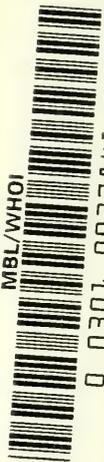




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BULLETIN No. 46

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U.S. TREASURY DEPARTMENT  
COAST GUARD

Bulletin No. 46

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REPORT OF THE INTERNATIONAL  
ICE PATROL SERVICE

IN THE  
NORTH ATLANTIC OCEAN



R. P. BULLARD  
R. P. DINSMORE  
ALFRED P. FRANCESCHETTI  
P. A. MORRILL  
FLOYD M. SOULE



CG-188-15

Season of 1960

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UNITED STATES  
GOVERNMENT PRINTING OFFICE  
WASHINGTON : 1961



# UNITED STATES COAST GUARD

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OFU  
17 Feb 1961

Transmitted herewith is Bulletin No. 46, Report of the International Ice Patrol Service in the North Atlantic Ocean, season of 1960.

A handwritten signature in cursive script that reads "A. C. Richmond".

A. C. RICHMOND,  
*Admiral, U.S. Coast Guard,*  
*Commandant.*

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## PREFACE

This bulletin is No. 46 in the series of annual reports on the International Ice Patrol and covers the season of 1960. It is divided into two parts. The first is a report of the observation operations which extended from 11 March to 30 June 1960. Ship, aircraft and communication activities are described in detail and special sections deal with observed monthly ice conditions, experiments in iceberg demolition and statistics on ice and sea temperature reports for 1960.

The second part comprises a preliminary presentation of the oceanographic data collected during 1960. Included are charts of dynamic topography of the sea surface (ocean current maps), tables of oceanographic data, and a brief discussion of the results of the season's four oceanographic surveys and the post-season research cruise in the Labrador Sea.

The authors of the section on oceanography are Floyd M. Soule, Oceanographer, USCG, Lieut. P. A. Morrill, USCG, and Alfred P. Franceschetti, Oceanographer, USCG. The remainder was written by Capt. R. P. Bullard, USCG, and Lt. Comdr. R. P. Dinsmore, USCG.



## INTERNATIONAL ICE PATROL, 1960

Between 11 March and 30 June 1960, the International Ice Patrol operated in the North Atlantic Ocean to serve the safety of ships traversing the shipping lanes in the vicinity of the Grand Banks of Newfoundland. This service has been conducted annually since 1913, except for the years 1942 through 1945, by operating forces of the United States Coast Guard. The 1960 iceberg year was a relatively light one with approximately 253 bergs drifting southward of the 48th parallel of latitude during the year as compared to the 693 in 1959.

Commander Ross P. Bullard, USCG, was assigned as Commander, International Ice Patrol. Facilities placed under Commander Bullard's command were the U.S. Coast Guard Air Detachment, Argentia, Newfoundland; U.S. Coast Guard Radio Station NIK, Argentia, Newfoundland; U.S. Coast Guard Cutter *Evergreen* (oceanographic vessel); and the U.S. Coast Guard Cutters *Acushnet* and *Gentian*, standby patrol vessels.

Primary ice observation for the season was conducted by aircraft. A secondary but indispensable source of information consisted of reports from merchant and government vessels. Additional valuable information was received from the Canadian Ice Information Office at Halifax, the Canadian National Telegraph at St. Johns, Danish sources in Greenland, and the U.S. Navy.

The Office of Commander, International Ice Patrol was moved to the United States Naval Station at Argentia, Newfoundland, on 8 March and patrol services were inaugurated on 11 March. The ice situation that date showed extremely light conditions with no icebergs or pack ice south of Belle Isle. Ice conditions were lighter than normal during March and April, somewhat heavier than normal during May and lighter than normal during June. A detailed description summarizing monthly ice conditions throughout the year appears in a later section. The rapid warming of the waters over the Grand Banks, the relative inactivity of the Labrador Current south of the 49th parallel, and the distribution of ice permitted termination of ice patrol services with the 1248Z broadcast on 30 June. Inasmuch as ice conditions were light, the establishment of a surface patrol was not necessary and the shipping track shifts were made on schedule.

The reader will note that this bulletin of the series has been retitled from the previous "International Ice Observation and Ice Patrol Service." The former title reflected a distinction made when the patrol was conducted by ships alone. The term "Ice Observation" was used

during a search for ice information; "Ice Patrol" meant that ice information was available and being broadcast. The advent of aircraft reconnaissance and radar and the integrated activities of the planes, oceanographic vessel and patrol vessel now provide the continuity of information which permits the unqualified use of the term "Patrol." It is emphasized that the change in title in no way reflects a change in the functions or services of the Patrol.

## AERIAL ICE OBSERVATION

Forty-one ice observation flights were made during the period from 10 March to 30 June. These flights averaged 1,200 miles in length and 7.5 hours in duration. Each flight is planned for maximum coverage in a selected area. The search areas are determined by the degree and reliability of available ice information over the Grand Banks, prevailing conditions of wind, sea and visibility, and the activity of the Labrador Current. The primary objective is to maintain accurate information concerning the southwestern, southern, and southeastern limits of the ice. A secondary objective is to fix the location of as much of the ice within the limits as is consistent with the accomplishment of the primary objective.

Twenty pre-season observation flights were made from 1 January to 10 March by Coast Guard Air Detachment Argentinia aircraft to establish the southern limits of the ice in its southward drift. The position and rate of encroachment information resulting from these flights is the major factor in determining the time that the patrol services should commence. The relatively large number of pre-season flights was principally due to the unusual appearance of icebergs on the Grand Banks during late December 1959 and January 1960. From the termination of the Patrol on 30 June to 16 September, 14 post-season reconnaissance flights were made to guard against an undetected ice encroachment. During December due to the report of bergs off the Newfoundland coast, two reconnaissance flights were made searching the area from 48° N. to 50°20' N. as far east as the 1,000 fathom curve. No ice was sighted during these two flights.

Flight statistics for the Patrol season are presented in table 1.

Table 1.—Aerial Ice Observation Statistics for the 1960 Season

Month	Number of flights	Number days flights made	Number days good weather	Average visual effectiveness	Maximum number days between flights	Hours flown
				<i>Percent</i>		
March (10-31) . . . . .	6	6	10	67.5	4	48.1
April . . . . .	10	9	16	76.0	5	72.4
May . . . . .	13	12	11	52.3	5	96.8
June . . . . .	12	9	11	79.8	6	90.4
Total . . . . .	41	36	48	63.4	5	307.7

## COMMUNICATIONS

Primary radio communications for International Ice Patrol was conducted by U.S. Coast Guard Radio Station (NIK), Argentina, Newfoundland. Commencing with the 0048Z broadcast on 11 March 1960, this station broadcasted ice advisory bulletins to shipping at 0048 and 1248 Greenwich Mean Time until the final broadcast on 30 June 1960. Transmissions were made simultaneously on 155 kilocycles, 5320 kilocycles and 8502 kilocycles with an output of 2 kilowatts. Each bulletin was transmitted twice, after a preliminary announcement on 500 kilocycles. The first transmission was made at 15 words per minute, the second at 25 words per minute.

All broadcasts included a statement as to the method of ice observation being used and a request that ships report all ice sighted and report sea water temperature, position, course, speed, visibility, and surface weather every four hours when between the latitudes of 39° N. and 49° N. and longitudes 42° W. and 60° W. The significance of the ice reports is obvious but the importance of the other information, while equally important, is not so apparent. The sea temperature reports are used to construct isotherm charts which play an important role in the evaluation of berg reports, prediction of berg drifts and estimation of the rate of ice deterioration. The charts prepared from these reports are included as figures 1 through 7. The position, course and speed information is plotted for use in ascertaining the density of shipping in a given area and for possible use in issuing a special warning should a vessel or vessels appear to be standing into danger. The visibility and weather reports are used in determining the feasibility of making an ice observation flight in a given area. The response to the requests for information, while not complete, was gratifying.

Merchant vessels handled traffic with NIK on their assigned frequencies with NIK working on 427 kilocycles, 6477.5 kilocycles, 8734 kilocycles or 12718.5 kilocycles as appropriate.

International Ice Patrol also operated a branch teletype station from the naval teletype relay at Argentina. This circuit was used for the transmission and receipt of ice information between the United States Naval Hydrographic Office, the Canadian Department of Transport Ice Information Office at Halifax, U.S. Coast Guard Headquarters, and other interested agencies.

During the 1960 season, Ice Patrol communication facilities handled a total of 18,029 radio messages and 22,420 landline messages. The statistics concerning ship reports is given in the following table:

Number of ice reports received from vessels.....	1,008
Number of vessels furnishing ice reports.....	275
Number of sea surface temperature reports.....	7,436
Number of vessels furnishing sea surface temperatures.....	525
Number of requests for special ice information.....	188
Total number of vessels worked (not including relays).....	592

The percentage distribution of reporting vessels by nationality was as follows:

Country	No. of reporting ships	Percentage of total	Country	No. of reporting ships	Percentage of total
United Kingdom	154	28.0	Denmark	4	0.7
United States	82	14.9	Finland	4	0.7
Germany	77	14.0	Iceland	3	0.5
Norway	50	9.1	Israel	3	0.5
Sweden	42	7.6	Poland	3	0.5
Netherlands	27	4.9	Portugal	3	0.5
Liberia	25	4.5	Belgium	2	0.4
Italy	16	2.9	Spain	2	0.4
France	12	2.2	Union of South Africa	2	0.4
Panama	9	1.7	Japan	1	0.2
Canada	8	1.5	Switzerland	1	0.2
Greece	7	1.3	Yugoslavia	1	0.2
Ireland	7	1.3			
U.S.S.R.	5	0.9	26 nations	550	100.0

## MONTHLY ICE CONDITIONS, 1960

### JANUARY

The beginning of 1960 found several icebergs present along the eastern slope of the Grand Banks and scattered bergs along the Newfoundland coast as far south as Cape Race.

These bergs were the remnants of the vigorous southward movement of ice experienced during 1959. Three large bergs drifting south of the 48th parallel in December reached positions between 45° N. to 46° N. and 48° W. to 49° W. by 8 January. Subsequent reports indicated these bergs were then carried eastward achieving no further southerly drift. The last of this group was sighted on the 12th by a United States naval vessel in position 45°10' N., 46°02' W. Such an occurrence of ice during January can be considered exceptional. Not since 1937 have bergs been observed so far to the south during this month.

Again from 8 to 28 January a berg was kept under observation which at the end of this period was last reported in 45°51' N., 47°02' W. This latter berg was one of the three estimated to have crossed south of the 48th parallel during the month. All others sighted in January probably arrived south of 48° N. in November and December. The other two drifted close along the Newfoundland coast; one sighted by U.S. Coast Guard Cutter *Casco* on 12 January in 47°17' N., 52°34' W. and the other was reported by an aircraft on 23 January just east of Cape St. Francis. Included within this latter group are the several bergs which were reported grounded in the Cape Race area throughout December and January. Periodically one or more of these bergs would unground and be driven southward by storm winds and except in one instance would last be reported in the area near 45°40' N., 52°40' W. Such occurrences were observed on the 3d, 14th and 18th of January. The one exception was on the 25th when

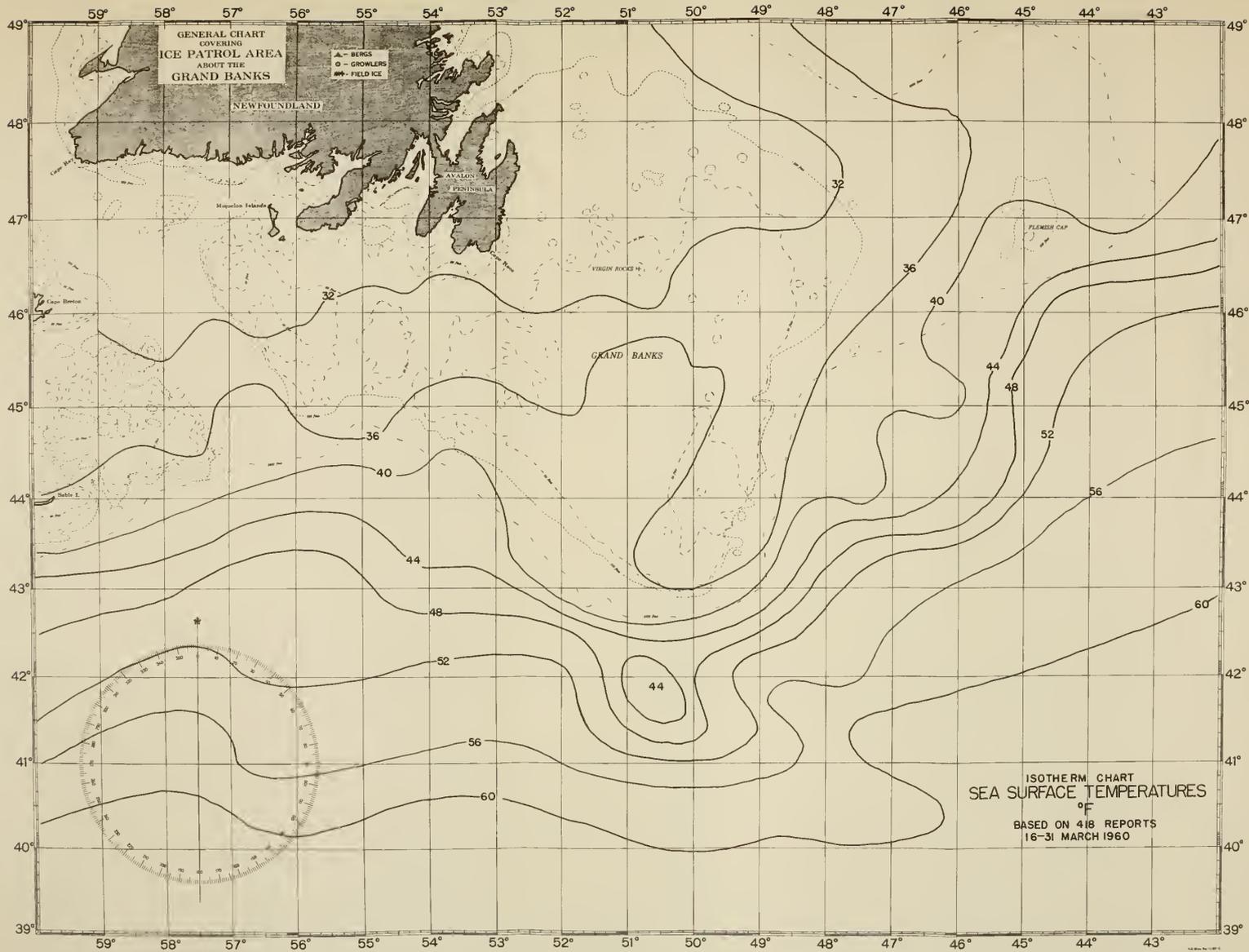


FIGURE 1.—Surface isotherms for the period 16-31 March 1960.



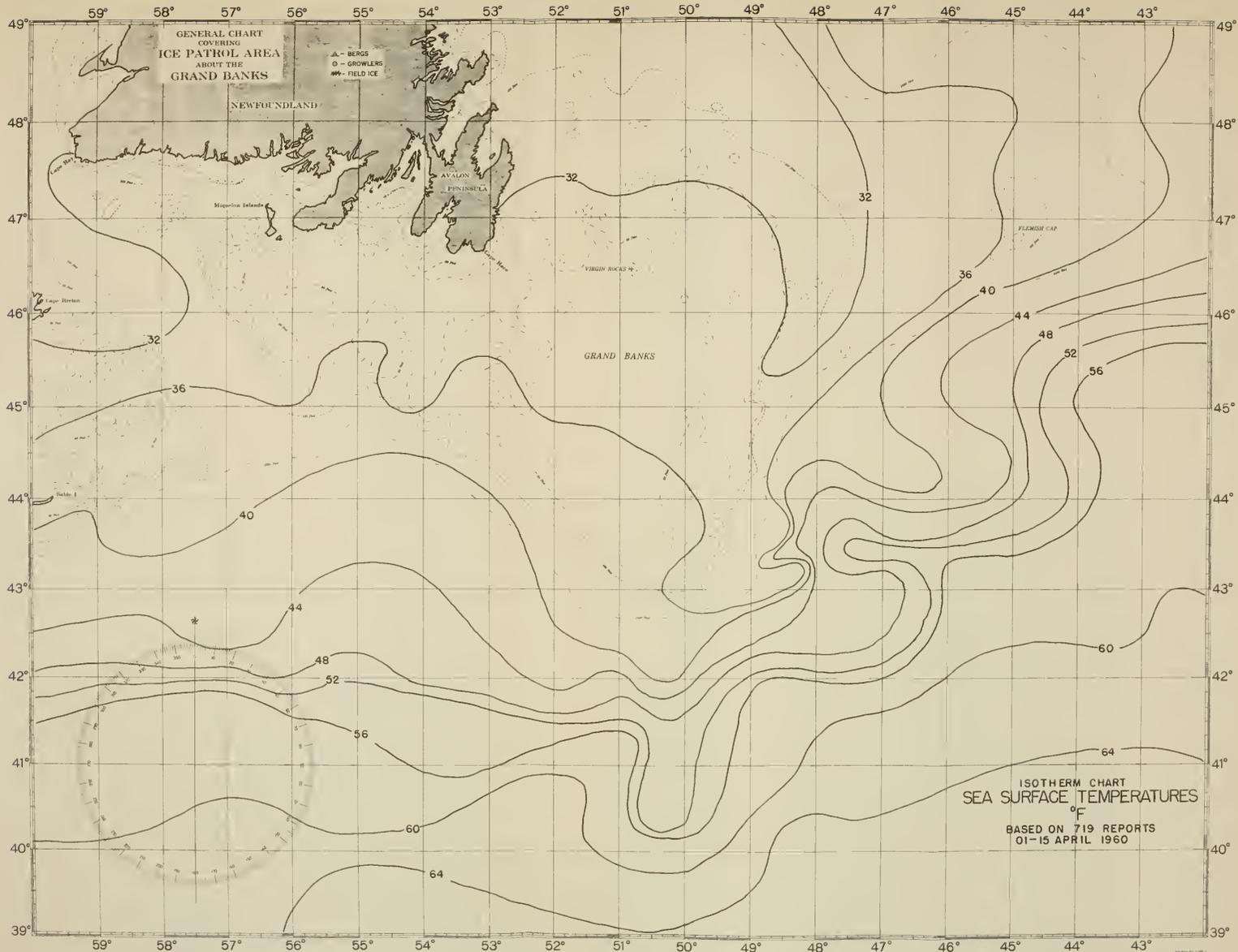


FIGURE 2.—Surface isotherms for the period 1-15 April 1960.



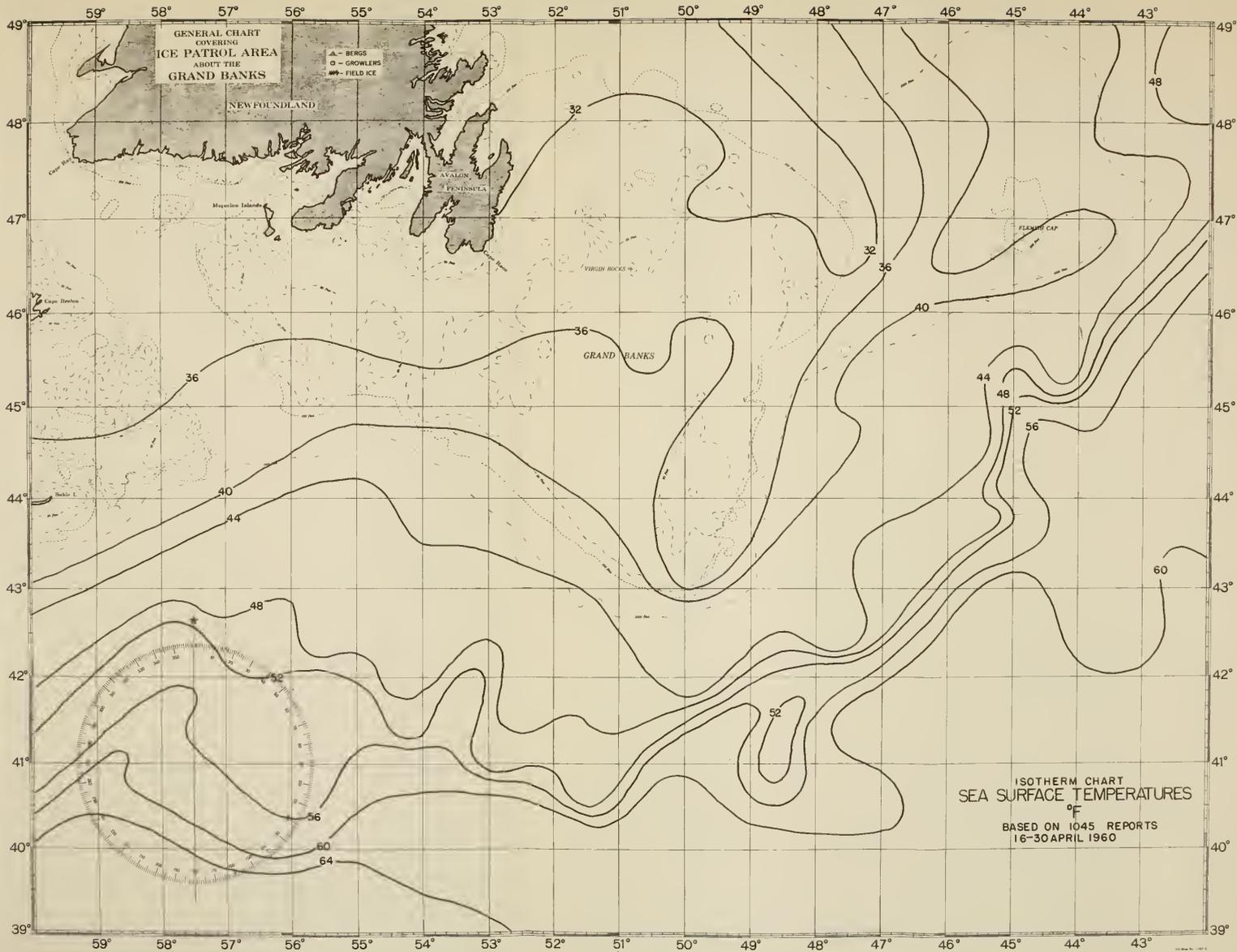


FIGURE 3.—Surface isotherms for the period 16-30 April 1960.



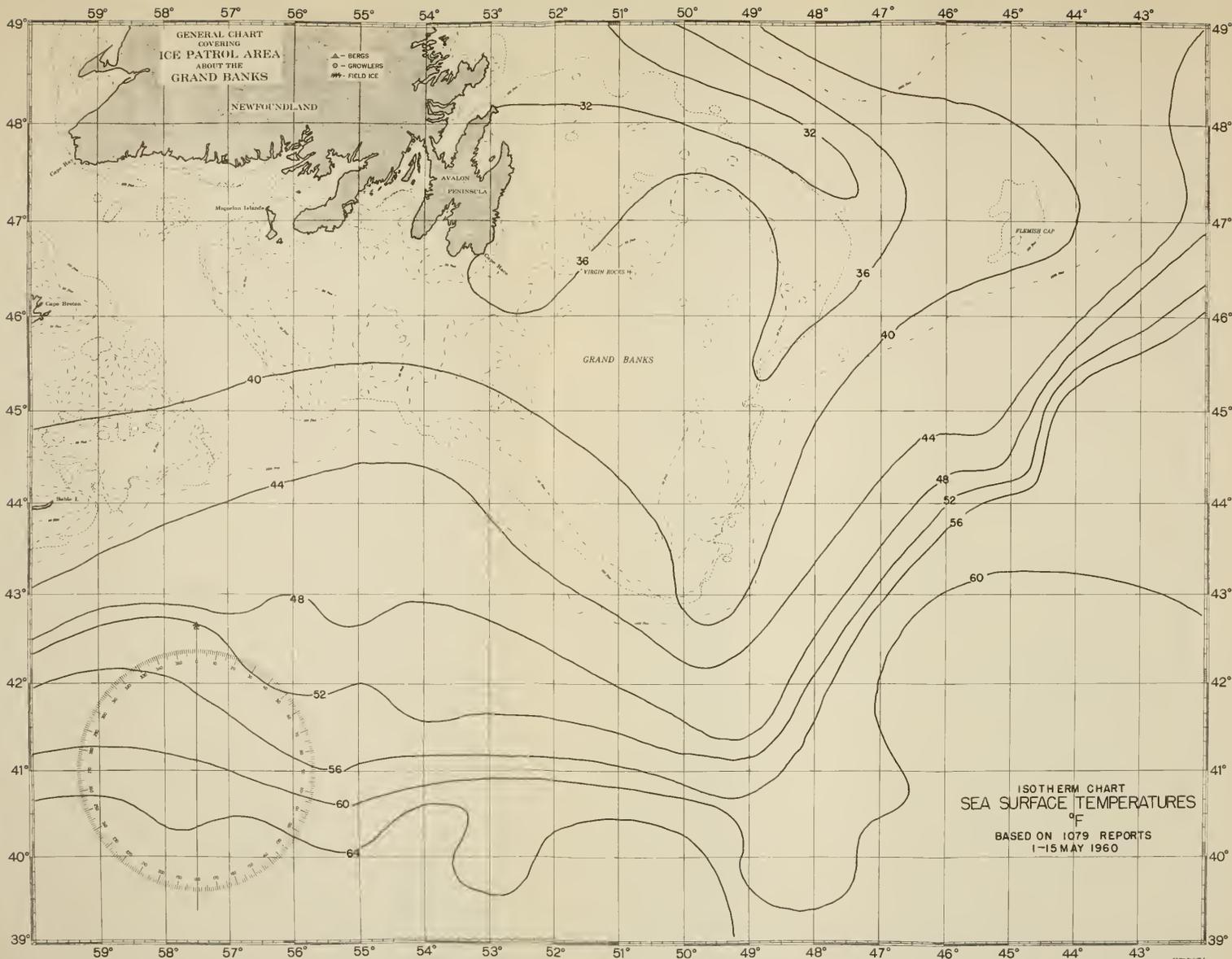


FIGURE 4.—Surface isotherms for the period 1-15 May 1960.



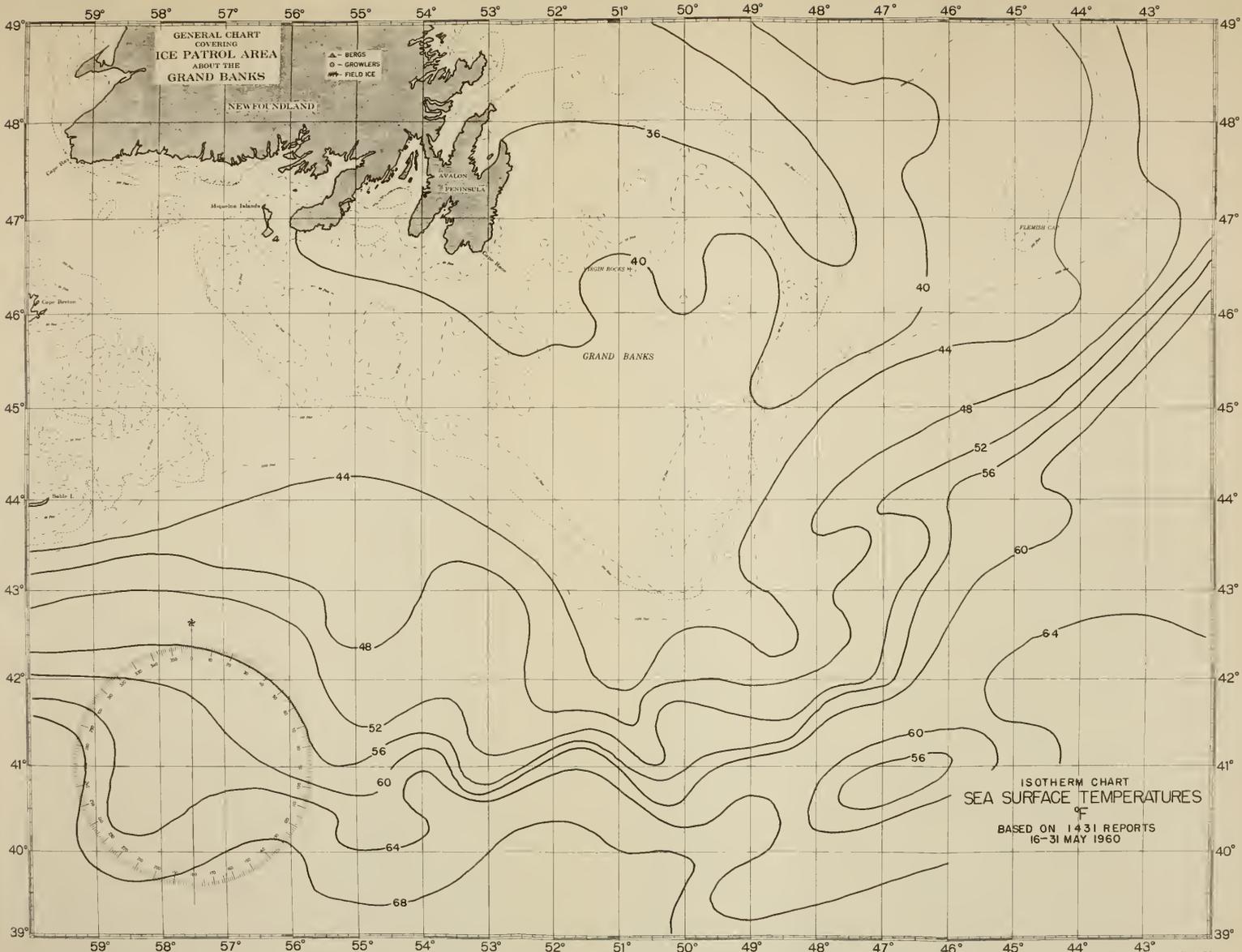


FIGURE 5.—Surface isotherms for the period 16-31 May 1960.







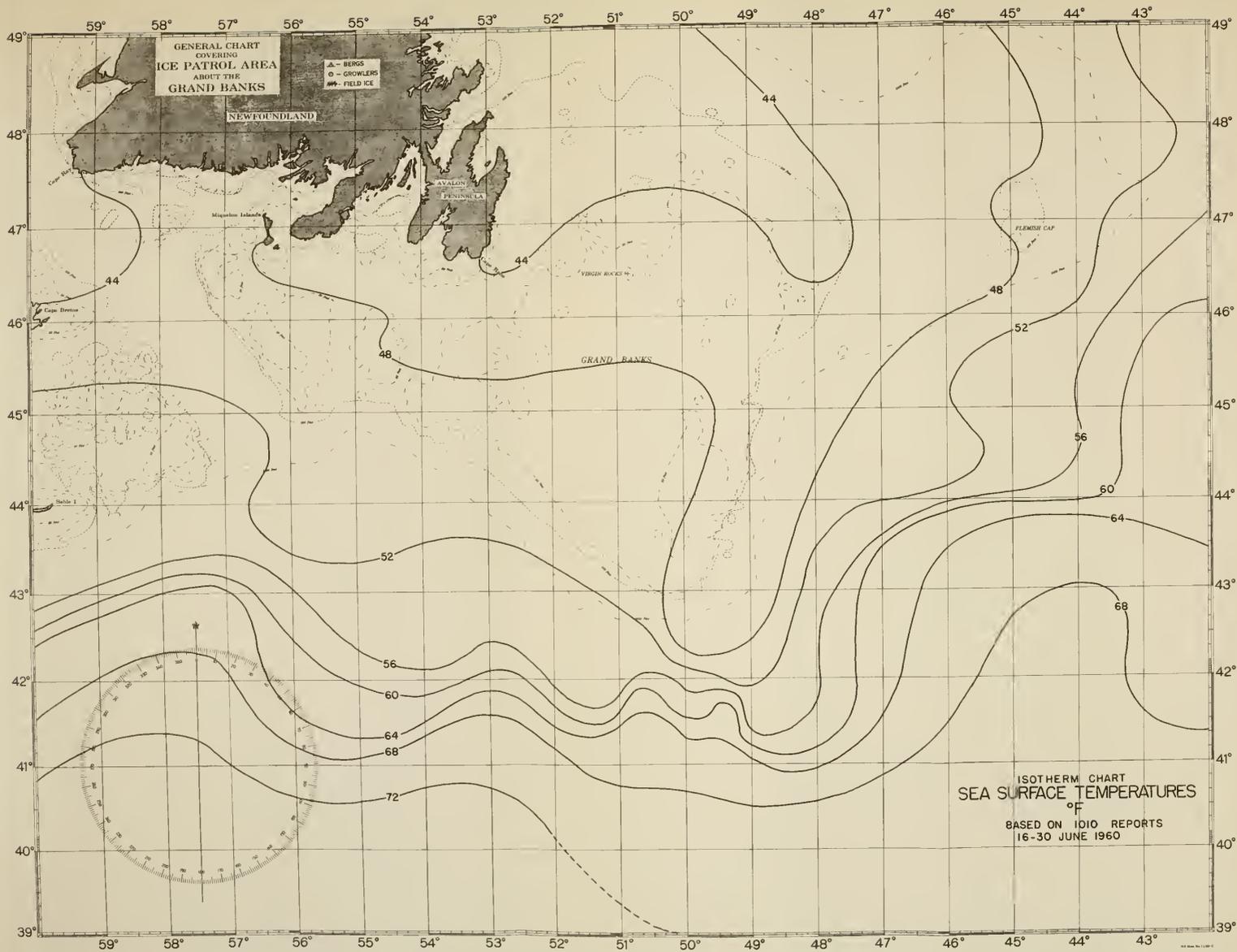


FIGURE 7.—Surface isotherms for the period 16-30 June 1960.



a growler was reported near Cape St. Mary, thus indicating a westerly drift.

Following a last sighting of a small berg near Cape Race on 29 January, no further ice was reported south of latitude  $48^{\circ}$  N. until April. It can be concluded that this rare January activity was associated more closely with the ice season of 1959 rather than that of 1960.

A warm winter with above average air temperatures in Newfoundland, precluded the formation of local sea ice except in the bays and straits of the northern coast. Patches and small fields of slush and bay ice were reported occasionally within and near the Strait of Belle Isle, but the Strait remained navigable throughout the month.

The Gulf of St. Lawrence remained open during the month and with the aid of the Canadian Department of Transport icebreaking and ice forecasting service, shipping was maintained in the River St. Lawrence as far as Quebec City throughout the month. Ice reached its greatest extent during the second and third weeks of the month.

#### FEBRUARY

Except for one berg grounded at Cape Bonavista and scattered bergs along the coast north of latitude  $51^{\circ}$  N., no bergs were observed in the Grand Banks or Newfoundland area during the month. A berg was reported by SS *Salacia* on 19 February in  $43^{\circ}45'$  N.,  $48^{\circ}00'$  W., but an aircraft searching the area later in the day failed to find any trace of the reported berg. Since the reported sighting was in darkness at a range of over 6 miles and within an area of high density shipping, the accuracy of the report is questionable.

Local sea ice and pack ice moving southward from the Labrador coast early in the month, blocked the Strait of Belle Isle and the reaches of bays and inlets of northern Newfoundland and persisted in concentrations varying from seven to nine-tenths cover of the sea surface. However, air temperatures averaging  $8^{\circ}$  to  $15^{\circ}$  above the monthly mean, favored the majority of Newfoundland ports with ice-free conditions and no sea ice was observed over the Grand Banks or Newfoundland waters south of latitude  $50^{\circ}$  N. Throughout the month, the southern limit of field ice approximated very closely a line from Belle Isle to  $53^{\circ}$  N.,  $52^{\circ}$  W. thence north-northwesterly. It consisted primarily of local Labrador pack and was not of Arctic origin.

The central Gulf of St. Lawrence continued ice-free during the month, but prevailing northeast winds concentrated heavy ice in the Prince Edward Island and Chaleur Bay areas. Icebreakers, however, were able to maintain some shipping to major ports in the Gulf and to Quebec City.

#### MARCH

The first half of March saw only two icebergs south of Belle Isle, but there were many bergs arriving at the Strait and scattered close along the Labrador coast. These conditions were undoubtedly due

to northeasterly winds prevailing during the early months of the year. A close parallel existed in the distribution of pack ice. The consolidated and heavy ice was concentrated along the coast with only transient storms carrying loose pack any distance offshore. Such conditions are depicted in figure 8, which shows observed ice conditions on 3 March.

On 22-23 March aerial ice observation found the edge of the Arctic pack at the Labrador coast at about latitude  $53^{\circ}$  N., and accompanied by a high concentration of bergs within the pack. Few bergs as yet had drifted south of Belle Isle but many were scattered throughout the Strait and into the northeast arm of the Gulf of St. Lawrence as far as Riche Point. This latter condition is a relatively rare occurrence but is due probably to the unseasonably light sea ice within the Strait and its approaches permitting the transit of icebergs that would otherwise have been blocked.

There was little change in the field ice limits given by figure 8 from March 3d through March 16th. However, between the 16th and the 22d a rapid southward movement occurred under the influence of strong northwesterly winds. On the 23d heavy sea ice extended as far south as Fogo Island, Newfoundland, and was being driven well off the Labrador coast. The situation as it existed that day is shown on figure 9.

The conditions thus described resulted from the shift from northeasterly to northwesterly winds. This was made obvious at the month's end by the appearance of numerous bergs and growlers eastward from Belle Isle to longitude  $52^{\circ}$  W. Two weeks earlier none of these bergs were known to be east of the 55th meridian.

On 31 March the Arctic pack had advanced to latitude  $51^{\circ}$  N., and loose field ice had encroached along the Newfoundland coast about  $49^{\circ}$  N.,  $52^{\circ}$  W.

In the Gulf of St. Lawrence ice conditions declined steadily throughout March except in the northeast arm where young ice continued to form and winter ice was carried in by an exceptionally vigorous circulation through the Strait of Belle Isle. This ice reached its peak about 23 March and thereafter deteriorated steadily.

No well developed "ice-bridge" was formed across Cabot Strait by the breakup and outflow of Gulf ice by reasons of both a light ice year and pressure exerted by the northeast winds. However, Cabot Strait did not escape ice-free. With the relaxation of the northeasterly flow, sufficient ice drifted into Cabot Strait to block the port of Sydney, N.S., during the third week of March. Shipping continued through Cabot Strait but was hampered by patches and belts of loose ice for the remainder of the month.

Twice during March, icebergs were sighted by Ocean Station *Bravo* (United States Coast Guard Cutter *Castle Rock*), located in the middle of the Labrador Sea. These bergs were tracked by that vessel within

the limits of its 200-mile station. Such sightings are rare and are outside of or close to the limits of iceberg occurrence as shown on hydrographic charts and publications. The first instance was 15-18 March when the berg was sighted in position  $56^{\circ}23' N.$ ,  $50^{\circ}29' W.$ , and tracked to melting at  $54^{\circ}51' N.$ ,  $50^{\circ}40' W.$  The drift averaged 22 miles per day in a south-southwest direction. The second case was from 22-25 March with the berg first sighted in  $56^{\circ}27' N.$ ,  $50^{\circ}38' W.$ , and abandoned in  $54^{\circ}55' N.$ ,  $51^{\circ}15' W.$ , when it reached the southern limits of the ocean station after a 22 mile-per-day southerly average drift.

Other extreme ice sightings were by M/V *Jökulfell* on 20 March which reported four bergs at  $57^{\circ}20' N.$ ,  $39^{\circ}10' W.$ , SS *Mormacsaga* which sighted a small berg in  $56^{\circ}39' N.$ ,  $39^{\circ}57' W.$ , on 21 March and an unidentified aircraft which reported a large berg in  $56^{\circ}50' N.$ ,  $48^{\circ}00' W.$  Certainly these latter bergs and probably the OSV Bravo bergs were of East Greenland origin.

Ice reports received during March for the area south of latitude  $49^{\circ} N.$  are summarized in figure 13.

#### APRIL

The suspected southerly movement of icebergs into the Grand Banks area at the end of March materialized during the first week of April when the season's crop of bergs was observed to be approaching the northern slope of the Banks under the influence of the Labrador Current. The axis of the berg movement can be deduced from figure 10 which shows conditions as they existed at the end of the second week. Here the forefront of the bergs is shown breaking out of the pack ice which has achieved very nearly its maximum southward extrusion from the year. The first berg of the season to drift across the 48th parallel did so at this time.

It is interesting to note that throughout the month this berg movement coincided in its entirety very nearly with the eastern branch of the Labrador Current. By the month's end 33 bergs had crossed latitude  $48^{\circ} N.$ , of which 27 did so during the last week. None had been observed along the east coast of Newfoundland south of Cape Freels.

After occupying the limits on 15 April shown by figure 10, the pack ice changed little throughout the remainder of the month. The rate of deterioration along the southern boundary very nearly equalled the rate of southward movement. At the month's end a dominant northerly wind in the Belle Isle area resulted in a heavy concentration of ice being carried to the northern slope of the Grand Banks, and an encroachment of ice along the east coast of Newfoundland as far as Baccalieu Island. Warming sea temperatures prevented any major spreading to the south, however.

Ice in the Gulf of St. Lawrence deteriorated steadily and shipping

was maintained throughout the month. During the first week, small fields of brash and slush hampered shipping in Cabot Strait and on the main steamer track as far as Heath Point, Anticosti Island. Rotting patches remained in Cabot Strait until 18 April. Thereafter no further sea ice was observed for the season except small patches persisting in Northumberland Strait to the month's end and heavy winter ice which blocked the extreme northeast arm of the Gulf.

Early in April reports of growlers and bergy bits from the Gulf of St. Lawrence between Heath Point and Cape St. George were regarded at first as large rafted floes of sea ice. However, as this ice invaded the main shipping track between Anticosti Island and Bird Rocks during the third week of April, reports of icebergs became frequent and the glacial origin of this ice was recognized. Berg reports, especially in such numbers from this part of the Gulf are extremely rare. By the last week in April these bergs were observed drifting seaward through Cabot Strait at a rate of about 25 miles per day. From 24-30 April at least seven bergs were sighted south of latitude  $48^{\circ}$  N., within the Gulf and many others were grounded along the west coast of Newfoundland and at Anticosti and Magdalen Islands. These bergs were the same as reported in March to be transiting the Strait of Belle Isle. As was then noted, the explanation probably is in the prevailing northeast winds from December to mid-March and the light winter sea ice existing in the Strait which otherwise would impede the berg's progress.

Other unusual ice sightings occurred on 4-6 April when OSV *Bravo* sighted two small bergs near  $56^{\circ}30'$  N.,  $51^{\circ}20'$  W., and again on 26 April when SS *Leona* reported a large berg in  $56^{\circ}40'$  N.,  $45^{\circ}40'$  W.

Ice reports for April are plotted on figure 14. The existence of a large berg reported the 23d in  $43^{\circ}40'$  N.,  $48^{\circ}00'$  W., by the Factory Fishing Vessel *Fairtry III* is open to question. This berg was reported at night and could not be relocated the following day by intensive aerial search under ideal conditions of visibility.

In addition to the 33 bergs drifting south of latitude  $48^{\circ}$  N., in the east, 8 more can be added in the Gulf of St. Lawrence making a total of 41 for the month.

## MAY

At the beginning of May, icebergs approaching the northern slope of the Banks were more westward than the earlier arrivals in April. This was, in part, due to strong northerly winds occurring the last week in April over the Belle Isle area which had the effect of concentrating the pack ice close along the Labrador coast and shifting the berg movement more toward the Newfoundland coast.

In addition to conditions described in the foregoing paragraph, a severe storm over the Grand Banks 1-3 May with attendant north to northeast winds altered radically the distribution of ice over the

Grand Banks. Ice was driven from its previously well formed pattern within the Labrador Current and spread over the entire northern portion of the Grand Banks and along the Newfoundland coast as far south as Cape Race.

The changes brought about by the two aforementioned conditions can be seen by comparing figures 10 and 11. It was not, however, until 7 May that the complete effect was apparent. An examination of figure 15 shows that the extreme berg encroachment for the year over the central part of the Banks occurred at this time. The period 1-7 May also included the maximum number of berg arrivals south of latitude  $48^{\circ}$  N. Fifty-four bergs crossed the 48th parallel during that week and represented 20 percent of the year's total.

Such an alteration in berg distribution is not an exceptional occurrence. A similar effect of greater magnitude and more abrupt was experienced in May 1959. In both instances the effect of the western branch of the Labrador Current emerged dominant. Bergs now began arriving at the Newfoundland coast south of latitude  $48^{\circ}$  N., in numbers which belied the sparser activity offshore. Throughout the remainder of May, bergs continued to arrive along the coast and move into the area south of Cape Race and conditions in these waters may be considered above average. The peak for the year occurred during the last week in May when 110 bergs were sighted within a 25-mile radius of Cape Bonavista and many were reported in a westward drift around Cape Race and as far as Placentia Bay.

The bergs which were carried onto the northern Grand Banks early in May remained grounded and achieved no further significant drifts. By the end of the month, most of these had disintegrated and no new arrivals were sighted or reported in this area.

A group of bergs, estimated at perhaps 15 to 20 of the season's early arrivals, remained unaffected by the first week's redistribution and continued to drift down the eastern slope of the Banks and under the influence of the Labrador Current, were well-poised for a prolonged drift southward. Such was not the case, however, as southwesterly winds, by then prevailing over the Grand Banks, exerted sufficient pressure to deviate the majority of these bergs eastward between latitudes  $46^{\circ}$  N., and  $44^{\circ}$  N., into the Atlantic Current. Here the warmer waters and northeastward drift soon ended any threat. The most southerly drift for the month and for the year occurred 18-20 May when three survivors of this group reached the Tail of the Bank and two penetrated just south of latitude  $43^{\circ}$  N., before melting. At the month's end no bergs were known to exist over the eastern slope of the Banks.

Field ice reached its peak for the season during the first week in May, but represented little advance over conditions which existed during the middle of April. During this week, the coast north of Baccalieu Island was blocked and the pack edge reached to within 5

miles of St. Johns. Scattered patches and strings of drift ice were reported as far south as Cape Race on 6 May but no major sea surface cover existed south of latitude  $47^{\circ}30'$  N.

Ice conditions existing on 4 May are presented by figure 11. The effect of the late April storm centered in the Belle Isle area is readily apparent. The northern ice is concentrated along the coast and the southern ice fields are detached from their northern source. Warming trends during the second week in May hastened the deterioration of the southern and eastern limits, especially the latter. However, the coastal current, previously described as transporting bergs to the Avalon Peninsula maintained a pack-ice threat to eastern Newfoundland ports until the middle of the month. Rapid deterioration followed, however, and aerial observation on 24 May revealed that the southern branch of the sea ice shown on figure 11 had melted entirely. The pack ice in the Belle Isle area, on the other hand, remained ominously heavy and within very nearly the same limits as shown by figure 11. At the month's end this ice was once again advancing southward.

In the Gulf of St. Lawrence all pack ice had disappeared by 3 May except in the extreme northeast arm at the western approaches to the Strait of Belle Isle where heavy polar ice persisted throughout the month. Small icebergs continued seaward drifts through Cabot Strait until 14 May, after which no more ice was reported on the main shipping track into the Gulf. The two growlers sighted on 13 May south of the Miquelon Islands were the last survivors of this most unusual iceberg occurrence.

During an intense air and surface search of the Labrador Sea on 4-6 May for the ill-fated Danish Motor Vessel *Hanne S.* more icebergs were observed in the general area of Ocean Station *Bravo* than usually is considered normal. This poses the question that either 1960 is an abnormal year for iceberg occurrence or that more bergs habitually frequent that region than heretofore has been acknowledged.

Plot of ice conditions for May within the Ice Patrol area are shown by figure 15.

## JUNE

At the beginning of June, the majority of icebergs within the Ice Patrol area were concentrated along the Newfoundland coast. A minor southeastward movement of bergs along the northern slope of the Grand Banks occurred early in June and reached its peak on the 16th. Conditions on this day are shown by figure 12. Thereafter, through the end of the month, only occasional bergs were reported in this critical region and none were observed south of latitude  $47^{\circ}$  N.

On the Newfoundland coast concentrations remained high during the early part of the month, but few new arrivals resulted in steadily deteriorating numbers present. By 30 June fewer than seven bergs remained south of latitude  $48^{\circ}$  N., over the entire area.

Heavy polar pack ice persisting in the Belle Isle and northeastern Newfoundland area at the beginning of June made an unseasonal southerly advance and reached a maximum limit about 16 June as shown on figure 12. Westerly winds, however, had cleared the Strait of Belle Isle so that only the eastern approaches to the Strait were blocked. By 24 June the pack limits had receded north of latitude  $52^{\circ}30'$  N., and except for rotting patches of drift ice and many scattered bergs, the Strait was navigable with caution.

At the middle of June, a southward movement of icebergs was detected off the Labrador coast between the thousand fathom isobath and the 52d meridian. A similar occurrence developed in 1958 and 1959. At the month's end the leaders of this unseasonal movement were approaching the northern slope of the Banks. However, warming sea temperatures were causing a high deterioration rate and no significant drifts were observed.

No unusual berg positions were reported in June except perhaps, for the several bergs observed in Placentia Bay during the first two weeks of the month. These were survivors from the high concentrations existing during May in the area south of Cape Race. On 1 June and again on 12-15 June, bergs were visible from the Ice Patrol Headquarters at Argentia. This year and in 1959, are the only two years where such an event has been recorded or remembered.

During June, 44 bergs drifted south of latitude  $48^{\circ}$  N. A summary of ice reports received during the month is plotted on figure 16.

### JULY

The southward berg movement detected off Labrador during the middle of June was maintained throughout July with the majority of reports originating on the Belle Isle shipping route (track G) between longitudes  $50^{\circ}$  W. and  $52^{\circ}$  W. A few scattered bergs of this group arrived at the northern slope of the Banks and sightings indicate that for the most part, they turned eastward without crossing the 48th parallel. Typical of these were four bergs observed on 8 July near  $48^{\circ}30'$  N.,  $46^{\circ}10'$  W. Several, however, remained under the influence of the Labrador Current and passed between the Grand Banks and Flemish Cap. Only one berg reached south of latitude  $46^{\circ}$  N. This was observed on 3 July in  $46^{\circ}46'$  N.,  $46^{\circ}41'$  W., on 10 July in  $45^{\circ}24'$  N.,  $48^{\circ}18'$  W., and was last seen the following day in  $44^{\circ}55'$  N.,  $48^{\circ}52'$  W. This is the most extreme drift observed during the month and the most southerly position a berg had occupied since 18 May.

An interesting and unusual berg sighting was received on 10 July when SS *Greek Cosmic* reported a berg in  $52^{\circ}40'$  N.,  $44^{\circ}42'$  W.

Occasional scattered bergs were reported along the coast of the Avalon Peninsula through the 16th and on the northeast coast during the entire month.

It is estimated that four bergs drifted south of latitude  $48^{\circ}$  N., in July.

## AUGUST

Ships continued to report icebergs in the eastern entrance and approaches to the Strait of Belle Isle as far east as the 50th meridian. Scattered bergs were also sighted during the first half of the month between latitudes  $51^{\circ}30'$  N., and  $51^{\circ}$  N., and longitudes  $51^{\circ}$  W., and  $53^{\circ}30'$  W. Throughout the month, a number of bergs were distributed along the 1,000-fathom curve as far south as  $48^{\circ}30'$  N. Observations indicate that these bergs were deteriorating rapidly and moving off to the eastward without crossing the 48th parallel.

## SEPTEMBER

Ships using track G continued to report bergs in the eastern approaches to the Strait of Belle Isle but in lesser numbers indicating a thinning out. During the month only one berg was reported west of Belle Isle and only one was reported south of the 51st parallel. The former was reported on the 2d in latitude  $51^{\circ}37'$  N., longitude  $56^{\circ}19'$  W., and the latter was reported on the 10th in latitude  $50^{\circ}42'$  N., longitude  $55^{\circ}02'$  W.

Two unusual sightings were reported during the month. One, made by the *Keystone State* on the 13th, involved two growlers in position  $51^{\circ}18'$  N.,  $47^{\circ}52'$  W., a position more easterly than normally to be expected. The other, reported by the *Median Princess*, involved a large berg in position  $59^{\circ}30'$  N.,  $46^{\circ}20'$  W., considerably north and east of the area where bergs are normally expected.

## OCTOBER

The number of reported sightings of icebergs diminished considerably during the month. The few bergs reported were located 30 to 60 miles west of the 1,000-fathom curve and north of the 51st parallel and south of the 53d parallel.

## NOVEMBER-DECEMBER

Two large bergs were reported on 9 November at  $52^{\circ}32'$  N.,  $53^{\circ}56'$  W., and  $52^{\circ}29'$  N.,  $54^{\circ}11'$  W. A berg and growler were reported on 15 November at  $50^{\circ}43'$  N.,  $53^{\circ}11'$  W. The latter berg was reported again on 22 November as a small berg at  $49^{\circ}36'$  N.,  $52^{\circ}15'$  W., surrounded by several growlers indicating advanced deterioration.

No glacial ice was reported in the Newfoundland area during December and no ice drifted south of  $48^{\circ}$  N., during either month.

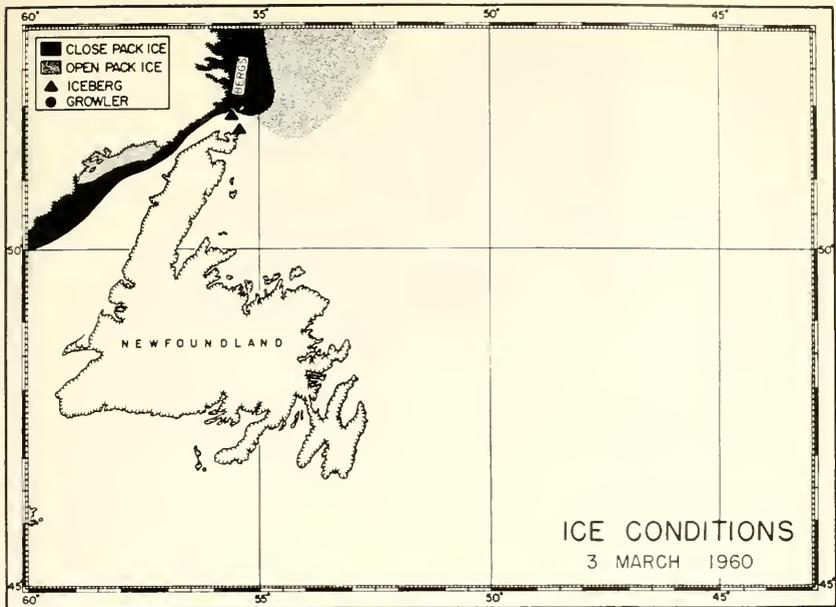


FIGURE 8.—Ice conditions on 3 March 1960.

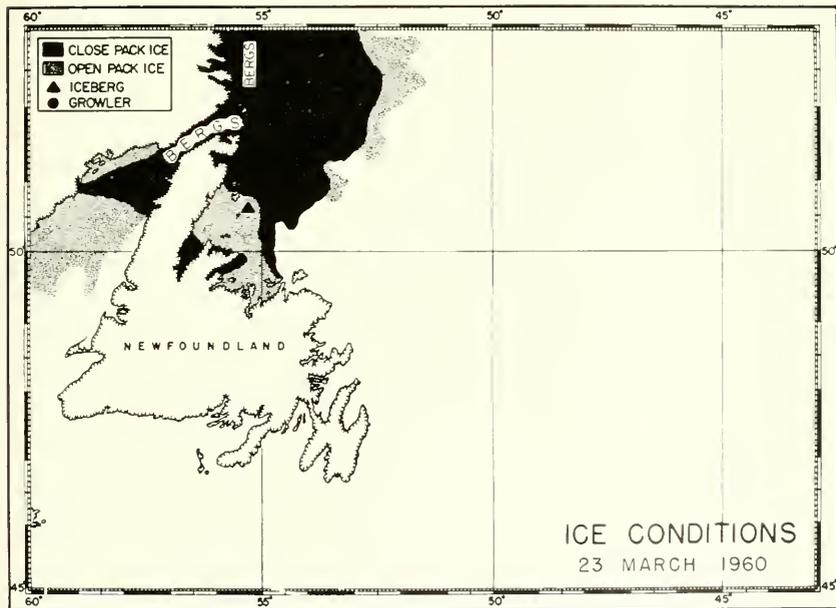


FIGURE 9.—Ice conditions on 23 March 1960.

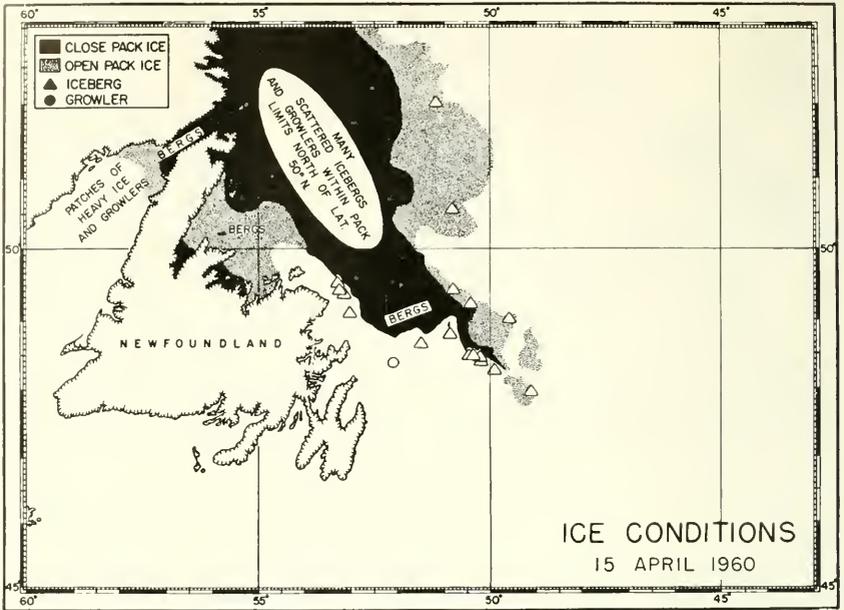


FIGURE 10.—Ice conditions on 15 April 1960.

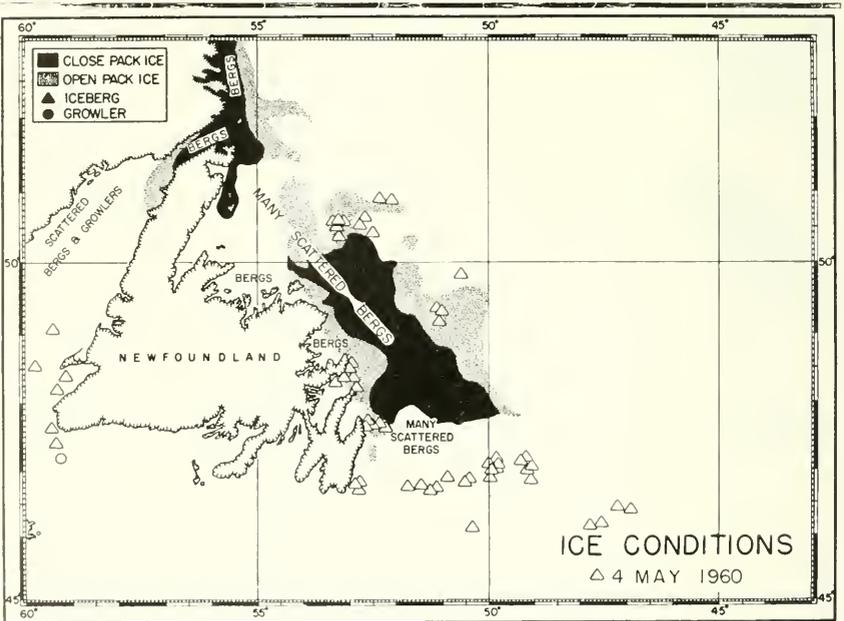


FIGURE 11.—Ice conditions on 4 May 1960.

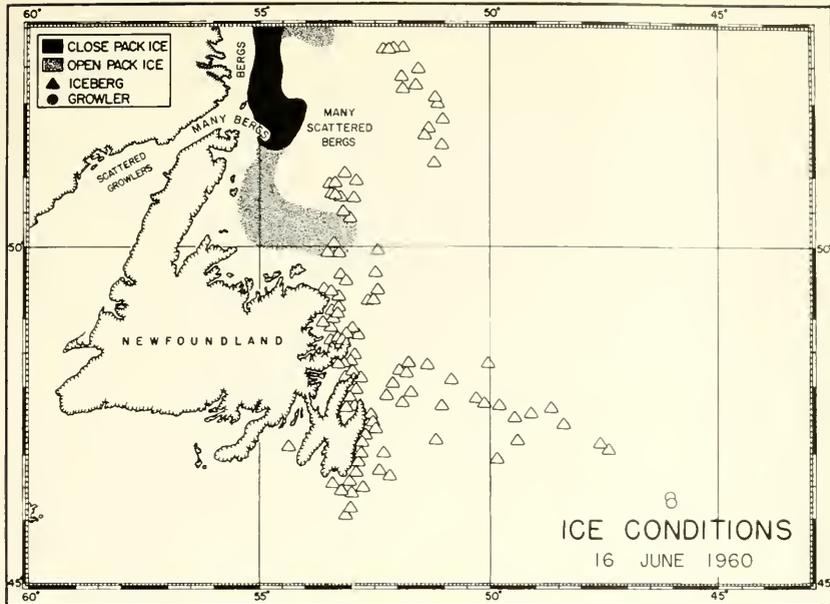


FIGURE 12.- Ice conditions on 16 June 1960.

### ICE AND SEA CONDITION REPORT

[By country]

BELGIUM			FRANCE		
Vessel	Ice reports	Sea condition reports	Vessel	Ice reports	Sea condition reports
SS <i>Lindi</i> .....		4	SS <i>Bois Rose</i> .....	1	1
SS <i>Lubumbashi</i> .....		7	SS <i>Flandre</i> .....		9
CANADA			SS <i>Fort Caroline</i> .....		1
SS <i>Dunkyle</i> .....	2	1	SS <i>Fort Richempanse</i> .....		5
SS <i>Eskimo</i> .....		4	SS <i>Gien</i> .....		1
SS <i>Gowrie</i> .....		1	SS <i>Isara</i> .....		3
CGS <i>Labrador</i> .....	2	3	SS <i>Joliette</i> .....		4
SS <i>Lanark</i> .....	3	11	SS <i>Liberte</i> .....		18
SS <i>Nattawunga</i> .....		25	SS <i>Marquette</i> .....	1	28
SS <i>Sangregorio</i> .....		10	SS <i>Pengall</i> .....		6
SS <i>Wolfe</i> .....	7		SS <i>Picre</i> .....		9
			SS <i>Pont Audemer</i> .....	1	24
DENMARK			GERMANY		
SS <i>Olfu Bjarke</i> .....		3	SS <i>Alexandra Sartori</i> .....		11
SS <i>Ohio</i> .....		11	SS <i>Annika</i> .....		2
SS <i>Maine</i> .....		17	SS <i>Belgrano</i> .....	1	
SS <i>Bolivia</i> .....		8	SS <i>Berlin</i> .....		54
FINLAND			SS <i>Bertha Entz</i> .....	4	7
SS <i>Kaarina</i> .....		2	SS <i>Bertold Brecht</i> .....	2	2
SS <i>Kristina</i> .....	2	1	SS <i>Bilboa</i> .....		5
SS <i>Orion</i> .....	1	1	SS <i>Billetal</i> .....	2	8
SS <i>Peter</i> .....	4	4	SS <i>Bremen</i> .....		2

## GERMANY—Continued

Vessel	Ice reports	Sea condition reports
SS <i>Brienteine</i> .....	---	1
SS <i>Brooktor</i> .....	---	6
SS <i>Caria</i> .....	1	---
SS <i>Carl Julius</i> .....	6	7
SS <i>Carl Fritzen</i> .....	---	6
SS <i>Catharina Oldendorff</i> .....	---	1
SS <i>Charlotte Schroder</i> .....	3	3
SS <i>Christa</i> .....	6	21
SS <i>Christian Sartori</i> .....	2	23
SS <i>Christianna Pikuritz</i> .....	---	1
SS <i>Cleopatra</i> .....	2	28
SS <i>Clio</i> .....	---	10
SS <i>Concordia</i> .....	1	2
SS <i>Erika Schulte</i> .....	1	9
SS <i>Elfriede</i> .....	1	---
SS <i>Elise Schulte</i> .....	1	13
SS <i>Elizabeth Berger</i> .....	---	2
SS <i>Francisca Sartori</i> .....	---	7
SS <i>Fritz Thyssen</i> .....	8	21
SS <i>George Russ</i> .....	---	16
SS <i>Gertrude Fritzen</i> .....	2	3
SS <i>Gloria</i> .....	---	10
SS <i>Hans Honold</i> .....	1	23
SS <i>Hanseatic</i> .....	1	31
SS <i>Heinrich Honold</i> .....	---	22
SS <i>Herta Engelene Fritzen</i> .....	1	9
SS <i>Holstein</i> .....	1	11
SS <i>Howaldt</i> .....	---	1
SS <i>Ingrid Weide</i> .....	8	13
SS <i>Innstien</i> .....	5	21
SS <i>Ilse Schulte</i> .....	3	6
SS <i>Klaus Leonhardt</i> .....	---	1
SS <i>Lahnstein</i> .....	---	3
SS <i>Leada</i> .....	3	---
SS <i>Leanna</i> .....	1	10
SS <i>Lea Paul</i> .....	3	8
SS <i>Leuna</i> .....	1	1
SS <i>Lucenburg</i> .....	---	1
SS <i>Magdalena Oldendorff</i> .....	---	1
SS <i>Magenburg</i> .....	3	---
SS <i>Maria Althoff</i> .....	1	---
SS <i>Maria Anna Schulte</i> .....	---	2
SS <i>Marie Leonhardt</i> .....	9	---
SS <i>Marxburg</i> .....	2	---
SS <i>Micke Iegenhausen</i> .....	1	---
SS <i>Naumburg</i> .....	---	11
SS <i>Mordsee</i> .....	---	2
SS <i>Ludolf Oldendorff</i> .....	1	11
SS <i>Ophelia</i> .....	---	3

## GERMANY—Continued

Vessel	Ice reports	Sea condition reports
SS <i>Poseidon</i> .....	3	11
SS <i>Regensburg</i> .....	2	2
SS <i>Reifenstein</i> .....	1	9
SS <i>Rhenania</i> .....	1	1
SS <i>Roland Russ</i> .....	2	2
SS <i>Schwanlein</i> .....	---	17
SS <i>Seven Seas</i> .....	5	33
SS <i>Silvia</i> .....	5	5
SS <i>Tilo Von Wil-mowsky</i> .....	1	1
SS <i>Transatlantic</i> .....	4	3
SS <i>Transcanada</i> .....	5	5
SS <i>Transpacific</i> .....	1	20
SS <i>Transquebec</i> .....	---	2
SS <i>Virgilia</i> .....	2	10
SS <i>Volunnia</i> .....	1	1
SS <i>Weissenburg</i> .....	2	9
SS <i>Welheim</i> .....	1	1
SS <i>West Falia</i> .....	2	9
SS <i>Willi Huber</i> .....	2	2

## GREAT BRITAIN

SS <i>Afghanistan</i> .....	1	25
SS <i>Albano</i> .....	2	20
SS <i>Alexander T. Wood</i> .....	2	8
SS <i>Alice Bowater</i> .....	5	8
SS <i>Alsatia</i> .....	---	39
SS <i>Andria</i> .....	2	29
SS <i>Angelo</i> .....	7	25
SS <i>Arabia</i> .....	8	8
SS <i>Asia</i> .....	5	28
SS <i>Assyria</i> .....	1	8
SS <i>Athelsultan</i> .....	---	1
SS <i>Baskerville</i> .....	---	1
SS <i>Bassano</i> .....	3	16
SS <i>Beavercore</i> .....	8	10
SS <i>Beaverdell</i> .....	7	25
SS <i>Beaverford</i> .....	5	16
SS <i>Beaver Glen</i> .....	2	4
SS <i>Beaverlake</i> .....	11	36
SS <i>Birmingham City</i> .....	---	19
SS <i>Bishopsgate</i> .....	2	4
SS <i>British Vision</i> .....	1	18
SS <i>Broompark</i> .....	---	9
SS <i>Burgan</i> .....	---	2
SS <i>Cairnarvon</i> .....	10	27
SS <i>Cairngowan</i> .....	5	12
SS <i>Calygaria</i> .....	3	3
SS <i>Cape Clear</i> .....	---	1
SS <i>Cape Franklin</i> .....	4	7
SS <i>Carinthia</i> .....	14	43
SS <i>Caronia</i> .....	---	3

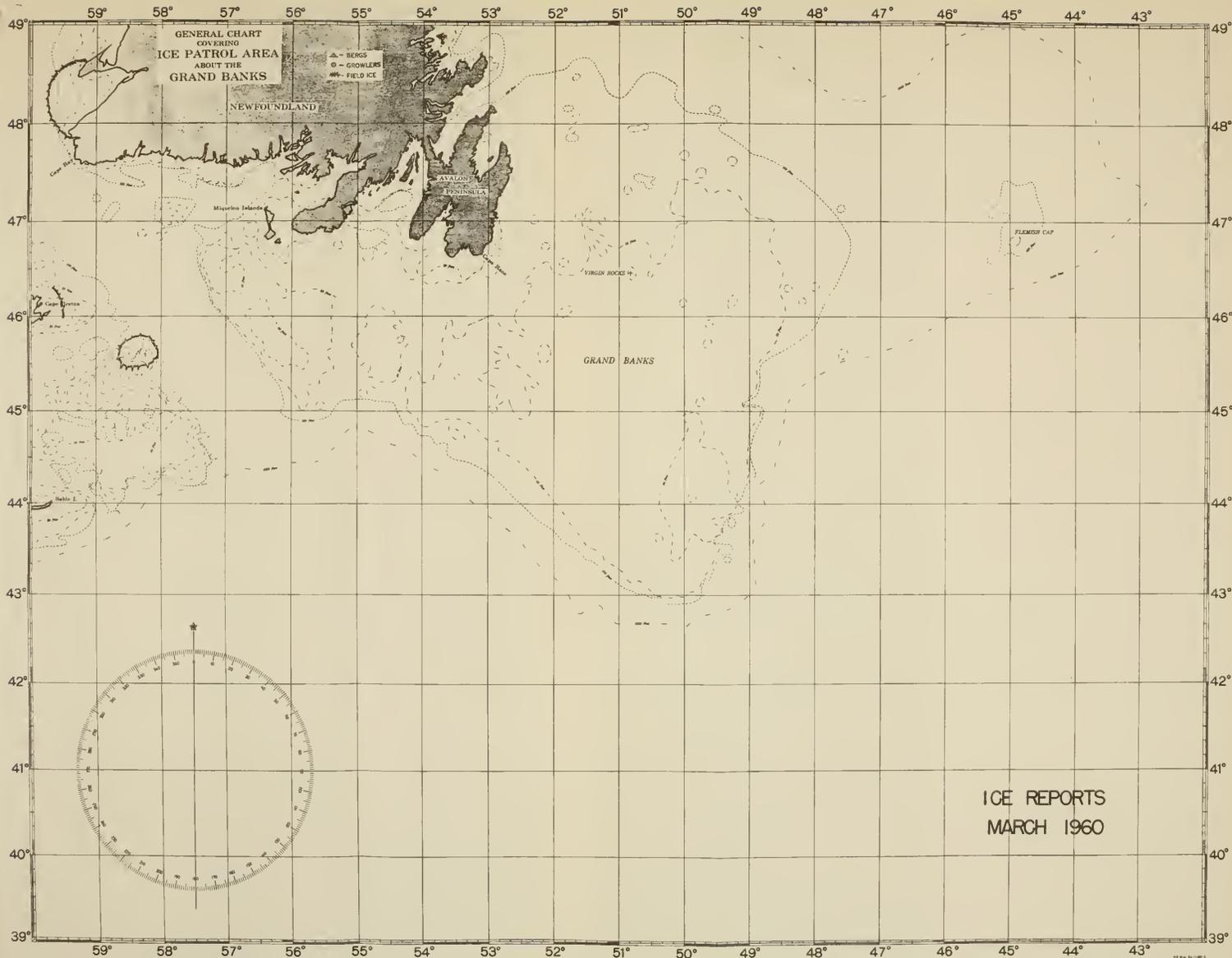


FIGURE 13.—Ice conditions March 1960. Figures indicate day of month ice was sighted or reported.



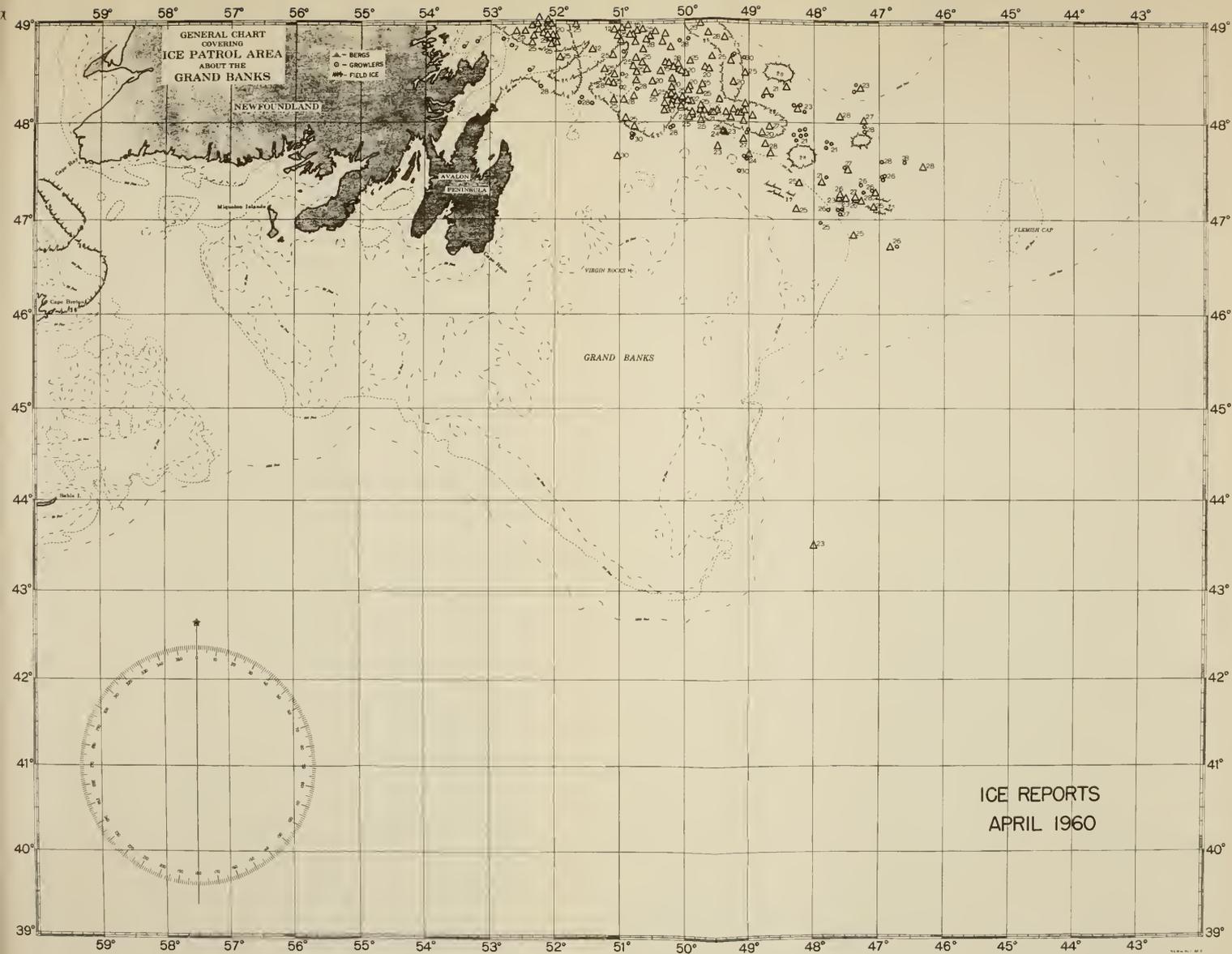


FIGURE 14.—Ice conditions April 1960. Figures indicate day of month ice was sighted or reported.



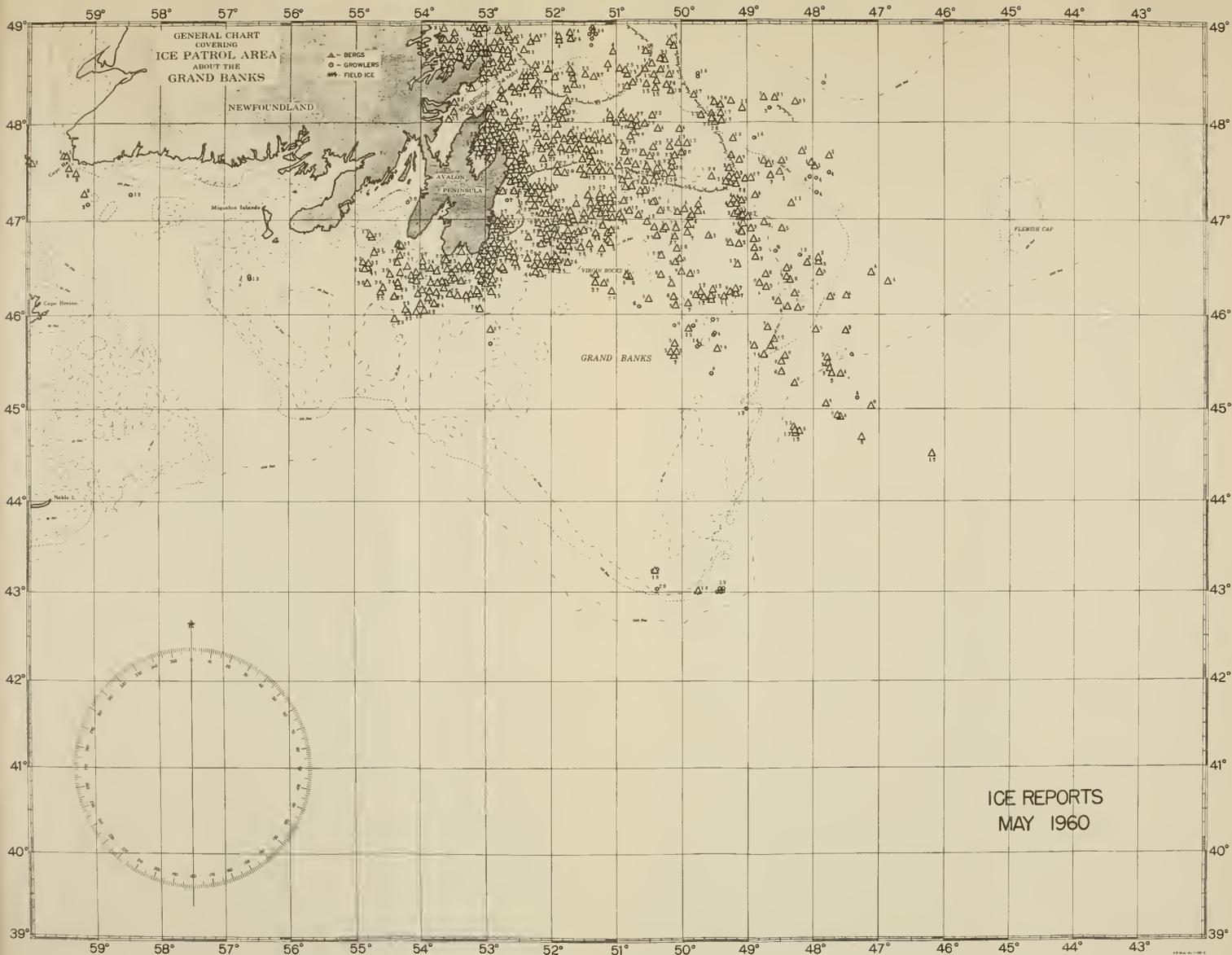


FIGURE 15.—Ice conditions May 1960. Figures indicate day of month ice was sighted or reported.



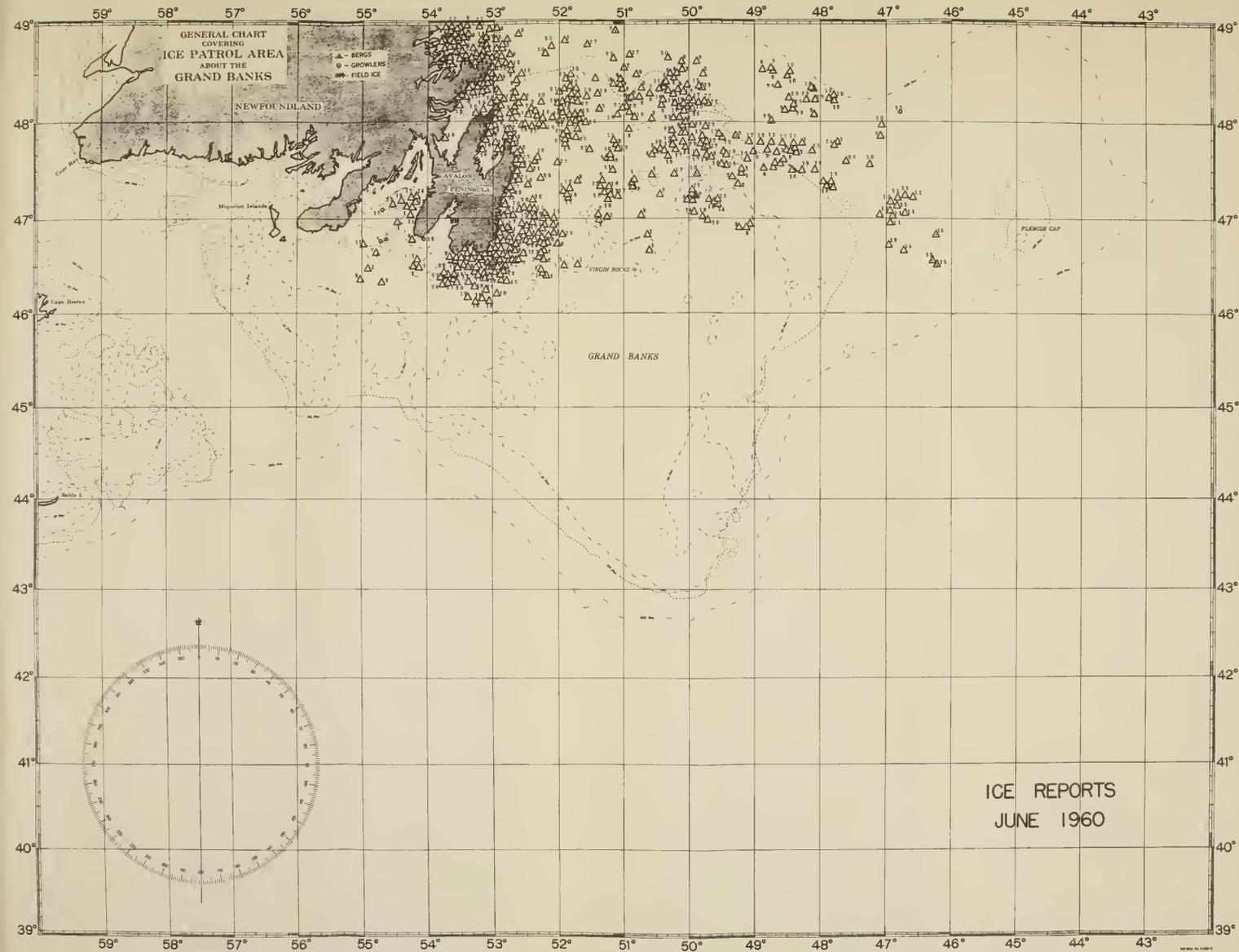


FIGURE 16.—Ice conditions June 1960. Figures indicate day of month ice was sighted or reported.







## GREAT BRITAIN—Continued

Vessel	Ice reports	Sea condition reports
SS Carrigan Head	9	12
SS Carronpark	2	1
SS Caslon		3
SS City Blisbane		7
SS City of Edinburgh		4
SS City of Lucknow	4	1
SS Colina	3	20
SS Constance Bowater	1	4
SS Consuelo	7	34
SS Cairndhu	5	45
SS Carton	2	44
SS Crystal Crown	1	6
SS Crystal Diamond	6	17
SS Crystal Sapphire	1	21
SS Cydonia	1	1
SS Cyrus Field	30	33
SS Dalhanna	5	13
SS Dartwood	1	2
SS Deepool	2	10
SS Dundee		4
SS Edenmore		6
SS Elizabeth Bowater	1	9
SS Empress of Britain	18	50
SS Empress of England	14	48
SS Empress of France	21	82
SS Essex Trader		6
SS Ezzo Nassau		5
SS Fairtry Three	1	1
SS Fanad Head		48
SS Fort Avalon	3	18
SS Granwood	1	
SS Guernsey	12	71
SS Bumburgh Castle	1	8
SS Hartismere		1
SS Hinea	4	11
SS Hosanger	2	16
SS Inoshoven	7	7
SS Inver	2	11
SS Iron Age	7	50
SS Iron Barque	2	2
SS Irvingdale	1	2
SS Ivernia	10	61
SS Kildale	3	2
SS King Arthur		6
SS King Charles	6	11
SS Lady Penison Pender	2	
SS Lakonia	7	7
SS La Loma	1	
SS La Marea	2	2
SS Laurentia	17	8
SS Lismoria	12	47

## GREAT BRITAIN—Continued

Vessel	Ice reports	Sea condition reports
SS Liverpool Packet	2	2
SS London Spirit		10
SS Mahscer		5
SS Manaar		2
SS Manchester Venture	5	8
SS Manchester City	2	13
SS Manchester Explorer		3
SS Manchester Faith	2	2
SS Manchester Fame	1	2
SS Manchester Mariner	3	15
SS Manchester Merchant		20
SS Manchester Miller	6	19
SS Manchester Pioneer	1	2
SS Manchester Progress		13
SS Manchester Prospector	1	1
SS Manchester Regiment		4
SS Manchester Shipper		5
SS Manchester Spinner	2	20
SS Manchester Trader		5
SS Manchester Vanguard	5	16
SS Maple Hill	1	13
SS Marango	2	37
SS Marie Louise Mackay		4
SS Marwick Head		1
SS Mata		5
SS Mauretania		28
SS Media	2	59
SS Newfoundland	17	68
SS Nova Scotia	17	54
SS Oremina	1	9
SS Parthia	12	71
SS Pinemore	3	15
SS Pipiriki		2
SS Queen Elizabeth		39
SS Queen Mary		42
SS Ramore Head	1	35
SS Red Car	4	8
SS Rialto	4	59
SS Rondo		2
SS Roonagh Head	3	3
SS Roscommon	6	15
SS Ruysdael	3	7
SS Sagamore	3	9
SS Santona	9	9

## GREAT BRITAIN—Continued

## ITALY

Vessel	Ice reports	Sea condition reports	Vessel	Ice reports	Sea condition reports
SS <i>Saxonia</i>	19	31	SS <i>Augustus</i>		41
SS <i>Scottish Lion</i>		7	SS <i>Aurelia</i>		12
SS <i>Sept. Hes.</i>	3	1	SS <i>Capo Noli</i>		2
SS <i>Sheaf Field</i>	9	5	SS <i>Carlo Martinolich</i>		8
SS <i>Sheaf Wear</i>	1	9	SS <i>Cristoforo Colombo</i>		5
SS <i>Silvercrag</i>	2	54	SS <i>Elettra Passio</i>		1
SS <i>Silver Sand</i>	2	14	SS <i>Genepesca</i>	2	1
SS <i>Sucaton</i>	2	2	SS <i>Irpinia</i>		27
SS <i>Southern Prince</i>	3	8	SS <i>Marco Martinoli</i>		2
SS <i>St. Helena</i>		8	SS <i>Megara</i>		7
SS <i>Suffolk</i>		5	SS <i>Napoli</i>		5
SS <i>Sungate</i>	1	2	SS <i>Persco</i>	1	1
SS <i>Susan Constant</i>		2	SS <i>Port of Marghera</i>		1
SS <i>Sylvania</i>	16	79	SS <i>Saturnia</i>		23
SS <i>Taranaki</i>		7	SS <i>Sun Palermo</i>		1
SS <i>Thackeray</i>		9	SS <i>Vulcania</i>		36
SS <i>Toronto City</i>	1	2			
SS <i>Tremorrah</i>	2	2	ICELAND		
SS <i>Triunculo</i>	1		SS <i>Jokulfell</i>	1	5
SS <i>Torr Head</i>		7	SS <i>Lagarfoss</i>		1
H.M.S. <i>Troubridge</i>		9	SS <i>Trollafoss</i>		1
SS <i>Ulster</i>		6			
SS <i>Venassa</i>		3	JAPAN		
SS <i>Vercharmain</i>		12	SS <i>Musashisan Maru</i>		10
SS <i>Port Vindex</i>	3	13			
SS <i>Vitrina</i>	1	9	LIBERIA		
SS <i>Wendorer</i>	11		SS <i>Andros Thrill</i>		1
SS <i>Woodford</i>		10	SS <i>A. N. Kemp</i>		26
SS <i>Zinnou</i>	2	3	SS <i>Archimede</i>	1	6
			SS <i>Bulk Oceanic</i>		16
GREECE			SS <i>Calli</i>		7
SS <i>Anthippimichalos</i>	1	1	SS <i>B. A. Canada</i>		2
SS <i>Argo Delos</i>	1	3	SS <i>Classic</i>	1	1
SS <i>Arkadia</i>	13	27	SS <i>Continental Carrier</i>		1
SS <i>Elenik</i>		6	SS <i>Continental Trader</i>	1	2
SS <i>Laconia</i>		1	SS <i>Corwall</i>		25
SS <i>North Dutchess</i>		4	SS <i>Fugue</i>		3
SS <i>Viris</i>		29	SS <i>Galicia</i>		1
			SS <i>Ionian Traveler</i>		3
ISRAEL			SS <i>Karodoro</i>		1
SS <i>Dagan</i>		8	SS <i>Korthi</i>		7
SS <i>Shomron</i>		3	SS <i>National Progress</i>		1
SS <i>Tappuz</i>		15	SS <i>Olympia</i>		1
			SS <i>Point Laere</i>		31
IRELAND			SS <i>Sapho</i>	1	2
SS <i>Irish Elm</i>		3	SS <i>Sideris</i>	1	2
SS <i>Irish Fir</i>	4	1	SS <i>Sunflower</i>		1
SS <i>Irish Oak</i>	3	3	SS <i>Transaratic</i>		1
SS <i>Irish Pine</i>	5		SS <i>World Challenger</i>		3
SS <i>Irish Poplar</i>	1	2	SS <i>World Seafarer</i>		5
SS <i>Irish Rose</i>		3	SS <i>Zermall</i>		1
SS <i>Irish Willow</i>	1	5			

## NETHERLANDS

Vessel	Ice reports	Sea condition reports
SS Aalsdijk	-----	1
SS Alea	-----	4
SS Arcundsdyk	-----	17
SS Asmidiske	-----	6
SS Asterope	-----	8
SS Fricstrand	1	1
SS Geertje Buisman	1	7
SS Kerkedyk	-----	7
SS Korendyk	1	11
SS Massdam	-----	55
SS Nieuw Amsterdam	-----	43
SS Nieuw Holland	1	1
SS Noordam	-----	82
SS Prins-Casimir	1	1
SS Prinses Irene	1	1
SS Prins Johan Willem Friso	1	1
SS Prins Willem	4	4
SS Prins W. Van Oranje	1	1
SS Proveniërs Ingle	1	20
SS Rotterdam	-----	28
SS Ryndan	4	75
SS Slamati	-----	5
SS Sommeledyk	1	15
SS Statendam	-----	33
SS Utrecht	8	13
SS Vtippara	-----	9
SS Westerdam	-----	8

## NORWAY

SS Arnfinn Stange	-----	8
SS Bale Comcau	1	-----
SS Bergensfjord	2	10
SS Bergesen	-----	14
SS Black Hawk	-----	43
SS Black Heron	-----	2
SS Black Swan	-----	27
SS Borealis	-----	5
SS Bulk Enterprise	-----	21
SS Capto	1	1
SS Carrier	-----	12
SS Elnesfjell	-----	7
SS Erita	5	40
SS Foldenfjord	7	13
SS Germont	1	2
SS Granville	-----	17
SS Grindefjell	1	2
SS Hamina	1	26
SS Hermion	1	2
SS Hindanger	1	-----

## NORWAY—Continued

Vessel	Ice reports	Sea condition reports
SS Hoegh Skean	1	9
SS Hoegh Trader	-----	2
SS Horda	-----	26
SS Iselin	5	24
SS Mabella	-----	1
SS Makefjell	1	-----
SS Milross	-----	4
SS Mosnes	1	26
SS Myken	1	-----
SS Nepos	-----	4
SS Nora	2	2
SS Nordgard	-----	9
SS Nordland	2	-----
SS North Star	1	1
SS Oslofjord	8	38
SS Rancnfjord	2	51
SS Raranger	-----	9
SS Rogn	-----	1
SS Rutenfjell	-----	5
SS Star Fighter	1	-----
SS Stavanger Fjord	6	57
SS Tabriew	1	-----
SS Tank Monarch	-----	11
SS Thalatta	-----	8
SS Thorshov	-----	10
SS Troja	-----	3
SS Tronstad	1	-----
SS Topdalsfjord	5	12
SS Vestan	1	2
SS Vista Fjord	-----	7

## PANAMA

SS Arkansas	-----	9
SS Esso Cristobal	1	9
SS Esso Cuba	-----	6
SS Homeric	3	15
SS Italia	3	11
SS Labrador	-----	13
SS Pioneer	-----	5
SS Silvaplana	-----	10
SS Teraco Iowa	-----	5

## POLAND

SS Batory	8	60
SS General Bem	-----	40
SS Tristan	-----	1

## PORTUGAL

SS Gilcannes	6	7
SS Pedro De Barcelos	1	-----
SS Rio Alfusqueiro	1	-----

SPAIN			UNITED STATES OF AMERICA		
<i>Vessel</i>	<i>Ice reports</i>	<i>Sea condition reports</i>	<i>Vessel</i>	<i>Ice reports</i>	<i>Sea condition reports</i>
SS <i>Monte Naranco</i>		7	SS <i>America</i>		80
SS <i>Tornado</i>	2	2	SS <i>American Builder</i>		1
SWEDEN			SS <i>American Chief</i>		62
SS <i>Abrisko</i>	1	1	SS <i>American Clipper</i>		1
SS <i>Arvidsjaur</i>	2	45	SS <i>American Farmer</i>		1
SS <i>Arafors</i>	1	55	SS <i>American Flyer</i>		14
SS <i>Arasaksa</i>		25	SS <i>American Forwarder</i>		8
SS <i>Bongholm</i>		7	SS <i>American Gunner</i>		16
SS <i>Brahholm</i>		6	SS <i>American Leader</i>		13
SS <i>Brosca</i>		12	SS <i>American Packer</i>	2	49
SS <i>Carlsholm</i>		10	SS <i>American Press</i>		3
SS <i>Caroline Smith</i>		1	SS <i>American Scientist</i>		17
SS <i>Cora</i>		18	SS <i>American Scout</i>		24
SS <i>Dakota</i>		22	SS <i>American Shipper</i>		55
SS <i>Danaholm</i>	1	39	SS <i>American Trapper</i>		4
SS <i>Erholm</i>	5	18	SS <i>American Traveler</i>		4
SS <i>Fannus</i>		62	SS <i>American Veteran</i>		2
SS <i>Gripsholm</i>		28	SS <i>Anne Quinn</i>		9
SS <i>Hispaniola</i>		1	SS <i>Brasil</i>		14
SS <i>Hjordis Thorden</i>		1	SS <i>Chain</i>		8
SS <i>Indiana</i>		4	SS <i>Coeur d'Acleue</i>		
SS <i>Isolde</i>		4	<i>Victory</i>		14
SS <i>Kungsholm</i>	1	44	SS <i>Eranthia</i>		1
SS <i>Laholm</i>	1	3	SS <i>Excalibur</i>		9
SS <i>Louisa Gorthon</i>	1	1	SS <i>Exceller</i>		5
SS <i>Maltsholm</i>	1	10	SS <i>Exmouth</i>		5
SS <i>Nebraska</i>	1		SS <i>Etlavia</i>		26
SS <i>Nigella</i>		11	SS <i>Flying Independent</i>		1
SS <i>Norden</i>	1	8	SS <i>Hoosier State</i>	3	61
SS <i>Ragneborg</i>		9	SS <i>Keystone State</i>	2	2
SS <i>Saggat</i>		1	SS <i>Mormacalm</i>		25
SS <i>Sea Friend</i>		21	SS <i>Mormacook</i>	1	17
SS <i>Skogholm</i>	6	11	SS <i>Mormacpen</i>		17
SS <i>Sparrholm</i>		7	SS <i>Mormacsaga</i>	1	8
SS <i>Suorva</i>		2	SS <i>Mormacstar</i>		2
SS <i>Traviata</i>		1	SS <i>Mormacwaive</i>		6
SS <i>Tunaholm</i>	1		SS <i>Ocean Evelyn</i>	1	1
SS <i>Udlerholm</i>		2	SS <i>Penn. Challenger</i>	1	1
SS <i>Vasara</i>		26	SS <i>Pioneer Core</i>		27
SS <i>Vassi jaure</i>	1		SS <i>Southland</i>		4
SS <i>Vibyholm</i>	1	21	SS <i>United States</i>		29
SS <i>Vingaren</i>		21	SS <i>Wild Ranger</i>		4
SS <i>Vigro</i>	1		SS <i>Wolverine State</i>		38
SS <i>Vistasvagge</i>	2	12			
SS <i>Vitafors</i>	1	11			
SWITZERLAND			U. S. GOVERNMENT VESSELS		
SS <i>Regina</i>		31	USCGC <i>Bibb</i>	5	23
UNION OF SOUTH AFRICA			USCGC <i>Campbell</i>	2	27
SS <i>President Brand</i>	2		USCGC <i>Castle Rock</i>		8
SS <i>South African</i>			USCGC <i>Chincotcague</i>		21
<i>Trader</i>	5		USCGC <i>Cook Inlet</i>	1	15
			USCGC <i>Coos Bay</i>	7	18

## U.S. GOVERNMENT VESSELS—Con.

Vessel	Ice reports	Sea condition reports
USCGC <i>Duane</i> .....	3	34
USCGC <i>Eagle</i> .....	1	10
USCGC <i>Escanaba</i> .....	—	11
USCGC <i>Halfmoon</i> .....	2	1
USCGC <i>Humboldt</i> .....	6	21
USCGC <i>Ingham</i> .....	—	37
USCGC <i>Mackinac</i> .....	36	60
USCGC <i>McCulloch</i> .....	10	31
USCGC <i>Rockaway</i> .....	2	23
USCGC <i>Spencer</i> .....	—	23
USCGC <i>Westwind</i> .....	8	19
USS <i>Cache</i> .....	1	4
USS <i>Edisto</i> .....	8	11
USS <i>Ingram</i> .....	1	33
USS <i>Kretchner</i> .....	2	2
USS <i>Northampton</i> .....	—	10
USS <i>Taurus</i> .....	—	29
USS <i>Upshur</i> .....	—	15
USNS <i>Bluc Jacket</i> .....	—	17
USNS <i>Comet</i> .....	—	49
USNS <i>Eltanin</i> .....	1	4
USNS <i>Geiger</i> .....	—	37
USNS <i>Gen. Blatchford</i> .....	—	9
USNS <i>Gen. Buckner</i> .....	—	64

## U.S. GOVERNMENT VESSELS—Con.

Vessel	Ice reports	Sea condition reports
USNS <i>Gen. Leroy Ellinge</i> .....	—	3
USNS <i>Gen. Patch</i> .....	—	43
USNS <i>Gen. Randal</i> .....	—	21
USNS <i>Gen. Rose</i> .....	—	98
USNS <i>Kelly</i> .....	—	1
USNS <i>Lt. James Robinson</i> .....	1	3
USNS <i>Mirjak</i> .....	2	31
USNS <i>Point Barrow</i> .....	9	14
USNS <i>Sgt. Morris Grain</i> .....	1	14
USNS <i>William O. Darby</i> .....	—	84

UNION OF SOVIET SOCIALIST  
REPUBLICS

SS <i>Aksatua</i> .....	—	1
SS <i>Almetjevsk</i> .....	—	8
SS <i>Furmano</i> .....	2	2
SS <i>Lomonossov</i> .....	—	29
SS <i>Sambor</i> .....	1	—

## YUGOSLAVIA

SS <i>Zenica</i> .....	1	2
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## ICEBERG DEMOLITION EXPERIMENTS, 1960

The 1960 iceberg demolition experiments were conducted in three phases. The first phase consisted of dropping twenty, 1,000-pound, high-explosive bombs from a UF2G aircraft on one iceberg. The second phase was the planting of thermite, an incendiary type explosive, on two icebergs and the third phase was the dusting of one iceberg with carbon black. In all cases, the experiments were conducted in order to test various means for the destruction of icebergs. Although some damage to the bergs resulted, it must be admitted that all of the means tried were unsuccessful in destroying the icebergs.

The aerial bombing experiments were a direct continuation of the bombing program of 1959 with the exception that high explosive bombs were substituted for thermite bombs. The United States Department of the Navy made available ten, 1,000-pound general-purpose bombs and ten, 1,000-pound, semi-armor-piercing bombs for the experiment. The Coast Guard assigned a UF2G (Gruman Albatross) amphibian aircraft from the U.S. Coast Guard Air Station, Brooklyn, N.Y., with Lieut. C. E. Mueller, USCG, as plane commander and Ens. J. M. Tanguay, USCG, as copilot, from the U.S. Coast Guard Air Station, Salem, Mass., to perform the bombing experiments. The aircraft reported to the Commander, International Ice Patrol, on 17

May 1960. Prior to the commencement of the experiments, modified bomb release racks were installed on the aircraft's wings and the bomb-sight as developed by Lieut.(jg) T. F. Budinger, USCG, during the 1959 season, was again placed in use.

Prior to the commencement of the tests, liaison was established with the Canadian Government through the United States Consul General at St. John's, Newfoundland, and the Canadian Naval Commander, Newfoundland area. The cooperation and enthusiasm received for the program was most gratifying. On 17 May a notice to mariners was sent advising that aircraft iceberg bombing would take place from 19 May to 7 June during daylight hours and good weather only.

Initial plans called for 10 effective bombing flights with 2 bombing runs per flight. Unfortunately, poor weather conditions prevailed between 19-22 May and consequently the first bombing flight was made on 23 May on a berg located in position  $49^{\circ}40' N.$ ,  $52^{\circ}40' W.$  The iceberg remained in the operating area during the entire period. The last run was on 30 May. During the test period, twenty, 1,000-pound bombs were dropped on the single iceberg. A total of 18 hits were made of which 3 were underwater bursts and 3 failed to detonate.

Figure 18a is a picture of the iceberg used for the bombing experiments. It was 220 feet high at maximum height above the water and 475 feet across its broadest face. Figure 18b shows a direct hit on the inside valley of the berg. As a result of the explosion, a spray of ice fragments rose to over 500 feet. The results can be seen in figure 19a which was taken 2 minutes after the initial explosion. Figure 19b shows the iceberg on the morning of 24 May after the effects of the first and second bomb drops. It is noted that the berg has tilted and revealed a previously submerged shelf. The shelf again submerged as shown in figure 20a after a hit was made in the center of the cavity.



FIGURE 18a.—Aspect of iceberg at outset of bombing tests.



FIGURE 18b.—Direct hit of 1,000-lb. G.P. bomb.

Figure 20b shows the result of a bomb hit on 29 May high up on the side of the berg. Such high hits caused little damage. Again the shelf has risen out of the water. The berg did not materially change in size or attitude after this hit. The last bomb was dropped on 30 May.

At the conclusion of the tests, the iceberg was estimated to be between one-fourth to one-third smaller than at the outset of the tests. The observed disintegration is attributed to both natural deterioration and the effect of the bombing. Although the proportion for which either factor was responsible cannot be definitely established, it is believed that the bombing was the predominant factor. It should be noted, however, that natural forces had destroyed the iceberg by 20 June.

The second phase of iceberg destruction study was an attempt to repeat the experiments of the late Prof. H. T. Barnes of McGill University who experimented in iceberg demolition by the use of thermite. Professor Barnes reported great success in the virtual



FIGURE 19a.—Two minutes after first bomb hit.



FIGURE 19b.—Aspect of berg after tilting showing submerged shelf.



FIGURE 20a.—After another hit in the cavity berg retilted so that shelf again submerged.



FIGURE 20b.—Final aspect of the berg after a hit high up on the side. Shelf again out of water.

destruction of bergs in the Notre Dame Bay area of Newfoundland during the mid-1920's. His method had not been previously attempted by Ice Patrol as it required the boarding of an iceberg, a very dangerous operation in the ice patrol area. In 1959,<sup>1</sup> a project was undertaken using thermite incendiary bombs dropped from an aircraft. Although the airdrops were successful insofar as the feasibility of aircraft operations and the number of hits scored, the designed spread of the incendiary clusters prevented a concentration for the point source of heat required in the theory of the "thermal shock" fracturing of icebergs.

For the 1960 project, forty, 28-pound, TH1, M1A2 charges of thermite were obtained for planting in the icebergs. It was felt that before any further bombing experiments could be attempted, the work of Professor Barnes had to be reevaluated. To this end, an ice drill, exposure suits, cram-pons and ice axes were also procured. The plan was to board one or more icebergs and plant in succession, 7, 13, and 20 charges for the 3 detonations on a berg outside Canadian territorial waters. However, the wholehearted approval and cooperation of the Canadian authorities, including the personal approval of Premier J. R. Smallwood of Newfoundland made possible the choosing of a berg in one of the sheltered bays in Newfoundland. Thus two icebergs, located in Bonavista Bay were selected for the experiment.

On 8 June, a U.S. Naval Station, Argentia, Newfoundland, HUS helicopter with Lt. John Steinbacher, USCG, as pilot, rendezvoused with Ice Patrol's oceanographic vessel, the USCGC *Evergreen* in Bonavista Bay. Lt. Comdr. R. P. Dinsmore, the project officer, and his assistants set up a beach camp near Swale's Inlet which was just a short distance from a small tabular iceberg. Immediate steps were taken to set off the first detonation of 196 pounds of thermite.

The boarding party, consisting of at least three persons at all times, proceeded to the berg in a rubber raft. Figure 21a shows the first member of the party boarding the berg. You will note that a protruding ice shelf has calved just behind the boarder. This is a vivid illustration of the dangers involved in going aboard an iceberg. After the party got aboard, three holes were made for the charges with a gasoline powered drill. It required about 45 minutes to drill each hole and all drilling was accompanied by loud cracking noises within the ice.

In order to detonate the charges it became necessary to run a detonation cable to the *Evergreen's* 115-volt ship's service supply inasmuch as a hand blasting machine failed to ignite them. Figure 21b shows the first explosion. This type of reaction is peculiar to a detonation of thermite in ice. The production of molten iron at a temperature of over 4,000° F. produces steam and gasses so rapidly that a shower of molten iron is scattered over a radius of 100 yards.

<sup>1</sup> Iceberg Demolition Experiments, 1959, Coast Guard Bulletin No. 45, season of 1959.



FIGURE 21a.—A protruding ice shelf calved during initial boarding.



FIGURE 21b.—First thermite explosion.

This effect was exactly as described in Professor Barnes' report. However, aside from a few small growlers calved around the waterline and a small crater, there appeared to be little other effect.

Figure 22a shows the boarding party landing on the second iceberg for the planting of the second and third set of charges. The size of the berg can be seen relative to the men standing on the left shelf. The second detonation took place on this shelf and the results were similar to the first detonation.

Figure 22b is the final burst which consisted of 560 pounds of thermite planted at the base of the large pinnacle. Again a magnificent display took place as smoke and molten iron was hurled hundreds of feet into the air, but the berg remained virtually unchanged. This concluded the thermite tests.

While the results were disappointing, they clearly show that this type of detonation will not necessarily cause the resultant disintegration that was described by Professor Barnes.

The third and last phase of the demolition experiments were conducted in two parts. The first part consisted of filling practice bombs with carbon black and various other substances. The Ice Patrol is indebted to the United Carbon Co. of New York for their kind donation of 150 pounds of KOSMOS-60 brand carbon black. The other substances included sand, ground clay, metal filings, water and oil in various mixtures. The bombs were dropped from a special chute on a R5D (Douglas DC-4) patrol aircraft. Although some difficulty



FIGURE 22a.—Party boards large berg.



FIGURE 22b.—560-lb. thermite explosion at base of pinnacle.

in hitting the icebergs using these crude arrangements was experienced, sufficient hits were made to evaluate the effectiveness of this means of application of carbon black. The bombs dropped would bounce off the ice and rupture in the air. Dry mixtures were widely dispersed without achieving an adequate concentration. Liquid mixtures formed ineffectual puddles without achieving an adequate dispersal.

The second part of the program was accomplished in conjunction with the thermite demolition experiments on 10 June. The small tabular berg which had been the subject of the first detonation on 8 June was boarded and 25 pounds of carbon black was manually spread by fiber brooms. Three persons achieved an effective covering of about 6,500 square feet on one-half of the berg within 30 minutes. The sea was calm with a light breeze blowing, the sky was clear, and the time of application was about 1530 local apparent time. The elevation of the sun was approximately  $45^{\circ}$  regressing. Five hours after the application of the carbon black, the berg was observed to undergo a major calving and breakup. On close inspection the following morning, the berg was found to be less than a third of its previous size (see figs. 23a and 23b). While the spectacular aftermath of this test could well be coincident with the inevitable breakup of the berg, the possibility that the carbon black could have been contributory is speculative and interesting. Future tests aimed at an operationally feasible scheme are under study.

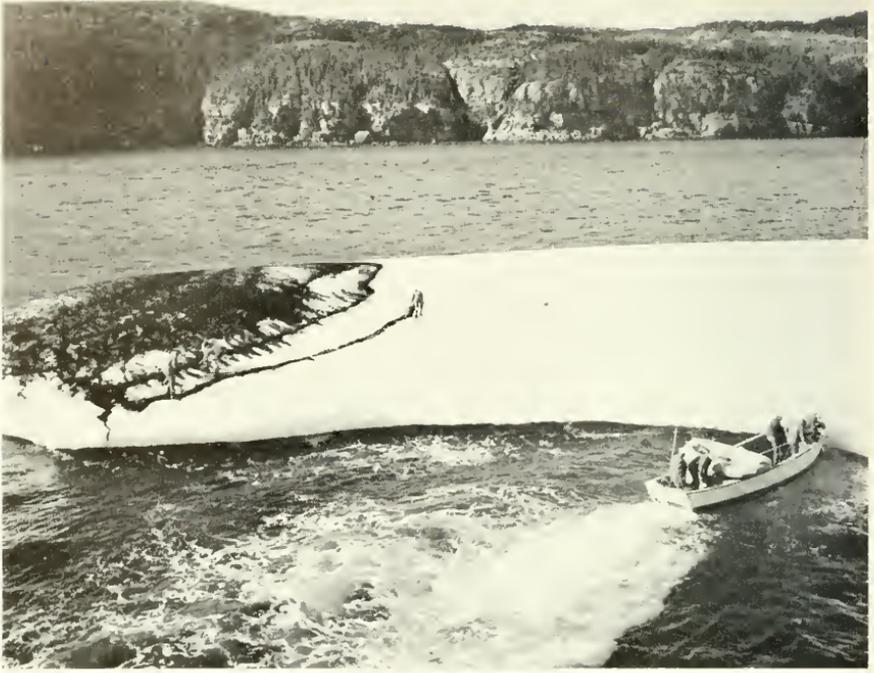


FIGURE 23a. Spreading carbon-black on small tabular iceberg.



FIGURE 23b.—Berg reduced to half its size.

# PHYSICAL OCEANOGRAPHY OF THE GRAND BANKS REGION AND THE LABRADOR SEA IN 1960<sup>1</sup>

by Floyd M. Soule, Peter A. Morrill, and Alfred P. Franceschetti (U.S. Coast Guard)

The U.S.C.G.C. *Evergreen* again served as the oceanographic vessel of the International Ice Patrol for 1960. No marked alterations affecting the oceanographic work were made in the vessel since the 1959 season.

The *Evergreen* departed Argentia, Newfoundland, on 1 April to conduct the first survey of the 1960 season. In addition to covering the southern and eastern slopes of the Grand Banks, this survey extended south to latitude 37°30' N., in order to take stations in conjunction with the Woods Hole Oceanographic Institution's research vessels, *Chain*, *Atlantis*, and *Crawford* on the Gulf Stream Survey, 1960, under the direction of Mr. F. C. Fuglister. A total of 68 stations were taken during the first survey of which the first 31 were a part of Gulf Stream, 1960. Although original plans called for a two east station to the bottom, it was found that the winch would overheat if more than 4,000 meters of wire were let out and consequently 4,000 meters was set as the maximum station depth. The survey proceeded without major interruption and was completed at station 7351 on 17 April and the *Evergreen* returned to Argentia.

The second survey was made in two phases. The first phase consisted of 70 stations taken in a counterclockwise direction on the eastern and northeastern slopes of the Grand Banks. Although heavy weather caused minor delays, the first phase was completed on 9 May at station 7421. Due to an erratic functioning loran receiver, the *Evergreen* returned to Argentia for repairs. After a 1-day stay, *Evergreen* departed on the second phase of the survey which was to make a quantitative evaluation of the wind effect on iceberg movement. Three days were lost in trying to locate an iceberg that was both free from field ice and not aground. On the late evening of 16 May, a drydock type iceberg, 85 feet high and 405 feet long was located in the Labrador Current. Although heavy fog persisted for 95 percent of the observation period and the winds were light, the preliminary evaluation is believed to be a success. In all, eight parachute drogues were launched during the 4 days of observations.

The third oceanographic survey consisted solely of an occupation of the Bonavista triangle. The survey commenced at the northern corner of the triangle on 3 June and proceeded in a counterclockwise direction without interruption. At station 7451 on 6 June, the survey was com-

<sup>1</sup> To be reprinted as Contribution No. 1160 in the Collected Reprints of the Woods Hole Oceanographic Institution.

pleted and *Evergreen* proceeded into Bonavista Bay to conduct iceberg demolition tests which have been described in the preceding section of this bulletin.

After completing the demolition tests, the *Evergreen* returned to Argentia on 13 June and departed from there on 17 June to conduct the fourth oceanographic survey which covered the waters over and immediately seaward of the southern and eastern slopes of the Grand Banks from just westward of the Tail of the Banks to the latitude of Flemish Cap. This survey included 86 stations taken between 18 June and 1 July with the work of collection of data beginning at the southwestern end of the area and progressing northward. Between stations 7467 and 7468, 36 hours were lost when the loran receiver transformer burned out and a spare one had to be flown down from Argentia. The survey resumed after a successful airdrop was made. At station 7537, the fourth survey was completed and *Evergreen* proceeded to St. Johns, Newfoundland, for a brief period of rest and relaxation.

On 5 July, *Evergreen* departed St. Johns to conduct the 1960 post-season cruise which was to include an occupation of the Bonavista triangle and a section across the Labrador Sea from South Wolf Island, Labrador to Cape Farewell, Greenland. The 30 stations of the Bonavista triangle were occupied between 6 and 8 July after which the *Evergreen* proceeded to within 5 miles of South Wolf Island to commence the Labrador Sea section, where on 10 July, the work of collection of data was resumed. The survey proceeded without interruption until shortly after the taking of station 7588, located on the Greenland continental slope, heavy concentrations of storis were encountered. At station 7588, *Evergreen* was approximately 36 miles off Cape Farewell. *Evergreen* then proceeded slowly through various leads in the ice until at 17 miles from Cape Farewell and still 5 miles short of proposed station 7589, the ice became impassable. An attempt was made to take station, but the rapidly moving ice floes threatened to close in on the ship. As there was no indication of more favorable ice conditions in the near future, the survey ended and *Evergreen* returned to Boston via Argentia and Woods Hole. Thus ended the 1960 oceanographic data collection.

The oceanographic work was under the supervision of Lt. P. A. Morrill who was assisted by Lt. (jg.) T. F. Budinger for the first, second, and third surveys, and by Oceanographer Alfred P. Franceschetti for the fourth and postseason surveys. Other assistants in the observational work included R. C. Norris, aerographer's mate first class; F. N. Brown, yeoman first class; D. P. Wagner, aerographer's mate second class; W. C. Carpenter, yeoman second class, and L. E. Dawson, aerographer's mate third class. Temperature and salinity observations were made at each of the 325 stations. At the 21 stations forming the section across the Labrador Sea, the observations

extended from the surface to as near the bottom as was practicable. The 31 stations that comprised a part of the Gulf Stream, 1960, survey were similarly taken except that a maximum depth of 4,000 meters was imposed. At the remaining stations, observations were limited to the upper 1,500 meters. The intended depths of observations were 0, 25, 50, 75, 100, 150, 200, 300, 400, 600, 800, 1,000 and thence by 500-meter intervals except for the Gulf Stream, 1960, stations which, below the 1,000-meter level, were 1,250, 1,500, 1,750, 2,000, 2,250, 2,500, 3,000, 3,500 and 4,000 meters. Temperatures were measured with protected deep sea reversing thermometers. Most of the thermometers used were of Richter and Wiese manufacture, with a scattering of Negretti and Zambra, Kabl Scientific Instrument Corp. and G. M. Manufacturing Co., instruments. Depths of observation were based on unprotected reversing thermometers made by Richter and Wiese and by Kabl. As in the past, a program of intercomparison of the protected thermometers was carried out in the field to permit a close control to be kept on the functioning of individual thermometers. The thermometers were used in pairs and one of each pair was shifted periodically so that any one thermometer was eventually paired with several other thermometers. Mean differences between the corrected readings of pairs of thermometers were adjusted to zero by the application of consistent corrections. In all, 2,150 comparisons were made. Of these, 683 involved thermometers having a range of  $-2^{\circ}$  to  $+20^{\circ}$  or more and had a standard deviation (difference between the corrected readings of a pair of thermometers) of  $\pm 0.013^{\circ}$ . For the ranges of  $+3$  to  $+13$  (311 comparisons) and  $-2^{\circ}$  to  $+8^{\circ}$  (1,156 comparisons), where the scale is more open, the standard deviations were  $\pm 0.007^{\circ}$  and  $\pm 0.008^{\circ}$  respectively. Inasmuch as most of the observed temperatures listed in the Table of Oceanographic Data are based on the corrected readings of a pair of thermometers and since many of the thermometers used had recent laboratory comparisons with thermometers tested by the National Bureau of Standards, it is considered that the tabulated observed temperatures have an accuracy of  $0.01^{\circ}$  C.

As in past years, the routine salinity measurements were made with a Wenner salinity bridge with a precision of  $\pm 0.005\text{‰}$ . This year the observed salinities listed in the Table of Oceanographic Data are considered to have an accuracy equal to this precision. As mentioned in Bulletins Nos. 44 and 45 of this series, efforts to arrive at a better standardization of salinities have been in progress for some time. During the 1959 ice season, 11 large samples (ca. 12 gallons each) of actual surface sea water, distributed over the salinity range from 31 to  $36.4\text{‰}$ , were collected from the Ice Patrol operating area and stored in polyethylene drums. In February 1960, these samples were divided, some portions of each being transferred to polyethylene and glass containers for further storage, and other portions being measured after a few days storage in glass bottles. The measurements consisted

of precise determinations of chlorinity by the Vollhardt method, with checks against silver of high purity; and of electrical impedance by means of the Coast Guard's Wenner salinity bridge. The procedures followed and the results obtained in the precise chlorinity determinations are given in appendix 1. Other details regarding location of origin and date of collection of the large samples are given in appendix 2.

Three measurements of each sample were made on the Coast Guard bridge during each of two runs on 25 and 26 February 1960. The samples were also measured on the Woods Hole Oceanographic Institution's bridges No. 1 and No. 2 on 16 March 1960. Schleicher and Bradshaw of WHOI considered, from an examination of Thomas, Thompson, and Utterback's work on the electrical conductivity of sea water,<sup>2</sup> that the relationship between conductivity and salinity of sea water could be expressed by a second degree relationship over the salinity range from 30 to 40‰. They took actual high salinity Atlantic water (ca. 36‰) and concentrated it to about 40‰ by slow evaporation. From this they prepared five samples, distributed in salinity from 30 to 40‰, by dilution with conductivity water. From the second degree relationship and measurements of the ratios of the salinities of the prepared samples they determined the shape of their calibration curve and fixed it laterally by the measurement of Copenhagen water.

The Coast Guard has always used an assumed linear relationship between conductivity and salinity over a lesser range of about 31 to 36½‰ but has avoided the assumption that Copenhagen water has the same chlorinity-conductivity relationship as actual newly collected sea water. The February 1960 measurements present an opportunity of examining the magnitude of the errors involved in assuming a linear relationship between conductivity and salinity of sea water over this range, of determining the corrections to salinities published in the Ice Patrol bulletins for the postwar years, and the variations between the chlorinity-conductivity relationship of sea water and of several batches of Copenhagen water.

In assuming a linear relationship between conductivity and salinity, the calibration curve of the Coast Guard's bridge has the form

$$S = \frac{A}{B + m} - C$$
 where  $m$  is the reading of the variable impedance in the X-dial arm of the bridge at balance corresponding to a salinity  $S$ ; and  $A$ ,  $B$ , and  $C$  are constants which depend in part on the arbitrary selection of one point on the curve. In the 1957 calibration curve this point was an X-dial reading of 49.911 corresponding to  $S=35‰$  and the numerical expression was

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<sup>2</sup> Thomas, Bertram D., Thomas G. Thompson, and Clinton L. Utterback, The electrical conductivity of sea water. Jour. Conseil, v. 9, pp. 28-35, 1931.

$$S = \frac{9817.725}{200.2 + m} - 4.2534 \quad (1)$$

The best fit of the February 1960 measurements to this curve was obtained by using a standardization correction of 0.054 in X-dial reading so that a reading of 49.857 corresponded to a salinity of 35‰.

After the addition of 0.143 to the values of  $m$  (bringing the selected point to  $S = 35‰$  corresponding to  $m = 50.000$ ) a preliminary evaluation was made of the constants for a calibration curve assuming a second degree relationship between conductivity and salinity. In the relationship assumed,  $C = C_{35}(K + LS + MS^2)$  where  $C$  is the conductivity at any salinity  $S$  and  $C_{35}$  is the conductivity at a salinity of 35‰ and  $K$ ,  $L$ , and  $M$  are constants. This calibration curve has the form:

$$S = \frac{-L \pm \sqrt{L^2 - 4M \left[ K - \frac{(m' + B)}{(m + B)} \right]}}{2M}$$

where  $K$ ,  $L$ ,  $M$ , and  $m$  are as above and  $m'$  is the value of the X-dial reading corresponding to a salinity of 35‰ and  $B$  is a constant depending on the impedances of the bridge not associated with the electrolyte under measurement.<sup>3</sup> Where  $m_1$ ,  $m_2$ ,  $m_3$  and  $m_4$  are the X-dial readings at balance corresponding to salinities  $S_1$ ,  $S_2$ ,  $S_3$  and  $S_4$  respectively,  $B$  may be evaluated by solution of the following quadratic:

$$B^2 \begin{bmatrix} S_1 S_2 (S_2 - S_1) (m_3 - m_4) \\ + S_1 S_3 (S_3 - S_1) (m_4 - m_2) \\ + S_1 S_4 (S_4 - S_1) (m_2 - m_3) \\ + S_2 S_3 (S_3 - S_2) (m_1 - m_4) \\ + S_2 S_4 (S_4 - S_2) (m_3 - m_1) \\ + S_3 S_4 (S_4 - S_3) (m_1 - m_2) \end{bmatrix} + B \begin{bmatrix} S_1 S_2 (S_2 - S_1) (m_3 - m_4) (m_1 + m_2) \\ + S_1 S_3 (S_3 - S_1) (m_4 - m_2) (m_1 + m_3) \\ + S_1 S_4 (S_4 - S_1) (m_2 - m_3) (m_1 + m_4) \\ + S_2 S_3 (S_3 - S_2) (m_1 - m_4) (m_2 + m_3) \\ + S_2 S_4 (S_4 - S_2) (m_3 - m_1) (m_2 + m_4) \\ + S_3 S_4 (S_4 - S_3) (m_1 - m_2) (m_3 + m_4) \end{bmatrix} \\ + \begin{bmatrix} S_1 S_2 (S_2 - S_1) (m_3 - m_4) m_1 m_2 \\ + S_1 S_3 (S_3 - S_1) (m_4 - m_2) m_1 m_3 \\ + S_1 S_4 (S_4 - S_1) (m_2 - m_3) m_1 m_4 \\ + S_2 S_3 (S_3 - S_2) (m_1 - m_4) m_2 m_3 \\ + S_2 S_4 (S_4 - S_2) (m_3 - m_1) m_2 m_4 \\ + S_3 S_4 (S_4 - S_3) (m_1 - m_2) m_3 m_4 \end{bmatrix} = 0$$

<sup>3</sup> Considering that the adjacent arms of the bridge containing the X- and Y-cells have some small amount of impedance not associated with the electrolytes contained in the cells and that the other two arms of the bridge are each made up of a fixed impedance and a variable impedance, let  $r$  be the impedance not associated with the electrolyte in the X-cell arm, let  $R$  be the fixed impedance in the X-dial arm, let  $R_2$  be the total impedance of the Y-dial arm and let  $R_4$  be the total impedance of the Y-cell arm. Then  $B = R - r \frac{R_2}{R_4}$

The constants  $M$ ,  $K$ , and  $L$  may then be successively evaluated using the expressions:

$$M = \frac{(m' + B)}{S_1(S_2 - S_3)} \left[ \frac{S_1(m_1 + B) - S_3(m_3 + B)}{(S_1 - S_3)(m_3 + B)(m_1 + B)} - \frac{S_1(m_1 + B) - S_2(m_2 + B)}{(S_1 - S_2)(m_2 + B)(m_1 + B)} \right]$$

$$K = \frac{(m' + B)}{(S_1 - S_2)} \left[ \frac{S_1}{(m_2 + B)} - \frac{S_2}{(m_1 + B)} \right] + MS_1S_2$$

$$L = \frac{1}{S_1} \left[ \frac{(m' + B)}{(m_1 + B)} - K \right] - MS_1$$

Practical consideration of the fact that values of  $S$  are known only to 1 part in 35,000 and values of  $m$  are known only to about 1 part in 50,000, these uncertainties combined with the presence of small differences between large numbers in the solution of the quadratics mean that any evaluation of  $B$  by this method may result in errors of an order of magnitude or more.

In the derivation of the formula for the calibration curve based on a linear relationship between conductivity and salinity, it is assumed that  $C = C'(K + LS)$  and the calibration curve becomes:

$$S = \frac{\frac{1}{L}(m' + B)}{m + B} - \frac{K}{L}$$

where  $S$ ,  $B$ ,  $m'$  and  $m$  have the same significance as before.  $B$  may be evaluated from the expression:

$$B = \frac{m_2(m_3 - m_1)(S_1 - S_2) - m_3(m_2 - m_1)(S_1 - S_3)}{(m_2 - m_1)(S_1 - S_3) - (m_3 - m_1)(S_1 - S_2)}$$

$L$  and  $K$  may then be evaluated successively from the expressions:

$$L = \frac{(m' + B)(m_2 - m_1)}{(S_1 - S_2)(m_1 + B)(m_2 + B)}$$

$$K = \frac{m' + B}{m + B} - SL$$

As will be shown later, 2 of the 11 drums seem to have atypical conductivity-chlorinity relationships. Excluding these 2, the remaining 9 provide 84 combinations for the evaluation of  $B$  above. These were evaluated and a weighted mean (sum of the numerators divided by the sum of the denominators)  $B$  derived as 195.773. The 36 combinations for the evaluation of  $L$  were weighted as before to

derive  $L$  as 0.025 860 0. Each of the nine values of  $K$  were computed and their average taken as 0.094 661 74. Whence

$$S = \frac{9503.982\ 924}{m + 195.773} - 3.661 \quad (2)$$

Bearing in mind the standardization difference necessary in the use of calibration curves (1) and (2), the following is a summary of the comparison of the results of the precise chlorinity determinations and the salinities derived from the use of calibration curves (1) and (2) on the Coast Guard bridge and the salinities as measured by the WHOI bridges No. 1 and No. 2.

Drum No.	CGOU					WHOI No. 1		WHOI No. 2	
	S by Cl	S (1)	Corr	S (2)	Corr	S	Corr	S	Corr
7.....	31.080	31.084	- .004	31.083	- .003	31.083	- .003	31.084	- .004
15.....	31.636	31.633	+ .003	31.631	+ .005	31.628	+ .008	31.631	+ .005
11.....	31.979	31.980	- .001	31.978	+ .001	31.974	+ .005	31.979	+ .000
(14).....	34.468	32.480	(- .012)	32.478	(- .010)	32.475	(- .007)	32.480	(- .012)
3.....	35.036	33.031	+ .005	33.028	+ .008	33.037	- .001	33.034	+ .002
(10).....	35.533	33.554	(- .021)	33.552	(- .019)	33.545	(- .012)	33.548	(- .015)
5.....	34.011	34.015	- .004	34.014	- .003	34.010	+ .001	34.014	- .003
6.....	34.480	34.485	- .005	34.484	- .004	34.481	- .001	34.486	- .006
1.....	35.030	35.033	- .003	35.033	- .003	35.033	- .003	35.036	- .006
9.....	35.540	35.539	+ .001	35.540	.000	35.540	.000	35.542	- .002
8.....	36.426	36.419	+ .007	36.423	+ .003	36.435	- .009	36.430	- .004
Average.....			- .000 <sub>1</sub> ± .004 <sub>1</sub>		+ .000 <sub>1</sub> ± .004 <sub>2</sub>		- .000 <sub>1</sub> ± .004 <sub>3</sub>		- .002 <sub>0</sub> ± .003 <sub>5</sub>

From this tabulation it will be seen that these three bridges agree in showing large differences from the chlorinity values for drums No. 14 and No. 10. Hence these drums have not been used in the computations.

Applying a correction of  $-0.002\text{‰}$  to the salinities obtained by WHOI bridge No. 2 and then taking the means of results from bridges No. 1 and No. 2 gives a standard deviation from the salinities derived from the chlorinities of  $\pm 0.003\text{‰}$  for the WHOI bridges whose calibration curves are based on an assumed second degree relationship between conductivity and salinity. This may be compared with the standard deviation of the Coast Guard bridge salinities from the salinities derived from chlorinities of  $\pm 0.004\text{‰}$  where the calibration curve is based on an assumed linear relationship between conductivity and salinity. The errors introduced through the use of the simpler expression, calibration curves (1) or (2), are therefore not considered to be significant for the salinity range 31 to  $36\frac{1}{2}\text{‰}$ , and the use of calibration curves of this type will be continued.

From the February 1960, measurements it is now possible to correct the published salinities for the postwar period 1948 through 1959 on the basis of intercomparison of different batches of Copenhagen water and the standardization values assigned these batches in arriving at

the published salinities. Of the various partial and complete calibration measurements made in the postwar period prior to February 1960, those made in February–March 1948, are considered the most reliable and have been accepted. The cumulative discrepancy of these measurements from the February 1960, measurements, as obtained from the successive intercomparison of different batches of Copenhagen standard water, amounts to 0.085 in X-dial reading. The reconciliation of this difference between the two ends of the 12-year period may be treated in different ways. It has been assumed here that this difference occurred gradually, at the rate of 0.007 per year (ca. 0.001‰S) from 1948 to 1960, and that this drift may represent a slow increase in conductivity of the Copenhagen water from solution of the glass containing-ampoules during storage. Three different calibration curves were used during the period; the 1948 curve for 1948–49, the 1950 curve for 1950–56 and the 1957 curve for 1957 and subsequent measurements. The arbitrarily selected point was different for each of the curves so that a salinity of 35‰ corresponded to the following X-dial readings: 1948 curve, 50.255; 1950 curve 50.100; 1957 curve, 49.911. The significant chronology of the intercomparison of the different batches of Copenhagen water, in X-dial reading, was as follows.

February–March 1948	P15 = 50.040
Season of 1951	P18 greater than P15 by 0.110
March 1953	P17 greater than P15 by 0.135
Season of 1956	P22 greater than P17 by 0.120
March–May 1957	P22 greater than P23 by 0.009
February 1960	P23 = 49.857
February 1960	P29 = 49.902

From the foregoing, then, the corrected values of X-dial reading which should have been used in standardization for the appropriate calibration curve used, are as follows:

1948 curve 1948	P15 = 50.040
1948 curve 1949	P15 = 50.033
1950 curve 1950	P15 = 49.871
1950 curve 1951	P15 = 49.864
1950 curve 1951	P18 = 50.001
1950 curve 1952	P15 = 49.857
1950 curve 1952	P18 = 49.997
1950 curve 1953	P15 = 49.850
1950 curve 1953	P17 = 49.985
1950 curve 1954	P17 = 49.978
1950 curve 1955	P17 = 49.971
1950 curve 1956	P17 = 49.964
1950 curve 1956	P22 = 50.084
1957 curve 1957	P22 = 49.888
1957 curve 1957	P23 = 49.879
1957 curve 1958	P23 = 49.872
1957 curve 1959	P23 = 49.865
1957 curve 1960	P23 = 49.857
1957 curve 1960	P29 = 49.902

The application of standardization corrections necessary to conform to these values requires the following corrections to the published salinities. It will be noted that while the corrections are tabulated below to the nearest 0.001‰, the salinities published were given to the nearest 0.01‰ and the precision of the measurements was 0.005‰.

Survey	Station	$\delta S_{25}$	Survey	Station	$\delta S_{25}$
1948:			1953:		
1st .....	3576-3589	-0.002	1st .....	4995-5060	+0.030
2d .....	3600-3616	0.000	2d .....	5091-5141	+0.035
3d .....	3617-3658	+0.001	3d, 4th .....	5142-5248	+0.029
Postseason .....	3659-3715	+0.001	Postseason .....	5249-5300	+0.030
Postseason .....	3716-3746	0.000			
1949:			1954:		
1st and 2d .....	3747-3810	+0.003	1st .....	5301-5363	+0.023
3d .....	3811-3872	+0.001	2d .....	5394-5476	+0.019
4th .....	3873-3902	+0.003	3d .....	5477-5566	+0.028
5th .....	3903-3932	+0.006	4th .....	5567-5661	+0.018
Postseason .....	3933-3999	+0.001	Postseason .....	5662-5740	+0.022
1950:			1955:		
1st .....	4000-4068	+0.029	1st and 2d .....	5741-5877	+0.027
2d .....	4069-4144	+0.027	3d .....	5878-5983	+0.022
3d .....	4145-4174	+0.030	Postseason .....	5984-6036	+0.025
4th .....	4175-4238	+0.028			
Postseason .....	4239-4306	+0.028	1956:		
1951:			1st .....	6037-6122	+0.009
1st .....	4307-4385	+0.023	2d .....	6123-6217	+0.002
2d .....	4386-4452	+0.031	3d .....	6218-6284	+0.008
2d .....	4453-4464	+0.028	Postseason .....	6285-6335	+0.003
3d .....	4465-4559	+0.025			
Postseason .....	4560-4613	+0.031	1957:		
1952:			1st .....	6336-6431	+0.032
1st .....	4614-4740	+0.026	2d .....	6432-6503	+0.041
2d .....	4741-4840	+0.028	2d .....	6504-6519	+0.040
3d .....	4841-4940	+0.024	Postseason .....	6520-6572	+0.042
Postseason .....	4941-4970	+0.029			
Postseason .....	4971-4980	+0.027	1958:		
Postseason .....	4981-4984	+0.029	1st .....	6573-6660	+0.037
Postseason .....	4985-4988	+0.031	2d .....	6661-6740	+0.038
Postseason .....	4989-4994	+0.028	3d .....	6741-6835	+0.042
			Postseason .....	6836-6889	+0.039
			1959:		
			1st .....	6890-6976	+0.012
			2d and 3d .....	6977-7149	+0.009
			4th and postseason .....	7150-7283	+0.011

It is now of interest to examine the departures of Copenhagen water from the conductivity-chlorinity relationship existing in actual sea water which has not been stored in glass containers, as represented by the discrepancies between the salinities corresponding to the stated chlorinities of the Copenhagen water and the salinities corresponding to the X-dial readings of the Copenhagen water as given above. The comparison follows.

Year	Batch	Prepared	Stated Cl <sup>o</sup> / <sub>20</sub>	Equivalent S <sup>o</sup> / <sub>25</sub>	S <sup>o</sup> / <sub>25</sub> by conductivity	S (conductivity) minus S (Cl) in ‰
1948	P15	1937	19.393	35.034	35.033	-0.001
1949	P15	1937	19.393	35.034	35.035	+0.001
1950	P15	1937	19.393	35.034	35.036	+0.002
1951	P15	1937	19.393	35.034	35.037	+0.003
1952	P18	1949	19.376	35.004	35.016	+0.012
1953	P17	1948	19.386	35.022	35.018	-0.004
1954	P17	1948	19.386	35.022	35.019	-0.003
1955	P17	1948	19.386	35.022	35.020	-0.002
1956	P17	1948	19.386	35.022	35.022	0.000
1957	P22	1954	19.375	35.002	35.004	+0.002
1957	P23	1955	19.376	35.004	35.005	+0.001
1958	P23	1955	19.376	35.004	35.006	+0.002
1959	P23	1955	19.376	35.004	35.007	+0.003
1960	P29	1959	19.370	34.993	35.001	+0.008

It will be seen that the major discrepancies in the above table occur with 3 year old P18 where the difference was .012‰ and 1 year old P29 with a difference of .008‰ in apparent salinity. Otherwise, batches P15 (even at age 14 years), P17, P22 and P23 would have given a negligible error if they had been used as conductivity standards.

The corrections to the salinities for the period 1948 through 1959 imply corrections to the dynamic heights used in the preparation of dynamic topographic charts for the same period. While, for the most part, the relative topography remains unchanged, corrections are required to reduce all charts to a common basis before charts of the same area can be compared. The following corrections, in dynamic millimeters, should be applied to the published dynamic topographic charts to make their dynamic heights comparable. These corrections do not necessarily apply to the dynamic heights of individual stations published in the tables of oceanographic data, as consultation of the texts of the various bulletins will indicate that in some cases partial corrections have been made in the tabulated data.

Year	Bulletin No.	Figure No.	Page No.	Milli- meters
1948	34	17	Facing page 73	+1.5
		19	Facing page 74	+0.2
		26	Facing page 74	-8.3
		27	Page 79	-0.8
		31	Page 84	<sup>1</sup> -1.1
1949	35	14	Page 57	-9.9
		15	Page 58	-9.9
		16	Page 59	-0.7
		18	Page 66	-9.9
		20	Page 68	-4.6
		23	Page 72	-1.1
1950	36	16	Facing page 66	-22.0
		17	Facing page 66	-20.5
		18	Facing page 66	-21.2
		23	Facing page 80	-22.8
		29	Facing page 88	-31.8
1951	37	7	Page 21	-17.4
		8	Page 22	<sup>2</sup> -23.5
		8	Page 22	<sup>3</sup> -21.2
		9	Page 23	-19.0
		18	Page 48	-23.5
		21	Page 51	-35.3
1952	38	7	Page 35	-29.6
		8	Page 36	-19.7
		9	Page 37	-21.2
		10	Page 38	-18.2
		11	Page 43	-22.0
		13	Page 47	<sup>4</sup> -30.7
		13	Page 47	<sup>5</sup> -33.0
		13	Page 47	<sup>6</sup> -35.3
		13	Page 47	<sup>7</sup> -31.9

See footnote at end of table.

Year	Bulletin No.	Figure No.	Page No.	Milli-meters
1953	39	14	Page 51	-22.8
		15	Page 52	-26.5
		16	Page 53	-22.0
		17	Page 54	-22.0
		19	Page 62	-22.8
		37	Page 81	-34.1
1954	40	15	Page 85	-17.4
		16	Page 86	-14.4
		18	Page 88	-21.2
		19	Page 89	-13.7
		20	Page 92	-16.7
		24	Page 99	-25.0
1955	41	13	Page 64	-20.5
		14	Page 65	-12.9
		15	Page 66	-24.3
		16	Page 67	-19.0
		19	Page 75	-28.4
1956	42	12	Page 38	-6.81
		13	Page 39	-1.5
		14	Page 40	-6.1
		15	Page 41	-9.9
		20	Page 54	-3.4
1957	43	19	Page 84	-24.3
		20	Page 85	<sup>8</sup> -31.1
		20	Page 85	<sup>9</sup> -30.3
		21	Page 86	-31.9
		25	Page 99	-63.7
1958	44	19	Page 34	-28.1
		20	Page 35	-28.8
		21	Page 36	-31.9
		22	Page 37	-29.6
		33	Page 56	-39.2
1959	45	44	Page 101	-9.1
		45	Page 102	-6.8
		46	Page 103	-6.8
		47	Page 104	-8.3
		48	Page 105	-8.3
		51	Page 109	-12.5

<sup>1</sup> Southern section only, from Labrador to Cape Farewell.

<sup>2</sup> All but southernmost section.

<sup>3</sup> Southernmost section only.

<sup>4</sup> Labrador current.

<sup>5</sup> Center west of 50° W.

<sup>6</sup> Center east of 50° W.

<sup>7</sup> West Greenland current.

<sup>8</sup> Except sections extending south and west from Flemish Cap.

<sup>9</sup> Flemish Cap sections only.

It will be noted that the salinities characterizing the intermediate and deep water of the Labrador Sea as given in tabular form on page 103 of bulletin No. 43 of this series (season of 1957) and on page 60

of bulletin No. 44 (1958 season) should be corrected to the following values: <sup>1</sup>

	1957	1958
Intermediate water	34. 86 <sub>5</sub>	34. 86 <sub>1</sub>
2000 meters	34. 92 <sub>9</sub>	34. 92 <sub>2</sub>
2500 meters	34. 93 <sub>6</sub>	34. 93 <sub>0</sub>
3000 meters	34. 93 <sub>3</sub>	34. 91 <sub>5</sub>
3500 meters	34. 90 <sub>7</sub>	34. 89 <sub>6</sub>

While the tabulation of the salinity corrections being listed according to stations permits the correction of specific sections of salinity, the corrections to certain illustrations are not apparent as for instance the curves representing the T-S relationship of the water masses found in the Grand Banks region. For those, the following corrections to the salinities are necessary.

Year	Bulletin No.	Figure	Page	Correction to salinity in ‰
1949	35	17	63	+0.00 <sub>2</sub>
1950	36	22	78	+0.02 <sub>8</sub>
1951	37	11	31	+0.02 <sub>4</sub>
1952	38	12	41	+0.02 <sub>6</sub>
1953	39	36	77	+0.03 <sub>0</sub>
1954	40	22	95	+0.02 <sub>3</sub>
1955	41	17	70	+0.02 <sub>7</sub>
1956	42	16	44	+0.00 <sub>6</sub> Interchange titles of figures 16 and 17.
1957	43	22	89	+0.03 <sub>6</sub>
1958	44	24	41	+0.04 <sub>0</sub>
1959	45	49	107	+0.01 <sub>0</sub>

It should be noted that beginning with the 1956 season, the T-S curves for the year have been compared with postwar averages. The average curves shown are in error and should be disregarded. The corrected postwar averages are compared with the prewar averages in figure 30.

Other published figures show potential densities and need the following corrections:

Year	Bulletin No.	Figure	Page	Correction to $\sigma_\theta$
1953	39	40	87	+0.02 <sub>2</sub>
		11	87	+0.02
		42	87	+0.02 <sub>4</sub> for broken lines +0.02 <sub>2</sub> for solid lines
		44	89	+0.02 <sub>4</sub>
		43	90	Station 4971-4980, +0.02 <sub>2</sub> 4981-4984, +0.02 <sub>3</sub> 4985-4988, +0.02 <sub>3</sub> 4989-4994, +0.02 <sub>2</sub>
1954	40	33, 34, 35, 36, 37	109 113	+0.01, except +0.02 <sub>2</sub> for the broken lines in figure 37.
1955	41	22	79	+0.02 <sub>0</sub>

<sup>1</sup> In all the bulletins of this series an inferior final digit in a number indicates that that digit is in doubt and the number has not been rounded off. Thus a salinity of 34.896 would be rounded off to 34.90.

In bulletin 42, figures 23, 24, 25 and 26, year to year fluctuations in the temperature, salinity, and density of the intermediate and deep water of the Labrador Sea were presented for the prewar and postwar periods. With the necessary corrections applied to the postwar data much of the difference between the two periods disappears. Figure 26 of bulletin 42 has been redrawn with corrected values and extended through 1960 and is presented in this bulletin as figure 44.

Figures 24 through 28 show chronologically the dynamic topography found during the four surveys made during the season and the post-season occupation of the Bonavista triangle. Notable in the first survey, figure 24, is the weakness of the Labrador Current at the Tail of the Banks, the relatively small area of cold mixed water southeastward of the Tail, and the correspondingly great northwestward and westward incursion of Atlantic Current water toward the Grand Banks at the 42d and 44th parallels.

Comparison of figure 24 with figure 25 indicates a weakening of the Labrador Current between about latitudes  $45^{\circ}$  N., and  $45^{\circ}30'$  N. (the northern margin of the first survey and the southwestern margin of the second survey). The pronounced meander of Atlantic Current water toward the Grand Banks seen at the 44th parallel in figure 24 is probably responsible for the clockwise eddy present in the southern edge of the second survey between longitudes  $46^{\circ}$  W., and  $47^{\circ}$  W. It is also noted that figure 25 shows some possibility of bergs moving southeastward between Flemish Cap and the Grand Banks.

Figure 26 shows the dynamic topography of the Bonavista triangle found during the third survey. The current pattern along the southwestern side of the triangle is somewhat simpler than usual, although the westward flow near the southern corner may recurve eastward south of the surveyed area instead of continuing westward across the banks as suggested by the figure.

The fourth survey (fig. 27) again shows a warm water clockwise eddy, centered at about  $44^{\circ}30'$  N.,  $48^{\circ}$  W., which is considered to be a remnant of an earlier meander of the Atlantic Current. Between this eddy and another Atlantic Current meander northeastward of it, there is a weak eastward meander of Labrador Current water. As in the second survey, some of the Labrador Current meanders onto the Grand Banks at about the 46th parallel. The southern edge of the surveyed area shows a remarkably wide quiet area south of the northernmost band of the Atlantic Current.

Comparison of figure 28 with figure 26 shows that there was a slight weakening of the Labrador Current between the third survey and the postseason cruise. Normally the change would be in the other direction. The geographical division between the eastern and western branches of the Labrador Current changed offshore during the interval. Figure 26 indicates that southward moving bergs crossing the 49th parallel eastward of about  $51^{\circ}40'$  W., would follow the eastern branch

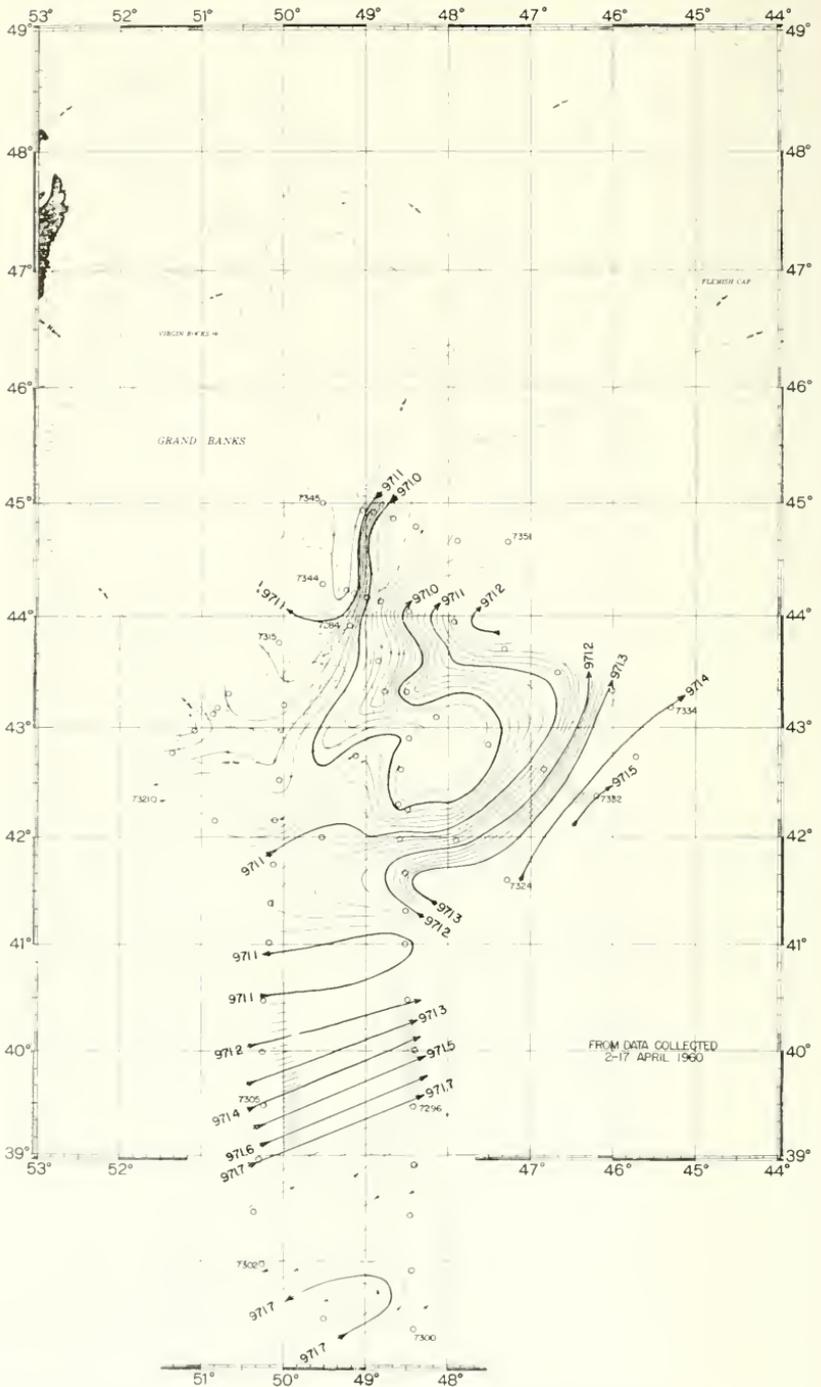


FIGURE 24.—Dynamic topography of the sea surface relative to the 1,000-decibar surface, from data collected 2-17 April 1960. Oceanographic station positions are indicated and the station numbers given at turning points.

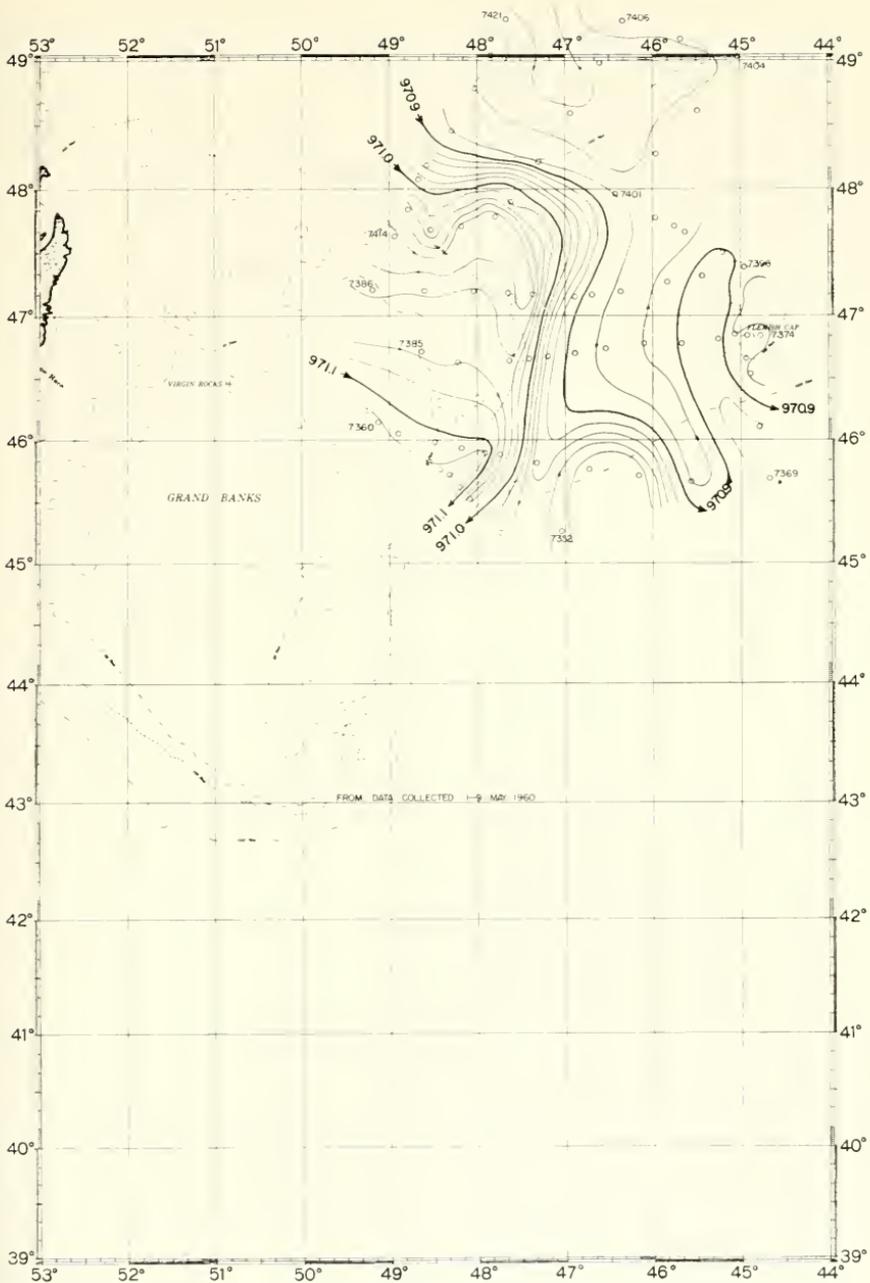


FIGURE 25.—Dynamic topography of the sea surface relative to the 1,000-decibar surface, from data collected 1-9 May 1960. Oceanographic station positions are indicated and the station numbers given at turning points.

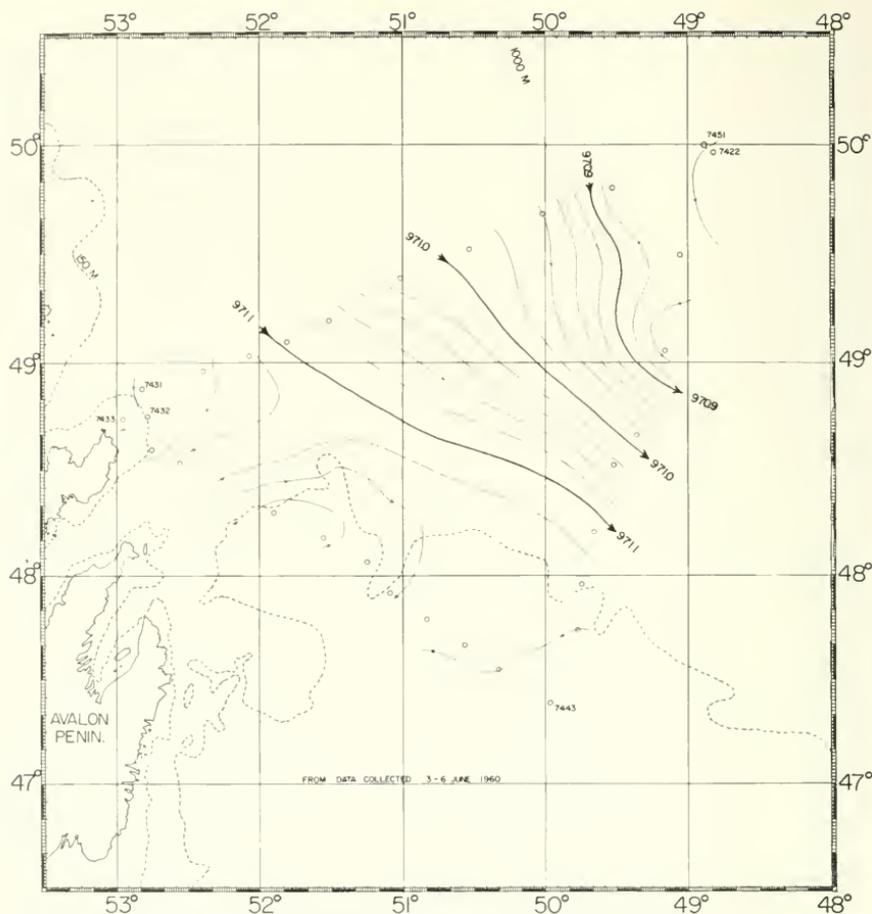


FIGURE 26.—Dynamic topography of the sea surface relative to the 1,000-decibar surface, from data collected 3-6 June 1960. Oceanographic station positions are indicated and the station numbers given at turning points.

whereas during the postseason occupation of the Bonavista triangle, figure 28 indicates that only such bergs as might cross the 49th parallel eastward of about  $50^{\circ}30' W.$ , would follow the eastern branch.

The first survey, the southern part of the second survey and the fourth survey covered areas in the Grand Banks region from which sufficient earlier data are available to permit the designation of normal temperature-salinity relationships of the Labrador Current and Atlantic Current water masses and the virtual water mass of mixed water derived from these two water masses. Figure 29 compares the T-S relationships of the Labrador Current water, Atlantic Current water and mixed water found during the above mentioned surveys in 1960 with the mean relationships for the 13-year period 1948-60.

Whereas the temperature minimum in the Labrador Current characteristically occurs at a depth of about 75 meters, in 1960 it occurred



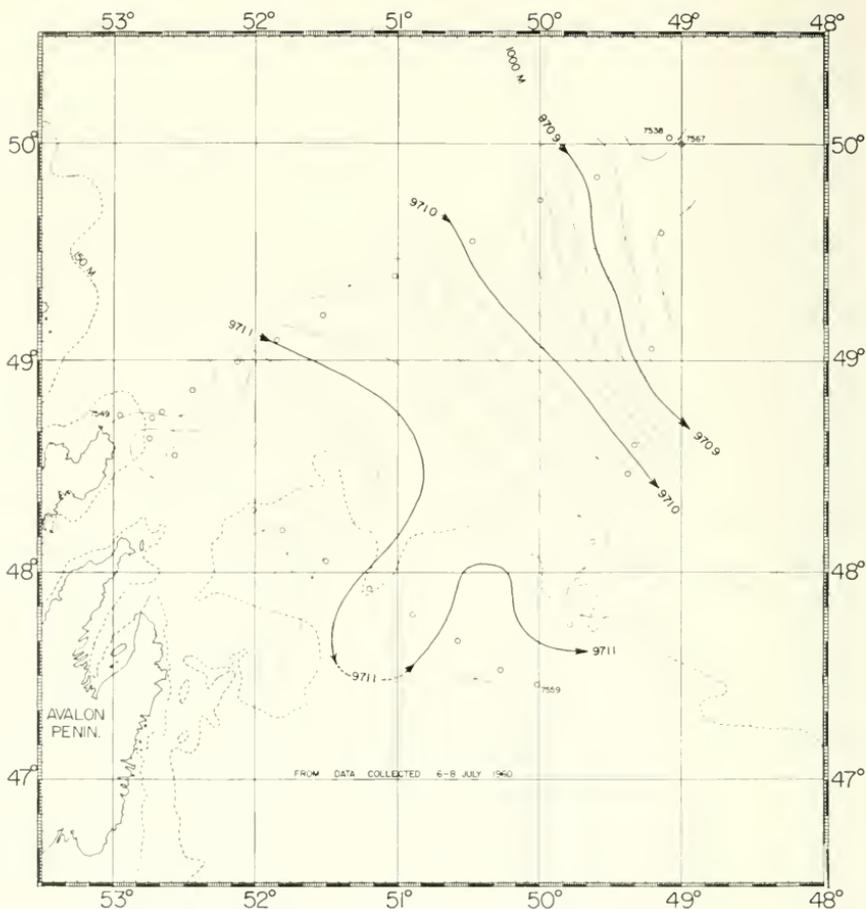


FIGURE 28.—Dynamic topography of the sea surface relative to the 1,000-decibar surface from data collected 6-8 July 1960. Oceanographic station positions are indicated and the station numbers given at turning points.

at about 50 meters and the salinities were lower than normal at depths less than about 200 meters. The mixed water curve for 1960 approximates the normal curve down to about 400 meters. Below this depth, and in the Labrador Current water below about 600 meters, the 1960 values are colder and fresher than normal. It is suggested that since the Labrador Current is formed by the junction of West Greenland Current and Baffinland Current components just south of Davis Strait in the proportions of about 3 to 2, an abnormal amount of Baffinland Current coming south across Davis Strait ridge might have the effect of lowering both temperature and salinity in the deeper levels of the Labrador Current in the Grand Banks region. As the mixed water contains a greater proportion of Labrador Current water than Atlantic Current water and as the horizontal velocity of the mixed water is small, and because of the relative volume transports of

the Labrador and Atlantic Currents, the effect of such an abnormality on the departure from normal T-S curves would be great in the case of the mixed water and nil in the case of the Atlantic Current. During the summer of 1959, the volume transport of the West Greenland Current off Cape Farewell was 3.2 million cubic meters per second in excess of its seasonal normal and this excess was contributed by its East Greenland Current component. This could have resulted in the stimulation of the Baffin Bay circulation necessary to produce the effect outlined above. The unsatisfactory part of such an explanation of the shape of the curves in figure 29 is that one would expect to find the effect at shallower levels in the Labrador Current water than in the mixed water and this is not the case.

The 1960 curve for Atlantic Current water very nearly coincides with the normal curve. However, individual levels are displaced along the curve indicating denser water than normal at levels deeper than 300 meters with lighter than normal water down to and including the 300 meter level. To avoid the possibility of overweighting the 1960 observations from extra southerly stations, no data were included from stations taken south of 41° N., during the first survey.

To show the differences between the mean T-S relationships found during the prewar period of 1934-41 and the postwar period 1948-60 the mean curves for both periods have been shown in figure 30. The curves for Atlantic Current water are not as specific as those for mixed water and Labrador Current water because the data are heavily weighted by the larger number of stations from the outer margins of the current and the small number of cases when surveys completely crossed the Atlantic Current. The salinity minimum at a temperature of about 5.5° which seemed characteristic of the outer margins of the Atlantic Current during the prewar period has not been noticeable during the postwar period. There has been little change in salinity at levels of 800 meters and deeper but above that level the salinities have been higher. Temperatures have been higher at all levels during the postwar period.

In the mixed water there has been little temperature change above 400 meters but the temperatures have increased below that level and salinities have decreased at all levels. In the Labrador Current water also the salinities have decreased at all levels except 200 meters where they remained about the same. The water has become somewhat colder at levels above 1,000 meters and warmer at 1,500 meters.

Figure 31 shows a plot of the values of  $\sigma_t$  corresponding to the average temperature and average salinity, for individual years, of the Labrador Current water found at particular levels in the Grand Banks region for the periods 1934-41 and 1948-60. This revises figure 23 (p. 92) in Bulletin 43 of this series in the light of the salinity corrections to the postwar data, and extends the figure to include 1960.

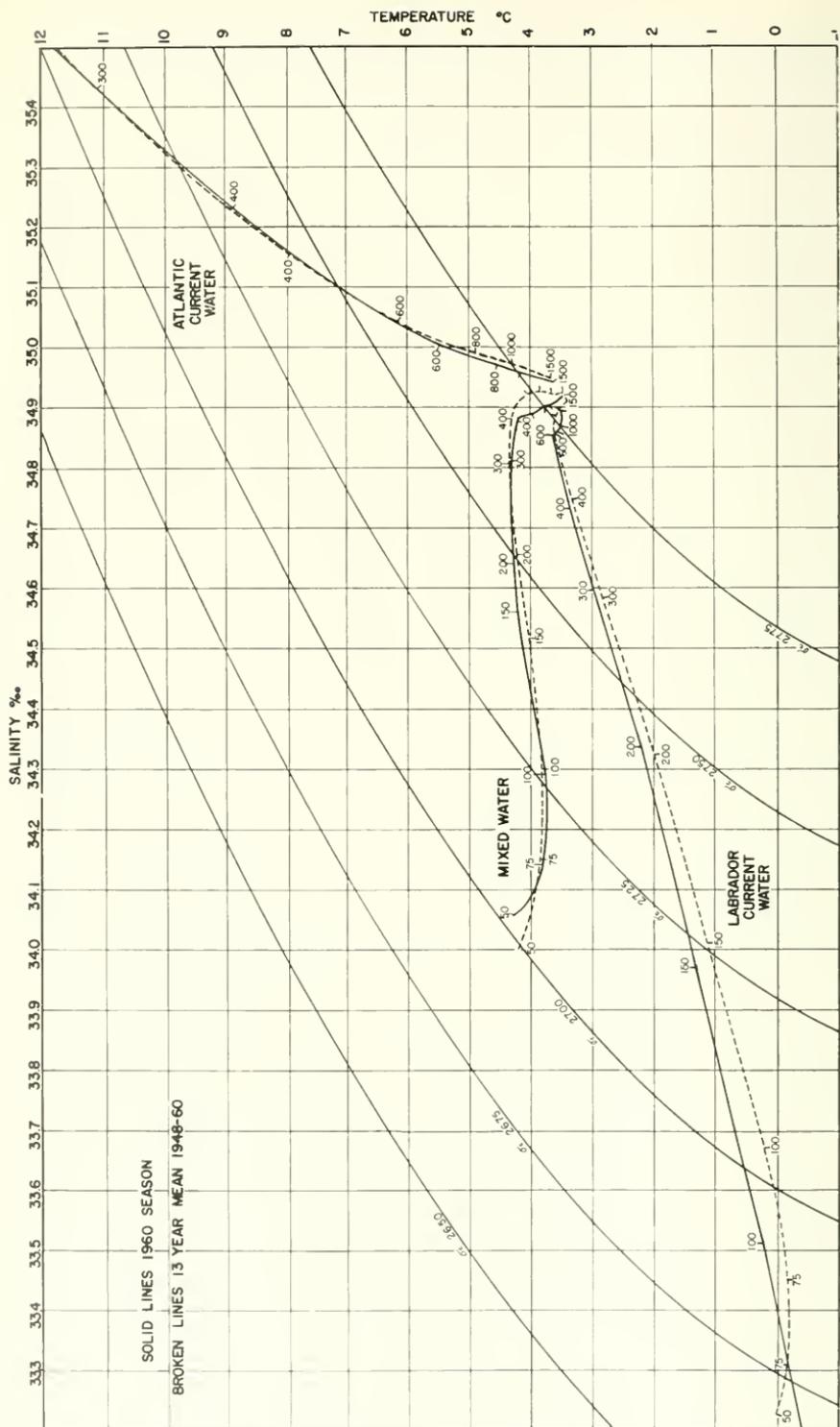


FIGURE 29.—Temperature-salinity relationships for Labrador Current water, Atlantic Current water and mixed water found in the Grand Banks region. Solid lines show conditions found during 1960 and broken lines represent the 13-year means for the period 1948-60. An approximate depth scale is given in meters.

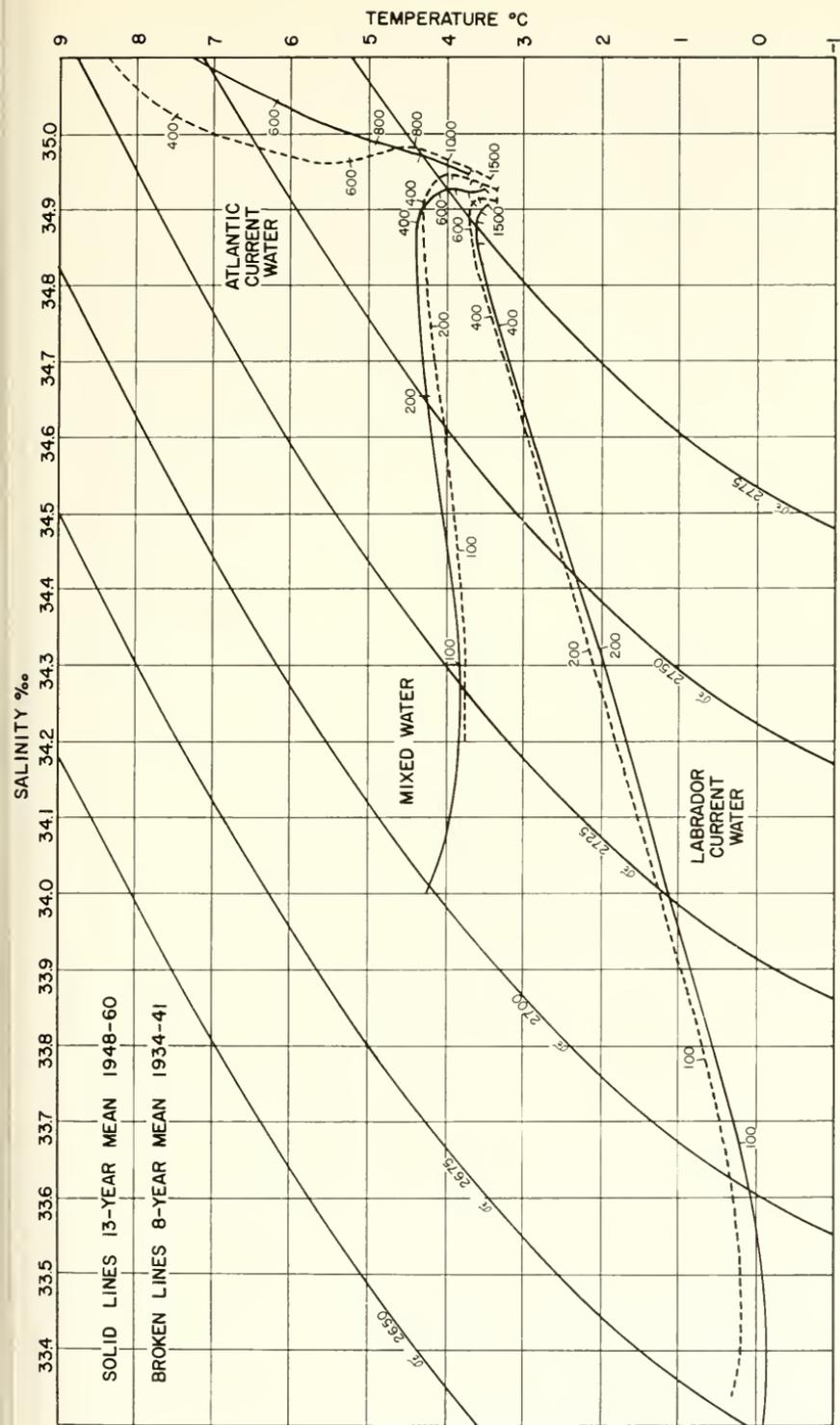


FIGURE 30.—Mean temperature-salinity relationships for Labrador Current water, Atlantic Current water and mixed water found in the Grand Banks region during the period 1948-60 (shown as solid lines) compared with means for the period 1934-41 (shown as broken lines).

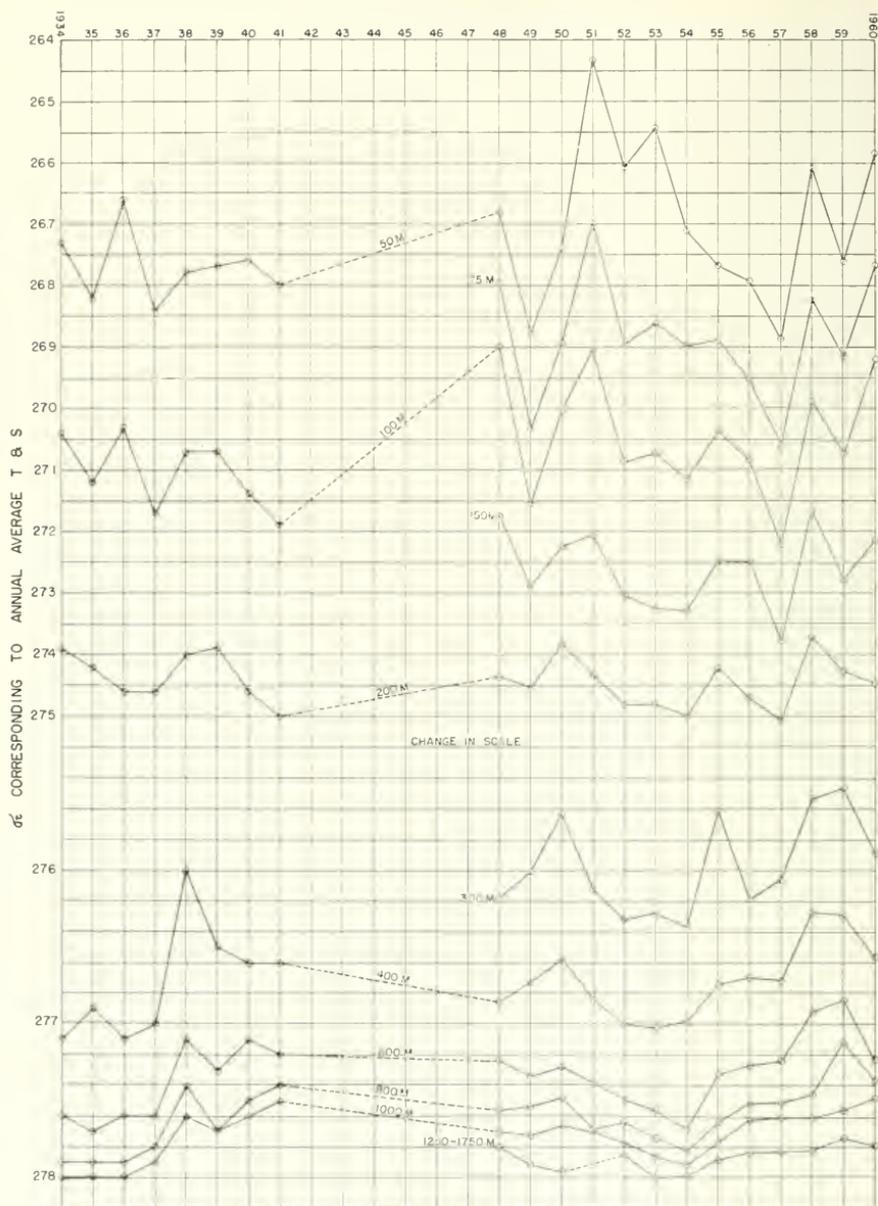


FIGURE 31.—Year-to-year fluctuations in density of the Labrador Current water found in the Grand Banks region at selected levels 1934-41 and 1948-60. The plotted points represent values of  $\sigma_t$  corresponding to the average temperature and average salinity for the particular year and level.

The temperature and salinity distribution found along the extra-southerly sections of the first survey are shown in figures 32-35. Departures of the individual stations from the specified meridian may be seen by referring to figure 24. The various bands of current shown in the dynamic topographic chart can also be identified in the temperature and salinity sections. Comparing the two sections it will be seen that the highest temperature in the western section is slightly warmer than in the eastern section. Otherwise the temperatures and salinities within particular current bands show little difference between the two sections.

The section along the meridian of  $50^{\circ}15'$  W., has been occupied by ships of the International Ice Patrol before. In 1938, the *General Greene* occupied the section during the period when the *Armour Hansen* and *Altair* were engaged in their investigation of the Gulf Stream system in the Azores sector. The *Evergreen* occupied the section in 1950 at the time of Operation Cabot and again in 1958 as a part of the activity of the International Geophysical Year.

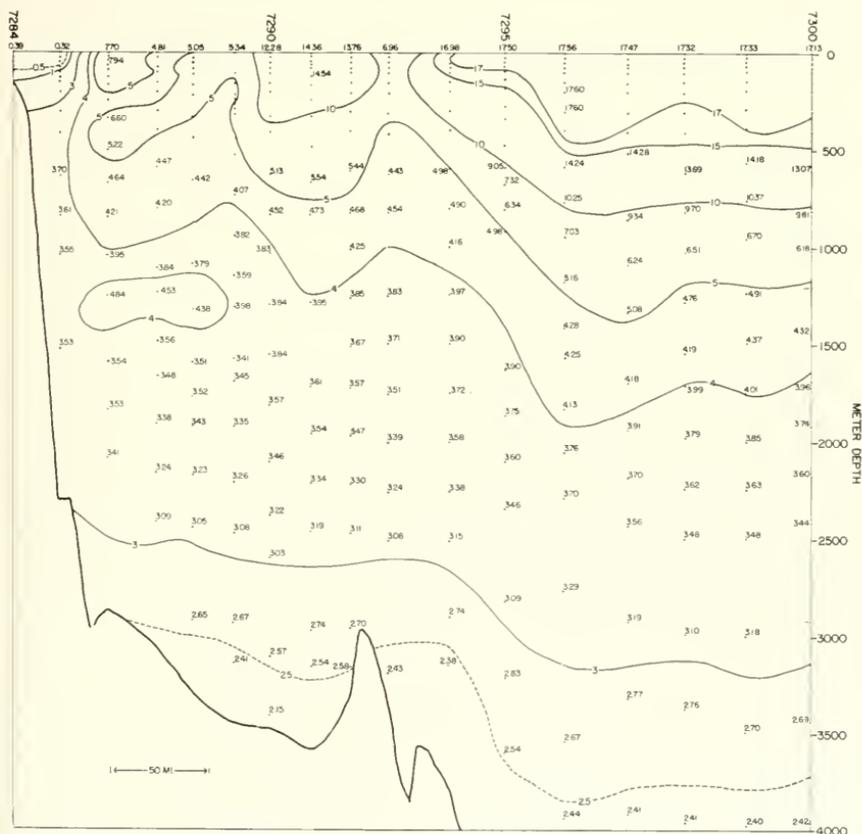


FIGURE 32.—Temperature distribution along meridional section at  $48^{\circ}30'$  W., from data collected 2-7 April 1960.

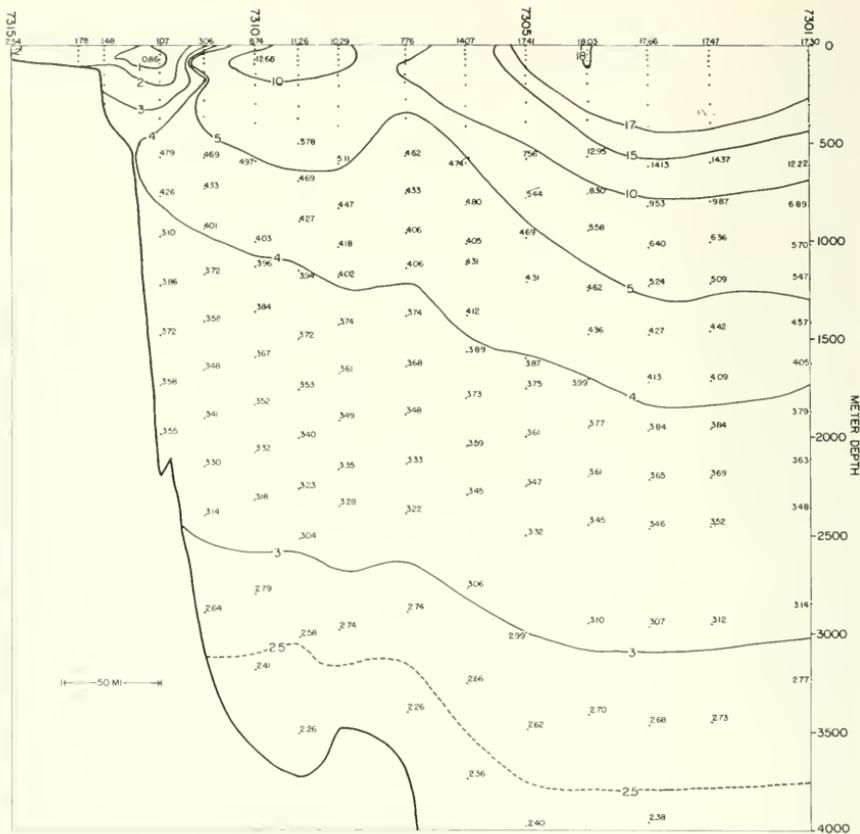


FIGURE 33. Salinity distribution along meridional section at  $48^{\circ}30'$  W., from data collected 2-7 April 1960.

The dynamic topography of the sea surface shown in figure 24 is referred to the 1,000-decibar surface. While this reference surface is satisfactory for studies of the Labrador Current in the Grand Banks region, the motionless surface beneath the Atlantic Current is more nearly the 2,000-decibar surface and this deeper surface was used for reference in studying the velocity distribution and volume and heat transports of the Atlantic Current at the section located along  $50^{\circ}15'$  W. Figure 24 is still useful in showing the current pattern even though the absolute velocities are in error.

Figure 36 is a schematic representation of the bands of the Labrador and Atlantic Currents as they usually are found crossing a section along this meridian and is presented here to facilitate a discussion of the 1960 occupation of the section in comparison with the earlier occupations. An important part of the Atlantic Current crosses the section as A in figure 36. Some of A recurves toward Bermuda as B, some recurves northwestward as D and some continues to the eastward as C. D again recurves to the eastward after being joined by a

part of the Atlantic Current, G, which recurved northwestward west of the section. G may be considered to include a small amount of water from the U.S. and Canadian shelves, and G and D together make up E. The Labrador Current, F, crossing the section to the westward, recurves and recrosses the section, with some admixture of water from G and D, as mixed water paralleling and on the northern side of E. The net contribution of the Atlantic Current to the eastward of the Grand Banks, then, is E plus C.

The following table summarizes the volume transports of these various components found during the four occupations. Units are millions of cubic meters per second. Values of components are computed except where otherwise indicated. Values derived by sum or difference of other components are indicated by (d). Values determined graphically by planimeter are indicated by (p). Some of the values are less reliable and are considered estimates labeled (e). It appears that in 1960, a closed counterclockwise eddy was present near the southern end of the section and consequently the southeastward

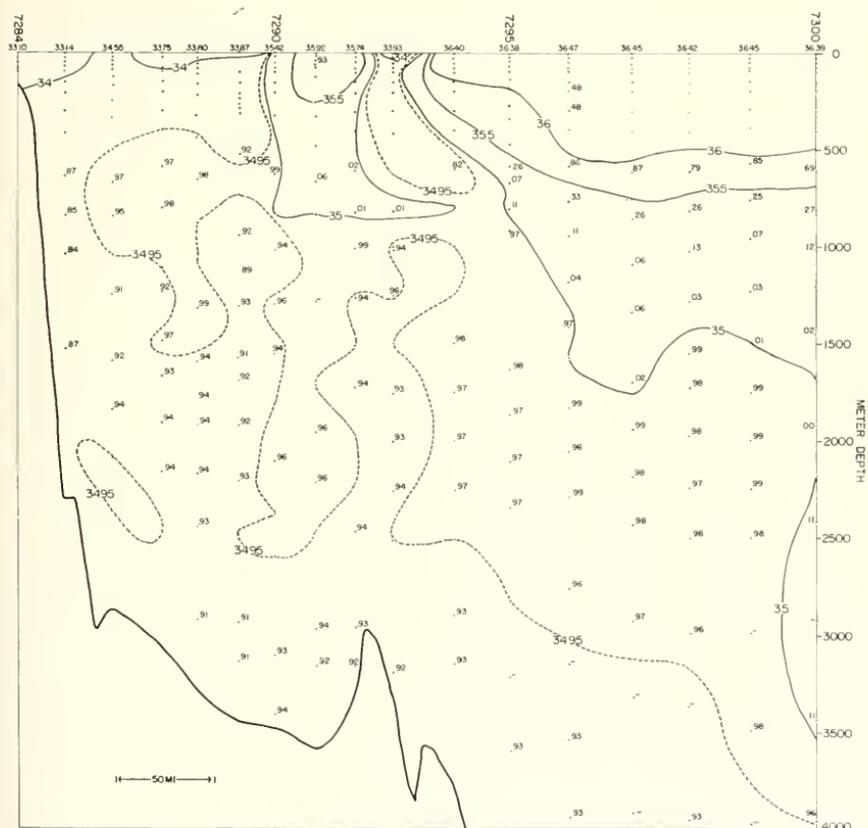


FIGURE 34.—Temperature distribution along meridional section at  $50^{\circ}15' W.$ , from data collected 7-10 April 1960.

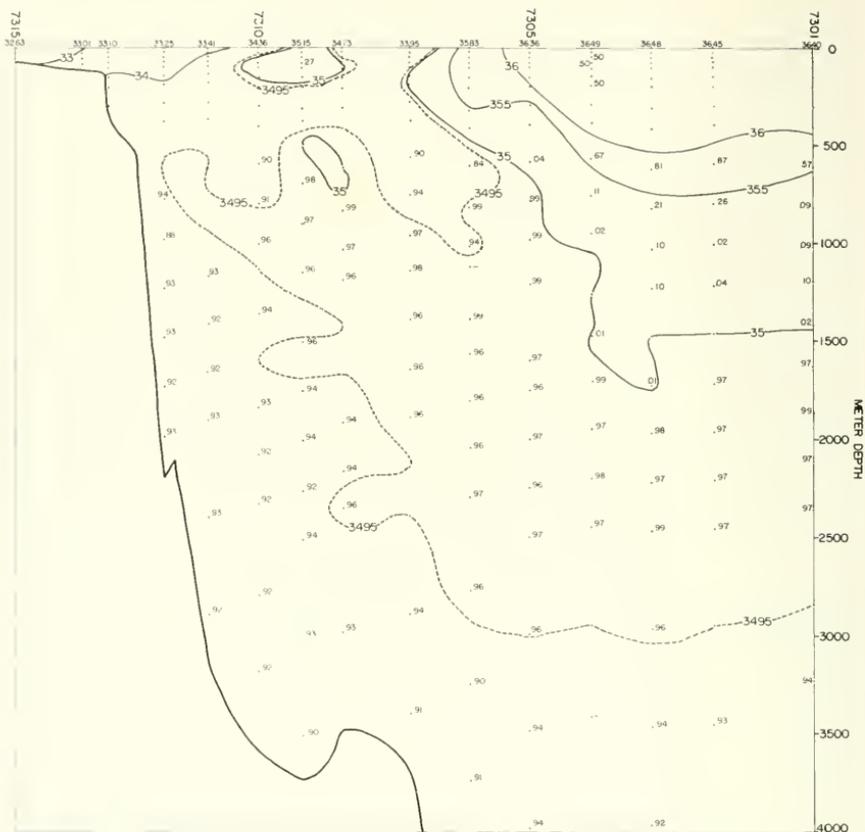


FIGURE 35. Salinity distribution along meridional section at  $50^{\circ}15' W.$ , from data collected 7-10 April 1960.

transport included this eddy as well as B. The volume transport of the eddy, estimated as the net transport between stations 7300 and 7301, was therefore subtracted to derive B.

	1938	1950	1958	1960
A+F+E-D	58.6	56.4+3.5(c)=59.9	48.6	52.3-0.9(d)=51.4
A		18.5	5.6	5.2
D	(p)0.1	31.4	19.9	(d)6.8
E+F	2.8	2.0	6.7	2.5
F		(d)29.4	(d)13.2	(d)4.2
E		completely south of section	7.6+2.2(c)=9.8	(c)6.2
B	21.7		(d)33.2	(d)40.0
C			(d)7.6	(d)-0.9
G		(d)10.9	(d)16.4	(d)44.3
E+C	(d)24.1	5.8-2	(d)13.0	(d)46.3
C+B		(d)41.4	(d)13.0	(d)50.5
E+C+B	(d)45.8	(d)70.8	(d)56.2	

\* Applying mean B for 1938, 1958 and 1960 to E+C+B for 1950.

As the sum of E plus C is one of the most important values which can be derived from the occupation of the section, an extraordinary and otherwise unjustifiable procedure was followed to get a gross ap-

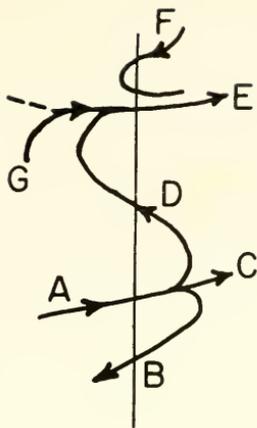


FIGURE 36.—Schematic diagram of currents crossing the meridian of  $50^{\circ}15' W.$ , south of the Grand Banks.

proximation of  $E+C$  for 1950. In that year  $E+C+B$  was available but  $B$  was completely south of the section. The mean value of  $B$  for 1938, 1958 and 1960 was subtracted to derive  $E+C$  for 1950.<sup>5</sup> Bearing in mind the large uncertainty in this value it is still of interest to note that while there has been no consistent change in  $E+C$ , for the three occupations 1950, 1958 and 1960, for which separate values of  $E$  and  $C$  can be deduced, there has been a continued decrease in the northern component  $E$  and an increase in the southern component  $C$ . The tabulation shows a small negative value for  $G$  in 1960. This means that  $D$  was greater than  $E$  and is further interpreted to mean that  $D$  included the eastern part of a closed counterclockwise eddy having a volume transport of this difference between  $D$  and  $E$ . The gross value of  $A$  has been reduced by the amount of this difference to derive the tabulated value of  $A$ .

As in 1958 the volume transport of  $F$ , referred to the 2,000-decibar surface is larger than when referred to the 1,000-decibar surface. The larger value has been used in this tabulation to permit the use of a common reference surface in the construction of the velocity profile shown in figure 37 and used in graphical determination of heat transports of the various components. The components shown in figure 36 have been interpreted as being made up of the following components shown in figure 37:  $F=v_1$ ;  $E=V_2+V_1-v_1$ ;  $D=v_2-V_3$ ;  $A=V_3-v_3-(D-E)$ ;  $B=v_3$ —eddy between 7301 and 7300;  $C=A-D-B$ . The heat transport expressed as millions of cu. m<sup>o</sup>C/sec and mean temperature of the contribution of the Atlantic Current to the eastward of the

<sup>5</sup> A fifth value of  $E+C$  may be approximated from the 1937 postseason cruise in which the net volume transport between stations 2475 and 2486 (southeastward of the Tail of the Banks) was computed to be  $52.3 \times 10^6$  cu.m/sec. As the Labrador Current between stations 2471 and 2475, computed as  $3.0 \times 10^6$  cu.m/sec, recurved as a part of the northeasterly flow between stations 2475 and 2486, the net contribution of the Atlantic Current to the eastward of the Grand Banks ( $E+C$ ) was equal to or greater than  $(52.3-3.0) \times 10^6 = 49.3 \times 10^6$  cu.m/sec.

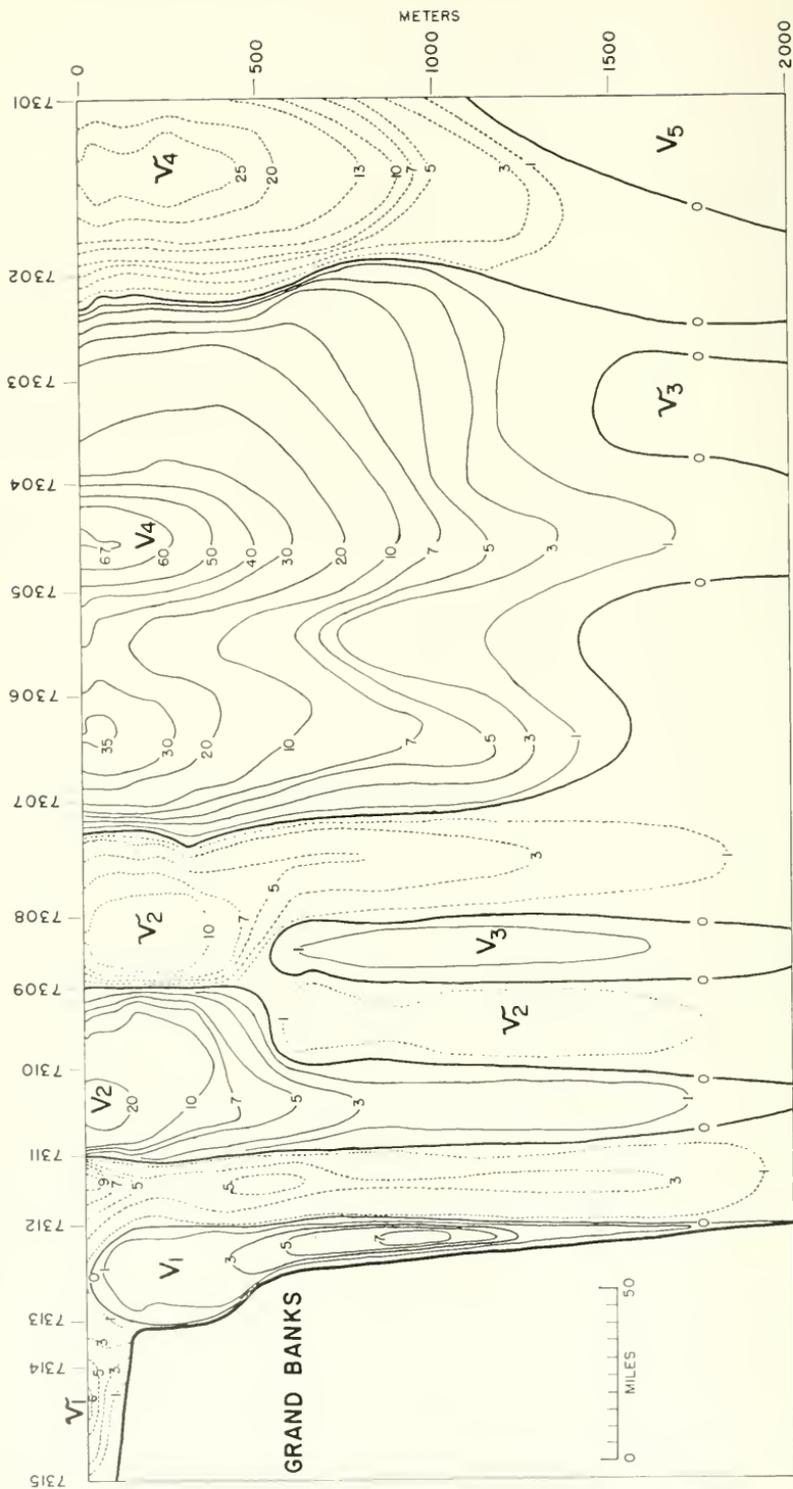


FIGURE 37.—Velocity distribution along meridional section at  $50^{\circ}15' W.$ , from data collected 7–10 April 1960. Velocities are referred to the 2,000-decibar surface. Easterly-flowing currents are shown as solid lines and westerly-flowing currents are shown as broken lines.

Grand Banks for this occupation of the section are given below in comparison with similar quantities for earlier occupations:

	<i>E</i>		<i>C</i>		<i>E+C</i>	
	<i>Heat transport</i>	<i>Mean temperature</i>	<i>Heat transport</i>	<i>Mean temperature</i>	<i>Heat transport</i>	<i>Mean temperature</i>
1938.....					312.	13.0
1950.....					779.	13.4
1958.....	159.	12.1	447.	13.5	606.	13.1
1960.....	37.	8.8	521.	13.0	558.	12.6

The lower mean temperature found during this occupation is noted as well as the fact that the 1960 measurements were made earlier in the spring. Although the Atlantic Current extends to considerable depth, since the highest velocity occurs in the upper layers and the heat transport and mean temperature are weighted according to velocity distribution seasonal changes in temperature in the upper layers cannot be disregarded and at this writing the significance of seasonal changes in heat transport and mean temperature cannot be accurately assessed in consideration of the above tabulated values.

From the 14 stations (7294-7307) which were located south of  $41^{\circ}$  N., during the first survey 53 observations from the water beneath the Atlantic Current were examined for potential temperature-salinity relationship and a curve representing them has been shown as a solid line in figure 38. Because of the small number of observations the curve has uncertainties, but at potential temperatures above about  $2.6^{\circ}$  it departs toward lower salinities from the curve shown by Bradshaw and Schleicher<sup>6</sup> for the deep water west of Bermuda. At lower potential temperatures there is no significant difference. The broken line in figure 38 is taken from Bradshaw and Schleicher. Fourteen observations from the deeper water beneath the Atlantic Current, made during the 1958 occupation of this section are shown as circles in figure 38.

A number of sections across the Labrador Current have been repeatedly occupied in connection with the routine current surveys of the Grand Banks region and on the postseason cruises. The locations of these sections are as follows: Sections NW., SW., and SE. are the northwestern, southwestern and southeastern sides of the Bonavista triangle which is defined by its corners located at  $50^{\circ}$  N.,  $49^{\circ}$  W.;  $47^{\circ}20'$  N.,  $50^{\circ}$  W., and just off Cape Bonavista, Newfoundland; Section H is roughly parallel to SE. and extends northeasterly from about  $47^{\circ}10'$  N.,  $49^{\circ}15'$  W.; section G extends northeasterly from about  $47^{\circ}10'$  N.,  $48^{\circ}40'$  W.; section F<sub>2</sub> is an east-west section between the Grand Banks and Flemish Cap at the parallel of  $47^{\circ}15'$  N.; section F is similar to F<sub>2</sub> but about 30 miles farther south; section T extends southeasterly from about  $46^{\circ}20'$  N.,  $49^{\circ}$  W.; section U ex-

<sup>6</sup> Bradshaw, Alvin L., and Karl E. Schleicher "A Conductivity Bridge for the Measurement of Salinity of Sea Water" Woods Hole Oceanographic Institution Reference No. 56-20. Unpublished Manuscript.

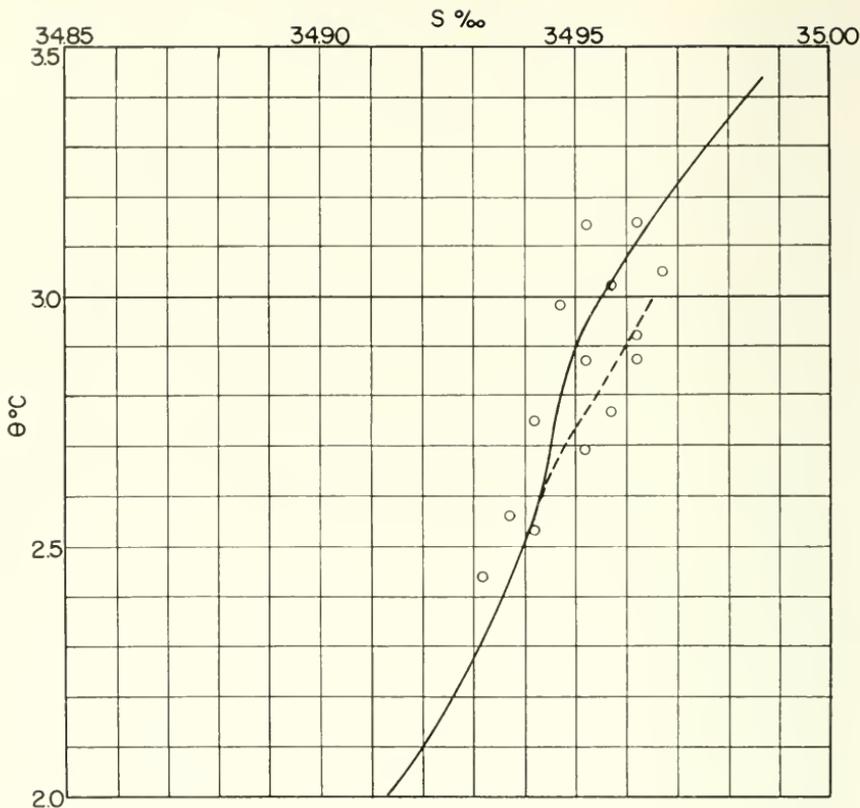


FIGURE 38.—Potential temperature-salinity relationship found beneath the Atlantic Current south of the Grand Banks 2-10 April 1960 (solid line) and 23-26 May 1958 (circles) compared with the relationship reported by Bradshaw and Schleicher for the deep water west of Bermuda (broken line).

tends easterly from the Grand Banks at about  $45^{\circ}$  N.; section W extends southerly from the Grand Banks along the meridian of  $50^{\circ}15'$  W.; the South Wolf Island section extends northeasterly from South Wolf Island, Labrador, and is a part of the section across the Labrador Sea from South Wolf Island to Cape Farewell, Greenland.

A sufficient number of occupations of many of these sections has permitted the development of tentative normal seasonal variation relationships. Those previously developed for the Labrador Current were published as follows:

- Sections NW., SW., and SE. . . . . bulletin No. 39 (season of 1953)
- Sections F and G. . . . . bulletin No. 42 (season of 1956)
- South Wolf Island section . . . . . bulletin No. 44 (season of 1958)

Tentative normals for sections T, U, and W have been redetermined and are shown herewith in figure 39. All occupations of these sections through 1960 were grouped according to months. The monthly groups from mid-April to mid-May were then averaged and plotted

against their mean dates as the circles shown in the figure. Average mean monthly rates of change were then used to extend the lines in each direction from these circled points. While the tentative normals shown in figure 39 are better than those previously published in Bulletin 36 of this series, the remaining irregularities indicate that there are still imperfections in the curves.

Data are insufficient to determine even tentative normals for sections H and F<sub>2</sub>.

Volume transport, mean temperature, minimum observed temperature and heat transport were evaluated for 23 occupations of such sections in 1959 and 18 occupations in 1960, and are tabulated below in comparison with seasonal normal values where they are available. Temperatures are given in °C, volume transport in millions of cu.m/sec. and heat transport in millions of cu.m°C/sec. Figure 40 is a schematic diagram representing the circulation deduced from the volume transports found during the 1960 surveys and listed in the table. In the first survey the Labrador Current was warmer than normal both as to mean temperature and minimum observed temperature. Recurvature after passing latitude 45° N., reduced the volume transport from greater than normal at section U to decidedly below normal at section W. In the second survey very nearly normal volume at section G did not suffer the usual losses and so was above normal at sections F and T. Mean temperatures were near normal at G and F and above normal at T. The coldest water graded from colder than normal in the north to warmer than normal in the south.

In both the third survey and postseason occupations of the Bonavista triangle the volume transports appearing in figure 40 have been adjusted so that the volume entering past section NW equals the sum of the volumes leaving across the other two sections. Considering this "mean triangle" the volume transport was about a million cu.m/sec. above normal during the third survey and about a quarter of a million above normal during the postseason cruise. Minimum temperatures were about normal in both occupations. Mean temperatures, however, went from near normal during the third survey to about 0.9° above normal during the postseason cruise. During the fourth survey, the mean temperature anomalies varied from -0.2 at section F to +0.3 at U and dropped to slightly below normal at W. Volumes were below normal at F and T and above normal at U and W. These changes are considered to result from losses of Labrador Current water seaward and additions of warmer water from the Grand Banks.

Off South Wolf Island both the volume transport and mean temperature were above normal with a resulting large heat transport.

Section U has been occupied 56 times during 21 different years and the occupation during the first survey of 1960 is the first time that a positive temperature has been recorded as the minimum observed

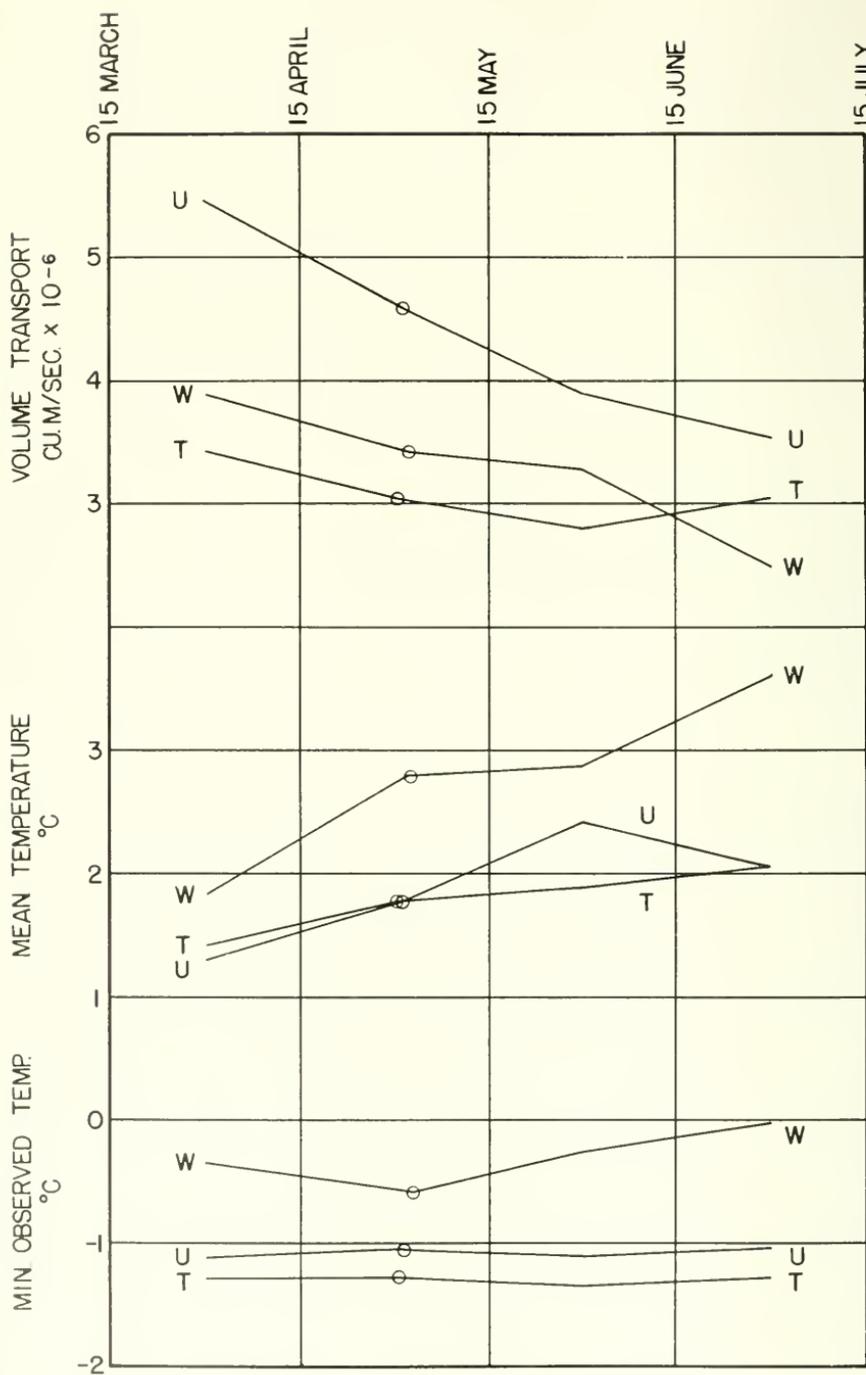


FIGURE 39. Tentative normal seasonal change in volume transport, mean temperature and minimum observed temperature of the Labrador Current at sections T, U and W.

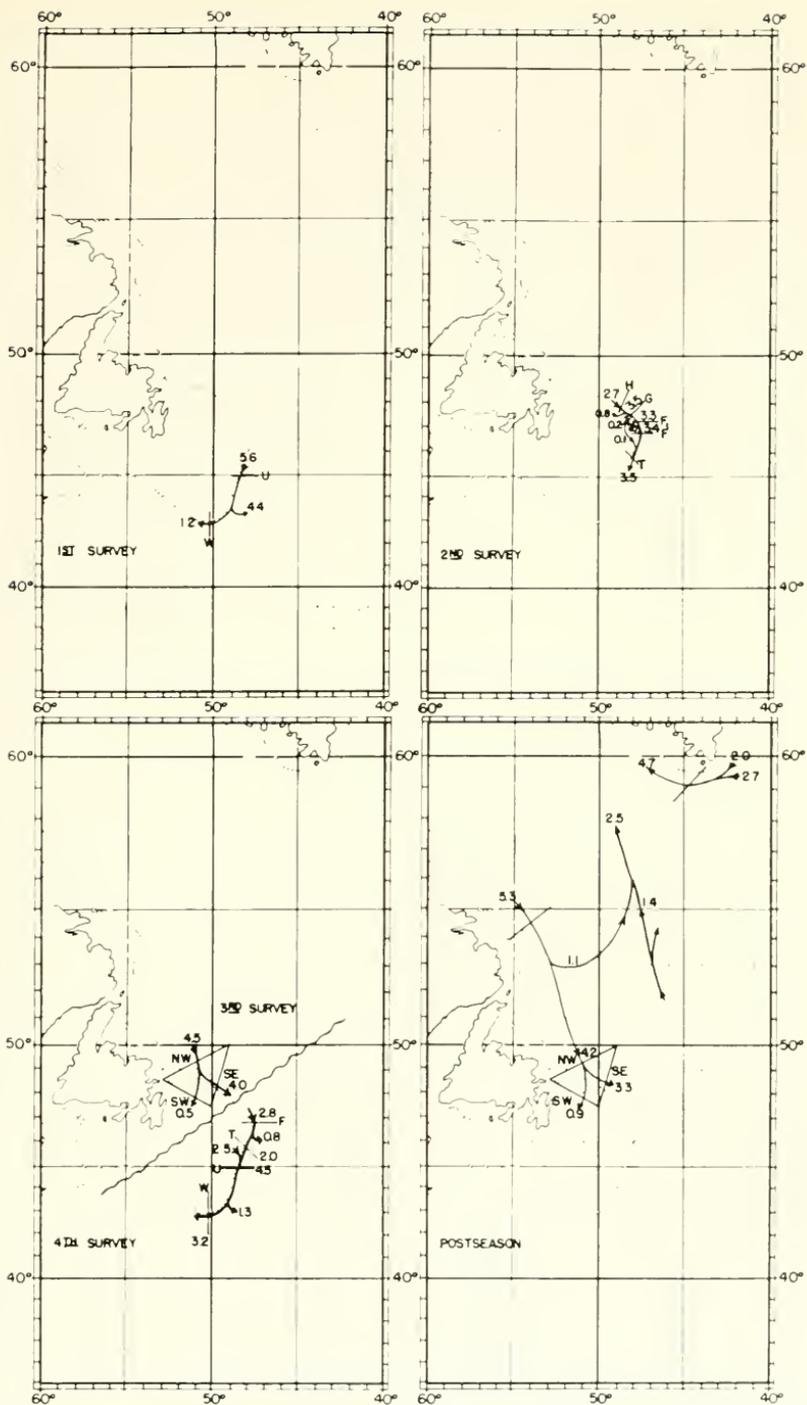


FIGURE 40.—Schematic representation of circulation deduced from sections occupied in 1960. Numerals indicate volume transport in units of  $m^3 \times 10^5/\text{sec}$ .

# SUMMARY OF VELOCITY SECTIONS ACROSS THE LABRADOR CURRENT

SECTIONS OCCUPIED IN 1959

	Volume transport			Mean Temperature			Minimum observed temperatures			Heat transport		
	1959	Normal	Anomaly	1959	Normal	Anomaly	1959	Normal	Anomaly	1959	Normal	Anomaly
<b>First survey:</b>												
F	4.17	2.75	+1.42	1.24	1.58	-0.34	-1.33	-1.26	-0.07	5.15	4.31	+0.84
T	3.72	3.24	+0.48	1.39	1.61	-0.22	-1.33	-1.27	-0.06	5.18	5.22	-0.04
C	5.38	5.13	+0.25	1.12	1.49	-0.37	-1.31	-1.09	-0.22	6.05	7.64	-1.59
W	6.48	3.79	+2.69	1.67	2.03	-0.36	-0.55	-0.38	-0.17	10.83	7.69	+3.16
<b>Second survey:</b>												
F	2.40	2.93	-0.53	1.08	1.79	-0.71	-1.47	-1.29	-0.18	2.59	5.21	-2.65
T	1.93	2.97	-1.04	1.97	1.81	+0.16	-1.41	-1.30	-0.11	3.80	5.38	-1.58
C	3.72	1.48	+2.24	1.52	1.89	-0.37	-0.85	-1.07	+0.22	5.65	8.17	-2.82
W	3.99	3.45	+0.54	0.90	2.74	-1.84	-0.94	-0.58	-0.36	3.58	9.45	-5.87
<b>Third survey:</b>												
F	4.30	3.13	+1.17	0.34	2.02	-1.68	-1.41	-1.33	-0.08	1.45	6.32	-4.87
T	4.11	2.82	+1.29	1.49	1.90	-0.41	-1.41	-1.34	-0.07	6.17	5.30	+0.81
C	4.11	3.87	+0.24	1.29	2.39	-1.10	-1.07	-1.00	+0.03	3.34	9.23	-3.91
W	3.30	3.30	0.00	1.33	2.86	-0.35	-0.14	-0.30	+0.16	6.38	9.44	-3.06
<b>Fourth survey:</b>												
NW	2.49	3.73	-1.24	-0.17	1.21	-1.38	-1.70	-1.67	-0.03	-0.43	4.51	-4.94
SW	3.24	3.31	-0.07	0.49	-0.30	+0.79	-1.65	-1.64	-0.01	0.12	-0.15	+0.27
SE	3.08	3.11	+0.54	1.95	1.73	+0.24	-1.12	-1.34	+0.12	7.26	5.43	+1.83
G	3.24	2.68	+0.72	1.32	2.12	+0.05	-1.35	-1.32	-0.23	8.16	3.68	+4.48
F	3.40	3.27	+0.13	2.17	2.17	0.00	-1.40	-1.35	-0.05	10.55	3.68	+6.87
W	2.67	3.27	-0.60	1.51	2.17	-0.66	-1.11	-1.35	+0.24	4.63	7.10	-3.07
<b>Post-season:</b>												
NW	4.59	4.30	+0.29	1.56	1.57	-0.01	-1.66	-1.57	-0.09	7.15	6.75	+0.40
SW	0.52	0.71	-0.19	2.41	0.33	+2.08	-1.66	-1.65	+0.01	1.26	0.23	+1.03
SE	4.74	3.44	+1.30	2.15	2.15	0.00	-1.44	-1.61	+0.17	9.52	7.40	+2.12
South Wolf Island	5.14	6.12	-1.28	2.25	3.03	-0.78	-1.47	-1.45	-0.02	11.55	19.45	-7.90

SECTIONS OCCUPIED IN 1960

	Volume transport			Mean Temperature			Minimum observed temperatures			Heat transport		
	1960	Normal	Anomaly	1960	Normal	Anomaly	1960	Normal	Anomaly	1960	Normal	Anomaly
First survey:												
U	5.59	5.03	+0.56	1.77	1.55	+0.22	0.02	-1.09	+1.11	9.89	7.80	+2.09
W	1.23	3.73	-2.50	2.58	2.13	+0.45	0.86	-0.42	+1.28	3.19	7.91	-4.75
Second survey:												
U	2.65	3.48	+0.83	0.92	1.66	-0.74	-1.58	-1.21	+0.32	2.41	5.78	-3.37
G	3.53	3.28	+0.25	1.36	1.38	-0.02	-1.56	-1.29	+0.27	5.52	4.51	+1.01
F	3.40	2.88	+0.52	1.79	1.71	+0.08	-1.01	-1.29	+0.28	6.09	5.01	+1.08
T	3.41	3.03	+0.38	2.72	1.81	+0.91	-0.80	-1.27	+0.47	9.27	5.48	+3.79
Third survey:												
NW	4.79	3.55	+1.24	1.46	1.10	+0.36	-1.67	-1.70	+0.63	7.02	3.90	+3.12
SW	0.47	0.46	+0.01	0.47	-0.48	+0.95	-1.64	-1.63	-0.01	0.22	-0.22	+0.44
SE	3.84	3.06	+0.78	1.16	1.62	-0.46	-1.65	-1.52	-0.13	4.41	4.96	-0.52
Fourth survey:												
F	2.85	3.33	-0.48	2.04	2.24	-0.20	-1.51	-1.36	-0.18	5.83	7.46	-1.63
T	1.99	3.02	-1.03	2.26	2.04	+0.22	-1.26	-1.29	+0.63	4.50	6.16	-1.66
U	4.54	3.59	+0.95	2.43	2.10	+0.34	-1.36	-1.05	-0.31	11.08	7.54	+3.54
W	3.24	2.76	+0.48	3.18	3.32	-0.14	-0.48	-0.11	-0.27	10.29	9.16	+1.13
Post season:												
NW	4.49	3.97	+0.52	2.71	1.36	+1.35	-1.02	-1.63	+0.01	12.19	5.40	+6.79
SW	0.79	0.60	+0.19	0.31	-0.02	+0.36	-1.63	-1.64	+0.01	0.27	-0.01	+0.28
SE	3.05	3.28	-0.23	2.48	1.93	+0.55	-1.57	-1.57	-0.00	7.56	6.33	+1.23
South Wolf Island	5.27	4.37	+0.90	2.56	2.21	+0.35	-1.67	-1.51	-0.13	13.47	9.66	+3.81

temperature. The mean temperature during the postseason occupation of the Bonavista triangle was the warmest on record with 25 occupations during 13 years.

Figures 41 through 43 show the dynamic topography in the vicinity of the Labrador Sea section and the temperature and salinity distribution found along that section during the postseason cruise. As the stations were disposed in the form of a single section, rather than a network, the dynamic topography along the section is somewhat conjectural especially in the quieter water of the central Labrador Sea. The Labrador Current, divided by the shoal off Hamilton Inlet, and the outer part of the West Greenland Current off Cape Farewell are recognizable. In the temperature section, the characteristic frigid water over the shelf and temperature maximum tongue extending downward toward the continental slope identify the Labrador Current. In 1960, this temperature maximum tongue was warmer than usual. On the Greenland side the temperature maximum of greater than  $6^{\circ}$  identifies the Irminger Current component of the West Greenland Current. As previously noted, sea ice prevented the extension of the section beyond station 7588 so no information is available regarding the shape of the isotherms and isohalines in the colder fresher water inshore of the core of the Irminger Current water.

The temperature minimum remnant in the intermediate water of the Labrador Sea was warmer than usual with a coldest observation of  $3.23^{\circ}$ . The depth of the temperature maximum beneath it was shoaler than usual, located near 1,500 meters. The deep salinity maximum layer appears to have been centered at about 2,500 meters.

In considering the volume transport, mean temperature and heat transport of the West Greenland Current at the time of the 1960 occupation of the Labrador Sea section reasonable assumptions were made in extrapolating a section of anomaly of specific volume from station 7588 to the beach as well as in the extrapolation of isotherms. The resulting figures for volume transport, mean temperature and heat transport of the West Greenland Current were 6.09, 4.95, and 30.17 respectively. Comparable normal values, from the curves published in bulletin 35 of this series, are 4.70, 4.50, and 21.14. The corresponding figures for 1959 were 7.56, 4.29, and 32.40 when the normal values were 4.37, 5.14, and 22.49.

Considering the West Greenland Current to be made up of an Irminger Current component of constant mean temperature of  $5.5^{\circ}$  and an East Greenland Current component of constant mean temperature of  $3.2^{\circ}$  these components had volume transports of 4.64 and 1.45 respectively in 1960 compared with seasonal normals of 2.65 and 2.05 and in 1959 they were 3.57 and 3.99 compared with seasonal normals of 3.70 and 0.67. Thus in 1959, the Irminger Current component was near normal and the East Greenland Current component had a large positive anomaly. In 1960, the East Greenland Current component

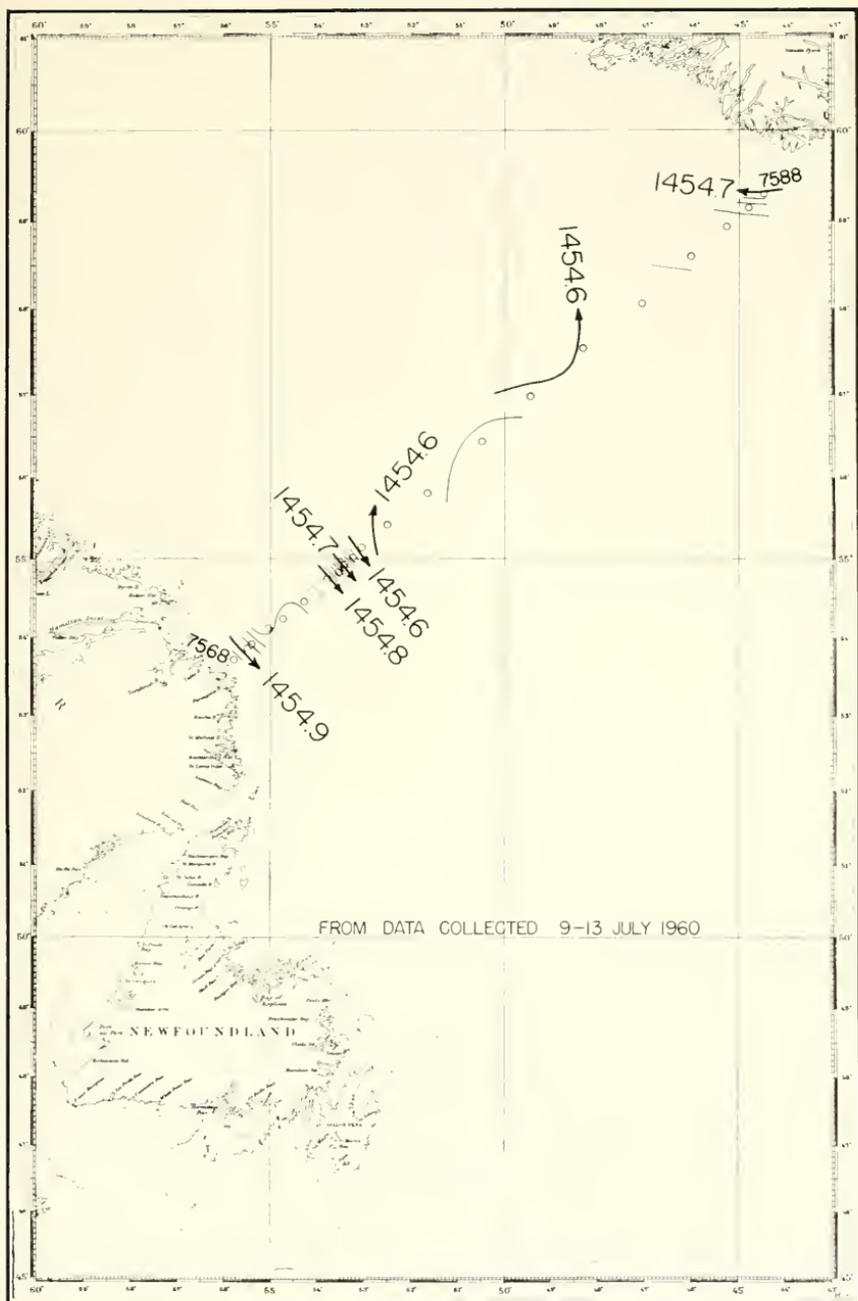


FIGURE 41.—Dynamic topography of the sea surface relative to the 1,500-decibar surface from data collected 10-13 July 1960. Oceanographic station positions are indicated by circles.

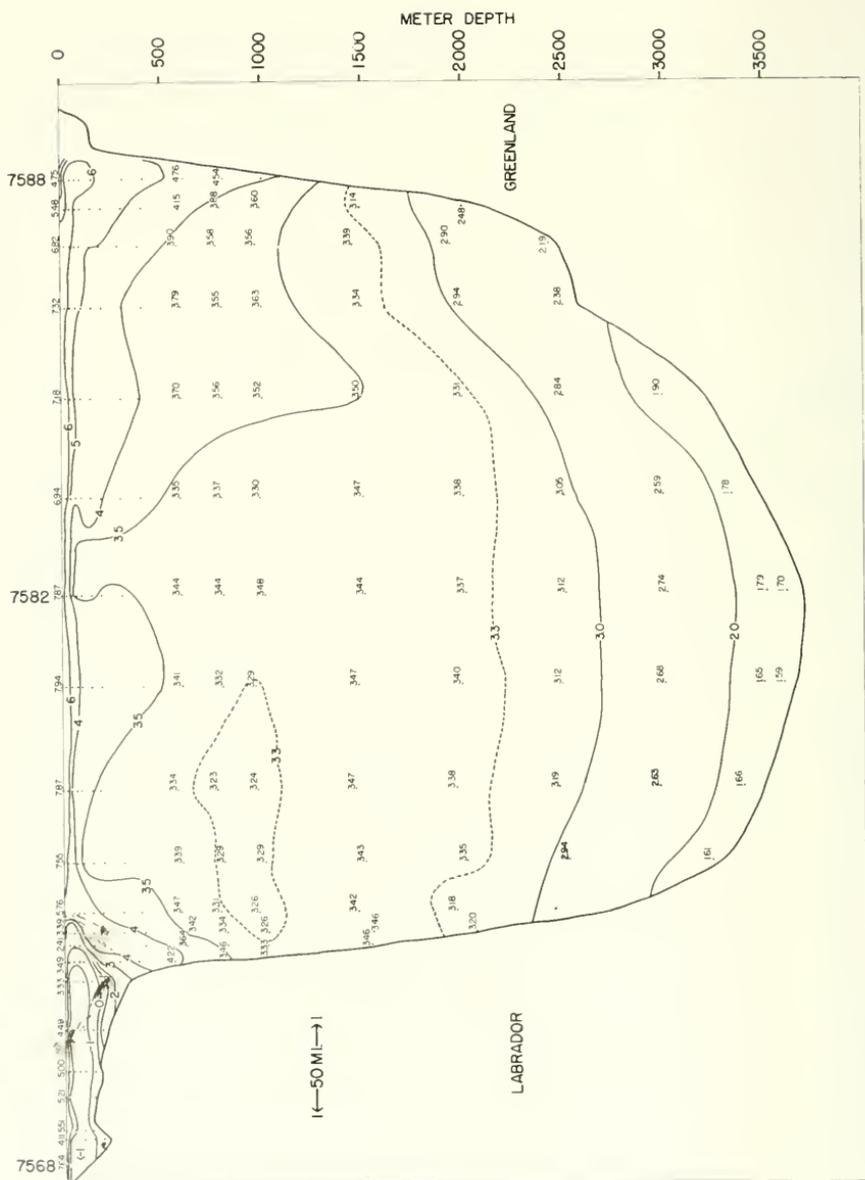
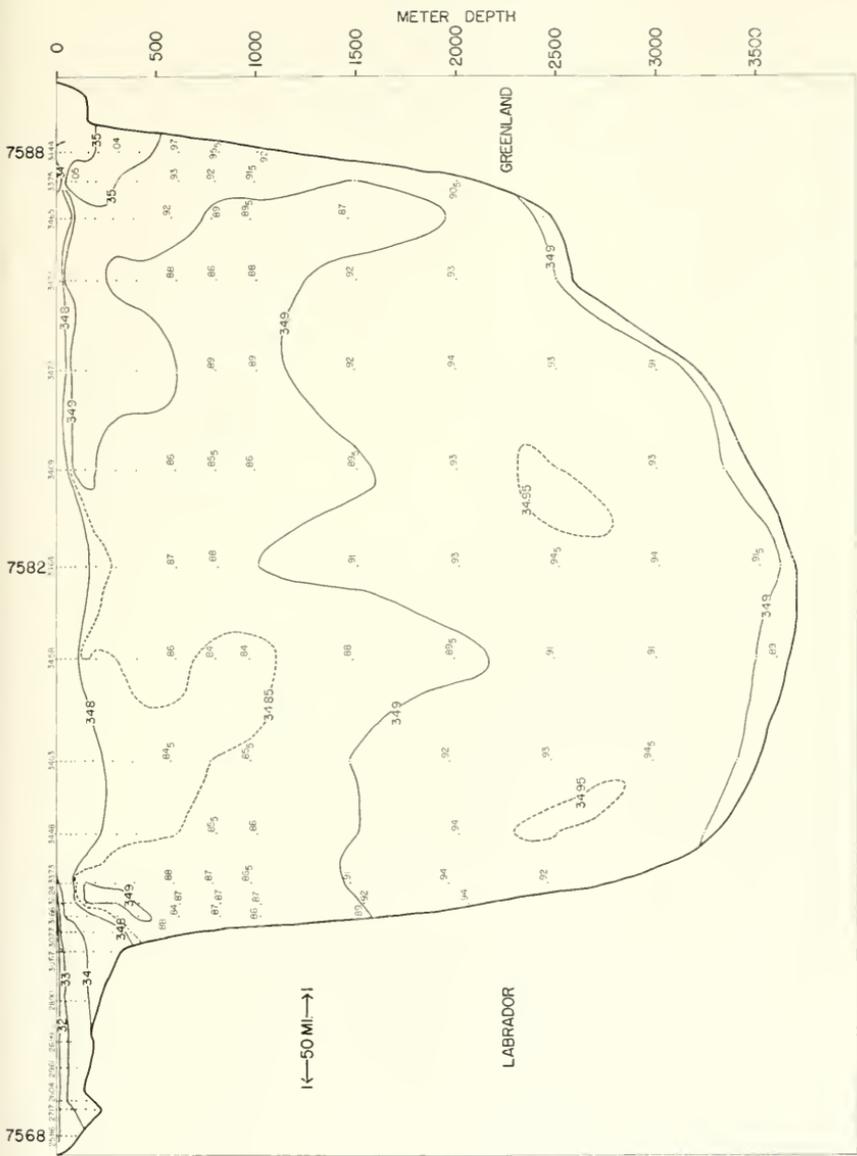


FIGURE 42. Temperature distribution along section between South Wolf Island, Labrador and Cape Farewell, Greenland 10-13 July 1960.



was below normal and the Trminger Current component had a large positive anomaly.

In 1959, the net volume transport above the reference surface between Cape Farewell and South Wolf Island was computed to be 2.37 northwesterly. In 1960, this net transport was computed to be 1.91 also northwesterly.

Analysis of the intermediate water and deep water of the Labrador Sea section, after the manner described in Bulletin 42 of this series, gave the following characteristic values for 1959 and 1960:

	1959		1960	
	Tempera- ture	Salinity	Tempera- ture	Salinity
Intermediate water. . . . .	3. 36	34. 83 <sub>5</sub>	3. 37	34. 87 <sub>0</sub>
2,000 meters. . . . .	3. 19	34. 90 <sub>3</sub>	3. 17	34. 92 <sub>5</sub>
2,500 meters. . . . .	2. 84	34. 91 <sub>6</sub>	2. 94	34. 93 <sub>0</sub>
3,000 meters. . . . .	2. 37	34. 89 <sub>8</sub>	2. 43	34. 92 <sub>5</sub>
3,500 meters. . . . .	1. 70	34. 87 <sub>8</sub>	1. 72	34. 91 <sub>0</sub>

The values of  $\sigma_t$  corresponding to the average temperature and average salinity have been shown in figure 44 for the deep water levels for each year that the Labrador Sea section has been occupied since 1934. Differences between prewar and postwar means are not significant. Examination of temperatures and salinities show a small increase in both temperature and salinity from prewar means to postwar means with changes becoming less at greater depths. At 2,000 meters, the change in salinity was 0.006‰ and in temperature 0.06°. At deeper levels the changes were not significant.

In figure 45 the mean potential temperature of the deep water of the Labrador Sea is plotted against mean salinity for particular levels. Ellipses show the standard deviation of individual postwar years from the 13-year mean 1948-60.

Assumptions occasionally must be made as to the ratio of the draft of a berg to its height above water. If the berg is homogeneous and floating with one-eighth of its mass above the water line this ratio would be 7/1 for a berg of rectangular shape or tabular with a flat top and vertical sides. If it is spherical in shape, the ratio is 3.5/1. Even smaller values exist for odd shapes like a mount or pinnacle on a raft or with extensive ledges. This ratio has frequently been assumed to be 5 or 6 to 1 for average bergs. Additional experience indicates that an average figure is nearer that for a sphere than that for a rectangular shape. This emphasizes the need for considering the total vector of forces moving bergs, that is, the effect of wind and water forces.

During the second survey, a study of the wind effect on icebergs was made with Lieut. (jg.) T. F. Budinger, USCG, as project officer. The primary objective of the study was to determine the direct effect of the wind and the indirect effect of the wind driven current on the movement of icebergs and thereby improve iceberg movement for-

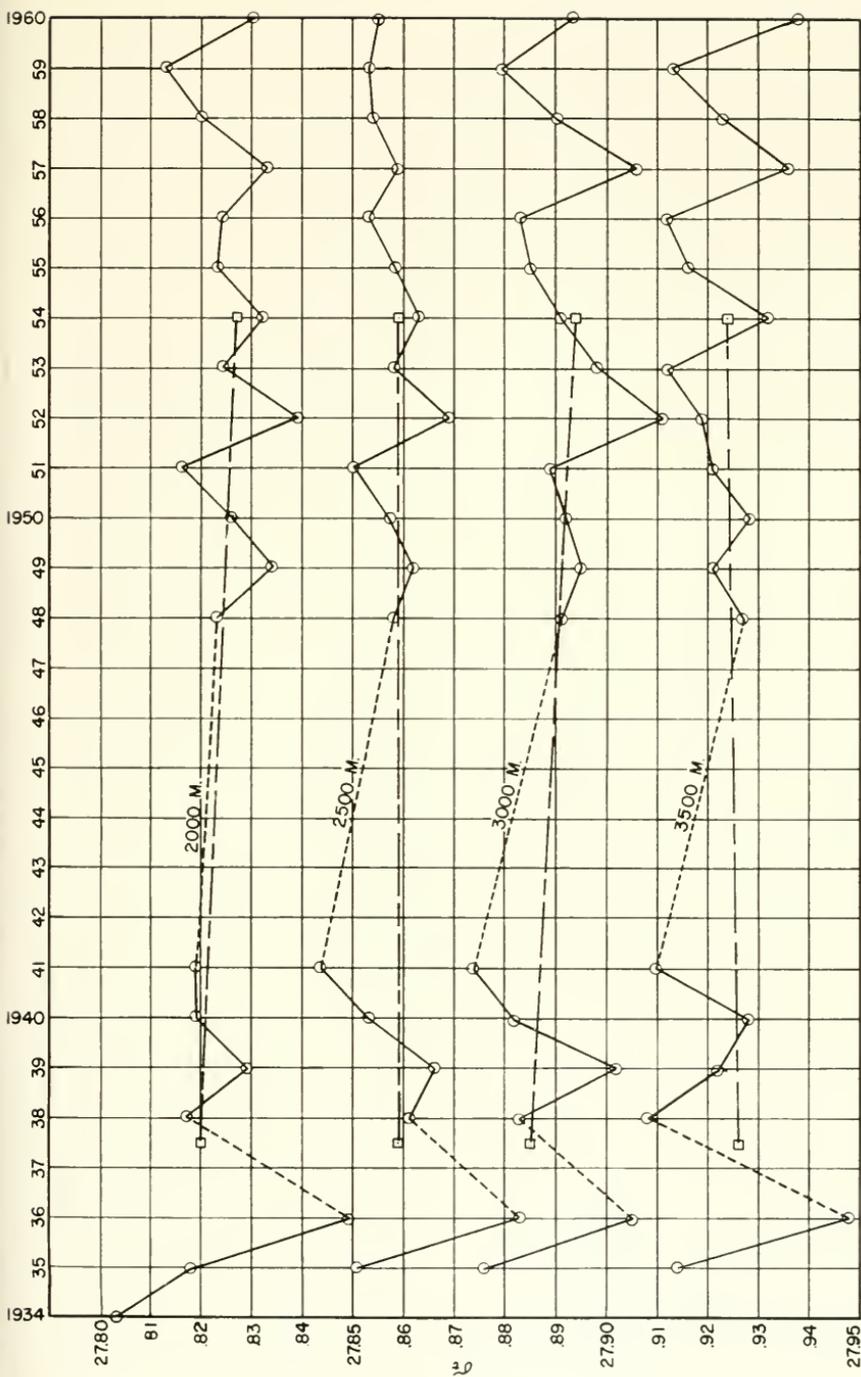


FIGURE 44.—Year-to-year variations in the deep water of the Labrador Sea as represented by the value of  $\sigma_t$  corresponding to the average temperature and salinity for the year.

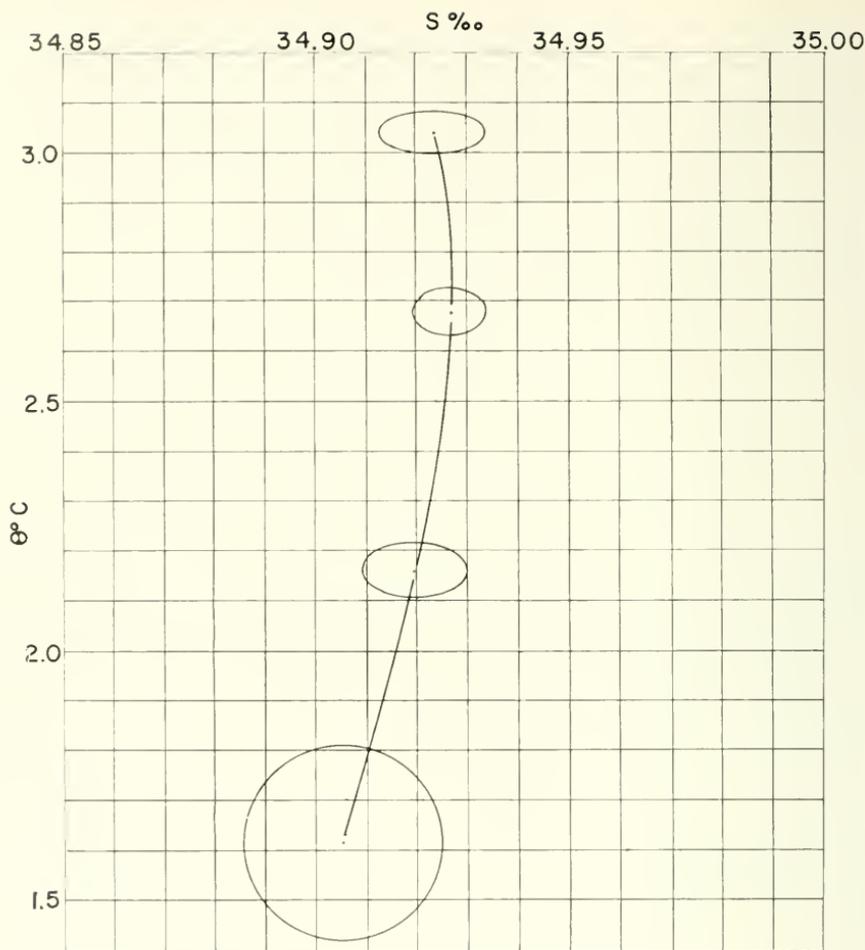


FIGURE 15.—Potential temperature-salinity relationship for the deep water of the Labrador Sea. Ellipses show standard deviation of postwar years from the 13-year mean 1948-60.

casting techniques. A secondary objective was to investigate Ekman's empirical equation for the velocity of a wind driven current.

To accomplish these objectives, the following measurements were made: Wind velocity by means of automatic and hand held wind measuring devices; ship's position by means of loran; surface current by means of a geomagnetic electrokinetograph and surface and sub-surface currents by means of plotting the drift of three parachute drogues. The observation period lasted 83 hours during which time 66 loran fixes were obtained, 16 geomagnetic electrokinetograph surface current determinations were made, hourly wind velocity measurements taken, and half hourly radar ranges of iceberg and drogue reflectors recorded.

The parachute drogue measurements consisted of simultaneous radar tracking of three drogues relative to the iceberg. The drogues were placed approximately at the surface, at 250 feet, and at 500 feet. Each was suspended from a float consisting of a styrofoam float pierced by a 20-foot aluminum spar equipped with a battery powered flashing light and radar reflector. Unfortunately, the radar reflectors did not work as well as was expected and maximum radar range was 5 miles with occasional maximum ranges of less than 1 mile in choppy seas. Nevertheless, successful observations were taken and data recorded. At the present time it is felt that although some interesting results were obtained, the amount of data is insufficient to present a conclusive result. It is hoped that further studies can be made and more definite conclusions reached.

With reasonable assumptions regarding above water and below water areas and drag coefficients applied to theoretical hydrodynamical arguments an expression for windage was derived as:

$$\text{Iceberg velocity} = 0.023 \text{ wind.}$$

This was in good agreement with the preliminary data which indicate that the relation between wind speed and the movement imparted to an iceberg for wind speeds between 10 and 50 knots is linear and given by: Iceberg Vel. =  $0.03K \cdot W$  with the movement directed  $50^\circ$  to the right of the surface wind.<sup>7</sup> The "shape" constant,  $K$ , varies from 0.7 for blocky or massive bergs to 1.4 for drydock or winged icebergs,  $W$  is the wind speed. As part of this investigation, a re-evaluation of the constant in Ekman's equation for the velocity of wind driven currents was accomplished by a rapid reduction of 77,828 observations made by lightships along the North American east coast. The value derived, 0.013, is in excellent agreement with Ekman's.

## SUMMARY

1. Precise chlorinity determinations together with Wenner salinity bridge measurements of a collection of large samples of actual surface sea water samples over the range of salinities encountered in the Ice Patrol operating area has permitted a good calibration of the salinity bridge, an assessment of the errors involved in the use of several batches of Copenhagen standard water as standards of conductivity, and the determination of corrections to the previously published salinities of samples collected by the Ice Patrol during the period 1948 to 1959. These corrections and other corrections to salinity-dependent functions are tabulated.

2. Five dynamic topographic charts resulting from the four surveys made in the Grand Banks region during the season and the postseason occupation of the Bonavista triangle have been presented.

<sup>7</sup> Budinger, T. F. Wind Effect on Icebergs 1960, unpublished.

3. The temperature-salinity characteristics of the three water masses found in the Grand Banks region during the period from 1948-60 have been compared with conditions found during the 1960 season and with the means for the prewar period 1934-41.

4. During the first survey, two sections were extended southward from the Grand Banks to completely cross the Atlantic Current. For one of these sections, the volume and heat transports and mean temperature of the several branches of the Atlantic Current crossing the section have been presented in comparison with similar values found during the occupations of this section in 1938, 1950, and 1958.

5. The volume and heat transports and mean and minimum observed temperatures found during 23 occupations of sections across the Labrador Current in 1959 and 18 occupations of such sections in 1960 have been presented in comparison with tentative seasonal normals.

6. New tentative seasonal normal relationships for the Labrador Current at sections T, U, and W have been presented.

7. The characteristic temperature and salinity of the intermediate and deep waters of the Labrador Sea from the 1960 postseason cruise have been presented in comparison with earlier values, and the year to year fluctuations in density of the deep water at specific levels has been shown for all occupations of the Labrador Sea section from 1934 to 1960.

8. Some experiments using parachute drogues in measuring the effect of wind on the movement of icebergs have been described.

## Appendix I

### EXACT CHLORINITY DETERMINATIONS

By Lieut. (jg.) T. F. Budinger

*General:* On 8 February 1960 an investigation was initiated to determine the exact halogen content in 12 sea-water samples taken from the surface waters of the Grand Banks and contiguous areas of the North Atlantic Ocean. These samples were obtained by the International Ice Patrol Oceanographic Unit in 1959 and stored in polyethylene containers of ca. 12-gallon capacity until February 1960 when they were transferred to chemically clean containers of suitable size and quantities to allow distribution for calibration and analytical work by other investigators. This is a final technical report on the project completed 28 February 1960.

*Techniques:* Twelve Ice Patrol samples ranging in salinity from about 31‰ to 36.4‰ (intervals of approximately 0.5‰) were analyzed together with two Normal Water samples (batches P-28 and P-29) prepared by the Hydrographical Laboratories in Copenhagen, Denmark. The analyses were conducted by two very precise techniques which can be made complimentary one to the other thus allowing intercomparison and confidence, or doubt, as the case might be, in the final results. The Ice Patrol surface samples were analyzed by a comparison technique with the Normal Water, P-28. The procedure is essentially the Volhardt technique as modified by Dittmar (1884),<sup>1</sup> S. P. L. Sørensen (1902),<sup>2</sup> and Bjørn-Andersen (1911).<sup>3</sup> The resulting weight titration technique gives high precision commensurate with the size of sample, strength of titration liquids, and analytical care. An extremely precise technique following the same general procedure as developed by the investigators listed above was used by Miss I. Knudsen (1937)<sup>4</sup> in comparing Urnormal 1937 water with P, P-11, and P-15 batches. The technique employed in the Ice Patrol analyses is a slight modification of the above procedures to accommodate the available apparatus at the Marine Biological Laboratories in Woods Hole, Mass. The criteria for choice of solution strengths and quantities of samples were to maintain the highest theoretical precision in accomplishing replicate analyses of 12 samples and to allow intercomparison of the comparison analyses with "atomic weight silver" analyses. The second procedure used for control was pure silver analyses of the chlorinity of P-28 and Ice Patrol sample No. 1 as defined subsequent to the change in atomic weights of silver and chlorine in 1940.

Other techniques have been used for the precise analysis of sea-water chlorinity. Deacon<sup>5</sup> and Thompson and Wirth<sup>6</sup> used pure

NaCl as a standard; Herman <sup>7</sup> and Bather and Riley <sup>8</sup> have reported a potentiometric method which is very rapid and precise.

*Comparison Technique:* About 50 grams of sea water of known approximate chlorinity were transferred to a 125-ml., glass-stoppered Erlenmeyer flask. A slight excess of acidified strong silver nitrate solution, usually about 53 grams, was transferred to a similar vessel. The silver nitrate solution, hereafter referred to as the AgNO<sub>3</sub>(strong), was prepared to be equivalent to ca. 18.29‰ Cl and later analyzed as 18.278‰ Cl equivalent. In a darkened room the two solutions were combined, mixed, and stored in a 500-ml. Erlenmeyer for ca. 10 hours. The total volume including washing from transferring was 250 to 300 ml. Usually four samples were run through at one time. The solution was decanted onto a filter and the precipitate washed five times with acidified conductivity water. Final filtering was accomplished by slight suction and the precipitate washed two times with conductivity water. The filtrate, ca. 500 ml., was transferred to a 600 ml. beaker and the volume reduced to 20-50 ml. on a water bath. After some experimentation, very efficient evaporation was accomplished by unattended air baths heated by properly adjusted Fischer burners. After this volume reduction, the slight excess of silver nitrate was titrated volumetrically with ammonium thiocyanate (ca. 0.05 N) and back titrated with weak silver nitrate using 2 ml. of a saturated, acidified solution of Ferric Alum (FeNH<sub>4</sub>(SO<sub>4</sub>)<sub>2</sub> · 12 H<sub>2</sub>O) as indicator. From the quantity of NH<sub>4</sub>SCN, weak AgNO<sub>3</sub> and the established ratios of these volumes to a unit mass of AgNO<sub>3</sub>(strong), the exact amount of AgNO<sub>3</sub>(strong) corresponding to a weighed amount of sea-water sample was computed. The expression for chlorinity in sea water used for this comparison technique is:

$$\text{Cl } \text{‰} = 19.374 \frac{P-28 \cdot S_c}{\text{Sample} \cdot S_p}$$

where P-28 and "Sample" are the masses of Normal water and the sample respectively; and Sp and Sc the amounts of silver nitrate required to precipitate all of the halides in the Normal water and the sample, respectively. The value 19.374 is the nominal chlorinity of P-28.

All weighings were double weighings and buoyancy corrections were made only for the "exact" technique described below as in the comparison technique the corrections for buoyancy are always positive in the numerator and denominator and are approximately the same for normal water and sea water as their density is almost the same. All apparatus were calibrated against an "S" class 10 gram mass, checked by the National Bureau of Standards. All solutions were made up with reagent grade chemicals, nitrogen oxide free HNO<sub>3</sub>, conductivity water, and sealed with an evaporation proof technique. Care was

taken to avoid light exposure. The amount of excess  $\text{AgNO}_3$  adhering to the precipitate of  $\text{AgCl}$  was found negligible except in early trials when a large excess was present. The overall precision for the replicate analyses shown in table 1 is less than  $\pm 0.002\%$  in chlorinity and the accuracy is safely estimated the same magnitude as will be seen by examination of the pure silver analyses.

The ratios giving the relative strength of all solutions were determined by multiple analyses with good precision:

1. Strength of the weak titration liquids in relation to one another:

$$\frac{\text{ml. of } \text{NH}_4\text{SCN}}{\text{ml. of } \text{AgNO}_3(\text{weak})} = 1.003 (\pm 0.001)$$

(mean of 5 determinations)

2. Strength of weak titration liquids by comparison to  $\text{AgNO}_3$  strong:

$$\frac{\text{AgNO}_3(\text{strong})}{\text{ml. } \text{NH}_4\text{SCN}} = \frac{0.0967 \text{ gm in air/milliliter}}{(\pm 0.0001)}$$

(mean of 8 determinations)

3. Strength of  $\text{AgNO}_3$  strong by comparison with P-28 Normal Water:

$$\frac{\text{P-28}}{\text{AgNO}_3} = 0.94347 (\pm 0.00008)$$

(mean of 6 determinations)

*Absolute "Atomic weight silver" technique:*

Based on the new definition of chlorinity:

"The number giving the chlorinity in grams per kilogram of a sea-water sample is identical with the number giving the mass in grams of "atomic weight silver" just necessary to precipitate the halogens in 0.3285233 kilogram of the sea-water sample."

$$\text{Cl}^\circ/\text{oo} = 0.3285233 \text{ gm silver necessary}$$

The values for P-28 Normal Water and International Ice Patrol sample No. 1 waters were determined using pure U.S. Mint Silver. The last such analysis of Normal water was made in 1938 by O. Hönigschmid <sup>4</sup> reported for Urnormal 1937.

About 75 gms. of sample were weighed in a 125 ml. Erlenmeyer. For each known mass of sample a very slight (ca. 10 mg.) excess of pure silver was weighed. The silver was in the form of small pellets. The pellets (ca. 1-3 mm. in diameter) were cleaned with acetone, boiled and soaked in 10 batches of conductivity water, examined

individually under magnification and dried at 225° C. before weighing. All silver masses were determined by double weighings on a Micro balance (sensitivity 1/200 mg.) and corrected for buoyancy, 0.01‰ impurity, and probable moisture pick-up during weighing period. To each silver sample ca. 20 ml. conc. HNO<sub>3</sub> (nitrogen oxide free) were added and after slight heating on a water bath the AgNO<sub>3</sub> solution was brought up to ca. 200 ml. with conductivity water. To these solutions, P-28 and sample No. 1 were added and mixed. All work was accomplished in darkness and conductivity water was used throughout. The procedure thereafter followed that of the comparison technique with the exception that the mixtures were repeatedly shaken over a period of 12 hours before filtering and very little (ca. 1 ml. of NH<sub>4</sub>SCN) was required by the excess silver nitrate.

*Results:* The results of these analyses are shown in the following table. The examination of P-28 by pure silver yielded values in remarkable agreement with the stated value:

P-28 by Silver	
19.3738	
19.3747	Mean = 19.374 <sub>3</sub>
	Stated value = 19.374

Silver analyses of Ice Patrol sample No. 1 compare very favorably with the results of the comparison technique:

By comparison	By silver
19.390 <sub>8</sub>	19.389 <sub>6</sub>

As a further check on the entire comparison technique and solution ratios, P-29 Normal Water was run as an unknown and confidence in all of the results may be inferred from the agreement between the stated value and the determined chlorinity:

By comparison	Stated value
19.369 <sub>8</sub>	19.370

As a final check, the determinations were examined to see if the amount of excess AgNO<sub>3</sub> caused random or directional deviation from the mean. The random deviation noted indicates that neither a determinate solution ratio error nor an indeterminate washing technique error exists. It is believed the precession could be improved slightly had weight burettes and larger samples been used. The precision of the chlorinity values given for Ice Patrol samples is ±0.002‰ Cl and the accuracy is believed to be very nearly ±0.002‰ Cl.

# Chlorinity and Salinity

## International Ice Patrol Sea-water Samples

Sample	Chlorinity $\frac{\text{g}}{\text{kg}}$ determinations	Chlorinity ‰ mean*	Precision	Salinity ‰
7.....	17. 2026 17. 2035 17. 2008	17. 2023	±0.001	31. 080
15.....	17. 5079 17. 5123	17. 5101	±0.002	31. 636
11.....	17. 6976 17. 7027	17. 7001	±0.002	31. 979
14.....	17. 9711 17. 9709	17. 9710	±0.001	32. 468
3.....	18. 2860 18. 2861	18. 2860	±0.000	33. 036
10.....	18. 5620 18. 5606	18. 5613	±0.001	33. 533
5.....	18. 8269 18. 8249	18. 8259	±0.001	34. 011
6.....	19. 0862 19. 0860	19. 0861	±0.000	34. 480
1.....	19. 3890 19. 3926	19. 3908	±0.002	35. 030
No. 1 Silver.....	19. 3913 19. 3879	19. 3896	±0.002	35. 028
9.....	19. 6721 19. 6737	19. 6729	±0.001	35. 540
8.....	20. 1623 20. 1658	20. 1640	±0.002	36. 426
P-29.....	19. 3658 19. 3695	19. 3698	±0.003	34. 992
P-28 Silver.....	19. 3741 19. 3738 19. 3747	19. 3743	±0.0005	35. 001

\*Fourth decimal not significant.

### REFERENCES

1. Dittmar, W. 1884. Report on researches into the composition of ocean water collected by H.M.S. *Challenger*. Challenger Repts., Physics and Chem., vol. 1, p. 4, 1884.
2. Forch, Carl, Martin Knudsen, and S. P. L. Sørensen. 1902. Bericht über die Konstantenbestimmungen zur Aufstellung der hydrographischen Tabellen. *Mémoires de l'Académie Royale des Sciences et des Lettres de Danemark, Copenhague, Série 6, Section des Sciences*, vol. 12, No. 1, 1902.
3. Björn-Andersen, H. 1912. Exact determination of the chlorine in some samples of sea water from the Mediterranean. Rpt. on the Danish Oceanographical Expeditions 1908-1810. vol. 1, sec. 3. p. 195, 1902.
4. Jacobsen, J. P. and M. Knudsen. 1940. Urnormal 1937 or Primary Standard Sea-Water 1937. Association D'Océanographie Physique, Publ. Scientifique No. 7, 1940.
5. Deacon, G. E. R. 1933. An examination of 'eau de mer normale P-13, 28-VI-1929. *Journal du Conseil*, vol. 8, p. 59, 1933.
6. Thompson, T. G. and H. E. Wirth. 1931. The specific gravity of sea water at zero degrees in relation to the chlorinity. *Journal du Conseil*, vol. 6. No. 2, p. 232, 1931.
7. Hermann, F. 1951. High accuracy potentiometric determination of the chlorinity of sea water. *Journal du Conseil*, vol. 17, No. 3, p. 223, 1951.
8. Bather, J. M. and J. P. Riley, 1953. The precise and routine potentiometric determination of the chlorinity of sea water. *Journal du Conseil*, vol. 18, No. 3, p. 277, 1953.

## Appendix 2

### Data on origin of 12-gallon polyethylene drum samples

Drum	Origin				Surface salinity at time of collection	S by Cl	Date drum sample divided
	Station	N. lat.	W. long.	Date of collection			
7	7244	48-25	52-14	2 Aug. 1959	31.07	31.080	15 Feb. 1960
15	7160	48-45.5	52-47	16 June 1959	31.60	31.636	16 Feb. 1960
11	7254	48-10	49-43	3 Aug. 1959	31.69	31.979	16 Feb. 1960
14	6899	43-00	50-14	6 Apr. 1959	32.47	32.468	16 Feb. 1960
3	6929	44-13	49-23	12 Apr. 1959	33.03	33.036	15 Feb. 1960
10	6910	42-02.5	47-49	9 Apr. 1959	33.54	33.533	16 Feb. 1960
5	6924	44-00	48-30	11 Apr. 1959	34.00	34.011	17 Feb. 1960
6	6922	43-41	47-19	11 Apr. 1959	34.46	34.480	16 Feb. 1960
1	6991	41-31.5	50-14	2 May 1959	34.80	35.030	16 Feb. 1960
	7028	44-52	45-18	8 May 1959	35.25		
9	6995	41-06	48-14	3 May 1959	35.28	35.540	17 Feb. 1960
	7004	42-39.5	46-51	5 May 1959	35.75		
8	6905	41-05.5	50-12	7 Apr. 1959	36.30	36.426	17 Feb. 1960

For the most part the column headings are self explanatory. The surface salinity at the time of collection of the large sample was that of a sample collected by Nansen bottle as measured by the Coast Guard Oceanographic Unit's Wenner bridge whereas the large sample was taken from the ship's fire main after thorough flushing of the system. While most of the differences between the surface salinity at the time of collection and the subsequent salinity by Cl are small, drums 11 and 8 showed large differences. In the case of drum 11, there was a considerable salinity gradient near the surface so that the fact that the fire main intake was below the surface may explain the higher drum salinity. No such explanation can be offered for the large difference in the case of drum 8 which leaves the possibility of inadequate flushing of the fire main system (this was one of the first drums collected in 1959 and personnel had little previous experience in this method of collection), contamination from other than sea water sources, and excessive evaporation. Since each of the last two possibilities depend on a leaky seal, they seem improbable because in the case of a leaky seal the contamination from rain water would probably greatly reduce the salinity. One other drum which did have a leaky seal changed from approximately 36.0‰ upon collection on 10 April 1959 to 33.22‰ in February 1960. Confidence in the seal is justified by the fact that at the end of the first survey, before the drum was put ashore for storage, a small sample was withdrawn and measured approximately 36.39‰ by conductivity. Drums 1 and 9 were composites, each being mixtures of about equal parts of drums which were about 1/4‰ on either side of the desired salinities.

## TABLE OF OCEANOGRAPHIC DATA

The data collected in 1960 are tabulated below. The individual station headings give the station number, date, geographical position, depth of water and dynamic height of the sea surface used in the construction of the dynamic topographic charts shown in figures 24, 25, 26, 27, 28, and 41. The depths of water are rough approximations, being the uncorrected sonic soundings based on a sounding velocity of 800 fathoms per second and containing an additional mechanical speed error of about 1/60. Where the depths of scaled values are enclosed in parentheses, the data are based on extrapolated vertical distribution curves of temperature or salinity or both. Asterisks appearing before observed temperatures indicate that these temperatures were determined from the depth of reversal and the corrected reading of an unprotected thermometer. The symbol  $\sigma_t$  signifies 1000 (density-1) at atmospheric pressure and temperature  $t$ .

# TABLE OF OCEANOGRAPHIC DATA

Observed values			Scaled values			Observed values			Scaled values				
Depth, meters	Temperature, °C	Salinity, ‰	Depth, meters	Temperature, °C	Salinity, ‰	σ <sub>t</sub>	Depth, meters	Temperature, °C	Salinity, ‰	σ <sub>t</sub>			
Station 7284; 2 April; 43°55' N., 49°15' W.; depth 159 m.; dynamic height						Station 7288; 3 April; 42°38.5' N., 48°35' W.; depth 3,283 m.; dynamic height 970.983							
0	0.39	33.10	0	0.39	33.10	26.56	0	5.05	33.81	0	5.05	33.81	26.74
25	0.43	33.15	25	0.43	33.15	26.61	25	5.05	33.80	25	5.05	33.80	26.74
50	0.47	33.18	50	0.47	33.18	26.63	50	6.65	34.27	50	6.51	34.17	26.85
75	0.50	33.18	75	0.50	33.18	26.62	80	5.67	34.32	75	5.82	34.30	27.05
100	0.58	33.25	100	0.58	33.25	26.68	110	5.54	34.32	100	5.58	34.31	27.08
							166	6.39	34.77	150	6.16	34.66	27.29
							220	6.21	34.86	200	6.28	34.84	27.41
							330	5.03	34.87	300	5.19	34.86	27.56
							438	4.85	34.97	400	4.90	34.95	27.67
							655	4.42	34.98	600	4.52	34.97	27.73
							872	4.00	34.96	800	4.14	34.96	27.76
							1,089	3.79	31.95	1,000	3.80	34.95	27.79
							1,318	4.38	34.99	1,250	4.23	34.97	27.76
							1,592	3.51	34.94	1,500	3.81	34.95	27.79
							1,670	3.52	34.94	1,750	3.49	34.93	27.80
							1,918	3.43	34.94	2,000	3.36	34.93	27.81
							2,169	3.23	34.94	2,250	3.17	34.93	27.83
							2,420	3.05	34.93	2,500	2.98	34.92	27.85
							2,921	2.65	34.91	(3,000)	2.60	34.90	27.86
Station 7285; 2 April; 43°36' N., 48°52.5' W.; depth 2,286 m.; dynamic height 970.983						Station 7289; 3 April; 42°17.5' N., 48°36' W.; depth 3,438 m.; dynamic height 970.984							
0	0.32	33.14	0	0.32	33.14	26.60	0	5.34	33.87	0	5.34	33.87	26.76
25	0.34	33.13	25	0.34	33.13	26.59	105	5.20	34.17	25	5.31	33.92	26.81
51	0.34	33.16	50	0.35	33.15	26.62	158	4.47	34.49	50	5.28	34.00	26.87
75	0.70	33.49	75	0.70	33.49	26.86	212	4.56	34.66	75	5.25	34.07	26.93
101	1.15	33.80	100	1.15	33.79	27.08	238	4.88	34.77	100	5.22	34.15	27.00
151	2.28	34.30	150	2.27	34.29	27.40	264	4.91	34.82	150	4.56	34.42	27.28
202	2.77	34.54	200	2.75	34.52	27.55	290	5.02	34.87	200	4.53	34.60	27.43
303	3.41	34.72	300	3.40	34.70	27.60	317	5.11	34.91	300	5.04	34.88	27.40
414	3.82	34.83	400	3.80	34.82	27.69	526	4.42	34.92	400	4.84	34.90	27.63
637	3.70	34.87	600	3.72	34.86	27.72	732	4.07	34.95	600	4.30	34.92	27.71
840	3.61	34.85	800	3.61	34.84	27.72	941	3.82	34.92	800	3.98	34.93	27.75
1,038	3.55	34.84	1,000	3.56	34.83	27.71	1,118	3.59	34.89	1,000	3.75	34.91	27.76
1,526	3.55	34.87	1,500	3.55	34.86	27.74	1,307	3.98	34.93	1,250	3.86	34.91	27.75
							1,572	3.41	34.91	1,500	3.67	34.91	27.77
							1,690	3.46	34.92	1,750	3.44	34.91	27.79
							1,920	3.38	34.92	2,000	3.34	34.92	27.81
							2,202	3.26	34.93	2,250	3.22	34.92	27.82
							2,470	3.08	34.95	2,500	3.05	34.93	27.84
							2,937	2.67	34.91	3,000	2.58	34.90	27.86
							3,133	2.41	34.91				
Station 7286; 3 April; 43°19' N., 48°32' W.; depth 2,834 m.; dynamic height 971.017						Station 7290; 4 April; 42°00' N., 48°34' W.; depth 3,475 m.; dynamic height 971.132							
0	7.70	34.55	0	7.70	34.55	26.97	0	12.28	35.42	0	12.28	35.42	26.87
21	7.87	34.54	25	7.88	34.54	26.95	26	12.30	35.41	25	12.30	35.41	26.87
42	7.94	34.56	50	7.93	34.56	26.96	52	12.33	35.42	50	12.32	35.41	26.86
62	7.90	34.57	75	7.85	34.55	26.96	78	12.40	35.45	75	12.40	35.44	26.87
83	7.79	34.55	100	7.69	34.55	26.98	105	12.28	35.42	100	12.31	35.41	26.87
123	7.47	34.57	150	7.00	34.57	27.10	156	11.81	35.36	150	11.90	35.36	26.91
166	7.91	34.58	200	5.75	34.57	27.25	208	10.78	35.33	200	11.05	35.33	27.03
249	4.86	34.51	300	6.33	34.87	27.42	313	10.97	35.33	300	9.95	35.32	27.23
333	6.60	34.94	400	5.90	34.94	27.54	416	6.36	34.99	400	6.90	35.03	27.47
498	5.22	34.95	600	4.62	34.95	27.70	625	5.13	34.99	600	5.26	34.98	27.65
665	4.64	34.97	800	4.39	34.95	27.73	830	4.52	35.01	800	4.61	35.00	27.74
841	4.21	34.96	1,000	3.98	34.95	27.77	1,034	3.83	34.94	1,000	3.94	34.94	27.76
1,040	3.95	34.96	1,250	3.85	34.90	27.74	1,294	3.84	34.96	1,250	3.83	34.95	27.78
1,246	4.84	34.91	1,500	3.61	34.90	27.77	1,551	3.84	34.94	1,500	3.86	34.94	27.77
1,588	3.54	34.92	1,750	3.52	34.92	27.79	1,811	3.57	34.95	1,750	3.65	34.94	27.79
1,834	3.53	34.94	2,000	3.46	34.94	27.81	2,103	3.46	34.96	2,000	3.49	34.95	27.82
2,086	3.41	34.95					2,374	3.22	34.95	2,250	3.33	34.95	27.83
							2,508	3.03	34.95	2,500	3.10	34.94	27.85
							3,108	2.57	34.93	3,000	2.69	34.93	27.88
							3,407	2.15	34.94				
Station 7287; 3 April; 42°54.5' N., 48°29.5' W.; depth 3,054 m.; dynamic height 971.011						Station 7291; 4 April; 42°00' N., 48°34' W.; depth 3,475 m.; dynamic height 971.132							
0	4.81	33.75	0	4.81	33.75	28.72	0	12.28	35.42	0	12.28	35.42	26.87
24	4.83	33.74	25	4.81	33.74	28.72	26	12.30	35.41	25	12.30	35.41	26.87
72	4.44	33.91	50	4.70	33.79	28.77	52	12.33	35.42	50	12.32	35.41	26.86
99	5.19	34.17	75	4.43	33.84	28.84	78	12.40	35.45	75	12.40	35.44	26.87
150	4.39	34.31	100	5.19	34.16	27.01	105	12.28	35.42	100	12.31	35.41	26.87
200	4.74	34.58	150	4.39	34.31	27.21	156	11.81	35.36	150	11.90	35.36	26.91
299	5.17	34.82	200	4.74	34.58	27.39	208	10.78	35.33	200	11.05	35.33	27.03
350	5.17	34.96	300	5.17	34.81	27.52	313	10.97	35.33	300	9.95	35.32	27.23
588	4.47	34.97	400	5.16	34.95	27.64	416	6.36	34.99	400	6.90	35.03	27.47
708	4.20	34.98	600	4.45	34.96	27.73	625	5.13	34.99	600	5.26	34.98	27.65
1,107	3.84	34.95	800	4.19	34.97	27.77	830	4.52	35.01	800	4.61	35.00	27.74
1,229	4.53	34.92	1,000	3.96	34.95	27.77	1,034	3.83	34.94	1,000	3.94	34.94	27.76
1,485	3.54	34.97	1,250	3.73	34.94	27.76	1,294	3.84	34.96	1,250	3.83	34.95	27.78
1,663	3.48	34.93	1,500	3.55	34.96	27.82	1,551	3.84	34.94	1,500	3.86	34.94	27.77
1,908	3.38	34.94	1,750	3.42	34.93	27.81	1,811	3.57	34.95	1,750	3.65	34.94	27.79
2,156	3.24	34.94	2,000	3.27	34.93	27.82	2,103	3.46	34.96	2,000	3.49	34.95	27.82
2,404	3.09	34.95	2,250	3.18	34.94	27.84	2,374	3.22	34.95	2,250	3.33	34.95	27.83
			(2,500)	3.03	34.94	27.86	2,508	3.03	34.95	2,500	3.10	34.94	27.85
							3,108	2.57	34.93	3,000	2.69	34.93	27.88
							3,407	2.15	34.94				

# TABLE OF OCEANOGRAPHIC DATA—Continued

Observed values			Scaled values				Observed values			Scaled values			
Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	$\sigma_t$	Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	$\sigma_t$
Station 7291; 4 April; 41°39' N., 48°31' W.; depth 3,585 m.; dynamic height 971.095							Station 7294; 5 April; 40°29.5' N., 48°30.5' W.; depth 3,768 m.; dynamic height 971.171						
0	14.36	35.92	0	14.36	35.92	26.83	0	16.98	36.40	0	16.98	36.40	26.61
20	14.41	35.92	25	14.38	35.91	26.82	25	17.00	36.39	25	17.00	36.40	26.60
41	14.45	35.93	50	14.39	35.92	26.83	50	17.02	36.40	50	17.02	36.40	26.60
61	14.44	35.92	75	14.40	35.91	26.82	75	16.37	36.23	75	16.37	36.23	26.62
82	14.45	35.92	100	14.47	35.91	26.80	100	15.74	36.10	100	15.74	36.10	26.66
122	14.54	35.93	150	14.45	35.93	26.83	149	14.50	35.92	150	14.48	35.92	26.81
162		35.92	200	13.55	35.78	26.90	199	13.72	35.77	200	13.70	35.76	26.85
245	12.12	35.54	300	10.48	35.31	27.13	299	11.97	35.51	300	11.95	35.50	27.01
327	9.84	35.26	400	8.94	35.23	27.33	398	9.79	35.29	400	9.75	35.28	27.23
481	7.38	35.23	600	6.36	35.11	27.61	597	4.98	34.82	600	5.00	34.81	27.55
603	5.54	35.06	800	4.85	35.02	27.73	793	4.90	35.02	800	4.88	35.01	27.72
835	4.73	35.02	1,000	4.33	34.99	27.77	988	4.16	34.95	1,000	4.15	34.94	27.74
1,282	3.93		1,250	4.00	34.97	27.78	1,241	3.97	34.95	1,250	4.00	34.95	27.77
1,712	3.61	34.95	1,500	3.76	34.96	27.80	1,495	3.90	34.98	1,500	3.92	34.97	27.79
1,960	3.54	34.96	1,750	3.59	34.94	27.80	1,747	3.72	34.97	1,750	3.71	34.96	27.81
2,210	3.34	34.96	2,000	3.50	34.95	27.82	1,998	3.58	34.97	2,000	3.57	34.96	27.82
2,459	3.19	34.95	2,250	3.31	34.95	27.84	2,252	3.38	34.97	2,250	3.39	34.96	27.84
2,965	2.74	34.94	2,500	3.15	34.94	27.84	2,505	3.15	34.95	2,500	3.15	34.94	27.84
3,155	2.54	34.93	3,000	2.70	34.93	27.87	2,898	2.74	34.93	3,000	2.59	34.92	27.88
							3,144	2.38					
Station 7292; 4 April; 41°19' N., 48°32' W.; depth 3,310 m.; dynamic height 971.178							Station 7295; 5 April; 40°00' N., 48°26' W.; depth 4,846 m.; dynamic height 971.420						
0	13.76	35.74	0	13.76	35.74	26.82	0	17.50	36.38	0	17.50	36.38	26.46
26	13.77	35.75	25	13.77	35.74	26.82	22	17.50	36.38	25	17.50	36.37	26.46
51	13.73	35.74	50	13.74	35.73	26.82	46	17.51	36.37	50	17.49	36.36	26.45
77	13.69	35.74	75	13.70	35.73	26.83	68	17.46	36.37	75	17.20	36.25	26.44
102	13.69	35.73	100	13.70	35.73	26.83	92	16.54	36.18	100	16.45	36.17	26.56
152	11.74	35.28	150	11.83	35.31	26.88	137	15.85	36.15	150	15.60	36.11	26.71
203	11.05	35.18	200	11.10	35.18	26.91	182	14.92	36.02	200	14.64	35.97	26.82
305	9.47	35.15	300	9.54	35.14	27.15	271	13.50	35.76	300	13.35	35.70	26.88
406	7.58	35.01	400	7.67	35.02	27.36	339	13.14	35.64	400	12.50	35.65	27.01
610	5.44	35.02	600	5.63	35.01	27.63	470	11.65	35.68	600	8.75	35.22	27.35
811	4.68	35.01	800	4.73	35.01	27.73	583	9.05	35.26	800	6.35	35.10	27.60
1,010	4.25	34.99	1,000	4.26	34.99	27.77	674	7.32	35.07	1,000	4.85	34.96	27.68
1,261	3.85	34.94	1,250	3.86	34.94	27.77	801	6.34	35.11	1,250	4.47	34.97	27.73
1,509	3.67	34.95	1,500	3.68	34.94	27.79	911	4.98	34.97	1,500	4.08	34.97	27.78
1,720	3.57	34.94	1,750	3.55	34.93	27.79	1,630	3.90	34.98	1,750	3.76	34.97	27.81
1,968	3.47	34.95	2,000	3.42	34.94	27.82	1,868	3.75	34.97	2,000	3.60	34.96	27.82
2,216	3.30	34.95	2,250	3.26	34.94	27.83	2,106	3.60	34.97	2,250	3.50	34.96	27.83
2,466	3.11	34.94	2,500	3.19	34.93	27.83	2,342	3.46	34.97	2,500	3.31	34.95	27.83
2,958	2.70	34.93	3,000	2.68	34.92	27.87	2,820	3.09	34.95	3,000	2.95	34.94	27.86
3,156	2.58	34.92					3,210	2.83					
							3,598	2.54	34.93				
Station 7293; 4 April; 41°00' N., 48°32' W.; depth 3,262 m.; dynamic height 971.052							Station 7296; 5 April; 39°27.5' N., 48°26' W.; depth 5,413 m.; dynamic height 971.737						
0	6.96	33.93	0	6.96	33.93	26.59	0	17.56	36.47	0	17.56	36.47	26.52
26	6.94	33.96	25	6.95	33.95	26.62	25	17.56	36.47	25	17.56	36.47	26.52
52	7.85	34.37	50	7.72	34.33	26.81	50	17.59	36.47	50	17.59	36.47	26.51
78	9.04	34.78	75	8.80	34.72	26.95	75	17.58	36.47	75	17.58	36.47	26.51
104	9.53	34.99	100	9.21	34.94	27.02	100	17.59	36.47	100	17.59	36.47	26.51
155	8.05	34.81	150	8.24	34.81	27.15	149	17.60	36.48	150	17.60	36.47	26.52
208	7.07	34.80	200	7.25	34.81	27.26	209	17.60	36.48	200	17.60	36.47	26.52
312	5.50	34.80	300	5.69	34.79	27.44	305	17.60	36.47	300	17.16	36.47	26.62
413	4.43	34.80	400	4.72	34.86	27.56	584	14.24	35.87	600	13.90	35.81	27.81
622	4.43	34.95	600	4.45	34.92	27.70	767	10.25	35.33	800	9.67	35.28	27.82
827	4.54	35.01	800	4.54	34.99	27.74	945	7.03	35.11	1,000	6.27	35.09	27.61
998	4.00	34.94	1,000	4.01	34.96	27.78	1,180	5.16	35.04	1,250	5.41	35.01	27.66
1,248	3.83	34.96	1,250	3.84	34.95	27.75	1,412	4.28	34.97	1,500	4.27	34.98	27.76
1,497	3.71	34.95	1,500	3.73	34.94	27.79	1,507	4.25	35.00	1,750	4.16	34.98	27.76
1,752	3.51	34.93	1,750	3.50	34.92	27.80	1,828	4.13	34.96	2,000	3.85	34.96	27.79
2,002	3.39	34.93	2,000	3.37	34.92	27.81	2,056	3.76	34.99	2,250	3.72	34.97	27.81
2,254	3.24	34.94	2,250	3.22	34.93	27.83	2,286	3.70	34.99	2,500	3.51	34.97	27.83
2,506	3.08	34.95	2,500	3.10	34.94	27.85	2,700	3.29	34.96	3,000	3.12	34.94	27.85
3,199	2.43	34.92	3,000	2.64	34.92	27.88	3,145	3.00					
							3,538	2.67	34.93				
							3,933	2.44	34.93				

TABLE OF OCEANOGRAPHIC DATA—Continued

Observed values			Scaled values				Observed values			Scaled values			
Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	$\sigma_t$	Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	$\sigma_t$
Station 7297; 6 April; 38°55.5' N., 48°26' W.; depth 5,321 m.; dynamic height 971.780							Station 7300; 7 April; 37°22.5' N., 48°25' W.; depth 5,305 m.; dynamic height 971.745						
0	17.47	36.45	0	17.47	36.45	26.52	0	17.13	36.39	0	17.13	36.39	26.56
26	17.48	36.45	25	17.48	36.44	26.52	25	17.16	36.39	25	17.16	36.39	26.56
52	17.49	36.44	50	17.47	36.43	26.51	50	17.19	36.40	50	17.19	36.39	26.56
77	17.49	36.44	75	17.48	36.43	26.51	75	17.17	36.39	75	17.17	36.39	26.56
102	17.49	36.44	100	17.49	36.43	26.51	100	17.17	36.39	100	17.18	36.39	26.56
153	17.49	36.44	150	17.49	36.43	26.51	150	17.18	36.39	150	17.18	36.39	26.56
201	17.50	36.44	200	17.50	36.43	26.50	200	17.18	36.39	200	17.18	36.39	26.56
306	17.51	36.44	300	16.98	36.43	26.50	300	17.18	36.40	300	17.18	36.39	26.56
408	16.96	36.31	400	14.45	35.89	26.49	401	16.67	36.27	400	16.66	36.26	26.58
611	11.28	35.87	600	10.52	35.10	27.19	604	13.07	35.69	600	13.15	35.59	26.83
858	9.34	35.26	800	7.45	35.13	27.47	809	9.81	35.27	800	9.97	35.28	27.19
1,000	6.24	35.06	1,000	5.51	35.07	27.68	1,016	6.18	35.12	1,000	6.48	35.12	27.60
1,358	5.08	35.06	1,250	4.12	35.01	27.77	1,443	4.32	35.02	1,250	5.17	35.05	27.72
1,692	4.18	35.02	1,500	4.12	35.01	27.80	1,683	3.96	35.00	1,500	4.25	35.00	27.78
1,958	3.91	34.99	1,750	4.12	35.01	27.80	1,926	3.74	35.00	1,750	3.90	34.99	27.81
2,183	3.70	34.98	2,000	3.84	34.98	27.81	2,171	3.60	35.00	2,000	3.69	34.99	27.83
2,430	3.56	34.98	2,250	3.66	34.97	27.82	2,416	3.44	35.11	2,250	3.55	35.02	27.87
2,692	3.49	34.97	2,500	3.52	34.97	27.83	3,434	2.69	35.11	2,500	3.39	35.10	27.95
3,318	2.77	34.97	3,000	3.10	34.96	27.87	3,956	2.42	34.96	3,000	3.01	35.10	27.99
3,914	2.41	34.95											
Station 7298; 6 April; 38°26.5' N., 48°28' W.; depth 5,303 m.; dynamic height 971.738							Station 7301; 7 April; 37°28.5' N., 49°30.5' W.; depth 5,321 m.; dynamic height 971.637						
0	17.32	36.42	0	17.32	36.42	26.53	0	17.30	36.40	0	17.30	36.40	26.52
26	17.34	36.42	25	17.33	36.41	26.53	26	17.31	36.39	25	17.31	36.39	26.52
51	17.34	36.42	50	17.33	36.41	26.53	52	17.31	36.39	50	17.30	36.39	26.52
77	17.31	36.42	75	17.31	36.41	26.54	77	17.28	36.39	75	17.28	36.38	26.54
102	17.32	36.42	100	17.32	36.41	26.53	103	17.27	36.39	100	17.27	36.38	26.54
152	17.32	36.42	150	17.32	36.41	26.53	153	17.27	36.39	150	17.27	36.38	26.54
203	17.27	36.40	200	16.75	36.40	26.53	205	17.16	36.36	200	17.17	36.35	26.53
305	16.71	36.28	300	16.15	36.28	26.62	308	16.91	36.31	300	16.93	36.30	26.54
407	16.11	36.16	400	13.82	35.80	26.86	409	15.62	36.08	400	15.76	36.09	26.66
611	13.69	35.79	600	9.98	35.30	27.20	613	12.22	35.57	600	12.44	35.61	26.99
816	9.70	35.26	800	6.85	35.13	27.56	817	6.89	35.09	800	7.33	35.12	27.45
1,021	6.51	35.13	1,000	4.99	35.03	27.72	1,020	5.70	35.09	1,000	5.85	35.08	27.68
1,282	4.76	35.03	1,250	4.31	34.99	27.79	1,191	5.47	35.10	1,250	5.25	35.08	27.73
1,545	4.19	34.99	1,500	3.92	34.97	27.79	1,413	4.57	35.02	1,500	4.36	34.99	27.76
1,721	3.99	34.98	1,750	3.77	34.97	27.81	1,628	4.05	34.97	1,750	3.92	34.97	27.79
1,976	3.79	34.98	2,000	3.61	34.97	27.82	1,868	3.49	34.99	2,000	3.71	34.97	27.81
2,234	3.62	34.97	2,250	3.48	34.97	27.84	2,110	3.63	34.97	2,250	3.55	34.96	27.82
2,493	3.48	34.98	2,500	3.08	34.95	27.86	2,356	3.48	34.97	2,500	3.38	34.95	27.83
2,982	3.10	34.96	3,000				2,838	3.14	34.95	3,000	3.02	34.94	27.86
3,363	2.76						3,329	2.77	34.94				
3,954	2.41	34.93											
Station 7299; 6 April; 37°55' N., 48°27' W.; depth 5,303 m.; dynamic height 971.726							Station 7302; 8 April; 37°58.5' N., 50°16' W.; depth 5,413 m.; dynamic height 971.768						
0	17.33	36.45	0	17.33	36.45	26.56	0	17.47	36.45	0	17.47	36.45	26.52
24	17.35	36.43	25	17.35	36.42	26.54	25	17.52	36.44	25	17.52	36.45	26.51
48	17.31	36.43	50	17.30	36.42	26.55	50	17.52	36.45	50	17.52	36.45	26.51
72	17.31	36.44	75	17.30	36.42	26.55	75	17.51	36.45	75	17.51	36.45	26.51
96	17.28	36.42	100	17.29	36.42	26.55	100	17.50	36.44	100	17.50	36.44	26.50
144	17.30	36.42	150	17.29	36.41	26.54	150	17.41	36.43	150	17.41	36.43	26.52
192	17.29	36.44	200	17.30	36.43	26.55	200	17.38	36.42	200	17.38	36.41	26.52
288	17.32	36.43	300	17.31	36.42	26.54	302	17.30	36.41	300	17.30	36.40	26.53
382	17.33	36.42	400	17.00	36.35	26.57	401	17.16	36.37	400	17.16	36.36	26.54
568	14.18	35.85	600	13.52	35.76	26.89	600	14.37	35.87	600	14.35	35.87	26.79
759	10.37	35.35	800	9.58	35.28	27.26	803	9.87	35.26	800	9.86	35.26	27.20
952	6.70	35.07	1,000	6.41	35.05	27.60	1,008	6.36	35.02	1,000	6.53	35.02	27.52
1,238	4.91	35.03	1,250	4.96	35.02	27.73	1,214	5.09	35.01	1,250	4.99	35.02	27.72
1,490	4.37	35.01	1,500	4.36	35.00	27.77	1,461	4.42	35.00	1,500	4.20	34.99	27.78
1,743	4.01	34.99	1,750	3.99	34.98	27.79	1,712	4.09	34.97	1,750	4.06	34.96	27.77
1,992	3.85	34.99	2,000	3.83	34.98	27.81	1,960	3.84	34.97	2,000	3.81	34.96	27.80
2,241	3.63	34.99	2,250	3.62	34.98	27.83	2,205	3.69	34.97	2,250	3.65	34.96	27.81
2,491	3.48	34.98	2,500	3.48	34.97	27.84	2,454	3.52	34.97	2,500	3.49	34.96	27.83
2,688	3.18	34.96	3,000	3.17	34.97	27.87	2,949	3.12	34.95	3,000	3.08	34.94	27.85
3,190	2.70	34.98					3,148	2.73	34.93				
3,979	2.40												

# TABLE OF OCEANOGRAPHIC DATA—Continued

Observed values			Scaled values				Observed values			Scaled values			
Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	$\sigma_t$	Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	$\sigma_t$
Station 7303; 8 April; 38°28.5' N., 50°22.5' W.; depth 5,394 m.; dynamic height 971.766							Station 7306; 9 April; 39°59.5' N., 50°17' W.; depth 5,394 m.; dynamic height 971.242						
0	17.66	36.48	0	17.66	36.48	26.49	0	14.07	35.83	0	14.07	35.83	26.82
26	17.66	36.48	25	17.66	36.47	26.49	26	14.05	35.82	25	14.05	35.81	26.82
52	17.67	36.48	50	17.66	36.47	26.49	51	14.07	35.82	50	14.06	35.81	26.82
104	17.65	36.49	100	17.66	36.48	26.50	77	14.04	35.82	75	14.03	35.81	26.82
155	17.66	36.49	150	17.66	36.48	26.50	103	13.95	35.81	100	13.95	35.80	26.83
206	17.56	36.47	200	17.57	36.46	26.51	153	13.83	35.81	150	13.85	35.80	26.85
310	17.45	36.45	300	17.46	36.44	26.52	205	13.32	35.67	200	13.37	35.68	26.86
414	17.41	36.43	400	17.42	36.42	26.52	308	12.16	35.52	300	12.25	35.53	26.97
622	14.13	35.81	600	14.45	35.86	26.77	410	8.70	35.09	400	9.10	35.12	27.22
828	9.53	35.21	800	9.70	35.28	27.24	605	4.74	34.84	600	4.83	34.83	27.58
1,033	6.40	35.10	1,000	6.42	35.11	27.60	816	4.80	34.99	800	4.80	34.97	27.70
1,230	5.24	35.10	1,250	5.15	35.08	27.71	1,015	4.31	34.94	1,000	4.12	34.94	27.75
1,476	4.27	35.00	1,500	4.25	34.99	27.77	1,114	4.31	35.00	1,250	4.23	34.99	27.78
1,721	4.13	35.01	1,750	4.10	34.99	27.79	1,386	4.12	34.99	1,500	3.95	34.96	27.78
1,968	3.84	34.98	2,000	3.81	34.97	27.80	1,592	3.89	34.96	1,750	3.75	34.95	27.79
2,218	3.65	34.97	2,250	3.65	34.96	27.81	1,800	3.73	34.96	2,000	3.64	34.95	27.80
2,468	3.46	34.99	2,500	3.43	34.96	27.83	2,043	3.59	34.96	2,250	3.50	34.96	27.83
2,964	3.07	34.96	3,000	3.05	34.95	27.86	2,291	3.45	34.97	2,500	3.28	34.95	27.84
3,462	2.68	34.94					2,766	3.06	34.96	3,000	2.87	34.93	27.86
3,961	2.38	34.92					3,248	2.66	34.90				
							3,732	2.36	34.91				
Station 7304; 8 April; 38°58' N., 50°18.5' W.; depth 5,394 m.; dynamic height 971.683							Station 7307; 9 April; 40°29' N., 50°15' W.; depth 3,695 m.; dynamic height 971.107						
0	18.03	36.49	0	18.03	36.49	26.42	0	7.76	33.95	0	7.76	33.95	26.49
24	18.03	36.49	25	18.03	36.48	26.42	23	7.83	34.06	25	7.85	34.08	26.59
49	18.03	36.49	50	18.02	36.48	26.42	45	8.70	34.42	50	8.85	34.48	26.75
73	18.02	36.50	75	18.01	36.49	26.43	70	9.57	34.76	75	9.77	34.80	26.86
97	18.01	36.50	100	18.00	36.49	26.43	93	10.20	34.98	100	10.23	35.01	26.94
145	17.80	36.49	150	18.00	36.48	26.42	139	10.04	35.08	150	9.88	35.07	27.04
194	17.78	36.50	200	17.95	36.49	26.44	185	9.01	35.01	200	8.80	34.96	27.17
291	17.57	36.47	300	17.45	36.44	26.53	278	6.11	34.69	300	5.80	34.64	27.31
385	16.46	36.21	400	16.20	36.16	26.61	372	4.75	34.66	400	4.72	34.68	27.47
570	12.95	35.67	600	12.20	35.76	27.00	592	4.62	34.90	600	4.55	34.90	27.67
758	8.30	35.11	800	7.69	35.08	27.41	758	4.33	34.94	800	4.27	34.94	27.73
946	5.58	35.02	1,000	5.43	35.00	27.64	960	4.06	34.97	1,000	4.08	34.96	27.77
1,258	4.62	34.95	1,250	4.67	34.95	27.70	1,140	4.06	34.98	1,250	3.94	34.96	27.78
1,470	4.36	35.01	1,500	4.32	35.00	27.77	1,388	3.74	34.96	1,500	3.72	34.95	27.80
1,702	4.00	34.99	1,750	3.95	34.98	27.79	1,642	3.68	34.96	1,750	3.60	34.95	27.81
1,950	3.77	34.97	2,000	3.74	34.97	27.81	1,888	3.48	34.96	2,000	3.41	34.95	27.83
2,198	3.61	34.98	2,250	3.58	34.97	27.83	2,138	3.33	34.95	2,250	3.25	34.94	27.83
2,445	3.45	34.97	2,500	3.42	34.96	27.83	2,389	3.22	34.95	2,500	3.11	34.94	27.85
2,931	3.10	34.95	3,000	3.05	34.94	27.85	2,889	2.74	34.94	3,000	2.65	34.93	27.88
3,411	2.70						3,394	2.26	34.91				
Station 7305; 9 April; 39°28.5' N., 50°15' W.; depth 5,449 m.; dynamic height 971.400							Station 7308; 9 April; 41°02.5' N., 50°11' W.; depth 3,475 m.; dynamic height 971.113						
0	17.41	36.36	0	17.41	36.36	26.47	0	10.29	34.73	0	10.29	34.73	26.70
25	17.42	36.36	25	17.42	36.36	26.47	26	10.25	34.72	25	10.25	34.71	26.70
50	17.36	36.35	50	17.36	36.35	26.47	53	10.48	34.88	50	10.45	34.86	26.78
74	17.27	36.33	75	17.26	36.32	26.48	79	11.19	35.19	75	11.07	35.13	26.88
99	17.08	36.32	100	17.07	36.31	26.52	106	11.64	35.07	100	11.55	35.09	26.76
148	15.19	36.04	150	15.80	36.02	26.60	158	8.31	34.81	150	8.87	34.85	27.04
197	14.84	35.88	200	14.78	35.86	26.70	211	6.89	34.67	200	7.23	34.69	27.16
296	12.59	35.48	300	12.55	35.47	26.87	317	6.68	34.81	300	6.72	34.78	27.30
392	11.72	35.48	400	11.55	35.45	27.04	418	5.95	34.95	400	6.08	34.92	27.50
584	7.56	35.04	600	7.39	35.03	27.41	614	5.11	35.00	600	5.15	34.99	27.62
781	5.44	34.99	800	5.36	34.98	27.63	821	4.47	34.99	800	4.52	34.98	27.73
980	4.69	34.99	1,000	4.65	34.98	27.72	1,031	4.18	34.97	1,000	4.23	34.96	27.75
1,212	4.31	34.99	1,250	4.30	34.98	27.75	1,188	4.02	34.96	1,250	4.15	34.95	27.75
1,600	3.87	34.97	1,500	4.02	34.96	27.77	1,428	3.74	34.95	1,500	3.70	34.94	27.79
1,750	3.75	34.96	1,750	3.74	34.95	27.79	1,672	3.61	34.95	1,750	3.56	34.94	27.80
2,000	3.61	34.97	2,000	3.61	34.96	27.82	1,916	3.49	34.94	2,000	3.44	34.93	27.81
2,247	3.47	34.96	2,250	3.45	34.95	27.82	2,162	3.35	34.94	2,250	3.31	34.94	27.83
2,496	3.32	34.96	2,500	3.31	34.95	27.84	2,354	3.28	34.96	2,500	3.15	34.94	27.84
2,991	2.99	34.95	3,000	3.00	34.94	27.86	2,981	2.74	34.93	3,000	2.70	34.92	27.87
3,482	2.62	34.94											
3,974	2.40	34.94											

TABLE OF OCEANOGRAPHIC DATA—Continued

Observed values			Scaled values			
Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	$\sigma_t$
Station 7309; 10 April; 41°22.5' N., 50°10' W.; depth 3,731 m.; dynamic height 971.141						
0	11.26	35.15	0	11.26	35.15	26.86
26	11.30	35.15	25	11.30	35.14	26.85
52	11.53	35.21	50	11.51	35.19	26.85
78	11.59	35.27	75	11.56	35.25	26.89
104	11.02	35.16	100	11.14	35.17	26.90
155	11.05	35.23	150	10.40	35.21	27.07
207	8.47	34.89	200	8.75	34.92	27.12
311	6.81	34.80	300	7.00	34.80	27.28
374	8.43	34.94	400	7.81	34.95	27.28
501	5.78	35.00	600	5.22	34.98	27.65
694	4.69	34.98	800	4.48	34.97	27.73
901	4.27	34.97	1,000	4.20	34.96	27.76
1,252	3.94	34.96	1,250	3.96	34.95	27.70
1,503	3.72	34.96	1,500	3.75	34.95	27.79
1,754	3.53	34.94	1,750	3.55	34.93	27.79
2,006	3.40	34.94	2,000	3.40	34.93	27.81
2,261	3.23	34.92	2,250	3.23	34.92	27.82
2,511	3.04	34.94	2,500	3.05	34.93	27.84
3,012	2.58	34.93	3,000	2.60	34.92	27.88
3,507	2.26	34.90				
Station 7310; 10 April; 41°44.5' N., 50°07.5' W.; depth 3,585 m.; dynamic height 971.104						
0	8.71	34.36	0	8.74	34.36	26.67
25	8.99	34.42	25	8.99	34.43	26.69
50	11.65	35.25	50	11.65	35.25	26.86
75	12.68	35.51	75	12.68	35.51	26.87
100	11.77	35.32	100	11.77	35.32	26.89
150	10.18	35.13	150	10.18	35.13	27.03
201	8.53	34.95	200	8.55	34.95	27.17
302	6.11	34.80	300	6.45	34.80	27.36
400	5.78	34.91	400	5.77	34.90	27.53
597	4.97	34.90	600	4.93	34.89	27.62
799	3.98	34.91	800	3.98	34.90	27.73
1,004	4.03	34.96	1,000	4.05	34.95	27.76
1,136	3.96	34.95	1,250	3.94	34.94	27.77
1,362	3.84	34.94	1,500	3.75	34.94	27.78
1,597	3.67	34.95	1,750	3.60	34.93	27.79
1,836	3.52	34.93	2,000	3.40	34.92	27.81
2,079	3.32	34.92	2,250	3.25	34.92	27.82
2,321	3.18	34.92	2,500	3.05	34.92	27.84
2,799	2.79	34.92	3,000	2.35	34.91	27.89
3,181	2.41	34.92				
Station 7311; 10 April; 42°09' N., 50°06' W.; depth 3,091 m.; dynamic height 971.020						
0	3.06	33.41	0	3.06	33.41	26.63
23	3.09	33.45	25	3.25	33.52	26.71
46	6.13	34.25	50	6.70	34.29	26.92
69	7.66	34.57	75	7.40	34.55	27.00
92	6.83	34.52	100	6.40	34.50	27.10
137	5.28	34.47	150	4.87	34.43	27.26
183	3.50	34.34	200	3.90	34.41	27.37
275	5.61	34.84	300	5.54	34.85	27.51
364	5.26	34.90	400	5.14	34.90	27.60
538	1.69	34.95	600	4.57	34.94	27.70
732	4.33	34.95	800	4.23	34.94	27.74
936	4.00	34.95	1,000	3.95	34.94	27.76
1,166	3.72	34.93	1,250	3.70	34.92	27.78
1,410	3.58	34.92	1,500	3.55	34.91	27.78
1,658	3.48	34.92	1,750	3.45	34.91	27.79
1,902	3.41	34.93	2,000	3.35	34.92	27.81
2,150	3.30	34.92	2,250	3.25	34.92	27.82
2,400	3.14	34.93	2,500	3.00	34.92	27.85
2,802	2.64	34.92	3,000	2.57	34.91	27.87
Station 7312; 10 April; 42°31' N., 50°03.5' W.; depth 2,195 m.; dynamic height 971.041						
0	1.07	33.25	0	1.07	33.25	26.66
23	1.00	33.32	25	1.00	33.31	26.71
47	1.00	33.30	50	1.00	33.30	26.70
70	0.86	33.32	75	0.85	33.36	26.76
94	0.86	33.55	100	0.92	33.57	26.92
140	1.29	33.90	150	1.40	33.94	27.18
186	1.81	34.13	200	1.96	34.17	27.33
280	2.66	34.49	300	2.92	34.53	27.54
375	3.80	34.72	400	3.93	34.75	27.61
570	1.79	34.95	600	4.70	34.94	27.68
772	1.26	34.94	800	4.23	34.92	27.72
1,226	3.86	34.93	1,000	4.08	34.92	27.74
1,479	3.72	34.93	1,250	3.86	34.92	27.76
1,735	3.58	34.92	1,500	3.70	34.92	27.78
1,984	3.55	34.93	1,750	3.55	34.91	27.78
			2,000	3.55	34.92	27.79
Station 7313; 10 April; 42°58.5' N., 50°01.5' W.; depth 344 m.; dynamic height 971.056						
0	1.48	33.10	0	1.48	33.10	26.50
25	1.45	33.09	25	1.45	33.09	26.50
50	1.35	33.14	50	1.35	33.14	26.55
75	1.02	33.26	75	1.02	33.26	26.66
100	2.06	33.57	100	2.06	33.57	26.85
150	2.87	34.17	150	2.87	34.17	27.25
200	2.59	34.24	200	2.59	34.24	27.33
300	3.38	34.56	300	3.38	34.56	27.51
Station 7314; 10 April; 43°11.5' N., 50°00' W.; depth 110 m.; dynamic height 971.065						
0	1.78	33.01	0	1.78	33.01	26.41
27	1.64	33.05	25	1.64	33.04	26.45
53	1.27	33.18	50	1.30	33.16	26.57
80	1.29	33.33	75	1.25	33.29	26.67
Station 7315; 10 April; 43°45' N., 50°03.5' W.; depth 68 m.; dynamic height 971.054						
0	2.54	32.63	0	2.54	32.63	26.05
27	2.44	32.64	25	2.45	32.63	26.06
54	1.91	32.86	50	2.00	32.82	26.25
Station 7316; 11 April; 43°17.5' N., 50°40' W.; depth 90 m.; dynamic height 971.066						
0	2.65	33.01	0	2.65	33.01	26.35
24	2.29	33.11	25	2.30	33.10	26.45
49	2.39	33.17	50	2.40	33.16	26.49
73	2.01	33.51	75	2.00	33.51	26.81
Station 7317; 11 April; 43°11' N., 50°48.5' W.; depth 166 m.; dynamic height 971.047						
0	3.76	33.49	0	3.76	33.49	26.62
20	4.35	33.70	25	4.30	33.70	26.75
39	4.14	33.72	50	4.50	33.85	26.84
58	4.84	33.99	75	5.30	34.03	26.89
78	5.40	34.18	100	5.85	34.11	26.89
117	6.25	34.17				

TABLE OF OCEANOGRAPHIC DATA—Continued

Observed values			Scaled values				Observed values			Scaled values			
Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	$\sigma_t$	Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	$\sigma_t$
Station 7318: 11 April; 43°08' N., 50°52.5' W.; depth 631 m.; dynamic height 971.050							Station 7322: 11 April; 42°10' N., 50°52' W.; depth 3,292 m.; dynamic height 971.047						
0	4.40	33.59	0	4.40	33.59	26.64	0	5.68	33.46	0	5.68	33.46	26.39
25	5.01	33.86	25	5.01	33.86	26.79	25	5.90	33.52	25	5.90	33.52	26.41
50	5.69	34.05	50	5.69	34.05	26.85	50	5.77	33.69	50	5.77	33.69	26.56
76	8.03	34.62	75	8.05	34.62	26.99	75	7.17	34.23	75	7.17	34.23	26.80
101	9.12	34.86	100	9.10	34.85	27.00	100	9.17	34.84	100	9.17	34.84	26.98
152	7.60	34.69	150	7.70	34.69	27.09	148	7.30	34.67	150	7.25	34.74	27.20
202	7.25	34.80	200	7.25	34.78	27.23	198	6.26	34.67	200	6.25	34.66	27.27
303	5.26	34.76	300	5.35	34.75	27.46	308	5.18	34.75	300	5.15	34.74	27.47
404	3.72	34.71	400	3.80	34.70	27.59	397	5.66	35.01	400	5.65	35.00	27.62
606	3.72	34.81	600	3.70	34.79	27.67	597	4.17	34.98	600	4.45	34.97	27.74
							798	4.25	34.97	800	4.25	34.96	27.75
							1,003	3.88	34.94	1,000	3.90	34.94	27.77
							1,513	3.66	34.95				
Station 7319: 11 April; 42°58' N., 51°05.5' W.; depth 1,481 m.; dynamic height 971.080							Station 7323: 12 April; 41°59.5' N., 49°32' W.; depth 3,127 m.; dynamic height 971.112						
0	6.59	34.16	0	6.59	34.16	26.82	0	11.16	35.09	0	11.16	35.09	26.83
23	6.89	34.36	25	6.90	34.36	26.95	24	11.21	35.09	25	11.20	35.08	26.82
48	7.40	34.52	50	7.50	34.53	26.99	47	11.59	35.26	50	11.60	35.25	26.88
71	8.46	34.78	75	8.40	34.77	27.05	71	11.73	35.33	75	11.80	35.35	26.92
96	8.10	34.75	100	7.75	34.71	27.10	95	12.29	35.49	100	12.30	35.48	26.92
142	5.08	34.34	150	4.85	34.31	27.17	142	12.37	35.50	150	12.25	35.47	26.93
190	3.73	34.21	200	3.65	34.20	27.21	190	11.62	35.38	200	11.25	35.32	27.00
286	3.17	34.23	300	3.15	34.25	27.29	285	7.49	34.88	300	7.30	34.87	27.30
382	3.13	34.40	400	3.25	34.41	27.43	381	5.99	34.85	400	5.90	34.85	27.47
575	4.51	34.79	600	4.50	34.89	27.66	577	4.76	34.94	600	4.70	34.94	27.48
770	4.45	34.95	800	1.35	34.92	27.71	777	3.88	34.94	800	4.05	34.93	27.74
960	3.71	34.88	1,000	3.75	34.88	27.73	982	3.68	34.91	1,000	3.70	34.90	27.74
1,431	3.62						1,491	3.66	34.93				
Station 7320: 11 April; 42°46.5' N., 51°21' W.; depth 2,012 m.; dynamic height 971.058							Station 7324: 12 April; 41°36' N., 47°17.5' W.; depth 4,280 m.; dynamic height 971.309						
0	3.00	33.37	0	3.00	33.37	26.60	0	15.08	35.96	0	15.08	35.96	26.71
23	6.09	34.11	25	6.10	34.11	26.86	22	15.12	35.98	25	15.10	35.97	26.72
46	6.16	34.20	50	6.20	34.22	26.93	45	15.14	35.98	50	15.10	35.98	26.72
69	6.61	34.35	75	6.50	34.34	26.98	67	15.11	35.98	75	15.05	35.98	26.73
92	6.15	34.35	100	5.90	34.31	27.04	90	15.05	35.99	100	15.00	35.98	26.74
138	4.47	34.22	150	4.55	34.25	27.15	134	14.77	35.99	150	14.60	35.97	26.83
185	4.85	34.35	200	4.75	34.36	27.22	179	14.31		200	14.20	35.96	26.90
277	4.32	34.49	300	4.45	34.54	27.39	269	13.80	35.90	300	13.15	35.78	26.98
367	4.99	34.75	400	4.95	34.77	27.52	414	10.66	35.34	400	10.95	35.39	27.11
546	4.91	34.94	600	4.80	34.93	27.66	620	6.98	35.05	600	7.35	35.07	27.45
722	4.51	34.96	800	4.50	34.95	27.71	826	5.56	35.07	800	5.50	35.05	27.67
902	4.43	34.96	1,000	4.40	34.95	27.72	1,035	3.04	35.10	1,000	5.15	35.08	27.74
1,352	3.72	34.94					1,555	3.89	34.99				
Station 7321: 11 April; 42°21' N., 51°35' W.; depth 3,237 m.; dynamic height 971.013							Station 7325: 12 April; 41°58.5' N., 47°54' W.; depth 3,932 m.; dynamic height 971.176						
0	5.45	33.49	0	5.45	33.49	26.44	0	11.98	35.28	0	11.98	35.28	26.82
21	5.24	33.53	25	5.20	33.52	26.51	20	11.96	35.27	25	11.95	35.26	26.82
42	5.16	33.54	50	5.10	33.67	26.64	40	11.95	35.26	50	12.05	35.31	26.84
63	4.98	33.94	75	4.90	34.10	26.99	61	12.18	35.38	75	11.80	35.30	26.88
84	4.93	34.23	100	4.90	34.24	27.10	81	11.69	35.29	100	11.95	35.36	26.90
126	4.91	34.25	150	4.60	34.38	27.25	121	12.28	35.46	150	12.30	35.47	26.92
169	4.32	34.51	200	4.50	34.59	27.42	161	12.33	35.49	200	11.55	35.40	27.00
253	4.83	34.76	300	4.90	34.82	27.57	242	10.76	35.32	300	9.20	35.12	27.20
338	4.94	34.90	400	4.80	34.91	27.65	319	8.70	35.08	400	7.75	35.07	27.39
509	4.53	34.95	600	4.45	34.93	27.74	471	6.96	35.08	600	5.70	35.00	27.61
682	4.11	34.94	800	4.30	34.93	27.74	618	5.50	35.60	800	4.25	34.92	27.72
862	4.05	34.94	1,000	3.95	34.93	27.75	790	4.27	34.93	1,000	4.00	34.91	27.74
1,308	3.70	34.94					1,252	3.69	34.90				

TABLE OF OCEANOGRAPHIC DATA—Continued

Observed values			Scaled values				Observed values			Scaled values			
Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	$\sigma_t$	Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	$\sigma_t$
Station 7326; 13 April; 42°22.5' N., 48°30' W.; depth 2,475 m.; dynamic height 971.011							Station 7330; 13 April; 42°51.5' N., 47°30.5' W.; depth 3,840 m.; dynamic height 970.994						
0	5.54	33.77	0	5.54	33.77	26.65	0	5.79	33.72	0	5.79	33.72	26.58
26	5.54	33.77	25	5.55	33.76	26.65	26	5.72	33.74	25	5.50	33.73	26.63
52	5.73	33.98	50	5.70	33.95	26.79	51	5.30	33.77	50	5.30	33.76	26.88
79	5.72	34.19	75	5.70	34.15	26.94	77	4.76	33.84	75	4.80	33.82	26.79
105	1.76	34.28	100	5.00	34.26	27.11	102	4.22	34.38	100	4.30	34.32	27.24
157	6.13	34.72	150	5.90	34.65	27.31	155	4.78	34.60	150	4.70	34.57	27.39
209	5.79	34.78	200	5.85	34.70	27.40	206	4.57	34.68	200	4.60	34.66	27.47
311	5.37	34.91	300	5.10	34.88	27.55	308	5.51	34.97	300	5.45	34.93	27.58
417	4.98	34.94	400	5.00	34.96	27.64	507	4.66	34.95	400	5.10	34.95	27.64
623	4.51	34.97	600	4.40	34.96	27.71	609	4.36	34.96	600	4.40	34.95	27.72
828	4.05	34.94	800	4.15	34.93	27.73	810	3.97	34.93	800	4.00	34.93	27.75
1,037	3.62	34.87	1,000	3.70	34.88	27.74	1,014	3.86	34.94	1,000	3.90	34.93	27.76
1,563	3.51	34.88					1,522	3.51	34.93				
Station 7327; 13 April; 42°43.5' N., 49°07.5' W.; depth 2,378 m.; dynamic height 971.047							Station 7331; 14 April; 42°37' N., 46°51' W.; depth 1,114 m.; dynamic height 971.180						
0	0.73	33.11	0	0.73	33.11	26.55	0	13.88	35.77	0	13.88	35.77	26.81
25	0.85	33.21	25	0.85	33.21	26.64	26	13.95	35.78	25	13.95	35.77	26.81
50	1.16	33.46	50	1.16	33.46	26.81	51	13.95	35.77	50	13.95	35.77	26.81
74	1.69	34.13	75	4.70	34.13	27.04	77	13.95	35.77	75	13.95	35.77	26.81
99	2.01	33.91	100	2.00	33.92	27.13	102	13.86	35.77	100	13.85	35.76	26.82
118	1.24	33.89	150	1.25	33.89	27.15	155	12.67	35.56	150	12.75	35.57	26.91
197	1.66	34.06	200	1.65	34.05	27.26	206	11.12	35.32	200	11.35	35.34	26.99
296	2.04	34.23	300	1.05	34.24	27.38	308	8.64	35.04	300	8.80	35.05	27.21
393	2.98	34.54	400	3.00	34.55	27.55	361	6.38	34.71	400	6.10	34.74	27.35
585	3.78	34.81	600	3.80	34.83	27.69	535	5.24	34.88	600	5.15	34.91	27.61
777	3.68	34.86	800	3.70	34.85	27.72	703	1.94	34.97	800	1.70	34.96	27.70
970	3.62	34.89	1,000	3.65	34.89	27.75	890	1.44	34.96	1,000	4.30	34.95	27.73
1,450	3.75	34.95					1,379	3.76	34.95				
Station 7328; 13 April; 43°20' N., 48°47.5' W.; depth 1,957 m.; dynamic height 970.919							Station 7332; 11 April; 42°23' N., 46°11' W.; depth 4,663 m.; dynamic height 971.500						
0	1.75	33.53	0	1.75	33.53	26.83	0	15.12	36.10	0	15.42	36.10	26.74
23	1.66	33.77	25	1.65	33.78	27.04	26	15.12	36.10	25	15.40	36.09	26.71
46	1.90	33.98	50	1.95	34.01	27.21	52	15.43	36.10	50	15.40	36.09	26.74
69	2.22	34.26	75	2.25	34.26	27.38	78	15.43	36.10	75	15.40	36.09	26.74
92	2.33	34.30	100	2.40	34.32	27.42	104	15.21	36.06	100	15.25	36.06	26.75
139	2.75	34.46	150	2.90	34.70	27.52	157	14.32	35.90	150	14.45	35.91	26.81
185	3.24	34.64	200	3.30	34.66	27.61	209	14.80	36.06	200	14.75	36.03	26.84
277	3.70	34.79	300	3.75	34.79	27.66	313	14.81	36.07	300	14.85	36.06	26.85
368	3.87	34.85	400	3.85	34.81	27.69	348	13.95	35.81	400	13.35	35.72	26.90
519	3.78	34.87	600	3.75	34.86	27.72	585	8.19	35.13	600	11.00	35.39	27.10
727	3.67	34.85	800	3.65	34.85	27.72	700	8.19	35.15	800	7.65	35.13	27.44
897	3.60	34.86	1,000	3.60	34.86	27.74	987	6.54	35.12	1,000	6.50	35.11	27.59
1,302	3.52	34.90					1,366	4.53	35.05				
Station 7329; 13 April; 43°06' N., 48°09' W.; depth 3,081 m.; dynamic height 970.987							Station 7333; 14 April; 42°41' N., 45°43.5' W.; depth 4,572 m.						
0	9.54	34.79	0	9.54	34.79	26.88	0	15.09	36.05	0	15.09	36.05	26.77
27	9.33	34.77	25	9.35	34.76	26.89	26	15.01	36.02	25	15.00	36.02	26.78
54	8.43	34.62	50	8.60	34.62	26.91	52	14.97	36.02	50	14.95	36.01	26.79
81	9.28	34.86	75	9.05	34.80	26.97	78	14.91	36.01	75	14.90	36.00	26.79
108	7.45	34.65	100	8.10	34.66	27.01	104	14.85	35.99	100	14.85	35.99	26.79
162	1.99	34.19	150	3.25	34.28	27.30	156	14.35	35.89	150	14.10	35.90	26.81
216	2.60	34.44	200	2.40	34.36	27.45	208	14.75	36.03	200	14.65	35.99	26.83
324	3.31	34.69	300	3.15	34.63	27.59	312	13.92	35.86	300	14.05	35.87	26.87
410	3.65	34.76	400	3.60	34.74	27.61							
510	3.76	34.86	600	3.75	34.85	27.71							
806	3.58	34.86	800	3.60	34.85	27.73							
1,010	3.59	34.86	1,000	3.60	34.85	27.73							
1,525	3.50	34.93											

# TABLE OF OCEANOGRAPHIC DATA—Continued

Observed values			Scaled values				Observed values			Scaled values			
Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	$\sigma_t$	Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	$\sigma_t$
Station 7334: 14 April; 43°11' N., 45°18' W.; depth 4,637 m.; dynamic height 971.368													
0	14.96	36.05	0	14.96	36.05	26.80	0	11.33	35.43	0	11.33	35.43	27.06
26	14.92	36.06	25	14.90	36.05	26.82	26	11.33	35.43	25	11.30	35.42	27.07
51	14.89	36.05	50	14.90	36.05	26.82	51	11.35	35.43	50	11.35	35.42	27.06
77	14.88	36.06	75	11.90	36.05	26.82	77	11.34	35.43	75	11.35	35.42	27.06
102	14.89	36.04	100	14.90	36.04	26.81	102	11.35	35.44	100	11.35	35.43	27.06
154	14.74	36.04	150	14.75	36.03	26.84	153	11.36	35.44	150	11.35	35.43	27.06
206	14.85	36.07	200	14.85	36.05	26.84	204	11.38	35.43	200	11.30	35.42	27.07
308	14.20	35.93	300	14.25	35.93	26.87	306	11.46	35.47	300	11.15	35.36	27.07
397	12.69	35.65	400	12.60	35.64	26.98	409	8.34	34.98	400	8.40	35.02	27.22
397	8.78	35.17	600	8.65	35.16	27.32	612	5.60	34.95	600	5.75	34.94	27.56
786	6.08	35.05	800	5.55	35.03	27.65	818	4.41	34.95	800	4.55	34.94	27.70
986	4.74	34.99	1,000	4.75	34.98	27.70	975	3.98	34.92	1,000	4.00	34.92	27.75
1,493	3.70	34.93					1,541	3.67	34.93				
Station 7335: 14 April; 43°19.5' N., 46°00' W.; depth 4,846 m.; dynamic height 971.314													
0	14.36	35.89	0	14.36	35.89	26.80	0	10.99	35.16	0	10.99	35.16	26.91
26	14.36	35.89	25	14.35	35.88	26.81	23	10.98	35.16	25	10.95	35.15	26.92
52	14.38	35.90	50	14.35	35.89	26.81	46	10.98	35.16	50	10.95	35.15	26.92
79	14.40	35.91	75	14.40	35.90	26.81	69	10.98	35.16	75	10.90	35.15	26.93
104	14.43	35.91	100	14.40	35.90	26.81	92	10.75	35.16	100	10.60	35.14	26.97
157	14.44	35.91	150	14.45	35.90	26.80	139	10.03	35.12	150	9.60	35.05	27.08
210	14.37	35.91	200	14.40	35.90	26.81	185	8.13	34.88	200	7.75	34.85	27.21
314	12.57	35.58	300	12.80	35.62	26.93	277	5.71	34.73	300	5.55	34.74	27.42
420	10.35	35.31	400	10.80	35.35	27.10	413	4.91	34.82	400	4.95	34.80	27.54
630	6.48	34.99	600	7.05	35.04	27.46	619	4.61	34.94	600	4.20	34.92	27.73
841	4.78	34.95	800	5.10	34.96	27.65	826	4.02	34.95	800	4.00	34.94	27.76
1,053	4.24	34.95	1,000	4.40	34.94	27.71	985	4.07	34.94	1,000	4.05	34.93	27.74
1,588	3.62	34.92					1,542	3.52	34.89				
Station 7336: 15 April; 43°30' N., 46°40' W.; depth 4,618 m.; dynamic height 971.144													
0	10.54	34.90	0	10.54	34.90	26.79	0	1.50	33.58	0	1.50	33.58	26.89
26	10.69	34.94	25	10.65	34.93	26.80	24	1.84	33.64	25	1.85	33.63	26.91
51	11.59	35.16	50	11.55	35.15	26.81	46	1.92	33.67	50	2.00	33.70	26.95
77	12.28	35.34	75	12.20	35.32	26.82	69	2.18	33.91	75	2.25	33.96	27.14
102	11.40	35.11	100	11.55	35.14	26.80	91	2.40	34.14	100	2.60	34.22	27.32
154	11.05	35.16	150	11.05	35.15	26.90	138	3.48	34.56	150	3.45	34.57	27.52
205	9.95	35.07	200	10.05	35.07	27.02	184	3.35	34.65	200	3.45	34.67	27.60
307	8.51	35.09	300	8.60	35.08	27.26	275	3.98	34.83	300	3.95	34.83	27.67
416	6.34	34.93	400	6.65	34.95	27.45	416	3.84	34.87	400	3.85	34.86	27.71
623	4.78	34.94	600	4.95	34.93	27.64	620	3.62	34.86	600	3.65	34.85	27.72
831	4.15	34.93	800	4.25	34.92	27.72	822	3.56	34.84	800	3.55	34.84	27.72
1,040	4.05	34.95	1,000	4.10	34.93	27.74	1,028	3.53	34.89	1,000	3.55	34.87	27.75
1,564	3.52	34.94					1,542	3.48	34.91				
Station 7337: 15 April; 43°42' N., 47°18' W.; depth 4,206 m.; dynamic height 971.172													
0	11.55	35.50	0	11.55	35.50	27.07	0	0.15	33.16	0	0.15	33.16	26.62
27	11.55	35.50	25	11.55	35.49	27.07	22	0.19	33.17	25	0.15	33.18	26.65
53	11.57	35.49	50	11.55	35.48	27.06	15	0.12	33.32	50	0.20	33.35	26.78
80	11.62	35.50	75	11.60	35.49	27.06	68	0.44	33.50	75	0.50	33.51	26.90
105	11.60	35.50	100	11.60	35.49	27.06	91	0.63	33.57	100	0.70	33.61	26.97
159	11.60	35.51	150	11.60	35.50	27.07	135	0.97	33.79	150	1.10	33.87	27.15
212	11.62	35.50	200	11.60	35.50	27.07	181	1.49	34.06	200	1.60	34.11	27.31
317	11.63	35.50	300	11.60	35.49	27.06	272	2.11	34.36	300	2.30	34.40	27.49
415	11.60	35.50	400	9.10	35.18	27.26	358	2.81	34.52	400	3.00	34.57	27.57
472	6.92	34.92	600	5.55	34.92	27.57	528	3.63	34.78	600	3.80	34.84	27.70
631	5.22	34.93	800	4.60	34.96	27.71							
794	4.61	34.97	1,000	4.25	34.95	27.74							
1,213	3.88	34.95											
Station 7340: 15 April; 44°07.5' N., 48°48' W.; depth 1,637 m.; dynamic height 970.932													
0	1.50	33.58	0	1.50	33.58	26.89	0	0.15	33.16	0	0.15	33.16	26.62
24	1.84	33.64	25	1.85	33.63	26.91	22	0.19	33.17	25	0.15	33.18	26.65
46	1.92	33.67	50	2.00	33.70	26.95	15	0.12	33.32	50	0.20	33.35	26.78
69	2.18	33.91	75	2.25	33.96	27.14	68	0.44	33.50	75	0.50	33.51	26.90
91	2.40	34.14	100	2.60	34.22	27.32	91	0.63	33.57	100	0.70	33.61	26.97
138	3.48	34.56	150	3.45	34.57	27.52	135	0.97	33.79	150	1.10	33.87	27.15
184	3.35	34.65	200	3.45	34.67	27.60	181	1.49	34.06	200	1.60	34.11	27.31
275	3.98	34.83	300	3.95	34.83	27.67	272	2.11	34.36	300	2.30	34.40	27.49
416	3.84	34.87	400	3.85	34.86	27.71	358	2.81	34.52	400	3.00	34.57	27.57
620	3.62	34.86	600	3.65	34.85	27.72	528	3.63	34.78	600	3.80	34.84	27.70
822	3.56	34.84	800	3.55	34.84	27.72							
1,028	3.53	34.89	1,000	3.55	34.87	27.75							
1,542	3.48	34.91											
Station 7341: 16 April; 44°10' N., 48°57' W.; depth 607 m.; dynamic height 971.039													
0	0.15	33.16	0	0.15	33.16	26.62	0	0.15	33.16	0	0.15	33.16	26.62
22	0.19	33.17	25	0.15	33.18	26.65	22	0.19	33.17	25	0.15	33.18	26.65
15	0.12	33.32	50	0.20	33.35	26.78	15	0.12	33.32	50	0.20	33.35	26.78
68	0.44	33.50	75	0.50	33.51	26.90	68	0.44	33.50	75	0.50	33.51	26.90
91	0.63	33.57	100	0.70	33.61	26.97	91	0.63	33.57	100	0.70	33.61	26.97
135	0.97	33.79	150	1.10	33.87	27.15	135	0.97	33.79	150	1.10	33.87	27.15
181	1.49	34.06	200	1.60	34.11	27.31	181	1.49	34.06	200	1.60	34.11	27.31
272	2.11	34.36	300	2.30	34.40	27.49	272	2.11	34.36	300	2.30	34.40	27.49
358	2.81	34.52	400	3.00	34.57	27.57	358	2.81	34.52	400	3.00	34.57	27.57
528	3.63	34.78	600	3.80	34.84	27.70	528	3.63	34.78	600	3.80	34.84	27.70

# TABLE OF OCEANOGRAPHIC DATA—Continued

Observed values			Scaled values				Observed values			Scaled values			
Depth, meters	Tem-perature, °C.	Salin-ity, ‰	Depth, meters	Tem-perature, °C.	Salin-ity, ‰	$\sigma_t$	Depth, meters	Tem-perature, °C.	Salin-ity, ‰	Depth, meters	Tem-perature, °C.	Salin-ity, ‰	$\sigma_t$
Station 7312; 16 April; 44°12.5' N., 49°08.5' W.; depth 168 m.; dynamic height 971.118													
0	0.01	33.06	0.	0.01	33.06	26.56	0	2.11	33.56	0.	2.11	33.56	26.83
25	0.01	33.11	25	0.01	33.11	26.59	25	2.09	33.61	25	2.09	33.61	26.87
50	0.31	33.11	50	0.25	33.40	26.83	50	2.15	33.87	50	2.15	33.87	27.07
76	0.36	33.41	75	0.35	33.40	26.82	75	2.35	33.98	75	2.35	33.98	27.14
101	0.37	33.12	100	0.35	33.41	26.83	100	2.36	34.19	100	2.36	34.19	27.30
152	0.43	33.45	150	0.40	33.43	26.84	149	2.66	34.45	150	2.65	34.44	27.49
							199	3.00	34.58	200	3.00	34.57	27.57
							299	4.23	34.83	300	4.20	34.82	27.65
							392	3.79	34.80	400	3.75	34.79	27.66
							587	3.64	34.84	600	3.65	34.83	27.70
							780	3.59	34.81	800	3.60	34.86	27.74
							985	3.55	34.88	1,000	3.55	34.87	27.75
							1,517	3.50	34.87				
Station 7343; 16 April; 41°13.5' N., 49°14' W.; depth 81 m.; dynamic height 971.124													
0	0.04	33.10	0.	0.04	33.10	26.58	0	2.10	33.40	0.	2.10	33.40	26.70
25	0.13	33.17	25	0.13	33.17	26.64	25	2.07	33.39	25	2.07	33.40	26.71
49	0.17	33.20	50	0.15	33.19	26.66	45	1.92	33.73	50	1.95	33.77	27.01
74	0.22	33.30	75	0.20	33.29	26.73	68	2.15	33.98	75	2.25	34.02	27.19
							91	2.39	34.18	100	2.75	34.25	27.33
							135	3.93	34.59	150	3.95	34.61	27.50
							180	4.01	34.68	200	4.15	34.69	27.54
							271	4.49	34.80	300	4.45	34.79	27.59
							406	4.23	34.90	400	4.20	34.89	27.70
							609	3.77	34.89	600	3.80	34.88	27.73
							812	3.68	34.90	800	3.70	34.89	27.75
							1,014	3.55	34.90	1,000	3.60	34.89	27.76
							1,521	3.44	34.91				
Station 7344; 16 April; 44°18' N., 49°31' W.; depth 55 m.; dynamic height 971.131													
0	0.58	33.04	0.	0.58	33.04	26.51	0	2.23	33.38	0	2.23	33.38	26.67
25	0.61	33.07	25	0.61	33.07	26.53	15	2.24	33.36	25	2.25	33.38	26.70
50	0.58	33.07	50	0.59	33.07	26.53	29	2.26	33.41	50	2.00	33.81	27.04
							41	2.01	33.78	75	2.05	34.10	27.27
							58	1.92	33.91	100	2.75	34.40	27.45
							88	2.12	34.10	150	4.45	34.72	27.54
							117	3.72	34.66	200	4.90	34.81	27.56
							175	5.03	34.81	300	4.30	34.86	27.66
							365	4.14	34.90	400	3.70	34.89	27.75
							552	3.77	34.89	600	3.85	34.90	27.74
							743	3.99	34.94	800	3.90	34.93	27.76
							943	3.76	34.93	1,000	3.80	34.92	27.77
							1,164	3.53	34.93				
Station 7345; 16 April; 45°01' N., 49°32' W.; depth 71 m.; dynamic height 971.131													
0	0.22	32.98	0	0.22	32.98	26.48	0	2.23	33.38	0	2.23	33.38	26.67
25	0.25	32.99	25	0.25	32.99	26.49	15	2.24	33.36	25	2.25	33.38	26.70
51	0.17	33.15	50	0.20	33.13	26.61	29	2.26	33.41	50	2.00	33.81	27.04
							41	2.01	33.78	75	2.05	34.10	27.27
							58	1.92	33.91	100	2.75	34.40	27.45
							88	2.12	34.10	150	4.45	34.72	27.54
							117	3.72	34.66	200	4.90	34.81	27.56
							175	5.03	34.81	300	4.30	34.86	27.66
							365	4.14	34.90	400	3.70	34.89	27.75
							552	3.77	34.89	600	3.85	34.90	27.74
							743	3.99	34.94	800	3.90	34.93	27.76
							943	3.76	34.93	1,000	3.80	34.92	27.77
							1,164	3.53	34.93				
Station 7346; 16 April; 41°56.5' N., 49°03' W.; depth 91 m.; dynamic height 971.123													
0	0.03	33.05	0	0.03	33.05	26.55	0	2.52	33.71	0	2.52	33.71	26.91
25	0.03	33.22	25	0.03	33.22	26.69	27	2.55	33.71	25	2.55	33.70	26.91
50	0.06	33.23	50	0.06	33.23	26.69	53	2.96	33.86	50	2.90	33.83	26.98
75	0.07	33.25	75	0.07	33.25	26.71	80	2.85	34.04	75	2.90	34.00	27.12
							106	2.15	34.17	100	2.50	34.15	27.27
							160	2.70	34.41	150	2.65	34.36	27.43
							212	2.92	34.76	200	2.85	34.68	27.66
							318	5.03	34.94	300	4.65	34.90	27.66
							405	4.60	34.93	400	4.60	34.92	27.68
							609	3.96	34.90	600	4.00	34.89	27.72
							816	3.80	34.89	800	3.80	34.88	27.73
							1,026	3.79	34.92	1,000	3.80	34.91	27.76
							1,556	3.48	34.92				
Station 7347; 16 April; 41°55' N., 48°54' W.; depth 612 m.; dynamic height 971.058													
0	0.11	33.13	0	0.14	33.13	26.60	0	2.52	33.71	0	2.52	33.71	26.91
24	0.08	33.12	25	0.05	33.11	26.60	27	2.55	33.71	25	2.55	33.70	26.91
48	0.02	33.19	50	0.07	33.20	26.68	53	2.96	33.86	50	2.90	33.83	26.98
72	0.27	33.43	75	0.37	33.16	26.87	80	2.85	34.04	75	2.90	34.00	27.12
96	0.68	33.67	100	0.75	33.68	27.02	106	2.15	34.17	100	2.50	34.15	27.27
114	1.16	33.81	150	1.20	33.81	27.12	160	2.70	34.41	150	2.65	34.36	27.43
192	1.32	33.93	200	1.30	33.92	27.18	212	2.92	34.76	200	2.85	34.68	27.66
287	1.40	33.97	300	1.50	34.02	27.25	318	5.03	34.94	300	4.65	34.90	27.66
383	3.11	34.11	400	2.30	34.47	27.55	405	4.60	34.93	400	4.60	34.92	27.68
575	3.71	34.85	(600)	3.95	34.89	27.72	609	3.96	34.90	600	4.00	34.89	27.72
							816	3.80	34.89	800	3.80	34.88	27.73
							1,026	3.79	34.92	1,000	3.80	34.91	27.76
							1,556	3.48	34.92				

TABLE OF OCEANOGRAPHIC DATA—Continued

Observed values			Scaled values			
Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	$\sigma_t$
Station 7352; 1 May; 45°16' N., 47°03' W.; depth 3,228 m.; dynamic height 970.976						
0	5.37	34.08	0	5.37	34.08	26.92
26	5.38	34.175	25	5.40	34.18	27.00
53	5.59	34.25	50	5.55	34.25	27.04
78	6.31	34.445	75	6.20	34.42	27.09
105	5.73	34.44	100	5.85	34.44	27.15
157	5.61	34.68	150	5.65	34.64	27.33
209	5.74	34.805	200	5.70	34.78	27.43
314	3.46	34.70	300	3.75	34.71	27.60
361	3.68	34.775	400	3.75	31.80	27.67
541	4.03	34.895	600	4.00	34.89	27.72
721	3.96	34.89	800	4.05	34.90	27.72
921	3.73	34.91	1,000	4.20	34.91	27.72
1,382	3.64	34.93				

Station 7353; 2 May; 45°15' N., 47°15' W.; depth 2,743 m.; dynamic height 970.970

0	4.95	34.03	0	4.95	34.03	26.93
25	4.89	34.03	25	4.89	34.03	26.94
52	4.86	34.02	50	4.85	34.02	26.94
77	4.88	34.19	75	4.90	34.17	27.05
103	4.77	100	100	4.80	34.25	27.12
154	4.59	34.41	150	4.60	34.40	27.26
206	4.08	34.61	200	4.15	34.59	27.46
309	3.92	34.71	300	3.95	34.70	27.57
369	3.89	34.77	400	3.90	34.79	27.65
551	3.86	34.875	600	3.80	34.88	27.73
731	3.69	34.89	800	3.65	34.89	27.75
917	3.58	34.895	1,000	3.55	34.90	27.77
1,400	3.32	34.915				

Station 7354; 2 May; 45°31' N., 48°06' W.; depth 1,335 m.; dynamic height 971.045

0	-0.51	32.88	0	-0.51	32.88	26.44
24	-0.60	32.90	25	-0.60	32.92	26.47
48	-0.62	33.18	50	-0.50	33.20	26.70
72	0.71	33.48	75	1.10	33.56	26.90
96	4.87	34.10	100	4.90	34.11	27.00
143	5.16	34.205	150	5.15	34.21	27.05
192	4.91	34.295	200	4.90	34.32	27.17
288	5.01	34.76	300	4.75	34.74	27.52
358	3.30	34.66	400	3.40	34.71	27.64
537	3.78	34.86	600	3.75	34.86	27.72
716	3.68	34.85	800	3.65	34.87	27.74
901	3.62	34.89	1,000	3.60	34.89	27.76
1,202	3.52	34.88				

Station 7355; 2 May; 45°37' N., 48°13' W.; depth 640 m.; dynamic height 971.131

0	-0.42	32.72	0	-0.42	32.72	26.31
24	-0.43	32.72	25	-0.45	32.72	26.31
48	-0.52	32.74	50	-0.55	32.75	26.34
71	-0.85	32.98	75	-0.80	33.01	26.56
95	-0.48	33.21	100	-0.45	33.23	26.72
142	0.24	33.48	150	0.30	33.50	26.90
190	0.70	33.64	200	0.95	33.70	27.02
285	3.12	34.18	300	3.05	34.22	27.28
364	2.51	34.42	400	3.41	34.51	27.53
502	3.71	34.78	500	3.70	34.77	27.66

Observed values			Scaled values			
Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	$\sigma_t$
Station 7356; 2 May; 45°43' N., 48°20' W.; depth 174 m.; dynamic height 971.124						
0	0.18	32.69	0	0.18	32.69	26.25
26	-0.41	32.735	25	-0.40	32.73	26.32
51	-0.74	32.98	50	-0.75	32.98	26.53
77	-0.60	33.10	75	-0.60	33.09	26.60
102	-0.22	33.32	100	-0.25	33.30	26.76
152	0.06	33.40	150	0.05	33.40	26.84

Station 7357; 2 May; 45°46' N., 48°26' W.; depth 115 m.; dynamic height 971.121

0	-0.31	32.73	0	-0.31	32.73	26.31
25	-0.34	32.73	25	-0.34	32.73	26.31
49	-0.80	32.97	50	-0.80	32.97	26.52
74	-0.55	33.12	75	-0.55	33.13	26.64
98	-0.09	33.28	100	-0.10	33.28	26.74

Station 7358; 2 May; 45°50' N., 48°33' W.; depth 95 m.; dynamic height 971.120

0	0.54	32.85	0	0.54	32.85	26.36
26	0.57	32.85	25	0.55	32.85	26.36
53	0.51	32.85	50	0.55	32.85	26.36
79	-0.21	33.17	75	-0.05	33.13	26.62

Station 7359; 2 May; 46°03' N., 48°54' W.; depth 84 m.; dynamic height 971.110

0	0.63	32.89	0	0.63	32.89	26.39
28	0.61	32.89	25	0.60	32.89	26.39
55	0.04	33.16	50	0.15	33.11	26.59

Station 7360; 2 May; 46°09' N., 49°08' W.; depth 68 m.; dynamic height 971.123

0	0.95	32.83	0	0.95	32.83	26.33
26	0.91	32.84	25	0.90	32.84	26.34
51	0.83	32.865	50	0.85	32.86	26.36

Station 7361; 2 May; 45°59' N., 48°30' W.; depth 95 m.; dynamic height 971.107

0	0.36	32.84	0	0.36	32.84	26.37
26	0.35	32.835	25	0.35	32.85	26.38
52	0.01	33.19	50	0.05	33.17	26.65
78	0.35	33.42	75	0.30	33.41	26.83

Station 7362; 2 May; 45°56' N., 48°11' W.; depth 124 m.; dynamic height 971.115

0	0.22	32.86	0	0.22	32.86	26.39
26	0.21	32.86	25	0.20	32.86	26.39
51	0.03	32.92	50	0.05	32.92	26.45
77	-0.04	33.25	75	-0.05	33.22	26.69
103	0.24	33.43	100	0.20	33.40	26.85

TABLE OF OCEANOGRAPHIC DATA—Continued

Observed values			Scaled values				Observed values			Scaled values			
Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	$\sigma_t$	Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	$\sigma_t$
Station 7363; 2 May; 15°51' N., 47°55' W.; depth 265 m.; dynamic height 971.120							Station 7367; 3 May; 45°44' N., 46°10' W.; depth 3,383 m.; dynamic height 970.995						
0	0.13	32.81	0	0.13	32.81	26.38	0	6.51	34.43	0	6.51	34.43	27.06
25	-0.11	32.84	25	-0.11	32.84	26.38	26	6.49	34.43	25	6.50	34.43	27.06
50	-0.28	32.88	50	-0.28	32.88	26.43	52	6.49	34.43	50	6.50	34.43	27.06
75	-0.75	33.08	75	-0.75	33.08	26.61	79	6.50	34.43	75	6.50	34.43	27.06
101	-0.33	33.215	100	-0.35	33.21	26.70	105	6.50	34.44	100	6.50	34.44	27.06
150	0.76	33.65	150	0.76	33.65	27.00	156	6.67	34.685	150	6.65	34.66	27.22
201	0.92	33.745	200	0.90	33.74	27.06	209	6.38	34.79	200	6.45	34.77	27.34
							314	5.33	34.89	300	5.50	34.88	27.54
							363	5.07	34.89	400	4.85	34.89	27.62
							546	3.96	34.89	600	3.85	34.89	27.73
							739	3.66	34.88	800	3.60	34.87	27.75
							928	3.54	34.87	1,000	3.55	34.88	27.75
							1,352	3.56	34.92				
Station 7364; 3 May; 15°53' N., 17°45' W.; depth 677 m.; dynamic height 971.063							Station 7368; 3 May; 15°39.6' N., 45°33.8' W.; depth 3,621 m.; dynamic height 970.879						
0	0.16	32.87	0	0.16	32.87	26.40	0	3.73	34.25	0	3.73	34.25	27.24
23	0.13	32.88	25	0.15	32.90	26.42	26	3.71	34.26	25	3.75	34.26	27.25
45	0.58	33.04	50	0.30	33.07	26.56	51	1.03	34.30	50	4.00	34.30	27.25
68	-0.49	33.19	75	-0.40	33.21	26.71	77	3.75	34.475	75	3.75	34.45	27.39
91	-0.48	33.325	100	0.00	33.34	26.79	102	3.58	34.60	100	3.60	34.60	27.53
135	0.83	33.68	150	0.90	33.74	27.06	152	4.67	34.87	150	4.60	34.85	27.62
181	1.12	33.86	200	1.40	33.97	27.21	204	1.52	34.87	200	1.55	34.87	27.65
272	2.51	34.14	300	2.69	34.48	27.52	306	3.67	34.82	300	3.70	34.82	27.70
367	2.83	34.57	400	3.00	34.61	27.60	375	3.66	34.81	400	3.65	34.82	27.70
567	3.78	34.84	(600)	3.95	34.88	27.71	568	3.65	34.87	600	3.60	34.87	27.75
							763	3.54	34.865	800	3.55	34.87	27.75
							958	3.47	34.88	1,000	3.45	34.88	27.76
							1,400	3.11	34.91				
Station 7365; 3 May; 15°49' N., 17°20' W.; depth 1,372 m.; dynamic height 970.936							Station 7369; 3 May; 45°41.1' N., 44°40.5' W.; depth 4,352 m.; dynamic height 970.929						
0	0.99	33.48	0	0.99	33.48	26.81	0	3.64	33.58	0	3.64	33.58	26.71
26	1.81	33.68	25	1.80	33.68	26.95	26	4.30	33.905	25	4.30	33.90	26.90
50	2.67	33.95	50	2.67	33.95	26.92	52	1.35	34.005	50	4.35	34.00	26.97
76	2.56	34.085	75	2.60	34.07	27.20	78	3.86	34.155	75	3.95	34.15	27.14
100	2.12	34.14	100	2.12	34.14	27.29	105	3.50	34.26	100	3.55	34.24	27.25
152	2.55	34.115	150	2.57	34.40	27.47	156	3.65	34.44	150	3.60	34.42	27.39
202	2.64	34.48	200	2.65	34.47	27.52	208	1.26	34.745	200	4.10	34.67	27.54
302	3.34	34.635	300	3.39	34.69	27.63	313	5.17	35.01	300	5.05	34.97	27.67
332	3.63	34.77	400	3.70	34.81	27.69	416	4.40	34.945	400	4.50	34.96	27.72
507	3.77	34.87	600	3.70	34.87	27.74	622	3.86	34.92	600	3.90	34.92	27.76
687	3.66	34.87	800	3.69	34.88	27.75	828	3.50	34.90	800	3.55	34.90	27.77
845	3.61	34.88	1,000	3.55	34.88	27.75	1,031	3.61	34.93	1,000	3.60	34.93	27.79
1,324	3.47	34.88					1,550	3.11	34.935				
Station 7366; 3 May; 15°46' N., 46°44' W.; depth 2,834 m.; dynamic height 970.999							Station 7370; 4 May; 46°06.4' N., 44°46.9' W.; depth 3,731 m.; dynamic height 970.921						
0	7.26	31.61	0	7.26	31.61	27.10	0	4.11	33.97	0	4.41	33.97	26.91
26	7.27	31.61	25	7.25	31.61	27.10	26	4.11	33.975	25	4.40	33.97	26.95
52	7.26	31.61	50	7.25	31.61	27.10	52	4.39	34.00	50	4.40	34.00	26.97
78	7.26	31.615	75	7.25	34.61	27.10	78	4.05	34.20	75	4.10	34.17	27.14
104	7.27	31.62	100	7.25	31.62	27.11	104	3.59	34.29	100	3.65	34.27	27.26
155	7.26	31.62	150	7.25	34.62	27.11	155	4.25	34.65	150	4.15	34.61	27.48
207	6.68	34.725	200	6.75	34.71	27.25	207	3.59	34.635	200	3.70	34.64	27.55
311	5.16	34.82	300	5.60	34.81	27.47	311	4.11	34.88	300	4.05	34.85	27.68
376	4.80	34.88	400	1.80	34.89	27.63	411	3.89	34.87	400	3.90	34.87	27.72
564	4.35	34.975	600	1.80	34.97	27.75	621	3.77	34.90	600	3.75	34.90	27.75
751	4.14	34.95	800	4.10	34.95	27.76	828	3.57	34.88	800	3.60	34.89	27.76
945	3.89	34.95	1,000	3.85	34.95	27.78	1,031	3.69	34.925	1,000	3.65	34.92	27.78
1,440	3.55	34.94					1,549	3.45	34.93				

# TABLE OF OCEANOGRAPHIC DATA—Continued

Observed values			Scaled values			
Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	$\sigma_t$
Station 7371; 4 May; 46°32.4' N., 44°53.5' W.; depth 704 m.; dynamic height 970.875						
0	3.61	34.12	0	3.61	34.12	27.15
24	3.58	34.12	25	3.60	34.12	27.15
50	3.56	34.12	50	3.56	34.12	27.15
74	3.44	34.42	75	3.45	34.42	27.10
100	3.37	34.50	100	3.37	34.50	27.47
149	3.66	34.69	150	3.65	34.69	27.59
199	3.82	34.79	200	3.80	34.79	27.66
299	3.73	34.85	300	3.70	34.85	27.72
399	3.64	34.86	400	3.65	34.86	27.73
690	3.56	34.88	600	3.56	34.88	27.75

Station 7372; 4 May; 46°39.5' N., 44°56.1' W.; depth 223 m.; dynamic height 970.898						
Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	$\sigma_t$
0	3.61	34.08	0	3.61	34.08	27.11
23	3.60	34.09	25	3.60	34.09	27.12
47	3.59	34.09	50	3.60	34.09	27.12
70	3.59	34.10	75	3.55	34.14	27.17
94	3.40	34.31	100	3.40	34.33	27.33
141	3.53	34.51	150	3.55	34.55	27.49
188	3.71	34.72	(200)	3.75	34.77	27.65

Station 7373; 4 May; 46°50.9' N., 45°01.1' W.; depth 183 m.; dynamic height 970.894						
Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	$\sigma_t$
0	3.67	34.06	0	3.67	34.06	27.09
21	3.63	34.08	25	3.60	34.08	27.12
41	3.59	34.09	50	3.50	34.15	27.18
62	3.31	34.265	75	3.45	34.31	27.31
83	3.55	34.38	100	3.60	34.48	27.43
125	3.69	34.65	(150)	3.75	34.81	27.68

Station 7374; 4 May; 46°50.9' N., 44°46.3' W.; depth 152 m.; dynamic height 970.885						
Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	$\sigma_t$
0	3.63	34.09	0	3.63	34.09	27.12
27	3.61	34.09	25	3.69	34.09	27.12
53	3.56	34.09	50	3.55	34.09	27.13
80	3.18	34.32	75	3.25	34.28	27.30
106	3.20	34.39	100	3.20	34.37	27.39

Station 7375; 4 May; 46°50.2' N., 44°55.1' W.; depth 179 m.; dynamic height 970.894						
Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	$\sigma_t$
0	3.65	34.06	0	3.65	34.06	27.10
25	3.63	34.06	25	3.63	34.06	27.10
51	3.59	34.06	50	3.60	34.07	27.11
75	3.57	34.08	75	3.57	34.08	27.12
101	3.35	34.31	100	3.35	34.31	27.32
151	3.66	34.70	150	3.65	34.70	27.69

Station 7376; 4 May; 46°48.8' N., 45°15.1' W.; depth 220 m.; dynamic height 970.906						
Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	$\sigma_t$
0	3.78	34.06	0	3.78	34.06	27.08
25	3.77	34.07	25	3.77	34.07	27.09
50	3.75	34.07	50	3.75	34.07	27.10
75	3.74	34.08	75	3.74	34.08	27.11
101	3.40	34.23	100	3.40	34.23	27.25
150	4.03	34.55	150	4.03	34.55	27.44
201	3.88	34.71	200	3.90	34.70	27.58

Observed values			Scaled values			
Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	$\sigma_t$
Station 7377; 4 May; 46°47' N., 45°40' W.; depth 256 m.; dynamic height 970.901						
0	3.95	34.11	0	3.95	34.11	27.11
24	3.95	34.12	25	3.95	34.12	27.12
49	3.95	34.12	50	3.95	34.12	27.12
72	3.99	34.175	75	4.00	34.19	27.16
97	3.67	34.405	100	3.70	34.41	27.37
145	4.23	34.58	150	4.25	34.60	27.46
193	4.32	34.74	200	4.25	34.75	27.58
242	3.92	34.80	250	3.90	34.81	27.67

Station 7378; 4 May; 46°46.5' N., 45°54' W.; depth 348 m.; dynamic height 970.881						
Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	$\sigma_t$
0	3.98	34.16	0	3.98	34.16	27.14
24	3.99	34.15	25	4.00	34.16	27.14
48	3.93	34.16	50	3.95	34.18	27.16
72	3.55	34.415	75	3.69	34.43	27.39
96	4.03	34.56	100	4.05	34.57	27.46
145	4.12	34.67	150	4.10	34.68	27.54
193	4.08	34.765	200	4.05	34.77	27.62
289	3.81	34.85	(300)	3.80	34.86	27.72

Station 7379; 4 May; 46°43' N., 46°33' W.; depth 732 m.; dynamic height 970.878						
Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	$\sigma_t$
0	3.92	34.13	0	3.92	34.13	27.12
25	3.93	34.13	25	3.93	34.13	27.12
50	3.96	34.13	50	3.96	34.13	27.12
75	3.56	34.26	75	3.56	34.26	27.27
100	4.10	34.62	100	4.10	34.62	27.50
149	4.16	34.745	150	4.15	34.75	27.59
199	3.92	34.81	200	3.90	34.81	27.67
299	3.84	34.87	300	3.85	34.87	27.72
388	3.68	34.88	400	3.65	34.88	27.74
551	3.53	34.87	(600)	3.50	34.87	27.76

Station 7380; 5 May; 46°42' N., 46°52' W.; depth 1,234 m.; dynamic height 970.887						
Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	$\sigma_t$
0	2.22	34.08	0	2.22	34.08	27.24
26	2.24	34.08	25	2.25	34.08	27.23
51	2.26	34.26	50	2.25	34.26	27.38
77	2.22	34.335	75	2.20	34.33	27.44
103	2.48	34.44	100	2.45	34.43	27.49
153	2.70	34.53	150	2.70	34.52	27.55
204	3.16	34.68	200	3.10	34.67	27.64
307	3.69	34.81	300	3.65	34.80	27.68
406	3.77	34.87	400	3.80	34.86	27.72
607	3.73	34.875	600	3.75	34.87	27.73
807	3.66	34.87	800	3.65	34.87	27.74
1,007	3.54	34.86	1,000	3.55	34.86	27.74

Station 7381; 5 May; 46°41' N., 47°12' W.; depth 649 m.; dynamic height 970.929						
Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	$\sigma_t$
0	0.92	33.66	0	0.92	33.66	27.00
25	0.85	33.67	25	0.85	33.67	27.01
50	1.15	33.78	50	1.15	33.78	27.07
76	1.19	33.94	75	1.20	33.94	27.20
101	1.48	34.09	100	1.45	34.09	27.30
150	1.94	34.27	150	1.94	34.27	27.42
201	2.41	34.45	200	2.40	34.45	27.52
302	3.25	34.70	300	3.20	34.70	27.65
403	3.73	34.84	400	3.70	34.83	27.70
607	3.66	34.86	600	3.65	34.87	27.74

TABLE OF OCEANOGRAPHIC DATA—Continued

Observed values			Scaled values				Observed values			Scaled values			
Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	$\sigma_t$	Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	$\sigma_t$
Station 7382; 5 May; 46°40' N., 47°25' W.; depth 329 m.; dynamic height 971.011							Station 7389; 6 May; 47°11.5' N., 47°40' W.; depth 216 m.; dynamic height 971.066						
0	-0.01	32.98	0	-0.04	32.98	26.50	0	-0.23	32.68	0	-0.23	32.68	26.27
23	-0.56	33.13	25	-0.45	33.17	26.67	26	-0.37	32.66	25	-0.35	32.66	26.25
46	0.52	33.40	50	0.45	33.44	26.82	52	-0.81	32.80	50	-0.75	32.79	26.38
69	0.09	33.445	75	0.10	33.46	26.88	78	-0.95	32.99	75	-0.90	32.96	26.52
92	0.13	33.51	100	0.15	33.54	26.94	104	-0.71	33.18	100	-0.75	33.15	26.66
137	0.45	33.68	150	0.65	33.75	27.08	155	0.60	33.58	150	0.45	33.54	26.92
182	1.21	33.99	200	1.45	34.07	27.29	207	0.95	33.79	200	0.90	33.76	27.08
271	2.47	34.41	(300)	2.80	34.54	27.55							
Station 7383; 5 May; 46°38' N., 47°38' W.; depth 172 m.; dynamic height 971.059							Station 7390; 6 May; 47°11' N., 47°22' W.; depth 402 m.; dynamic height 971.086						
0	-0.21	32.70	0	-0.21	32.70	26.28	0	-0.51	32.71	0	-0.51	32.71	26.30
26	-0.25	32.70	25	-0.25	32.70	26.28	26	-0.50	32.74	25	-0.50	32.74	26.33
52	-0.37	32.72	50	-0.35	32.72	26.30	51	-0.58	32.75	50	-0.60	32.75	26.34
78	-1.01	33.05	75	-0.95	33.01	26.56	77	-0.80	32.92	75	-0.80	32.90	26.46
104	-0.06	33.36	100	-0.20	33.31	26.77	102	-0.93	33.015	100	-0.90	33.02	26.57
155	1.13	33.91	150	1.00	33.84	27.13	153	-0.20	33.36	150	-0.30	33.33	26.79
							204	0.89	33.78	200	0.75	33.73	27.06
							306	2.74	34.54	300	2.60	34.49	27.53
Station 7384; 5 May; 46°38' N., 48°13' W.; depth 117 m.; dynamic height 971.060							Station 7391; 6 May; 47°10' N., 46°53' W.; depth 1,189 m.; dynamic height 970.907						
0	0.28	32.77	0	0.28	32.77	26.32	0	1.23	33.77	0	1.23	33.77	27.06
26	0.16	32.78	25	0.15	32.78	26.33	26	1.41	33.89	25	1.40	33.89	27.14
51	0.24	32.82	50	0.25	32.82	26.36	51	1.35	33.935	50	1.35	33.93	27.18
76	-0.26	33.09	75	-0.25	33.07	26.58	77	1.53	34.12	75	1.50	34.11	27.32
102	0.33	33.125	100	0.25	33.30	26.74	101	1.84	34.23	100	1.85	34.22	27.38
							153	2.27	34.38	150	2.25	34.38	27.47
							205	2.67	34.52	200	2.65	34.51	27.55
							308	3.51	34.76	300	3.40	34.74	27.66
							405	3.74	34.83	400	3.75	34.83	27.69
							607	3.69	34.88	600	3.70	34.88	27.74
							811	3.54	34.89	800	3.55	34.89	27.76
							1,013	3.49	34.86	1,000	3.50	34.87	27.76
Station 7386; 5 May; 47°13' N., 49°13' W.; depth 102 m.; dynamic height 971.063							Station 7392; 6 May; 47°10' N., 46°42' W.; depth 658 m.; dynamic height 970.891						
0	0.53	32.80	0	0.53	32.80	26.33	0	3.62	34.09	0	3.62	34.09	27.12
28	0.34	32.82	25	0.35	32.82	26.35	24	3.59	34.10	25	3.55	34.10	27.14
55	0.36	32.825	50	0.35	32.82	26.35	48	3.28	34.09	50	3.30	34.09	27.15
83	0.16	33.01	75	0.00	32.93	26.46	73	3.09	34.24	75	3.30	34.25	27.28
							97	2.62	34.325	100	2.70	34.34	27.40
							114	3.88	34.64	150	3.90	34.65	27.54
							193	3.89	34.73	200	3.90	34.71	27.61
							290	3.92	34.84	300	3.90	34.81	27.69
							388	3.72	34.84	400	3.70	34.84	27.71
							585	3.47	34.875	(600)	3.45	34.88	27.76
Station 7387; 5 May; 47°13' N., 48°36' W.; depth 119 m.; dynamic height 971.062							Station 7393; 6 May; 47°11.5' N., 46°22' W.; depth 318 m.; dynamic height 970.879						
0	0.21	32.70	0	0.21	32.70	26.26	0	3.65	34.10	0	3.65	34.10	27.13
26	0.25	32.76	25	0.25	32.76	26.31	25	3.63	34.09	25	3.63	34.09	27.12
53	0.40	32.81	50	0.40	32.81	26.35	50	3.62	34.09	50	3.62	34.09	27.12
80	-0.32	33.07	75	-0.20	33.02	26.51	74	3.50	34.22	75	3.50	34.22	27.24
106	0.02	33.30	100	-0.10	33.25	26.72	99	3.60	34.50	100	3.60	34.51	27.46
							148	1.09	34.73	150	1.10	34.73	27.58
							197	3.92	34.785	200	3.90	34.79	27.65
							296	3.72	34.85	300	3.70	34.85	27.72
Station 7388; 6 May; 47°12' N., 48°03' W.; depth 166 m.; dynamic height 971.059													
0	-0.20	32.73	0	-0.20	32.73	26.31							
25	0.21	32.72	25	-0.21	32.72	26.30							
51	-0.13	32.80	50	-0.10	32.80	26.38							
76	0.56	33.08	75	-0.55	33.02	26.55							
102	-0.11	33.265	100	-0.15	33.24	26.72							
152	0.76	33.63	150	0.70	33.62	26.98							

# TABLE OF OCEANOGRAPHIC DATA—Continued

Observed values			Scaled values				Observed values			Scaled values			
Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	$\sigma_t$	Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	$\sigma_t$
Station 7394; 6 May; 47°16' N., 45°50' W.; depth 289 m.; dynamic height 970.893													
0	3.70	34.06	0	3.70	34.06	27.09							
26	3.64	34.07	25	3.65	34.07	27.11							
51	3.57	34.08	50	3.55	34.08	27.12							
77	3.57	34.07	75	3.55	34.07	27.12							
102	3.51	34.335	100	3.30	34.30	27.32							
153	3.85	34.64	150	3.80	34.61	27.52							
206	3.71	34.72	200	3.70	34.71	27.61							
256	3.71	34.775	250	3.70	34.77	27.66							
Station 7395; 6 May; 47°19' N., 45°27' W.; depth 218 m.; dynamic height 970.912													
0	3.68	34.05	0	3.68	34.05	27.08							
25	3.63	34.06	25	3.63	34.06	27.10							
50	3.58	34.08	50	3.58	34.08	27.12							
75	3.54	34.09	75	3.54	34.09	27.13							
100	3.53	34.10	100	3.53	34.10	27.14							
150	3.61	34.42	150	3.61	34.42	27.39							
200	3.79	34.63	200	3.79	34.63	27.54							
Station 7396; 6 May; 47°23' N., 44°58' W.; depth 170 m.; dynamic height 970.897													
0	3.60	34.05	0	3.60	34.05	27.09							
27	3.59	34.09	25	3.60	34.09	27.12							
52	3.49	34.10	50	3.50	34.10	27.14							
78	3.37	34.11	75	3.40	34.12	27.17							
103	3.15	34.34	100	3.15	34.32	27.35							
158	3.82	34.63	150	3.70	34.59	27.51							
Station 7397; 6 May; 47°30' N., 45°13' W.; depth 223 m.; dynamic height 970.995													
0	3.65	34.06	0	3.65	34.06	27.10							
26	3.66	34.07	25	3.66	34.07	27.11							
52	3.61	34.06	50	3.60	34.06	27.10							
78	3.49	34.06	75	3.50	34.06	27.11							
103	3.29	34.18	100	3.30	34.16	27.21							
154	3.50	34.53	150	3.50	34.51	27.47							
206	3.70	34.71	200	3.65	34.69	27.59							
Station 7398; 6 May; 47°40' N., 45°38' W.; depth 329 m.; dynamic height 970.877													
0	3.63	34.08	0	3.63	34.08	27.11							
24	3.63	34.08	25	3.60	34.08	27.11							
49	3.59	34.095	50	3.60	34.10	27.13							
73	3.54	34.34	75	3.55	34.35	27.33							
97	2.96	34.435	100	3.00	34.44	27.46							
146	3.34	34.63	150	3.40	34.64	27.58							
195	3.79	34.775	200	3.80	34.78	27.65							
292	3.70	34.86	(300)	3.70	34.87	27.74							
Station 7399; 7 May; 47°42' N., 45°45' W.; depth 433 m.; dynamic height 970.869													
0	3.43	34.25	0	3.43	34.25	27.27							
24	3.43	34.23	25	3.40	34.23	27.25							
50	3.30	34.23	50	3.30	34.23	27.26							
74	2.53	34.365	75	2.55	34.37	27.45							
99	2.63	34.47	100	2.60	34.47	27.52							
148	3.04	34.605	150	3.10	34.61	27.59							
198	3.94	34.80	200	3.95	34.80	27.65							
297	3.78	34.83	300	3.85	34.83	27.68							
396	3.56	34.88	(400)	3.80	34.88	27.73							
Station 7400; 7 May; 47°46' N., 45°58' W.; depth 1,042 m.; dynamic height 970.862													
0	3.06	34.28	0	3.06	34.28	27.32							
25	3.12	34.28	25	3.12	34.28	27.32							
50	3.12	34.25	50	3.12	34.26	27.30							
75	2.98	34.48	75	2.98	34.48	27.49							
100	2.92	34.53	100	2.92	34.53	27.54							
149	3.23	34.63	150	3.25	34.63	27.58							
199	3.70	34.77	200	3.70	34.77	27.66							
299	3.80	34.83	300	3.80	34.83	27.69							
399	3.76	34.88	400	3.75	34.88	27.73							
600	3.54	34.87	600	3.54	34.87	27.74							
804	3.48	34.89	800	3.50	34.89	27.77							
1,008	3.43	34.905	1,000	3.45	34.90	27.78							
Station 7401; 7 May; 47°58' N., 46°25' W., depth 1,189 m.; dynamic height 970.881													
0	2.27	34.10	0	2.27	34.10	27.25							
25	2.27	34.09	25	2.27	34.09	27.24							
50	2.36	34.14	50	2.36	34.14	27.27							
75	2.36	34.38	75	2.36	34.38	27.46							
100	2.50	34.43	100	2.50	34.43	27.49							
150	2.81	34.55	150	2.81	34.55	27.56							
200	3.14	34.65	200	3.14	34.65	27.61							
300	3.56	34.80	300	3.56	34.80	27.69							
400	3.65	34.85	400	3.65	34.85	27.72							
602	3.69	34.88	600	3.70	34.88	27.74							
807	3.61	34.87	800	3.60	34.87	27.75							
1,014	3.51	34.895	1,000	3.55	34.89	27.76							
Station 7402; 7 May; 48°17' N., 45°58' W.; depth 1,006 m.; dynamic height 970.862													
0	3.50	34.28	0	3.50	34.28	27.28							
23	3.36	34.32	25	3.55	34.33	27.31							
46	3.23	34.38	50	3.25	34.38	27.38							
70	3.27	34.40	75	3.25	34.43	27.42							
93	2.97	34.52	100	3.00	34.54	27.54							
138	3.27	34.62	150	3.35	34.65	27.59							
185	3.56	34.73	200	3.60	34.74	27.64							
278	3.81	34.82	300	3.80	34.83	27.69							
357	3.72	34.86	400	3.70	34.86	27.73							
547	3.60	34.87	600	3.60	34.87	27.75							
737	3.56	34.885	800	3.50	34.89	27.77							
951	3.43	34.90	1,000	3.40	34.90	27.79							
Station 7403; 7 May; 48°37' N., 45°30' W., depth 878 m.; dynamic height 970.865													
0	3.65	34.30	0	3.65	34.30	27.29							
26	3.55	34.315	25	3.55	34.31	27.30							
52	3.26	34.38	50	3.30	34.38	27.38							
78	3.17	34.495	75	3.20	34.48	27.47							
103	2.98	34.52	100	3.00	34.52	27.53							
156	3.22	34.61	150	3.20	34.60	27.57							
207	3.59	34.755	200	3.55	34.73	27.64							
303	3.82	34.86	300	3.80	34.86	27.72							
399	3.75	34.86	400	3.80	34.86	27.72							
597	3.59	34.85	600	3.60	34.85	27.73							
797	3.43	34.88	(800)	3.40	34.88	27.77							

# TABLE OF OCEANOGRAPHIC DATA—Continued

Observed values			Scaled values			
Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	$\sigma_t$
Station 7101; 7 May; 19°02' N., 45°02' W., depth 1,408 m.; dynamic height 970.862						
0	3.16	34.31	0	3.16	34.31	27.34
26	3.10	34.32	25	3.10	34.32	27.36
52	2.51	34.33	50	2.60	34.33	27.40
77	2.87	34.41	75	2.85	34.42	27.46
103	3.05	34.52	100	3.00	34.51	27.52
152	3.34	34.70	150	3.20	34.69	27.63
205	3.62	34.80	200	3.45	34.79	27.69
308	3.65	34.81	300	3.65	34.83	27.70
400	3.66	34.85	400	3.68	34.85	27.72
602	3.61	34.86	600	3.60	34.86	27.74
806	3.53	34.88	800	3.55	34.88	27.75
1,010	3.48	34.88	1,000	3.50	34.88	27.76
1,274	3.46	34.89				
Station 7105; 7 May; 19°10' N., 45°40' W., depth 2,432 m.; dynamic height 970.861						
0	4.54	34.54	0	4.54	34.54	27.38
21	4.55	34.55	25	4.55	34.55	27.39
48	4.45	34.55	50	4.40	34.55	27.41
72	3.13	34.50	75	3.10	34.50	27.50
96	3.08	34.53	100	3.10	34.54	27.53
114	3.42	34.65	150	3.50	34.66	27.59
192	3.55	34.78	200	3.55	34.79	27.68
288	3.69	34.85	300	3.70	34.85	27.72
355	3.62	34.85	400	3.65	34.85	27.72
542	3.62	34.875	600	3.60	34.88	27.75
737	3.56	34.88	800	3.65	34.89	27.75
938	3.90	34.91	1,000	3.85	34.91	27.75
1,417	3.38	34.925				
Station 7106; 8 May; 49°19' N., 46°20' W., depth 3,054 m.; dynamic height 970.878						
0	5.30	34.63	0	5.30	34.63	27.36
26	5.30	34.63	25	5.30	34.63	27.36
52	5.27	34.63	50	5.25	34.63	27.37
78	5.09	34.63	75	5.10	34.63	27.39
104	4.88	34.635	100	4.90	34.63	27.41
155	4.12	34.62	150	4.20	34.62	27.49
207	3.95	34.71	200	3.95	34.72	27.59
311	3.97	34.85	300	3.95	34.84	27.68
400	3.83	34.87	400	3.85	34.87	27.72
600	3.65	34.88	600	3.65	34.88	27.74
801	3.58	34.90	800	3.60	34.90	27.77
1,006	3.49	34.91	1,000	3.50	34.91	27.79
1,522	3.41	34.94				
Station 7107; 8 May; 48°59' N., 46°38' W., depth 2,816 m.; dynamic height 970.852						
0	3.49	34.49	0	3.49	34.49	27.45
26	3.50	34.49	25	3.50	34.49	27.45
51	3.06	34.55	50	3.05	34.55	27.54
77	3.08	34.58	75	3.05	34.58	27.56
103	3.00	34.56	100	3.00	34.57	27.57
153	3.01	34.615	150	3.00	34.61	27.60
205	3.30	34.735	200	3.25	34.72	27.66
308	3.63	34.84	300	3.60	34.83	27.71
414	3.62	34.84	400	3.65	34.84	27.71
621	3.57	34.865	600	3.60	34.86	27.74
829	3.47	34.885	800	3.50	34.88	27.76
1,037	3.50	34.90	1,000	3.50	34.90	27.78
1,557	3.39	34.92				
Station 7408; 8 May; 48°36' N., 46°57' W., depth 2,542 m.; dynamic height 970.844						
0	3.27	34.42	0	3.27	34.42	27.42
26	3.23	34.435	25	3.25	34.43	27.42
53	3.23	34.465	50	3.25	34.46	27.45
79	3.34	34.54	75	3.30	34.53	27.50
105	3.28	34.58	100	3.05	34.57	27.56
157	3.20	34.71	150	3.15	34.69	27.64
210	3.39	34.78	200	3.35	34.77	27.69
315	3.65	34.85	300	3.60	34.84	27.72
413	3.63	34.88	400	3.65	34.87	27.74
619	3.58	34.88	600	3.60	34.88	27.75
822	3.48	34.88	800	3.50	34.88	27.76
1,029	3.47	34.90	1,000	3.50	34.90	27.78
1,545	3.33	34.91				
Station 7409; 8 May; 48°13' N., 47°18' W.; depth 1,792 m.; dynamic height 970.881						
0	1.84	33.71	0	1.84	33.71	26.97
25	0.95	33.98	25	0.95	33.98	27.25
51	1.53	34.17	50	1.45	34.16	27.36
76	2.14	34.34	75	2.15	34.33	27.42
102	2.59	34.445	100	2.30	34.44	27.54
152	2.94	34.56	150	2.90	34.55	27.56
201	3.08	34.62	200	3.05	34.61	27.59
306	3.59	34.82	300	3.55	34.80	27.69
392	3.65	34.85	400	3.65	34.85	27.72
588	3.59	34.87	600	3.60	34.87	27.75
784	3.56	34.87	800	3.55	34.87	27.75
984	3.47	34.89	1,000	3.45	34.89	27.77
1,489	3.35	34.915				
Station 7110; 8 May; 47°54' N., 47°37' W.; depth 375 m.; dynamic height 971.918						
0	0.48	32.61	0	0.48	32.61	26.19
23	-0.60	32.77	25	-0.65	32.80	26.39
46	-0.65	33.06	50	-0.65	33.10	26.62
68	-0.33	33.215	75	-0.15	33.30	26.76
92	0.29	33.49	100	0.40	33.54	26.93
137	0.99	33.77	150	1.25	33.89	27.15
183	1.99	34.20	200	2.15	34.33	27.44
275	2.81	34.53	300	2.95	34.61	27.60
366	3.22	34.68	(400)	3.35	34.72	27.65
Station 7411; 8 May; 47°46.5' N., 47°48' W.; depth 309 m.; dynamic height 971.096						
0	0.66	32.54	0	0.66	32.54	26.11
24	-0.59	32.59	25	-0.60	32.59	26.21
49	-1.23	32.72	50	-1.20	32.73	26.34
73	-1.46	32.83	75	-1.45	32.83	26.43
97	-1.23	32.895	100	-1.15	32.92	26.49
146	-0.11	33.335	150	-0.05	33.38	26.82
195	0.80	33.73	200	0.85	33.77	27.09
292	2.88	34.505	300	3.00	34.56	27.56
Station 7412; 8 May; 47°42' N., 48°11' W.; depth 230 m.; dynamic height 971.086						
0	0.63	32.57	0	0.63	32.57	26.17
25	-0.52	32.64	25	-0.52	32.64	26.25
50	-1.21	32.78	50	-1.21	32.78	26.38
75	-1.22	32.81	75	-1.22	32.81	26.41
100	-1.34	32.90	100	-1.34	32.90	26.48
151	0.05	33.30	150	0.00	33.30	26.75
201	1.51	34.015	200	1.50	34.04	27.26

# TABLE OF OCEANOGRAPHIC DATA—Continued

Observed values			Scaled values				Observed values			Scaled values			
Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	$\sigma_t$	Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	$\sigma_t$
Station 7413; 8 May; 47°41' N., 48°32' W; depth 214 m.; dynamic height 971.022							Station 7418; 9 May; 48°28' N., 48°18' W, depth 1,939 m.; dynamic height 970.878						
0	0.55	32.96	0	0.55	32.96	26.45	0	1.82	33.74	0	1.82	33.74	26.99
25	0.12	33.10	25	0.10	33.10	26.59	25	1.53	34.05	25	1.53	34.05	27.27
51	0.18	33.17	50	0.15	33.17	26.64	50	1.90	34.25	50	1.90	34.25	27.40
76	-0.41	33.24	75	-0.40	33.23	26.72	76	2.23	34.38	75	2.20	34.38	27.48
102	0.00	33.41	100	-0.05	33.40	26.84	101	2.21	34.445	100	2.20	34.44	27.53
153	0.29	33.54	150	0.25	33.53	26.93	150	2.63	34.56	150	2.63	34.56	27.59
204	2.47	34.475	200	0.30	34.41	27.63	200	3.17	34.69	200	3.17	34.69	27.64
							301	3.61	34.825	300	3.60	34.82	27.71
							386	3.61	34.84	400	3.65	34.84	27.71
							573	3.53	34.845	600	3.55	34.85	27.73
							757	3.47	34.85	800	3.45	34.85	27.74
							950	3.45	34.87	1,000	3.45	34.87	27.76
							1,440	3.43	34.905				
Station 7414; 8 May; 47°39' N., 48°56' W; depth 179 m.; dynamic height 971.083							Station 7419; 9 May; 48°48' N., 48°02' W, depth 2,286 m.; dynamic height 970.860						
0	0.41	32.40	0	0.44	32.40	26.02	0	4.20	34.52	0	4.20	34.52	27.41
24	0.79	32.445	25	0.75	32.45	26.04	25	3.87	34.52	25	3.87	34.52	27.44
49	-1.56	32.68	50	-1.55	32.68	26.31	51	3.45	34.51	50	3.30	34.51	27.47
72	-1.54	32.80	75	-1.50	32.81	26.42	76	2.80	34.52	75	2.80	34.51	27.53
97	-1.26	32.94	100	-1.20	32.96	26.53	102	2.82	34.55	100	2.80	34.55	27.56
145	0.06	33.41	(150)	0.20	33.45	26.87	152	2.73	34.61	150	2.75	34.61	27.62
							302	3.21	34.70	300	3.15	34.70	27.65
							304	3.66	34.845	300	3.65	34.84	27.71
							396	3.64	34.85	400	3.65	34.85	27.72
							594	3.53	34.86	600	3.55	34.86	27.74
							794	3.42	34.85	800	3.45	34.85	27.74
							994	3.46		1,000	3.50	34.87	27.76
							1,496	3.37	34.90				
Station 7415; 9 May; 47°50' N., 48°48' W; depth 220 m.; dynamic height 971.059							Station 7420; 9 May; 49°02' N., 47°51' W, depth 2,395 m.; dynamic height 970.863						
0	-0.51	32.44	0	-0.51	32.44	26.09	0	4.41	34.52	0	4.41	34.52	27.38
25	-1.57	32.62	25	-1.57	32.62	26.26	25	4.31	34.52	25	4.31	34.52	27.40
51	-1.58	32.81	50	-1.60	32.80	26.41	51	3.28	34.525	50	3.40	34.53	27.49
76	-1.39	32.96	75	-1.40	32.95	26.52	76	3.06	34.53	75	3.05	34.53	27.52
102	-0.36	33.29	100	-0.15	33.26	26.73	102	2.54	34.55	100	2.60	34.55	27.58
152	0.09	33.485	150	0.05	33.47	26.90	152	2.42	34.56	150	2.15	34.57	27.61
203	1.02	33.92	200	1.00	33.91	27.19	204	2.82	34.68	200	2.80	34.67	27.66
							306	3.42	34.775	300	3.40	34.77	27.69
							384	3.58	34.82	400	3.60	34.82	27.71
							578	3.52	34.85	600	3.55	34.85	27.73
							775	3.42	34.84	800	3.40	34.84	27.74
							972	3.42	34.85	1,000	3.45	34.85	27.77
							1,474	3.38	34.90				
Station 7416; 9 May; 48°05' N., 48°41' W, depth 322 m.; dynamic height 970.996							Station 7421; 9 May; 49°20' N., 47°40' W.; depth 2,560 m.; dynamic height 970.844						
0	0.81	33.06	0	0.81	33.06	26.52	0	3.51	34.54	0	3.51	34.54	27.49
25	0.50	33.12	25	0.50	33.12	26.58	26	3.39	34.53	25	3.40	34.53	27.49
50	-0.26	33.25	50	-0.26	33.25	26.72	52	3.11	34.52	50	3.15	34.52	27.51
74	-0.57	33.315	75	-0.55	33.32	26.79	74	2.51	34.54	75	2.60	34.54	27.57
99	-0.28	33.515	100	-0.35	33.53	26.95	104	2.54	34.605	100	2.55	34.59	27.62
148	1.11	33.93	150	1.15	33.95	27.21	154	3.54	34.735	150	3.10	34.72	27.68
198	1.66	34.245	200	1.70	34.25	27.41	206	3.61	34.845	200	3.55	34.83	27.71
297	2.78	34.58	300	2.80	34.59	27.59	310	3.60	34.84	300	3.60	34.84	27.72
							416	3.56	34.84	400	3.55	34.84	27.72
							623	3.45	34.84	600	3.45	34.84	27.73
							829	3.42	34.84	800	3.40	34.84	27.74
							1,036	3.45	34.895	1,000	3.45	34.89	27.77
							1,554	3.34	34.895				
Station 7417; 9 May; 48°12' N., 48°36' W, depth 677 m.; dynamic height 970.956							Station 7422; 9 May; 49°20' N., 47°40' W.; depth 2,560 m.; dynamic height 970.844						
0	1.26	33.15	0	1.26	33.15	26.56	0	3.51	34.54	0	3.51	34.54	27.49
24	0.20	33.13	25	0.20	33.13	26.61	26	3.39	34.53	25	3.40	34.53	27.49
49	-0.34	33.35	50	-0.30	33.37	26.82	52	3.11	34.52	50	3.15	34.52	27.51
73	0.03	33.65	75	0.10	33.66	27.04	74	2.51	34.54	75	2.60	34.54	27.57
99	0.94	33.80	100	0.95	33.81	27.11	104	2.54	34.605	100	2.55	34.59	27.62
147	1.66	34.17	150	1.70	34.19	27.36	154	3.54	34.735	150	3.10	34.72	27.68
196	2.68	34.52	200	2.70	34.53	27.55	206	3.61	34.845	200	3.55	34.83	27.71
295	3.42	34.74	300	3.45	34.74	27.65	310	3.60	34.84	300	3.60	34.84	27.72
396	3.64	34.83	400	3.65	34.83	27.70	416	3.56	34.84	400	3.55	34.84	27.72
598	3.68	34.88	600	3.65	34.88	27.74	623	3.45	34.84	600	3.45	34.84	27.73
							829	3.42	34.84	800	3.40	34.84	27.74
							1,036	3.45	34.895	1,000	3.45	34.89	27.77
							1,554	3.34	34.895				

# TABLE OF OCEANOGRAPHIC DATA—Continued

Observed values			Scaled values			
Depth, meters	Temperature, °C	Salinity, ‰	Depth, meters	Temperature, °C	Salinity, ‰	$\sigma_t$
Station 7422; 3 June; 50°02' N., 48°49' W.; depth 2,030 m.; dynamic height 970.816						
0	6.58	31.60	0	6.58	34.60	27.18
25	6.17	31.59	25	6.17	34.59	27.23
50	1.67	31.63	50	4.67	34.63	27.14
75	3.81	34.62	75	3.81	34.62	27.52
100	3.39	34.62	100	3.39	34.62	27.57
149	3.62	34.74	150	3.60	34.74	27.64
199	3.42	31.76	200	3.40	34.76	27.68
299	3.63	34.85	300	3.60	34.85	27.73
385	3.16	34.85	400	3.45	34.86	27.75
585	3.19	34.88	600	3.50	34.88	27.76
792	3.45	34.89	800	3.45	34.89	27.77
990	3.14	34.885	1,000	3.40	34.89	27.78
1,486	3.38	34.93				
Station 7423; 3 June; 49°49' N., 49°32' W.; depth 1,298 m.; dynamic height 970.867						
0	4.73	33.80	0	4.73	33.90	26.85
26	6.18	34.59	25	6.10	34.58	27.23
52	5.12	31.59	50	5.50	34.59	27.31
78	3.27	34.61	75	3.55	34.60	27.53
104	3.25	31.67	100	3.25	34.65	27.60
155	2.87	34.69	150	2.90	34.69	27.67
206	3.07	34.75	200	3.05	34.74	27.69
310	3.40	34.80	300	3.35	34.79	27.70
376	3.31	34.81	400	3.35	34.82	27.73
586	3.55	34.86	600	3.55	34.86	27.74
758	3.54	34.87	800	3.55	34.87	27.75
957	3.48	34.87	1,000	3.50	34.87	27.76
1,256	3.49	34.89				
Station 7424; 3 June; 49°47' N., 50°01' W.; depth 622 m.; dynamic height 970.960						
0	3.85	32.91	0	3.85	32.91	26.16
25	-0.48	33.07	25	-0.48	33.07	26.59
50	-0.25	33.50	50	-0.25	33.50	26.93
75	0.55	33.82	75	0.55	33.82	27.14
104	0.79	33.99	100	0.75	33.99	27.27
154	1.38	34.23	150	1.35	34.23	27.42
204	1.80	34.38	200	1.80	34.38	27.51
301	3.72	34.65	300	3.75	34.65	27.55
399	3.68	34.84	400	3.70	34.84	27.71
595	3.59	34.86	(600)	3.60	34.86	27.74
Station 7425; 3 June; 49°31' N., 50°32' W.; depth 313 m.; dynamic height 970.994						
0	3.51	32.71	0	3.51	32.71	26.03
26	2.12	32.95	25	2.15	32.95	26.34
51	-0.11	33.12	50	0.00	33.12	26.61
77	-0.62	33.39	75	-0.55	33.37	26.83
103	-0.08	33.615	100	-0.15	33.62	27.03
153	0.85	34.06	150	0.80	34.04	27.30
205	1.98	34.33	200	1.90	34.31	27.45
308	3.15	34.69	300	3.05	34.66	27.63
Station 7426; 3 June; 49°23' N., 51°01' W.; depth 348 m.; dynamic height 971.010						
0	3.41	32.59	0	3.44	32.59	25.95
26	-1.14	32.84	25	-0.90	32.83	26.11
52	-1.49	33.10	50	-1.45	33.09	26.63
78	-0.88	33.29	75	-0.90	33.26	26.76
104	-0.30	33.50	100	-0.15	33.47	26.92
155	1.10	33.93	150	1.00	33.88	27.16
206	1.45	34.21	200	1.40	34.18	27.38
310	2.98	34.66	300	2.85	34.62	27.62
Station 7427; 3 June; 49°12' N., 51°32' W.; depth 318 m.; dynamic height 971.079						
0	3.73	32.31	0	3.73	32.31	25.69
25	0.34	32.63	25	0.34	32.63	26.20
51	-1.22	32.84	50	-1.20	32.84	26.43
76	-1.55	32.94	75	-1.50	32.94	26.52
102	-1.32	33.07	100	-1.35	33.06	26.61
151	-0.51	33.39	150	-0.55	33.37	26.83
202	1.06	33.91	200	1.00	33.90	27.18
304	2.34	34.41	300	2.30	34.40	27.49
Station 7428; 3 June; 49°06' N., 51°49' W.; depth 300 m.; dynamic height 971.098						
0	3.56	32.10	0	3.56	32.10	25.56
24	2.52	32.38	25	2.45	32.39	25.87
49	-0.86	32.76	50	-0.85	32.76	26.35
74	-1.47	32.85	75	-1.45	32.85	26.44
98	-1.15	32.975	100	-1.40	32.99	26.56
147	-0.54	33.345	150	-0.50	33.36	26.82
196	0.06	33.71	200	0.15	33.74	27.10
294	2.42	34.41	(300)	2.55	34.44	27.50
Station 7429; 4 June; 49°02' N., 52°05' W.; depth 293 m.; dynamic height 971.125						
0	3.20	32.26	0	3.20	32.26	25.70
25	-0.91	32.59	25	-0.91	32.59	26.23
50	-1.59	32.72	50	-1.59	32.72	26.35
74	-1.62	32.77	75	-1.65	32.77	26.39
99	-1.59	32.85	100	-1.60	32.85	26.46
149	-1.41	33.01	150	-1.40	33.01	26.58
199	-0.60	33.33	200	-0.85	33.33	26.81
283	2.16	34.33				
Station 7430; 4 June; 48°58' N., 52°24' W.; depth 342 m.; dynamic height 971.149						
0	2.50	32.33	0	2.50	32.33	25.82
25	-1.22	32.66	25	-1.22	32.66	26.29
51	-1.67	32.78	50	-1.70	32.78	26.39
76	-1.54	32.86	75	-1.55	32.86	26.46
102	-1.49	32.88	100	-1.50	32.88	26.47
152	-1.29	32.97	150	-1.30	32.97	26.54
202	-0.76	33.19	200	-0.80	33.17	26.68
304	1.15	33.93	300	1.05	33.90	27.18
Station 7431; 4 June; 48°53' N., 52°50' W.; depth 223 m.; dynamic height 971.154						
0	4.61	31.69	0	4.61	31.69	25.12
26	0.97	32.34	25	1.00	32.34	25.94
52	-1.43	32.775	50	-1.35	32.75	26.36
78	-1.51	32.83	75	-1.50	32.82	26.42
104	-1.54	32.90	100	-1.55	32.89	26.48
155	-1.14	33.08	150	-1.20	33.06	26.61
207	-0.59	33.31	200	-0.65	33.29	26.77
Station 7432; 4 June; 48°45' N., 52°47' W.; depth 132 m.; dynamic height 971.158						
0	4.63	31.69	0	4.63	31.69	25.12
25	-0.52	32.50	25	-0.52	32.50	26.13
49	-1.57	32.72	50	-1.60	32.72	26.35
74	-1.60	32.79	75	-1.60	32.79	26.40
98	-1.61	32.80	100	-1.60	32.80	26.41
128	-1.58	32.85				

# TABLE OF OCEANOGRAPHIC DATA—Continued

Observed values				Scaled values				Observed values				Scaled values			
Depth, meters	Temperature, °C.	Salinity, ‰	$\sigma_t$	Depth, meters	Temperature, °C.	Salinity, ‰	$\sigma_t$	Depth, meters	Temperature, °C.	Salinity, ‰	$\sigma_t$	Depth, meters	Temperature, °C.	Salinity, ‰	$\sigma_t$
Station 7433; 4 June; 48°44' N., 52°58' W.; depth 121 m.; dynamic height 971.169								Station 7439; 4 June; 47°55' N., 51°06' W.; depth 181 m.; dynamic height 971.142							
0	6.30	30.80	24.23	0	6.30	30.80	24.23	0	4.11	32.18	25.55	0	4.11	32.18	25.55
28	-0.22	32.44	25.94	25	0.05	32.29	25.94	25	2.02	32.28	25.81	25	2.02	32.28	25.81
55	-1.30	32.595	26.22	50	-1.29	32.58	26.22	50	-0.84	32.60	26.29	50	-0.84	32.60	26.29
83	-1.53	32.67	26.28	75	-1.50	32.65	26.28	75	-1.14	32.82	26.41	75	-1.14	32.82	26.41
				(100)	-1.60	32.71	26.34	100	-1.06	32.91	26.48	100	-1.06	32.91	26.48
								140	-0.03	33.25					
Station 7434; 4 June; 48°45' N., 52°45' W.; depth 220 m.; dynamic height 971.149								Station 7440; 4 June; 47°48' N., 50°50' W.; depth 117 m.; dynamic height 971.130							
0	4.51	31.71	25.15	0	4.51	31.71	25.15	0	3.95	32.24	25.62	0	3.95	32.24	25.62
25	1.96	32.44	25.95	25	1.96	32.44	25.95	25	1.79	32.50	26.01	25	1.79	32.50	26.01
52	-1.60	32.71	26.33	50	-1.60	32.70	26.33	50	-1.15	32.64	26.27	50	-1.15	32.64	26.27
77	-1.61	32.795	26.40	75	-1.60	32.79	26.40	76	-1.49	32.785	26.39	75	-1.45	32.78	26.39
103	-1.60	32.80	26.41	100	-1.60	32.80	26.41	106	-0.52	33.115	26.59	100	-0.75	33.06	26.59
154	-0.60	33.305	26.76	150	-0.70	33.27	26.76								
Station 7435; 4 June; 48°32' N., 52°33.5' W.; depth 269 m.; dynamic height 971.115								Station 7441; 5 June; 47°40' N., 50°49' W.; depth 110 m.; dynamic height 971.125							
0	4.97	31.79	25.16	0	4.97	31.79	25.16	0	4.42	32.51	25.78	0	4.42	32.51	25.78
23	-1.09	32.48	26.01	25	1.85	32.51	26.01	25	2.74	32.56	25.98	25	2.74	32.56	25.98
46	-1.09	32.81	26.41	50	-1.10	32.82	26.41	50	1.05	32.75	26.26	50	1.05	32.75	26.26
69	-1.36	32.885	26.48	75	-1.40	32.90	26.48	74	0.30	32.92	26.45	75	0.30	32.93	26.45
92	-1.51	32.97	26.58	100	-1.45	33.01	26.58	104	0.23	33.33	26.72	100	0.25	33.27	26.72
138	-1.21	33.20	26.81	150	-1.30	33.31	26.81								
184	0.27	33.605	27.07	200	0.70	33.74	27.07								
221	1.25	33.935													
Station 7436; 4 June; 48°18' N., 51°54' W.; depth 192 m.; dynamic height 971.162								Station 7442; 5 June; 47°33' N., 50°20' W.; depth 104 m.; dynamic height 971.120							
0	5.22	31.59	24.98	0	5.22	31.59	24.98	0	4.79	32.69	25.88	0	4.79	32.69	25.88
26	-0.30	32.375	26.00	25	-0.25	32.35	26.00	24	2.57	32.48	26.09	25	2.55	32.70	26.13
52	-1.43	32.65	26.27	50	-1.35	32.64	26.27	49	0.69	32.79	26.32	50	0.70	32.80	26.32
78	-1.44	32.69	26.31	75	-1.60	32.68	26.31	74	0.32	32.945	26.46	75	0.30	32.95	26.46
104	-1.41	32.85	26.42	100	-1.45	32.82	26.42	99	0.16	33.20	26.67	100	0.15	33.20	26.67
155	-1.33	32.97	26.53	150	-1.30	32.96	26.53								
Station 7437; 4 June; 48°11' N., 51°34' W.; depth 220 m.; dynamic height 971.162								Station 7443; 5 June; 47°23' N., 49°58' W.; depth 91 m.; dynamic height 971.118							
0	4.25	31.91	25.33	0	4.25	31.91	25.33	0	4.42	32.60	25.87	0	4.42	32.60	25.87
25	0.63	32.12	25.78	25	0.63	32.12	25.78	24	2.73	32.695	26.09	25	2.25	32.70	26.13
50	-1.44	32.67	26.22	50	-1.44	32.57	26.22	49	-0.21	32.78	26.36	50	-0.20	32.79	26.36
75	-1.56	32.72	26.34	75	-1.56	32.72	26.34	78	-0.29	33.005	26.52	75	-0.25	32.99	26.52
100	-1.47	32.74	26.36	100	-1.47	32.74	26.36								
150	-0.84	33.03	26.57	150	-0.84	33.03	26.57								
200	0.33	33.43	26.84	200	0.33	33.43	26.84								
Station 7438; 4 June; 48°04' N., 51°15' W.; depth 179 m.; dynamic height 971.146								Station 7444; 5 June; 47°44' N., 49°47' W.; depth 115 m.; dynamic height 971.120							
0	3.95	32.14	25.54	0	3.95	32.14	25.54	0	4.17	32.47	25.78	0	4.17	32.47	25.78
25	2.30	32.20	25.73	25	2.30	32.20	25.73	25	2.81	32.70	26.09	25	2.81	32.70	26.09
51	-1.47	32.635	26.26	50	-1.40	32.63	26.26	50	0.29	32.80	26.34	50	0.29	32.80	26.34
76	-1.38	32.74	26.36	75	-1.40	32.74	26.36	75	-0.34	32.96	26.49	75	-0.34	32.96	26.49
101	-1.54	32.84	26.43	100	-1.50	32.83	26.43	100	-0.19	33.19	26.68	100	-0.19	33.19	26.68
152	0.04	33.33	26.76	150	0.00	33.31	26.76								
Station 7445; 5 June; 47°58' N., 49°45' W.; depth 168 m.; dynamic height 971.132								Station 7445; 5 June; 47°58' N., 49°45' W.; depth 168 m.; dynamic height 971.132							
0	3.76	32.28	25.66	0	3.76	32.28	25.66	0	3.76	32.28	25.66	0	3.76	32.28	25.66
24	1.79	32.455	25.98	25	1.75	32.45	25.98	24	1.75	32.45	25.98	25	1.75	32.45	25.98
49	-1.14	32.65	26.28	50	-1.15	32.65	26.28	49	-1.14	32.65	26.28	50	-1.15	32.65	26.28
74	-1.58	32.75	26.36	75	-1.55	32.75	26.36	74	-1.58	32.75	26.36	75	-1.55	32.75	26.36
99	-1.35	32.875	26.43	100	-1.35	32.89	26.47	99	-1.35	32.875	26.43	100	-1.35	32.89	26.47
148	0.19	33.455	26.91	(150)	0.20	33.48	26.91	148	0.19	33.455	26.91	(150)	0.20	33.48	26.91

TABLE OF OCEANOGRAPHIC DATA—Continued

Observed values			Scaled values			
Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	$\sigma_t$
Station 7146; 5 June; 48°12' N., 49°40' W.; depth 223 m.; dynamic height 971.109						
0	3.85	32.14	0	3.85	32.14	25.55
25	-0.07	32.06	25	-0.07	32.06	26.27
51	-1.02	32.81	50	-1.55	32.83	26.43
76	-1.05	32.955	75	-1.65	32.95	26.53
102	-0.99	33.175	100	-1.05	33.16	26.68
152	-0.02	33.50	150	-0.10	33.48	26.90
203	1.33	33.97	200	1.25	33.95	27.20
Station 7147; 5 June; 48°31' N., 49°31' W.; depth 594 m.; dynamic height 971.043						
0	3.95	32.31	0	3.95	32.31	25.67
18	0.79	32.085	25	0.75	32.78	26.30
38	-1.45	32.96	50	-1.00	33.03	26.57
56	-1.12	33.065	75	-0.70	33.30	26.78
72	-0.74	33.27	100	-0.40	33.47	26.92
112	0.25	33.55	150	1.00	33.89	25.17
150	1.00	33.89	200	1.55	34.17	27.36
225	1.86	34.30	300	2.80	34.57	27.58
307	2.90	34.60	400	3.30	34.70	27.64
482	3.65	34.78				
Station 7148; 5 June; 48°40' N., 49°22' W.; depth 1,042 m.; dynamic height 970.983						
0	4.00	32.36	0	4.00	32.36	25.71
20	-1.27	32.87	25	-1.20	32.94	26.51
39	-0.84	33.20	50	-0.70	33.33	26.81
59	-0.42	33.46	75	0.05	33.59	26.99
79	0.24	33.625	100	0.65	33.80	27.12
118	1.12	33.97	150	1.35	34.13	27.34
157	1.40	34.165	200	2.10	34.37	27.48
236	2.74	34.545	300	2.85	34.64	27.63
322	2.84	34.67	400	3.25	34.75	27.68
482	3.63	34.81	600	3.65	34.85	27.72
668	3.64	34.85	800	3.60	34.88	27.75
867	3.57	34.89	(1,000)	3.55	34.90	27.77
Station 7149; 5 June; 49°04' N., 49°10' W.; depth 1,705 m.; dynamic height 970.873						
0	5.99	34.37	0	5.99	34.37	27.08
26	5.06	34.535	25	5.85	34.53	27.22
51	3.06	34.165	50	3.10	34.47	27.48
77	2.66	34.56	75	2.70	34.55	27.57
102	2.96	34.655	100	2.90	34.65	27.64
154	3.06	34.69	150	3.05	34.69	27.65
205	3.18	34.755	200	3.15	34.75	27.69
307	3.33	34.79	300	3.30	34.79	27.71
414	3.40	34.83	400	3.40	34.82	27.73
622	3.52	34.87	600	3.50	34.87	27.76
833	3.46	34.875	800	3.50	34.87	27.76
1,043	3.44	34.87	1,000	3.45	34.87	27.76
1,277	3.46	34.905				
Station 7150; 6 June; 49°30' N., 49°04' W.; depth 1,810 m.; dynamic height 970.870						
0	5.87	34.19	0	5.87	34.19	26.95
26	5.09	34.355	25	5.10	34.35	27.17
52	5.05	34.52	50	5.05	34.50	27.29
78	3.47	34.64	75	3.75	34.62	27.53
104	3.17	34.69	100	3.25	34.68	27.62
156	3.16	34.72	150	3.10	34.72	27.68
208	3.23	34.755	200	3.20	34.75	27.69
312	3.14	34.80	300	3.10	34.80	27.71
421	3.37	34.815	400	3.40	34.81	27.72
630	3.17	34.83	600	3.45	34.83	27.72
841	3.16	34.85	800	3.45	34.85	27.74
1,052	3.45	34.885	1,000	3.45	34.88	27.76
1,581	3.37	34.915				
Station 7151; 6 June; 50°00' N., 48°53' W.; depth 2,030 m.; dynamic height 970.868						
0	5.69	34.35	0	5.69	34.35	27.10
23	5.12	34.565	25	5.05	34.57	27.35
47	4.35	34.60	50	4.25	34.60	27.46
70	3.52	34.59	75	3.45	34.60	27.54
95	2.97	34.62	100	2.95	34.62	27.61
141	2.83	34.63	150	2.85	34.64	27.63
188	3.05	34.68	200	3.10	34.69	27.65
283	3.27	34.755	300	3.30	34.76	27.69
380	3.28	34.81	400	3.35	34.81	27.72
568	3.33	34.82	600	3.35	34.82	27.73
755	3.45	34.84	800	3.50	34.85	27.74
952	3.16	34.855	1,000	3.50	34.86	27.75
1,447	3.44	34.89				
Station 7152; 18 June; 41°59' N., 51°00' W.; depth 3,292 m.; dynamic height 971.144						
0	12.47	33.47	0	12.47	33.47	25.33
24	11.63	33.83	25	11.65	33.85	25.78
50	11.96	35.28	50	11.96	35.28	26.84
74	12.44	35.19	75	12.40	35.49	26.91
99	12.29	35.52	100	12.25	35.50	26.95
148	12.27	35.52	150	12.25	35.50	26.95
198	10.78	35.24	200	10.70	35.23	27.02
297	7.71	34.96	300	7.65	34.96	27.31
399	6.80	34.905	400	5.90	34.88	27.49
602	4.32	34.83	600	4.25	34.89	27.60
862	4.16	34.90	800	4.00	34.92	27.75
1,017	3.95	34.93	1,000	3.90	34.93	27.76
1,327	3.70	34.93				
Station 7153; 19 June; 41°59' N., 51°58' W.; depth 4,023 m.; dynamic height 971.121						
0	11.10	33.12	0	11.10	33.12	25.32
25	9.35	33.18	25	9.35	33.18	25.65
51	1.52	33.15	50	1.75	33.15	26.54
77	3.55	33.61	75	3.30	33.57	26.74
103	4.33	33.96	100	4.20	33.91	26.92
153	7.52	34.15	150	7.25	34.43	26.95
205	8.32	34.96	200	8.25	34.92	27.20
308	6.83	34.97	300	6.95	34.97	27.43
406	5.31	34.88	400	5.40	34.89	27.56
610	4.93	35.00	600	4.95	34.99	27.69
815	4.06	34.95	800	4.10	34.95	27.76
1,017	3.99	34.96	1,000	4.00	34.96	27.78
1,519	3.68	34.95				
Station 7154; 19 June; 42°21' N., 51°30' W.; depth 2,926 m.; dynamic height 971.042						
0	8.50	32.78	0	8.50	32.78	25.48
25	8.03	33.12	25	8.03	33.12	25.81
52	3.75	33.53	50	4.15	33.50	26.60
77	3.65	33.81	75	3.65	33.81	26.89
103	3.26	33.94	100	3.30	33.92	27.02
154	4.06	34.32	150	4.00	34.30	27.25
206	3.03	34.35	200	3.15	34.35	27.37
309	3.57	34.63	300	3.55	34.60	27.53
378	1.87	34.91	400	4.25	34.91	27.71
568	4.43	34.94	600	4.30	34.93	27.71
759	3.85	34.90	800	3.85	34.90	27.74
949	3.83	34.92	1,000	3.80	34.92	27.77
1,426	3.56	34.92				

TABLE OF OCEANOGRAPHIC DATA—Continued

Observed values			Scaled values			
Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	$\sigma_t$
Station 7455; 19 June; 42°44' N., 51°05' W.; depth 1,774 m.; dynamic height 971.052						
0	10.02	33.07	0	10.02	33.07	25.46
26	9.82	33.22	25	9.85	33.22	25.60
52	6.23	33.54	50	8.85	33.51	26.00
78	3.95	33.86	75	4.50	33.82	26.82
105	3.94	34.09	100	3.95	34.05	27.06
156	4.62	34.61	150	4.50	34.54	27.39
208	4.03	34.64	200	4.10	34.63	27.50
313	4.67	34.87	300	4.85	34.84	27.58
405	4.47	34.88	400	4.50	34.88	27.65
610	3.70	34.85	600	3.75	34.85	27.71
816	3.72	34.88	800	3.70	34.88	27.74
1,022	3.63	34.89	1,000	3.65	34.88	27.74
1,539	3.58	34.93				

Station 7456; 19 June; 42°52' N., 50°50' W.; depth 1,070 m.; dynamic height 971.007						
Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	$\sigma_t$
0	11.14	33.33	0	11.14	33.33	25.47
23	7.39	33.39	25	7.05	33.41	26.18
47	3.21	33.66	50	3.45	33.78	26.89
70	7.49	34.59	75	7.55	34.62	27.06
93	7.98	34.76	100	7.65	34.74	27.14
139	5.91	34.66	150	5.90	34.65	27.31
186	5.85	34.62	200	5.80	34.65	27.32
279	5.58	34.78	300	5.55	34.78	27.45
369	3.52	34.60	400	5.20	34.78	27.49
547	3.65	34.79	600	3.65	34.81	27.69
735	3.73	34.86	800	3.70	34.86	27.73
927	3.69	34.86	1,000	3.60	34.86	27.74

Station 7457; 19 June; 42°54' N., 50°47' W.; depth 637 m.; dynamic height 971.079						
Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	$\sigma_t$
0	11.56	33.39	0	11.56	33.39	25.44
25	9.88	33.40	25	9.88	33.40	25.75
51	6.33	34.125	50	6.45	34.08	26.78
76	8.87	34.78	75	8.75	34.72	26.96
103	7.34	34.60	100	7.50	34.61	27.06
153	5.74	34.50	150	5.85	34.51	27.21
204	6.93	34.67	200	6.80	34.66	27.30
307	4.28	34.65	300	4.50	34.65	27.47
408	3.63	34.71	400	3.65	34.70	27.60
611	3.71	34.83	600	3.70	34.82	27.70

Station 7458; 19 June; 42°57' N., 50°42' W.; depth 170 m.; dynamic height 971.054						
Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	$\sigma_t$
0	11.18	33.39	0	11.18	33.39	25.51
25	6.41	33.57	25	6.11	33.57	26.39
51	2.34	33.61	50	2.65	33.61	26.83
76	8.41	75	8.30	34.69	27.01	
103	5.55	34.32	100	5.85	34.34	27.07
153	3.83	34.11	150	3.95	34.13	27.12

Station 7459; 19 June; 43°03' N., 50°34' W.; depth 93 m.; dynamic height 971.091						
Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	$\sigma_t$
0	8.83	33.11	0	8.83	33.11	25.68
26	7.26	32.88	25	7.25	32.89	25.74
51	0.17	32.97	50	0.45	32.97	26.47
78	0.56	33.33	75	0.50	33.30	26.72

Station 7460; 19 June; 43°21' N., 50°16' W.; depth 60 m.; dynamic height 971.095						
Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	$\sigma_t$
0	8.12	32.76	0	8.12	32.76	25.52
25	5.65	32.81	25	5.65	32.81	25.89
51	1.74	33.01	50	1.85	33.01	26.42

Observed values			Scaled values			
Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	$\sigma_t$
Station 7461; 19 June; 42°59' N., 50°20' W.; depth 91 m.; dynamic height 971.082						
0	6.05	32.57	0	6.05	32.57	25.65
25	1.82	32.77	25	1.82	32.77	26.22
50	0.07	32.98	50	0.07	32.98	26.50
75	-0.09	33.21	75	-0.09	33.21	26.69

Station 7462; 19 June; 42°48' N., 50°18' W.; depth 293 m.; dynamic height 971.102						
Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	$\sigma_t$
0	5.68	32.61	0	5.68	32.61	25.73
23	2.65	32.72	25	2.45	32.73	26.14
48	-0.48	32.86	50	-0.45	32.90	26.45
70	-0.34	33.11	75	-0.30	33.13	26.63
95	-0.17	33.25	100	-0.15	33.27	26.74
141	0.16	33.44	150	0.50	33.51	26.90
188	2.36	33.81	200	2.55	33.91	27.07
281	3.81	34.54				

Station 7463; 19 June; 42°38' N., 50°18' W.; depth 2,012 m.; dynamic height 971.070						
Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	$\sigma_t$
0	7.05	32.68	0	7.05	32.68	25.61
25	1.58	32.77	25	1.58	32.77	26.24
52	0.10	33.12	50	0.25	33.10	26.58
76	-0.23	33.26	75	-0.20	33.25	26.72
102	0.12	33.40	100	0.10	33.38	26.82
153	3.00	33.95	150	2.80	33.90	27.05
203	1.39	34.00	200	1.50	34.00	27.23
303	3.02	31.52	300	2.95	34.09	27.50
394	3.32	34.67	400	3.35	34.71	27.64
589	3.69	34.84	600	3.70	34.84	27.71
780	3.69	34.87	800	3.70	34.87	27.74
982	3.67	34.89	1,000	3.65	34.89	27.75
1,483	3.55	34.92				

Station 7464; 20 June; 42°21' N., 50°17' W.; depth 2,743 m.; dynamic height 970.972						
Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	$\sigma_t$
0	9.86	33.15	0	9.86	33.15	25.55
26	6.40	33.56	25	6.70	33.56	26.35
52	3.49	33.84	50	3.75	33.82	26.89
76	3.01	34.01	75	3.05	34.00	27.10
102	4.23	34.34	100	4.05	34.31	27.26
153	3.85	34.49	150	3.90	34.48	27.40
203	3.30	34.52	200	3.35	34.52	27.49
304	4.84	34.90	300	4.80	34.88	27.62
400	4.81	34.97	400	4.82	34.97	27.69
597	4.08	34.94	600	4.05	34.94	27.75
793	3.91	34.93	800	3.90	34.93	27.76
995	3.90	34.96	1,000	3.90	34.95	27.78
1,505	3.70	34.95				

Station 7465; 20 June; 41°58' N., 50°16' W.; depth 3,566 m.; dynamic height 971.083						
Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	$\sigma_t$
0	12.13	33.11	0	12.13	33.11	25.12
25	8.39	33.82	25	8.39	33.82	26.31
50	6.26	33.86	50	6.26	33.86	26.65
75	11.27	35.13	75	11.27	35.13	26.85
100	10.80	35.17	100	10.89	35.17	26.95
151	9.06	34.99	150	9.10	34.99	27.11
201	7.19	34.83	200	7.55	34.83	27.22
301	3.48	34.45	300	3.55	34.45	27.41
377	5.41	34.94	400	5.30	34.93	27.60
571	4.25	34.91	600	4.25	34.92	27.72
771	4.26	34.97	800	4.20	34.96	27.76
965	3.97	34.99	1,000	3.95	34.95	27.77
1,450	3.74	34.95				

TABLE OF OCEANOGRAPHIC DATA—Continued

Observed values			Scaled values			Observed values			Scaled values				
Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	$\sigma_t$	Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	$\sigma_t$
Station 7466; 20 June; 41°30' N., 50°14' W.; depth 3,931 m.; dynamic height 971.252						Station 7470; 23 June; 40°59' N., 48°28' W.; depth 3,383 m.; dynamic height 971.270							
0	16.70	35.61	0	16.70	35.64	26.09	0	16.43	34.99	0	16.43	34.99	25.66
25	16.42	35.70	25	16.42	35.70	26.21	24	16.89	35.43	25	16.85	35.43	25.90
51	15.62	36.02	50	15.65	36.00	26.61	49	14.11	35.57	50	14.15	35.56	26.53
76	15.12	35.94	75	15.15	35.94	26.68	73	13.36	35.54	75	13.30	35.53	26.76
102	13.71	35.70	100	13.95	35.71	26.76	98	12.68	35.42	100	12.65	35.42	26.81
152	13.14	35.61	150	13.15	35.64	26.87	147	12.31	35.46	150	12.35	35.46	26.90
203	12.38	35.52	200	12.45	35.52	26.92	196	12.32	35.52	200	12.30	35.51	26.95
305	10.71	35.32	300	10.80	35.33	27.08	294	10.68	35.34	300	10.60	35.33	27.12
391	8.21	35.03	400	8.20	35.03	27.28	402	8.31	35.09	400	8.40	35.09	27.30
585	5.96	35.01	600	5.85	35.00	27.59	602	6.01	35.06	600	6.05	35.01	27.50
773	4.93	34.97	800	4.85	34.97	27.69	899	4.47	34.98	800	5.00	34.99	27.69
971	4.41	34.97	1,000	4.40	34.97	27.74	1,095	4.16	34.97	1,000	4.30	34.97	27.75
1,471	3.94	34.97					1,581	3.57	34.92				

Station 7467; 20 June; 41°00' N., 50°15' W.; depth 4,023 m.; dynamic height 971.257						Station 7471; 23 June; 41°37' N., 47°20' W.; depth 4,335 m.; dynamic height 971.241							
0	15.66	34.63	0	15.66	34.63	25.56	0	15.10	34.42	0	15.10	34.42	25.52
24	15.94	35.33	25	15.95	35.32	26.02	26	12.92	34.22	25	13.00	34.25	25.84
52	14.89	35.87	50	15.00	35.85	26.64	49	14.25	35.56	50	14.20	35.56	26.60
78	14.15	35.76	75	14.20	35.77	26.76	73	13.21	35.53	75	13.20	35.53	26.78
104	13.81	35.73	100	13.85	35.74	26.81	98	13.04	35.58	100	13.00	35.57	26.85
155	13.27	35.66	150	13.30	35.67	26.87	145	12.08	35.40	150	12.05	35.40	26.91
208	12.93	35.62	200	13.00	35.63	26.89	194	11.73	35.36	200	11.65	35.36	26.95
312	10.51	35.28	300	10.80	35.32	27.08	292	10.61	35.31	300	10.45	35.29	27.11
410	8.74	35.16	400	8.95	35.24	27.33	403	7.62	34.945	400	7.70	34.95	27.30
615	6.25	35.05	600	6.45	35.05	27.55	591	5.42	34.94	600	5.40	34.96	27.62
820	4.68	34.97	800	4.85	35.01	27.72	792	5.14	35.05	800	5.10	35.04	27.71
1,025	4.41	34.97	1,000	4.35	34.97	27.75	980	4.15	34.95	1,000	4.15	34.94	27.74
1,538	3.84	34.98					1,347	3.70	34.92				

Station 7468; 20 June; 42°00' N., 49°27' W.; depth 3,252 m.; dynamic height 971.063						Station 7472; 23 June; 42°01' N., 47°54' W.; depth 3,400 m.; dynamic height 971.006							
0	12.24	33.09	0	12.24	33.09	25.08	0	11.52	33.31	0	11.52	33.31	25.39
24	8.08	33.13	25	8.05	33.14	25.83	25	8.93	33.28	25	8.93	33.28	25.80
49	1.40	33.58	50	4.40	33.58	26.64	50	4.63	33.69	50	4.63	33.69	26.70
75	2.88	33.67	75	3.15	33.68	26.84	75	3.27	33.89	75	3.27	33.89	26.99
99	2.72	33.82	100	2.55	33.83	27.01	100	2.78	34.11	100	2.78	34.11	27.14
147	2.88	34.09	150	3.25	34.11	27.17	150	3.95	34.51	150	3.95	34.51	27.42
196	3.89	34.41	200	3.90	34.41	27.35	200	3.48	34.56	200	3.48	34.56	27.51
295	3.70	34.60	300	3.75	34.61	27.52	300	4.13	34.78	300	4.13	34.78	27.62
353	1.12	34.71	400	4.30	34.81	27.63	389	4.19	34.89	400	4.50	34.89	27.66
539	4.82	35.00	600	4.60	34.97	27.72	587	4.16	34.98	600	4.45	34.98	27.74
731	3.80	34.90	800	3.90	34.92	27.76	783	4.30	34.99	800	4.25	34.99	27.77
929	4.03	34.95	1,000	3.95	34.94	27.76	983	3.95	34.97	1,000	3.95	34.96	27.78
1,151	3.18	34.88					1,494	3.57	34.93				

Station 7469; 22 June; 41°33' N., 49°02' W.; depth 3,409 m.; dynamic height 971.229						Station 7473; 23 June; 42°21' N., 48°31' W.; depth 3,383 m.; dynamic height 971.000							
0	15.84	34.60	0	15.84	34.60	25.50	0	11.90	33.13	0	11.90	33.13	25.18
25	15.19	35.51	25	15.19	35.51	26.31	25	4.98	33.48	25	4.98	33.48	26.50
51	11.45	35.79	50	14.50	35.79	26.70	50	4.54	33.99	50	4.54	33.99	26.94
76	13.62	35.65	75	13.65	35.66	26.79	75	5.21	34.28	75	5.20	34.28	27.10
102	13.16	35.62	100	13.20	35.60	26.83	100	6.31	34.57	100	6.31	34.57	27.19
152	12.40	35.49	150	12.45	35.50	26.91	149	5.37	34.57	150	5.30	34.57	27.32
203	12.06	35.44	200	12.10	35.45	26.94	198	4.79	34.62	200	4.80	34.62	27.42
305	10.24	35.19	300	10.35	35.21	27.08	298	4.98	34.82	300	5.00	34.82	27.56
416	7.31	34.92	400	7.75	34.97	27.31	394	4.64	34.89	400	4.40	34.89	27.71
622	1.61	34.87	600	4.95	34.88	27.60	600	4.46	34.97	600	4.45	34.97	27.71
797	1.61	35.00	800	4.60	34.98	27.72	786	4.45	34.98	800	4.40	34.98	27.74
1,033	1.10	34.95	1,000	4.20	34.96	27.76	981	3.89	34.94	1,000	3.90	34.94	27.77
1,519	3.71	34.96					1,497	3.50	34.92				

# TABLE OF OCEANOGRAPHIC DATA—Continued

Observed values			Scaled values				Observed values			Scaled values			
Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	$\sigma_t$	Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	$\sigma_t$
Station 7474; 23 June; 42°40' N., 49°08' W.; depth 2,652 m.; dynamic height 970.970							Station 7475; 24 June; 42°39' N., 46°51' W.; depth 3,841 m.; dynamic height 971.145						
0	8.46	32.55	0	8.46	32.55	25.30	0	15.28	34.13	0	15.28	34.13	25.26
25	4.27	33.32	25	4.27	33.32	26.44	24	14.62	34.10	25	14.50	34.10	25.41
51	2.77	33.50	50	2.80	33.62	26.83	48	10.67	34.48	50	10.65	34.50	26.47
76	2.47	33.95	75	2.50	33.94	27.10	72	10.21	34.61	75	10.20	34.63	26.64
102	2.74	34.18	100	2.70	34.15	27.25	96	9.98	34.76	100	9.85	34.75	26.80
152	2.96	34.44	150	2.95	34.42	27.45	143	7.69	34.69	150	7.70	34.72	27.12
203	3.55	34.62	200	3.50	34.54	27.49	192	7.94	34.93	200	7.85	34.92	27.26
305	4.23	34.86	300	4.20	34.84	27.66	288	6.42	34.83	300	6.35	34.84	27.40
405	4.08	34.89	400	4.10	34.89	27.71	372	5.78	34.87	400	5.75	34.89	27.52
605	3.98	34.91	600	4.00	34.91	27.74	561	5.39	35.02	600	5.39	35.02	27.68
807	3.78	34.92	800	3.80	34.91	27.76	754	4.90	35.03	800	4.80	35.03	27.74
1,006	3.61	34.92	1,000	3.65	34.92	27.78	949	4.40	35.01	1,000	4.35	35.00	27.77
1,510	3.47	34.93					1,448	3.72	34.94				
Station 7475; 24 June; 43°20' N., 48°50' W.; depth 2,012 m.; dynamic height 970.981							Station 7476; 24 June; 43°07' N., 48°09' W.; depth 3,219 m.; dynamic height 971.002						
0	7.53	32.64	0	7.53	32.64	25.51	0	19.48	35.91	0	19.48	35.91	25.61
25	5.58	32.96	25	5.58	32.96	26.01	25	19.52	35.94	25	19.52	35.94	25.62
50	1.99	33.65	50	1.99	33.65	26.88	49	17.22	36.01	50	17.20	36.01	26.26
75	1.04	33.86	75	1.04	33.86	27.15	74	15.32	35.80	75	15.30	35.81	26.55
100	2.64	34.20	100	2.64	34.20	27.30	98	15.27	35.95	100	15.20	35.92	26.60
150	3.40	34.44	150	3.40	34.44	27.42	146	13.39	35.60	150	13.35	35.60	26.80
201	3.96	34.65	200	3.95	34.65	27.53	196	13.14	35.63	200	13.10	35.62	26.87
301	3.78	34.73	300	3.80	34.73	27.61	294	12.03	35.47	300	11.85	35.45	26.98
400	4.23	34.86	400	4.23	34.86	27.67	331	10.46	35.28	400	9.30	35.16	27.21
598	4.05	34.92	600	4.05	34.92	27.73	491	7.65	35.00	600	7.50	34.92	27.61
799	3.71	34.90	800	3.70	34.90	27.76	645	5.46	34.89	800	5.45	35.01	27.35
989	3.50	34.90	1,000	3.50	34.90	27.78	834	5.43	35.04	1,000	5.15	35.03	27.70
1,501	3.36	34.93					1,357	4.59	35.00				
Station 7476; 24 June; 43°07' N., 48°09' W.; depth 3,219 m.; dynamic height 971.002							Station 7477; 24 June; 42°53' N., 47°27' W.; depth 3,658 m.; dynamic height 971.157						
0	8.20	32.36	0	8.20	32.36	25.20	0	17.95	34.82	0	17.95	34.82	25.17
24	2.74	32.66	25	2.70	32.69	26.08	23	18.04	35.37	25	18.00	35.37	25.58
49	0.14	33.28	50	0.15	33.30	26.74	45	17.97	35.37	50	17.05	35.39	25.82
74	0.27	33.55	75	0.30	33.54	26.93	67	14.05	35.48	75	13.75	35.47	26.62
99	0.63	33.76	100	0.65	33.77	27.10	89	13.05	35.44	100	12.90	35.40	26.74
147	1.63	34.17	150	1.70	34.19	27.36	135	12.53	35.26	150	12.40	35.32	26.78
197	2.73	34.44	200	2.75	34.46	27.50	180	12.24	35.45	200	12.00	35.43	26.94
296	4.88	34.89	300	4.85	34.89	27.62	269	11.31	35.38	300	9.50	34.96	27.02
396	4.65	34.93	400	4.65	34.93	27.68	291	9.61	34.96	400	8.05	34.93	27.23
593	4.00	34.91	600	4.00	34.91	27.74	469	7.03	34.91	600	6.15	34.94	27.50
789	3.87	34.93	800	3.85	34.93	27.76	669	5.65	34.99	800	5.00	34.97	27.68
989	3.75	34.93	1,000	3.75	34.93	27.77	862	4.65	34.96	1,000	4.45	34.96	27.73
1,490	3.50	34.93					1,390	3.90	34.96				
Station 7477; 24 June; 42°53' N., 47°27' W.; depth 3,658 m.; dynamic height 971.157							Station 7478; 25 June; 43°11' N., 45°34' W.; depth 4,801 m.; dynamic height 971.301						
0	16.31	35.08	0	16.31	35.08	25.75	0	17.35	35.71	0	17.35	35.71	25.99
24	15.19	35.19	25	15.15	35.20	26.11	26	17.34	35.72	25	17.35	35.72	26.00
48	13.23	35.46	50	13.20	35.46	26.73	52	15.91	36.01	50	16.05	35.99	26.51
72	12.72	35.46	75	12.65	35.45	26.83	78	14.69	35.81	75	14.80	35.83	26.67
97	12.18	35.40	100	12.15	35.40	26.89	103	13.40	35.58	100	13.65	35.77	26.88
144	11.85	35.41	150	11.75	35.39	26.96	156	13.15	35.68	150	13.20	35.69	26.90
192	10.78	35.25	200	10.60	35.22	27.04	207	12.67	35.55	200	12.75	35.57	26.91
289	8.18	35.00	300	8.05	35.00	27.29	310	11.60	35.47	300	11.70	35.47	27.03
389	7.06	35.01	400	6.90	35.00	27.45	387	10.26	35.31	400	10.10	35.29	27.18
582	4.40	34.85	600	4.40	34.88	27.66	579	6.99	35.08	600	6.80	35.06	27.51
773	4.54	34.99	800	4.50	34.98	27.73	773	5.03	34.96	800	4.95	34.96	27.67
968	4.04	34.94	1,000	4.00	34.94	27.76	975	4.62	35.00	1,000	4.60	34.99	27.73
1,462	3.66	34.93					1,494	3.81	34.95				

TABLE OF OCEANOGRAPHIC DATA—Continued

Observed values			Scaled values			Observed values			Scaled values				
Depth, meters	Tem-perature, °C.	Salin-ity, ‰	Depth, meters	Tem-perature, °C.	Salin-ity, ‰	Depth, meters	Tem-perature, °C.	Salin-ity, ‰	Depth, meters	Tem-perature, °C.	Salin-ity, ‰	$\sigma_t$	
Station 7482; 25 June; 43°23' N., 46°08' W.; depth 1,663 m.; dynamic height 971.298						Station 7486; 26 June; 44°04' N., 48°30' W.; depth 2,743 m.; dynamic height 970.963							
0.	17.25	35.57	0.	17.25	35.57	25.91	0.	9.50	33.08	0.	9.50	33.08	25.56
27	17.24	35.65	25.	17.25	35.65	25.97	25.	4.97	33.41	25.	4.97	33.41	26.47
53	16.37	36.16	50.	15.40	36.11	26.53	52.	2.53	33.94	50.	2.70	33.91	27.06
80	15.65	36.04	75.	15.80	36.07	26.64	77.	2.74	34.12	75.	2.70	34.10	27.21
106	14.32	35.79	100.	14.65	35.85	26.72	103.	3.48	34.27	100.	3.40	34.25	27.27
160.	13.74	35.74	150.	13.85	35.75	26.82	154.	3.85	34.58	150.	3.80	34.55	27.47
214	13.13	35.66	200.	13.30	35.68	26.87	206.	3.69	34.58	200.	3.70	34.58	27.50
320.	11.42	35.43	300.	11.75	35.47	27.02	309.	4.39	34.83	300.	4.35	34.81	27.62
404	9.19	35.13	400.	9.30	35.15	27.20	398.	4.45	34.91	400.	4.45	34.91	27.69
606	5.68	34.92	600.	5.80	34.92	27.54	600.	4.08	34.92	600.	4.08	34.92	27.71
811	1.57	34.94	800.	4.65	34.94	27.69	802.	3.81	34.92	800.	3.80	34.92	27.77
1,016	4.31	34.97	1,000.	4.35	34.96	27.74	1,006.	3.65	34.91	1,000.	3.65	34.91	27.77
1,531	3.72	34.94					1,518	3.49	34.90				
Station 7483; 25 June; 43°30' N., 46°38' W.; depth 4,380 m.; dynamic height 971.267						Station 7487; 26 June; 44°08' N., 48°45' W.; depth 1,591 m.; dynamic height 971.017							
0.	17.36	35.72	0.	17.36	35.72	25.91	0	6.94	32.54	0	6.94	32.54	25.52
21	17.22	35.735	25.	17.20	35.74	26.05	24	3.58	32.78	25.	3.55	32.79	26.10
48	16.00	36.08	50.	15.95	36.07	26.60	49	2.51	33.15	50.	2.50	33.16	26.48
72	15.51	36.02	75.	15.45	36.00	26.66	74	-0.19	33.34	75.	-0.20	33.35	26.80
97	14.85	35.90	100.	14.80	35.89	26.71	98.	0.96	33.81	100.	1.00	33.82	27.12
144	13.95	35.78	150.	13.90	35.78	26.82	147.	1.50	34.11	150.	1.50	34.13	27.33
193	13.88	35.76	200.	13.45	35.75	26.90	197.	2.27	34.38	200.	2.30	34.39	27.42
290.	11.51	35.51	300.	11.50	35.47	27.07	296.	3.23	34.685	300.	3.25	34.68	27.68
375.	9.14	35.20	400.	9.00	35.17	27.27	402.	3.58	34.80	400.	3.60	34.79	27.68
566	6.20	35.02	600.	6.00	35.02	27.59	602	3.70	34.82	600.	3.70	34.82	27.70
760.	5.13	35.02	800.	5.05	35.02	27.71	803	3.59	34.87	800.	3.60	34.87	27.75
957	4.64	35.02	1,000.	4.55	35.01	27.76	1,009	3.55	34.87	1,000.	3.55	34.87	27.75
1,464	3.69	34.92					1,523	3.56	34.92				
Station 7484; 25 June; 43°43' N., 47°19' W.; depth 4,115 m.; dynamic height 971.096						Station 7488; 26 June; 44°10' N., 48°53' W.; depth 626 m.; dynamic height 971.041							
0.	16.38	35.12	0.	16.38	35.12	25.77	0	6.42	32.38	0	6.42	32.38	25.46
25	15.74	34.95	25.	15.74	34.95	25.79	25	2.27	32.73	25	2.27	32.73	26.16
50	8.12	34.38	50.	8.42	34.38	26.74	52	-0.75	33.04	50	-0.55	33.02	26.55
75	10.04	34.91	75.	10.04	34.91	26.89	77	-0.63	33.29	75	-0.65	33.26	26.75
100	8.85	34.95	100.	8.85	34.90	27.08	103	0.02	33.54	100.	-0.05	33.51	26.93
150	8.95	34.90	150.	8.95	34.95	27.11	154.	1.05	33.92	150.	0.95	33.89	27.17
200	8.60	34.99	200.	8.60	34.99	27.19	205	1.95	34.26	200.	1.85	34.23	27.38
300	1.93	34.61	300.	4.93	34.61	27.42	308	2.95	34.60	300.	2.85	34.57	27.58
349	4.96	34.78	400.	4.85	34.82	27.57	410.	3.46	34.77	400.	3.40	34.76	27.68
521	1.67	34.92	600.	4.55	34.94	27.70	609.	3.69	34.85	600.	3.70	34.85	27.72
692	4.45	34.96	800.	4.15	34.93	27.73							
878	3.98	34.91	1,000.	3.90	34.91	27.75							
1,267	3.62	34.91											
Station 7485; 25 June; 43°55' N., 47°58' W.; depth 3,658 m.; dynamic height 970.972						Station 7489; 26 June; 44°11' N., 48°59' W.; depth 167 m.; dynamic height 971.099							
0	8.64	32.67	0	8.64	32.67	25.37	0	6.28	32.36	0	6.28	32.36	25.46
25	3.78	33.21	25	3.78	33.21	26.11	25	-1.24	32.79	25	-1.24	32.79	26.39
51	2.63	33.30	50	2.65	33.79	26.81	50	-1.15	33.03	50	-1.15	33.03	26.58
76	2.67	34.02	75	2.65	34.01	27.15	75	-0.55	33.24	75	-0.55	33.24	26.73
102	3.15	34.23	100.	3.10	34.21	27.27	99	-0.31	33.115	100.	-0.30	33.12	26.87
152	3.39	34.17	150.	3.35	34.45	27.43	149	0.90	33.85	150.	0.90	33.85	27.15
202	3.58	34.62	200.	3.55	34.61	27.54							
304	1.18	34.82	300.	4.15	34.81	27.64							
397	1.38	34.91	400.	4.10	34.91	27.69							
596	1.11	34.92	600.	4.10	34.92	27.71							
790	3.92	34.93	800.	3.90	34.93	27.76							
991	3.79	34.91	1,000.	3.60	34.91	27.78							
1,490	3.50	34.92											
Station 7490; 26 June; 44°13' N., 49°07' W.; depth 60 m.; dynamic height 971.118						Station 7490; 26 June; 44°13' N., 49°07' W.; depth 60 m.; dynamic height 971.118							
0	6.32	32.49	0	6.32	32.49	25.55	0	6.32	32.49	0	6.32	32.49	25.55
18	0.55	32.73	25	0.55	32.73	26.34	18	0.55	32.73	25	0.25	32.79	26.34
43.	-0.91	32.96	(50)	-1.00	33.01	26.56	43.	-0.91	32.96	(50)	-1.00	33.01	26.56

# TABLE OF OCEANOGRAPHIC DATA—Continued

Observed values			Scaled values				Observed values			Scaled values			
Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	$\sigma_t$	Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	$\sigma_t$
Station 7491; 26 June; 44°16' N., 49°24' W.; depth 53 m.; dynamic height 971.122							Station 7497; 26 June; 44°44' N., 47°57' W.; depth 3,484 m.; dynamic height 970.999						
0	9.02	32.62	0	9.02	32.62	25.28	0	9.31	33.30	0	9.31	33.30	25.75
15		32.62			32.80	25.87	27	6.19	34.41	25	5.05	33.76	26.71
40	1.00	33.07	(50)	-0.25	33.15	26.64	52	6.19	34.41	50	6.00	34.35	27.02
							79	6.76	34.52	75	6.70	34.51	27.10
							104	6.77	34.52	100	6.75	34.52	27.10
							157	6.68	34.67	150	6.70	34.65	27.20
							210	5.84	34.72	200	6.00	34.71	27.35
							314	4.96	34.86	300	5.10	34.83	27.55
							394	4.35	34.87	400	4.35	34.87	27.67
							591	3.76	34.88	600	3.75	34.88	27.73
							791	3.61	34.90	800	3.60	34.89	27.76
							993	3.57	34.90	1,000	3.55	34.90	27.77
							1,505	3.46	34.92				
Station 7492; 26 June; 44°59' N., 49°24' W.; depth 64 m.; dynamic height 971.127							Station 7498; 27 June; 44°37' N., 47°20' W.; depth 3,885 m.; dynamic height 970.914						
0	7.52	32.47	0	7.51	32.47	25.38	0	9.85	33.21	0	9.85	33.21	25.60
26	3.95	32.47	25	4.00	32.47	25.80	26	4.75	33.76	25	4.50	33.76	26.77
51	-0.85	32.91	50	-0.80	32.90	26.46	53	3.08	34.06	50	3.25	34.02	27.10
							79	3.57	34.27	75	3.50	34.23	27.24
							105	3.62	34.41	100	3.60	34.38	27.35
							157	3.77	34.60	150	3.75	34.57	27.49
							209	3.62	34.83	200	3.65	34.78	27.66
							314	4.51	34.91	300	4.40	34.90	27.68
							412	4.28	34.93	400	4.35	34.93	27.71
							619	3.48	34.89	600	3.74	34.90	27.76
							826	3.73	34.91	800	3.75	34.91	27.67
							1,034	3.80	34.93	1,000	3.80	34.93	27.77
							1,555	3.43	34.92				
Station 7493; 26 June; 44°57' N., 49°12' W.; depth 98 m.; dynamic height 971.136							Station 7499; 27 June; 44°30' N., 46°36' W.; depth 3,858 m.; dynamic height 970.966						
0	6.84	32.43	0	6.84	32.43	25.44	0	10.38	33.38	0	10.38	33.38	25.65
23	6.20	32.43	25	5.40	32.47	25.65	25	10.63	33.58	25	10.63	33.58	25.76
48	0.01	32.72	50	-0.10	32.73	26.30	51	10.79	34.01	50	10.80	34.01	26.06
71	-0.86	32.86	(75)	-1.00	32.88	26.45	76	3.13	34.13	75	3.65	34.12	27.15
							102	4.14	34.40	100	4.00	34.38	27.31
							152	4.72	34.68	150	4.70	34.67	27.47
							203	4.68	34.75	200	4.70	34.74	27.52
							305	4.76	34.92	300	4.75	34.90	27.64
							346	4.18	34.86	400	4.10	34.87	27.70
							594	3.89	34.91	600	3.90	34.91	27.75
							789	3.82	34.92	800	3.80	34.92	27.77
							991	3.57	34.90	1,000	3.55	34.90	27.77
							1,502	3.42	34.91				
Station 7494; 26 June; 44°56' N., 49°02' W.; depth 549 m.; dynamic height 971.134							Station 7500; 27 June; 44°24' N., 45°57' W.; depth 3,913 m.; dynamic height 970.974						
0	5.05	32.35	0	5.05	32.35	25.60	0	9.60	32.65	0	9.60	32.65	25.20
20	4.59	32.36	25	3.60	32.45	25.82	25	3.40	33.24	25	3.40	33.24	26.47
40	-1.31	32.74	50	-1.35	32.79	26.39	51	1.58	33.71	50	1.65	33.66	26.97
60	-1.36	32.85	75	-1.05	33.00	26.56	76	2.46	34.02	75	2.45	34.01	27.16
80	-0.96	33.06	100	-0.70	33.16	26.67	102	4.53	34.45	100	4.40	34.42	27.31
120	-0.41	33.26	150	0.00	33.51	26.93	152	5.16	34.67	150	5.10	34.66	27.42
160	0.23	33.59	200	0.90	33.85	27.15	202	4.78	34.74	200	4.80	34.73	27.50
240	1.53	34.12	300	1.95	34.30	27.39	304	4.49	34.85	300	4.50	34.84	27.62
320		34.36	400	2.55	34.48	27.53	404	4.40	34.91	400	4.40	34.91	27.69
485	3.06	34.61					605	3.97	34.91	600	4.00	34.91	27.74
							805	3.75	34.90	800	3.75	34.90	27.75
							1,007	3.69	34.91	1,000	3.70	34.91	27.77
							1,515	3.49	34.91				
Station 7495; 26 June; 44°53' N., 48°47' W.; depth 2,195 m.; dynamic height 970.996							Station 7501; 27 June; 44°24' N., 45°57' W.; depth 3,913 m.; dynamic height 970.974						
0	5.95	32.71	0	5.95	32.71	25.78	0	9.60	32.65	0	9.60	32.65	25.20
26	5.56	32.83	25	5.55	32.83	25.91	25	3.40	33.24	25	3.40	33.24	26.47
52	3.62	33.64	50	3.80	33.59	26.71	51	1.58	33.71	50	1.65	33.66	26.97
78	1.62	33.74	75	1.95	33.73	26.97	76	2.46	34.02	75	2.45	34.01	27.16
103	1.22	33.96	100	1.25	33.93	27.19	102	4.53	34.45	100	4.40	34.42	27.31
156	1.49	34.18	150	1.40	34.15	27.36	152	5.16	34.67	150	5.10	34.66	27.42
208	2.17	34.41	200	2.05	34.37	27.49	202	4.78	34.74	200	4.80	34.73	27.50
311	3.57	34.74	300	3.40	34.70	27.63	304	4.49	34.85	300	4.50	34.84	27.62
413	4.24	34.88	400	4.15	34.86	27.68	404	4.40	34.91	400	4.40	34.91	27.69
619	3.74	34.88	600	3.80	34.88	27.73	605	3.97	34.91	600	4.00	34.91	27.74
826	3.57	34.89	800	3.60	34.88	27.75	805	3.75	34.90	800	3.75	34.90	27.75
1,040	3.51	34.89	1,000	3.55	34.89	27.76	1,007	3.69	34.91	1,000	3.70	34.91	27.77
1,583	3.52	34.89					1,515	3.49	34.91				

TABLE OF OCEANOGRAPHIC DATA—Continued

Observed values			Scaled values				Observed values			Scaled values			
Depth, meters	Temperature, °C	Salinity, ‰	Depth, meters	Temperature, °C	Salinity, ‰	$\sigma_t$	Depth, meters	Temperature, °C	Salinity, ‰	Depth, meters	Temperature, °C	Salinity, ‰	$\sigma_t$
Station 7501: 27 June; 44°20' N., 45°13' W.; depth 4,200 m.; dynamic height 971.118							Station 7505: 28 June; 45°14' N., 46°33' W.; depth 3,383 m.; dynamic height 970.966						
0	12.68	33.22	0	12.68	33.22	25.10	0	10.71	33.58	0	10.71	33.58	25.74
24	10.02	33.33	25	10.00	33.38	25.71	26	8.49	33.58	25	8.50	33.58	26.10
49	8.08	34.23	50	8.10	34.25	26.69	49	3.38	34.16	75	4.25	34.00	26.99
73	9.24	31.69	75	9.25	34.70	26.86	77	1.05	34.03	50	4.45	34.15	27.18
98	9.52	31.90	100	9.10	34.89	26.98	102	3.73	34.34	100	3.70	34.32	27.30
146	6.20	34.44	150	6.10	34.44	27.12	153	3.95	34.53	150	3.90	34.52	27.40
197	5.15	34.42	200	5.20	34.44	27.23	204	4.38	34.71	200	4.35	34.70	27.53
293	6.15	34.81	300	6.10	34.81	27.41	306	4.05	34.82	300	4.10	34.81	27.65
398	5.16	34.80	400	5.15	34.80	27.52	403	4.03	34.88	400	4.05	34.88	27.70
591	4.12	34.87	600	4.10	34.87	27.70	606	3.71	34.88	600	3.75	34.88	27.73
780	4.04	34.89	800	4.05	34.89	27.71	811	3.61	34.89	800	3.65	34.89	27.75
979	3.91	34.91	1,000	3.90	34.91	27.75	1,015	3.57	34.89	1,000	3.60	34.89	27.76
1,489	3.62	34.91					1,532	3.41	34.93				
Station 7502: 27 June; 44°50' N., 45°15' W.; depth 4,298 m.; dynamic height 970.979							Station 7506: 28 June; 45°14' N., 47°11' W.; depth 3,329 m.; dynamic height 970.942						
0	11.97	33.37	0	11.97	33.37	25.35	0	7.79	33.11	0	7.76	33.11	25.84
25	7.43	33.53	25	7.43	33.53	26.22	24	5.86	33.31	25	5.80	33.32	26.27
52	3.91	33.91	50	4.25	33.90	26.90	48	2.14	33.99	50	2.15	34.00	27.18
77	4.61	34.33	75	4.55	34.30	27.19	72	2.32	34.24	75	2.35	34.25	27.36
103	3.85	34.32	100	3.95	34.32	27.28	97	2.57	34.32	100	2.60	34.33	27.40
154	4.57	34.62	150	4.50	34.60	27.43	144	3.05	34.19	150	3.10	34.51	27.51
205	4.11	34.64	200	4.15	34.64	27.50	192	3.49	34.66	200	3.55	34.68	27.59
308	4.11	34.83	300	4.40	34.82	27.62	289	1.18	34.82	300	4.15	34.83	27.65
406	4.87	34.98	400	4.85	34.97	27.68	398	3.98	34.89	400	4.00	34.89	27.72
610	4.10	34.94	600	4.15	34.94	27.74	588	3.61	34.84	600	3.60	34.84	27.72
811	3.92	34.93	800	3.95	34.93	27.75	792	3.57	34.86	800	3.55	34.86	27.74
1,016	3.75	34.94	1,000	3.80	34.94	27.78	994	3.52	34.89	1,000	3.55	34.89	27.76
1,522	3.44	34.92					1,505	3.40	34.91				
Station 7503: 27 June; 45°20' N., 45°15' W.; depth 4,298 m.; dynamic height 971.039							Station 7507: 28 June; 45°35' N., 47°44.5' W.; depth 1,317 m.; dynamic height 971.003						
0	12.21	33.17	0	12.21	33.17	25.15	0	6.68	32.63	0	6.68	32.63	25.62
25	7.86	33.16	25	7.86	33.16	26.11	25	1.95	32.99	25	1.95	32.99	26.36
50	1.00	33.47	50	1.00	33.47	26.81	51	-0.46	33.32	50	-0.35	33.31	26.77
75	6.28	34.38	75	6.28	34.38	27.05	76	0.52	33.72	75	0.50	33.71	27.06
100	6.30	34.47	100	6.30	34.47	27.12	103	1.86	34.11	100	1.70	34.07	27.27
151	5.19	34.50	150	5.50	34.49	27.23	153	1.72	34.20	150	1.70	34.19	27.36
201	5.67	34.65	200	5.65	34.65	27.34	204	2.28	34.45	200	2.20	34.43	27.52
301	5.79	34.91	300	5.80	34.90	27.52	307	3.23	34.63	300	3.15	34.62	27.59
401	4.79	34.90	400	4.80	34.90	27.64	407	3.63	34.71	400	3.60	34.73	27.63
598	4.27	34.93	600	4.30	34.93	27.71	610	3.67	34.83	600	3.65	34.83	27.70
798	4.01	34.94	800	4.00	34.94	27.76	814	3.60	34.81	800	3.60	34.84	27.72
1,000	3.85	34.93	1,000	3.85	34.93	27.76	1,117	3.54	34.81	1,000	3.55	34.84	27.72
1,507	3.48	34.92											
Station 7504: 28 June; 45°16' N., 45°48' W.; depth 3,585 m.; dynamic height 971.053							Station 7508: 28 June; 45°10' N., 47°54' W.; depth 647 m.; dynamic height 971.005						
0	11.63	33.66	0	11.63	33.66	25.64	0	6.80	32.43	0	6.80	32.43	25.44
26	8.70	33.77	25	8.85	33.76	26.18	21	3.73	32.72	25	3.70	32.72	26.03
51	10.17	31.98	50	10.10	31.91	26.89	49	-0.63	32.85	50	-0.65	32.89	26.45
76	10.44	35.13	75	10.40	35.13	27.00	73	-0.99	33.23	75	-0.95	33.24	26.75
101	9.17	31.92	100	9.25	31.93	27.04	99	-0.36	33.42	100	-0.35	33.42	26.87
153	8.11	31.96	150	8.45	34.96	27.19	147	0.85	33.86	150	0.90	33.90	27.19
204	6.95	34.81	200	7.10	34.82	27.29	196	1.68	34.19	200	1.70	34.49	27.60
305	5.75	34.87	300	5.80	34.86	27.49	295	2.64	34.71	300	2.65	34.71	27.71
404	5.11	34.95	400	5.40	34.95	27.61	394	3.31	34.80	400	3.35	34.81	27.72
597	4.74	34.98	600	4.75	34.98	27.70	597	3.70	34.88	600	3.70	34.88	27.75
791	4.24	34.97	800	4.20	34.97	27.77							
989	3.94	34.95	1,000	3.95	34.95	27.77							
1,484	3.56	34.93											

# TABLE OF OCEANOGRAPHIC DATA—Continued

Observed values			Sealed values				Observed values			Sealed values			
Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	$\sigma_t$	Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	$\sigma_t$
Station 7509; 28 June; 45°46' N., 48°04' W.; depth 172 m.; dynamic height 971.098							Station 7516; 29 June; 46°10' N., 47°45.5' W.; depth 174 m.; dynamic height 971.102						
0	6.32	32.30	0	6.32	32.30	25.10	0	5.87	32.28	0	5.87	32.28	25.56
25	5.99	32.32	25	5.99	32.32	25.46	25	4.41	32.34	25	4.41	32.34	25.66
50	-0.76	32.82	50	-0.76	32.82	26.40	50	-1.20	32.78	50	-1.20	32.78	26.38
76	-1.14	33.05	75	-1.10	33.05	26.60	75	-1.24	32.95	75	-1.24	32.95	26.52
101	-0.66	33.25	100	-0.70	33.23	26.73	100	-0.94	33.18	100	-0.94	33.18	26.70
152	0.06	33.56	150	0.05	33.55	26.96	150	-0.06	33.50	150	-0.06	33.50	26.92
Station 7510; 28 June; 45°51' N., 48°12' W.; depth 104 m.; dynamic height 971.091							Station 7517; 29 June; 46°05' N., 47°25' W.; depth 649 m.; dynamic height 971.032						
0	7.69	32.57	0	7.69	32.57	25.44	0	6.49	32.41	0	6.49	32.41	25.47
26	1.99	32.51	25	2.20	32.51	25.98	25	3.99	32.74	25	3.99	32.74	26.02
52	-1.26	32.80	50	-1.00	32.77	26.37	52	-1.14	33.025	50	-0.65	33.05	26.38
78	-1.02	32.98	75	-1.05	32.95	26.52	77	-1.14	33.23	75	-1.15	33.25	26.76
104	-0.28	33.30	100	-0.40	33.25	26.74	103	-0.13	33.53	100	-0.20	33.49	26.92
							154	1.17	33.925	150	1.05	33.89	27.17
							206	1.90	34.33	200	1.80	34.28	27.43
							309	2.95	34.625	300	2.85	34.60	27.60
							404	3.54	34.82	400	3.55	34.81	27.70
							593	3.65	34.85	600	3.65	34.85	27.72
Station 7511; 28 June; 45°56' N., 48°20' W.; depth 91 m.; dynamic height 971.095							Station 7518; 29 June; 46°04.5' N., 47°10.5' W.; depth 593 m.; dynamic height 970.948						
0	8.02	32.60	0	8.01	32.60	25.42	0	6.20	32.62	0	6.20	32.62	25.68
24	7.15	32.60	25	6.80	32.60	25.58	25	3.08	33.27	25	3.08	33.27	26.52
49	-0.93	32.81	50	-0.90	32.83	26.41	51	0.32	33.63	50	0.35	33.61	26.99
73	-0.23	33.22	75	-0.20	33.24	26.72	76	0.74	33.93	75	0.70	33.92	27.22
Station 7512; 28 June; 46°04' N., 48°34' W.; depth 75 m.; dynamic height 971.094							Station 7519; 29 June; 46°05.5' N., 47°32' W.; depth 686 m.; dynamic height 970.931						
0	7.83	32.62	0	7.83	32.62	25.46	0	7.89	33.32	0	7.89	33.32	25.98
25	5.93	32.60	25	5.93	32.60	25.70	25	6.70	33.92	25	6.50	33.92	26.66
49	-0.55	32.92	50	-0.55	32.93	26.48	51	3.96	34.22	50	4.00	34.21	27.18
64	-0.17	33.24					76	4.02	34.40	75	4.00	34.39	27.32
							102	4.04	34.46	100	4.05	34.45	27.36
							152	4.10	34.66	150	4.10	34.65	27.52
							203	4.30	34.78	200	4.30	34.77	27.60
							305	4.25	34.86	300	4.25	34.86	27.67
							407	3.74	34.86	400	3.80	34.86	27.72
							601	3.70	34.87	600	3.70	34.87	27.74
Station 7513; 28 June; 46°18' N., 48°58' W.; depth 70 m.; dynamic height 971.095							Station 7520; 29 June; 46°04' N., 45°59' W.; depth 1,829 m.; dynamic height 970.962						
0	8.18	32.66	0	8.18	32.66	25.44	0	7.84	33.25	0	7.84	33.25	25.94
26	5.54	32.68	25	5.60	32.67	25.78	25	7.94	33.62	25	7.94	33.62	26.23
51	1.00	32.91	50	1.20	32.89	26.35	50	5.40	34.02	50	5.40	34.02	26.88
							75	1.55	33.99	75	1.55	33.99	27.21
							100	2.72	34.28	100	2.72	34.28	27.35
							149	2.90	34.39	150	2.90	34.39	27.43
							198	3.09	34.51	200	3.10	34.51	27.51
							298	4.41	34.88	300	4.40	34.88	27.66
							371	4.03	34.86	400	4.00	34.87	27.71
							560	3.90	34.90	600	3.85	34.90	27.74
							752	3.67	34.90	800	3.65	34.89	27.75
							943	3.59	34.86	1,000	3.55	34.86	27.74
							1,424	3.45	34.87				
Station 7514; 29 June; 46°15' N., 48°35' W.; depth 89 m.; dynamic height 971.086							Station 7515; 29 June; 46°12' N., 48°02' W.; depth 117 m.; dynamic height 971.092						
0	7.59	32.60	0	7.59	32.60	25.47	0	7.19	32.49	0	7.19	32.49	25.52
25	4.97	32.63	25	4.97	32.63	25.83	25	3.11	32.47	25	3.11	32.47	25.88
49	0.12	32.93	50	0.10	32.94	26.47	50	-1.20	32.78	50	-1.20	32.78	26.38
74	0.06	33.34	(75)	0.05	33.35	26.80	75	-1.37	32.94	75	-1.37	32.94	26.52
							100	0.13	33.40	100	0.13	33.40	26.84

## TABLE OF OCEANOGRAPHIC DATA—Continued

Observed values			Scaled values			
Depth, meters	Tem-perature, °C.	Salin-ity, ‰	Depth, meters	Tem-perature, °C.	Salin-ity, ‰	$\sigma_t$

Station 7521; 29 June; 46°00' N., 45°18' W.; depth 3,072 m.; dynamic height 970.946

0	9.14	33.43	0	9.14	33.43	25.89
25	9.06	33.68	25	8.60	33.72	26.20
42	3.99	34.11	50	3.90	34.13	27.12
67	3.65	34.19	75	3.70	34.24	27.23
90	3.86	34.35	100	3.90	34.39	27.33
135	3.93	34.57	150	4.70	34.67	27.49
180	5.09	34.89	200	5.05	34.92	27.56
270	5.41	35.00	300	5.10	34.97	27.66
376	4.21	34.90	400	4.15	34.90	27.71
509	3.69	34.88	600	3.60	34.88	27.75
707	3.53	34.87	800	3.55	34.88	27.75
955	3.49	34.88	1,000	3.50	34.88	27.76
1,424	3.42	34.91				

Station 7522; 29 June; 45°59' N., 41°33' W.; depth 3,695 m.; dynamic height 970.924

0	9.82	34.06	0	9.82	34.06	26.27
25	9.19	34.06	25	9.19	34.06	26.37
51	6.60	34.34	50	6.75	34.33	26.94
76	5.19	34.47	75	5.25	34.47	27.25
102	4.59	34.59	100	4.65	34.58	27.10
152	4.08	34.67	150	4.10	34.67	27.54
204	3.91	34.76	200	3.95	34.75	27.61
306	3.88	34.85	300	3.90	34.85	27.70
408	3.95	34.91	400	3.95	34.90	27.73
607	3.81	34.92	600	3.80	34.91	27.76
803	3.62	34.90	800	3.65	34.90	27.76
1,006	3.65	34.92	1,000	3.65	34.92	27.78
1,515	3.42	34.93				

Station 7523; 30 June; 46°22' N., 44°40' W.; depth 1,737 m.; dynamic height 970.885

0	9.17	33.99	0	9.17	33.99	26.32
25	7.15	34.28	25	7.15	34.28	26.85
52	4.01	34.46	50	4.25	34.45	27.34
77	3.77	34.51	75	3.80	34.50	27.43
103	3.51	34.57	100	3.55	34.63	27.55
154	3.63	34.71	150	3.65	34.69	27.59
205	3.63	34.79	200	3.65	34.78	27.66
308	3.60	34.84	300	3.60	34.84	27.72
407	3.62	34.86	400	3.66	34.86	27.74
606	3.54	34.87	600	3.55	34.87	27.75
802	3.47	34.87	800	3.50	34.87	27.76
1,006	3.47	34.87	1,000	3.45	34.87	27.76
1,519	3.46	34.91				

Station 7524; 30 June; 46°28' N., 44°44' W.; depth 633 m.; dynamic height 970.906

0	9.28	33.96	0	9.28	33.96	26.28
25	8.63	34.02	25	8.63	34.02	26.43
51	3.88	34.35	50	4.05	34.34	27.28
76	3.27	34.47	75	3.30	34.46	27.45
102	3.25	34.53	100	3.25	34.52	27.50
152	3.42	34.66	150	3.40	34.65	27.59
204	3.76	34.83	200	3.75	34.81	27.68
306	3.70	34.81	300	3.70	34.84	27.71
406	3.69	34.86	400	3.70	34.86	27.73
605	3.64	34.88	600	3.65	34.87	27.74

Observed values			Scaled values			
Depth, meters	Tem-perature, °C.	Salin-ity, ‰	Depth, meters	Tem-perature, °C.	Salin-ity, ‰	$\sigma_t$

Station 7525; 30 June; 46°33' N., 44°16' W.; depth 217 m.; dynamic height 970.942

0	9.10	33.99	0	9.10	33.99	26.33
25	8.37	33.98	25	8.37	33.98	26.44
50	6.46	34.16	50	6.46	34.16	26.85
75	3.41	34.15	75	3.41	34.15	27.19
100	3.25	34.33	100	3.25	34.33	27.33
150	3.26	34.52	150	3.26	34.52	27.50
200	3.47	34.65	200	3.47	34.65	27.58

Station 7526; 30 June; 46°39' N., 44°48' W.; depth 169 m.; dynamic height 970.928

0	9.18	34.01	0	9.18	34.01	26.34
25	6.65	34.02	25	6.65	34.02	26.72
50	4.22	34.06	50	4.22	34.06	27.04
75	3.23	34.25	75	3.23	34.25	27.13
100	3.41	34.38	100	3.41	34.38	27.37
150	3.64	34.60	150	3.64	34.60	27.52

Station 7527; 30 June; 46°53' N., 44°55' W.; depth 153 m.; dynamic height 970.938

0	9.34	33.98	0	9.34	33.98	26.29
25	8.72	33.99	25	8.72	33.99	26.39
50	5.67	34.05	50	5.67	34.05	26.87
75	3.42	34.22	75	3.42	34.22	27.24
100	3.48	34.42	100	3.48	34.42	27.40
135	3.44	34.50	(150)	3.45	34.53	27.48

Station 7528; 30 June; 46°53' N., 45°13' W.; depth 224 m.; dynamic height 970.935

0	9.47	33.98	0	9.47	33.98	26.26
25	8.73	33.94	25	8.73	33.94	26.35
50	5.71	34.05	50	5.71	34.05	26.86
74	3.49	34.30	75	3.50	34.30	27.30
99	3.47	34.42	100	3.45	34.42	27.40
148	3.36	34.56	150	3.35	34.57	27.53
198	3.66	34.71	(200)	3.65	34.71	27.61

Station 7529; 30 June; 46°50' N., 45°42' W.; depth 281 m.; dynamic height 970.954

0	9.30	33.82	0	9.30	33.82	26.17
25	8.75	33.87	25	8.75	33.87	26.30
49	5.59	33.99	50	5.60	33.99	26.82
74	5.69	34.09	75	5.65	34.09	26.90
98	3.26	34.19	100	3.25	34.20	27.24
147	3.71	34.54	150	3.70	34.55	27.48
196	3.81	34.73	200	3.80	34.73	27.61
255	3.77	34.74				

Station 7530; 30 June; 46°48' N., 46°07' W.; depth 329 m.; dynamic height 970.955

0	9.36	33.71	0	9.36	33.74	26.09
24	8.39	33.94	25	8.40	33.94	26.38
49	8.79	34.02	50	8.75	34.02	26.40
74	3.66	34.08	75	3.65	34.09	27.12
99	3.35	34.26	100	3.35	34.27	27.29
147	3.67	34.53	150	3.70	34.54	27.47
197	3.77	34.73	200	3.75	34.73	27.61
296	3.74	34.86	(300)	3.70	34.87	27.74

# TABLE OF OCEANOGRAPHIC DATA—Continued

Observed values			Scaled values				Observed values			Scaled values			
Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	$\sigma_t$	Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	$\sigma_t$
Station 7531; 30 June; 46°49' N., 46°34' W.; depth 622 m.; dynamic height 970.908							Station 7536; 1 July; 46°49' N., 48°14' W.; depth 119 m.; dynamic height 971.074						
0	8.16	33.52	0	8.16	33.52	26.12	0	7.26	32.33	0	7.26	32.33	25.31
19	8.08	33.66	25	6.95	33.82	26.52	25	3.77	32.56	25	3.77	32.56	25.89
39	4.08	34.28	50	3.25	34.30	27.32	51	-0.86	32.85	50	-0.75	32.84	26.42
58	2.57	34.32	75	2.70	34.36	27.42	76	-0.93	33.03	75	-0.90	33.02	26.57
78	2.77	34.37	100	3.15	34.45	27.45	102	0.06	33.33	100	0.00	33.30	26.75
117	3.49	34.515	150	3.90	34.71	27.59							
156	4.01	34.75	200	3.85	34.78	27.64							
235	3.75	34.81	300	3.75	34.85	27.71							
304	3.76	34.85	400	3.65	34.86	27.73							
441	3.62	34.87											
Station 7532; 30 June; 46°50' N., 46°49' W.; depth 1,234 m.; dynamic height 970.895							Station 7537; 1 July; 46°48' N., 48°44' W.; depth 93 m.; dynamic height 971.079						
0	8.05	33.51	0	8.05	33.51	26.12	0	7.01	32.44	0	7.01	32.44	25.43
25	4.37	33.59	25	4.37	33.59	26.65	26	5.27	32.44	25	5.30	32.44	25.64
50	2.81	34.12	50	2.81	34.12	27.23	53	0.32	32.87	50	0.90	32.82	26.32
75	2.32	34.32	75	2.32	34.32	27.12	79	-0.08	33.26	75	0.00	33.21	26.69
100	2.98	34.47	100	2.98	34.47	27.19							
148	2.52	34.53	150	2.55	34.53	27.57							
198	2.82	34.64	200	2.85	34.65	27.64							
298	3.75	34.85	300	3.75	34.85	27.71							
396	3.70	34.87	400	3.70	34.87	27.74							
593	3.61	34.88	600	3.60	34.88	27.75							
782	3.50	34.89	800	3.50	34.89	27.77							
1,090	3.46	34.90	1,000	3.50	34.90	27.78							
Station 7533; 30 June; 46°52' N., 47°17' W.; depth 622 m.; dynamic height 970.995							Station 7538; 6 July; 50°03' N., 49°05' W.; depth 1,728 m.; dynamic height 970.853						
0	6.74	32.64	0	6.74	32.64	25.54	0	8.52	33.81	0	8.52	33.81	26.28
23	5.10	32.69	25	4.95	32.72	25.90	24	6.25	34.33	25	6.20	34.34	27.02
47	1.37	33.17	50	1.25	33.20	26.61	49	4.05	34.56	50	4.00	34.56	27.46
70	-0.44	33.49	75	-0.30	33.52	26.95	73	3.38	34.66	75	3.40	34.67	27.61
94	0.45	33.65	100	0.50	33.71	27.06	97	3.47	34.72	100	3.45	34.73	27.64
140	1.11	34.07	150	1.35	34.13	27.35	147	3.41	34.78	150	3.40	34.78	27.69
186	2.13	34.38	200	2.20	34.42	27.52	196	3.44	34.81	200	3.50	34.81	27.71
280	2.84	34.79	300	3.00	34.66	27.64	293	3.51	34.84	300	3.50	34.84	27.73
369	3.62	34.62	400	3.60	34.81	27.70	388	3.52	34.88	400	3.50	34.87	27.76
547	3.63	34.865	(600)	3.65	34.88	27.74	582	3.45	34.87	600	3.45	34.87	27.76
							778	3.34	34.87	800	3.35	34.87	27.77
							978	3.36	34.88	1,000	3.35	34.88	27.77
							1,483	3.40	34.92				
Station 7534; 30 June; 46°51' N., 47°25' W.; depth 320 m.; dynamic height 971.018							Station 7539; 6 July; 49°52' N., 49°36' W.; depth 1,170 m.; dynamic height 970.892						
0	6.76	32.47	0	6.76	32.47	25.48	0	7.81	32.68	0	7.81	32.68	25.50
23	1.85	32.77	25	1.65	32.78	26.24	24	0.59	33.85	25	0.60	33.86	27.17
47	-1.47	33.01	50	-1.45	33.03	26.59	48	0.51	34.03	50	0.55	34.05	27.33
70	-1.28	33.28	75	-1.05	33.32	26.81	72	1.81	34.30	75	1.80	34.31	27.46
94	-0.16	33.52	100	-0.05	33.58	26.98	97	1.92	34.42	100	2.00	34.42	27.53
141	1.21	34.00	150	1.35	34.05	27.27	144	2.15	34.51	150	2.50	34.53	27.57
188	1.92	34.28	200	2.00	34.30	27.43	192	2.76	34.62	200	2.80	34.63	27.62
282	2.66	34.52	(300)	2.80	34.56	27.57	289	3.26	34.78	300	3.30	34.78	27.70
							386	3.40	34.82	400	3.40	34.82	27.73
							580	3.38	34.85	600	3.40	34.85	27.75
							776	3.45	34.87	800	3.45	34.87	27.76
							976	3.44	34.87	1,000	3.45	34.88	27.76
							1,130	3.45	34.89				
Station 7535; 30 June; 46°50' N., 47°44' W.; depth 170 m.; dynamic height 971.037							Station 7540; 6 July; 49°45' N., 50°00' W.; depth 627 m.; dynamic height 970.946						
0	6.03	32.30	0	6.03	32.30	25.44	0	7.95	32.18	0	7.95	32.18	25.88
25	1.14	32.48	25	1.14	32.48	26.04	24	4.66	33.04	25	4.55	33.05	26.20
51	-1.54	32.85	50	-1.45	32.82	26.42	48	-0.81	33.69	50	-0.75	33.70	27.11
76	-1.46	32.99	75	-1.45	32.98	26.55	72	0.06	33.88	75	0.20	33.91	27.24
102	-0.70	33.25	100	-0.75	33.23	26.73	97	1.45	34.15	100	1.45	34.16	27.36
152	0.29	33.53	150	0.25	33.52	26.93	144	1.19	34.325	150	1.60	34.35	27.42
							192	2.50	34.55	200	2.55	34.57	27.61
							289	3.21	34.74	300	3.25	34.75	27.68
							386	3.39	34.80	400	3.40	34.80	27.71
							581	3.42	34.83	(600)	3.45	34.83	27.72

# TABLE OF OCEANOGRAPHIC DATA—Continued

Observed values			Scaled values				Observed values			Scaled values			
Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	$\sigma_t$	Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	$\sigma_t$
Station 7541; 6 July; 49°31' N., 50°28' W.; depth 336 m.; dynamic height 970.994													
0	8.74	31.87	0	8.74	31.87	24.74	0	10.03	31.04	0	10.03	31.04	23.88
25	2.18	32.82	25	2.18	32.82	26.24	25	5.39	32.20	25	5.39	32.20	25.43
51	-1.44	33.09	50	-1.25	33.09	26.71	52	-1.43	32.75	50	-1.43	32.75	26.36
76	-0.87	33.34	75	-0.90	33.33	26.82	75	-0.94	32.85	75	-0.94	32.85	26.43
102	-0.10	33.72	100	-0.20	33.70	27.09	99	-1.33	32.93	100	-1.35	32.94	26.52
152	0.88	31.09	150	0.80	31.07	27.33	149	-1.13	33.19	150	-1.10	33.20	26.72
203	2.15	31.43	200	2.05	31.41	27.52	199	-0.10	33.52	200	-0.90	33.53	26.98
305	3.21	34.76	300	3.35	34.75	27.67							
Station 7542; 6 July; 49°24' N., 51°01' W.; depth 340 m.; dynamic height 971.066													
0	9.15	30.40	0	9.15	30.10	23.52	0	9.35	31.03	0	9.35	31.03	23.99
25	1.54	32.53	25	1.54	32.53	26.05	25	2.56	32.35	25	2.56	32.35	25.83
50	-1.24	32.92	50	-1.24	32.92	26.50	50	-1.49	32.75	50	-1.19	32.75	26.36
75	-1.30	33.12	75	-1.30	33.12	26.66	75	-1.59	32.82	75	-1.59	32.82	26.43
101	-1.30	33.30	100	-1.30	33.30	26.80	100	-1.49	32.91	100	-1.49	32.94	26.52
151	0.39	33.77	150	0.35	33.76	27.07	150	-1.09	33.16	150	-1.09	33.16	26.68
201	1.45	34.16	200	1.45	34.15	27.35							
302	2.74	34.60	300	2.70	34.58	27.59							
Station 7543; 6 July; 49°13' N., 51°32' W.; depth 320 m.; dynamic height 971.066													
0	9.74	30.21	0	9.74	30.21	23.28	0	12.25	30.78	0	12.25	30.78	23.29
21	-0.52	32.19	25	-0.55	32.21	25.90	25	-0.88	32.41	25	-0.88	32.41	26.08
49	-0.67	32.81	50	-0.70	32.81	26.40	52	-1.10	32.59	50	-1.35	32.57	26.22
74	-1.26	33.13	75	-1.25	33.14	26.67	77	-1.47	32.69	75	-1.45	32.68	26.31
99	-1.23	33.32	100	-1.20	33.33	26.83							
147	-0.24	33.76	150	-0.15	33.78	27.15							
197	1.43	34.16	200	1.70	34.18	27.35							
296	3.05	34.67	(300)	3.15	34.69	27.64							
Station 7544; 6 July; 49°06' N., 51°54' W.; depth 291 m.; dynamic height 971.091													
0	8.91	30.18	0	8.91	30.18	23.39	0	9.59	31.48	0	9.59	31.18	24.06
25	1.99	32.22	25	4.99	32.22	25.50	25	-0.41	32.45	25	-0.41	32.45	26.09
50	-0.75	32.90	50	-0.75	32.90	26.46	51	-1.44	32.68	50	-1.40	32.67	26.30
75	-1.45	33.04	75	-1.45	33.04	26.60	77	-1.52	32.80	75	-1.50	32.79	26.40
100	-1.18	33.18	100	-1.18	33.18	26.70	103	-1.47	32.91	100	-1.50	32.89	26.47
149	-0.63	33.58	150	-0.60	33.59	26.95	153	-1.10	32.96	150	-1.40	32.96	26.53
199	0.88	34.00	200	0.85	34.01	27.28							
274	2.55	34.46	(300)	3.10	34.62	27.60							
Station 7545; 6 July; 49°00' N., 52°08' W.; depth 294 m.; dynamic height 971.152													
0	10.58	30.66	0	10.58	30.66	23.50	0	10.35	31.29	0	10.35	31.29	24.03
25	-1.11	32.45	25	-1.11	32.45	26.12	25	6.81	32.14	25	6.81	32.14	25.22
51	-1.42	32.67	50	-1.10	32.66	26.29	51	-1.18	32.73	50	-1.40	32.72	26.34
76	-1.58	32.74	75	-1.55	32.71	26.34	77	-1.52	32.83	75	-1.50	32.82	26.42
102	-1.57	32.80	100	-1.50	32.79	26.40	103	-1.38	32.94	100	-1.35	32.93	26.51
152	-1.50	32.91	150	-1.50	32.90	26.48	153	-0.76	33.36	150	-0.80	33.34	26.82
202	-0.95	33.44	200	-0.95	33.42	26.90							
278	2.04	34.315	(300)	2.80	34.53	27.55							
Station 7546; 7 July; 48°52' N., 52°27' W.; depth 355 m.; dynamic height 971.168													
0	8.41	31.74	0	8.41	31.74	24.68	0	10.43	31.35	0	10.42	31.35	24.06
19	4.38	32.22	25	2.70	32.37	25.83	25	1.15	32.05	25	1.50	32.04	25.41
39	-1.37	32.70	50	-1.50	32.75	26.36	52	-1.39	32.61	50	-1.20	32.58	26.22
59	-1.62	32.79	75	-1.60	32.83	26.43	78	-1.53	32.76	75	-1.50	32.74	26.36
79	-1.57	32.84	100	-1.50	32.87	26.46	104	-1.42	32.88	100	-1.45	32.86	26.45
118	-1.47	32.90	150	-1.45	32.93	26.51	145	-1.25	33.10	(150)	-1.20	33.12	26.66
157	-1.33	32.94	200	-0.45	33.28	26.76							
236	0.20	33.56	(300)	1.65	34.07	27.28							
Station 7547; 7 July; 48°46' N., 52°40' W.; depth 236 m.; dynamic height 971.164													
0	10.03	31.04	0	10.03	31.04	23.88	0	9.35	31.03	0	9.35	31.03	23.99
25	5.39	32.20	25	5.39	32.20	25.43	25	2.56	32.35	25	2.56	32.35	25.83
52	-1.43	32.75	50	-1.43	32.75	26.36	50	-1.49	32.75	50	-1.19	32.75	26.36
75	-0.94	32.85	75	-0.94	32.85	26.43	75	-1.59	32.82	75	-1.59	32.82	26.43
99	-1.33	32.93	100	-1.35	32.94	26.52	100	-1.49	32.91	100	-1.49	32.94	26.52
149	-1.13	33.19	150	-1.10	33.20	26.72	150	-1.09	33.16	150	-1.09	33.16	26.68
199	-0.10	33.52	200	-0.90	33.53	26.98							
Station 7548; 7 July; 48°44' N., 52°45' W.; depth 163 m.; dynamic height 971.155													
0	9.35	31.03	0	9.35	31.03	23.99	0	9.35	31.03	0	9.35	31.03	23.99
25	2.56	32.35	25	2.56	32.35	25.83	25	2.56	32.35	25	2.56	32.35	25.83
50	-1.49	32.75	50	-1.19	32.75	26.36	50	-1.49	32.75	50	-1.19	32.75	26.36
75	-1.59	32.82	75	-1.59	32.82	26.43	75	-1.59	32.82	75	-1.59	32.82	26.43
100	-1.49	32.91	100	-1.49	32.94	26.52	100	-1.49	32.91	100	-1.49	32.94	26.52
150	-1.09	33.16	150	-1.09	33.16	26.68	150	-1.09	33.16	150	-1.09	33.16	26.68
Station 7549; 7 July; 48°44' N., 52°57' W.; depth 99 m.; dynamic height 971.167													
0	12.25	30.78	0	12.25	30.78	23.29	0	12.25	30.78	0	12.25	30.78	23.29
25	-0.88	32.41	25	-0.88	32.41	26.08	25	-0.88	32.41	25	-0.88	32.41	26.08
52	-1.10	32.59	50	-1.35	32.57	26.22	52	-1.10	32.59	50	-1.35	32.57	26.22
77	-1.47	32.69	75	-1.45	32.68	26.31	77	-1.47	32.69	75	-1.45	32.68	26.31
Station 7550; 7 July; 48°38' N., 52°44' W.; depth 158 m.; dynamic height 971.138													
0	9.59	31.48	0	9.59	31.18	24.06	0	9.59	31.48	0	9.59	31.18	24.06
25	-0.41	32.45	25	-0.41	32.45	26.09	25	-0.41	32.45	25	-0.41	32.45	26.09
51	-1.44	32.68	50	-1.40	32.67	26.30	51	-1.44	32.68	50	-1.40	32.67	26.30
77	-1.52	32.80	75	-1.50	32.79	26.40	77	-1.52	32.80	75	-1.50	32.79	26.40
103	-1.47	32.91	100	-1.50	32.89	26.47	103	-1.47	32.91	100	-1.50	32.89	26.47
153	-1.10	32.96	150	-1.40	32.96	26.53	153	-1.10	32.96	150	-1.40	32.96	26.53
Station 7551; 7 July; 48°34' N., 52°34' W.; depth 236 m.; dynamic height 971.129													
0	9.58	31.40	0	9.58	31.40	24.24	0	9.58	31.40	0	9.58	31.40	24.24
26	3.21	32.31	25	3.30	32.30	25.72	26	3.21	32.31	25	3.30	32.30	25.72
51	-1.47	32.72	50	-1.40	32.71	26.33	51	-1.47	32.72	50	-1.40	32.71	26.33
77	-1.63	32.79	75	-1.60	32.78	26.39	77	-1.63	32.79	75	-1.60	32.78	26.39
102	-1.43	32.89	100	-1.45	32.88	26.47	102	-1.43	32.89	100	-1.45	32.88	26.47
152	-1.22	33.195	150	-1.25	33.18	26.70	152	-1.22	33.195	150	-1.25	33.18	26.70
203	-0.47	33.47	200	-0.50	33.45	26.90	203	-0.47	33.47	200	-0.50	33.45	26.90
Station 7552; 7 July; 48°18' N., 52°01' W.; depth 179 m.; dynamic height 971.134													
0	10.35	31.29	0	10.35	31.29	24.03	0	10.35	31.29	0	10.35	31.29	24.03
25	6.81	32.14	25	6.81	32.14	25.22	25	6.81	32.14	25	6.81	32.14	25.22
51	-1.18	32.73	50	-1.40	32.72	26.34	51	-1.18	32.73	50	-1.40	32.72	26.34
77	-1.52	32.83	75	-1.50	32.82	26.42	77	-1.52	32.83	75	-1.50	32.82	26.42
103	-1.38	32.94	100	-1.35	32.93	26.51	103	-1.38	32.94	100	-1.35	32.93	26.51
153	-0.76	33.36	150	-0.80	33.34	26.82	153	-0.76	33.36	150	-0.80	33.34	26.82
Station 7553; 7 July; 48°12' N., 51°48' W.; depth 177 m.; dynamic height 971.142													
0	10.43	31.35	0	10.42	31.35	24.06	0	10.43	31.35	0	10.42	31.35	24.06
25	1.15	32.05	25	1.50	32.04	25.41	25	1.15	32.05	25	1.50	32.04	25.41
52	-1.39	32.61	50	-1.20	32.58	26.22	52	-1.39					

TABLE OF OCEANOGRAPHIC DATA—Continued

Observed values			Scaled values			
Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	$\sigma_t$
Station 7554; 7 July; 48°04' N., 51°30' W.; depth 164 m.; dynamic height 971.116						
0	11.00	31.58	0	11.00	31.58	24.14
25	0.53	32.43	25	0.53	32.43	26.03
50	-1.39	32.66	50	-1.39	32.66	26.29
74	-1.52	32.78	75	-1.50	32.78	26.39
99	-1.41	32.89	100	-1.45	32.90	26.54
149	0.06	33.34	150	0.10	33.35	26.80
Station 7555; 7 July; 47°55' N., 51°12' W.; depth 142 m.; dynamic height 971.097						
0	9.34	32.05	0	9.34	32.05	24.78
25	1.83	32.58	25	1.83	32.58	26.07
50	-1.32	32.78	50	-1.32	32.78	26.36
75	-1.19	32.86	75	-1.19	32.86	26.45
100	-0.36	33.14	100	-0.36	33.14	26.64
130	0.01	33.30				
Station 7556; 7 July; 47°48' N., 50°53' W.; depth 140 m.; dynamic height 971.098						
0	9.06	32.12	0	9.06	32.12	24.88
25	3.44	32.47	25	3.44	32.47	25.85
50	-0.53	32.77	50	-0.53	32.77	26.35
75	-0.51	33.02	75	-0.51	33.02	26.55
100	-0.04	33.27	100	-0.04	33.27	26.73
Station 7557; 7 July; 47°40' N., 50°34' W.; depth 135 m.; dynamic height 971.105						
0	8.77	32.18	0	8.77	32.18	24.97
25	4.76	32.34	25	4.76	32.34	25.62
50	0.63	32.79	50	0.63	32.79	26.32
75	0.01	32.94	75	0.01	32.94	26.47
100	0.11	33.27	100	0.11	33.27	26.73
Station 7558; 7 July; 47°32' N., 50°17' W.; depth 98 m.; dynamic height 971.109						
0	8.97	32.13	0	8.97	32.13	24.90
25	6.05	32.47	25	6.05	32.47	25.53
50	1.65	32.72	50	1.65	32.72	26.19
75	-0.21	33.08	75	-0.21	33.08	26.59
90	-0.03	33.16	(100)	0.05	33.21	26.69
Station 7559; 7 July; 47°28' N., 50°00' W.; depth 86 m.; dynamic height 971.102						
0	9.12	32.30	0	9.12	32.30	25.01
25	6.36	32.58	25	6.36	32.58	25.62
50	0.89	32.78	50	0.89	32.78	26.29
70	-0.73	32.98	(75)	-1.00	33.03	26.57
Station 7560; 8 July; 47°45' N., 49°47' W.; depth 110 m.; dynamic height 971.098						
0	8.41	32.23	0	8.41	32.23	25.06
25	4.24	32.47	25	4.24	32.47	25.77
50	-0.24	32.80	50	-0.24	32.80	26.37
75	-0.15	33.03	75	-0.15	33.03	26.55
100	-0.16	33.17	100	-0.16	33.17	26.66
Station 7561; 8 July; 47°58' N., 49°44' W.; depth 170 m.; dynamic height 971.066						
0	8.74	31.64	0	8.74	31.64	24.55
25	1.72	32.56	25	1.72	32.56	26.06
50	-1.36	32.81	50	-1.36	32.81	26.41
75	-1.44	32.98	75	-1.44	32.98	26.55
100	-1.40	33.03	100	-1.40	33.03	26.59
150	0.57	33.75	150	0.57	33.75	27.09
Station 7562; 8 July; 48°09' N., 49°37' W.; depth 212 m.; dynamic height 971.097						
0	8.42	31.50	0	8.42	31.50	24.49
25	-0.57	32.62	25	-0.57	32.62	26.23
50	-1.57	32.81	50	-1.57	32.81	26.41
75	-1.39	32.94	75	-1.39	32.94	26.52
100	-1.44	33.09	100	-1.44	33.09	26.63
150	-0.22	33.55	150	-0.22	33.55	26.97
200	1.56	34.14	200	1.56	34.14	27.33
Station 7563; 8 July; 48°29' N., 49°22' W.; depth 603 m.; dynamic height 971.034						
0	9.43	31.25	0	9.43	31.25	24.15
22	7.42	32.67	25	7.15	32.70	25.61
46	5.34	32.83	50	4.00	32.95	26.18
68	-0.89	33.43	75	-0.70	33.47	26.93
92	0.15	33.57	100	0.10	33.66	27.04
136	1.35	34.115	150	1.50	34.18	27.37
182	1.83	34.31	200	2.00	34.37	27.49
273	2.79	34.64	300	2.90	34.67	27.66
365	3.14	34.745	400	3.25	34.76	27.69
551	3.56	34.84	(600)	3.65	34.86	27.73
Station 7564; 8 July; 48°36' N., 49°19' W.; depth 1,097 m.; dynamic height 970.988						
0	9.83	31.86	0	9.83	31.86	24.55
25	3.59	32.84	25	3.59	32.84	26.14
51	-1.01	33.29	50	-0.95	33.30	26.57
76	0.09	33.74	75	0.05	33.74	27.11
102	0.72	33.99	100	0.65	33.97	27.26
151	0.53	34.16	150	0.55	34.15	27.33
202	2.08	34.45	200	2.00	34.44	27.54
304	3.00	34.71	300	2.95	34.70	27.67
404	3.20	34.78	400	3.20	34.77	27.71
604	3.45	34.84	600	3.45	34.84	27.73
803	3.60	34.88	800	3.60	34.88	27.75
1,002	3.48	34.89	1,000	3.50	34.89	27.77
Station 7565; 8 July; 49°03' N., 49°13' W.; depth 1,728 m.; dynamic height 970.875						
0	9.48	32.88	0	9.48	32.88	25.40
25	6.10	34.14	25	6.10	34.14	26.88
51	3.37	34.50	50	3.40	34.49	27.46
76	3.12	34.64	75	3.15	34.64	27.60
102	3.16	34.71	100	3.15	34.70	27.65
152	3.35	34.76	150	3.35	34.76	27.68
202	3.41	34.81	200	3.40	34.81	27.72
304	3.45	34.84	300	3.45	34.83	27.72
406	3.44	34.84	400	3.45	34.84	27.73
608	3.49	34.85	600	3.50	34.85	27.74
809	3.42	34.88	800	3.45	34.88	27.76
1,012	3.45	34.89	1,000	3.45	34.89	27.77
1,522	3.38	34.93				

# TABLE OF OCEANOGRAPHIC DATA—Continued

Observed values			Scaled values			$\sigma_t$
Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	
Station 7566; 8 July; 49°36' N., 49°09' W.; depth 1,673 m.; dynamic height 970.859						
0	9.49	33.52	0	9.49	33.52	25.90
25	5.49	34.51	25	5.49	34.51	27.25
50	3.44	34.53	50	3.45	34.53	27.48
76	3.16	34.64	75	3.15	34.63	27.59
103	3.31	34.69	100	3.30	34.68	27.62
153	3.58	34.77	150	3.55	34.76	27.67
204	3.35	34.79	200	3.35	34.79	27.70
307	3.40	34.82	300	3.40	34.82	27.73
409	3.57	34.87	400	3.55	34.86	27.74
607	3.63	34.89	600	3.60	34.89	27.76
802	3.45	34.88	800	3.50	34.88	27.76
1,007	3.48	34.89	1,000	3.45	34.89	27.77
1,522	3.36	34.90				

Station 7567; 8 July; 50°00' N., 49°00' W.; depth 1,875 m.; dynamic height 970.866

0	8.50	33.96	0	8.50	33.96	26.48
24	4.48	34.04	25	4.50	34.05	27.00
49	3.58	34.62	50	3.55	34.62	27.55
73	3.26	34.68	75	3.25	34.69	27.63
98	3.42	34.75	100	3.45	34.75	27.66
146	3.55	34.80	150	3.55	34.80	27.69
195	3.62	34.82	200	3.60	34.82	27.71
293	3.57	34.83	300	3.55	34.82	27.71
404	3.58	34.83	400	3.55	34.83	27.71
606	3.37	34.85	600	3.40	34.84	27.74
806	3.36	34.85	800	3.35	34.84	27.74
1,014	3.27	34.85	1,000	3.30	34.85	27.76
1,526	3.43	34.91				

Station 7568; 10 July; 53°43' N., 55°48' W.; depth 113 m.; dynamic height 1454.933

0	7.64	25.86	0	7.64	25.86	20.15
25	-1.62	32.51	25	-1.62	32.51	26.17
50	-1.65	32.64	50	-1.65	32.64	26.28
75	-1.67	32.69	75	-1.67	32.69	26.32
100	-1.59	32.76	100	-1.59	32.76	26.37

Station 7569; 10 July; 53°51' N., 55°30.5' W.; depth 223 m.; dynamic height 1454.888

0	4.11	27.17	0	4.10	27.17	21.59
24	-1.39	32.48	25	-1.40	32.49	26.15
48	-1.67	32.68	50	-1.65	32.70	26.33
72	-1.50	32.85	75	-1.45	32.87	26.46
96	-1.08	33.08	100	-1.10	33.11	26.64
144	-1.27	33.39	150	-1.20	33.43	26.91
192	-0.62	33.76	(200)	-0.50	33.82	27.20

Station 7570; 10 July; 53°54' N., 55°25' W.; depth 179 m.; dynamic height 1454.879

0	5.51	26.04	0	5.51	26.04	20.57
25	0.00	32.23	25	0.00	32.23	25.89
50	-0.97	32.98	50	-0.97	32.98	26.53
75	-1.22	33.20	75	-1.22	33.20	26.72
101	-1.26	33.36	100	-1.25	33.35	26.81
151	-0.87	33.65	150	-0.90	33.61	27.07

Observed values			Scaled values			$\sigma_t$
Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	

Station 7571; 10 July; 54°06' N., 55°02' W.; depth 163 m.; dynamic height 1454.834

0	5.21	29.61	0	5.21	29.61	23.42
25	-1.20	32.63	25	-1.20	32.63	26.25
50	-1.55	32.90	50	-1.55	32.90	26.49
75	-1.22	33.19	75	-1.22	33.19	26.79
100	1.20	33.36	100	1.20	33.36	26.85
150	-0.89	33.70	150	-0.89	33.70	27.12

Station 7572; 10 July; 54°14' N., 54°45' W.; depth 183 m.; dynamic height 1454.865

0	5.00	26.99	0	5.00	26.99	21.37
25	-0.81	32.43	25	-0.81	32.43	26.09
50	-1.42	32.98	50	-1.42	32.98	26.55
75	-1.09	33.18	75	-1.09	33.18	26.71
100	-1.19	33.34	100	-1.19	33.34	26.84
150	-0.99	33.64	150	-0.99	33.64	27.07

Station 7573; 10 July; 54°26' N., 54°16' W.; depth 214 m.; dynamic height 1454.835

0	4.49	28.90	0	4.49	28.90	22.92
24	-1.41	32.66	25	-1.40	32.67	26.30
48	-1.36	33.04	50	-1.35	33.06	26.10
71	-1.21	33.22	75	-1.20	33.26	26.77
95	-1.23	33.45	100	-1.15	33.49	26.96
142	-0.59	33.83	150	-0.30	33.91	27.26
190	1.32	34.31	(200)	1.25	34.39	27.56

Station 7574; 10 July; 54°44' N., 53°48' W.; depth 320 m.; dynamic height 1454.807

0	3.33	30.67	0	3.33	30.67	24.32
23	-1.49	32.83	25	-1.50	32.85	26.46
46	-1.21	33.21	50	-1.40	33.22	26.74
69	-1.16	33.28	75	-1.15	33.35	26.84
92	-1.09	33.58	100	-0.95	33.62	27.06
137	-0.47	33.83	150	-0.20	33.94	27.28
184	0.50	34.14	200	0.85	34.21	27.44
276	2.72	34.58	(300)	3.35	34.70	27.63

Station 7575; 10 July; 54°50' N., 53°34' W.; depth 654 m.; dynamic height 1454.758

0	3.49	30.77	0	3.49	30.77	24.50
24	-0.35	33.27	25	-0.40	33.28	26.76
47	-0.98	33.51	50	-0.95	33.54	26.99
71	-0.59	33.72	75	-0.55	33.75	27.14
94	-0.32	33.87	100	-0.05	33.91	27.25
140	1.71	34.32	150	2.05	34.39	27.50
187	3.41	34.64	200	3.45	34.65	27.58
281	3.82	34.74	300	3.90	34.76	27.63
372	4.23	34.85	400	4.25	34.86	27.67
551	1.22	34.88	(600)	4.25	34.89	27.69

Station 7576; 10 July; 54°56' N., 53°24' W.; depth 1,600 m.; dynamic height 1454.687

0	2.41	31.66	0	2.41	31.66	25.29
26	0.27	33.55	25	0.30	33.55	26.95
51	1.27	34.20	50	1.20	34.18	27.39
77	1.96	34.35	75	1.90	34.33	27.46
103	3.50	34.61	100	3.35	34.59	27.54
153	4.45	34.79	150	4.40	34.78	27.58
205	1.25	34.80	200	4.25	34.80	27.62
308	1.49	34.87	300	4.45	34.86	27.65
410	1.34	34.91	400	4.55	34.90	27.65
615	3.64	34.84	600	3.70	34.85	27.72
820	3.46	34.87	800	3.50	34.86	27.75
1,024	3.33	34.86	1,000	3.35	34.86	27.76
1,536	3.46	34.89	1,500	3.20	34.89	27.80

TABLE OF OCEANOGRAPHIC DATA—Continued

Observed values			Scaled values				Observed values			Scaled values			
Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	$\sigma_t$	Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	$\sigma_t$
Station 7577; 10 July; 55°00' N., 53°16' W.; depth 2,103 m.; dynamic height 1454.636							Station 7580; 11 July; 55°50' N., 51°40' W.; depth 3,493 m.; dynamic height 1454.617						
0	3.39	32.24	0	3.39	33.24	26.47	0	7.87	34.63	0	7.87	34.63	27.02
25	1.26	33.66	25	1.26	33.66	26.97	24	6.26	34.665	25	6.20	34.67	27.30
50	1.19	34.19	50	1.19	34.19	27.40	48	3.95	34.67	50	3.90	34.68	27.56
75	3.11	34.54	75	3.11	34.54	27.53	72	3.81	34.71	75	3.75	34.71	27.60
100	4.34	34.80	100	4.34	34.80	27.60	96	3.68	34.74	100	3.65	34.74	27.63
150	4.59	34.90	150	4.59	34.90	27.66	143	3.54	34.77	150	3.55	34.77	27.67
200	4.40	34.90	200	4.40	34.90	27.68	190	3.43	34.79	200	3.40	34.79	27.70
300	1.17	34.90	300	4.17	34.90	27.71	286	3.34	34.81	300	3.35	34.81	27.72
410	3.81	34.89	400	3.90	34.89	27.73	382	3.35	34.83	400	3.35	34.83	27.73
615	3.42	34.87	600	3.45	34.87	27.76	575	3.34	34.845	600	3.35	34.85	27.75
819	3.34	34.87	800	3.35	34.87	27.77	772	3.23	34.85	800	3.25	34.85	27.76
1,024	3.26	34.87	1,000	3.30	34.87	27.78	972	3.24	34.855	1,000	3.25	34.86	27.77
1,541	3.46	34.92	1,500	3.45	34.91	27.79	1,466	3.47	34.90	1,500	3.45	34.90	27.78
2,059	3.20	34.94					1,967	3.38	34.92				
							2,475	3.19	34.93				
							2,981	2.63	34.945				
							3,399	1.66	34.90				
Station 7578; 11 July; 55°08' N., 53°02' W.; depth 2,761 m.; dynamic height 1454.599							Station 7581; 11 July; 56°26' N., 50°30' W.; depth 3,658 m.; dynamic height 1454.636						
0	5.76	33.73	0	5.76	33.73	26.60	0	7.94	34.58	0	7.94	34.58	26.97
25	5.34	34.58	25	5.34	34.58	27.32	25	6.79	34.58	25	6.79	34.58	27.14
50	4.71	34.66	50	4.71	34.66	27.46	51	5.16	34.64	50	5.20	34.64	27.39
75	4.14	34.73	75	4.14	34.73	27.58	76	4.11	34.735	75	4.20	34.73	27.57
100	4.10	34.86	100	4.10	34.86	27.69	102	3.83	34.795	100	3.85	34.79	27.65
149	4.08	34.90	150	4.10	34.90	27.72	151	3.82	34.855	150	3.85	34.85	27.70
199	3.86	34.88	200	3.90	34.88	27.72	202	3.64	34.825	200	3.65	34.83	27.70
289	3.69	34.89	300	3.70	34.89	27.75	304	3.65	34.85	300	3.65	34.85	27.72
391	3.59	34.89	400	3.55	34.89	27.76	403	3.58	34.87	400	3.55	34.87	27.75
587	3.47	34.88	600	3.45	34.88	27.76	602	3.41	34.86	600	3.45	34.86	27.75
783	3.31	34.87	800	3.30	34.87	27.78	800	3.32	34.84	800	3.35	34.84	27.74
979	3.26	34.865	1,000	3.25	34.87	27.78	996	3.29	34.84	1,000	3.30	34.84	27.75
1,470	3.42	34.91	1,500	3.40	34.91	27.80	1,486	3.47	34.88	1,500	3.45	34.87	27.76
1,961	3.18	34.94					1,992	3.40	34.895				
2,454	3.42	34.92					2,492	3.12	34.91				
							3,002	2.68	34.91				
							3,500	1.65	34.90				
							3,600	1.59	34.89				
Station 7579; 11 July; 55°26' N., 52°29' W.; depth 3,292 m.; dynamic height 1454.612							Station 7582; 11 July; 57°00' N., 49°27' W.; depth 3,694 m.; dynamic height 1454.603						
0	7.55	34.48	0	7.55	34.48	26.95	0	7.87	34.64	0	7.87	34.64	27.03
26	5.98	34.68	25	6.00	34.68	27.32	25	5.75	34.69	25	5.75	34.69	27.36
51	4.27	34.71	50	4.35	34.71	27.54	50	3.96	34.70	50	3.96	34.70	27.57
76	3.75	34.73	75	3.75	34.73	27.61	76	3.40	34.71	75	3.40	34.71	27.63
102	3.46	34.73	100	3.50	34.73	27.64	101	3.40	34.75	100	3.40	34.75	27.67
152	3.34	34.77	150	3.35	34.78	27.69	151	3.40	34.78	150	3.45	34.78	27.68
203	3.36	34.795	200	3.35	34.79	27.70	201	3.68	34.84	200	3.65	34.84	27.71
305	3.47	34.83	300	3.45	34.83	27.72	302	3.57	34.85	300	3.60	34.85	27.73
404	3.45	34.84	400	3.45	34.84	27.73	402	3.45	34.85	400	3.45	34.85	27.74
604	3.39	34.85	600	3.40	34.85	27.75	604	3.44	34.87	600	3.45	34.87	27.76
807	3.29	34.855	800	3.30	34.85	27.76	810	3.44	31.88	800	3.45	34.89	27.77
1,011	3.29	34.86	1,000	3.30	34.86	27.77	1,018	3.48	34.90	1,000	3.50	34.90	27.78
1,509	3.43	34.90	1,500	3.40	34.90	27.79	1,511	3.44	34.91	1,500	3.45	34.91	27.79
2,016	3.35	34.94					2,015	3.37	34.93				
2,522	2.94	34.95					2,515	3.12	34.945				
3,234	1.61	34.90					3,018	2.74	34.94				
							3,517	1.79	34.915				
							3,616	1.70	34.90				

# TABLE OF OCEANOGRAPHIC DATA—Continued

Observed values			Scaled values			
Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	$\sigma_t$
Station 7583; 12 July; 57°33' N., 48°20' W.; depth 3,475 m.; dynamic height 1454.602						
0	6.94	34.69	0	6.94	34.69	27.20
25	6.41	34.70	25	6.41	34.70	27.28
50	4.27	34.79	50	4.27	34.79	27.61
75	4.06	34.87	75	4.06	34.87	27.70
100	4.39	34.93	100	4.39	34.93	27.71
150	4.20	34.92	150	4.20	34.92	27.72
200	4.01	34.90	200	4.01	34.90	27.73
300	3.74	34.88	300	3.74	34.88	27.74
401	3.60	34.88	400	3.60	34.88	27.75
599	3.35	34.86	600	3.35	34.86	27.76
799	3.37	34.855	800	3.40	34.86	27.76
996	3.30	34.86	1,000	3.30	34.86	27.77
1,505	3.47	34.895	1,500	3.45	34.89	27.77
2,007	3.38	34.93				
2,509	3.05	34.95				
3,003	2.59	34.93				
3,340	1.78	34.90				

Station 7584; 12 July; 58°05' N., 47°07' W.; depth 3,200 m.; dynamic height 1454.608

Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	$\sigma_t$
Station 7584; 12 July; 58°05' N., 47°07' W.; depth 3,200 m.; dynamic height 1454.608						
0	7.18	34.72	0	7.18	34.72	27.19
25	6.27	34.72	25	6.27	34.72	27.32
50	5.29	34.80	50	5.29	34.80	27.50
75	4.86	34.90	75	4.86	34.90	27.63
101	4.73	34.93	100	4.75	34.93	27.66
152	4.71	34.96	150	4.75	34.96	27.69
202	4.34	34.93	200	4.35	34.93	27.71
303	4.10	34.92	300	4.10	34.92	27.74
404	3.98	34.925	400	4.00	34.92	27.75
604	3.70	34.90	600	3.70	34.90	27.76
805	3.56	34.89	800	3.60	34.89	27.76
1,004	3.52	34.89	1,000	3.50	34.89	27.77
1,498	3.50	34.92	1,500	3.50	34.92	27.80
2,000	3.31	34.94				
2,503	2.81	34.93				
3,000	1.90	34.91				

Station 7585; 12 July; 58°36' N., 46°02' W.; depth 2,578 m.; dynamic height 1454.630

Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	$\sigma_t$
Station 7585; 12 July; 58°36' N., 46°02' W.; depth 2,578 m.; dynamic height 1454.630						
0	7.32	34.72	0	7.32	34.72	27.17
25	6.08	34.72	25	6.08	34.72	27.34
51	5.27	34.92	50	5.30	34.92	27.60
76	5.19	34.95	75	5.20	34.95	27.65
101	5.02	34.95	100	5.05	34.95	27.65
153	4.78	34.955	150	4.85	34.95	27.67
204	4.35	34.915	200	4.40	34.92	27.70
305	4.01	34.875	300	4.05	34.88	27.70
406	3.95	34.89	400	3.95	34.89	27.72
607	3.79	34.88	600	3.80	34.88	27.73
807	3.55	34.86	800	3.60	34.86	27.74
1,006	3.63	34.88	1,000	3.65	34.88	27.74
1,502	3.34	34.92	1,500	3.35	34.92	27.81
2,004	2.94	34.93				
2,507	2.38	34.90				

Observed values			Scaled values			
Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	$\sigma_t$
Station 7586; 13 July; 58°57' N., 45°17' W.; depth 2,468 m.; dynamic height 1454.631						
0	6.82	34.65	0	6.82	34.65	27.19
24	6.18	34.66	25	6.15	34.66	27.29
18	6.03	34.71	50	6.00	34.71	27.35
72	5.32	34.77	75	5.30	34.80	27.50
96	5.10	34.91	100	5.10	34.94	27.63
145	5.00	34.97	150	5.00	34.97	27.68
193	5.00	34.99	200	5.00	34.99	27.69
289	4.67	34.98	300	4.60	34.98	27.72
387	4.29	34.96	400	4.25	34.96	27.75
580	3.90	34.92	600	3.85	34.92	27.76
776	3.58	34.89	800	3.60	34.89	27.76
972	3.56	34.895	1,000	3.55	34.89	27.76
1,460	3.39	34.87	1,500	3.35	34.87	27.77
1,948	2.90	34.90				
2,438	2.19					

Station 7587; 13 July; 59°10' N., 44°50' W.; depth 2,103 m.; dynamic height 1454.643

Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	$\sigma_t$
Station 7587; 13 July; 59°10' N., 44°50' W.; depth 2,103 m.; dynamic height 1454.643						
0	5.48	33.75	0	5.48	33.75	26.65
25	5.52	33.83	25	5.52	33.83	26.71
51	6.14	35.02	50	6.10	35.02	27.58
76	5.86	35.04	75	5.90	35.04	27.62
102	5.58	35.05	100	5.60	35.05	27.66
152	5.30	35.025	150	5.35	35.03	27.67
204	5.21	35.02	200	5.20	35.02	27.69
306	5.03	35.00	300	5.05	35.00	27.69
408	4.69	34.98	400	4.80	34.98	27.70
613	4.15	34.93	600	4.20	34.93	27.72
794	3.88	34.92	800	3.85	34.92	27.76
996	3.60	34.915	1,000	3.60	34.92	27.79
1,498	3.14	34.90	1,500	3.15	34.90	27.81
2,004	2.48	34.995				

Station 7588; 13 July; 59°19' N., 41°29' W.; depth 1,116 m.; dynamic height 1454.698

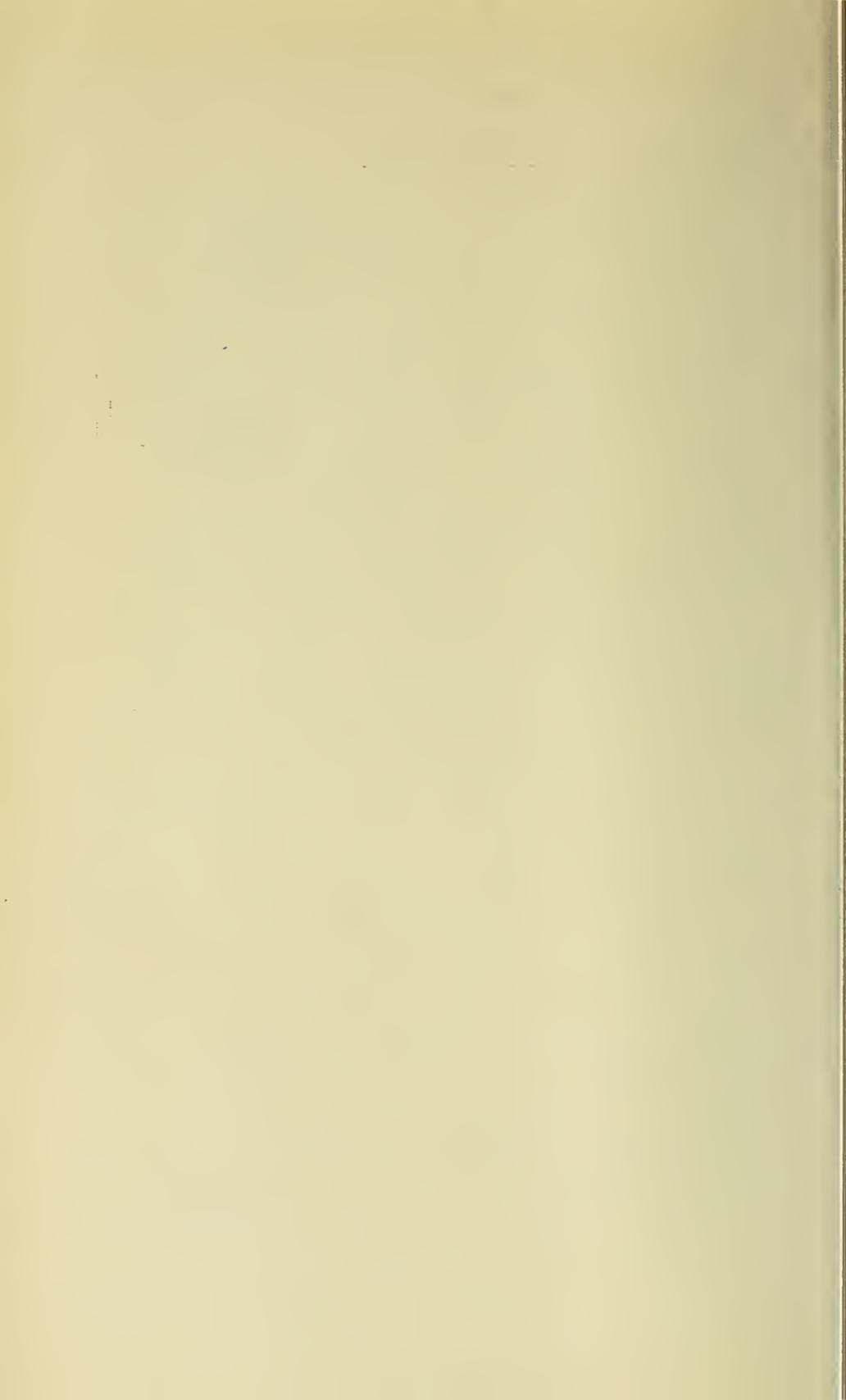
Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	$\sigma_t$
Station 7588; 13 July; 59°19' N., 41°29' W.; depth 1,116 m.; dynamic height 1454.698						
0	4.75	34.44	0	4.75	34.44	27.28
25	6.20	34.86	25	6.20	34.86	27.44
51	6.41	34.95	50	6.40	34.95	27.48
76	6.51	34.97	75	6.50	34.97	27.49
101	6.46	34.98	100	6.45	34.98	27.49
161	6.19	34.95	150	6.25	34.96	27.51
212	5.96	35.02	200	6.00	35.00	27.57
313	5.72	35.04	300	5.75	35.04	27.63
413	5.33	35.03	400	5.40	35.03	27.67
612	4.76	34.97	600	4.80	34.98	27.70
810	4.54	34.955	800	4.60	34.96	27.71
1,007	4.05	34.92	1,000	4.05	34.92	27.74

U.S. TREASURY DEPARTMENT . . . COAST GUARD

BULLETIN No. 47

REPORT OF THE INTERNATIONAL  
ICE PATROL SERVICE IN THE  
NORTH ATLANTIC OCEAN - [ SEASON of  
1961 ]

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WOODS HOLE, MASS.



U.S. TREASURY DEPARTMENT  
COAST GUARD

Bulletin No. 47

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REPORT OF THE INTERNATIONAL  
ICE PATROL SERVICE

IN THE  
NORTH ATLANTIC OCEAN



R. P. BULLARD  
ALFRED P. FRANCESCHETTI  
P. A. MORRILL  
R. M. O'HAGAN  
FLOYD M. SOULE



CG-188-16

Season of 1961

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UNITED STATES COAST GUARD

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OFU  
28 March 1962

Transmitted herewith is Bulletin No. 47, Report of the International Ice Patrol Service in the North Atlantic Ocean, season of 1961.

A handwritten signature in cursive script, reading 'A. C. Richmond'.

A. C. RICHMOND,  
*Admiral, U.S. Coast Guard,  
Commandant.*

Dist (SDL No. 74)

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## PREFACE

This bulletin is No. 47 in the series of annual reports on the International Ice Patrol Service in the North Atlantic Ocean and covers the season of 1961. It is divided into two parts. The first is a report of the observation operations which extended from 23 February to 28 June 1961. Ship, aircraft and communication activities are described and special sections deal with observed monthly ice conditions and statistics on ice and sea temperature reports for 1961.

The second part comprises a preliminary presentation of the oceanographic data collected during 1961. Included are charts of dynamic topography of the sea surface (ocean current maps), tables of oceanographic data, a brief discussion of the results of the season's four oceanographic surveys, the postseason research cruise in the Labrador Sea and a report of the results of a program for collection of current data using moored current meters.

The authors of the section on oceanography are Floyd M. Soule, Oceanographer, USCG, Alfred P. Franceschetti, Oceanographer, USCG and Lt. R. M. O'Hagan, USCGR. The remainder was written by Capt. R. P. Bullard, USCG, Lt. Comdr. R. E. Lenczyk, USCG and Lt. P. A. Morrill, USCG.



## INTERNATIONAL ICE PATROL, 1961

The International Ice Patrol operated in the North Atlantic Ocean from 23 February to 28 June 1961, to serve the safety of ships traversing the shipping lanes in the vicinity of the Grand Banks as provided for by the Safety of Life at Sea Convention, 1948. The 1961 iceberg year was a light one with approximately 115 bergs drifting southward of the 48th parallel of latitude during the year as compared to 253 in 1960 and 693 in 1959.

Capt. Ross P. Bullard, USCG, served as Commander, International Ice Patrol. Facilities available to the Commander consisted of aircraft from the U.S. Coast Guard Air Detachment, Argentia, Newfoundland; U.S. Coast Guard Radio Station NIK, Argentia, Newfoundland; U.S. Coast Guard Cutter *Evergreen* (oceanographic vessel); and the U.S. Coast Guard Cutters *Acushnet* and *Tamoroa*, standby patrol vessels.

Primary ice observation for the season was accomplished utilizing aircraft from the Air Detachment. A supplementary and indispensable source of information consisted of reports made by merchant and government vessels crossing the area. Additional valuable information was received from the Canadian Ice Information Office at Halifax, the Canadian National Telegraph at St. Johns, Danish sources in Greenland and the U.S. Navy.

The Office of Commander, International Ice Patrol was moved to the United States Naval Station, Argentia, Newfoundland, on 17 February and patrol services were inaugurated on 24 February with the broadcast of the first ice information bulletin. The ice situation on that date showed more severe conditions than normal with sea ice extending from Cape St. Mary on the west to 47° W. on the east and northward from 46° N. The sea ice conditions remained more serious than usual until the middle of May. Iceberg conditions were average for February, above average during March and well below average after the middle of April. A detailed description summarizing monthly ice conditions throughout the year appears in a later section. The steady seasonal surface warming of the waters over the Grand Banks, the relative inactivity of the eastern branch of the Labrador Current and the general distribution of icebergs permitted termination of ice patrol services with the 0048 GMT broadcast on 28 June 1961. The absence of icebergs in favorable positions to drift south of the 47th parallel along the eastern slope of the Grand Banks permitted the

shift of shipping tracks on schedule and made it unnecessary to establish a surface patrol.

## AERIAL ICE OBSERVATION

Fifty-two ice observation flights were made during the period from 23 February to 28 June 1961. These flights averaged approximately 1,150 miles in length and 7.1 hours duration. Each flight was planned for maximum coverage in a selected area consistent with a determination of the limits of all ice and the limits of sea ice of five-tenths concentration. The elements considered in selecting the search area consist of the following: (a) Degree and reliability of available ice information over the Grand Banks, (b) prevailing conditions of wind, sea, visibility, and sea and air temperature, and (c) the activity of the Labrador Current. At all times it was necessary to keep in mind the primary objective specified in Safety of Life at Sea Convention. This objective is to maintain accurate information concerning the southwestern, southern and southeastern limits of all ice in the vicinity of the Grand Banks of Newfoundland. As much information as possible concerning the location and character of ice within the limits was obtained consistent with accomplishment of the primary objective.

Eight pre-season observation flights were made from 13 January to 23 February by Air Detachment aircraft to establish the southern limits of the ice in its southward drift. The information developed by these flights was the major factor in determining the time that the patrol forces should be assembled and services commenced.

During the period from 28 June to 1 November, 12 regular post-season reconnaissance flights were made to guard against an undetected ice encroachment. Three special flights were made during late October to track one iceberg drifting south of the 48th parallel of latitude.

Table I. Aerial Ice Observation Statistics—1961 Season

Month	Number of flights	Number days flights made	Number days good weather	Average effectiveness		Maximum number days between flights	Hours flown
				Visual	Radar		
February (23-28).....	3	3	4	82	90	2	20.8
March.....	10	8	9	56	73	5	76.2
April.....	15	13	18	69	85	5	108.9
May.....	12	12	15	74	97	6	82.9
June.....	12	10	14	84	85	5	82.6
Total/Average.....	52	46	60	70	86	4.6	371.4

## COMMUNICATIONS

Primary radio communications for International Ice Patrol was conducted by U.S. Coast Guard Radio Station (NIK), Argentia, Newfoundland. Ice advisory bulletins to shipping were broadcast

twice daily at 0048 and 1248 Greenwich Mean Time commencing with the 0048 GMT broadcast on 24 February and terminating with the 0048 GMT broadcast on 28 June. Each bulletin was transmitted simultaneously on 155, 5320 and 8502 kilocycles with an output power of 2 kilowatts following a preliminary announcement on 500 kc/s. In addition to the plain language bulletin, ice charts were transmitted daily at 1330 GMT by facsimile on 10287.5 kc/s with a drum speed of 60 r.p.m. from 18 April to 28 June.

All broadcasts included a statement as to the method of ice observation being used and a request that ships report all ice sighted and report sea water temperature, position, course, speed, visibility and surface weather every 4 hours when between the latitudes of 39° N. and 49° N. and longitudes 42° W. and 60° W. The significance of the ice reports is obvious, but the importance of the other information is not readily apparent. The sea temperature reports are used to construct isotherm charts which play an important role in the evaluation of berg reports, prediction of berg drifts and estimation of the rate of ice deterioration. The charts prepared from these reports are included as figures 1 through 9. The position, course and speed is plotted to indicate the density of shipping and for use in issuing a special warning, should a vessel or vessels appear to be standing into danger. The visibility and weather reports are used in determining the feasibility of making an ice observation flight in a given area. The response to the request for information, while not complete, was gratifying.

Merchant vessels handled traffic with NIK by transmitting on their assigned frequency and receiving on 427, 6477.5, 8734, or 12718.5 kc/s as appropriate.

International Ice Patrol operated a branch teletype station from the naval teletype relay at Argentina. This facility was used for the exchange of information with the U.S. Navy Hydrographic Office, the Canadian Department of Transport Ice Information Office at Halifax, and other interested agencies.

During the 1961 season, Ice Patrol communication facilities handled a total of 18,340 radio messages and 26,143 landline messages. The statistics concerning ship reports is given below:

Number of ice reports received from vessels.....	928
Number of vessels making ice reports.....	234
Number of sea surface temperature reports.....	8,342
Number of vessels making sea temperature reports.....	528
Number of requests for special ice reports.....	162
Total number of vessels worked (not including relays).....	579

Note: Consideration of the above figures and the total number of reporting vessels in the following table, may lead to the conclusion that an error exists. This is not the case. Some vessels made no ice reports, some made no sea temperature reports, some reported both and some requested information but made no reports.

The percentage distribution of reporting vessels by nationality was as follows:

Country	No. of reporting ships	Percentage of total	Country	No. of reporting ships	Percentage of total
United Kingdom	154	28.0	Canada	3	0.5
United States	85	15.4	Finland	3	0.5
Germany	75	13.6	Iceland	3	0.5
Sweden	46	8.3	Poland	3	0.5
Norway	44	8.0	Belgium	2	0.4
Netherlands	30	5.4	India	2	0.4
Liberia	23	4.2	Yugoslavia	2	0.4
Italy	20	3.6	Argentina	1	0.2
France	11	2.0	Portugal	1	0.2
Greece	10	1.8	Spain	1	0.2
Panama	8	1.5	Tanganyika	1	0.2
Israel	5	1.0	U.S.S.R.	1	0.2
Denmark	4	0.7	U.A.R.	1	0.2
Ireland	4	0.7	29 Nations	551	100.0
Japan	4	0.7			
Switzerland	4	0.7			

## ICE CONDITIONS 1961

### JANUARY

During the first week of January, no sea ice or icebergs were sighted below  $52^{\circ}$  N. with the exception of a small amount of sea ice forming in the Gulf of St. Lawrence. However, cold polar air flowing from the northwest soon created much local winter ice. By the third week, much of the Gulf of St. Lawrence, the Strait of Belle Isle and the northeast coast of Newfoundland were covered by winter ice. By the end of the month, the sea ice extended down to the northern slopes of the Grand Banks and eastward to  $50^{\circ}30'$  W. Several icebergs were reported to have drifted below  $52^{\circ}$  N. Through the month, there was no ice hazard in the North Atlantic shipping routes, however, shipping along the east coast of Newfoundland and in the Gulf of St. Lawrence was extremely handicapped by the end of the month.

### FEBRUARY

Continued cold northwesterly winds caused a rapid expansion of the sea ice so that by the end of the first week in February, the entire Gulf of St. Lawrence was covered with sea ice. During the same period, the ice had extended eastward to  $49^{\circ}50'$  W. and southward to Cape Race. Off the Cape Breton Islands, the ice extended out from Cabot Strait to  $59^{\circ}$  W., south to  $44^{\circ}40'$  N. and west as far as Halifax, Nova Scotia. By the end of the second week, the ice in the Grand Banks region had moved to 45 miles south of Cape Pine. The first iceberg south of  $48^{\circ}$  N. was sighted off Cape Spear on 14 February. The sea ice limits remained fairly stable for the remainder of the month, however, the concentration and thickness of the sea ice continued to build. During this period, the port of St. Johns, Newfoundland, became blocked by the ice and from this time on until the









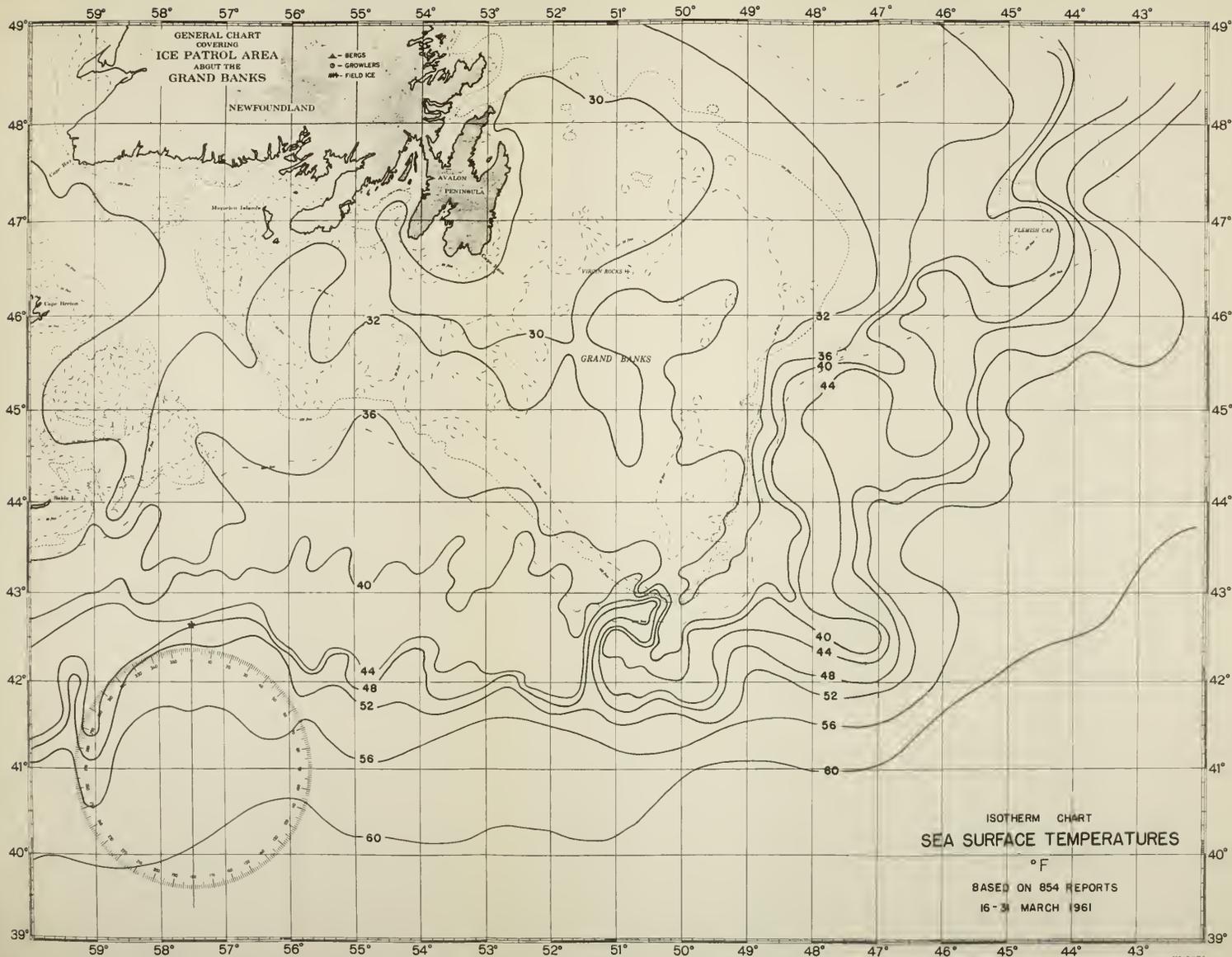


FIGURE 3.—Surface isotherms for the period 16-31 March 1961.



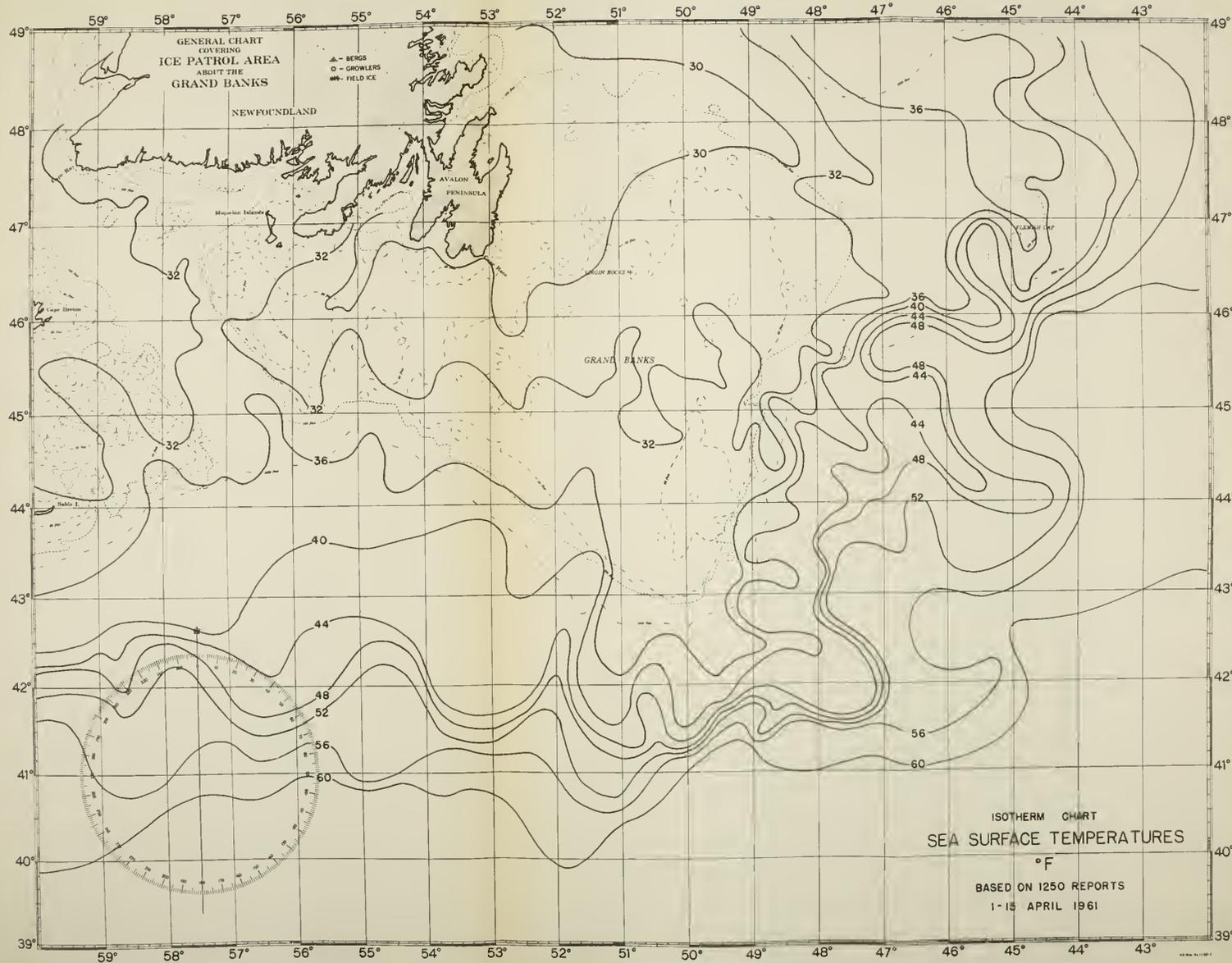


FIGURE 4.—Surface isotherms for the period 1-15 April 1961.



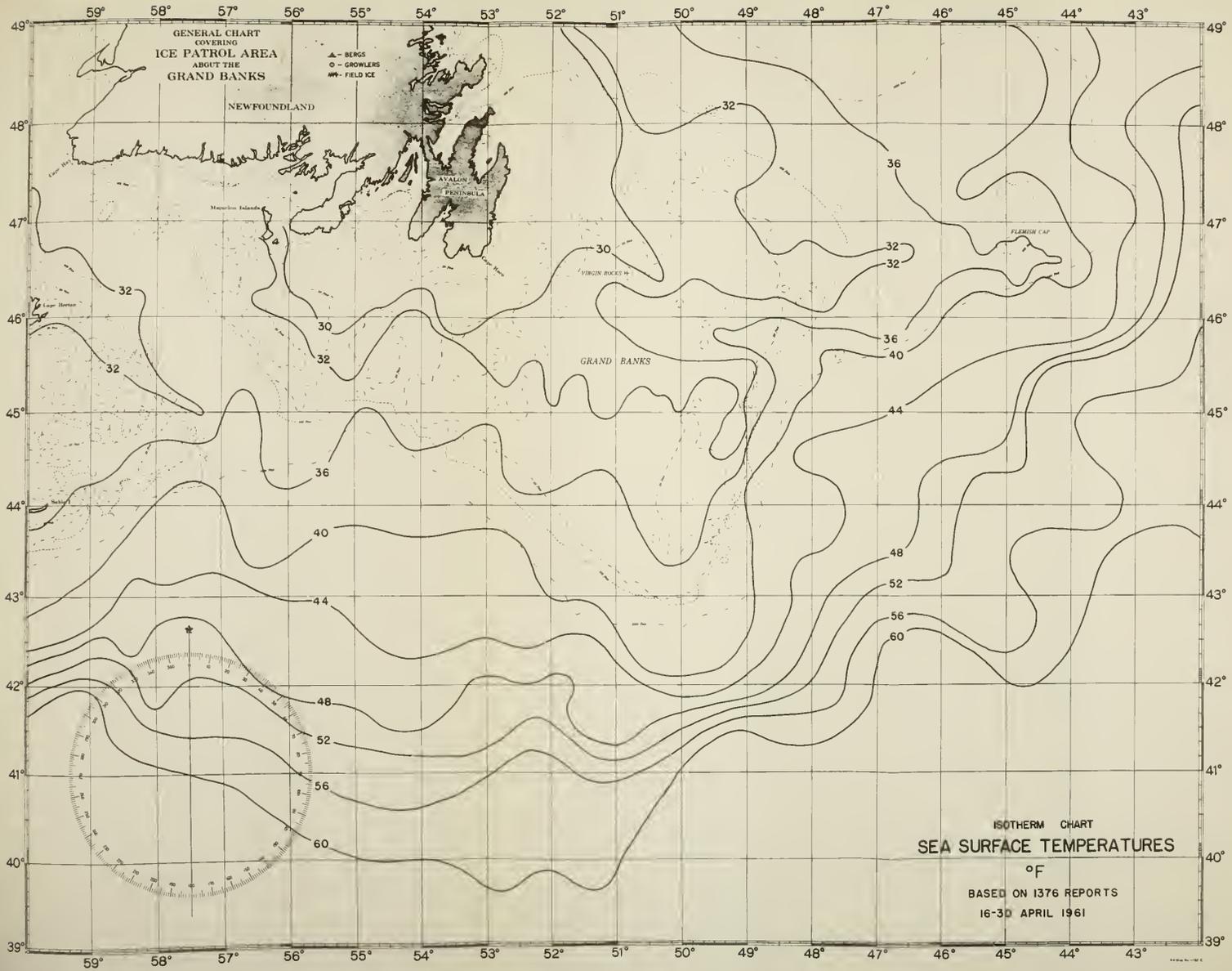


FIGURE 5.—Surface isotherms for the period 16-30 April 1961.



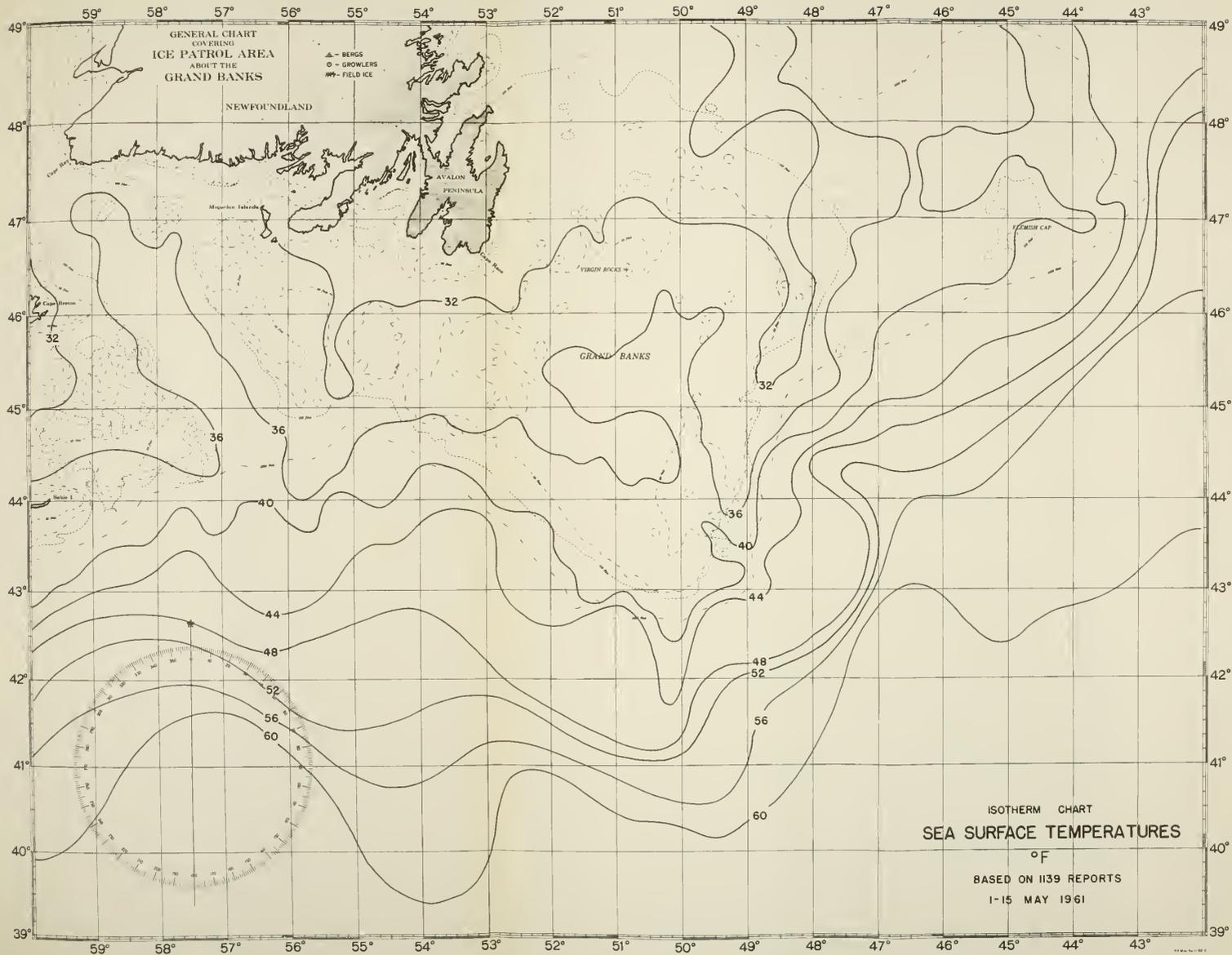


FIGURE 6.—Surface isotherms for the period 1-15 May 1961.



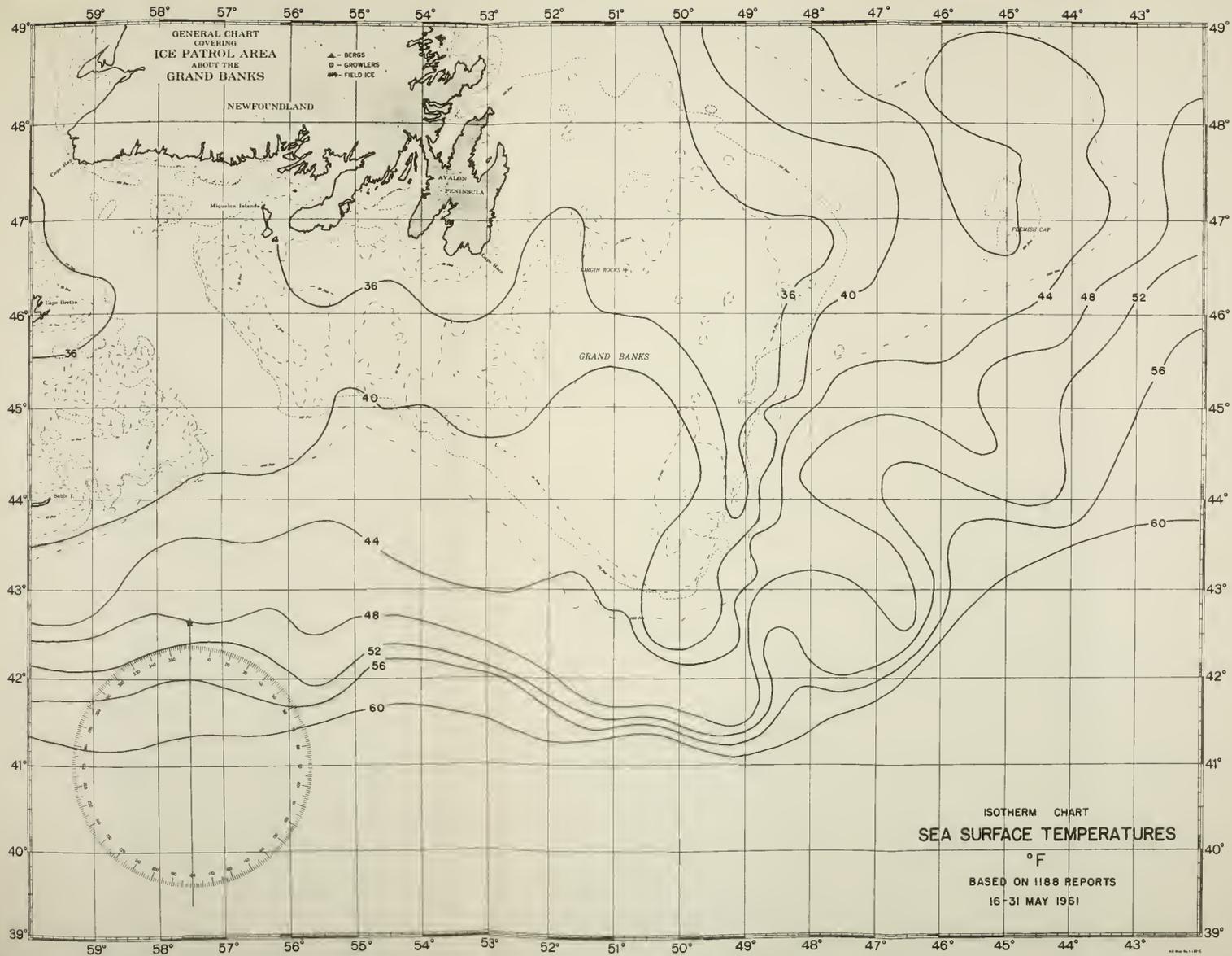


FIGURE 7.—Surface isotherms for the period 16-31 May 1961.



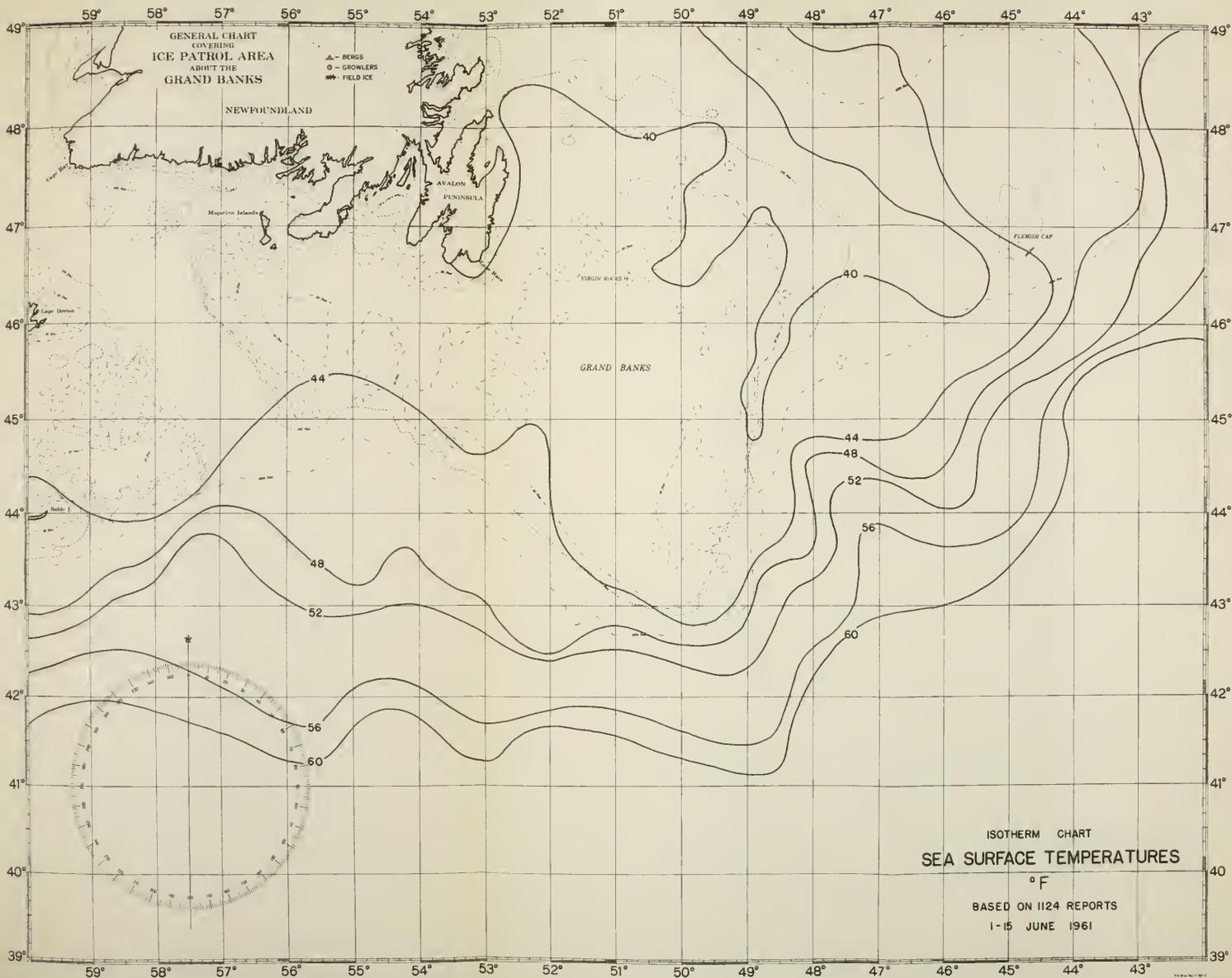


FIGURE 8.—Surface isotherms for the period 1-15 June 1961.



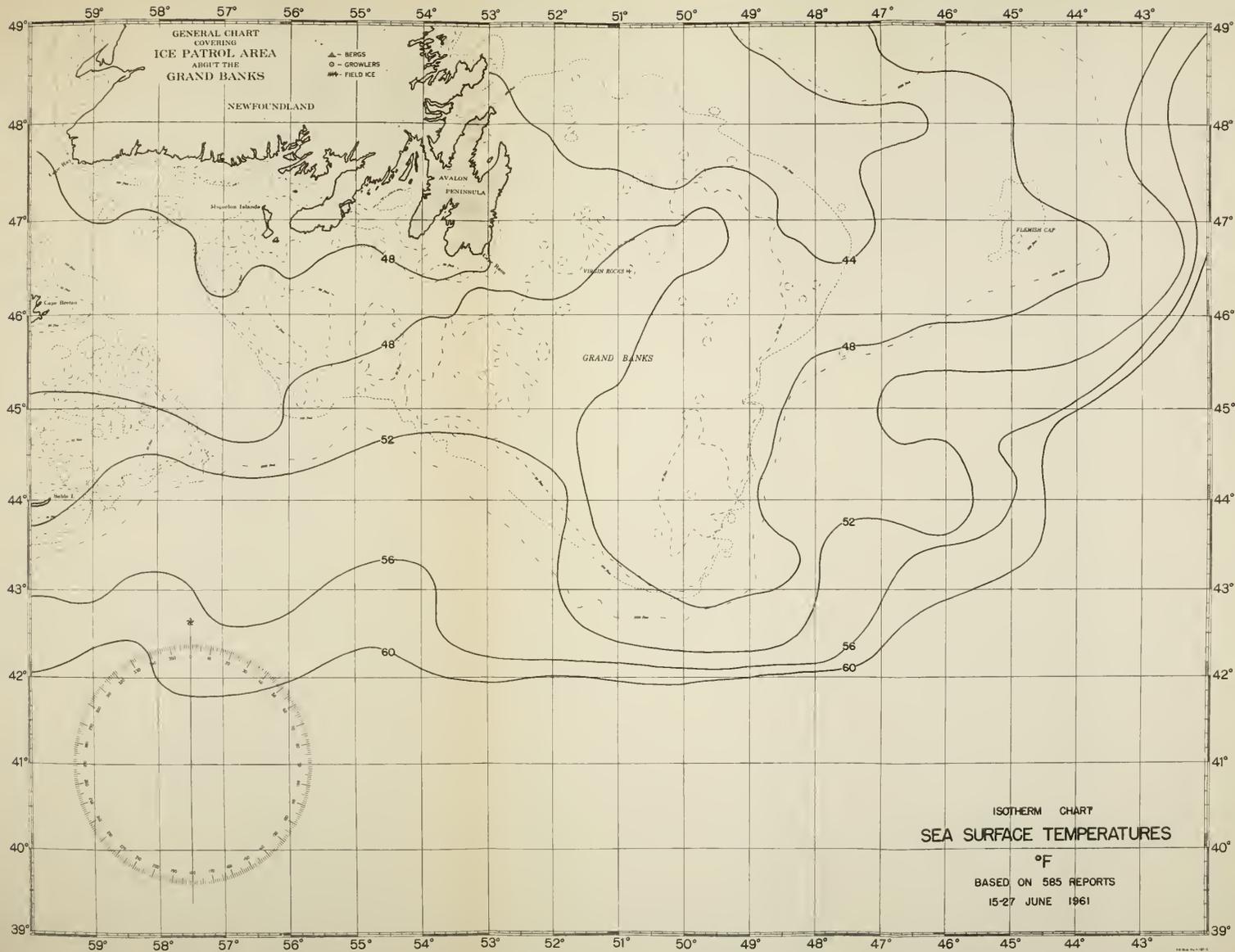


FIGURE 9.—Surface isotherms for the period 15-27 June 1961.



late spring breakup, shipping could not enter the harbor without icebreaker assistance. The berg movement during this period was along and over the northeast slopes of the Grand Banks. From the berg movement it was obvious that the eastern branch of the Labrador Current was much weaker than normal and that there was a general flow of Labrador Current water over the Grand Banks. The area within the 30° isotherm shown in figure 1 is an excellent indication of the severity of the winter and also approximates the limits of the sea ice during that period.

Figure 10 shows the limit of sea ice on 28 February and also summarizes the iceberg and growlers reported or sighted during the month south of 49° N.

### MARCH

Steady northwesterly winds continued to build up the sea ice in all areas. By the end of the first week in March, strings and patches of ice extended out to 47°25' W. and as far south as 45°30' N. in the Grand Banks region. The ice in the Gulf of St. Lawrence generally remained unchanged except for increasing thickness, however, south of Cape Breton, the ice moved to within 30 miles of Sable Island. A gentle iceberg flow occurred generally from the vicinity of Cape Bonavista down in a southeasterly direction, directly onto and over the Grand Banks.

During the second and third weeks of March, the ice reached its most southern position off the Grand Banks. A narrow belt of ice extended down along the eastern slopes of the Banks to a latitude of 44°32' N. Toward the end of the period, the sea ice extended out from the coast to 47° W., along the 47th parallel of latitude. This was to be the most eastward extension of the sea ice. The bergs continued the southeasterly flow with an increasing number traveling down the eastern coast of the Avalon Peninsula and around Cape Race westward to 55° W. It thus became obvious that the western branch of the Labrador Current was building rapidly and in fact was having a much greater effect on berg movement than the eastern branch. Nevertheless, on 20 March, one berg reached a position of 47°15' N., 47°55' W. and was the easternmost berg south of 48° N. whose position was confirmed.

The last week of March brought startling changes to the positions. The wind pattern switched and heavy easterly and northeasterly winds soon compacted the ice towards the shore. In less than 9 days, the leading ice edge moved 150 miles to the westward. South of the Avalon Peninsula, the ice also moved westward and extended as far as 57° W. In the Gulf of St. Lawrence there were open water leads along the western shore of Newfoundland and the southern coast of Anticosti Island. However, a great deal of ice was forced out around the Cape Breton Islands and encumbered the passage between Sable Island and the coast of Nova Scotia. In the St.

Lawrence River numerous open leads allowed the first ship of the season to make the passage to Montreal. On March the 25th, the SS *Woodward* arrived in Montreal and thus started the great press of shipping into the Gulf of St. Lawrence.

During the month, 60 bergs had come below  $48^{\circ}$  N. and at the end of the month 56 remained in existence. As the sea ice moved, so did the bergs. By the end of the month, only one berg lay east of  $51^{\circ}$  W. and one berg was already in visual sight from St. Pierre Island.

The relative movement of the ice is reflected in the two isotherm charts for the month. The  $30^{\circ}$  isotherm in figures 2 and 3 shows the retreat of the ice. Figure 11 gives the limits of sea ice on the days indicated and also summarizes the icebergs and growlers reported during the month south of  $49^{\circ}$  N.

#### APRIL

Ice conditions and ice movement during the first half of April was similar to those of the latter part of March. Persistent northerly and northeasterly winds continued to compact the ice onto the coast and around the southern portion of the Avalon Peninsula. During this period, the loose pack ice extended as far west as  $56^{\circ}50'$  W. and south to  $44^{\circ}40'$  N. in the Grand Banks region. By 15 April there was no sea ice east of  $51^{\circ}$  W., south of the Strait of Belle Isle. During the latter part of the month, the sea ice continued to be compacted onto the shore. The narrow band of very heavy pack ice with ridges approaching twenty feet hampered commercial traffic along the eastern coast of Newfoundland. The ice continued to flow westward around Cape Race and established an extensive field south of the Avalon Peninsula. This ice crossed Track "E", which had gone into effect on 11 April and caused shipping to divert to the south. For several days the entire entrance to Placentia Bay was covered with sea ice.

The icebergs continued their southerly flow along the Avalon Peninsula and around Cape Race forming in an area south of the peninsula. Although the vast majority of the bergs remained entrapped in the field ice, a few broke out of the eastern edge and moved across the northern slopes down to the central portion of the banks. These came as far south as  $45^{\circ}$  N. and east to  $50^{\circ}$  W. where they disintegrated due to natural causes. Eighteen bergs crossed the 48th parallel between 1 April and 18 April, however, at this point the bergs to the north were held fast by the heavy field ice and no more bergs came south until 1 May. On 18 April, 74 bergs were still in existence south of  $48^{\circ}$  N.

In the Gulf of St. Lawrence, the pattern established during the last week of March continued with a gradually opening lead located along the western coast of Newfoundland and in the central portion of the Gulf. By 10 April, vessels were able to proceed into the

St. Lawrence River through the ice fields and by 25 April there was open water from Cabot Strait to Montreal. The passage between Sable Island and Cape Breton remained endangered by sea ice until mid-April when the ice receded northward. The southern portion of the Gulf and the coast of Cape Breton remained clogged with extremely heavy pack ice.

Figures 4 and 5 indicate the temperature distribution as reported during the month of April. The  $30^{\circ}$  isotherm gives an excellent indication of the retreat of the sea ice. The  $32^{\circ}$  isotherm shows the lack of activity of the eastern branch of the Labrador Current.

Figure 12 summarizes the icebergs and growlers reported during the month south of  $49^{\circ}$  N. The one berg located east of  $46^{\circ}$  W. was reported on 14 April. However, an observation flight on the same day and in the same area failed to disclose its presence. As numerous fishing vessels were in the area, it is believed that the reported berg was actually another vessel. The figure also shows the sea ice limits on 30 April.

#### MAY

During the first week in May the wind swung from northeast to east to southeast and brought rapid changes to the ice conditions. The large field of pack ice split apart just south of Cape St. Mary leaving one field stretching from  $45^{\circ}45'$  N. to  $47^{\circ}$  N., and from  $54^{\circ}10'$  W. to  $55^{\circ}50'$  W., while the other field extended from  $46^{\circ}$  N. at  $53^{\circ}50'$  W., northward along the east coast of Newfoundland. The split of the ice fields allowed for rapid disintegration of the ice, especially during the second week when the wind swung to the southwest bringing warm surface winds and causing a rise in the surface water temperature. This is clearly seen by comparing the two isotherm charts for the month of May. By the end of May, the  $32^{\circ}$  surface water had completely disappeared. The western field shifted rapidly into Placentia Bay and there disintegrated. The ice along the east coast of Newfoundland also disintegrated rapidly. First it was forced offshore and the surface temperature and slight wave action caused rapid melting. By 20 May, there was no sea ice south of Cape Bonavista and by 31 May there was none south of Belle Isle except for a few trapped flows in Notre Dame and White Bays. In 20 days, the southern limit of sea ice had retreated over 360 miles.

The advent of the southerly winds and the breakup of sea ice soon brought about a major change in the iceberg distribution. The southernmost bergs rapidly disintegrated under the combined forces of heat and wave action, while the remainder south of the Avalon Peninsula drifted towards shore into the bays and shallows. During the month, a total of six bergs came south of  $48^{\circ}$  N. of which two drifted past Cape Spear and the remainder drifted into Conception Bay. In the Notre Dame Bay area, the large number of bergs that had drifted

south into the bay during March and April and had been held by the heavy pack ice were set free. On 8 May only eight bergs were east of  $53^{\circ}$  W. between  $48^{\circ}$  N. and  $51^{\circ}$  N. By 15 May, 34 bergs were east of  $53^{\circ}$  W. and by 31 May, 187 bergs were in the area. As the bergs were moving east-southeast at about 12 miles per day, it appeared that the eastern branch of the Labrador Current might be building.

In the Gulf of St. Lawrence, the southerly winds brought slightly different conditions. Although the central and northern sections, and the northeast arm of the Gulf cleared rapidly, the heavy rafted pack ice soon spewed into Cabot Strait and shipping was again slowed by the ice. This ice movement into the Strait continued during the remainder of the month, however, the ice seldom reached as far east as  $59^{\circ}$  W.

Figures 6 and 7 are the isotherm charts for May. Figure 13 summarizes the icebergs and growlers reported during the month south of  $49^{\circ}$  N. and also shows the limits of sea ice on the days indicated.

#### JUNE

The retreat of the sea ice continued so that by the end of the first week there was no sea ice below  $53^{\circ}$  N. off the east coast of Labrador and Newfoundland. By 10 June, the ice in Cabot Strait no longer posed a threat to shipping. By 15 June, the last remnants had melted. Belle Isle Strait was declared open to navigation on 1 June by Canadian authorities and the routes thereto were not endangered by sea ice after this date.

The pattern of berg movement established during the month of May continued during June. Only one berg came south of  $48^{\circ}$  N. during the month and by the end of the month, no bergs were reported south of that latitude. To the north, the bergs continued to spread eastward and by 15 June, an eastern boundary along  $48^{\circ}30'$  W. between  $50^{\circ}$  N. and  $54^{\circ}$  N. was established. Between  $50^{\circ}$  N. and  $48^{\circ}$  N. the berg drift generally followed the 1,000-fathom curve with the bergs melting rapidly as they progressed to the east. The easternmost berg was reported on 16 June in position  $48^{\circ}50'$  N.,  $45^{\circ}22'$  W.

During the month, surface temperatures warmed rapidly as shown in figures 8 and 9. With the rapid warming, berg disintegration was very high, accounting for a 40% reduction in the number of bergs between  $48^{\circ}$  N. and  $50^{\circ}$  N. during the week 17 and 24 June.

Figure 14 summarizes the iceberg and growlers reported during the month of June south of  $49^{\circ}$  N.

#### JULY

Over 100 bergs were sighted in the area from Fogo Island north along the coast of Newfoundland and Labrador to  $54^{\circ}$  N. and east to about 170 miles offshore on 30 June. Very few of these bergs drifted east or south of these limits. On 28 July, only 7 bergs and 2 growlers

were observed south of 50° N. No bergs drifted south of 48° N. during the month. A small berg with growlers reported by the SS *Berksheim* on 2 July at position 48°00' N., 46°55' W. was the southernmost and easternmost ice for July. Several reports were received of bergs along the eastern approaches to Belle Isle Straits.

#### AUGUST

A few bergs continued to trickle south of 50° N. but only one managed to move south of 48° N. This southernmost berg was reported on 10 August at position 47°54' N., 49°20' W. The movement of the few bergs between 48° N. and 52° N. appeared to be easterly. The easternmost berg was reported at position 49°30' N., 47°25' W. on 15 August. A postseason aerial reconnaissance flight on 30 August revealed no ice below 50° N. It was apparent that the numerous known bergs between 50° N. and 54° N. on 30 June had been rapidly disintegrating due to rising temperatures. Reports of bergs from Belle Isle to 160 miles seaward continued to be received throughout the month from vessels using Track G.

#### SEPTEMBER

Reports of bergs continued to be received at about the same frequency as the month of August. Practically all the reports were of bergs at the entrance of Belle Isle and to 140 miles to the east along track G. A flight on 20 September revealed only one berg south of 52° N., east of longitude 54° W. On the basis of this flight, scheduled weekly post-season aerial reconnaissance flights were terminated. The southernmost berg reported during September was at position 49°46' N., 53°15' W. on the 14th. An unusual report was that of a growler south of Avalon Peninsula, sighted by the SS *American Manufacturer* at 46°02' N., 54°24' W. on the 26th.

#### OCTOBER

There was a notable decrease in the overall number of ice reports during October, but there was more berg activity below 50° N. than the previous month. The southernmost and easternmost ice for the month was a small berg sighted on the 24th at 47°20' N., 47°17' W. This berg had been sighted a few times previously and was moving southeast in the Labrador Current at a rate of 20 miles daily. This berg was reported the next day about 20 miles to the west of its sighted position on the 24th. Apparently easterly winds of gale force had moved the berg out of the Labrador Current and removed it as a threat to shipping lanes to the south. A search for this berg on the 29th was negative and the berg was presumed melted. Three special post-season aerial reconnaissance flights were made during the month.

## NOVEMBER

The frequency of iceberg reports in the Newfoundland area continued at approximately the same level as for October. A few bergs continued to be reported in the eastern approaches to the Strait of Belle Isle and between 48° N. and 50° N., west of 51° W. On the 26th, one ship reported a radar target estimated to be one mile long in position 49°55' N., 49°45' W. There was some apprehension that this radar target might be an ice island, as ice islands were reported near Resolution Island in early October. However, a flight on 2 December failed to locate any ice in the position reported and possible drift areas. No bergs drifted south of 48° N. The southernmost ice reported during the month was a berg at 49°00' N., 51°59' W. on the 24th. No ice was reported east of 49°46' W.

## DECEMBER

A most unusual report of an iceberg in position 38°52' N., 67°17' W. on the 27th was investigated on the 29th and 30th by aircraft with negative results. Another report of this ice on the 29th indicated rapid disintegration. It is estimated that the ice disintegrated by 30 December. One berg is estimated to have drifted south of 48° N. during December. This one berg was reported off Cape Race, Newfoundland on 8 December. It is believed that this berg is the one reported on 27 December off Cape May, New Jersey. This is the southernmost ice reported since 1934 and the westernmost since 1916. It should be noted that the Newfoundland area experienced a mild autumn this year.

### ICE AND SEA CONDITION REPORT

[By country]

Vessel	Ice reports	Sea condition reports	Vessel	Ice reports	Sea condition reports
ARGENTINE REPUBLIC			FINLAND		
<i>SS World Japonica</i>	---	2	<i>SS Finnbirch</i>	1	1
BELGIUM			<i>SS Finnsailor</i>	3	1
<i>SS Burekel</i>	---	4	<i>SS Whiterose</i>	1	1
<i>SS Stadgent</i>	---	1	FRANCE		
CANADA			<i>SS Cleveland</i>	1	---
<i>HMSC Algonquin</i>	---	6	<i>SS Douala</i>	---	6
<i>CGS Sir Humphrey</i>	---	---	<i>SS Epinal</i>	2	14
<i>Gilbert</i>	15	14	<i>SS Flandre</i>	---	4
<i>CGS Wolfe</i>	1	---	<i>SS Jean. L. D.</i>	---	4
DENMARK			<i>SS Joliette</i>	---	13
<i>SS Esso Kobenhavn</i>	---	7	<i>SS La Heve</i>	---	8
<i>SS Olga Maersk</i>	1	---	<i>SS Liberte</i>	---	81
<i>SS Slesvig</i>	---	6	<i>SS Marquette</i>	---	11
			<i>SS Robert. L. D.</i>	---	4
			<i>SS Vire</i>	---	11

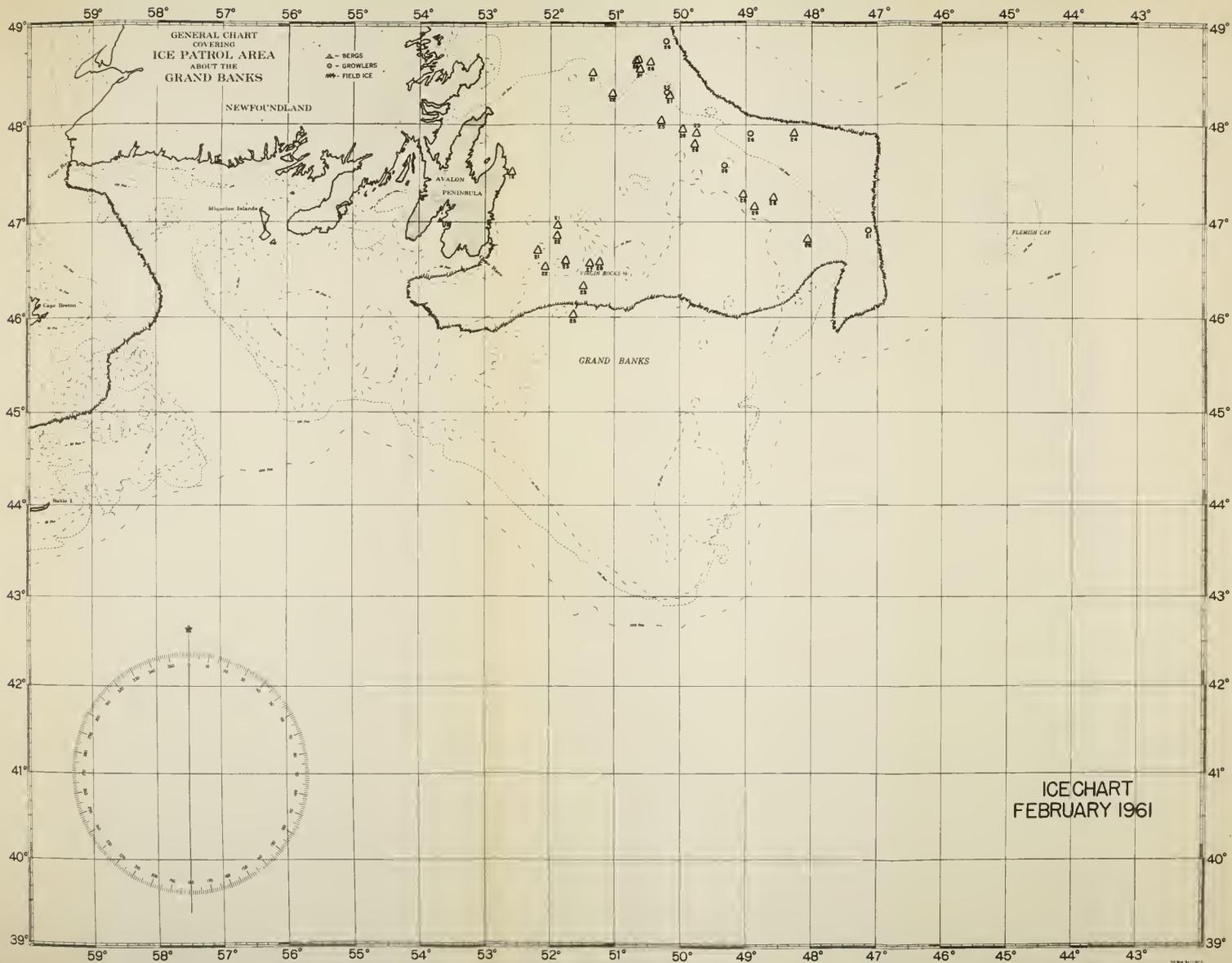


FIGURE 10.—Ice conditions, February 1961. Figures indicate day of month ice was sighted or reported.



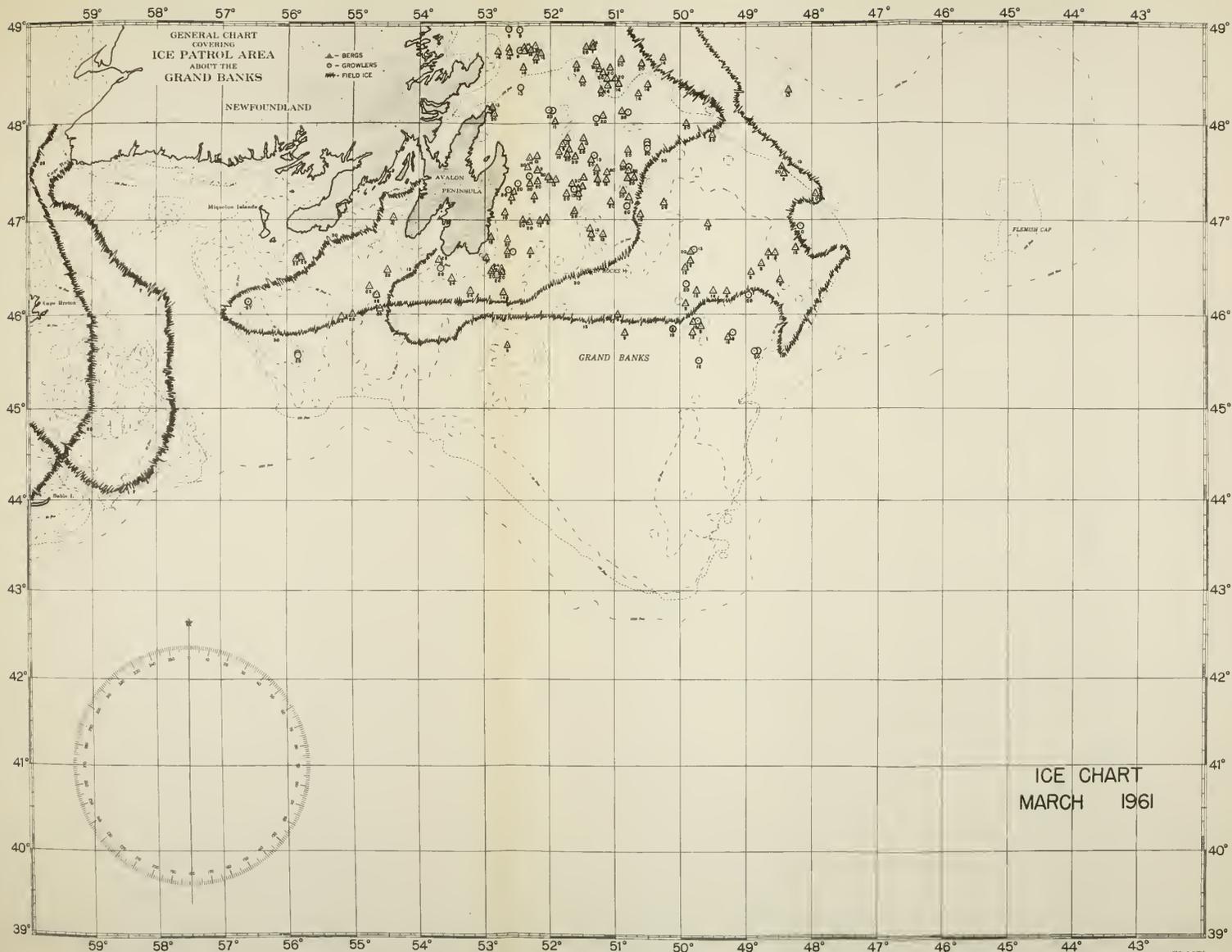


FIGURE 11.—Ice conditions, March 1961. Figures indicate day of month ice was sighted or reported.



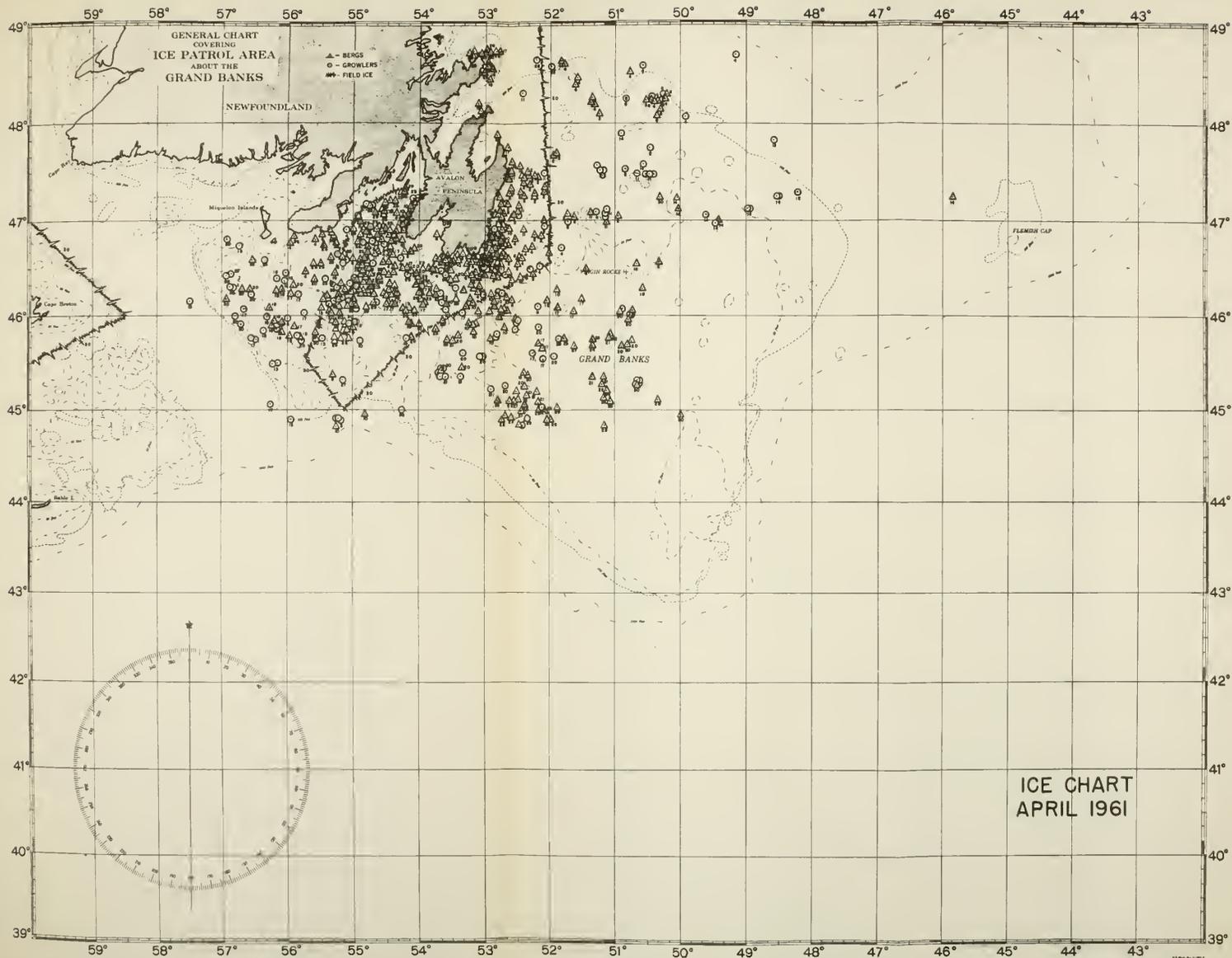


FIGURE 12.—Ice conditions, April 1961. Figures indicate day of month ice was sighted or reported.



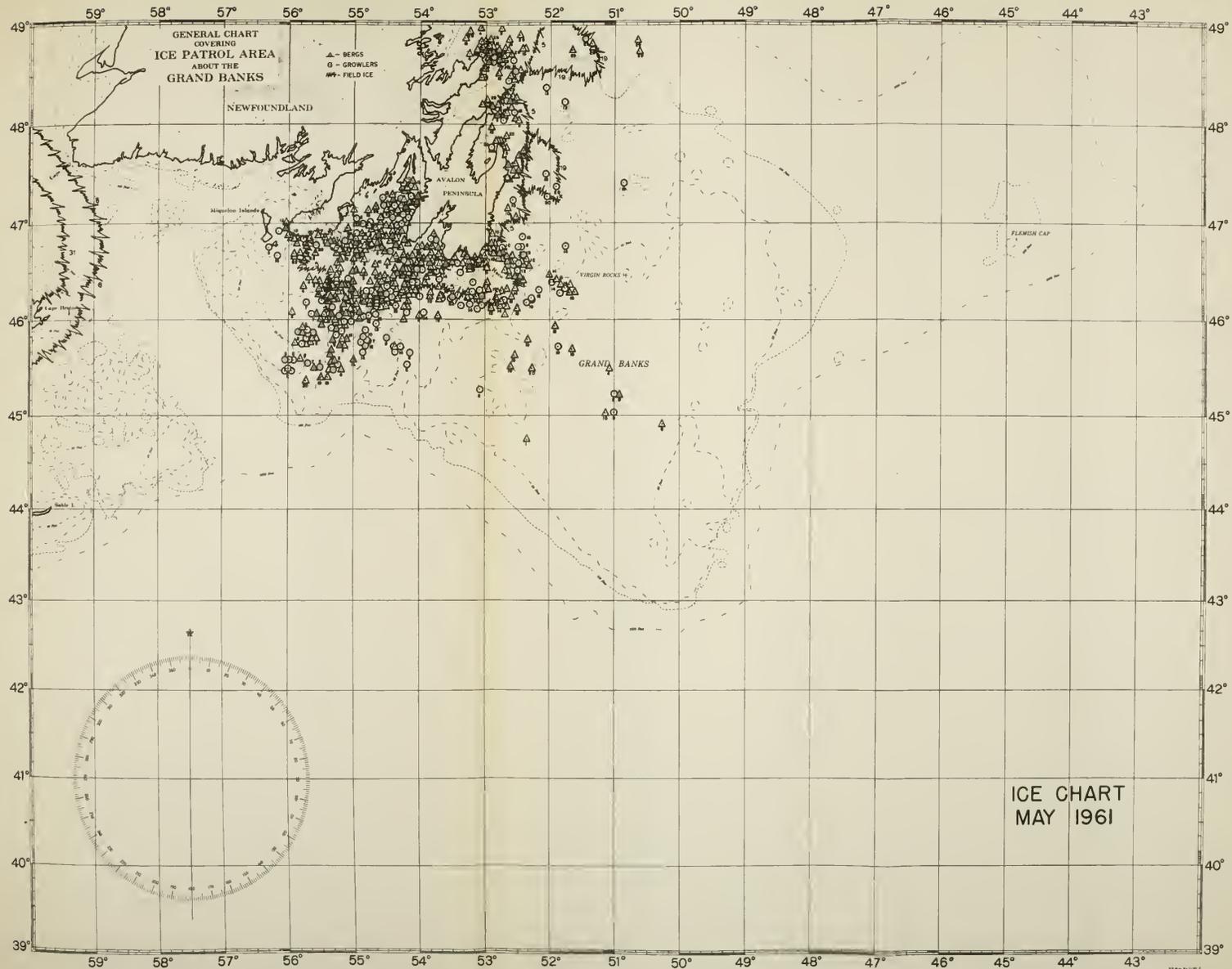


FIGURE 13.—Ice conditions, May 1961. Figures indicate day or month ice was sighted or reported.



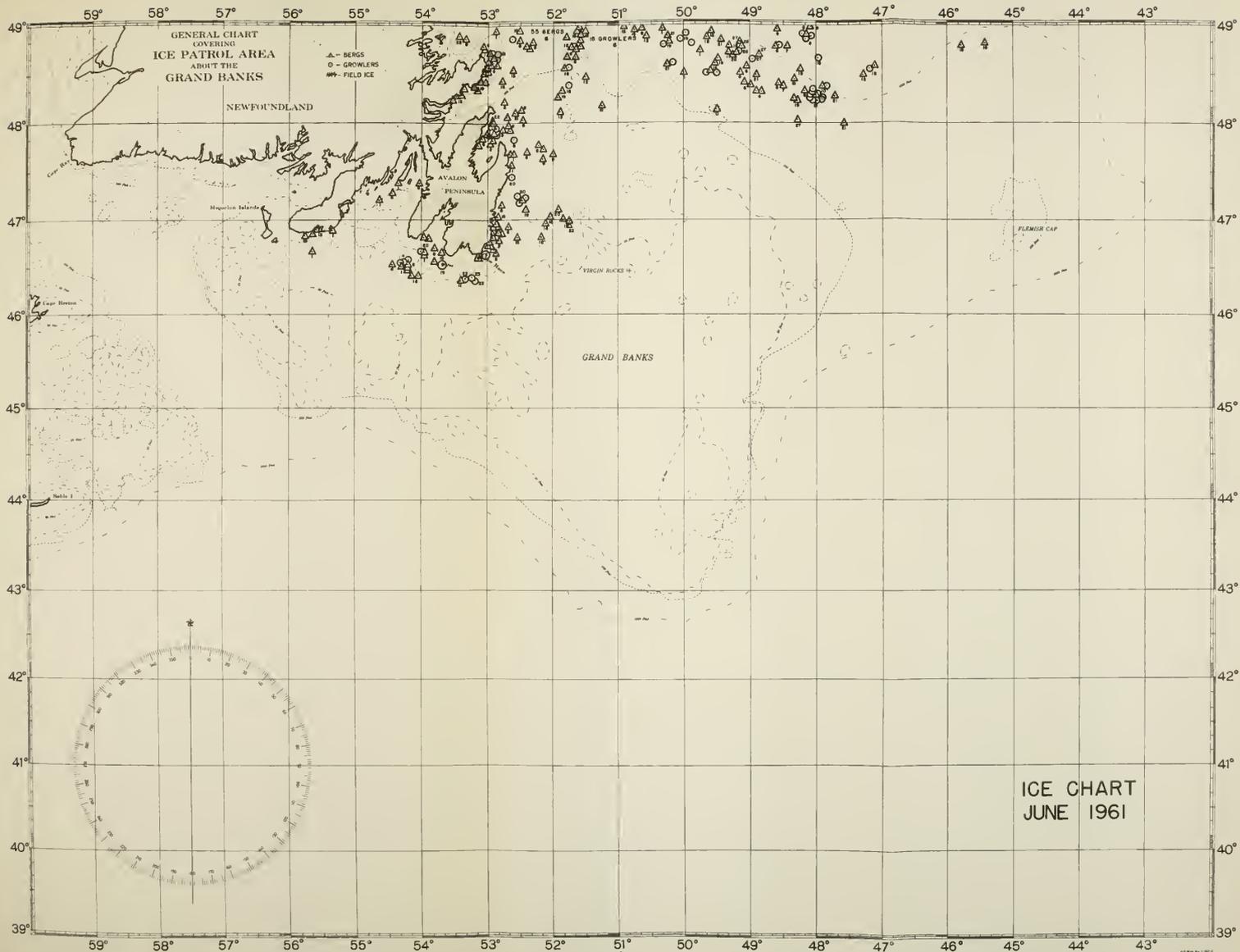


FIGURE 14.—Ice conditions, June 1961. Figures indicate day of month ice was sighted or reported.

Date	Description	Debit	Credit	Balance
1890	Jan 1			
1891	Feb 1			
1892	Mar 1			
1893	Apr 1			
1894	May 1			
1895	Jun 1			
1896	Jul 1			
1897	Aug 1			
1898	Sep 1			
1899	Oct 1			
1900	Nov 1			
1901	Dec 1			
1902	Jan 1			
1903	Feb 1			
1904	Mar 1			

ICE AND SEA CONDITION REPORT—Continued

Vessel	Ice reports	Sea condition reports	Vessel	Ice reports	Sea condition reports
GERMANY			GERMANY—continued		
SS Alexander Sartori	1	1	SS Learina		1
SS Alfred Theodore	2	7	SS Linzertor		2
SS Angelica Schulte		2	SS Luise Leonhardt		53
SS Anna Katrin Fritzen		40	SS Magdalena Oldendorff	1	3
SS Ansgaritor		4	SS Magdenburg	3	22
SS Beate Bolten	1	4	SS Maria Anna Schulte	4	8
SS Bellatrix		2	SS Marie Leonhardt		44
SS Bochum		1	SS Marivia		2
SS Bornheim		1	SS Naumburg		7
SS Breitenstein		11	SS Nordmeer	2	1
SS Bremen		3	SS Ophelia		5
SS Cap Verde		5	SS Poseidon	3	26
SS Carl Fritzen	4	33	SS Reinhart-Lorenz Russ		1
SS Carl Julius		5	SS Santa Elena		11
SS Catherine Sartori	2		SS Schwanheim		10
SS Christian Schulte		1	SS Seven Seas		41
SS Cleopatra		4	SS Susanne Fritzen		9
SS Cordoba		3	SS Susanne Reith		14
SS Domsheide	2	4	SS Trans-Atlantic		3
SS Dora Fritzen	2	11	SS Trans-Canada	1	3
SS Dortha Oldendorff	2	2	SS Valeria		12
SS Elbe		5	SS Virgilia		6
SS Elfriede	1	2	SS Volumnia		1
SS Elise Schulte	1	16	SS Walter Leonhardt		1
SS Emma Johanna		17	SS Weissenburg		7
SS Emsstein	5	1	SS Welheim	3	1
SS Francisca Sartori	1	17	SS Werratal	2	
SS Gertrud Fritzen	1	6	SS Westfalia		1
SS Hanseatic		27	SS Wotan		24
SS Heidelberg		8			
SS Heinrich Oldendorff		6			
SS Heinrich Udo Schulte	1				
SS Helga Oldendorf	2	3	GREAT BRITAIN		
SS Hennigsdorf	1	1	SS Adventurer		3
SS Herman Schulte	2	2	SS Alaunia		18
SS Ilse Schulte	2	27	SS Albano		1
SS Ingrid Weide	4	8	SS Alexander T. Wood	1	3
SS Innstein	5	13	SS Alsatia	1	16
SS Johanna Oldendorff		27	SS Andania		26
SS Karl Leonhardt		9	SS Andria	2	34
SS Klaus Oldendorff		33	SS Arabia		22
SS Konsul Schulte	1	12	SS Arctic	1	24
SS Lahnstein	1	10	SS Asia		18
SS Lealott	3	8	SS Assyria		7
SS Leanna		5	SS Athel Duchess	1	11
SS Leopaul		2	SS Athel Templar	1	7
			SS Baskerville	7	6

ICE AND SEA CONDITION REPORT—Continued

<i>Vessel</i>	<i>Ice reports</i>	<i>Sea condition reports</i>	<i>Vessel</i>	<i>Ice reports</i>	<i>Sea condition reports</i>
GREAT BRITAIN—continued			GREAT BRITAIN—continued		
SS <i>Beaver Cove</i>	2	18	SS <i>Escalante</i>		6
SS <i>Beaverdell</i>	3	30	SS <i>Eskfield</i>		3
SS <i>Beaverford</i>	6	40	SS <i>Gardenia</i>		8
SS <i>Beaverglen</i>	3	19	SS <i>Glasdale</i>	1	1
SS <i>Beaverlake</i>	4	20	SS <i>Gladys Bowater</i>	1	
SS <i>Becch Hill</i>		3	SS <i>Gloucester City</i>	1	6
SS <i>Birmingham City</i>	2	2	SS <i>Gloxinia</i>	1	6
SS <i>Blairspey</i>	3		SS <i>Goodwood</i>	1	2
SS <i>Booker Venture</i>	2	6	SS <i>Granwood</i>	2	1
SS <i>Border Castle</i>	5	15	SS <i>Haparangi</i>		9
SS <i>British Fame</i>		3	SS <i>Hartismere</i>		1
SS <i>Cable Guardian</i>	3	9	SS <i>Highliner</i>		2
SS <i>Cairnavon</i>	2	35	SS <i>Hurunui</i>		11
SS <i>Cairndhu</i>	5	49	SS <i>Inishowen Head</i>	1	2
SS <i>Cairngowan</i>	4	17	SS <i>Inver</i>		14
SS <i>Calgaria</i>		9	SS <i>Isaac Carter</i>	1	7
SS <i>Camellia</i>	1		SS <i>Ivernia</i>	10	72
SS <i>Cape Nelson</i>		1	SS <i>John W. Mackay</i>	2	2
SS <i>Captain Minus</i>	1	2	SS <i>La Bahia</i>	1	4
SS <i>Carinthia</i>	5	10	SS <i>Lakonia</i>		4
SS <i>Carrigan Head</i>	1	39	SS <i>La Marca</i>	2	24
SS <i>Caslon</i>	2	4	SS <i>La Pradera</i>	1	16
SS <i>Caxton</i>		35	SS <i>Lismoria</i>	5	86
SS <i>Cheviot</i>		8	SS <i>Llangorse</i>		10
SS <i>City of Bedford</i>		8	SS <i>Lodestone</i>		3
SS <i>City of Coventry</i>	1	12	HMS <i>Londonderry</i>		4
SS <i>City of Guilford</i>		8	SS <i>Lord Kevin</i>	44	82
SS <i>City of Melbourne</i>	1	2	SS <i>Luzor</i>		2
SS <i>City of Philadelphia</i>		1	SS <i>Manchester City</i>	2	2
SS <i>City of Worcester</i>		4	SS <i>Manchester Explorer</i>		6
SS <i>Colina</i>	1	28	SS <i>Manchester Faith</i>		1
SS <i>Constance Powater</i>	1	11	SS <i>Manchester Fame</i>	1	9
SS <i>Consuelo</i>	3	26	SS <i>Manchester Mariner</i>		12
SS <i>Crystal Bell</i>		7	SS <i>Manchester Miller</i>	3	21
SS <i>Crystal Jewel</i>		8	SS <i>Manchester Pioneer</i>	1	21
SS <i>Crystal Sapphire</i>		1	SS <i>Manchester Progress</i>	2	17
SS <i>Cydonia</i>		1	SS <i>Manchester Regiment</i>		4
SS <i>Cyrus Field</i>	1	1	SS <i>Manchester Shipper</i>	8	19
SS <i>Dalhanna</i>		1	SS <i>Manchester Spinner</i>		27
SS <i>Dartwood</i>	2	2	SS <i>Manchester Trader</i>		12
SS <i>Denmark Hill</i>		21	SS <i>Manchester Vanguard</i>		10
SS <i>Domino</i>		14	SS <i>Manchester Venture</i>		23
SS <i>Dunadd</i>	1	14	SS <i>Maple Hill</i>		11
SS <i>Dundee</i>	1	1	SS <i>Marengo</i>	8	34
SS <i>Edmore</i>	1	6	SS <i>Maurdainia</i>		36
SS <i>Empress of Britain</i>	6	65	SS <i>Media</i>		64
SS <i>Empress of Canada</i>	4	22	SS <i>Medina Princess</i>		4
SS <i>Empress of England</i>	6	46			

ICE AND SEA CONDITION REPORT—Continued

Vessel	Ice reports	Sea condition reports	Vessel	Ice reports	Sea condition reports
GREAT BRITAIN—continued			GREECE—continued		
SS Melika		9	SS Georgios Manolakis		3
SS Montcalm	1	9	SS Ladon	2	1
SS Naess Pioneer		15	SS Maddo Theodor		
SS Newfoundland	20	23	Acopulos		2
SS Nova Scotia	19	66	SS Oceanis	1	1
SS Papanui	1		SS Pacificator		1
SS Pennyworth	1	13	SS Pandora		1
SS Phylliss Bowater	1	7	SS Victoria		2
SS Port Chalmers		6			
SS Port Phillip		6	ICELAND		
SS Port Wantstead		2	SS Bruar Foss	3	25
SS Queen Elizabeth		11	SS Detti Foss		1
SS Queen Mary		33	SS Mai	1	
SS Ramoer Head	1	33			
SS Rialto	6	38	INDIA		
SS Ribblehead		25	SS Jala Dhruv		1
SS Ripon	2	18	SS Vares	1	4
SS Roonagh Head		31			
SS St. Arvans		17	IRELAND		
SS Sarah Bowater	4	3	SS Irish Oak		12
SS Saronia	11	50	SS Irish Pine	2	25
SS Seaway Star	1		SS Irish Poplar	2	10
SS Severn River		1	SS Irish Rose	1	5
SS Sheaf Wear	1	6			
SS Sidonia		5	ISRAEL		
SS Silvercrag	39	6	SS Dagan		4
SS Silversand		7	SS Deganya	1	
SS Sir Andrew Duncan	8	28	SS Shomron		1
SS Sneaton	1		SS Tappuz	1	14
SS South Prince	2	22	SS Yehuda		9
SS Sudbury Hill		11			
SS Sugar Exporter		7	ITALY		
SS Sunrip		13	SS Augustus		18
SS Sylvania		51	SS Aurelia		32
HMS Tidesurge		9	SS Caponloli		8
SS Toronto City	3	30	SS Carlo Martinolich	1	6
SS Waiwera		11	SS Fides		8
SS Western Prince	1	5	SS Giacomo		1
SS West Meath		5	SS Giovannella D'Amico		8
SS Whangaroa		13	SS Giove		4
SS Wimbledon		9	SS Irolli		1
SS Yorkwood	2	22	SS Irpinia		18
SS Zinnia	1		SS Leonardo Da Vinci		13
			SS Maria Parodi		3
GREECE			SS Mirella D'Amico	4	33
SS Antazisl	1		SS Orsa Minore		2
SS Arkadia	1	22	SS Punta Alice		2
SS Cape Rion	1	25	SS Punta Vagno	1	22

ICE AND SEA CONDITION REPORT—Continued

Vessel	Ice reports	Sea condition reports	Vessel	Ice reports	Sea condition reports
ITALY—continued			NETHERLANDS—continued		
SS <i>Saturnia</i> .....		15	SS <i>Nieuw Amsterdam</i> .....		47
SS <i>Sudalisco</i> .....		21	SS <i>Nieuw Tonge</i> .....		5
SS <i>Sunmar</i> .....		4	SS <i>Noordam</i> .....		85
SS <i>Zenobia Martini 2nd</i> .....		7	SS <i>Prins Frederik Hendrik</i> .....		3
JAPAN			SS <i>Prins Willem George Frederik</i> .....	1	17
SS <i>Hakonesan</i> .....		5	SS <i>Prins Willem George Friso</i> .....	1	---
SS <i>Kamikawa Maru</i> .....	3	6	SS <i>Prins Willem Van Oranje</i> .....		13
SS <i>Kenyo Maru</i> .....		11	SS <i>Prins Willem 2nd</i> .....	3	8
SS <i>Megurosan Maru</i> .....		3	SS <i>Prins Willem 5th</i> .....	1	3
LIBERIA			SS <i>Rotterdam</i> .....		32
SS <i>African Duke</i> .....		3	SS <i>Ryndam</i> .....	3	89
SS <i>A. N. Kemp</i> .....		9	SS <i>Skadi</i> .....	4	13
SS <i>Caribbean Sky</i> .....	1	---	SS <i>Sloterdyk</i> .....		1
SS <i>Chelwood Beacon</i> .....		11	SS <i>Sommelsdyk</i> .....		12
SS <i>Chevron Transporter</i> .....		9	SS <i>Stad Delft</i> .....		7
SS <i>Continental Carrier</i> .....		17	SS <i>Statendam</i> .....		5
SS <i>Continental Trader</i> .....		34	SS <i>Utrecht</i> .....		9
SS <i>Continental Pioneer</i> .....	1	---	SS <i>Vasum</i> .....		12
SS <i>Cornwall</i> .....		15	SS <i>Vivipara</i> .....		12
SS <i>Dona Margarita</i> .....		4	SS <i>Westerdam</i> .....		68
SS <i>Elizabeth H</i> .....		3	NORWAY		
SS <i>Farah Pahlivi</i> .....		6	SS <i>Anina</i> .....	2	9
SS <i>Invicta</i> .....		4	SS <i>Arna</i> .....	2	2
SS <i>Marinegra</i> .....	1	5	SS <i>Arnfinn Stange</i> .....		24
SS <i>North King</i> .....	3	4	SS <i>Artensis</i> .....		1
SS <i>Paul Pigott</i> .....	1	6	SS <i>Askot</i> .....		3
SS <i>Point Lacre</i> .....		34	SS <i>Felkarin</i> .....	1	1
SS <i>San Juan Trader</i> .....	3	13	SS <i>Fengazi</i> .....	1	4
SS <i>Sideris</i> .....		1	SS <i>Fergensfjord</i> .....	1	2
SS <i>Sun Princess</i> .....	1	8	SS <i>Findal</i> .....		16
SS <i>Sunwalker</i> .....		1	SS <i>Flack Tern</i> .....		10
SS <i>T. L. Lenzen</i> .....		7	SS <i>Forcalis</i> .....		8
SS <i>World Campaigner</i> .....		1	SS <i>Bysanz</i> .....		4
NETHERLANDS			SS <i>Dale</i> .....	3	5
SS <i>Alphard</i> .....		4	SS <i>Dido</i> .....	2	31
SS <i>Barendrecht</i> .....		7	SS <i>Disa</i> .....		2
SS <i>Colytto</i> .....		6	SS <i>Ferm</i> .....		3
SS <i>Forest Hill</i> .....	1	9	SS <i>Filefjell</i> .....		1
SS <i>Groote Beer</i> .....		16	SS <i>Foldenfjord</i> .....	3	23
SS <i>Johan Van Oldenbarnvelt</i> .....		12	SS <i>Gudvin</i> .....	1	1
SS <i>Kerkedyk</i> .....	1	22	SS <i>Harpefjell</i> .....		2
SS <i>Korendyk</i> .....	1	24	SS <i>Himing</i> .....		1
SS <i>Maasdam</i> .....		15	SS <i>Hiram</i> .....	1	3
SS <i>Neder Weser</i> .....		8			

ICE AND SEA CONDITION REPORT—Continued

<i>Vessel</i>	<i>Ice reports</i>	<i>Sea condition reports</i>	<i>Vessel</i>	<i>Ice reports</i>	<i>Sea condition reports</i>
NORWAY—continued			SWEDEN—continued		
<i>SS Iselin</i> .....		16	<i>SS Boheme</i> .....	2	
<i>SS Jagon</i> .....	1		<i>SS Borgholm</i> .....	11	30
<i>SS Jarilla</i> .....	1	1	<i>SS Braheholm</i> .....		22
<i>SS Karen Reed</i> .....		2	<i>SS Browind</i> .....		14
<i>SS Makefjell</i> .....	1	1	<i>SS Carla</i> .....		3
<i>SS Nardo</i> .....	2	1	<i>SS Carlsholm</i> .....	1	4
<i>SS Nordgard</i> .....		6	<i>SS Caroline Smith</i> .....	1	
<i>SS Norholt</i> .....	1		<i>SS Caspana</i> .....		1
<i>SS Oslofjord</i> .....	1	45	<i>SS Clary Thorden</i> .....	1	1
<i>SS Procyon</i> .....		2	<i>SS Danaholm</i> .....		16
<i>SS Prosper</i> .....		3	<i>SS Erholm</i> .....		1
<i>SS Reina</i> .....		5	<i>SS Falstaff</i> .....		1
<i>SS Roega</i> .....	1	1	<i>SS Faunus</i> .....		13
<i>SS Rosita</i> .....	1		<i>SS Faust</i> .....	1	33
<i>SS Skogaas</i> .....	2	7	<i>SS Figaro</i> .....		2
<i>SS Sonnavind</i> .....		4	<i>SS Fredrick Ragne</i> .....	1	7
<i>SS Starangerfjord</i> .....	2	21	<i>SS Gripsholm</i> .....		37
<i>SS Sun Victor</i> .....	2	2	<i>SS Hjordis Thorden</i> .....	1	
<i>SS Topdalsfjord</i> .....	6	23	<i>SS Indiana</i> .....		12
<i>SS Tronstad</i> .....	1	3	<i>SS Kungsholm</i> .....	1	48
<i>SS Vestlund</i> .....		7	<i>SS Mattavunga</i> .....	1	37
<i>SS Vistafjord</i> .....	1	19	<i>SS Marathon</i> .....		9
PANAMA			<i>SS Monica Smith</i> .....		1
<i>SS Clyde Water</i> .....		7	<i>SS Nereus</i> .....		7
<i>SS Esso Cristobal</i> .....	4	27	<i>SS Nordica</i> .....		2
<i>SS Esso Genova</i> .....		7	<i>SS North Lord</i> .....	1	3
<i>SS Homeric</i> .....	1	54	<i>SS Otis</i> .....	1	5
<i>SS Michigan</i> .....		12	<i>SS Ragneborg</i> .....		7
<i>SS Panamante</i> .....		3	<i>SS Skogholm</i> .....		4
<i>SS Panamolga</i> .....		3	<i>SS Sparreholm</i> .....		25
<i>SS Texaco Pennsylvania</i> .....		3	<i>SS Stalberg</i> .....		11
POLAND			<i>SS Tidaholm</i> .....		29
<i>SS Batory</i> .....	3	59	<i>SS Torsholm</i> .....		11
<i>SS Dalmor</i> .....	1		<i>SS Traviata</i> .....		1
<i>SS Legnica</i> .....		2	<i>SS Trolleholm</i> .....		4
PORTUGAL			<i>SS Uddeholm</i> .....		13
<i>SS Cine</i> .....	1	1	<i>SS Vibyholm</i> .....		32
SPAIN			<i>SS Virihaure</i> .....		8
<i>SS Guadalupe</i> .....		1	<i>SS Viris</i> .....		19
SWEDEN			<i>SS Virtala</i> .....		25
<i>SS Annika</i> .....	1	4	<i>SS Vitafors</i> .....		11
<i>SS Arjeplog</i> .....		2	<i>SS Vittangi</i> .....		5
<i>SS Arvidsjuar</i> .....		17	SWITZERLAND		
<i>SS Birgitragne</i> .....	1	12	<i>SS Castagnola</i> .....		11
			<i>SS Corviglia</i> .....	1	19
			<i>SS Regina</i> .....	1	42
			<i>SS Sunamela</i> .....	2	2

ICE AND SEA CONDITION REPORT—Continued

Vessel	Ice reports	Sea condition reports	Vessel	Ice reports	Sea condition reports
TANGANYIKA			UNITED STATES OF AMERICA—CON.		
SS <i>Warecrest</i>		8	SS <i>Tyson Lykes</i>		1
UNION OF SOVIET SOCIALIST REPUBLICS			SS <i>United States</i>		22
SS <i>Alitus</i>	1		SS <i>Wolverine State</i>		28
UNITED ARAB REPUBLIC			USCGC <i>Absecon</i>	14	59
SS <i>Port Said</i>		3	USCGC <i>Androscoggin</i>	10	37
UNITED STATES OF AMERICA			USCGC <i>Barataria</i>	3	38
SS <i>Alice Brown</i>		2	USCGC <i>Bibb</i>	9	27
SS <i>America</i>	90		USCGC <i>Campbell</i>	7	35
SS <i>American Builder</i>	51		USCGC <i>Castle Rock</i>		18
SS <i>American Chief</i>	49		USCGC <i>Chincoteague</i>	3	29
SS <i>American Farmer</i>	3		USCGC <i>Cook Inlet</i>	3	18
SS <i>American Flyer</i>	10		USCGC <i>Coos Bay</i>	4	45
SS <i>American Forwarder</i>		28	USCGC <i>Duane</i>	1	9
SS <i>American Gunner</i>	14		USCGC <i>Eagle</i>		12
SS <i>American Harvester</i>	13		USCGC <i>Escanaba</i>	1	17
SS <i>American Leader</i>	20		USCGC <i>Evergreen</i>	28	393
SS <i>American Packer</i>	23		USCGC <i>Half Moon</i>	1	31
SS <i>American Pilot</i>	1	7	USCGC <i>Humboldt</i>	5	34
SS <i>American Press</i>	1		USCGC <i>Ingham</i>	0	35
SS <i>American Reporter</i>	1		USCGC <i>Mackinac</i>	17	39
SS <i>American Scientist</i>	25		USCGC <i>McCulloch</i>	2	23
SS <i>American Shipper</i>	54		USCGC <i>Spencer</i>	3	33
SS <i>American Trapper</i>	14		USCGC <i>Owasco</i>	8	34
SS <i>American Veteran</i>	1		USCGC <i>Westwind</i>	2	26
SS <i>Charles Lykes</i>	5		USS <i>Camp</i>	2	4
SS <i>Constitution</i>	9		USS <i>Desoto County</i>	1	23
SS <i>Dalhanna</i>	1		USS <i>Eaton</i>		3
SS <i>Edgar F. Luckenbach</i>		2	USS <i>Hissem</i>	2	1
SS <i>Eranthia</i>		7	USS <i>Lake Champlain</i>		1
SS <i>Excalibur</i>		6	USS <i>Pawcatuck</i>		14
SS <i>Exemplar</i>		3	USS <i>Preserver</i>		8
SS <i>Expeditor</i>		7	USS <i>Traverse County</i>	7	27
SS <i>Extaria</i>		12	USNS <i>Blue Jacket</i>		13
SS <i>Flying Fish</i>		5	USNS <i>Comet</i>		30
SS <i>Mormacbay</i>		5	USNS <i>Cowanquesque</i>		5
SS <i>Mormacelm</i>	1	37	USNS <i>Geiger</i>		46
SS <i>Mormacmail</i>		14	USNS <i>Gen. Alexander M. Patch</i>	1	36
SS <i>Mormacpenn</i>		44	USNS <i>Gen. George M. Randall</i>		22
SS <i>Mormacpride</i>		3	USNS <i>Gen. Maurice Rose</i>		116
SS <i>Mormacrio</i>	2	6	USNS <i>Gen. Simon B. Buckner</i>		72
SS <i>Mormacsaga</i>	1	26	USNS <i>Gen. William S. Darby</i>		93
SS <i>Pelican State</i>		1	USNS <i>Lt. Robert Craig</i>		3
SS <i>Pioneer Cove</i>		12	USNS <i>Mirfak</i>	26	3

ICE AND SEA CONDITION REPORT—Continued

<i>Vessel</i>	<i>Ice reports</i>	<i>Sea condition reports</i>	<i>Vessel</i>	<i>Ice reports</i>	<i>Sea condition reports</i>
UNITED STATES OF AMERICA—CON.			UNITED STATES OF AMERICA—CON.		
USNS <i>Mizar</i> .....	1	1	USNS <i>Upshur</i> .....		65
USNS <i>Pecos</i> .....	3	7			
USNS <i>Sgt. Jonah E. Kelley</i> .....	15	81	YUGOSLAVIA		
USNS <i>Taurus</i> .....		1	SS <i>Natko Nodilo</i> .....	1	8
			SS <i>Zenica</i> .....		5



## PHYSICAL OCEANOGRAPHY OF THE GRAND BANKS REGION AND THE LABRADOR SEA IN 1961 <sup>1</sup>

By Floyd M. Soule, Alfred P. Franceschetti and R. M. O'Hagan (U.S. Coast Guard)

The oceanographic vessel of the International Ice Patrol in 1961 was again the 180-foot tender class cutter USCG cutter *Evergreen*. No marked alterations affecting the oceanographic work were made in the vessel since the previous season. Certain changes were made in the accumulators on the oceanographic winches. A different type of wire clamp which results in less mechanical damage to the wire rope was used on all Nansen type water bottles, and between the fourth survey and the postseason survey stainless steel wire rope replaced the galvanized plow steel wire rope on one of the winches.

The *Evergreen* departed Argentia, Newfoundland, on 31 March to conduct the first survey of the 1961 season. The survey covered the waters over and immediately seaward of the southern and eastern slopes of the Grand Banks from just westward of the Tail of the Banks northward to the latitude of Flemish Cap. The work of collection began on 2 April at station 7589 located off the southwestern slope of the banks and progressed from south to north without major interruption. On 15 April, the final station, number 7673, was completed and the *Evergreen* proceeded to Argentia, arriving there on the morning of 17 April.

The second survey covered the waters over and immediately seaward of the northeastern slope of the Grand Banks from Flemish Cap northwestward to station 7723 located at the offshore corner of the Bonavista triangle (50°00' N., 49°00' W.) and then along the southeast leg of the triangle to station 7731 (47°24' N., 50°00' W.). Ice conditions around the western part of the Bonavista triangle were such that oceanographic stations could not be taken and the occupation of the triangle, therefore, was not completed. The work of collection of data was completed on the morning of 5 May after 58 stations had been occupied. The *Evergreen* then proceeded to Argentia, arriving there on the evening of 6 May.

A third survey, stations 7732 to 7818, made between 25 May and 5 June was similar to that covered by the first survey. On 24 May en route to the first oceanographic station, three Richardson current meters were moored along section U at depths of 35 to 40 meters

<sup>1</sup> To be reprinted as Contribution No. 1252 in the Collected Reprints of the Woods Hole Oceanographic Institution.

below the surface in water depths of 42 fathoms, 475 fathoms and 980 fathoms. These meters were intended to record the speed and direction of the Labrador Current as it fluctuated in space and time. These experiments will be described in a later bulletin.

The *Evergreen* departed Argentia, Newfoundland, on the afternoon of 8 June to participate in a search for a fishing dory missing on the Grand Banks. It was concluded that the dory had been run down in the fog. After several days of searching, the case was closed and the *Evergreen* proceeded to the first station of the fourth survey arriving on the early afternoon of 14 June. The area covered was similar to that covered in the second survey and also included the Bonavista triangle. Data collection was completed during the night of 22 June, where upon the *Evergreen*, en route to Argentia, checked the positions and condition of current meter moorings.

The *Evergreen* departed Argentia, Newfoundland, on the afternoon of 2 July to begin the postseason oceanographic survey which included an occupation of the Bonavista triangle and a section across the Labrador Sea from South Wolf Island, Labrador, to Cape Farewell, Greenland. The triangle, consisting of 30 stations was completed on the afternoon of 6 July where upon the *Evergreen* proceeded to South Wolf Island arriving at the first station, number 7928, on the next day. In addition to the normal work of collecting temperature and salinity data on the Labrador Sea section, oxygen determinations were made for all depths at all stations occupied, excluding only surface samples. A total of 508 determinations was made using a modification of the Winkler method. The results will be discussed in a later section of this bulletin. The final station, number 7950, was occupied on the evening of 11 July, 6 miles off Cape Farewell. There were no interruptions or unusual delays during any of the 1961 surveys.

The oceanographic work was under the supervision of Oceanographer Alfred P. Franceschetti who was assisted by Lt. R. M. O'Hagan. Other assistants in the observational work and reduction of data included R. C. Norris, aerographer's mate first class; F. N. Brown, yeoman first class; D. P. Wagner, aerographer's mate second class; R. C. Bowden, aerographer's mate second class and J. A. Senefelder, seaman aerographer's mate.

Temperature and salinity observations were made at each of the 362 stations. At the 23 stations forming the section across the Labrador Sea, the observations extended from the surface to as near the bottom as was practicable. At the remaining stations, the observations were limited to the upper 1,500 meters. The intended depths of observations, in meters, were 0, 25, 50, 75, 100, 150, 200, 300, 400, 600, 800, 1,000, and thence by 500-meter intervals.

Temperatures were measured with protected deepsea reversing thermometers, mostly of Richter & Wiese manufacture, but with some manufactured by Negretti & Zambra, G. M. Manufacturing Company and

Kahl Scientific Instrument Corp. Depths of observation are based on unprotected reversing thermometers made by Richter & Wiese and by Kahl Scientific Instrument Corp. As in other years, a program of intercomparison of protected thermometers was carried out in the field measurements. The thermometers were used in pairs and one of each pair was shifted periodically so that the same thermometer was eventually paired with a number of other thermometers. From a total of 2,022 intercomparisons, the standard deviation between the corrected readings of a pair of protected thermometers was  $\pm 0.010^\circ \text{C}$ . Of these comparisons, 1,611 involved thermometers having a range of  $-2^\circ$  to  $+8^\circ$  with a standard deviation of  $\pm 0.008^\circ$ , 310 comparisons between thermometers of range  $-2^\circ$  to  $+20^\circ$  or greater gave a standard deviation of  $\pm .013^\circ$  and 101 comparisons were between thermometers with a range of  $+3^\circ$  to  $+13^\circ$  and gave a standard deviation of  $\pm 0.008^\circ$ . As most of the observed temperatures listed in the Table of Oceanographic Data are the means of the corrected readings of a pair of thermometers and as many of the thermometers had recent ice point determinations, it is considered that the tabulated observed temperatures are good to  $\pm 0.01^\circ \text{C}$ .

As in past years, salinities were measured with a Wenner salinity bridge. Prior to the beginning of field work, two check runs were made to verify the calibration curve using samples which had been stored in glass for 1 year after the precise chlorinity determinations made in February of 1960. No significant change in the calibration curve was observed. In the field measurements, the bridge was standardized with water from an oil-sealed carboy of sea water. Copenhagen standard water of batch P<sub>29</sub> was measured as an unknown twice during each salinity run. At the end of each survey, these measurements were used to correct the tentative value of the salinity of the oil-sealed carboy which had been used as a substandard of salinity and to determine the corrections to the salinities for the survey. The corrections indicated were as follows: first survey  $+0.01_0/_{\text{‰}}$ ; second survey  $+0.00_5/_{\text{‰}}$ ; third survey  $+0.01_2/_{\text{‰}}$ ; fourth survey  $+0.00_1/_{\text{‰}}$ ; post-season survey  $+0.02_0/_{\text{‰}}$ . Necessary corrections have been applied to the tabulated values appearing in the Table of Oceanographic Data and have been considered in the construction of the dynamic topographic charts. Temperature control of the samples in the electrolytic cells of the bridge limit the precision of the individual measurements to  $0.00_5/_{\text{‰}}$ . In view of the precise chlorinity determinations of February 1960 and the check runs on the calibration curve this would also have been the accuracy of the 1961 field measurements. Difficulties with the standardization technique, however, make it appear that the precision and accuracy of the values tabulated here are about  $0.01/_{\text{‰}}$ .

Figures 15 through 18 show the dynamic topography, in chronological order, found during the four surveys made during the season. As in the past, the reference surface used was 1000 decibars. The first



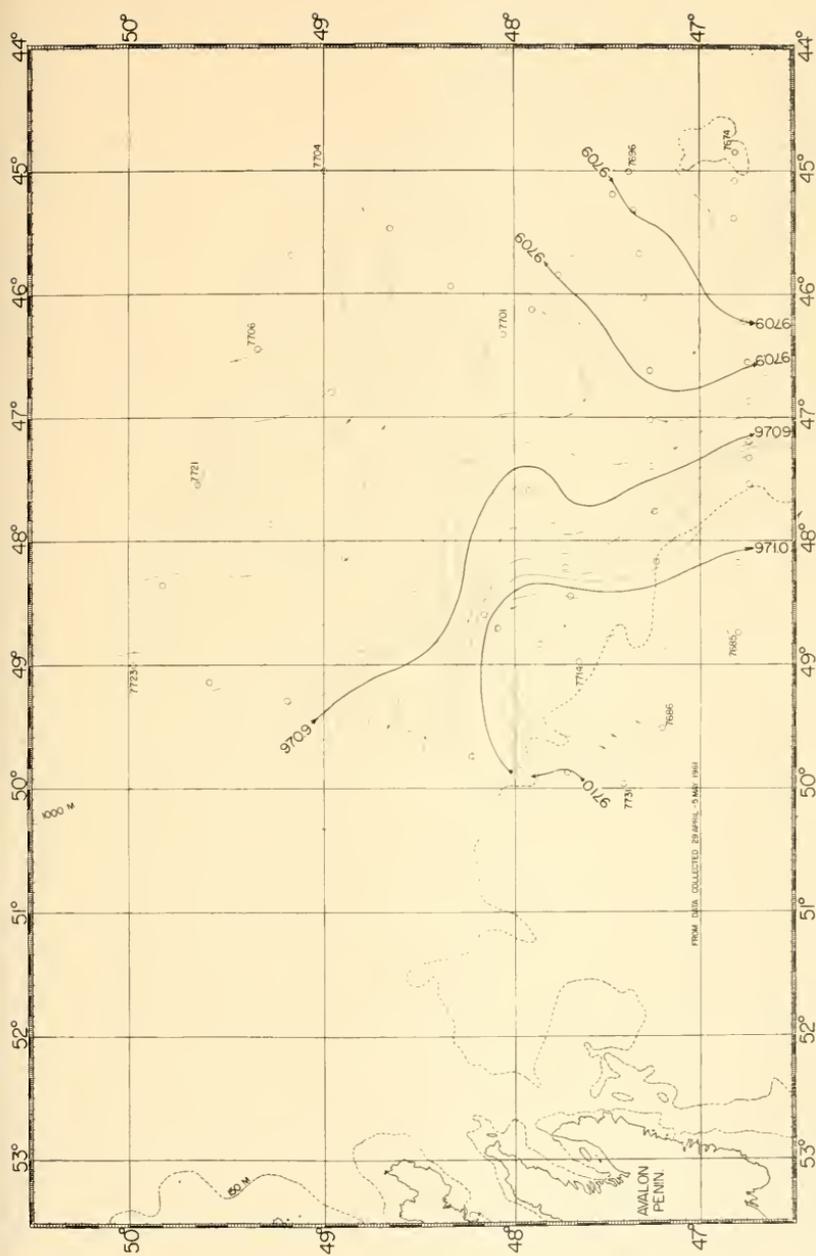


FIGURE 16.—Dynamic topography of the sea surface relative to the 1,000-decibar surface, from data collected 29 April–5 May 1961. Oceanographic station positions are indicated and the station numbers given at turning points.

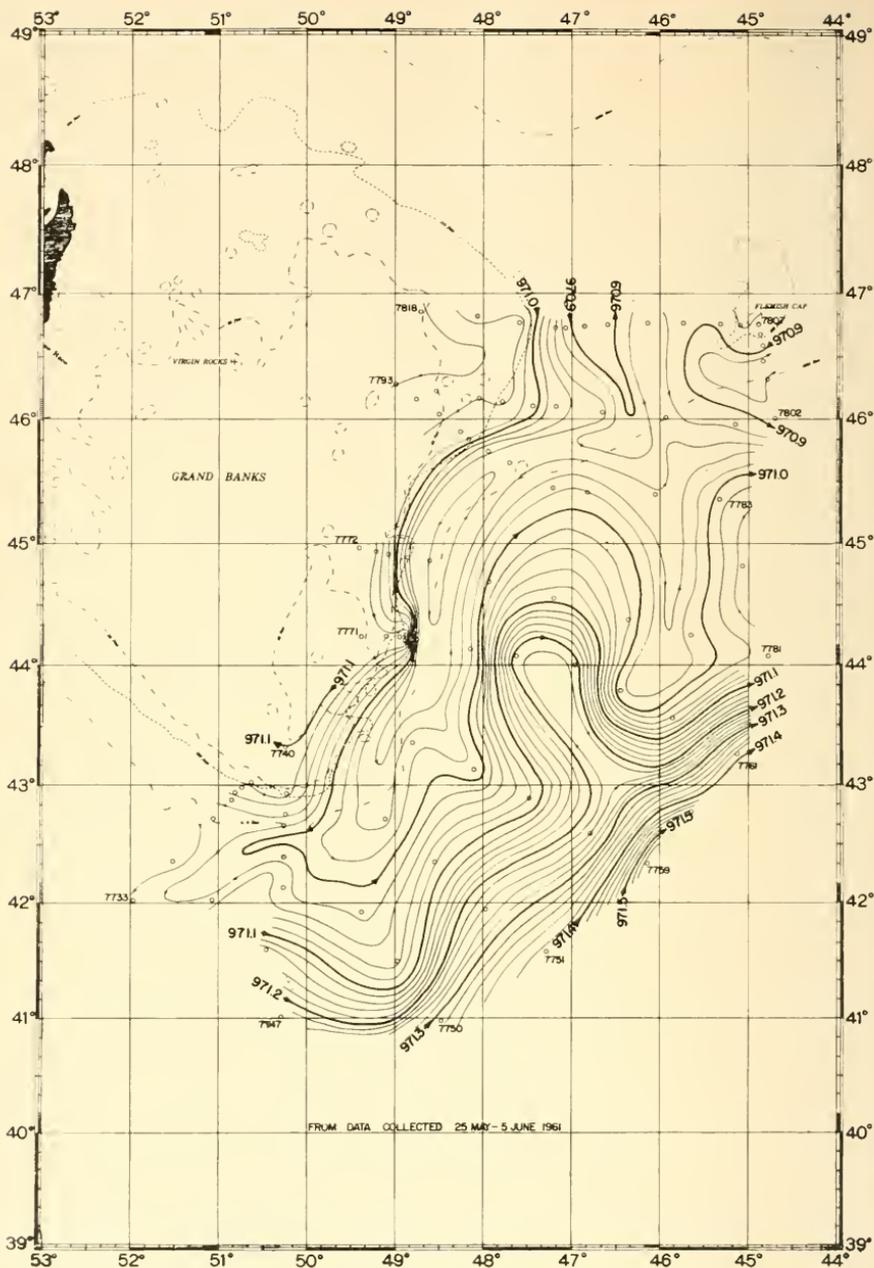


FIGURE 17.—Dynamic topography of the sea surface relative to the 1,000-decibar surface, from data collected 25 May-5 June 1961. Oceanographic station positions are indicated and the station numbers given at turning points.

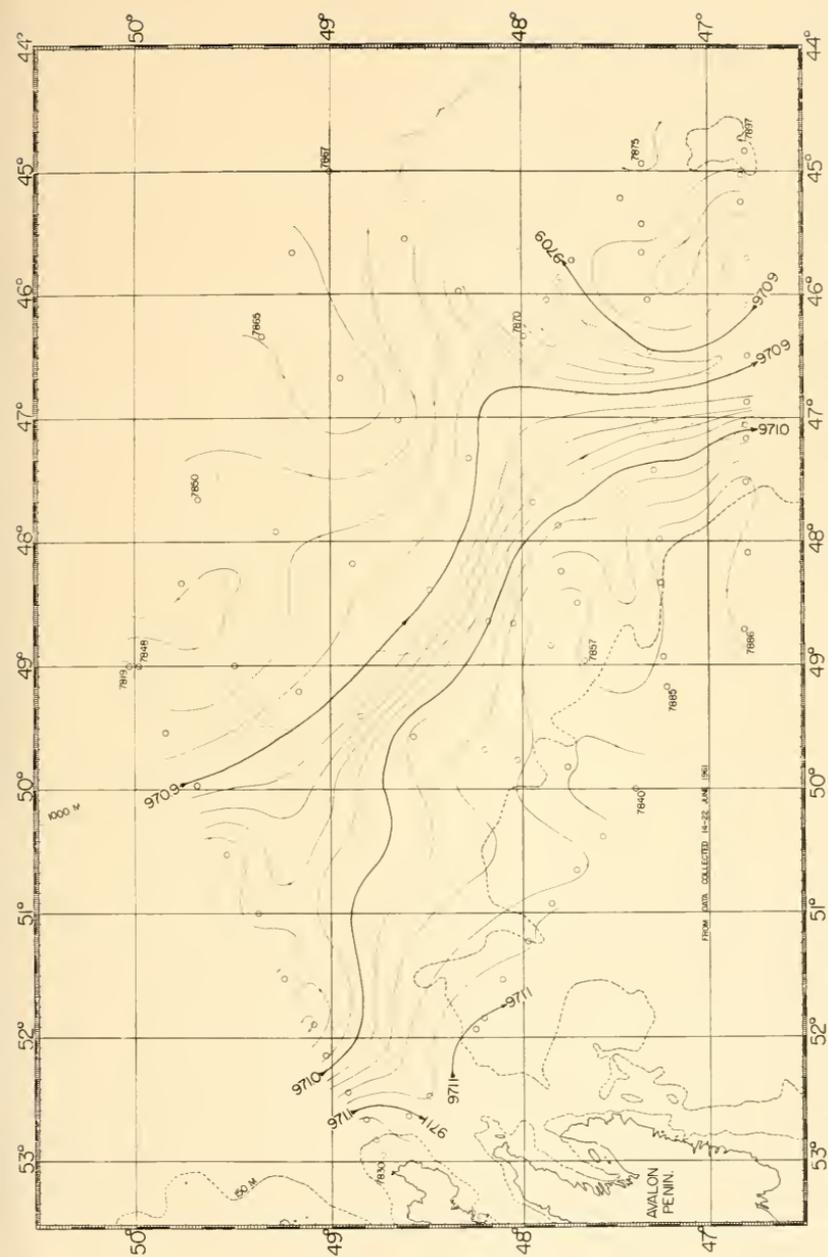


FIGURE 18.—Dynamic topography of the sea surface relative to the 1,000-decibar surface, from data collected 14–22 June 1961. Oceanographic station positions are indicated and the station numbers given at turning points.

survey, figure 15, shows a weak Labrador Current which becomes poorly defined south of  $45^{\circ}$  N. Most of what little Labrador Current water enters the surveyed area from the north sets westward between  $45^{\circ}$  N., and  $46^{\circ}$  N., and is lost to the surveyed area. The higher dynamic heights at stations 7622, 7623, and 7630 are the result of warmer water which probably crossed the Grand Banks from the margins of the Gulf Stream system off the southwest slope of the Grand Banks. Some modified Labrador Current water continues in a southward flow along the eastern slope of the banks south of  $45^{\circ}$  N., and rounds the Tail of the Banks to the westward in a normal pattern. The Atlantic Current shows a characteristic meander to the southeastward in the vicinity of station 7608. The northern margin of the Atlantic Current shows an abnormal meander northward, with the axis at about  $46^{\circ}$  W., the effects of which extend to the northernmost section of the survey at station 7667. Eastward of this meander, a cyclonic eddy is shown southward of Flemish Cap. Any bergs entering the area from the north would probably have been set westward onto the banks north of about  $45^{\circ}30'$  N.

Figure 16, representing conditions found during the second survey, shows eddies and meanders in the southwestern part of the surveyed area which indicate that for a berg to be carried south by the Labrador Current, it would have had to enter the western edge of the area between stations 7725 and 7726 and even then with some chances of stranding on the northern edge of the Grand Banks. The weak clockwise circulation within the two dynamic isohypses of 970.9 dynamic meters northwestward of Flemish Cap was probably conditioned by the northward meander of the Atlantic Current found in this longitude in the first survey. Rather flat topography was found in the northeastern half of the surveyed area.

In figure 17, from data collected during the third survey, the Labrador Current shows some recovery from the situation found during the first survey, especially with regard to its continuation southward past the 45th parallel. It suffers some eastward deflection at the 46th parallel and just north of the 44th parallel the remnants of the warm water found during the first survey still affect stations 7768-70. Losses of Labrador Current water mixing and recurving eastward are pronounced south of  $44^{\circ}$  N. A major meander of the Atlantic Current northward with its axis along the 47th meridian is shown from  $43^{\circ}$  N., northward. Eastward of this a southward meander of colder mixed water extends along the 46th meridian to south of  $44^{\circ}$  N. The remnant of the abnormal northward meander of Atlantic Current water found during the first survey along the 46th meridian is traceable with an axis through stations 7783, 7800, and 7811.

The dynamic topography found during the fourth survey is shown in figure 18. The dividing point between the eastern and western branches of the Labrador Current appears to be somewhat northward

of the Bonavista triangle. The low velocities along its northwestern side, between stations 7822 and 7825, and the accompanying complicated low velocity current pattern, produce an apparent separation of the eastern and western branches. From the rest of the chart adjacent to the southeastward, however, it would appear that the eastern and western branches are divided by the isohypse of 971.04 dynamic meters. At the southern margin of the chart the minimum dynamic height marking the eastern boundary of the Labrador Current shifted eastward progressively during the four surveys; 10 miles between the first and second,  $3\frac{1}{2}$  miles between the second and third, and 17 miles between the third and fourth for a total shift of some 30 miles from April to June. Although less precisely defined, the eastern boundary of the Labrador Current at the northern edge of the surveyed area shifted westward about 25 miles between the second and fourth surveys. As in the second survey; the dynamic topography in the northeastern half of the area showed little relief during the fourth survey.

In the Grand Banks region there are two water masses, Labrador Current water and Atlantic Current water, which mix with proportions usually sufficiently constant to produce a virtual water mass, the mixed water. Based upon the observations made during the first and third surveys, the temperature-salinity relationships found in 1961 have been shown in figure 19 as solid lines. For comparison, the T-S curves representing the means for the 14-year period 1948-61 have been shown as broken lines.

Except for the upper 300 meters in the Atlantic Current, the temperatures were higher than normal in 1961 in each water mass. In the Labrador Current water at levels of 100 meters and above, the higher temperatures were accompanied by lower salinities to produce lower densities. At 150 and 200 meters, an increase in salinity offset the effect of higher temperatures to maintain normal densities. At the 300- and 400-meter levels, higher salinities produced greater than normal densities. In the mixed water, salinities compensated temperatures to approximate normal densities down to about 100 meters. Below that level, densities were lighter than normal. In the Atlantic Current water, the densities were less than normal at levels deeper than 200 meters.

Over the years, several sections across the Labrador Current have been occupied repeatedly. Many of these have a sufficient number of occupations to permit the estimation of tentative normal seasonal variation relationships. The sections are defined as follows: South Wolf Island, extending  $045^{\circ}$  T from South Wolf Island, Labrador (normals published in Bulletin No. 44 of this series); sections NW, SW and SE, forming the northwestern, southwestern and southeastern sides of the Bonavista triangle (normals published in Bulletin No. 39 of this series); section H, parallel to and about 40 miles south-

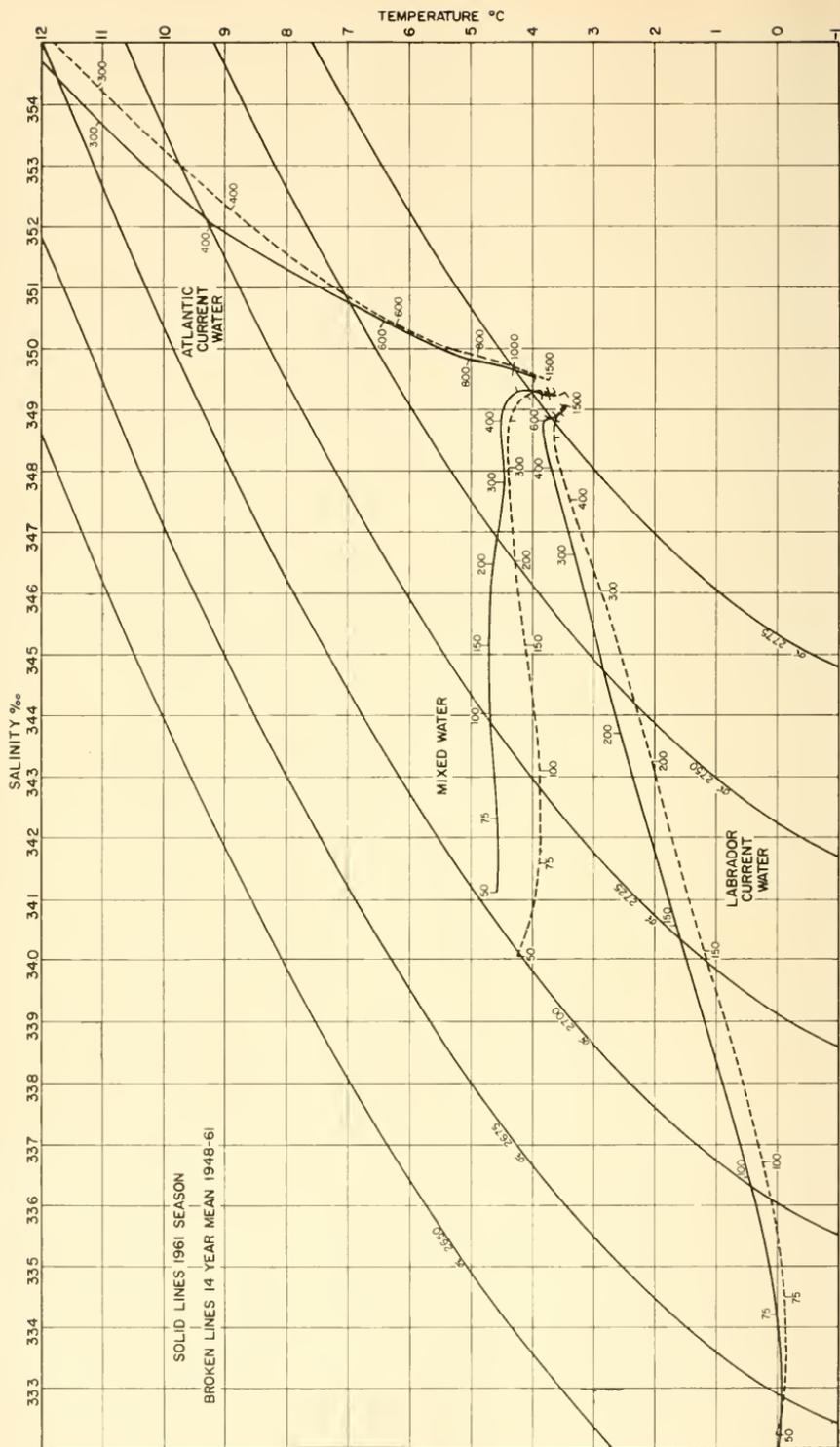


FIGURE 19. Temperature-salinity relationships for Labrador Current water, Atlantic Current water and mixed water found in the Grand Banks region. Solid lines show conditions found during 1961 and broken lines represent the 14-year means for the period 1948-61. An approximate depth scale in meters is given.

easterly of SE; section G, extending northeasterly from about  $47^{\circ}10'$  N.,  $48^{\circ}40'$  W.; section  $F_2$ , an east-west section between the Grand Banks and Flemish Cap along the parallel of  $47^{\circ}15'$  N.; section F, similar to  $F_2$  but about 30 miles farther south (normals for G and F published in Bulletin No. 42 of this series); section T, extending southeasterly from about  $46^{\circ}20'$  N.,  $49^{\circ}00'$  W.; section U, extending easterly from the Grand Banks at about  $45^{\circ}$  N.; and section W, extending southerly from the Grand Banks at about  $50^{\circ}15'$  W. (normals for T, U and W published in Bulletin No. 46 of this series). Data are still insufficient for the development of even tentative normals for sections H and  $F_2$ .

During the four surveys and postseason survey of 1961, there were 23 occupations of these sections. From these data, the volume transport (given in millions of cubic meters per second), mean temperature and minimum observed temperature (given in degrees Centigrade), and heat transport (given in millions of cubic meter degrees Centigrade per second) have been derived and their values given in Table 1 in comparison with seasonal normal values where these are available. An examination of Table 1 shows a preponderance of subnormal volume transport figures and warmer than normal mean temperatures and minimum observed temperatures. Since the heat transport is the product of volume transport and mean temperature, the picture derived from inspection of the table is not clear-cut with respect to heat transport. The volume transport at the several sections have been shown in figure 20, which is a schematic representation of the circulation deduced from the volume transport and mean temperatures given in Table 1.

From Table 1, it is seen that at the beginning of the season the Labrador Current was subnormal in volume transport, with the abnormality greater in the southern part of the area than in the more northerly part. As the season progressed, the abnormalities were reduced and approximately normal conditions were reached in the latter part of June. The geographical distribution of the abnormalities is illustrated by considering two occupations of the Bonavista triangle which averaged 103 percent of normal volume with an average mean temperature  $0.02^{\circ}$  warmer than normal; the average of all sections G and F was 88 percent of normal volume and  $0.31^{\circ}$  above normal mean temperature; and the average of all sections T, U and W was 64 percent of normal volume and  $0.57^{\circ}$  above normal mean temperature.

From the anomalies of volume transport and mean temperature it would appear that the deficiency in the volume of the Labrador Current was in its colder, inshore component. This, in combination with the nearly normal conditions found at the Bonavista triangle, in turn suggests that a greater than usual proportion of the Labrador Current followed the western branch along the Avalon Peninsula of

## SUMMARY OF VELOCITY SECTIONS ACROSS THE LABRADOR CURRENT OCCUPIED IN 1961

	Volume transport			Mean temperature			Minimum observed temperature			Heat transport		
	1961	Normal	Anomaly	1961	Normal	Anomaly	1961	Normal	Anomaly	1961	Normal	Anomaly
<b>First survey:</b>												
F	2.40	2.72	-0.32	1.98	1.55	+0.43	-1.31	-1.38	+0.07	4.76	4.23	+0.53
T	1.48	3.28	-1.80	2.09	1.96	+0.63	-1.18	-1.27	+0.09	3.23	5.14	-1.91
U	1.46	3.44	-3.98	2.87	1.45	+1.42	-0.65	-1.10	+0.45	4.18	7.80	-3.68
W	3.22	3.85	-0.63	3.88	1.93	+1.90	-0.37	-0.36	-0.01	12.34	7.42	+4.92
<b>Second survey:</b>												
H	3.69			1.45			-1.56			5.35		
G	2.74	3.58	-0.84	2.27	1.60	+0.67	-1.60	-1.22	-0.38	6.20	5.74	+0.46
F <sub>2</sub>	1.45			1.21			-0.93			1.76		
F <sub>1</sub>	1.71	2.84	-1.13	1.00	1.69	-0.69	-1.29	-1.28	-0.01	1.71	4.81	-3.10
<b>Third survey:</b>												
F	2.81	3.12	-0.31	2.49	2.01	+0.48	-1.10	-1.33	+0.23	6.99	6.27	+0.72
T	2.96	2.82	-0.26	2.54	1.89	+0.65	-0.95	-1.30	+0.35	6.50	5.33	+1.17
U	3.42	3.90	-0.48	1.83	2.41	-0.58	-0.45	-1.10	+0.65	6.26	9.40	-3.14
W	1.72	3.30	-1.58	2.26	2.85	-0.59	-0.14	-0.31	+0.17	3.90	9.42	-5.52
<b>Fourth survey:</b>												
NW	3.40	3.70	-0.30	0.87	1.19	-0.32	-1.59	-1.68	+0.09	2.95	4.41	-1.46
SW	0.75	0.50	+0.25	-0.73	-0.32	-0.41	-1.54	-1.64	+0.10	-0.54	-0.16	-0.38
SE	3.67	3.14	+0.53	2.08	1.73	+0.35	-1.25	-1.54	+0.29	7.64	5.42	+2.22
H	3.99			2.55			-1.07			10.19		
G	3.04	2.71	+0.33	2.45	2.11	+0.34	-1.31	-1.32	+0.01	7.46	5.71	+1.75
F <sub>2</sub>	2.91			2.81			-1.33			8.17		
F <sub>1</sub>	3.31	3.26	+0.05	2.79	2.16	+0.63	-1.26	-1.35	+0.09	9.22	7.05	+2.17
<b>Postseason:</b>												
NW	3.29	3.94	-0.65	0.77	1.35	-0.58	-1.57	-1.63	+0.06	2.55	5.31	-2.76
SW	0.48	0.59	-0.11	-1.02	-0.05	-0.97	-1.64	-1.64	+0.10	-0.49	-0.03	-0.46
SE	4.09	3.26	+0.83	2.47	1.91	+0.56	-1.33	-1.57	+0.24	10.09	6.23	+3.86
S. Wolf Island	7.30	4.23	+3.07	2.50	2.16	+0.34	-1.58	-1.55	-0.03	18.22	9.11	+9.11



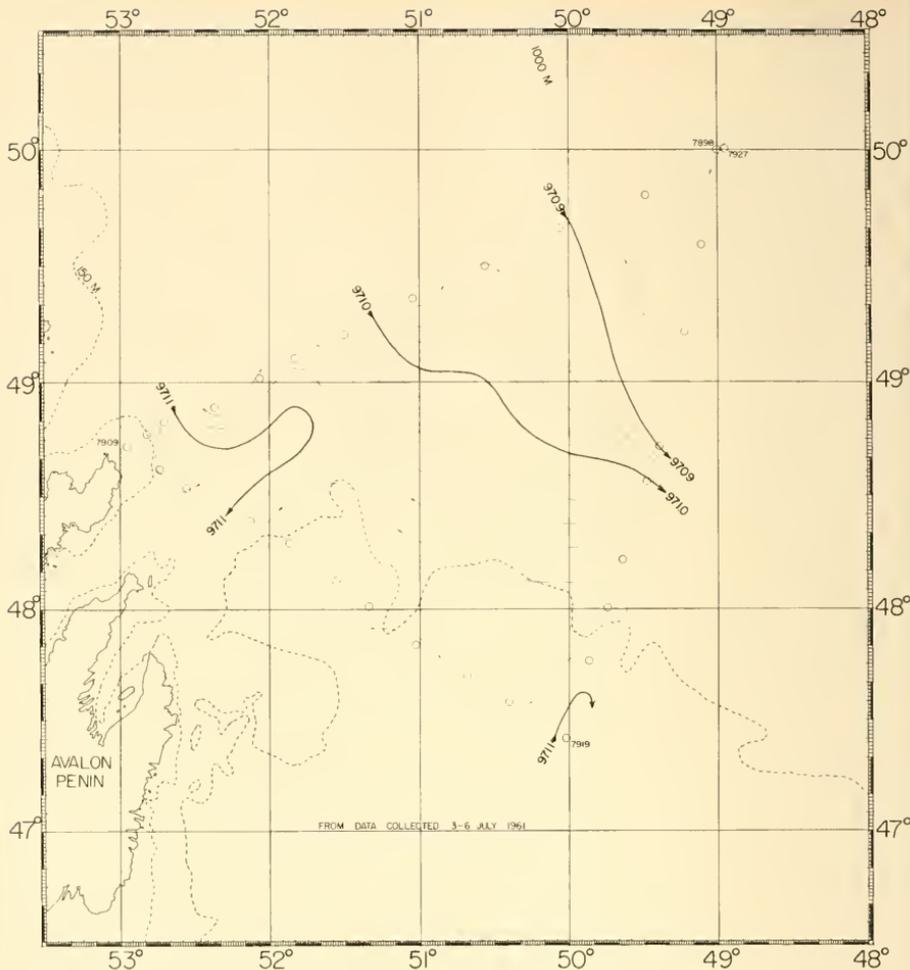


FIGURE 21.—Dynamic topography of the sea surface relative to the 1,000-decibar surface, from data collected 3-6 July 1961. Oceanographic station positions are indicated and the station numbers are given at turning points.

Newfoundland and that this was possibly associated with the abnormal quantity and distribution of sea ice during the first part of the season.

Figure 21 shows the dynamic topography found at the Bonavista triangle during the postseason survey. It shows a somewhat less complicated pattern along the northwestern side than appeared in figure 18 (fourth survey). The Labrador Current, as it passes the southeastern section, also was narrowed to a more pronounced band. From the volume transports shown in Table 1, there was an increase in the proportion of the Labrador Current following the eastern branch between the fourth and postseason surveys although the total volume remained nearly the same. Normally, there is a seasonal

decrease in the percentage of the volume transport following the eastern branch.

Figure 22 shows the location of the section across the Labrador Sea occupied during the postseason survey and gives the dynamic topography of the sea surface in the vicinity of the section. Figures 23 and 24 show the distribution of temperature and salinity, respectively, along this section. The distribution of dissolved oxygen is given in milliliters per liter in figure 25 and in percentage saturation in figure 26.

In considering figure 22, it must be kept in mind that the fragmentary dynamic topography shown is not the result of a network survey and while having some support from GEK observations, it is principally useful in showing the location of the steeper gradients.

The Labrador Current shows characteristic temperature distribution in figure 23, with a core of negative temperatures over the Labrador shelf, a steep horizontal temperature gradient over the continental slope, and warm water offshore, with a temperature maximum intersecting bottom at about 600 meters. A slight temperature maximum, as defined by the isotherm of  $3.4^{\circ}$ , extends northeastward from the Labrador side at a depth of about 1,500 meters as far as station 7943. On the Greenland side the cold inshore component of the West Greenland Current is delineated by the  $2^{\circ}$  isotherm while the effect of the Irminger Current component is evident in water warmer than  $5^{\circ}$ .

The salinity distribution shown in figure 24 shows a characteristic slope of the isohalines over the Labrador shelf with a gradation from low salinity coastal water to salinities greater than  $34.80\text{‰}$  over the continental slope. A downward bulge of the isohaline of  $34.85$  between stations 7938 and 7939 roughly coincides with a similar bulge in the isotherm of  $3.4^{\circ}$  seen in figure 23. This warmer fresher water is considered to be associated with the northward flow just seaward of the Labrador Current. On the Greenland side, the salinity maximum of greater than  $35\text{‰}$  outlines the core of the Irminger Current component of the West Greenland Current. Beneath this there is a salinity maximum extending downward and southwestward at depths between 2,000 and 3,000 meters, as indicated by the isohaline of  $34.9\text{‰}$ . Comparison of figures 23 and 24 shows this deep salinity maximum to be deeper than the temperature maximum.

An analysis of the temperature and velocity structure of the West Greenland Current showed a volume transport of  $5.98 \times 10^6$  m<sup>3</sup>/sec compared to a seasonal normal of 4.73. The mean temperature found in 1961 was  $4.69^{\circ}$  compared with a seasonal normal of  $4.46^{\circ}$ . Thus the heat transport was  $28.07 \times 10^6$  m<sup>3</sup> °C/sec compared with a seasonal normal of 21.09. If the East Greenland Current component is assumed to have a constant mean temperature of  $3.2^{\circ}$  and the



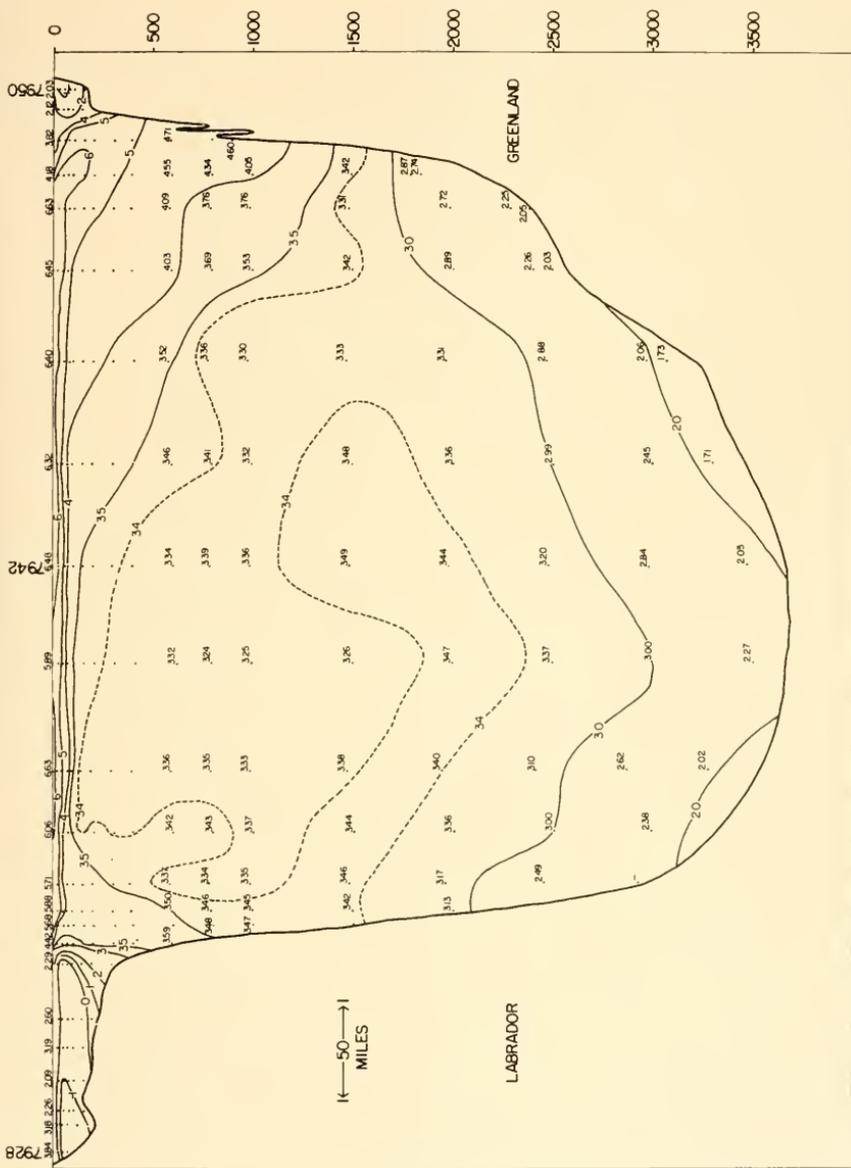


Figure 23.—Temperature distribution along section between South Wolf Island, Labrador and Cape Farewell, Greenland, from data collected 8-11 July 1961.

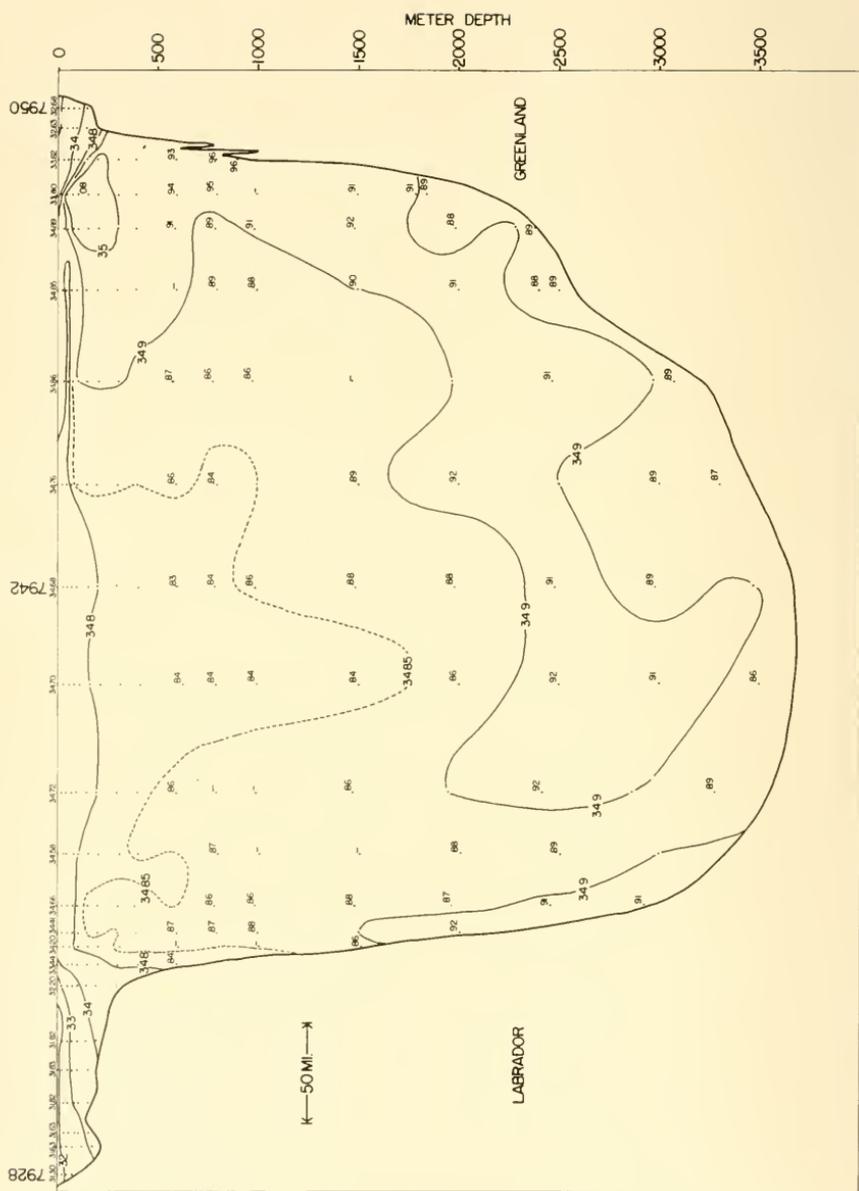


FIGURE 24.—Salinity distribution along section between South Wolf Island, Labrador and Cape Farewell, Greenland, from data collected 8-11 July 1961.

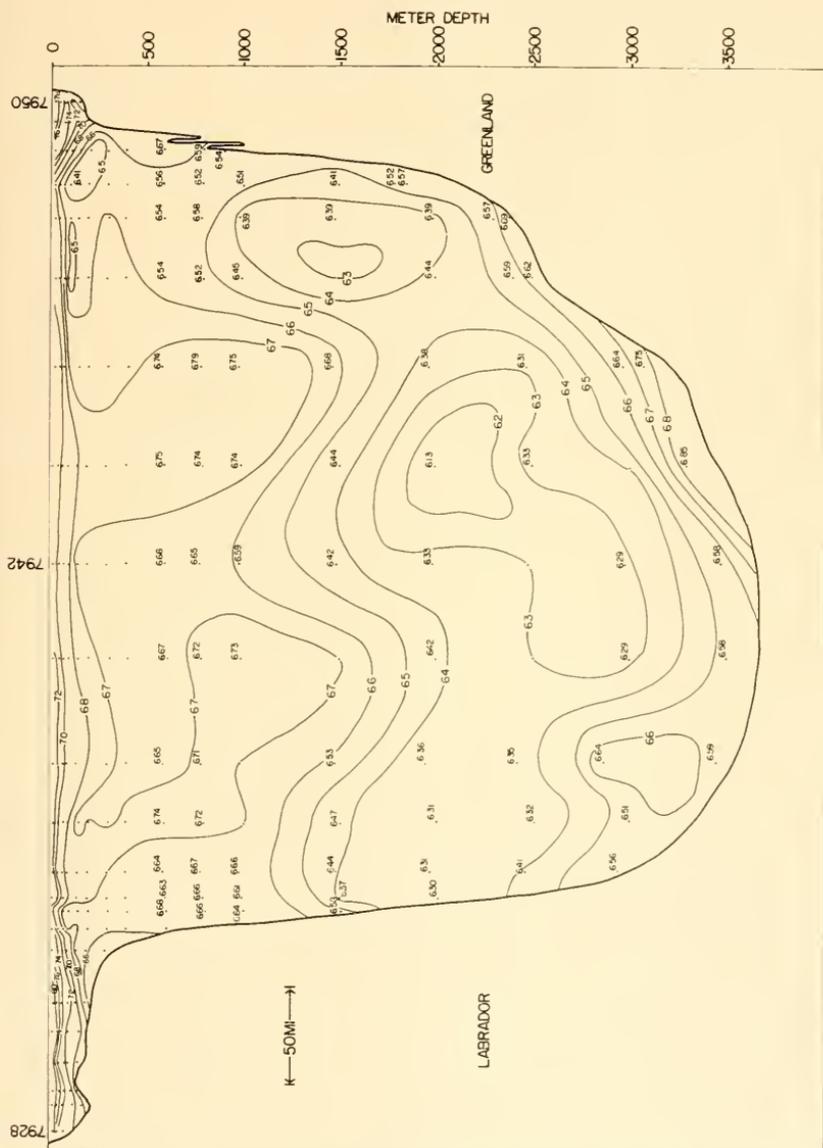


FIGURE 25.—Distribution of dissolved oxygen, in ml/l, along section between South Wolf Island, Labrador and Cape Farewell, Greenland, from data collected 8-11 July 1961.

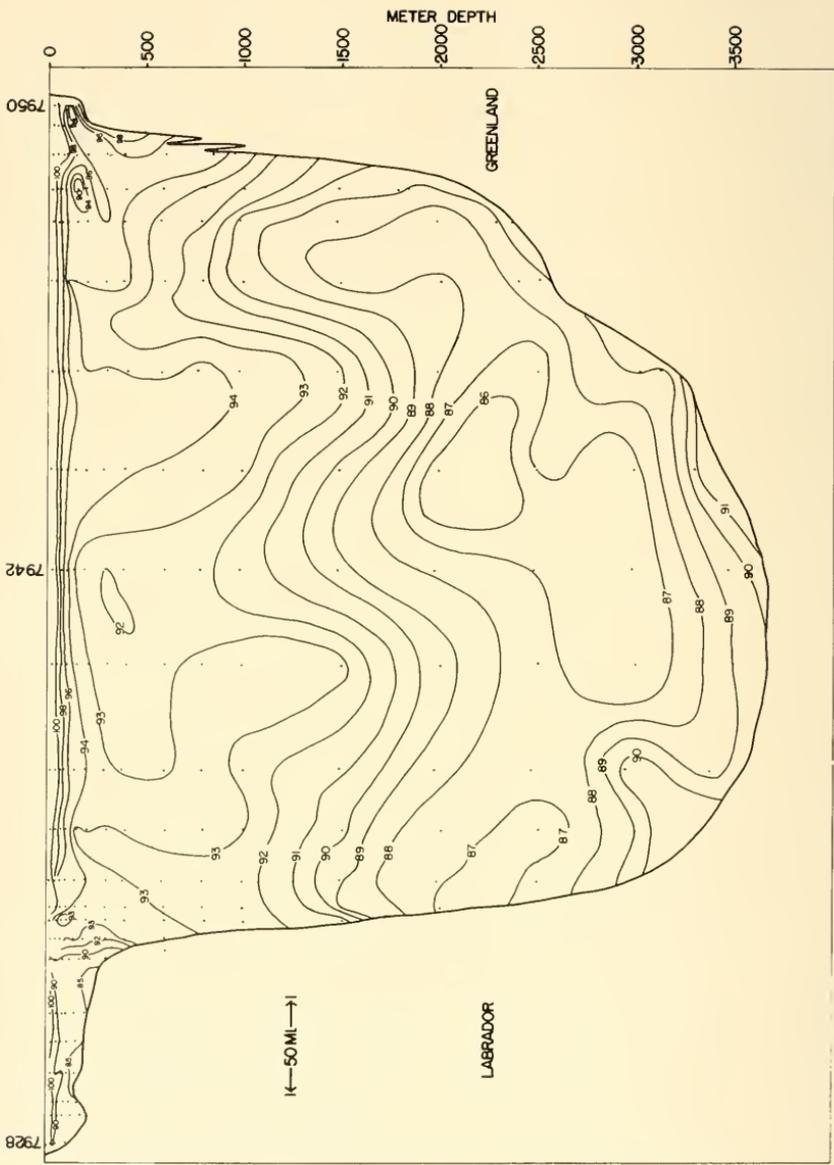


FIGURE 20.—Distribution of dissolved oxygen, in percent saturation, along section between South Wolf Island, Labrador and Cape Farewell, Greenland from data collected 8–11 July 1961.

Irminger Current component a constant mean temperature of 5.5°, then in 1961 the East Greenland Current component had a volume transport of 2.10 which was close to the seasonal normal of 2.14, while the Irminger Current component contributed 3.88 which was well above the seasonal normal of 2.59.

In an attempt to characterize the intermediate water and deep water for an entire occupation of the section, averages have been taken of all observed temperatures and salinities from depths between 450 and 1,750 meters in the central part of the Labrador Sea and scaled values of temperature and salinity at all stations at levels of 2,000, 2,500, 3,000 and 3,500 meters. These values for the 1961 occupation of the section are given below in comparison with averages for the 14-year period 1948-61.

	Temperature		Potential temperature		Salinity	
	1961	Average	1961	Average	1961	Average
Intermediate water .....	3.37	3.32	-----	-----	34.85 <sub>5</sub>	34.87 <sub>0</sub>
2,000 meters .....	3.21	3.20	3.04	3.04	34.89 <sub>6</sub>	34.92 <sub>5</sub>
2,500 meters .....	2.86	2.88	2.66	2.68	34.90 <sub>6</sub>	34.92 <sub>5</sub>
3,000 meters .....	2.51	2.41	2.26	2.17	34.89 <sub>8</sub>	34.91 <sub>8</sub>
3,500 meters .....	2.10	1.92	1.80	1.63	34.87 <sub>5</sub>	34.90 <sub>3</sub>

Dissolved oxygen measurements of samples from the Labrador Sea section were carried out by the method outlined by Jacobsen, J. P., et al.<sup>2</sup> Samples were taken from all levels except the surface. Teflon coated Nansen-type water bottles were used for sampling except for the 25-meter level and at station 7,942 at 3,478 meters where silver coated bottles were used. The sampling technique was essentially that described by Jacobsen and the complete analysis was carried out within 2 hours of the sampling. Titrations were made on each sample until repeated titrations showed a precision of 1 part in 300 or better. Standardizations of the Na<sub>2</sub>S<sub>2</sub>O<sub>3</sub> solution were repeatedly carried out during the cruise, thus insuring the accuracy and compatibility of the titrations. This was accomplished by standardizing with a previously prepared potassium bi-iodate standard. Aliquot samples of the treated sea water were withdrawn by a 50 ml automatic pipette and titrations were made with a micro-burette.

It should be noted here that the saturation values were obtained by the use of the nomogram of Richards and Corwin.<sup>3</sup> Since this nomogram corresponds to the oxygen saturation values of Truesdale, et al.,<sup>4</sup> which are given only to a minimum temperature of 0° C., it

<sup>2</sup> Jacobsen, J. P., Robinson, Rex and Thompson, Thomas G. A review of the determination of dissolved oxygen in sea water by the Winkler method. Union Géodes et Geophys. int., Assoc. d'Océanog Phys., Pub. Scientif. no. 11, 1950.

<sup>3</sup> Richards, Francis A. and Corwin, Nathaniel. Some oceanographic applications of recent determinations of the solubility of oxygen in sea water. Limnol. and Oceanog., vol 1, pp 263-267, 1956.

<sup>4</sup> Truesdale, G. A., Downing, A. L., and Lowden, G. F. The solubility of oxygen in pure water and sea water. J. Appl. Chem., vol 5, (2), pp 53-62, 1955.

was necessary to extrapolate the nomogram for samples from the Labrador Current where negative temperatures were found. This was done in preference to using the saturation tables of Fox<sup>5</sup> since there is some question as to the accuracy of his saturation values especially at low temperatures and low salinities (Truesdale<sup>4</sup>).

Referring to figures 25 and 26, there is some question as to the oxygen values for the 403 and 600 meter levels at station 7935 and the 197 meter level at station 7940. It is believed that these samples were contaminated and therefore they have not been used in construction of the figures.

From the foregoing figures it can be seen that high values of oxygen are characteristic of the entire section; however, some systematic differences do exist and the absolute values appear to be characteristic of the various parent water masses. That is, the Labrador Current and the cold portion of the West Greenland Current have high values of dissolved oxygen as compared to corresponding levels of the central portion of the Labrador Sea; whereas the warm Irminger Current component of the West Greenland Current has less oxygen. Minimum values of oxygen, both as regards ml/l and percent saturation, were found in a band between 2,000 and 3,000 meters. Below this minimum, the oxygen grades toward high values along bottom. The oxygen distribution in this high oxygen bottom water suggests a source near the Greenland side of the section.

If the salinity distribution found in the Labrador Sea section during the postseason survey in July 1960 may be assumed to approximate the conditions existing along the section in the autumn of that year, it is of interest to examine the average salinities at different points along the section, taking averages from the surface to successively deeper levels, to estimate the salinity distribution resulting from vertical convection following surface cooling and wind stirring of autumn and winter storms. In the central part of the Labrador Sea between the offshore portions of the West Greenland Current and the Labrador Current, the horizontal movements are slight and, it has been assumed, of negligible effect on convection. With such a situation, the salinities resulting from convection to bottom would be about 34.88 to 34.89‰ on the Labrador side and 34.90 to 34.91‰ on the Greenland side. Further assumptions involved are that the surface area in question is sufficiently distant from shore that the surface salinities were unaffected by melting or formation of ice and that no significant changes occurred in surface salinities from evaporation or precipitation. The bottom salinities estimated from the 1961 observations are of the order of 0.01<sub>5</sub>‰ fresher than the vertical averages described above.

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<sup>5</sup> Fox, C. J. J. On the coefficients of absorption of nitrogen and oxygen in distilled water and sea water and of atmospheric carbonic acid in sea water. *Faraday Soc. Trans.*, vol 5, pp 68-87, 1909.

The potential bottom temperatures, and consequently the wintertime surface temperatures required for vertical convection to bottom, were about  $1.3^{\circ}$  to  $1.4^{\circ}$  in the deeper parts of the section. In connection with another study, the average April surface temperatures in the five  $1^{\circ}$  rectangles bounded by  $60^{\circ}$  N., and  $61^{\circ}$  N., and  $50^{\circ}$  W., and  $55^{\circ}$  W., are available for comparison with such temperatures. For the decades 1876-85, 1886-95, 1916-25 and 1926-35 the average April surface temperature was warmer than  $1.5^{\circ}$ . The average April surface temperature approximated the required temperature for the decade 1896-1905, and was colder than required during the decades 1906-15, 1936-45 and 1946-55. The rectangles sampled were somewhat north of the Labrador Sea section under consideration and data for some years are fragmentary, but April is probably later than the season of minimum temperature, and it is considered that the historical temperatures indicate that, in many winters, deep vertical convective mixing is possible.

Such an hypothesis requires a mechanism for the reestablishment of conditions found during the summertime such as are shown in figures 23 through 26. The concept of mixing of adjacent waters of differing T-S characteristics within a constant density surface to produce a slightly denser mixed water which sinks to its appropriate new density surface provides such a mechanism around the periphery of the Labrador Sea. Here we have contrasts in temperature and salinity between the Irminger Current component of the West Greenland Current and the adjacent water of the central Labrador Sea and with the adjacent East Greenland Current component of the West Greenland Current. On the Labrador side there are also smaller contrasts between the warmer offshore part of the Labrador Current (derived from the West Greenland Current) and the adjacent water of the Labrador Sea offshore and again the inshore part of the Labrador Current (derived from the Baffinland Current). In each case horizontal gradients of velocity provide the necessary shear for the mixing.

Thus, after the deep convective mixing of wintertime ceases, sinking of mixed water spreading southwestward from beneath the Irminger Current component of the West Greenland Current provides the deep salinity maximum-oxygen minimum at 2,000-3,000 meters and sinking of mixed water spreading northeastward from beneath the offshore part of the Labrador Current provides the temperature maximum-oxygen maximum at about 1,500 meters. In such a system the bottom water, being least affected, is least altered from the winter picture and retains the coldest temperatures.

With water sinking from upper levels there is necessary an outflow of water from the deeper levels of the Labrador Sea. If there is a surface of no horizontal motion at intermediate levels, then the inclination of the deep surfaces of equal density indicate an outflow of deep and bottom water in the southwestern half of the section.

The density surfaces in the deep water are less regularly inclined in the Greenland half and are not determinate in indicating the direction of flow. Because of the magnification of errors of measurement in the integration over large vertical distances, the methods of dynamic topography cannot give us reliable answers here and, because of the low velocities involved, the answer must await an extensive time series of direct observations of the water movement.

One feature of the oxygen distribution (figures 25 and 26) which is unexplained is the tongue of high values extending downward to a depth of greater than 1,000 meters at stations 7943 and 7944. If this were located somewhat to the southwestward it might represent water least disturbed since wintertime convective mixing. The salinities and temperatures, however, indicate that it has been involved in the restoration of summertime conditions.

Other difficulties with the foregoing hypothesis of an annual intermittent circulation cycle involve questions as to the rate of oxygen consumption in the deeper levels, whether necessary horizontal and vertical velocities are reasonable and whether the mechanism can explain the occasional appearance, at levels of 2,500 to 3,000 meters, of small quantities of water of salinity as high as 34.95‰. A need is indicated for a time series of observations to develop information about the fall, winter and spring parts of the seasonal cycle.

## SUMMARY

At the beginning of the 1961 season, there was probably an abnormal division of the Labrador Current into its eastern and western branches with more than the usual proportion following the western branch. Certainly the eastern branch was found to be subnormal, especially south of the latitude of Flemish Cap. The surveys followed the changes in this situation as conditions slowly returned to normal near the end of the season.

1. Five dynamic topographic charts resulting from the four surveys made in the Grand Banks region during the season and the post-season occupation of the Bonavista triangle have been presented.

2. The temperature-salinity characteristics of the three water masses found in the Grand Banks region during the 1961 season have been compared with the means for the 14-year period 1948-61.

3. The volume and heat transports and mean and minimum observed temperatures found during 23 occupations of sections across the Labrador Current in 1961 have been presented in comparison with tentative seasonal normals.

4. The circulation in the intermediate, deep and bottom water of the Labrador Sea has been discussed in the light of the temperature, salinity and oxygen distribution found in 1961 along the section from South Wolf Island, Labrador to Cape Farewell, Greenland.

## TABLE OF OCEANOGRAPHIC DATA

The data collected in 1961 are tabulated below. The individual station headings give the station number, date, geographical position, depth of water and dynamic height of the sea surface used in the construction of the dynamic topographic charts shown in figures 15, 16, 17, 18, 21 and 22. The depths of water are rough approximations, being the uncorrected sonic soundings based on a sounding velocity of 800 fathoms per second and containing an additional mechanical speed error of about 1/60. Where the depths of scaled values are enclosed in parentheses, the data are based on extrapolated vertical distribution curves of temperature or salinity or both. Asterisks appearing before observed temperatures indicate that these temperatures were determined from the depth of reversal and the corrected reading of an unprotected thermometer. The symbol  $\sigma_t$  signifies 1000 (density—1) at atmospheric pressure and temperature  $t$ . Values of dissolved oxygen found at stations 7928–7950 are separately tabulated at the end of the usual tabulation of temperatures and salinities.

### TABLE OF OCEANOGRAPHIC DATA STATIONS OCCUPIED IN 1961

Observed values			Scaled values				Observed values			Scaled values			
Depth, meters	Tem-perature, °C.	Salin-ity, ‰	Depth, meters	Tem-perature, °C.	Salin-ity, ‰	$\sigma_t$	Depth, meters	Tem-perature, °C.	Salin-ity, ‰	Depth, meters	Tem-perature, °C.	Salin-ity, ‰	$\sigma_t$
Station 7589; 2 April; 41°58' N., 50°36' W.; depth 3,910 m.; dynamic height 970.961							Station 7590; 3 April; 41°54' N., 51°55' W.; depth 3,910 m.; dynamic height 971.129						
0	3.42	33.29	0	3.42	33.30	26.52	0	7.15	33.98	0	7.15	33.99	26.63
32	3.10	33.32	25	3.25	33.31	26.54	31	10.99	35.10	25	10.55	35.00	26.88
57	2.39	33.37	50	2.55	33.35	26.63	56	11.20	35.15	50	11.15	35.14	26.88
83	3.56	34.04	75	3.35	33.91	27.01	81	12.13	35.41	75	12.00	35.37	26.90
108	3.23	34.26	100	3.30	34.21	27.25	106	12.14	35.40	100	12.15	35.41	26.90
159	3.76	34.50	150	3.70	34.46	27.41	155	11.01	35.16	150	11.10	35.17	26.91
210	4.40	34.72	200	4.30	34.68	27.52	205	11.39	35.31	200	11.40	35.31	26.96
311	5.06	34.94	300	5.05	34.92	27.63	305	7.89	34.95	300	7.95	34.95	27.26
411	4.76	34.99	400	4.80	34.99	27.71	404	6.64	34.95	400	6.70	34.95	27.44
616	4.23	34.97	600	4.30	34.97	27.75	601	4.63	34.91	600	4.65	34.91	27.66
821	3.81	34.92	800	3.80	34.92	27.77	796	4.22	34.95	800	4.20	34.95	27.75
1,025	3.76	34.95	1,000	3.75	34.95	27.79	997	3.83	34.93	1,000	3.85	34.93	27.77
1,541	3.62	34.95					1,501	3.77	34.95				

# TABLE OF OCEANOGRAPHIC DATA STATIONS OCCUPIED IN 1961 *Continued*

Observed values			Sealed values			$\sigma_t$	Observed values			Sealed values			
Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰		Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	$\sigma_t$
Station 7591; 3 April; 42°20' N., 51°27' W.; depth 2,867 m.; dynamic height 970.999							Station 7595; 3 April; 43°00' N., 50°42' W.; depth 165 m.; dynamic height 971.048						
0	5.50	33.91	0	5.50	33.91	26.78	0	2.22	33.43	0	2.22	33.43	26.71
31	6.63	33.95	25	6.30	33.93	26.69	27	1.03	33.53	25	1.05	33.53	26.88
57	7.61	34.55	50	7.45	34.44	26.94	54	1.84	33.69	50	1.70	33.66	26.94
82	6.36	34.48	75	6.55	34.50	27.11	107	3.50	33.95	75	3.20	33.90	27.00
108	6.55	34.56	100	6.50	34.55	27.15	80	4.99	34.19	100	4.70	34.24	27.04
158	3.03	34.16	150	3.10	34.18	27.24	160	5.25	34.32	150	5.20	34.30	27.11
209	5.26	34.62	200	5.25	34.60	27.35							
314	4.46	34.76	300	4.50	34.74	27.55							
419	4.53	34.88	400	4.50	34.86	27.64							
623	4.58	34.95	600	4.60	34.95	27.70							
824	3.99	34.93	800	3.95	34.93	27.75							
1,030	3.81	34.93	1,000	3.80	34.93	27.77							
1,544	3.57	34.95											
Station 7592; 3 April; 42°41' N., 51°05' W.; depth 2,110 m.; dynamic height 971.065							Station 7596; 3 April; 43°02' N., 50°38' W.; depth 96 m.; dynamic height 971.062						
0	0.55	33.12	0	0.55	33.12	26.58	0	0.48	33.13	0	0.48	33.13	26.60
32	0.21	33.17	25	0.30	33.15	26.62	31	0.58	33.24	25	0.60	33.22	26.66
59	0.17	33.40	50	0.15	33.30	26.75	58	0.37	33.45	50	0.40	33.38	26.79
85	1.88	33.71	75	1.15	33.57	26.90	83	5.17	34.12	75	3.40	33.86	26.96
112	3.63	34.02	100	2.90	33.88	27.02							
163	6.71	34.55	150	6.20	34.49	27.14							
216	6.52	34.59	200	6.60	34.59	27.17							
313	4.38	34.55	300	4.45	34.55	27.40							
404	4.39	34.75	400	4.40	34.71	27.56							
602	4.44	34.92	600	4.45	34.92	27.70							
798	4.42	34.99	800	4.45	34.99	27.75							
1,000	4.03	34.95	1,000	4.05	34.95	27.76							
1,515	3.58	34.93											
Station 7593; 3 April; 42°53' N., 50°52' W.; depth 1,059 m.; dynamic height 971.016							Station 7597; 3 April; 43°17' N., 50°21' W.; depth 71 m.; dynamic height 971.057						
0	3.50	33.56	0	3.50	33.56	26.71	0	1.11	33.23	0	1.11	33.23	26.64
25	3.30	33.64	25	3.30	33.64	26.80	30	2.02	33.47	25	1.85	33.43	26.75
49	3.88	33.96	50	3.90	33.96	26.99	56	3.61	33.91	50	3.15	33.79	26.93
74	4.37	34.03	75	4.40	34.03	27.00							
99	5.29	34.21	100	5.30	34.21	27.04							
147	5.56	34.35	150	5.55	34.36	27.12							
196	5.30	34.43	200	5.25	34.44	27.22							
295	4.27	34.69	300	4.25	34.70	27.54							
393	4.77	34.88	400	4.75	34.88	27.63							
590	4.17	34.92	600	4.15	34.92	27.78							
794	4.11	34.91	800	4.10	34.94	27.75							
1,001	3.95	34.93	1,000	3.95	34.93	27.76							
Station 7594; 3 April; 42°57' N., 50°47' W.; depth 254 m.; dynamic height 971.047							Station 7598; 3 April; 43°01' N., 50°20' W.; depth 91 m.; dynamic height 971.062						
0	3.43	33.50	0	3.43	33.50	26.66	0	-0.19	33.14	0	-0.19	33.14	26.64
30	4.34	33.82	25	4.30	33.81	26.82	31	-0.37	33.25	25	-0.35	33.22	26.71
60	2.86	33.82	50	3.20	33.82	26.94	57	-0.24	33.38	50	-0.30	33.34	26.80
90	2.61	33.81	75	2.65	33.82	26.99	82	0.88	33.59	75	0.60	33.52	26.90
120	5.62	31.86	100	3.35	34.01	27.08							
179	5.95	34.45	150	5.90	34.43	27.13							
239	4.70	34.36	200	5.55	34.44	27.18							
Station 7600; 4 April; 42°39' N., 50°15' W.; depth 2,180 m.; dynamic height 971.014							Station 7599; 3 April; 42°50' N., 50°18' W.; depth 337 m.; dynamic height 971.049						
0	0.74	33.23	0	0.74	33.23	26.66	0	-0.07	33.14	0	-0.07	33.14	26.63
22	0.32	33.33	25	0.35	33.35	26.78	30	-0.06	33.15	25	-0.05	33.15	26.63
44	1.03	33.59	50	1.40	33.65	26.96	55	1.22	33.64	50	0.95	33.52	26.88
66	2.36	33.79	75	3.65	34.01	27.06	80	2.20	33.84	75	2.00	33.80	27.03
89	4.78	34.18	100	4.80	34.22	27.10	105	3.72	34.06	100	3.65	34.05	27.09
133	4.86	34.27	150	5.20	34.35	27.16	153	2.84	34.03	150	2.85	34.04	27.15
177	5.56	34.53	200	5.55	34.64	27.35	203	4.74	34.33	200	4.70	34.31	27.18
278	5.45	34.82	300	5.15	34.80	27.52	302	4.31	34.73	300	4.30	34.72	27.55
385	3.61	34.70	400	3.65	34.71	27.61							
577	4.31	34.90	600	4.30	34.91	27.70							
768	4.30	34.92	800	4.25	34.93	27.73							
962	3.99	34.96	1,000	3.95	34.95	27.77							
1,451	3.69	34.93											

## TABLE OF OCEANOGRAPHIC DATA STATIONS OCCUPIED IN 1961—Continued

Observed values			Sealed values				Observed values			Sealed values			
Depth, meters	Tem-perature, °C.	Salin-ity, ‰	Depth, meters	Tem-perature, °C.	Salin-ity, ‰	$\sigma_t$	Depth, meters	Tem-perature, °C.	Salin-ity, ‰	Depth, meters	Tem-perature, °C.	Salin-ity, ‰	$\sigma_t$
Station 7601: 4 April; 42°23' N., 50°11' W.; depth 3,270 m.; dynamic height 970.988													
0	0.52	33.23	0	0.52	33.23	26.68	0	7.65	34.12	0	7.65	34.13	26.67
32	2.70	33.63	25	2.05	33.49	26.78	30	11.73	35.29	25	11.60	35.22	26.85
59	5.30	34.16	50	4.60	34.02	26.97	55	11.99	35.34	50	12.00	35.34	26.87
86	5.33	34.30	75	5.30	34.24	27.06	79	10.66	35.08	75	10.70	35.09	26.92
113	5.57	34.44	100	5.50	34.38	27.15	104	11.16	35.19	100	11.10	35.19	26.92
165	5.06	34.53	150	5.25	34.51	27.28	151	10.06	35.18	150	10.10	35.18	27.09
218	4.19	34.57	200	4.45	34.55	27.40	200	9.30	35.17	200	9.30	35.17	27.22
323	5.03	34.86	300	4.95	34.82	27.56	298	6.91	34.95	300	6.90	34.95	27.41
427	4.77	34.94	400	4.85	34.93	27.66	395	5.94	34.99	400	5.90	34.99	27.58
636	4.24	34.94	600	4.30	34.94	27.73	588	4.88	35.00	600	4.80	35.00	27.72
844	3.92	34.92	800	4.00	34.93	27.75	781	4.14	34.93	800	4.10	34.93	27.74
1,048	3.83	34.92	1,000	3.85	34.93	27.77	981	3.86	34.93	1,000	3.85	34.93	27.77
							1,488	3.66	34.94				
Station 7602: 4 April; 42°00' N., 50°05' W.; depth 3,640 m.; dynamic height 970.994													
0	3.70	33.38	0	3.70	33.38	26.55	0	13.50	35.66	0	13.50	35.66	26.82
35	3.92	33.77	25	3.80	33.62	26.73	30	13.54	35.67	25	13.55	35.68	26.82
64	5.47	34.25	50	4.80	34.03	26.95	55	13.57	35.67	50	13.55	35.81	26.82
91	5.38	34.32	75	5.40	34.28	27.08	79	12.55	35.45	75	12.75	35.49	26.84
120	7.26	34.84	100	5.95	34.46	27.15	104	12.14	35.35	100	12.15	35.35	26.85
176	7.26	34.86	150	7.25	34.86	27.29	152	12.67	35.52	150	12.65	35.52	26.88
233	5.92	34.79	200	6.70	34.83	27.35	201	12.15	35.42	200	12.15	35.42	26.90
359	5.15	34.87	300	5.45	34.83	27.51	300	10.72	35.27	300	10.70	35.27	27.06
491	4.34	34.94	400	4.85	34.89	27.63	397	8.76	35.13	400	8.65	35.12	27.29
682	4.72	35.02	600	4.55	35.00	27.75	588	5.80	35.01	600	5.65	35.00	27.62
837	3.91	34.95	800	4.05	34.96	27.77	776	4.42	34.94	800	4.40	34.95	27.67
1,042	3.75	34.94	1,000	3.75	34.94	27.79	973	4.18	34.95	1,000	4.15	34.95	27.75
1,546	3.74	34.98					1,469	3.72	34.95				
Station 7603: 4 April; 41°31' N., 50°02' W.; depth 3,900 m.; dynamic height 971.129													
0	5.43	33.53	0	5.43	33.53	26.48	0	15.70	36.10	0	15.70	36.10	26.68
29	5.57	33.67	25	5.55	33.61	26.53	28	15.59	36.08	25	15.60	36.09	26.69
54	12.75	35.56	50	12.70	35.53	26.88	52	15.12	35.98	50	15.20	35.99	26.71
77	12.75	35.55	75	12.75	35.55	26.89	75	13.60	35.70	75	13.60	35.71	26.84
102	12.81	35.56	100	12.80	35.56	26.88	98	13.19	35.62	100	13.15	35.61	26.85
149	12.61	35.53	150	12.60	35.53	26.90	143	12.57	35.49	150	12.55	35.49	26.88
197	11.13	35.36	200	11.00	35.34	27.06	190	12.52	35.47	200	12.35	35.44	26.88
320	6.98	34.93	300	7.65	34.98	27.33	282	11.83	35.32	300	11.35	35.32	26.98
490	5.44	34.84	400	5.90	34.85	27.47	374	10.81	35.33	400	10.50	35.31	27.12
648	5.07	35.00	600	5.20	34.97	27.65	511	8.76	35.18	600	6.35	35.00	27.53
809	4.13	34.93	800	4.15	34.93	27.74	617	6.13	34.98	800	4.75	34.98	27.71
1,000	4.36	35.01	1,000	4.35	35.01	27.78	767	4.91	34.98	1,000	4.15	34.96	27.76
1,462	3.84	34.98					1,139	4.04	34.95				
Station 7604: 4 April; 41°00' N., 50°04' W.; depth 3,822 m.; dynamic height 971.277													
0	16.60	36.29	0	16.60	36.29	26.61	0	4.70	33.48	0	4.70	33.49	26.54
31	16.61	36.28	25	16.60	36.29	26.61	34	4.02	33.49	25	4.15	33.49	26.59
57	16.44	36.24	50	16.55	36.27	26.61	61	6.73	34.21	50	5.85	33.95	26.76
82	14.55	35.88	75	14.85	35.92	26.73	90	6.37	34.20	75	6.55	34.24	26.90
107	14.11	35.84	100	14.25	35.85	26.81	117	6.90	34.43	100	6.35	34.34	26.98
157	12.93	35.47	150	13.05	35.52	26.80	173	6.02	34.34	150	6.35	34.43	27.08
208	12.02	35.28	200	12.15	35.30	26.81	229	7.01	34.73	200	6.50	34.59	27.18
310	11.04	35.35	300	11.15	35.34	27.03	340	5.43	34.72	300	5.90	34.72	27.37
410	10.11	35.41	400	10.20	35.41	27.26	450	4.92	34.83	400	5.05	34.77	27.51
612	6.60	35.04	600	6.80	35.05	27.51	667	4.73	34.99	600	4.75	34.96	27.66
816	5.05	34.98	800	5.15	34.98	27.66	882	4.44	34.98	800	4.55	34.99	27.74
1,018	4.52	35.00	1,000	4.55	35.00	27.75	1,101	4.13	34.98	1,000	4.25	34.98	27.77
1,526	3.77	34.96					1,651	3.63	34.93				
Station 7605: 5 April; 42°00' N., 49°27' W.; depth 3,473 m.; dynamic height 971.057													
0	7.65	34.12	0	7.65	34.13	26.67	0	7.65	34.12	0	7.65	34.13	26.67
30	11.73	35.29	25	11.60	35.22	26.85	30	11.73	35.29	25	11.60	35.22	26.85
55	11.99	35.34	50	12.00	35.34	26.87	55	11.99	35.34	50	12.00	35.34	26.87
79	10.66	35.08	75	10.70	35.09	26.92	79	10.66	35.08	75	10.70	35.09	26.92
104	11.16	35.19	100	11.10	35.19	26.92	104	11.16	35.19	100	11.10	35.19	26.92
151	10.06	35.18	150	10.10	35.18	27.09	151	10.06	35.18	150	10.10	35.18	27.09
200	9.30	35.17	200	9.30	35.17	27.22	200	9.30	35.17	200	9.30	35.17	27.22
298	6.91	34.95	300	6.90	34.95	27.41	298	6.91	34.95	300	6.90	34.95	27.41
395	5.94	34.99	400	5.90	34.99	27.58	395	5.94	34.99	400	5.90	34.99	27.58
588	4.88	35.00	600	4.80	35.00	27.72	588	4.88	35.00	600	4.80	35.00	27.72
781	4.14	34.93	800	4.10	34.93	27.74	781	4.14	34.93	800	4.10	34.93	27.74
981	3.86	34.93	1,000	3.85	34.93	27.77	981	3.86	34.93	1,000	3.85	34.93	27.77
1,488	3.66	34.94					1,488	3.66	34.94				
Station 7606: 5 April; 41°32' N., 48°57' W.; depth 3,458 m.; dynamic height 971.215													
0	13.50	35.66	0	13.50	35.66	26.82	0	13.50	35.66	0	13.50	35.66	26.82
30	13.54	35.67	25	13.55	35.68	26.82	30	13.54	35.67	25	13.55	35.68	26.82
55	13.57	35.67	50	13.55	35.81	26.82	55	13.57	35.67	50	13.55	35.81	26.82
79	12.55	35.45	75	12.75	35.49	26.84	79	12.55	35.45	75	12.75	35.49	26.84
104	12.14	35.35	100	12.15	35.35	26.85	104	12.14	35.35	100	12.15	35.35	26.85
152	12.67	35.52	150	12.65	35.52	26.88	152	12.67	35.52	150	12.65	35.52	26.88
201	12.15	35.42	200	12.15	35.42	26.90	201	12.15	35.42	200	12.15	35.42	26.90
300	10.72	35.27	300	10.70	35.27	27.06	300	10.72	35.27	300	10.70	35.27	27.06
397	8.76	35.13	400	8.65	35.12	27.29	397	8.76	35.13	400	8.65	35.12	27.29
588	5.80	35.01	600	5.65	35.00	27.62	588	5.80	35.01	600	5.65	35.00	27.62
776	4.42	34.94	800	4.40	34.95	27.67	776	4.42	34.94	800	4.40	34.95	27.67
973	4.18	34.95	1,000	4.15	34.95	27.75	973	4.18	34.95	1,000	4.15	34.95	27.75
1,469	3.72	34.95					1,469	3.72	34.95				
Station 7607: 5 April; 41°04' N., 48°27' W.; depth 3,519 m.; dynamic height 971.268													
0	15.70	36.10	0	15.70	36.10	26.68	0	15.70	36.10	0	15.70	36.10	26.68
28	15.59	36.08	25	15.60	36.09	26.69	28	15.59	36.08	25	15.60	36.09	26.69
52	15.12	35.98	50	15.20	35.99	26.71	52	15.12	35.98	50	15.20	35.99	26.71
75	13.60	35.70	75	13.60	35.71	26.84	75	13.60	35.70	75	13.60	35.71	26.84
98	13.19	35.62	100	13.15	35.61	26.85	98	13.19	35.62	100	13.15	35.61	26.85
143	12.57	35.49	150	12.55	35.49	26.88	143	12.57	35.49	150	12.55	35.49	26.88
190	12.52	35.47	200	12.35	35.44	26.88	190	12.52	35.47	200	12.35	35.44	26.88
282	11.83	35.32	300	11.35	35.32	26.98	282	11.83	35.32	300	11.35	35.32	26.98
374	10.81	35.33	400	10.50	35.31	27.12	374	10.81	35.33	400	10.50	35.31	27.12
511	8.76	35.18	600	6.35	35.00	27.53	511	8.76	35.18	600	6.35	35.00	27.53
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## TABLE OF OCEANOGRAPHIC DATA STATIONS OCCUPIED IN 1961—Continued

Observed values			Scaled values				Observed values			Scaled values			
Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	$\sigma_t$	Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	$\sigma_t$
Station 7609; 6 April; 41°58' N., 47°55' W.; depth 3,822 m.; dynamic height 971.022													
0	5.63	33.79	0	5.63	33.79	26.66	0	6.01	33.56	0	6.01	33.57	26.44
36	6.35	34.18	25	6.10	34.04	26.80	30	6.00	33.57	25	6.00	33.57	26.45
66	7.37	34.40	50	6.85	34.33	26.93	54	5.81	33.97	50	5.85	33.91	26.73
97	4.94	34.11	75	6.50	34.32	26.97	78	7.14	34.35	75	6.90	34.30	26.90
126	7.68	34.73	100	5.05	34.11	26.99	103	8.28	34.79	100	8.30	34.77	27.07
186	6.92		150	7.45	34.75	27.18	150	8.31	34.86	150	8.30	34.86	27.14
246	5.08	34.63	200	6.55	34.73	27.29	199	6.86	34.67	200	6.80	34.67	27.21
358	4.82	34.83	300	4.90	34.70	27.47	296	5.02	34.63	300	5.00	34.64	27.41
465	4.99	34.97	400	4.90	34.91	27.64	393	5.43	34.90	400	5.40	34.91	27.58
692	4.62	35.00	600	4.75	35.00	27.73	589	4.69	34.95	600	4.65	34.95	27.70
918	4.32	34.99	800	4.50	35.00	27.75	785	4.58	35.01	800	4.55	35.01	27.76
1,146	3.84	34.95	1,000	4.15	34.98	27.78	980	4.00	34.92	1,000	4.00	34.92	27.74
1,715	3.50	34.94											
Station 7610; 6 April; 42°18' N., 48°33' W.; depth 3,549 m.; dynamic height 970.959													
0	6.91	34.18	0	6.91	34.18	26.81	0	14.10	35.85	0	14.10	35.85	26.84
19	6.91	34.20	25	7.00	34.23	26.83	30	14.13	35.86	25	14.10	35.86	26.85
38	7.76	34.53	50	7.40	34.56	27.04	54	14.17	35.90	50	14.15	35.87	26.86
57	6.93	34.56	75	6.05	34.45	27.13	78	14.15	35.87	75	14.15	35.87	26.86
75	6.06	34.45	100	6.10	34.63	27.27	102	14.16	35.87	100	14.15	35.87	26.86
113	6.20	34.68	150	6.15	34.75	27.36	150	14.16	35.88	150	14.15	35.88	26.85
151	6.14	34.75	200	5.40	34.78	27.48	198	13.61	35.75	200	13.55	35.74	26.87
226	5.17	34.80	300	4.80	34.87	27.62	294	11.47	35.36	300	11.35	35.35	27.00
302	4.80	34.87	400	4.85	34.96	27.68	390	9.62	35.20	400	9.45	35.19	27.21
491	4.86	35.01	600	4.55	34.98	27.73	581	6.57	34.99	600	6.30	34.99	27.53
705	4.19	34.95	800	4.15	34.96	27.76	770	4.78	34.96	800	4.75	34.96	27.69
891	4.18	34.98	1,000	4.10	34.98	27.78	962	4.59		1,000	4.55	34.95	27.71
1,371	3.68	34.94					1,440	4.36	34.93				
Station 7611; 6 April; 42°41' N., 49°17' W.; depth 3,003 m.; dynamic height 970.954													
0	5.29	34.09	0	5.29	34.09	26.94	0	15.58	36.14	0	15.58	36.14	26.74
32	5.17	34.07	25	5.20	34.07	26.94	33	15.56	36.13	25	15.55	36.14	26.74
59	5.14	34.13	50	5.15	34.11	26.97	59	15.59	36.14	50	15.60	36.14	26.73
85	5.69	34.31	75	5.55	34.24	27.03	86	15.52	36.11	75	15.55	36.12	26.73
111	5.59	34.46	100	5.65	34.40	27.14	112	15.51	36.10	100	15.50	36.10	26.73
162	4.93	34.66	150	5.00	34.62	27.40	166	14.99	35.99	150	15.15	36.02	26.74
215	5.41	34.81	200	5.35	34.77	27.47	219	14.57	35.91	200	14.70	35.94	26.78
317	5.24	34.96	300	5.30	34.95	27.62	324		35.78	300	13.85	35.81	26.86
416	4.97	34.98	400	5.00	34.98	27.68	429	12.18	35.57	400	12.60	35.64	26.99
618	4.39	34.98	600	4.40	34.98	27.75	638	7.71	35.05	600	8.55	35.11	27.29
818	4.10	34.97	800	4.10	34.97	27.77	846	5.13	34.94	800	5.45	34.95	27.60
1,006	3.89	34.96	1,000	3.90	34.96	27.79	1,058	4.74	35.01	1,000	4.80	35.00	27.72
1,448	3.58	34.96					1,591	3.92	34.97				
Station 7612; 7 April; 43°20' N., 48°44' W.; depth 2,848 m.; dynamic height 970.925													
0	4.93	34.16	0	4.93	34.16	27.04	0	13.20	35.75	0	13.20	35.75	26.95
32	4.93	34.15	25	4.95	34.15	27.03	29	13.27	35.76	25	13.25	35.76	26.95
58	6.03	34.45	50	5.95	34.41	27.11	54	13.28	35.75	50	13.30	35.75	26.93
84	5.34	34.39	75	5.60	34.41	27.16	77	13.28	35.74	75	13.30	35.74	26.92
110	4.19	34.39	100	4.65	34.39	27.25	102	13.27	35.74	100	13.30	35.74	26.92
161	3.65	34.52	150	3.70	34.49	27.43	119	13.28	35.76	150	13.25	35.76	26.95
213	4.39	34.75	200	4.20	34.70	27.53	197	12.80	35.65	200	12.80	35.64	26.95
317	5.14	34.98	300	5.10	34.97	27.66	293	11.75	35.46	300	11.65	35.45	27.02
420	4.48	34.93	400	4.55	34.94	27.70	389	10.24	35.24	400	10.10	35.22	27.13
622	4.01	34.91	600	4.10	34.94	27.75	581	7.81	35.09	600	7.60	35.09	27.42
823	3.68	34.91	800	3.75	34.91	27.76	772	5.73	35.05	800	5.60	35.05	27.66
1,027	3.51	34.90	1,000	3.55	34.91	27.78	964	5.01	35.02	1,000	4.90	35.02	27.72
1,539	3.47	34.91					1,443	3.81	34.95				
Station 7613; 7 April; 43°13' N., 47°42' W.; depth 3,458 m.; dynamic height 971.067													
0	6.01	33.56	0	6.01	33.56	26.44	0	6.01	33.56	0	6.01	33.57	26.44
30	6.00	33.57	25	6.00	33.57	26.45	30	6.00	33.57	25	6.00	33.57	26.45
54	5.81	33.97	50	5.85	33.91	26.73	54	5.81	33.97	50	5.85	33.91	26.73
78	7.14	34.35	75	6.90	34.30	26.90	78	7.14	34.35	75	6.90	34.30	26.90
103	8.28	34.79	100	8.30	34.77	27.07	103	8.28	34.79	100	8.30	34.77	27.07
150	8.31	34.86	150	8.30	34.86	27.14	150	8.31	34.86	150	8.30	34.86	27.14
199	6.86	34.67	200	6.80	34.67	27.21	199	6.86	34.67	200	6.80	34.67	27.21
296	5.02	34.63	300	5.00	34.64	27.41	296	5.02	34.63	300	5.00	34.64	27.41
393	5.43	34.90	400	5.40	34.91	27.58	393	5.43	34.90	400	5.40	34.91	27.58
589	4.69	34.95	600	4.65	34.95	27.70	589	4.69	34.95	600	4.65	34.95	27.70
785	4.58	35.01	800	4.55	35.01	27.76	785	4.58	35.01	800	4.55	35.01	27.76
980	4.00	34.92	1,000	4.00	34.92	27.74	980	4.00	34.92	1,000	4.00	34.92	27.74
Station 7614; 7 April; 42°57' N., 46°51' W.; depth 4,186 m.; dynamic height 971.254													
0	14.10	35.85	0	14.10	35.85	26.84	0	14.10	35.85	0	14.10	35.85	26.84
30	14.13	35.86	25	14.10	35.86	26.85	30	14.13	35.86	25	14.10	35.86	26.85
54	14.17	35.90	50	14.15	35.87	26.86	54	14.17	35.90	50	14.15	35.87	26.86
78	14.15	35.87	75	14.15	35.87	26.86	78	14.15	35.87	75	14.15	35.87	26.86
102	14.16	35.87	100	14.15	35.87	26.86	102	14.16	35.87	100	14.15	35.87	26.86
150	14.16	35.88	150	14.15	35.88	26.85	150	14.16	35.88	150	14.15	35.88	26.85
198	13.61	35.75	200	13.55	35.74	26.87	198	13.61	35.75	200	13.55	35.74	26.87
294	11.47	35.36	300	11.35	35.35	27.00	294	11.47	35.36	300	11.35	35.35	27.00
390	9.62	35.20	400	9.45	35.19	27.21	390	9.62	35.20	400	9.45	35.19	27.21
581	6.57	34.99	600	6.30	34.99	27.53	581	6.57	34.99	600	6.30	34.99	27.53
770	4.78	34.96	800	4.75	34.96	27.69	770	4.78	34.96	800	4.75	34.96	27.69
962	4.59		1,000	4.55	34.95	27.71	962	4.59		1,000	4.55	34.95	27.71
1,440	4.36	34.93					1,440	4.36	34.93				
Station 7615; 7 April; 42°46' N., 45°50' W.; depth 4,732 m.; dynamic height 971.396													
0	15.58	36.14	0	15.58	36.14	26.74	0	15.58	36.14	0	15.58	36.14	26.74
33	15.56	36.13	25	15.55	36.14	26.74	33	15.56	36.13	25	15.55	36.14	26.74
59	15.59	36.14	50	15.60	36.14	26.73	59	15.59	36.14	50	15.60	36.14	26.73
86	15.52	36.11	75	15.55	36.12	26.73	86	15.52	36.11	75	15.55	36.12	26.73
112	15.51	36.10	100	15.50	36.10	26.73	112	15.51	36.10	100	15.50	36.10	26.73
166	14.99	35.99	150	15.15	36.02	26.74	166	14.99	35.99	150	15.15	36.02	26.74
219	14.57	35.91	200	14.70	35.94	26.78	219	14.57	35.91	200	14.70	35.94	26.78
324		35.78	300	13.85	35.81	26.86	324		35.78	300	13.85	35.81	26.86
429	12.18	35.57	400	12.60	35.64	26.99	429	12.18	35.57	400	12.60	35.64	26.99
638	7.71	35.05	600	8.55	35.11	27.29	638	7.71	35.05	600	8.55	35.11	27.29
846	5.13	34.94	800	5.45	34.95	27.60	846	5.13	34.94	800	5.45	34.95	27.60

## TABLE OF OCEANOGRAPHIC DATA STATIONS OCCUPIED IN 1961 - Continued

Observed values			Sealed values				Observed values			Sealed values			
Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	$\sigma_t$	Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	$\sigma_t$
Station 7617; 8 April; 43°16' N., 46°06' W.; depth 4,650 m.; dynamic height 971.238													
0	12.94	35.67	0	12.94	35.67	26.94	0	5.22	34.23	0	5.22	34.24	27.07
32	12.93	35.68	25	12.95	35.68	26.95	32	5.24	34.26	25	5.25	34.26	27.08
59	12.93	35.66	50	12.95	35.67	26.94	58	5.22	34.25	50	5.20	34.25	27.08
85	12.71	35.63	75	12.80	35.65	26.95	84	5.49	34.43	75	5.40	34.34	27.13
111	12.63	35.59	100	12.65	35.61	26.95	110	5.69	34.66	100	5.65	34.64	27.33
163	12.47	35.56	150	12.50	35.57	26.95	161	5.70	34.65	150	5.70	34.65	27.34
215	12.16	35.48	200	12.25	35.51	26.96	213	4.70	34.71	200	4.85	34.70	27.48
321	10.63	35.24	300	11.05	35.30	27.02	317	4.29	34.83	300	4.35	34.81	27.62
424	6.59	34.62	400	7.35	34.71	27.16	422	4.30	34.91	400	4.30	34.91	27.70
632	4.61	34.72	600	4.80	34.69	27.47	623	3.96	34.91	600	4.00	34.91	27.74
839	4.47	34.92	800	4.50	34.89	27.67	820	3.71	34.91	800	3.70	34.91	27.77
1,045	4.53	35.00	1,000	4.50	35.00	27.75	1,023	3.60	34.92	1,000	3.60	34.92	27.79
1,558	3.88	34.97					1,532	3.43	34.92				
Station 7621; 9 April; 44°00' N., 18°16' W.; depth 3,650 m.; dynamic height 970.932													
0	5.22	34.23	0	5.22	34.24	27.07	0	1.68	32.98	0	1.68	32.98	26.40
32	5.24	34.26	25	5.25	34.26	27.08	32	1.71	33.06	25	1.70	33.02	26.43
58	5.22	34.25	50	5.20	34.25	27.08	58	6.37	34.54	50	4.50	34.01	26.97
84	5.49	34.43	75	5.40	34.34	27.13	84	7.11	34.67	75	6.90	34.63	27.16
110	5.69	34.66	100	5.65	34.64	27.33	110	7.59	34.77	100	7.45	34.74	27.17
161	5.70	34.65	150	5.70	34.65	27.34	161	5.02	34.43	150	5.55	34.48	27.22
213	4.70	34.71	200	4.85	34.70	27.48	213	3.83	34.42	200	4.00	34.42	27.35
317	4.29	34.83	300	4.35	34.81	27.62	317	5.06	34.77	300	4.90	34.72	27.49
422	4.30	34.91	400	4.30	34.91	27.70	420	5.26	34.99	400	5.25	34.97	27.64
623	3.96	34.91	600	4.00	34.91	27.74	624	4.58	34.98	600	4.65	34.99	27.73
820	3.71	34.91	800	3.70	34.91	27.77	825	3.91	34.92	800	4.00	34.93	27.75
1,023	3.60	34.92	1,000	3.60	34.92	27.79	1,028	3.68	34.87	1,000	3.70	34.88	27.74
1,532	3.43	34.92					1,537	3.62	34.89				
Station 7618; 8 April; 43°28' N., 46°41' W.; depth 4,500 m.; dynamic height 971.271													
0	12.72	35.57	0	12.72	35.57	26.91	0	1.68	32.98	0	1.68	32.98	26.40
30	12.72	35.56	25	12.70	35.57	26.91	32	1.71	33.06	25	1.70	33.02	26.43
55	12.75	35.57	50	12.75	35.57	26.90	58	6.37	34.54	50	4.50	34.01	26.97
79	12.75	35.58	75	12.75	35.58	26.91	84	7.11	34.67	75	6.90	34.63	27.16
104	12.83	35.62	100	12.80	35.61	26.92	110	7.59	34.77	100	7.45	34.74	27.17
154	12.83	35.67	150	12.85	35.67	26.96	161	5.02	34.43	150	5.55	34.48	27.22
203	12.97	35.71	200	12.95	35.71	26.97	213	3.83	34.42	200	4.00	34.42	27.35
301	13.16	35.78	300	13.15	35.78	26.98	317	5.06	34.77	300	4.90	34.72	27.49
400	11.35	35.41	400	11.35	35.41	27.03	420	5.26	34.99	400	5.25	34.97	27.64
596	7.43	35.12	600	7.30	35.11	27.48	624	4.58	34.98	600	4.65	34.99	27.73
793	4.94	34.98	800	4.90	34.98	27.69	825	3.91	34.92	800	4.00	34.93	27.75
990	4.52	34.98	1,000	4.50	34.98	27.74	1,028	3.68	34.87	1,000	3.70	34.88	27.74
							1,537	3.62	34.89				
Station 7622; 9 April; 44°08' N., 48°58' W.; depth 1,640 m.; dynamic height 971.014													
0	1.68	32.98	0	1.68	32.98	26.40	0	0.45	33.12	0	0.45	33.12	26.59
32	1.71	33.06	25	1.70	33.02	26.43	28	5.35	33.25	25	4.95	33.21	26.29
58	6.37	34.54	50	4.50	34.01	26.97	53	7.17	34.64	50	7.00	34.47	27.02
84	7.11	34.67	75	6.90	34.63	27.16	78	7.98	34.81	75	7.90	34.80	27.15
110	7.59	34.77	100	7.45	34.74	27.17	102	8.37	34.91	100	8.35	34.91	27.17
161	5.02	34.43	150	5.55	34.48	27.22	153	6.85	34.68	150	6.90	34.69	27.21
213	3.83	34.42	200	4.00	34.42	27.35	203	6.63	34.78	200	6.65	34.78	27.31
317	5.06	34.77	300	4.90	34.72	27.49	303	5.29	34.85	300	5.30	34.85	27.54
420	5.26	34.99	400	5.25	34.97	27.64	405	4.85	34.94	400	4.85	34.94	27.67
624	4.58	34.98	600	4.65	34.99	27.73	608	4.14	34.92	600	4.15	34.92	27.73
825	3.91	34.92	800	4.00	34.93	27.75							
1,028	3.68	34.87	1,000	3.70	34.88	27.74							
1,537	3.62	34.89											
Station 7619; 8-9 April; 43°41' N., 47°18' W.; depth 4,390 m.; dynamic height 971.171													
0	10.60	34.96	0	10.60	34.96	26.83	0	0.45	33.12	0	0.45	33.12	26.59
31	10.60	34.96	25	10.60	34.96	26.83	28	5.35	33.25	25	4.95	33.21	26.29
56	12.70	35.50	50	12.50	35.45	26.86	53	7.17	34.64	50	7.00	34.47	27.02
81	12.81	35.51	75	12.75	35.51	26.86	78	7.98	34.81	75	7.90	34.80	27.15
106	13.29	35.65	100	13.25	35.64	26.86	102	8.37	34.91	100	8.35	34.91	27.17
156	12.42	35.44	150	12.50	35.46	26.87	153	6.85	34.68	150	6.90	34.69	27.21
206	12.01	35.40	200	12.05	35.41	26.92	203	6.63	34.78	200	6.65	34.78	27.31
306	9.57	35.14	300	9.70	35.15	27.14	303	5.29	34.85	300	5.30	34.85	27.54
406	8.11	35.10	400	8.20	35.10	27.34	405	4.85	34.94	400	4.85	34.94	27.67
605	5.27	35.00	600	5.30	35.01	27.67	608	4.14	34.92	600	4.15	34.92	27.73
803	4.07	34.90	800	4.05	34.91	27.73							
1,001	3.78	34.91	1,000	3.80	34.91	27.76							
1,492	3.53	34.90											
Station 7623; 9 April; 44°09' N., 48°58' W.; depth 638 m.; dynamic height 971.010													
0	0.79	33.23	0	0.79	33.23	26.66	0	0.79	33.23	0	0.79	33.23	26.66
25	0.66	33.28	25	0.66	33.28	26.71	25	0.66	33.28	25	0.66	33.28	26.71
50	2.97	33.81	50	2.97	33.81	26.96	50	2.97	33.81	50	2.97	33.81	26.96
75	3.29	34.02	75	3.29	34.02	27.10	75	3.29	34.02	75	3.29	34.02	27.10
100	4.72	34.30	100	4.72	34.30	27.18	100	4.72	34.30	100	4.72	34.30	27.18
150	4.60	34.50	150	4.60	34.50	27.35	150	4.60	34.50	150	4.60	34.50	27.35
Station 7624; 9 April; 44°11' N., 49°04' W.; depth 182 m.; dynamic height 970.984													
0	0.79	33.23	0	0.79	33.23	26.66	0	0.79	33.23	0	0.79	33.23	26.66
25	0.66	33.28	25	0.66	33.28	26.71	25	0.66	33.28	25	0.66	33.28	26.71
50	2.97	33.81	50	2.97	33.81	26.96	50	2.97	33.81	50	2.97	33.81	26.96
75	3.29	34.02	75	3.29	34.02	27.10	75	3.29	34.02	75	3.29	34.02	27.10
100	4.72	34.30	100	4.72	34.30	27.18	100	4.72	34.30	100	4.72	34.30	27.18
150	4.60	34.50	150	4.60	34.50	27.35	150	4.60	34.50	150	4.60	34.50	27.35
Station 7625; 9 April; 44°12.5' N., 49°09' W.; depth 91 m.; dynamic height 970.986													
0	0.63	33.20	0	0.63	33.20	26.64	0	0.63	33.20	0	0.63	33.20	26.64
27	0.87	33.25	25	0.85	33.24	26.66	27	0.87	33.25	25	0.85	33.24	26.66
54	4.57	34.01	50	4.20	33.91	26.92	54	4.57	34.01	50	4.20	33.91	26.92
81	5.45	34.39	75	5.35	34.34	27.13	81	5.45	34.39	75	5.35	34.34	27.13

## TABLE OF OCEANOGRAPHIC DATA STATIONS OCCUPIED IN 1961—Continued

Observed values			Scaled values				Observed values			Scaled values			
Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	$\sigma_t$	Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	$\sigma_t$
Station 7626; 9 April; 44°13' N., 49°14' W.; depth 53 m.; dynamic height 970.991													
0	0.61	33.16	0	0.61	33.16	26.61	0	2.02	33.57	0	2.02	33.57	26.85
26	0.45	33.15	25	0.45	33.15	26.61	32	3.40	33.89	25	3.35	33.84	26.95
52	1.50	33.53	50	1.40	33.50	26.84	58	3.18	34.00	50	3.25	33.96	27.05
							84	3.12	34.28	75	3.15	34.20	27.26
							110	3.66	34.47	100	3.45	34.40	27.39
							162	4.69	34.72	150	4.50	34.68	27.49
							214	4.83	34.85	200	4.80	34.83	27.59
							319	4.77	34.94	300	4.80	34.92	27.66
							422	4.84	34.99	400	4.85	34.99	27.70
							624	4.23	34.96	600	4.30	34.96	27.75
							823	3.94	34.94	800	3.95	34.94	27.77
							1,046	3.65	34.92	1,000	3.70	34.92	27.78
							1,635	3.48	34.93				
Station 7627; 9 April; 41°59' N., 49°24' W.; depth 67 m.; dynamic height 971.001													
0	-0.20	32.99	0	-0.20	32.99	26.52	0	6.49	34.33	0	6.49	34.33	26.98
28	-0.17	33.04	25	-0.15	33.04	26.55	30	6.47	34.32	25	6.45	34.33	26.99
52	-0.30	33.16	50	-0.30	33.15	26.65	55	6.34	34.34	50	6.35	34.34	27.01
							79	6.30	34.37	75	6.30	34.37	27.04
							104	6.70	34.58	100	6.70	34.58	27.15
							153	6.01	34.52	150	6.00	34.52	27.20
							202	5.93	34.65	200	5.95	34.65	27.30
							308	3.76	34.60	300	3.75	34.60	27.52
							405	5.05	34.93	400	5.00	34.92	27.63
							614	4.18	34.91	600	4.20	34.91	27.72
							815	4.02	34.91	800	4.05	34.91	27.73
							1,015	3.92	34.95	1,000	3.95	34.95	27.78
							1,514	3.59	34.93				
Station 7628; 9 April; 44°56' N., 49°08' W.; depth 89 m.; dynamic height 971.008													
0	-0.53	32.92	0	-0.53	32.92	26.47	0	6.49	34.33	0	6.49	34.33	26.98
32	-0.57	32.95	25	-0.55	32.95	26.50	30	6.47	34.32	25	6.45	34.33	26.99
58	-0.65	33.00	50	-0.65	32.98	26.53	55	6.34	34.34	50	6.35	34.34	27.01
84	0.06	33.31	75	-0.30	33.16	26.66	79	6.30	34.37	75	6.30	34.37	27.04
							104	6.70	34.58	100	6.70	34.58	27.15
							153	6.01	34.52	150	6.00	34.52	27.20
							202	5.93	34.65	200	5.95	34.65	27.30
							308	3.76	34.60	300	3.75	34.60	27.52
							405	5.05	34.93	400	5.00	34.92	27.63
							614	4.18	34.91	600	4.20	34.91	27.72
							815	4.02	34.91	800	4.05	34.91	27.73
							1,015	3.92	34.95	1,000	3.95	34.95	27.78
							1,514	3.59	34.93				
Station 7629; 9 April; 44° 54.5' N., 48°59' W.; depth 673 m.; dynamic height 970.992													
0	-0.52	32.97	0	-0.52	32.97	26.51	0	6.49	34.33	0	6.49	34.33	26.98
31	-0.62	33.00	25	-0.60	32.99	26.53	30	6.47	34.32	25	6.45	34.33	26.99
55	-0.01	33.21	50	-0.20	33.17	26.66	55	6.34	34.34	50	6.35	34.34	27.01
80	2.92	33.90	75	2.30	33.78	26.99	79	6.30	34.37	75	6.30	34.37	27.04
105	6.49	34.39	100	5.95	34.32	27.04	104	6.70	34.58	100	6.70	34.58	27.15
154	7.97	34.85	150	7.95	34.84	27.18	153	6.01	34.52	150	6.00	34.52	27.20
204	6.14	34.74	200	6.25	34.74	27.34	202	5.93	34.65	200	5.95	34.65	27.30
307	3.89	34.81	300	3.95	34.81	27.66	308	3.76	34.60	300	3.75	34.60	27.52
410	4.14	34.91	400	4.15	34.91	27.72	405	5.05	34.93	400	5.00	34.92	27.63
626	3.92	34.91	600	3.95	34.91	27.74	614	4.18	34.91	600	4.20	34.91	27.72
							815	4.02	34.91	800	4.05	34.91	27.73
							1,015	3.92	34.95	1,000	3.95	34.95	27.78
							1,514	3.59	34.93				
Station 7630; 10 April; 44°52.5' N., 48°47' W.; depth 1,784 m.; dynamic height 971.026													
0	-0.48	33.01	0	-0.48	33.01	26.54	0	6.49	34.33	0	6.49	34.33	26.98
33	-0.49	33.01	25	-0.50	33.02	26.55	30	6.47	34.32	25	6.45	34.33	26.99
59	0.03	33.61	50	-0.30	33.38	26.84	55	6.34	34.34	50	6.35	34.34	27.01
86	3.32	34.10	75	2.10	33.94	27.14	79	6.30	34.37	75	6.30	34.37	27.04
113	4.96	34.37	100	4.35	34.26	27.18	104	6.70	34.58	100	6.70	34.58	27.15
165	5.43	34.43	150	5.40	34.42	27.19	153	6.01	34.52	150	6.00	34.52	27.20
218	5.36	34.44	200	5.40	34.44	27.21	202	5.93	34.65	200	5.95	34.65	27.30
321	2.98	34.52	300	3.25	34.49	27.48	308	3.76	34.60	300	3.75	34.60	27.52
422	4.59	34.87	400	4.35	34.81	27.62	405	5.05	34.93	400	5.00	34.92	27.63
618	4.49	34.97	600	4.50	34.97	27.73	614	4.18	34.91	600	4.20	34.91	27.72
806	4.04	34.93	800	4.05	34.93	27.74	815	4.02	34.91	800	4.05	34.91	27.73
1,011	3.78	34.88	1,000	3.80	34.95	27.75	1,015	3.92	34.95	1,000	3.95	34.95	27.78
1,536	3.64	34.92					1,514	3.74	34.92				
Station 7631; 10 April; 44°49.5' N., 48°30' W.; depth 2,548 m.; dynamic height 970.974													
0	-0.23	33.08	0	-0.23	33.08	26.59	0	6.49	34.33	0	6.49	34.33	26.98
31	1.26	33.57	25	0.75	33.56	26.93	30	6.47	34.32	25	6.45	34.33	26.99
56	4.49	34.21	50	4.25	34.18	27.13	55	6.34	34.34	50	6.35	34.34	27.01
81	4.14	34.21	75	4.25	34.21	27.15	79	6.30	34.37	75	6.30	34.37	27.04
106	3.54	34.21	100	3.65	34.21	27.22	104	6.70	34.58	100	6.70	34.58	27.15
156	3.66	34.37	150	3.65	34.35	27.33	153	6.01	34.52	150	6.00	34.52	27.20
206	4.79	34.64	200	4.75	34.62	27.42	202	5.93	34.65	200	5.95	34.65	27.30
300	3.99	34.67	300	4.00	34.67	27.45	308	3.76	34.60	300	3.75	34.60	27.52
388	5.22	34.96	400	5.20	34.96	27.64	405	5.05	34.93	400	5.00	34.92	27.63
587	4.27	34.94	600	4.25	34.94	27.73	614	4.18	34.91	600	4.20	34.91	27.72
789	4.08	34.94	800	4.10	34.94	27.75	815	4.02	34.91	800	4.05	34.91	27.73
989	3.68	34.89	1,000	3.70	34.90	27.76	1,015	3.92	34.95	1,000	3.95	34.95	27.78
1,495	3.52	34.90					1,514	3.60	34.92				
Station 7632; 10 April; 44°44' N., 47°58' W.; depth 3,367 m.; dynamic height 970.916													
0	2.02	33.57	0	2.02	33.57	26.85	0	6.49	34.33	0	6.49	34.33	26.98
32	3.40	33.89	25	3.35	33.84	26.95	30	6.47	34.32	25	6.45	34.33	26.99
58	3.18	34.00	50	3.25	33.96	27.05	55	6.34	34.34	50	6.35	34.34	27.01
84	3.12	34.28	75	3.15	34.20	27.26	79	6.30	34.37	75	6.30	34.37	27.04
110	3.66	34.47	100	3.45	34.40	27.39	104	6.70	34.58	100	6.70	34.58	27.15
162	4.69	34.72	150	4.50	34.68	27.49	153	6.01	34.52	150	6.00	34.52	27.20
214	4.83	34.85	200	4.80	34.83	27.59	202	5.93	34.65	200	5.95	34.65	27.30
319	4.77	34.94	300	4.80	34.92	27.66	308	3.76	34.60	300	3.75	34.60	27.52
422	4.84	34.99	400	4.85	34.99	27.70	405	5.05	34.93	400	5.00	34.92	27.63
624	4.23	34.96	600	4.30	34.96	27.75	614	4.18	34.91	600	4.20	34.91	27.72
823	3.94	34.94	800	3.95	34.94	27.77	815	4.02	34.91	800	4.05	34.91	27.73
1,046	3.65	34.92	1,000	3.70	34.92	27.78	1,015	3.92	34.95	1,000	3.95	34.95	27.78
1,635	3.48	34.93					1,514	3.59	34.93				
Station 7633; 10 April; 44°36' N., 47°16' W.; depth 3,913 m.; dynamic height 971.002													
0	6.49	34.33	0	6.49	34.33	26.98	0	6.49	34.33	0	6.49	34.33	26.98
30	6.47	34.32	25	6.45	34.33	26.99	30	6.47	34.32	25	6.45	34.33	26.99
55	6.34	34.34	50	6.35	34.34	27.01	55	6.34	34.34	50	6.35	34.34	27.01
79	6.30	34.37	75	6.30	34.37	27.04	79	6.30	34.37	75	6.30	34.37	27.04

## TABLE OF OCEANOGRAPHIC DATA STATIONS OCCUPIED IN 1961—Continued

Observed values			Scaled values				Observed values			Scaled values			
Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	$\sigma_t$	Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	$\sigma_t$
Station 7636; 10 April; 44°18' N., 45°15' W.; depth 4,180 m.; dynamic height 971.183							Station 7640; 12 April; 45°21.5' N., 46°42' W.; depth 3,180 m.; dynamic height 970.933						
0	10.85	35.17	0	10.85	35.17	26.95	0	5.79	34.49	0	5.79	34.49	27.20
32	10.90	35.15	25	10.90	35.16	26.94	32	5.55	34.48	25	5.60	34.48	27.21
57	11.26	35.24	50	11.15	35.21	26.93	58	5.43	34.46	50	5.50	34.47	27.22
83	11.59	35.33	75	11.50	35.32	26.95	84	5.34	34.45	75	5.35	34.45	27.22
108	11.61	35.33	100	11.60	35.33	26.94	110	5.76	34.55	100	5.60	34.51	27.24
161	12.43	35.54	150	12.30	35.50	26.94	161	5.93	34.79	150	5.95	34.78	27.40
212	12.65	35.58	200	12.65	35.58	26.93	213	4.85	34.76	200	5.00	34.76	27.51
315	9.30	35.05	300	9.45	35.07	27.12	316	4.68	34.83	300	4.70	34.82	27.59
419	8.43	35.13	400	8.65	35.13	27.30	418	4.99	34.98	400	4.90	34.97	27.69
625	5.78	35.04	600	5.95	35.05	27.62	622	4.10	34.91	600	4.15	34.92	27.73
835	4.85	35.00	800	4.95	35.01	27.71	828	3.78	34.92	800	3.80	34.92	27.77
1,048	4.26	34.97	1,000	4.35	34.98	27.76	1,035	3.53	34.90	1,000	3.55	34.90	27.77
1,586	3.59	34.92					1,554	3.45	34.92				
Station 7637; 11 April; 44°50' N., 49°14' W.; depth 4,460 m.; dynamic height 970.984							Station 7641; 12 April; 45°19' N., 47°30' W.; depth 2,640 m.; dynamic height 970.959						
0	4.24	34.08	0	4.24	34.08	27.05	0	8.93	35.02	0	8.93	35.02	27.17
34	4.56	34.07	25	4.30	34.07	27.04	28	8.93	35.02	25	8.95	35.02	27.17
61	5.38	34.24	50	5.00	34.16	27.03	51	8.94	35.02	50	8.95	35.02	27.16
89	5.93	34.40	75	5.60	34.31	27.08	74	8.66	34.97	75	8.65	34.97	27.17
116	7.07	34.65	100	6.55	34.53	27.13	97	8.12	34.84	100	7.95	34.82	27.16
170	5.53	34.57	150	6.00	34.59	27.25	144	4.64	34.45	150	4.75	34.48	27.31
225	5.13	34.68	200	5.25	34.62	27.37	190	5.43	34.69	200	5.35	34.71	27.43
327	5.44	34.90	300	5.35	34.87	27.55	281	4.63	34.76	300	4.70	34.80	27.57
423	4.40	34.81	400	4.60	34.83	27.61	357	4.97	34.94	400	4.90	34.94	27.65
601	4.28	34.94	600	4.30	34.94	27.72	574	4.41	34.94	600	4.30	34.94	27.72
789	3.96	34.94	800	3.95	34.94	27.77	750	3.96	34.92	800	3.90	34.92	27.76
971	3.72	34.90	1,000	3.70	34.90	27.67	947	3.76	34.91	1,000	3.75	34.91	27.76
1,404	3.58	34.92					1,459	3.56	34.93				
Station 7638; 11 April; 45°17' N., 45°13' W.; depth 2,800 m.; dynamic height 970.912							Station 7642; 12 April; 45°32' N., 48°04' W.; depth 1,092 m.; dynamic height 970.962						
0	4.99	34.38	0	4.99	34.38	27.21	0	-0.58	33.09	0	-0.58	33.09	26.61
32	5.10	34.40	25	5.05	34.39	27.21	33	-0.53	33.12	25	-0.55	33.11	26.62
59	5.45	34.46	50	5.35	34.45	27.22	59	-0.71	33.58	50	-0.25	33.44	26.87
85	5.58	34.47	75	5.60	34.47	27.21	86	1.69	34.89	75	1.45	33.79	27.07
111	5.12	34.62	100	5.30	34.56	27.31	113	1.32	34.00	100	1.50	33.95	27.19
163	4.77	34.70	150	4.80	34.68	27.47	165	1.99	34.27	150	1.75	34.20	27.37
215	5.43	34.91	200	5.35	34.89	27.57	217	2.90	34.51	200	2.55	34.45	27.51
320	3.80	34.79	300	3.85	34.81	27.67	318	4.29	34.83	300	4.15	34.81	27.64
423	3.75	34.82	400	3.75	34.81	27.68	415	4.20	34.87	400	4.20	34.87	27.69
631	3.83	34.89	600	3.80	34.88	27.73	618	3.97	34.90	600	4.00	34.90	27.73
838	3.73	34.90	800	3.75	34.90	27.76	821	3.72	34.90	800	3.75	34.90	27.75
1,016	3.61	34.89	1,000	3.65	34.89	27.76	1,023	3.68	34.89	1,000	3.70	34.90	27.76
1,564	3.54	34.91											
Station 7639; 11 April; 45°19' N., 45°58' W.; depth 3,620 m.; dynamic height 970.982							Station 7643; 12 April; 45°35' N., 48°09' W.; depth 619 m.; dynamic height 970.974						
0	8.86	34.96	0	8.86	34.96	27.13	0	-0.19	33.18	0	-0.19	33.18	26.67
32	8.88	34.97	25	8.90	34.97	27.13	31	-0.07	33.24	25	-0.10	33.22	26.70
58	8.92	34.96	50	8.90	34.96	27.12	56	0.56	33.50	50	0.40	33.41	26.83
84	8.87	34.96	75	8.90	34.96	27.13	81	1.62	33.85	75	1.45	33.79	27.07
110	6.56	34.57	100	7.25	34.66	27.14	106	1.91	34.02	100	1.90	33.99	27.19
160	7.43	34.86	150	7.35	34.85	27.28	155	1.73	34.11	150	1.75	34.10	27.29
212	6.56	34.88	200	6.75	34.88	27.38	206	1.94	34.30	200	1.90	34.28	27.42
316	5.25	34.83	300	5.40	34.84	27.52	307	2.53	34.51	300	2.50	34.49	27.54
418	4.72	34.90	400	4.80	34.89	27.63	408	3.54	34.80	400	3.45	34.79	27.70
625	4.41	34.96	600	4.45	34.96	27.73	610	3.82	34.89	600	3.80	34.89	27.74
831	4.06	34.94	800	4.15	34.94	27.75							
1,038	3.57	34.88	1,000	3.65	34.89	27.76							
1,555	3.50	34.91											

## TABLE OF OCEANOGRAPHIC DATA STATIONS OCCUPIED IN 1961—Continued

Observed values			Scaled values				Observed values			Scaled values			
Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	$\sigma_t$	Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	$\sigma_t$
Station 7644; 12 April; 45°39' N., 48°16' W.; depth 173 m.; dynamic height 971.034													
0	-0.83	32.92	0	-0.83	32.92	26.48	0	-0.88	32.96	0	-0.88	32.96	26.52
31	-0.92	33.00	25	-0.90	32.98	26.54	29	-0.90	32.95	25	-0.90	32.96	26.52
57	-1.08	33.13	50	-1.10	33.09	26.63	55	-0.92	32.95	50	-0.90	32.96	26.52
82	-0.80	33.36	75	-0.90	33.33	26.82	81	-1.25	33.09	75	-1.20	33.07	26.62
109	-0.53	33.44	100	-0.60	33.42	26.88	106	-1.05	33.32	100	-1.10	33.27	26.78
159	-0.18	33.55	150	-0.20	33.51	26.96	158	0.78	33.85	150	0.45	33.78	27.12
Station 7645; 12 April; 45°42.5' N., 48°22' W.; depth 111 m.; dynamic height 971.035													
0	-0.74	32.96	0	-0.71	32.96	26.51	0	-0.76	33.01	0	-0.76	33.01	26.56
31	-0.79	32.95	25	-0.75	32.96	26.51	30	-0.68	33.11	25	-0.70	33.09	26.62
56	-1.18	33.13	50	-1.10	33.07	26.62	54	-0.22	33.25	50	-0.30	33.22	26.73
81	-0.95	33.33	75	-1.00	33.30	26.80	79	1.10	33.58	75	0.85	33.52	26.89
106	-0.72	33.35	100	-0.80	33.35	26.83	103	2.24	33.91	100	2.20	33.91	27.11
							151	0.95	33.95	150	0.95	33.95	27.23
							200	1.69	34.23	200	1.70	34.23	27.40
							299	3.15	34.67	300	3.15	34.67	27.63
							490	3.51	34.79	490	3.50	34.79	27.69
							604	3.70	34.86	600	3.70	34.85	27.73
Station 7646; 12 April; 45°53' N., 48°39' W.; depth 89 m.; dynamic height 971.044													
0	-0.56	32.93	0	-0.56	32.93	26.48	0	1.98	33.66	0	1.98	33.66	26.92
26	-0.62	32.92	25	-0.60	32.92	26.48	31	2.54	33.79	25	2.50	33.77	26.97
52	-0.62	32.93	50	-0.60	32.93	26.48	57	2.57	33.80	50	2.55	33.80	26.99
78	-0.81	33.31	75	-0.80	33.25	26.75	82	2.79	33.93	75	2.75	33.90	27.05
Station 7647; 12 April; 46°01.5' N., 48°53' W.; depth 89 m.; dynamic height 971.047													
0	-0.59	32.85	0	-0.59	32.86	26.43	109	1.29	34.07	100	1.40	34.03	27.26
25	-0.67	32.88	25	-0.67	32.88	26.45	159	3.06	34.40	150	2.80	34.35	27.41
50	-0.70	32.89	50	-0.70	32.89	26.46	210	4.18	34.65	200	4.10	34.62	27.50
75	-0.92	33.16	75	-0.92	33.16	26.68	312	4.30	34.84	300	4.30	34.83	27.64
							414	4.16	34.87	400	4.15	34.87	27.69
							616	3.85	34.93	600	3.90	34.93	27.76
							821	3.66	34.90	800	3.70	34.90	27.76
							1,026	3.64	34.89	1,000	3.65	34.89	27.76
Station 7648; 12 April; 46°13' N., 49°12' W.; depth 69 m.; dynamic height 971.048													
0	-0.45	32.85	0	-0.45	32.85	26.41	0	1.94	33.45	0	1.94	33.45	26.76
31	-0.47	32.88	25	-0.50	32.88	26.44	31	3.68	33.96	25	3.40	33.86	26.96
57	-0.63	32.93	50	-0.60	32.92	26.48	58	5.17	34.34	50	4.75	34.23	27.12
							83	6.26	34.70	75	6.10	34.66	27.29
							110	5.84	34.69	100	6.00	34.69	27.33
							160	4.98	34.69	150	5.15	34.69	27.43
							212	4.58	34.76	200	4.65	34.76	27.55
							313	3.85	34.76	300	3.90	34.76	27.63
							411	4.32	34.89	400	4.30	34.88	27.68
							604	4.03	34.91	600	4.05	34.91	27.73
Station 7649; 12 April; 46°13.5' N., 48°34' W.; depth 89 m.; dynamic height 971.053													
0	-0.76	32.84	0	-0.76	32.84	26.42	0	6.56	34.51	0	6.56	34.51	27.12
27	-0.82	32.82	25	-0.80	32.82	26.40	30	6.65	34.54	25	6.60	34.53	27.12
51	-0.83	32.82	50	-0.85	32.82	26.40	55	6.96	34.60	50	6.90	34.59	27.13
75	-1.07	33.03	75	-1.05	33.03	26.58	78	7.26	34.66	75	7.20	34.65	27.14
							103	7.72	34.75	100	7.70	34.74	27.14
							151	6.61	34.69	150	6.60	34.69	27.25
							200	6.34	34.78	200	6.35	34.79	27.26
							297	1.58	34.71	300	1.60	34.71	27.51
							394	5.15	34.94	400	5.15	34.94	27.63
							587	4.05	34.85	600	4.00	34.85	27.69
Station 7650; 12 April; 46°14.5' N., 47°58' W.; depth 115 m.; dynamic height 971.049													
0	-0.80	32.84	0	-0.80	32.84	26.42	0	6.56	34.51	0	6.56	34.51	27.12
27	-0.85	32.83	25	-0.85	32.83	26.43	30	6.65	34.54	25	6.60	34.53	27.12
52	-0.82	32.85	50	-0.80	32.83	26.44	55	6.96	34.60	50	6.90	34.59	27.13
76	-1.29	33.11	75	-1.30	33.09	26.61	78	7.26	34.66	75	7.20	34.65	27.14
101	-0.69	33.37	100	-0.70	33.35	26.84	103	7.72	34.75	100	7.70	34.74	27.14
							151	6.61	34.69	150	6.60	34.69	27.25
							200	6.34	34.78	200	6.35	34.79	27.26
							297	1.58	34.71	300	1.60	34.71	27.51
							394	5.15	34.94	400	5.15	34.94	27.63
							587	4.05	34.85	600	4.00	34.85	27.69
Station 7651; 13 April; 46°14.5' N., 47°35' W.; depth 168 m.; dynamic height 971.045													
0	-0.88	32.96	0	-0.88	32.96	26.52	0	6.56	34.51	0	6.56	34.51	27.12
29	-0.90	32.95	25	-0.90	32.96	26.52	30	6.65	34.54	25	6.60	34.53	27.12
55	-0.92	32.95	50	-0.90	32.96	26.52	55	6.96	34.60	50	6.90	34.59	27.13
81	-1.25	33.09	75	-1.20	33.07	26.62	78	7.26	34.66	75	7.20	34.65	27.14
106	-1.05	33.32	100	-1.10	33.27	26.78	103	7.72	34.75	100	7.70	34.74	27.14
158	0.78	33.85	150	0.45	33.78	27.12	151	6.61	34.69	150	6.60	34.69	27.25
							200	6.34	34.78	200	6.35	34.79	27.26
							297	1.58	34.71	300	1.60	34.71	27.51
							394	5.15	34.94	400	5.15	34.94	27.63
							587	4.05	34.85	600	4.00	34.85	27.69
Station 7652; 13 April; 46°15' N., 47°09' W.; depth 620 m.; dynamic height 970.987													
0	-0.76	33.01	0	-0.76	33.01	26.56	0	6.56	34.51	0	6.56	34.51	27.12
30	-0.68	33.11	25	-0.70	33.09	26.62	30	6.65	34.54	25	6.60	34.53	27.12
54	-0.22	33.25	50	-0.30	33.22	26.73	55	6.96	34.60	50	6.90	34.59	27.13
79	1.10	33.58	75	0.85	33.52	26.89	78	7.26	34.66	75	7.20	34.65	27.14
103	2.24	33.91	100	2.20	33.91	27.11	103	7.72	34.75	100	7.70	34.74	27.14
151	0.95	33.95	150	0.95	33.95	27.23	151	6.61	34.69	150	6.60	34.69	27.25
200	1.69	34.23	200	1.70	34.23	27.40	200	6.34	34.78	200	6.35	34.79	27.26
299	3.15	34.67	300	3.15	34.67	27.63	297	1.58	34.71	300	1.60	34.71	27.51
490	3.51	34.79	490	3.50	34.79	27.69	394	5.15	34.94	400	5.15	34.94	27.63
604	3.70	34.86	600	3.70	34.85	27.73	587	4.05	34.85	600	4.00	34.85	27.69
Station 7653; 13 April; 46°15' N., 46°36' W.; depth 1,320 m.; dynamic height 970.938													
0	1.98	33.66	0	1.98	33.66	26.92	0	6.56	34.51	0	6.56	34.51	27.12
31	2.54	33.79	25	2.50	33.77	26.97	30	6.65	34.54	25	6.60	34.53	27.12
57	2.57	33.80	50	2.55	33.80	26.99	55	6.96	34.60	50	6.90	34.59	27.13
82	2.79	33.93	75	2.75	33.90	27.05	78	7.26	34.66	75	7.20	34.65	27.14
109	1.29	34.07	100	1.40	34.03	27.26	103	7.72	34.75	100	7.70	34.74	27.14
159	3.06	34.40	150	2.80	34.35	27.41	151	6.61	34.69	150	6.60	34.69	27.25
210	4.18	34.65	200	4.10	34.62	27.50	200	6.34	34.78	200	6.35	34.79	27.26
312	4.30	34.84	300	4.30	34.83	27.64	297	1.58	34.71	300	1.60	34.71	27.51
414	4.16	34.87	400	4.15	34.87	27.69	394	5.15	34.94	400	5.15	34.94	27.63
616	3.85	34.93	600	3.90	34.93	27.76	587	4.05	34.85	600	4.00	34.85	27.69
821	3.66	34.90	800	3.70	34.90	27.76							
1,026	3.64	34.89	1,000	3.65	34.89	27.76							
Station 7654; 13 April; 46°15.5' N., 46°32' W.; depth 622 m.; dynamic height 970.938													
0	1.94	33.45	0	1.94	33.45	26.76	0	6.56	34.51	0	6.56	34.51	27.12
31	3.68	33.96	25	3.40	33.86	26.96	30	6.65	34.54	25	6.60	34.53	27.12
58	5.17	34.34	50	4.75	34.23	27.12	55	6.96	34.60	50	6.90		

## TABLE OF OCEANOGRAPHIC DATA STATIONS OCCUPIED IN 1961—Continued

Observed values			Scaled values				Observed values			Scaled values			
Depth, meters	Tem-perature, °C.	Salin-ity, ‰	Depth, meters	Tem-perature, °C.	Salin-ity, ‰	$\sigma_t$	Depth, meters	Tem-perature, °C.	Salin-ity, ‰	Depth, meters	Tem-perature, °C.	Salin-ity, ‰	$\sigma_t$
Station 7656; 13 April; 46°16.5' N., 45°25' W.; depth 2,006 m.; dynamic height 970.853													
0	3.39	34.07	0	3.39	34.07	27.13	0	2.64	33.86	0	2.64	33.86	27.03
27	2.99	34.11	25	3.00	34.10	27.19	27	2.86	34.05	25	2.85	34.05	27.16
49	3.52	34.57	50	3.55	34.58	27.52	52	5.58	34.59	50	5.55	34.58	27.30
71	3.77	34.70	75	3.75	34.72	27.61	77	4.71	34.57	75	4.80	34.57	27.38
93	3.74	34.76	100	3.75	34.76	27.64	102	3.71	34.60	100	3.75	34.59	27.51
137	3.66	34.75	150	3.65	34.76	27.65	151	3.46	34.68	150	3.45	34.68	27.61
181	3.68	34.79	200	3.70	34.81	27.69	200	3.68	34.75	200	3.70	34.75	27.64
276	3.73	34.85	300	3.75	34.85	27.72							
376	3.83	34.88	400	3.85	34.89	27.73							
589	3.86	34.91	600	3.85	34.91	27.75							
785	3.71	34.90	800	3.70	34.90	27.75							
982	3.51	34.89	1,000	3.50	34.89	27.77							
1,478	3.45	34.92											
Station 7657; 13 April; 46°16' N., 44°31' W.; depth 3,190 m.; dynamic height 970.888													
0	4.92	34.35	0	4.92	34.35	27.19							
31	4.53	34.37	25	4.55	34.36	27.24							
56	4.96	34.46	50	4.90	34.45	27.27							
81	4.72	34.48	75	4.80	34.47	27.30							
106	4.48	34.60	100	4.50	34.58	27.42							
156	4.22	34.70	150	4.25	34.69	27.54							
206	4.01	34.78	200	4.05	34.77	27.62							
308	3.74	34.81	300	3.75	34.81	27.68							
410	4.14	34.90	400	4.10	34.89	27.71							
617	3.96	34.93	600	4.00	34.93	27.75							
821	3.79	34.92	800	3.80	34.92	27.77							
1,024	3.59	34.90	1,000	3.60	34.91	27.78							
1,536	3.43	34.92											
Station 7658; 13 April; 46°29' N., 44°45' W.; depth 1,640 m.; dynamic height 970.890													
0	7.35	34.78	0	7.35	34.79	27.22							
32	7.42	34.82	25	7.40	34.81	27.23							
57	7.37	34.80	50	7.40	34.81	27.23							
83	5.66	34.68	75	6.25	34.70	27.31							
109	5.31	34.75	100	5.35	34.72	27.43							
160	5.27	34.85	150	5.30	34.83	27.52							
211	4.85	34.90	200	4.95	34.90	27.62							
312	3.81	34.84	300	3.85	34.84	27.69							
410	3.84	34.86	400	3.85	34.86	27.70							
602	3.78	34.87	600	3.80	34.87	27.73							
803	3.77	34.91	800	3.75	34.91	27.76							
1,007	3.52	34.90	1,000	3.55	34.90	27.77							
1,520	3.47	34.91											
Station 7659; 13 April; 46°30.5' N., 44°46' W.; depth 620 m.; dynamic height 970.880													
0	6.68	34.66	0	6.68	34.66	27.21							
28	6.74	34.68	25	6.75	34.68	27.22							
54	5.47	34.67	50	5.60	34.67	27.36							
79	4.79	34.69	75	4.85	34.69	27.47							
105	4.51	34.68	100	4.55	34.68	27.49							
155	4.84	34.83	150	4.85	34.82	27.57							
206	4.38	34.85	200	4.40	34.85	27.65							
309	4.19	34.87	300	4.20	34.87	27.68							
410	3.77	34.85	400	3.80	34.86	27.72							
616	3.88	34.88	600	3.85	34.88	27.73							
Station 7660; 14 April; 46°37' N., 44°48' W.; depth 228 m.; dynamic height 970.891													
0	2.64	33.86	0	2.64	33.86	27.03							
27	2.86	34.05	25	2.85	34.05	27.16							
52	5.58	34.59	50	5.55	34.58	27.30							
77	4.71	34.57	75	4.80	34.57	27.38							
102	3.71	34.60	100	3.75	34.59	27.51							
151	3.46	34.68	150	3.45	34.68	27.61							
200	3.68	34.75	200	3.70	34.75	27.64							
Station 7661; 14 April; 46°41.5' N., 44°50' W.; depth 166 m.; dynamic height 970.898													
0	3.45	34.12	0	3.45	34.12	27.16							
29	3.41	34.14	25	3.40	34.14	27.18							
54	3.58	34.33	50	3.55	34.32	27.31							
80	3.31	34.34	75	3.35	34.34	27.35							
106	2.89	34.36	100	2.90	34.36	27.41							
156	3.10	34.51	150	3.05	34.49	27.50							
Station 7662; 14 April; 46°46' N., 44°42' W.; depth 139 m.; dynamic height 970.892													
0	3.79	34.29	0	3.79	34.29	27.27							
27	3.78	34.30	25	3.80	34.30	27.27							
54	3.71	34.31	50	3.75	34.31	27.29							
79	3.39	34.40	75	3.45	34.39	27.38							
106	3.00	34.45	100	3.05	34.45	27.46							
129	3.01	34.47											
Station 7663; 14 April; 46°46' N., 44°59' W.; depth 173 m.; dynamic height 970.889													
0	3.79	34.32	0	3.79	34.32	27.29							
31	3.77	34.33	25	3.80	34.33	27.30							
58	3.66	34.33	50	3.70	34.33	27.31							
83	2.91	34.40	75	3.00	34.38	27.41							
109	3.01	34.48	100	3.00	34.46	27.48							
160	3.05	34.49	150	3.05	34.49	27.50							
Station 7664; 14 April; 46°47' N., 45°16' W.; depth 215 m.; dynamic height 970.896													
0	3.74	34.24	0	3.74	34.24	27.23							
29	3.73	34.24	25	3.75	34.24	27.23							
55	3.72	34.25	50	3.75	34.25	27.24							
80	3.47	34.37	75	3.50	34.36	27.35							
107	3.30	34.41	100	3.35	34.41	27.40							
158	3.05	34.52	150	3.05	34.50	27.50							
210	3.84	34.74	200	3.70	34.69	27.69							
Station 7665; 14 April; 46°47' N., 45°43' W.; depth 346 m.; dynamic height 970.913													
0	3.92	34.18	0	3.92	34.18	27.16							
31	4.04	34.22	25	4.00	34.21	27.18							
57	3.96	34.27	50	3.95	34.26	27.23							
82	3.93	34.44	75	3.95	34.40	27.31							
108	4.45	34.57	100	4.25	34.53	27.41							
158	5.21	34.82	150	5.10	34.81	27.53							
208	4.47	34.74	200	4.55	34.76	27.55							
310	3.68	34.70	300	3.75	34.70	27.60							

## TABLE OF OCEANOGRAPHIC DATA STATIONS OCCUPIED IN 1961 — Continued

Observed values			Scaled values			
Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	$\sigma_t$
Station 7666; 14 April; 46°47.5' N., 46°09' W.; depth 319 m.; dynamic height 970.923						
0	2.98	33.89	0	2.98	33.89	27.02
28	3.43	34.02	25	3.40	34.00	27.07
54	4.12	34.24	50	4.05	34.21	27.18
79	3.92	34.30	75	3.95	34.29	27.25
105	3.95	34.45	100	3.95	34.42	27.35
155	4.48	34.62	150	4.45	34.62	27.46
205	3.81	34.67	200	3.80	34.67	27.57
307	3.78	34.85	300	3.80	34.84	27.70
Station 7667; 14 April; 46°48' N., 46°34' W.; depth 506 m.; dynamic height 970.952						
0	0.67	33.46	0	0.67	33.46	26.85
28	0.67	33.46	25	0.65	33.46	26.85
53	0.84	33.91	50	0.80	33.90	27.20
78	0.97	33.92	75	0.95	33.92	27.20
103	0.80	34.03	100	0.80	34.00	27.28
153	3.38	34.42	150	3.25	34.40	27.40
203	3.97	34.57	200	3.95	34.57	27.47
303	3.78	34.70	300	3.80	34.70	27.59
403	4.12	34.82	400	4.10	34.81	27.65
Station 7668; 14 April; 46°48' N., 46°51' W.; depth 893 m.; dynamic height 970.937						
0	0.75	33.42	0	0.75	33.42	26.81
32	0.67	33.46	25	0.65	33.44	26.84
59	1.29	33.92	50	1.10	33.77	27.07
85	1.65	34.08	75	1.50	34.03	27.25
111	2.82	34.28	100	2.50	34.22	27.33
162	2.44	34.43	150	2.50	34.39	27.46
215	3.54	34.62	200	3.35	34.58	27.54
320	3.96	34.80	300	3.90	34.77	27.64
422	4.11	34.85	400	4.10	34.85	27.68
627	3.99	34.88	600	4.00	34.88	27.71
830	3.73	34.91	800	3.75	34.91	27.76
1,031	3.56	34.88	1,000	3.60	34.89	27.76
Station 7669; 14 April; 46°48' N., 47°14' W.; depth 619 m.; dynamic height						
0	-0.33	33.17				
Station 7670; 14 April; 46°48' N., 47°18' W.; depth 619 m.; dynamic height 970.940						
0	0.38	33.47	0	0.38	33.47	26.88
27	0.15	33.52	25	0.15	33.52	26.93
51	0.25	33.65	50	0.20	33.63	27.01
75	1.23	34.00	75	1.20	34.00	27.25
99	1.15	34.13	100	1.15	34.13	27.36
146	2.01	34.40	150	2.10	34.42	27.52
194	2.52	34.55	200	2.55	34.56	27.60
290	2.83	34.63	300	2.85	34.63	27.63
Station 7671; 14 April; 46°48' N., 47°38' W.; depth 167 m.; dynamic height 971.032						
0	-0.79	32.91	0	-0.79	32.91	26.48
29	-0.80	32.91	25	-0.80	32.91	26.48
54	-1.05	32.93	50	-1.00	32.92	26.49
80	-1.31	33.27	75	-1.30	33.22	26.74
105	-0.61	33.45	100	-0.75	33.42	26.89
156	1.60	34.20	150	1.35	34.15	27.36
Station 7672; 15 April; 46°48' N., 48°13' W.; depth 111 m.; dynamic height 971.055						
0	-0.77	32.79	0	-0.77	32.79	26.38
25	-0.76	32.78	25	-0.76	32.78	26.37
50	-0.80	32.81	50	-0.80	32.81	26.40
75	-1.06	33.01	75	-1.06	33.01	26.56
100	-0.69	33.29	100	-0.69	33.29	26.78
Station 7673; 15 April; 46°48' N., 48°42' W.; depth 82 m.; dynamic height 971.057						
0	-0.59	32.76	0	-0.59	32.76	26.35
26	-0.60	32.82	25	-0.60	32.82	26.40
52	-0.71	32.83	50	-0.70	32.83	26.41
77	-0.95	32.95	75	-0.90	32.94	26.50
Station 7674; 29 April; 46°49' N., 44°50' W.; depth 135 m.; dynamic height 970.861						
0	3.65	34.19	0	3.65	34.19	27.20
27	3.64	34.21	25	3.65	34.21	27.22
54	3.12	34.45	50	3.10	34.45	27.46
82	3.22	34.53	75	3.20	34.53	27.51
109	3.28	34.54	100	3.25	34.54	27.52
131	3.30	34.57				
Station 7675; 29 April; 46°49' N., 45°04' W.; depth 164 m.; dynamic height 970.874						
0	3.72	34.25	0	3.72	34.24	27.24
30	3.74	34.28	25	3.75	34.28	27.26
54	3.74	34.28	50	3.75	34.29	27.27
78	3.74	34.28	75	3.75	34.29	27.27
103	3.13	34.45	100	3.15	34.44	27.44
151	3.26	34.54	150	3.25	34.54	27.52
Station 7676; 29 April; 46°49.5' N., 45°22' W.; depth 218 m.; dynamic height 970.875						
0	3.83	34.26	0	3.83	34.26	27.24
31	3.81	34.32	25	3.80	34.32	27.29
56	3.82	34.30	50	3.80	34.31	27.28
82	3.82	34.31	75	3.80	34.31	27.28
107	2.58	34.32	100	2.65	34.32	27.40
156	2.83	34.50	150	2.75	34.48	27.52
207	3.79	34.74	200	3.65	34.71	27.61
Station 7677; 29 April; 46°49.5' N., 45°16' W.; depth 255 m.; dynamic height 970.878						
0	3.70	34.11	0	3.70	34.11	27.13
30	3.68	34.13	25	3.70	34.13	27.15
55	3.69	34.11	50	3.70	34.12	27.14
80	5.05	34.63	75	4.90	34.61	27.40
104	4.67	34.67	100	4.75	34.66	27.46
153	4.13	34.68	150	4.15	34.67	27.53
202	3.87	34.72	200	3.90	34.72	27.60
213	3.78	34.79				

## TABLE OF OCEANOGRAPHIC DATA STATIONS OCCUPIED IN 1961—Continued

Observed values			Scaled values				Observed values			Scaled values			
Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	$\sigma_t$	Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	$\sigma_t$
Station 7678; 29 April; 46°46.5' N., 46°13' W.; depth 319 m.; dynamic height 970.900													
0	3.14	33.99	0	3.14	33.99	27.09	0	-0.45	33.06	0	-0.45	33.06	26.58
25	3.13	33.99	25	3.13	33.99	27.09	35	-0.46	33.06	25	-0.45	33.06	26.58
50	3.14	33.98	50	3.14	33.98	27.08	64	-0.50	33.23	50	-0.50	33.12	26.63
76	3.07	34.00	75	3.10	34.00	27.10	93	0.44	33.73	75	-0.20	33.41	26.85
101	3.49	34.32	100	3.45	34.30	27.31	122	1.17	34.02	100	0.70	33.82	27.14
149	4.20	34.65	150	4.20	34.65	27.51	160	1.33	34.10	150	1.30	34.09	27.32
201	4.72	34.79	200	4.70	34.79	27.56							
302	3.95	34.87	300	3.95	34.87	27.71							
Station 7679; 29 April; 46°44.5' N., 46°34' W.; depth 619 m.; dynamic height 970.905													
0	1.15	33.79	0	1.15	33.79	27.09	0	-0.27	32.86	0	-0.27	32.86	26.41
25	1.14	33.79	25	1.14	33.79	27.09	25	-0.24	32.82	25	-0.24	32.82	26.38
50	1.22	33.83	50	1.22	33.83	27.11	50	-0.40	32.92	50	-0.40	32.92	26.47
75	1.18	33.84	75	1.18	33.84	27.12	75	-1.29	33.16	75	-1.29	33.16	26.69
100	1.19	34.07	100	1.19	34.07	27.31	100	-0.64	33.39	100	-0.64	33.39	26.86
150	2.20	34.39	150	2.20	34.39	27.49							
200	2.77	34.54	200	2.77	34.54	27.56							
300	4.16	34.87	300	4.16	34.87	27.69							
400	3.74	34.85	400	3.74	34.85	27.72							
			(600)	3.65	34.89	27.76							
Station 7680; 29 April; 46°44.5' N., 46°52' W.; depth 1,256 m.; dynamic height 970.866													
0	2.45	34.04	0	2.45	34.04	27.19	0	-0.19	32.78	0	-0.19	32.78	26.35
31	2.43	34.09	25	2.45	34.08	27.22	27	-0.23	32.78	25	-0.20	32.79	26.36
57	2.42	34.11	50	2.40	34.10	27.24	52	-0.26	32.79	50	-0.25	32.79	26.36
82	2.52	34.52	75	2.50	34.48	27.54	77	-0.83	33.15	75	-0.75	33.12	26.64
108	2.85	34.54	100	2.75	34.53	27.56							
157	3.25	34.73	150	3.20	34.71	27.66							
208	3.45	34.78	200	3.40	34.77	27.69							
310	3.77	34.86	300	3.75	34.86	27.72							
410	3.76	34.87	400	3.75	34.87	27.73							
611	3.82	34.90	600	3.80	34.90	27.75							
812	3.69	34.90	800	3.70	34.90	27.76							
1,012	3.52	34.89	1,000	3.55	34.89	27.77							
Station 7681; 29 April; 46°44.5' N., 47°12' W.; depth 610 m.; dynamic height 970.909													
0	0.01	33.36	0	0.01	33.36	26.80	0	-0.20	32.80	0	-0.20	32.80	26.36
22	0.08	33.37	25	0.10	33.38	26.82	27	-0.24	32.80	25	-0.25	32.80	26.37
44	0.22	33.45	50	0.25	33.47	26.88	54	-0.29	32.78	50	-0.25	32.79	26.36
66	0.39	33.51	75	0.90	33.76	27.08	81	-0.93	33.05	75	-0.85	33.07	26.52
88	1.94	34.07	100	2.00	34.15	27.31	108	-0.52	33.40	100	-0.65	33.30	26.78
132	2.04	34.35	150	2.29	34.44	27.53							
176	2.49	34.53	200	2.80	34.62	27.62							
263	3.38	34.77	300	3.60	34.83	27.71							
349	3.76	34.87	400	3.75	34.89	27.75							
518	3.68	34.90	(500)	3.65	34.90	27.76							
Station 7682; 30 April; 46°44.5' N., 47°19' W.; depth 319 m.; dynamic height 970.971													
0	-0.42	33.17	0	-0.42	33.17	26.67	0	-0.09	33.30	0	-0.09	33.30	26.76
34	-0.44	33.19	25	-0.45	33.18	26.68	26	0.23	33.45	25	0.25	33.45	26.86
61	-0.45	33.21	50	-0.45	33.20	26.70	51	0.21	33.49	50	0.20	33.49	26.90
89	-0.49	33.49	75	-0.50	33.35	26.82	77	0.34	33.64	75	0.30	33.63	27.01
116	0.22	33.70	100	-0.25	33.60	27.01	102	1.04	33.90	100	0.95	33.88	27.17
171	1.31	34.16	150	0.95	34.00	27.27	152	1.96	34.32	150	1.95	34.31	27.44
226	2.02	34.38	200	1.70	34.29	27.45	203	2.10	34.39	200	2.10	34.39	27.50
			(300)	2.70	34.60	27.62							
Station 7683; 30 April; 46°44.5' N., 47°33' W.; depth 169 m.; dynamic height 970.973													
0	-0.45	33.06	0	-0.45	33.06	26.58	0	-0.27	32.86	0	-0.27	32.86	26.41
35	-0.46	33.06	25	-0.45	33.06	26.58	25	-0.24	32.82	25	-0.24	32.82	26.38
64	-0.50	33.23	50	-0.50	33.12	26.63	50	-0.40	32.92	50	-0.40	32.92	26.47
93	0.44	33.73	75	-0.20	33.41	26.85	75	-1.29	33.16	75	-1.29	33.16	26.69
122	1.17	34.02	100	0.70	33.82	27.14	100	-0.64	33.39	100	-0.64	33.39	26.86
160	1.33	34.10	150	1.30	34.09	27.32							
Station 7684; 30 April; 46°48' N., 48°10' W.; depth 116 m.; dynamic height 971.003													
0	-0.27	32.86	0	-0.27	32.86	26.41	0	-0.20	32.85	0	-0.20	32.85	26.41
25	-0.24	32.82	25	-0.24	32.82	26.38	25	-0.25	32.78	25	-0.25	32.78	26.35
50	-0.40	32.92	50	-0.40	32.92	26.47	50	-0.25	32.81	50	-0.25	32.81	26.37
75	-1.29	33.16	75	-1.29	33.16	26.69	75	-1.03	33.13	75	-1.03	33.13	26.66
100	-0.64	33.39	100	-0.64	33.39	26.86							
Station 7685; 30 April; 46°48' N., 48°45' W.; depth 89 m.; dynamic height 971.008													
0	-0.20	32.85	0	-0.20	32.85	26.41	0	-0.20	32.80	0	-0.20	32.80	26.36
25	-0.25	32.78	25	-0.25	32.78	26.35	25	-0.25	32.80	25	-0.25	32.80	26.37
50	-0.25	32.81	50	-0.25	32.81	26.37	50	-0.29	32.79	50	-0.25	32.79	26.36
75	-1.03	33.13	75	-1.03	33.13	26.66	75	-0.83	33.15	75	-0.75	33.12	26.64
Station 7686; 30 April; 47°12' N., 49°30' W.; depth 91 m.; dynamic height 971.013													
0	-0.19	32.78	0	-0.19	32.78	26.35	0	-0.20	32.80	0	-0.20	32.80	26.36
27	-0.23	32.78	25	-0.20	32.79	26.36	27	-0.24	32.80	25	-0.25	32.80	26.37
52	-0.26	32.79	50	-0.25	32.79	26.36	54	-0.29	32.78	50	-0.25	32.79	26.36
77	-0.83	33.15	75	-0.75	33.12	26.64	81	-0.93	33.05	75	-0.85	33.07	26.52
Station 7687; 30 April; 47°12' N., 48°51' W.; depth 115 m.; dynamic height 971.014													
0	-0.20	32.80	0	-0.20	32.80	26.36	0	-0.20	32.80	0	-0.20	32.80	26.36
27	-0.24	32.80	25	-0.25	32.80	26.37	27	-0.24	32.80	25	-0.25	32.80	26.37
54	-0.29	32.78	50	-0.25	32.79	26.36	54	-0.29	32.78	50	-0.25	32.79	26.36
81	-0.93	33.05	75	-0.85	33.07	26.52	81	-0.93	33.05	75	-0.85	33.07	26.52
108	-0.52	33.40	100	-0.65	33.30	26.78	108	-0.52	33.40	100	-0.65	33.30	26.78
Station 7688; 30 April; 47°14' N., 48°10' W.; depth 164 m.; dynamic height 970.977													
0	-0.64	33.04	0	-0.64	33.04	26.58	0	-0.64	33.04	0	-0.64	33.04	26.58
25	-0.62	33.18	25	-0.62	33.18	26.69	25	-0.62	33.18	25	-0.62	33.18	26.69
50	-0.63	33.22	50	-0.63	33.22	26.72	50	-0.63	33.22	50	-0.63	33.22	26.72
75	-0.89	33.34	75	-0.89	33.34	26.83	75	-0.89	33.34	75	-0.89	33.34	26.83
101	0.18	33.62	100	0.15	33.62	27.00	101	0.18	33.62	100	0.15	33.62	27.00
150	1.15	34.03	150	1.15	34.03	27.28	150	1.15	34.03	150	1.15	34.03	27.28
Station 7689; 30 April; 47°15' N., 47°46' W.; depth 228 m.; dynamic height 970.945													
0	-0.09	33.30	0	-0.09	33.30	26.76	0	-0.09	33.30	0	-0.09	33.30	26.76
26	0.23	33.45	25	0.25	33.45	26.86	26	0.23	33.45	25	0.25	33.45	26.86
51	0.21	33.49	50	0.20	33.49	26.90	51	0.21	33.49	50	0.20	33.49	26.90
77	0.34	33.64	75	0.30	33.63	27.01	77	0.34	33.64	75	0.30	33.63	27.01
102	1.04	33.90	100	0.95	33.88	27.17	102	1.04	33.90	100	0.95	33.88	27.17
152	1.96	34.32	150	1.95	34.31	27.44	152	1.96	34.32	150	1.95	34.31	27.44
203	2.10	34.39	200	2.10	34.39	27.50	203	2.10	34.39	200	2.10	34.39	27.50

## TABLE OF OCEANOGRAPHIC DATA STATIONS OCCUPIED IN 1961—Continued

Observed values			Scaled values				Observed values			Scaled values			
Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	$\sigma_t$	Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	$\sigma_t$
Station 7690; 30 April; 47°16' N., 47°24' W.; depth 592 m.; dynamic height 970.883													
0	1.97	33.87	0	1.97	33.87	27.09	0	2.71	33.88	0	2.71	33.88	27.04
26	1.43	33.98	25	1.45	33.97	27.21	32	2.68	33.89	25	2.70	33.89	27.05
53	1.60	34.08	50	1.55	34.07	27.24	58	2.92	33.94	50	2.85	33.92	27.06
79	1.77	34.15	75	1.75	34.14	27.32	83	3.18	34.53	75	3.10	34.21	27.27
105	2.05	34.34	100	2.00	34.31	27.44	109	3.05	34.37	100	3.10	34.35	27.38
157	2.49	34.53	150	2.45	34.51	27.56	158	3.56	34.52	150	3.45	34.50	27.47
209	2.84	34.63	200	2.80	34.62	27.62	209	3.98	34.68	200	3.90	34.66	27.55
313	3.42	34.78	300	3.35	34.77	27.69	259	4.17	34.76				
416	3.66	34.86	400	3.65	34.86	27.73							
519	3.67	34.86											
Station 7691; 1 May; 47°16' N., 47°01' W.; depth 1,183 m.; dynamic height 970.879													
0	2.22	34.15	0	2.22	34.15	27.30	0	3.22	34.03	0	3.22	34.03	27.11
32	2.22	34.18	25	2.20	34.18	27.32	25	3.13	34.05	25	3.15	34.05	27.14
57	2.20	34.20	50	2.20	34.20	27.34	51	2.99	34.07	50	3.00	34.07	27.17
83	2.34	34.22	75	2.30	34.21	27.34	76	3.21	34.39	75	3.20	34.36	27.38
109	2.68	34.41	100	2.55	34.33	27.41	103	3.55	34.50	100	3.50	34.49	27.45
159	3.01	34.62	150	2.95	34.59	27.58	153	4.10	34.67	150	4.10	34.66	27.53
211	3.67	34.77	200	3.60	34.74	27.64	201	3.91	34.72	200	3.95	34.72	27.59
314	3.67	34.82	300	3.70	34.82	27.70							
415	3.68	34.83	400	3.65	34.83	27.71							
618	3.68	34.89	600	3.70	34.89	27.75							
819	3.69	34.91	800	3.70	34.91	27.77							
1,018	3.52	34.90	1,000	3.55	34.90	27.77							
Station 7692; 1 May; 47°16' N., 46°37' W.; depth 610 m.; dynamic height 970.916													
0	3.76	34.02	0	3.76	34.02	27.05	0	3.58	34.07	0	3.58	34.07	27.11
32	3.68	34.00	25	3.70	34.01	27.05	26	3.48	34.08	25	3.50	34.08	27.13
58	2.12	33.88	50	2.40	33.91	27.09	52	3.46	34.13	50	3.45	34.12	27.16
84	3.51	34.25	75	3.00	34.10	27.19	78	3.38	34.31	75	3.40	34.29	27.30
110	4.20	34.48	100	4.05	34.46	27.37	105	3.46	34.54	100	3.45	34.52	27.48
161	2.96	34.49	150	3.15	34.49	27.49	156	3.39	34.60	150	3.40	34.60	27.55
212	2.78	34.55	200	2.80	34.53	27.55							
313	3.95	34.80	300	3.85	34.78	27.65							
411	4.00	34.87	400	4.00	34.86	27.70							
506	3.83	34.90	600	3.80	34.90	27.75							
Station 7697; 1 May; 47°28' N., 45°11' W.; depth 218 m.; dynamic height 970.905													
0	3.32	34.03	0	3.32	34.03	27.10	0	3.32	34.03	0	3.32	34.03	27.10
29	3.18	34.01	25	3.20	34.03	27.12	29	3.18	34.01	25	3.20	34.03	27.12
55	3.18	34.00	50	3.20	34.00	27.09	55	3.18	34.00	50	3.20	34.00	27.09
80	3.12	34.05	75	3.10	34.03	27.12	80	3.12	34.05	75	3.10	34.03	27.12
107	3.19	34.44	100	3.15	34.38	27.40	107	3.19	34.44	100	3.15	34.38	27.40
158	4.59	34.75	150	4.55	34.74	27.54	158	4.59	34.75	150	4.55	34.74	27.54
210	4.31	34.77	200	4.35	34.77	27.59	210	4.31	34.77	200	4.35	34.77	27.59
Station 7698; 1 May; 47°40.5' N., 45°42' W.; depth 317 m.; dynamic height 970.917													
0	2.90	33.91	0	2.90	33.91	27.05	0	2.90	33.91	0	2.90	33.91	27.05
27	3.17	33.89	25	3.15	33.89	27.01	30	2.67	33.92	25	2.70	33.92	27.07
53	3.10	33.90	50	3.10	33.90	27.02	56	2.60	33.91	50	2.60	33.92	27.08
78	3.33	34.01	75	3.30	34.01	27.09	80	2.69	33.99	75	2.65	33.97	27.12
104	4.00	34.35	100	4.00	34.34	27.28	106	3.51	34.37	100	3.50	34.36	27.35
154	3.54	34.14	150	3.55	34.44	27.41	155	2.78	34.38	150	2.80	34.38	27.43
204	3.60	34.54	200	3.60	34.53	27.48	204	3.71	34.65	200	3.75	34.64	27.55
306	4.29	34.83	300	4.25	34.81	27.63	305	4.24	34.83	300	4.20	34.83	27.65

## TABLE OF OCEANOGRAPHIC DATA STATIONS OCCUPIED IN 1961—Continued

Observed values			Scaled values			
Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	$\sigma_t$
Station 7699; 1 May; 47°45.5' N., 45°51' W.; depth 428 m.; dynamic height 970.904						
0	2.83	33.88	0	2.83	33.88	27.03
24	2.37	33.95	25	2.35	33.96	27.13
49	2.03	34.14	50	2.00	34.15	27.31
73	2.00	34.17	75	2.05	34.18	27.33
99	3.03	34.32	100	3.05	34.35	27.38
147	3.98	34.63	150	3.95	34.63	27.52
196	3.39	34.62	200	3.40	34.62	27.57
295	4.01	34.74	300	4.00	34.75	27.61
393	3.85	34.89	400	3.85	34.90	27.74

Station 7700; 1 May; 47°54.5' N., 46°07' W.; depth 1,047 m.; dynamic height 970.858

0	3.59	34.55	0	3.59	34.55	27.49
29	3.52	34.59	25	3.50	34.59	27.53
54	3.55	34.62	50	3.55	34.62	27.55
79	3.52	34.60	75	3.50	34.61	27.55
105	3.22	34.66	100	3.25	34.66	27.61
155	3.41	34.73	150	3.40	34.73	27.65
205	3.45	34.77	200	3.45	34.77	27.68
306	3.58	34.80	300	3.55	34.80	27.69
406	3.68	34.82	400	3.70	34.82	27.70
609	3.71	34.86	600	3.70	34.86	27.73
812	3.74	34.88	800	3.75	34.88	27.74
1,017	3.43	34.91	1,000	3.45	34.91	27.79

Station 7701; 1 May; 48°03.5' N., 46°19' W.; depth 1,219 m.; dynamic height 970.846

0	3.39	34.47	0	3.39	34.47	27.45
28	3.34	34.56	25	3.35	34.56	27.52
54	3.41	34.56	50	3.40	34.56	27.52
78	3.28	34.56	75	3.30	34.56	27.53
104	2.95	34.61	100	2.95	34.61	27.60
153	2.94	34.59	150	2.95	34.59	27.59
203	3.14	34.68	200	3.15	34.68	27.64
303	3.64	34.82	300	3.65	34.82	27.70
402	3.60	34.86	400	3.60	34.86	27.74
599	3.67	34.90	600	3.65	34.90	27.76
794	3.66	34.90	800	3.65	34.90	27.76
988	3.55	-----	(1,000)	3.55	34.90	27.77

Station 7702; 1 May; 48°20.5' N., 45°56' W.; depth 1,165 m.; dynamic height 970.822

0	3.92	34.65	0	3.92	34.65	27.54
30	3.82	34.67	25	3.80	34.67	27.57
56	3.82	34.67	50	3.80	34.67	27.57
82	3.64	34.68	75	3.65	34.68	27.59
108	3.56	34.77	100	3.55	34.75	27.66
159	3.53	34.81	150	3.55	34.81	27.70
211	3.46	34.83	200	3.45	34.83	27.73
315	3.59	34.86	300	3.60	34.86	27.74
418	3.53	34.88	400	3.55	34.88	27.76
603	3.57	34.88	600	3.55	34.88	27.76
774	3.46	34.88	800	3.45	34.88	27.77
931	3.44	34.92	(1,000)	3.45	34.92	27.80

Observed values			Scaled values			
Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	$\sigma_t$
Station 7703; 2 May; 48°39.5' N., 45°28' W.; depth 1,165 m.; dynamic height 970.816						
0	3.66	34.63	0	3.66	34.63	27.55
31	3.54	34.62	25	3.55	34.63	27.56
58	3.51	34.62	50	3.50	34.62	27.56
85	3.55	34.67	75	3.55	34.65	27.58
112	3.59	34.81	100	3.60	34.79	27.68
165	3.59	34.84	150	3.60	34.84	27.72
219	3.60	34.85	200	3.60	34.85	27.73
325	3.54	34.86	300	3.55	34.86	27.74
428	3.52	34.87	400	3.50	34.87	27.76
632	3.55	34.88	600	3.55	34.88	27.76
831	3.46	34.90	800	3.45	34.90	27.78
1,023	3.42	34.92	1,000	3.40	34.92	27.80

Station 7704; 2 May; 49°00' N., 45°00' W.; depth 1,538 m.; dynamic height 970.821

0	4.02	34.64	0	4.02	34.64	27.52
31	3.78	34.64	25	3.80	34.64	27.54
56	3.78	34.63	50	3.80	34.64	27.54
81	3.48	34.68	75	3.55	34.68	27.60
106	3.16	34.73	100	3.20	34.72	27.66
156	3.69	34.85	150	3.70	34.85	27.72
206	3.61	34.85	200	3.60	34.85	27.73
305	3.61	34.86	300	3.60	34.86	27.74
401	3.69	34.88	400	3.70	34.88	27.74
592	3.65	34.89	600	3.65	34.90	27.76
789	3.50	34.90	800	3.50	34.90	27.78
984	3.45	34.90	1,000	3.45	34.91	27.79
1,477	3.30	34.93				

Station 7705; 2 May; 49°10' N., 45°41' W.; depth 2,912 m.; dynamic height 970.850

0	5.67	34.72	0	5.67	34.72	27.39
33	5.63	34.75	25	5.65	34.75	27.42
59	5.10	34.72	50	5.25	34.73	27.45
86	4.44	34.72	75	4.70	34.72	27.51
113	3.82	34.74	100	4.10	34.73	27.58
165	3.66	34.78	150	3.70	34.77	27.66
218	3.89	34.84	200	3.80	34.82	27.69
322	4.02	34.89	300	4.00	34.88	27.71
423	3.74	34.90	400	3.80	34.90	27.75
624	3.69	34.90	600	3.70	34.90	27.76
829	3.56	34.88	800	3.60	34.88	27.76
1,034	3.46	34.89	1,000	3.50	34.89	27.77
1,544	3.45	34.91				

Station 7706; 2 May; 49°20.5' N., 46°26' W.; depth 3,003 m.; dynamic height 970.861

0	5.94	34.76	0	5.94	34.76	27.39
31	5.92	34.78	25	5.90	34.78	27.41
56	5.87	34.77	50	5.90	34.77	27.40
81	5.01	34.74	75	5.15	34.74	27.47
106	4.44	34.75	100	4.55	34.75	27.55
156	3.84	34.75	150	3.85	34.75	27.63
206	3.98	34.83	200	3.95	34.82	27.67
302	3.97	34.88	300	3.95	34.88	27.72
394	3.68	34.87	400	3.70	34.87	27.74
571	3.82	34.89	600	3.80	34.89	27.74
765	3.68	34.89	800	3.65	34.89	27.76
961	3.57	34.90	1,000	3.55	34.90	27.77
1,465	3.47	34.92				

## TABLE OF OCEANOGRAPHIC DATA STATIONS OCCUPIED IN 1961—Continued

Observed values			Scaled values				Observed values			Scaled values			
Depth, meters	Tem-perature, °C.	Salin-ity, ‰	Depth, meters	Tem-perature, °C.	Salin-ity, ‰	$\sigma_t$	Depth, meters	Tem-perature, °C.	Salin-ity, ‰	Depth, meters	Tem-perature, °C.	Salin-ity, ‰	$\sigma_t$
Station 7707; 2 May; 48°58' N., 46°48' W.; depth 2,776 m.; dynamic height 970.840													
0.	5.01	34.73	0.	5.01	34.73	27.48	0.	0.17	33.34	0.	0.17	33.34	26.78
32	5.01	34.72	25.	5.00	34.72	27.48	31	0.80	33.77	25.	0.65	33.72	27.06
58	4.75	34.71	50.	4.85	34.71	27.48	57	1.25	34.05	50.	1.15	33.99	27.25
84	4.55	34.71	75.	4.65	34.71	27.51	82	1.54	34.18	75.	1.45	34.15	27.35
110	3.74	34.74	100	3.95	34.73	27.60	108	1.89	34.29	100	1.80	34.26	27.42
160	3.80	34.81	150	3.80	34.81	27.68	158	2.32	34.46	150	2.25	34.44	27.53
212	3.42	34.74	200	3.50	34.75	27.66	209	2.40	34.52	200	2.35	34.51	27.57
313	3.76	34.89	300	3.85	34.87	27.72	256	3.24	34.73	250	3.10	34.70	27.66
410	3.87	34.91	400	3.75	34.91	27.76							
600	3.69	34.91	600	3.70	34.91	27.77							
799	3.54	34.90	800	3.55	34.90	27.77							
977	3.45	34.88	1,000	3.45	34.89	27.78							
1,496	3.40	34.93											
Station 7708; 2 May; 48°37' N., 47°06' W.; depth 2,457 m.; dynamic height 970.825													
0.	4.28	34.72	0.	4.28	34.72	27.56							
33	4.26	34.68	25.	4.25	34.69	27.54							
59	3.96	34.67	50.	4.05	34.67	27.54							
86	3.66	34.75	75.	3.75	34.71	27.60							
112	3.60	34.81	100	3.60	34.78	27.67							
164	3.55	34.85	150	3.55	34.84	27.73							
217	3.29	34.82	200	3.35	34.83	27.74							
320	3.47	34.84	300	3.40	34.84	27.74							
421	3.69	34.88	400	3.65	34.88	27.75							
618	3.64	34.89	600	3.65	34.89	27.76							
822	3.52	34.87	800	3.55	34.88	27.76							
1,027	3.46	34.89	1,000	3.45	34.89	27.78							
1,540	3.31	34.90											
Station 7709; 3 May; 48°15' N., 47°22' W.; depth 1,274 m.; dynamic height 970.867													
0.	2.40	34.27	0.	2.40	34.27	27.38							
31	2.60	34.39	25.	2.55	34.37	27.44							
56	2.88	34.48	50.	2.80	34.46	27.49							
82	3.24	34.54	75.	3.15	34.53	27.52							
107	2.89	34.54	100	3.00	34.55	27.55							
156	2.67	34.57	150	2.70	34.56	27.58							
207	2.91	34.68	200	2.85	34.67	27.66							
307	3.49	34.80	300	3.45	34.79	27.70							
407	3.63	34.83	400	3.60	34.83	27.71							
606	3.58	34.84	600	3.60	34.84	27.72							
804	3.62	34.88	800	3.60	34.88	27.75							
1,000	3.68	34.91	1,000	3.70	34.91	27.77							
1,203	3.67	34.90											
Station 7710; 3 May; 47°55.5' N., 47°36' W.; depth 351 m.; dynamic height 970.923													
0.	0.00	33.30	0.	0.00	33.30	26.76							
29	0.58	33.58	25.	0.50	33.55	26.94							
55	0.79	33.77	50.	0.75	33.75	27.08							
80	1.44	33.99	75.	1.35	33.96	27.21							
107	1.66	33.19	100	1.60	34.15	27.34							
157	2.32	34.49	150	2.25	34.46	27.54							
208	2.62	34.55	200	2.60	34.54	27.58							
311	3.47	34.80	300	3.35	34.77	27.69							
Station 7711; 3 May; 47°48' N., 47°50' W.; depth 298 m.; dynamic height 970.910													
0.	0.17	33.34	0.	0.17	33.34	26.78							
31	0.80	33.77	25.	0.65	33.72	27.06							
57	1.25	34.05	50.	1.15	33.99	27.25							
82	1.54	34.18	75.	1.45	34.15	27.35							
108	1.89	34.29	100	1.80	34.26	27.42							
158	2.32	34.46	150	2.25	34.44	27.53							
209	2.40	34.52	200	2.35	34.51	27.57							
256	3.24	34.73	250	3.10	34.70	27.66							
Station 7712; 3 May; 47°44.5' N., 48°12' W.; depth 240 m.; dynamic height 970.946													
0.	-0.07	33.40	0.	-0.07	33.40	26.84							
30	0.49	33.52	25.	0.40	33.50	26.90							
54	0.64	33.64	50.	0.60	33.63	26.99							
78	0.50	33.69	75.	0.50	33.68	27.04							
103	0.72	33.86	100	0.70	33.85	27.16							
150	1.52	34.20	150	1.55	34.20	27.39							
199	2.47	34.51	200	2.50	34.51	27.56							
Station 7713; 3 May; 47°42' N., 48°26' W.; depth 217 m.; dynamic height 971.021													
0.	-0.42	32.96	0.	-0.42	32.96	26.50							
31	-1.33	33.11	25.	-1.20	33.08	26.63							
57	-1.60	33.16	50.	-1.55	33.15	26.69							
82	-1.42	33.24	75.	-1.50	33.22	26.75							
108	-1.22	33.33	100	-1.30	33.30	26.81							
158	-0.22	33.57	150	-0.40	33.54	26.97							
			(200)	0.80	33.78	27.10							
Station 7714; 3 May; 47°39' N., 48°58' W.; depth 166 m.; dynamic height 971.003													
0.	-0.25	33.00	0.	-0.25	33.00	26.53							
30	-0.42	33.02	25.	-0.40	33.02	26.55							
55	-0.56	33.09	50.	-0.55	33.07	26.60							
80	-1.31	33.26	75.	-1.25	33.23	26.75							
106	-0.35	33.50	100	-0.55	33.46	26.91							
155	1.15	33.99	150	1.00	33.94	27.22							
Station 7715; 3 May; 47°52' N., 48°51' W.; depth 218 m.; dynamic height 971.048													
0.	-0.02	32.92	0.	-0.02	32.92	26.45							
31	-0.82	33.00	25.	-0.70	32.98	26.53							
56	-0.94	33.04	50.	-0.90	33.03	26.58							
81	-1.46	33.13	75.	-1.35	33.11	26.66							
106	-1.53	33.17	100	-1.50	33.16	26.70							
156	-0.29	33.48	150	-0.50	33.44	26.89							
206	2.43	33.86	200	2.15	33.81	27.03							
Station 7716; 3 May; 48°05' N., 48°42' W.; depth 319 m.; dynamic height 971.055													
0.	-0.01	32.93	0.	-0.01	32.93	26.46							
31	-0.70	32.95	25.	-0.60	32.95	26.50							
56	-1.35	33.01	50.	-1.25	33.00	26.56							
81	-1.56	33.14	75.	-1.55	33.13	26.68							
107	-1.55	33.19	100	-1.55	33.18	26.72							
156	-0.65	33.44	150	-0.80	33.41	26.88							
206	0.74	33.86	200	0.55	33.82	27.14							
307	1.76	34.29	300	1.70	34.26	27.42							

# TABLE OF OCEANOGRAPHIC DATA STATIONS OCCUPIED IN 1961—Continued

Observed values			Scaled values				Observed values			Scaled values			
Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	$\sigma_t$	Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	$\sigma_t$
Station 7717; 3 May; 48°10' N., 48°35' W.; depth 673 m.; dynamic height 970.963							Station 7721; 4 May; 49°39' N., 47°33' W.; depth 2,730 m.; dynamic height 970.833						
0	-0.01	32.96	0	-0.01	32.96	26.48	0	5.25	34.74	0	5.25	34.74	27.46
27	-0.56	33.33	25	-0.55	33.31	26.79	34	5.23	34.72	25	5.25	34.73	27.45
49	-0.57	33.39	50	-0.55	33.39	26.85	60	4.60	34.69	50	4.85	34.70	27.48
71	-0.35	33.54	75	-0.27	33.58	26.99	88	3.88	34.70	75	4.20	34.70	27.55
93	0.57	33.71	100	0.70	33.76	27.09	114	3.40	34.71	100	3.55	34.70	27.62
136	1.27	34.00	150	1.55	34.09	27.30	170	3.73	34.84	150	3.65	34.80	27.68
180	*2.07	34.29	230	2.25	34.37	27.47	224	3.45	34.83	200	3.55	34.84	27.73
267	2.66	34.57	310	2.90	34.64	27.63	332	3.38	34.82	300	3.40	34.82	27.73
354	3.22	34.74	490	3.40	34.79	27.70	440	3.40	34.855	400	3.40	34.84	27.74
528	3.66	34.86	(630)	3.65	34.87	27.74	654	3.60	34.90	600	3.55	34.89	27.77
							831	3.53	34.90	800	3.55	34.90	27.77
							1,064	3.49	34.91	1,000	3.50	34.90	27.78
							1,552	3.31	34.94				
Station 7718; 3 May; 48°32' N., 48°24' W.; depth 1,911 m.; dynamic height 970.833							Station 7722; 4 May; 49°53' N., 48°21' W.; depth 2,336 m.; dynamic height 970.827						
0	3.45	34.55	0	3.45	34.55	27.51	0	5.14	34.74	0	5.14	34.74	27.47
29	3.41	34.57	25	3.40	34.57	27.53	31	5.07	34.74	25	5.10	34.74	27.48
52	3.38	34.58	50	3.40	34.58	27.54	56	5.07	34.73	50	5.05	34.73	27.48
76	3.37	34.64	75	3.35	34.64	27.59	80	4.75	34.74	75	4.85	34.74	27.51
99	3.29	34.70	100	3.30	34.71	27.65	105	3.72	34.80	100	3.75	34.79	27.67
145	3.36	34.78	150	3.35	34.78	27.70	154	3.87	34.85	150	3.85	34.85	27.70
192	3.42	34.81	200	3.45	34.81	27.71	214	3.48	34.825	200	3.50	34.83	27.71
286	3.56	34.84	330	3.60	34.85	27.73	303	3.54	34.85	300	3.55	34.86	27.74
378	3.65	34.88	400	3.65	34.88	27.75	492	3.51	34.88	400	3.50	34.88	27.76
564	3.61	34.89	600	3.60	34.89	27.76	599	3.49	34.86	600	3.50	34.87	27.76
756	3.63	34.89	800	3.60	34.89	27.76	799	3.42	34.87	800	3.40	34.88	27.77
949	3.51	34.90	1,000	3.50	34.90	27.78	999	3.47	34.90	1,000	3.45	34.90	27.78
1,445	3.42	34.92					1,507	3.34	34.94				
Station 7719; 3 May; 48°54' N., 48°08' W.; depth 2,348 m.; dynamic height 970.827							Station 7723; 4 May; 49°59' N., 49°09' W.; depth 1,835 m.; dynamic height 970.847						
0	4.34	34.70	0	4.34	34.70	27.53	0	4.72	34.73	0	4.72	34.73	27.51
30	4.33	34.70	25	4.35	34.70	27.53	36	4.75	34.735	25	4.75	34.73	27.51
54	4.17	34.70	50	4.29	34.70	27.55	65	4.61	34.71	50	4.65	34.72	27.51
78	3.38	34.72	75	3.45	34.72	27.64	93	4.60	34.70	75	4.60	34.71	27.51
102	3.22	31.73	100	3.20	34.73	27.67	122	3.93	34.68	100	4.45	34.69	27.51
149	3.17	34.79	150	3.15	34.79	27.72	179	3.29	34.77	150	3.50	34.73	27.64
197	3.20	34.80	200	3.20	34.81	27.74	237	3.35	34.84	200	3.30	34.80	27.72
296	3.35	34.83	330	3.35	34.83	27.74	344	3.20	34.82	300	3.30	34.83	27.74
397	3.45	34.87	400	3.45	34.87	27.76	444	3.47	34.84	400	3.40	34.83	27.73
605	3.48	34.84	600	3.50	34.83	27.75	628	3.53	34.85	600	3.50	34.85	27.74
808	3.45	34.84	800	3.45	34.83	27.75	836	3.48	34.86	800	3.50	34.85	27.75
1,014	3.47	34.87	1,000	3.45	34.87	27.76	1,043	3.48	34.88	1,000	3.50	34.88	27.76
1,535	3.41	34.92					1,581	3.36	34.95				
Station 7720; 4 May; 49°17' N., 47°51' W.; depth 2,457 m.; dynamic height 970.815							Station 7724; 4 May; 49°45' N., 49°08' W.; depth 1,714 m.; dynamic height 970.837						
0	4.12	34.72	0	4.12	34.72	27.57	0	3.94	34.66	0	3.94	34.66	27.54
20	3.90	34.72	25	3.95	34.72	27.59	32	3.91	34.69	25	3.90	34.69	27.57
35	4.08	34.73	50	3.95	34.73	27.60	59	3.81	34.65	50	3.85	34.66	27.55
52	3.94	34.735	75	3.80	34.75	27.63	85	3.64	34.73	75	3.70	34.71	27.61
67	3.91	34.74	100	3.40	34.79	27.70	112	3.25	34.73	100	3.40	34.73	27.65
100	3.39	34.79	150	3.40	34.81	27.72	163	3.41	34.84	150	3.40	34.82	27.73
132	3.37	34.80	200	3.40	34.84	27.74	216	3.25	34.80	200	3.30	34.81	27.73
211	3.42	34.84	300	3.55	34.85	27.74	320	3.31	34.83	300	3.30	34.82	27.74
299	3.54	34.855	400	3.50	34.83	27.75	425	3.47	34.84	400	3.45	34.84	27.74
503	3.48	34.87	600	3.50	34.88	27.76	625	3.49	34.85	600	3.50	34.85	27.74
702	3.51	34.90	800	3.50	34.90	27.78	832	3.52	34.83	800	3.50	34.85	27.74
918	3.47	34.90	1,000	3.45	34.91	27.79	1,039	3.45	34.86	1,000	3.45	34.85	27.75
1,528	3.22	34.94					1,558	3.41	34.89				

# TABLE OF OCEANOGRAPHIC DATA STATIONS OCCUPIED IN 1961—Continued

Observed values			Scaled values				Observed values			Scaled values			
Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	$\sigma_t$	Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	$\sigma_t$
Station 7725; 4 May; 49°11' N., 49°17' W.; depth 1,638 m.; dynamic height 970.857							Station 7730; 5 May; 47°43' N., 49°52' W.; depth 113 m.; dynamic height 970.998						
0	2.59	34.24	0	2.59	34.24	27.34	0	-0.16	32.90	0	-0.16	32.90	26.44
31	3.20	34.54	25	3.10	34.49	27.49	26	-0.21	32.91	25	-0.20	32.91	26.45
57	3.19	34.58	50	3.20	34.58	27.55	52	-0.56	33.08	50	-0.55	33.06	26.59
82	3.01	34.57	75	3.05	34.57	27.56	78	-0.91	33.32	75	-0.90	33.29	26.79
107	2.85	34.58	100	2.90	34.58	27.58	104	-0.25	33.66	100	-0.30	33.60	27.01
157	3.12	34.67	150	3.10	34.66	27.63							
208	3.25	34.73	200	3.20	34.72	27.66							
309	3.53	34.83	300	3.50	34.82	27.72							
410	3.74	34.85	400	3.70	34.85	27.72							
611	3.80	34.89	600	3.80	34.89	27.74							
814	3.62	34.88	800	3.65	34.88	27.75							
1,019	3.52	34.88	1,000	3.55	34.89	27.77							
1,536	3.39	34.89											
Station 7726; 4 May; 48°47.5' N., 49°27' W.; depth 1,547 m.; dynamic height 970.936							Station 7731; 5 May; 47°25.5' N., 49°58' W.; depth 91 m.; dynamic height 971.023						
0	0.98	33.65	0	0.98	33.65	26.98	0	-0.04	32.74	0	-0.04	32.74	26.31
32	0.96	33.64	25	0.95	33.65	26.99	30	-0.13	32.75	25	-0.15	32.75	26.32
58	0.92	33.87	50	0.95	33.79	27.10	54	-0.16	32.76	50	-0.15	32.76	26.33
84	1.17	34.09	75	1.05	33.96	27.23	78	-0.76	32.83	75	-0.70	32.82	26.40
110	1.46	34.13	100	1.35	34.08	27.30							
162	2.39	34.40	150	2.20	34.35	27.46							
214	2.94	34.51	200	2.85	34.49	27.51							
316	3.14	34.65	300	3.10	34.63	27.60							
417	3.36	34.77	400	3.35	34.75	27.68							
616	3.63	34.85	600	3.60	34.85	27.73							
755	3.73	34.88	800	3.75	34.89	27.75							
942	3.80	34.90	1,000	3.75	34.90	27.76							
1,411	3.39	34.92											
Station 7727; 5 May; 48°34' N., 49°34' W.; depth 601 m.; dynamic height 970.913							Station 7732; 25 May; 42°01' N., 51°04' W.; depth 3,458 m.; dynamic height 971.029						
0	0.41	33.46	0	0.41	33.46	26.87	0	9.11	33.43	0	9.11	33.43	25.89
29	0.56	33.54	25	0.55	33.53	26.91	31	6.65	33.79	25	6.95	33.71	26.43
54	0.69	33.76	50	0.65	33.72	27.06	57	7.21	34.26	50	7.00	34.14	26.76
80	1.03	33.94	75	0.95	33.91	27.20	82	9.66	35.00	75	9.25	34.94	27.05
105	1.48	34.12	100	1.40	34.10	27.32	108	8.18	34.76	100	8.70	34.83	27.05
156	2.30	34.31	150	2.25	34.29	27.41	158	6.47	34.63	150	6.65	34.64	27.20
207	2.51	34.52	200	2.50	34.50	27.55	209	5.53	34.66	200	5.65	34.65	27.34
304	3.10	34.72	300	3.05	34.71	27.67	311	5.39	34.88	300	5.40	34.85	27.53
405	3.55	34.80	400	3.50	34.80	27.70	413	4.99	34.92	400	5.05	34.92	27.63
606	3.65	34.90	600	3.65	34.90	27.76	618	4.54	34.975	600	4.55	34.97	27.72
							823	4.22	34.975	800	4.25	34.98	27.76
							1,030	4.05	34.98	1,000	4.05	34.98	27.80
							1,547	3.68	34.96				
Station 7728; 5 May; 48°13.5' N., 49°44' W.; depth 224 m.; dynamic height 970.982							Station 7733; 25 May; 42°00.5' N., 51°57' W.; depth 4,004 m.; dynamic height 971.031						
0	-0.52	32.95	0	-0.52	32.95	26.50	0	8.57	33.42	0	8.57	33.42	25.97
25	-0.59	32.97	25	-0.59	32.97	26.52	31	5.42	33.56	25	5.70	33.53	26.45
50	-1.30	33.26	50	-1.30	33.26	26.77	56	5.73	33.77	50	5.60	33.71	26.60
75	-0.56	33.42	75	-0.56	33.42	26.88	81	7.28	34.46	75	7.05	34.36	26.93
100	-0.26	33.54	100	-0.26	33.54	26.96	107	6.64	34.52	100	6.85	34.51	27.11
150	0.59	33.78	150	0.59	33.78	27.11	156	5.75	34.54	150	5.80	34.53	27.23
200	1.10	34.00	200	1.10	34.00	27.26	207	5.38	34.65	200	5.40	34.63	27.36
							308	5.16	34.84	300	5.20	34.83	27.54
							410	4.76	34.89	400	4.80	34.89	27.63
							615	4.28	34.92	600	4.30	34.92	27.71
							818	4.20	34.96	800	4.20	34.96	27.76
							1,021	3.86	34.93	1,000	3.90	34.93	27.76
							1,529	3.70	34.95				
Station 7729; 5 May; 47°58.5' N., 49°48' W.; depth 173 m.; dynamic height 971.012							Station 7734; 26 May; 42°20.5' N., 51°32' W.; depth 3,156 m.; dynamic height 971.051						
0	-0.24	32.90	0	-0.24	32.90	26.45	0	4.96	33.27	0	4.96	33.27	26.33
31	-0.30	32.89	25	-0.30	32.89	26.44	29	3.73	33.44	25	3.80	33.39	26.55
57	-1.12	33.05	50	-0.90	33.01	26.56	54	9.78	34.83	50	8.55	34.58	26.88
82	-1.24	33.16	75	-1.20	33.13	26.67	78	10.54	35.05	75	10.55	35.05	26.91
107	-1.15	33.32	100	-1.20	33.27	26.78	102	9.89	34.97	100	9.95	34.98	26.96
158	-0.18	33.57	150	-0.30	33.53	26.96	150	6.96	34.64	150	6.95	34.64	27.16
							198	4.58	34.58	200	4.55	34.58	27.41
							294	4.45	34.61	300	4.45	34.62	27.46
							390	4.38	34.71	400	4.35	34.72	27.55
							582	4.32	34.91	600	4.30	34.91	27.70
							788	4.31	34.94	800	4.30	34.94	27.73
							980	3.83	34.89	1,000	3.85	34.89	27.74
							1,493	3.87	34.96				

## TABLE OF OCEANOGRAPHIC DATA STATIONS OCCUPIED IN 1961 - Continued

Observed values			Scaled values				Observed values			Scaled values			
Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	$\sigma_t$	Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	$\sigma_t$
Station 7735; 26 May; 42°42' N., 51°04' W.; depth 1,820 m.; dynamic height 971.034													
0	3.82	33.22	0	3.82	33.22	26.41	0	2.99	33.02	0	2.99	33.02	26.33
32	1.99	33.47	25	2.35	33.42	26.70	31	1.75	33.09	25	2.00	33.07	26.45
59	1.13	33.52	50	1.30	33.59	26.84	56	1.10	33.25	50	1.25	33.21	26.61
85	1.26	33.69	75	1.15	33.56	26.90	82	0.31	33.34	75	0.55	33.32	26.74
112	3.66	34.02	100	2.69	33.83	27.01	Station 7742; 26 May; 42°44' N., 50°14' W.; depth 364 m.; dynamic height 971.046						
163	4.43	34.30	150	4.35	34.27	27.19	0	3.02	33.01	0	3.02	33.01	26.32
216	3.92	34.36	200	4.00	34.34	27.28	31	0.35	33.17	25	0.60	33.14	26.00
319	3.91	34.62	300	3.90	34.58	27.48	57	-0.14	33.36	50	-0.10	33.31	26.77
419	4.34	34.82	400	4.30	34.79	27.61	82	0.42	33.57	75	0.20	33.51	26.92
616	4.31	34.92	600	4.30	34.92	27.71	108	0.81	33.67	100	0.70	33.64	26.99
819	4.01	34.92	800	4.05	34.92	27.74	158	1.86	33.92	150	1.75	33.87	27.12
1,021	3.82	34.915	1,000	3.85	34.92	27.76	209	2.50	34.11	200	2.40	34.07	27.22
1,533	3.73	34.92					311	4.03	34.72	300	3.85	34.65	27.55
Station 7736; 26 May; 42°52' N., 50°51' W.; depth 946 m.; dynamic height 971.054													
0	2.41	33.08	0	2.41	33.08	26.43	Station 7743; 26 May; 42°39' N., 50°16' W.; depth 1,729 m.; dynamic height 971.020						
31	0.16	33.16	25	0.45	33.14	26.61	0	3.44	33.03	0	3.44	33.03	26.30
56	-0.12	33.28	50	-0.10	33.24	26.71	31	3.26	33.31	25	3.30	33.26	26.49
81	0.29	33.50	75	0.20	33.47	26.88	56	2.10	33.50	50	2.30	33.46	26.74
104	0.47	33.51	100	0.45	33.51	26.90	81	1.74	33.59	75	1.80	33.57	26.86
155	3.27	34.07	150	3.25	34.04	27.12	106	1.25	33.76	100	1.30	33.72	27.02
205	2.80	34.17	200	2.80	34.16	27.26	157	2.54	34.16	150	2.35	34.11	27.25
305	3.59	34.50	300	3.55	34.48	27.44	207	4.23	34.58	200	4.20	34.56	27.44
404	4.42	34.80	400	4.40	34.79	27.60	306	3.79	34.68	300	3.80	34.67	27.57
604	4.07	34.88	600	4.05	34.88	27.71	407	3.90	34.76	400	3.90	34.75	27.62
805	4.00	34.90	800	4.00	34.90	27.73	607	3.94	34.87	600	3.95	34.87	27.71
Station 7737; 26 May; 42°55.5' N., 50°48' W.; depth 582 m.; dynamic height 971.033													
0	3.55	33.22	0	3.55	33.22	26.44	Station 7744; 27 May; 42°23' N., 50°15' W.; depth 2,730 m.; dynamic height 971.016						
37	1.52	33.19	25	2.30	33.20	26.53	0	5.56	33.38	0	5.56	33.38	26.35
68	0.07	33.26	50	0.80	33.21	26.64	31	3.05	33.51	25	3.20	33.47	26.67
110	0.65	33.60	75	0.10	33.32	26.77	56	3.85	33.93	50	3.70	33.82	26.90
145	1.52	33.80	100	0.50	33.54	26.92	81	3.85	34.07	75	3.85	34.05	27.07
246	4.40	34.45	150	1.70	33.83	27.08	107	3.37	34.09	100	3.50	34.08	27.13
352	4.62	34.77	200	3.45	34.15	27.19	156	3.41	34.26	150	3.40	34.24	27.26
573	4.08	34.90	300	4.55	34.66	27.48	206	4.59	34.51	200	4.55	34.48	27.34
			400	4.50	34.82	27.61	307	3.93	34.69	300	3.95	34.68	27.56
							406	4.18	34.80	400	4.15	34.80	27.63
							606	4.68	34.99	600	4.70	34.99	27.72
							803	4.34	34.86	800	4.35	34.93	27.72
							967	3.87	34.86	1,000	3.85	34.87	27.72
							1,477	3.59	34.92				
Station 7739; 26 May; 43°01' N., 50°38' W.; depth 93 m.; dynamic height 971.082													
0	2.94	33.05	0	2.94	33.05	26.36	Station 7745; 27 May; 42°01' N., 50°15' W.; depth 3,531 m.; dynamic height 971.029						
25	2.00	33.07	25	2.00	33.07	26.45	0	8.47	33.63	0	8.47	33.63	26.15
50	1.64	33.11	50	1.64	33.11	26.51	30	6.13	33.55	25	6.40	33.55	26.38
75	0.65	33.43	75	0.65	33.43	26.83	55	5.73	33.79	50	5.75	33.79	26.65
							78	6.61	34.38	75	6.55	34.34	26.98
							103	6.04	34.43	100	6.10	34.42	27.10
							151	5.86	34.60	150	5.85	34.59	27.27
							200	6.14	34.76	200	6.15	34.77	27.37
							301	5.38	34.84	300	5.40	34.84	27.52
							403	5.53	35.00	400	5.55	35.00	27.63
							614	4.86	35.01	600	4.90	35.01	27.72
							816	4.37	35.00	800	4.40	35.00	27.76
							1,020	4.12	34.99	1,000	4.15	34.99	27.78
							1,530	3.69	34.97				
Station 7740; 26 May; 43°19' N., 50°14' W.; depth 58 m.; dynamic height 971.100													
0	4.68	32.72	0	4.68	32.72	25.93							
30	2.10	32.98	25	2.20	32.97	26.36							
55	2.08	32.98	50	2.05	32.98	26.37							

## TABLE OF OCEANOGRAPHIC DATA STATIONS OCCUPIED IN 1961—Continued

Observed values			Scaled values				Observed values			Scaled values			
Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	$\sigma_t$	Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	$\sigma_t$
Station 7746; 27 May; 41°34.5' N., 50°26' W.; depth 4,095 m.; dynamic height 971.145													
0	11.31	34.61	0	11.31	34.61	26.44	0	11.31	34.61	0	11.31	34.61	26.44
29	11.28	34.59	25	11.30	34.60	26.43	31	11.72	35.25	25	11.70	35.25	26.40
51	11.59	34.80	50	11.60	34.78	26.51	55	15.97	36.00	50	16.20	36.03	26.51
75	11.01	34.90	75	11.05	34.90	26.71	80	14.66	35.78	75	14.90	35.83	26.65
97	11.15	35.22	100	11.15	35.23	26.91	104	11.82	35.26	100	11.95	35.28	26.83
144	11.17	35.27	150	11.10	35.26	26.98	154	11.55	35.24	150	11.55	35.24	26.88
150	9.42	35.09	200	9.70	35.06	27.07	203	11.72	35.29	200	11.75	35.29	26.88
287	7.53	34.92	300	7.35	34.91	27.32	300	11.56	35.35	300	11.55	35.35	26.96
389	6.10	34.87	400	6.05	34.87	27.46	399	10.79	35.33	400	10.75	35.33	27.10
600	5.42	35.01	600	5.40	35.01	27.66	591	6.92	35.03	600	6.80	35.03	27.49
800	4.68	34.99	800	4.70	34.99	27.72	784	5.26	35.01	800	5.10	35.01	27.69
1,000	4.10	34.96	1,000	4.10	34.96	27.76	976	4.56	34.99	1,000	4.50	34.99	27.75
1,500	3.87	34.98					1,448	3.93	34.97				
Station 7747; 27 May; 41°00.5' N., 50°16' W.; depth 3,822 m.; dynamic height 971.245													
0	15.39	35.57	0	15.39	35.57	26.34	0	16.73	36.30	0	16.73	36.30	26.59
28	16.33	36.06	25	16.30	36.01	26.50	29	16.74	36.28	25	16.75	36.29	26.58
50	15.19	35.97	50	15.20	35.97	26.69	52	15.95	36.16	50	16.00	36.16	26.66
72	14.36	35.84	75	14.25	35.83	26.79	76	15.58	36.18	75	15.60	36.18	26.76
95	13.58	35.72	100	13.50	35.70	26.85	99	15.44	36.14	100	15.45	36.14	26.77
140	12.72	35.53	150	12.60	35.50	26.88	147	15.16	36.09	150	15.15	36.08	26.79
194	11.95	35.40	200	11.90	35.40	26.94	194	14.94	36.04	200	14.90	36.03	26.80
283	11.54	35.39	300	11.20	35.35	27.03	285	14.31	35.93	300	13.70	35.83	26.91
389	8.72	35.04	400	8.55	35.01	27.24	373	12.98	35.70	400	12.40	35.61	27.00
618	6.06	35.03	600	6.20	35.03	27.57	543	9.08	35.17	600	8.05	35.09	27.36
825	4.17	34.89	800	4.30	34.90	27.70	729	6.41	35.02	800	5.90	35.02	27.60
1,035	3.97	34.89	1,000	4.00	34.89	27.72	918	5.39	35.02	1,000	5.15	35.02	27.70
1,562	3.95	34.92					1,406	4.10	34.98				
Station 7748; 27 May; 41°54.5' N., 49°22' W.; depth 3,475 m.; dynamic height 971.018													
0	10.25	33.44	0	10.25	33.44	25.71	0	16.69	34.51	0	16.69	34.51	25.23
30	5.45	33.52	25	5.90	33.49	26.40	32	15.16	35.92	25	15.40	35.90	26.59
56	6.97	34.15	50	6.75	34.02	26.70	58	14.69	35.90	50	14.85	35.91	26.72
80	5.87	34.36	75	6.15	34.33	27.03	84	13.57	35.70	75	13.95	35.78	26.82
106	4.65	34.24	100	4.75	34.26	27.14	110	12.89	35.55	100	13.10	35.59	26.85
155	5.39	34.58	150	5.35	34.56	27.31	163	12.44	35.47	150	12.60	35.49	26.87
205	5.76	34.74	200	5.75	34.73	27.39	215	11.24	35.21	200	11.50	35.26	26.90
307	5.42	34.90	300	5.45	34.89	27.56	319	10.57	35.24	300	10.75	35.24	27.03
408	4.92	34.93	400	4.95	34.93	27.65	425	7.81	34.94	400	8.45	35.00	27.22
515	4.46	34.96	600	4.50	34.96	27.72	634	5.65	35.01	600	5.90	35.00	27.59
818	4.08	34.94	800	4.10	34.94	27.75	843	4.63	34.96	800	4.80	34.97	27.70
1,021	4.09	34.98	1,000	4.10	34.98	27.78	1,052	4.23	34.97	1,000	4.30	34.95	27.74
1,526	3.67	34.93					1,575	3.61	34.92				
Station 7749; 27 May; 41°30' N., 48°58' W.; depth 2,853 m.; dynamic height 971.048													
0	9.54	33.47	0	9.54	33.47	25.86	0	12.22	34.67	0	12.22	34.67	26.31
27	5.12	33.49	25	5.45	33.49	26.45	29	10.35	34.77	25	10.50	34.75	26.69
50	5.38	33.64	50	5.40	33.64	26.57	53	10.13	34.89	50	10.15	34.87	26.84
72	4.52	33.78	75	4.50	33.82	26.82	76	10.37	35.01	75	10.35	35.00	26.91
95	4.53	34.12	100	4.70	34.18	27.08	100	10.78	35.14	100	10.80	35.14	26.94
138	6.06	34.51	150	5.80	34.51	27.21	147	10.39	35.24	150	10.30	35.24	27.11
183	5.12	34.51	200	5.30	34.59	27.34	194	8.72	35.02	200	8.65	35.02	27.21
272	6.21	34.94	300	6.00	34.93	27.52	279	7.39	34.95	300	6.70	34.89	27.39
360	5.37	34.92	400	5.30	34.91	27.61	357	4.60	34.72	400	4.70	34.79	27.56
536	5.10	35.01	600	4.95	35.01	27.71	494	5.03	34.97	600	4.60	34.97	27.72
719	4.60	34.99	800	4.35	34.98	27.75	660	4.45	34.95	800	4.15	34.92	27.73
905	4.08	34.94	1,000	4.00	34.95	27.77	827	4.08	34.91	1,000	3.90	34.91	27.75
1,368	3.70	34.97					1,252	3.64	34.91				
Station 7750; 28 May; 40°58' N., 48°28' W.; depth 3,658 m.; dynamic height 971.318													
0	17.11	36.16	0	17.11	36.16	26.39	0	17.11	36.16	0	17.11	36.16	26.40
31	17.12	36.15	25	17.10	36.16	26.40	31	17.12	36.15	25	17.10	36.16	26.40
55	15.97	36.00	50	16.20	36.03	26.51	55	15.97	36.00	50	16.20	36.03	26.51
80	14.66	35.78	75	14.90	35.83	26.65	80	14.66	35.78	75	14.90	35.83	26.65
104	11.82	35.26	100	11.95	35.28	26.83	104	11.82	35.26	100	11.95	35.28	26.83
154	11.55	35.24	150	11.55	35.24	26.88	154	11.55	35.24	150	11.55	35.24	26.88
203	11.72	35.29	200	11.75	35.29	26.88	203	11.72	35.29	200	11.75	35.29	26.88
300	11.56	35.35	300	11.55	35.35	26.96	300	11.56	35.35	300	11.55	35.35	26.96
399	10.79	35.33	400	10.75	35.33	27.10	399	10.79	35.33	400	10.75	35.33	27.10
591	6.92	35.03	600	6.80	35.03	27.49	591	6.92	35.03	600	6.80	35.03	27.49
784	5.26	35.01	800	5.10	35.01	27.69	784	5.26	35.01	800	5.10	35.01	27.69
976	4.56	34.99	1,000	4.50	34.99	27.75	976	4.56	34.99	1,000	4.50	34.99	27.75
1,448	3.93	34.97					1,448	3.93	34.97				
Station 7751; 28 May; 41°34' N., 47°16' W.; depth 4,481 m.; dynamic height 971.384													
0	16.73	36.30	0	16.73	36.30	26.59	0	16.73	36.30	0	16.73	36.30	26.59
29	16.74	36.28	25	16.75	36.29	26.58	29	16.74	36.28	25	16.75	36.29	26.58
52	15.95	36.16	50	16.00	36.16	26.66	52	15.95	36.16	50	16.00	36.16	26.66
76	15.58	36.18	75	15.60	36.18	26.76	76	15.58	36.18	75	15.60	36.18	26.76
99	15.44	36.14	100	15.45	36.14	26.77	99	15.44	36.14	100	15.45	36.14	26.77
147	15.16	36.09	150	15.15	36.08	26.79	147	15.16	36.09	150	15.15	36.08	26.79
194	14.94	36.04	200	14.90	36.03	26.80	194	14.94	36.04	200	14.90	36.03	26.80
285	14.31	35.93	300	13.70	35.83	26.91	285	14.31	35.93	300	13.70	35.83	26.91
373	12.98	35.70	400	12.40	35.61	27.00	373	12.98	35.70	400	12.40	35.61	27.00
543	9.08	35.17	600	8.05	35.09	27.36	543	9.08	35.17	600	8.05	35.09	27.36
729	6.41	35.02	800	5.90	35.02	27.60	729	6.41	35.02	800	5.90	35.02	27.60
918	5.39	35.02	1,000	5.15	35.02	27.70	918	5.39	35.02	1,000	5.15	35.02	27.70
1,406	4.10	34.98					1,406	4.10	34.98				
Station 7752; 28 May; 41°57.5' N., 47°58' W.; depth 3,932 m.; dynamic height 971.257													
0	16.69	34.51	0	16.69	34.51	25.23	0	16.69	34.51	0	16.69	34.51	25.23
32	15.16	35.92	25	15.40	35.90	26.59	32	15.16	35.92	25	15.40	35.90	26.59
58	14.69	35.90	50	14.85	35.91	26.72	58	14.69	35.90	50	14.85	35.91	26.72
84	13.57	35.70	75	13.95	35.78	26.82	84	13.57	35.70	75	13.95	35.78	26.82
110	12.89	35.55	100	13.10	35.59	26.85	110	12.89	35.55	100	13.10	35.59	26.85
163	12.44	35.47	150	12.60	35.49	26.87	163	12.44	35.47	150	12.60	35.49	26.87
215	11.24	35.21	200	11.50	35.26	26.90	215	11.24	35.21	200	11.50	35.26	26.90
319	10.57	35.24	300	10.75	35.24	27.03	319	10.57	35.24	300	10.75	35.24	27.03
425	7.81	34.94	400	8.45	35.00	27.22	425	7.81	34.94	400	8.45	35.00	27.22
634	5.65	35.01	600	5.90	35.00	27.59	634	5.65	35.01				

## TABLE OF OCEANOGRAPHIC DATA STATIONS OCCUPIED IN 1961—Continued

Observed values			Scaled values				Observed values			Scaled values			
Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	$\sigma_t$	Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	$\sigma_t$
Station 7754; 28 May; 42°42' N., 49°06' W.; depth 2,871 m.; dynamic height 970.958													
0	7.37	33.51	0	7.37	33.51	26.22							
28	4.41	33.59	25	4.80	33.57	26.59							
51	1.78	33.81	50	1.80	33.80	27.05							
74	2.34	34.06	75	2.40	34.07	27.22							
98	3.58	34.30	100	3.55	34.31	27.30							
142	2.99	34.40	150	3.35	34.45	27.44							
188	4.72	34.72	200	4.75	34.76	27.54							
286	4.89	34.89	300	4.90	34.90	27.63							
388	4.84	34.94	400	4.80	34.94	27.67							
606	4.34	34.96	600	4.35	34.96	27.74							
807	3.97	34.92	800	3.95	34.92	27.75							
1,007	3.57	34.88	1,000	3.60	34.88	27.75							
Station 7755; 29 May; 43°21.5' N., 48°49' W.; depth 3,658 m.; dynamic height 970.973													
0	7.95	33.69	0	7.95	33.69	26.28							
33	4.40	33.72	25	4.65	33.71	26.71							
60	6.28	34.39	50	5.50	34.11	26.93							
87	6.60	34.55	75	6.55	34.51	27.12							
114	5.68	34.56	100	6.15	34.56	27.21							
169	5.20	34.66	150	5.35	34.63	27.36							
223	4.54	34.70	200	4.75	34.68	27.47							
332	4.39	34.83	300	4.40	34.80	27.61							
444	4.32	34.89	400	4.35	34.87	27.67							
668	3.95	34.91	600	4.05	34.91	27.73							
890	3.71	34.89	800	3.80	34.90	27.75							
1,112	3.61	34.90	1,000	3.65	34.90	27.76							
1,670	3.51	34.90											
Station 7756; 29 May; 43°08' N., 48°07' W.; depth 3,383 m.; dynamic height 970.985													
0	8.55	33.77	0	8.55	33.77	26.25							
31	6.00	33.83	25	6.50	33.81	26.57							
57	5.26	34.05	50	5.40	33.99	26.85							
82	5.04	34.28	75	5.05	34.22	27.07							
107	5.57	34.49	100	5.50	34.46	27.21							
157	5.30	34.64	150	5.30	34.62	27.36							
208	5.83	34.84	200	5.80	34.82	27.46							
311	5.95	34.87	300	5.10	34.86	27.57							
414	4.79	34.95	400	4.80	34.95	27.68							
624	4.40	34.95	600	4.45	34.95	27.72							
831	4.04	34.96	800	4.10	34.96	27.76							
1,037	3.82	34.94	1,000	3.85	34.95	27.78							
1,551	3.51	34.88											
Station 7757; 29 May; 42°53' N., 47°30' W.; depth 3,841 m.; dynamic height													
0	9.98	33.60											
382	4.68	34.84											
509	4.70	34.96											
638	4.30	34.97											
960	3.85	34.93											
Station 7758; 29 May; 42°35' N., 46°48' W.; depth 4,207 m.; dynamic height 971.231													
0	14.69	35.36	0	14.69	35.36	26.34							
31	14.38	35.63	25	14.45	35.58	26.56							
57	13.91	35.74	50	14.05	35.73	26.76							
81	13.32	35.64	75	13.50	35.67	26.83							
106	12.74	35.53	100	12.85	35.55	26.87							
155	12.44	35.48	150	12.50	35.49	26.89							
205	11.69	35.35	200	11.75	35.36	26.93							
306		35.25	300	10.70	35.26	27.05							
406	8.60	35.10	400	8.80	35.12	27.26							
608	4.71	34.82	600	4.80	34.83	27.59							
810	4.73	34.95	800	4.75	34.94	27.68							
1,010	4.19	34.96	1,000	4.20	34.96	27.76							
1,513	3.73	34.92											
Station 7759; 29 May; 42°19.5' N., 46°08' W.; depth 4,828 m.; dynamic height 971.556													
0	16.60	36.25	0	16.60	36.25	26.58							
28	16.37	36.15	25	16.40	36.15	26.56							
51	16.02	36.22	50	16.00	36.22	26.70							
74	15.83	36.21	75	15.80	36.21	26.74							
97	15.71		100	15.70	36.20	26.76							
142	15.68	36.18	150	15.65	36.18	26.75							
188	15.56	36.17	200	15.50	36.16	26.77							
280	15.03	36.08	300	14.95	36.07	26.82							
371	14.75	36.00	400	14.50	35.95	26.83							
552	*12.60	35.65	600	11.80	35.56	27.08							
735		35.29	800	8.60	35.19	27.35							
916	7.00	35.03	1,000	6.00	34.99	27.57							
1,372	4.15	34.94											
Station 7760; 30 May; 42°46.5' N., 45°40' W.; depth 4,892 m.; dynamic height 971.458													
0	16.61	36.15	0	16.61	36.15	26.46							
32	16.24	36.19	25	16.35	36.18	26.59							
58	15.62	36.15	50	15.80	36.16	26.70							
84	15.46	36.15	75	15.50	36.15	26.76							
110	15.33	36.11	100	15.40	36.13	26.77							
160	14.99	36.03	150	15.05	36.04	26.78							
212	14.65	35.97	200	14.75	35.99	26.81							
315	13.53	35.74	300	13.75	35.78	26.86							
418	12.37	35.52	400	12.60	35.56	26.92							
622	9.65	35.26	600	9.95	35.29	27.21							
828	6.45	35.02	800	6.80	35.05	27.51							
1,035	5.14		1,000	5.25	34.98	27.65							
1,552	3.97	34.96											
Station 7761; 30 May; 43°15.5' N., 45°07' W.; depth 3,292 m.; dynamic height 971.393													
0	16.70	36.19	0	16.70	36.19	26.52							
31	16.52	36.25	25	16.60	36.25	26.58							
57	15.49	36.11	50	15.65	36.13	26.71							
82	15.29	36.10	75	15.35	36.11	26.77							
108	14.80	36.03	100	14.95	36.05	26.81							
158	14.59	35.97	150	14.60	35.98	26.83							
209	14.37	35.93	200	14.40	35.94	26.84							
310	13.34	35.74	300	13.45	35.76	26.91							
410	12.23	35.59	400	12.35	35.61	27.01							
608	8.51	35.15	600	8.70	35.16	27.31							
807	5.92	35.02	800	5.95	35.02	27.60							
1,006	5.41	34.99	1,000	5.45	34.99	27.64							
1,501	3.90	34.93											

## TABLE OF OCEANOGRAPHIC DATA STATIONS OCCUPIED IN 1961—Continued

Observed values			Scaled values				Observed values			Scaled values			
Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	$\sigma_t$	Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	$\sigma_t$
Station 7762: 30 May; 43°33.5' N., 45°53' W.; depth 4,572 m.; dynamic height 971.039							Station 7766: 31 May; 44°08' N., 48°19' W.; depth 3,329 m.; dynamic height 970.980						
0	9.20	33.52	0	9.20	33.52	25.95	0	8.52	33.58	0	8.52	33.58	26.10
30	6.08	33.87	25	6.55	33.81	26.56	32	5.36	33.83	25	5.85	33.78	26.63
54	5.22	33.91	50	5.30	33.91	26.80	59	4.82	34.13	50	4.90	34.03	26.94
79	6.75	34.37	75	6.50	34.32	26.97	85	5.64	34.43	75	5.25	34.32	27.13
103	6.97	34.58	100	6.95	34.57	27.11	111	6.31	34.61	100	6.10	34.54	27.20
151	4.10	34.27	150	4.10	34.27	27.22	163	6.37	34.79	150	6.35	34.77	27.35
200	1.61	34.47	200	4.60	34.47	27.32	216	5.39	34.78	200	5.60	34.79	27.46
299	5.32	34.80	300	5.30	34.80	27.50	320	5.30	34.93	300	5.30	34.50	27.58
397	5.22	34.89	400	5.20	34.89	27.58	424	4.96	34.98	400	5.05	34.97	27.67
597	4.37	34.93	600	4.35	34.93	27.72	628	4.13	34.94	600	4.20	34.94	27.74
792	3.86	34.88	800	3.85	34.88	27.73	824	3.86	34.91	800	3.90	34.91	27.75
987	3.76	34.90	1,000	3.75	34.90	27.76	1,017	3.67	34.92	1,000	3.70	34.92	27.78
1,471	3.65	34.95					1,473	3.56	34.91				
Station 7763: 30 May; 43°48' N., 46°27' W.; depth 4,079 m.; dynamic height 970.981							Station 7767: 31 May; 44°12.5' N., 48°45' W.; depth 1,646 m.; dynamic height 970.940						
0	8.26	33.68	0	8.26	33.68	26.22	0	3.36	33.15	0	3.36	33.15	26.40
32	4.07	33.77	25	4.60	33.76	26.76	21	2.96	33.58	25	3.00	33.59	26.78
58	3.36	33.80	50	3.55	33.79	26.80	39	3.23	33.60	50	2.80	33.68	26.87
84	2.50	33.97	75	2.70	33.90	27.06	56	2.55	33.72	75	2.40	34.05	27.20
110	2.49	34.09	100	2.50	34.05	27.19	73	2.39	34.03	100	3.10	34.20	27.26
161	2.47	34.18	150	2.50	34.16	27.28	107	3.26	34.24	150	3.60	34.52	27.47
213	3.28	34.43	200	2.30	34.37	27.47	142	3.64	34.49	200	3.30	34.58	27.54
317	3.95	34.68	300	2.80	34.64	27.64	217	3.23	34.60	300	3.55	34.78	27.68
420	1.07	34.79	400	3.85	34.78	27.65	295	3.55	34.78	400	3.70	34.83	27.70
628	4.45	34.96	600	4.45	34.95	27.72	462	3.75	34.84	600	3.75	34.88	27.74
836	4.10	34.92	800	4.15	34.93	27.74	609	3.74	34.88	800	3.70	34.89	27.75
1,043	3.86	34.94	1,000	3.90	34.94	27.77	752	3.72	34.89	1,000	3.55	34.88	27.76
1,562	3.53	34.91					1,100	3.50	34.87				
Station 7764: 30 May; 44°00' N., 46°56' W.; depth 4,207 m.; dynamic height 971.217							Station 7768: 31 May; 44°13.5' N., 48°51' W.; depth 640 m.; dynamic height 971.114						
0	14.05	35.58	0	14.05	35.58	26.64	0	2.97	32.93	0	2.97	32.93	26.26
32	13.37	35.63	25	13.45	35.62	26.80	23	-1.69	33.00	25	-1.45	33.01	26.44
59	13.61	35.74	50	13.55	35.72	26.86	47	-0.72	33.27	50	-0.70	33.27	26.76
85	13.60	35.75	75	13.60	35.75	26.87	70	-0.69	33.30	75	-0.70	33.29	26.78
111	13.58	35.74	100	13.60	35.75	26.87	94	-0.59	33.30	100	-0.55	33.31	26.79
163	13.27	35.68	150	13.35	35.70	26.88	141	-0.65	33.39	150	-0.30	33.43	26.85
215	12.10	35.45	200	12.45	35.52	27.92	188	1.54	33.65	200	1.70	33.74	27.01
320	9.32	35.09	300	9.75	35.13	27.12	282	2.44	34.26	300	2.55	34.30	27.39
423	7.84	35.03	400	8.20	35.05	27.30	376	2.86	34.43	(400)	2.95	34.46	27.48
630	5.22	34.94	600	5.50	34.95	27.60	564	3.49	34.71	(600)	3.60	34.76	27.66
837	4.52	34.92	800	4.60	34.93	27.69							
1,045	4.22	34.92	1,000	4.30	34.93	27.72							
1,562	3.60	34.91											
Station 7765: 30 May; 44°04' N., 47°38' W.; depth 4,024 m.; dynamic height 971.218							Station 7769: 31 May; 44°13.5' N., 48°57' W.; depth 183 m.; dynamic height 971.083						
0	14.25	35.78	0	14.25	35.78	26.75	0	2.97	32.90	0	2.97	32.90	26.24
32	13.88	35.81	25	13.90	35.81	26.85	26	-0.63	33.16	25	-0.60	33.15	26.66
58	13.92	35.83	50	13.90	35.83	26.87	53	-0.74	33.21	50	-0.75	33.21	26.72
81	13.74	35.81	75	13.80	35.82	26.88	79	-0.61	33.31	75	-0.65	33.29	26.78
111	13.64	35.79	100	13.70	35.80	26.89	106	-0.36	33.47	100	-0.45	33.43	26.93
162	13.57	35.77	150	13.55	35.78	26.90	158	0.64	33.75	150	0.45	33.71	27.06
214	13.50	35.75	200	13.50	35.76	26.90							
314	11.27	35.44	300	11.70	35.49	27.04							
411	8.50	35.08	400	8.85	35.12	27.26							
596	5.31	34.88	600	5.30	34.88	27.56							
793	4.84	35.01	800	4.80	35.01	27.73							
990	4.27	34.95	1,000	4.25	34.95	27.74							
1,483	3.62	34.89											
Station 7770: 31 May; 44°14' N., 49°06' W.; depth 64 m.; dynamic height 971.081							Station 7770: 31 May; 44°14' N., 49°06' W.; depth 64 m.; dynamic height 971.081						
0	2.76	32.95	0	2.76	32.95	26.29	0	2.76	32.95	0	2.76	32.95	26.29
25	0.06	33.11	25	0.06	33.11	26.63	25	0.06	33.11	25	0.06	33.11	26.63
50	-0.21	33.41	50	-0.21	33.41	26.61	50	-0.21	33.41	50	-0.21	33.41	26.61

# TABLE OF OCEANOGRAPHIC DATA STATIONS OCCUPIED IN 1961—Continued

Observed values			Scaled values				Observed values			Scaled values			
Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	$\sigma_t$	Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	$\sigma_t$
Station 7771; 31 May; 44°14' N., 49°23' W.; depth 52 m.; dynamic height 971.092													
0	3.75	32.91	0	3.75	32.91	26.17							
22	3.04	32.88	25	2.65	32.89	26.26							
43	0.67	33.03	50	0.35	33.09	26.57							
Station 7772; 31 May; 44°57.5' N., 49°25' W.; depth 73 m.; dynamic height 971.093													
0	3.05	32.83	0	3.05	32.83	26.18							
32	1.66	32.87	25	2.05	32.86	26.28							
57	0.06	33.07	50	0.50	33.00	26.49							
Station 7773; 31 May; 44°56' N., 49°13' W.; depth 88 m.; dynamic height 971.080													
0	2.88	32.82	0	2.88	32.82	26.18							
31	0.50	33.02	25	0.95	32.98	26.45							
57	-0.17	33.24	50	-0.10	33.20	26.68							
83	-0.14	33.34	75	-0.15	33.32	26.78							
Station 7774; 31 May; 44°55' N., 49°04' W.; depth 622 m.; dynamic height 971.037													
0	3.10	32.88	0	3.10	32.88	26.21							
31	0.09	33.09	25	0.70	33.05	26.47							
58	-0.45	33.38	50	-0.40	33.33	26.80							
83	-0.12	33.43	75	-0.20	33.42	26.86							
109	0.02	33.49	100	-0.05	33.47	26.90							
160	0.28	33.69	150	0.20	33.63	27.01							
211	1.50	34.04	200	1.20	33.95	27.21							
313	3.07	34.68	300	2.95	34.62	27.61							
413	3.53	34.79	400	3.50	34.78	27.68							
612	3.72	34.85	600	3.70	34.85	27.72							
Station 7775; 31 May; 44°53' N., 48°51' W.; depth 1,829 m.; dynamic height 970.932													
0	3.44	33.09	0	3.44	33.09	26.35							
32	2.41	33.50	25	2.50	33.39	26.67							
58	2.66	34.12	50	2.60	34.00	27.14							
84	2.20	34.18	75	2.30	34.16	27.30							
110	2.84	34.27	100	2.55	34.23	27.33							
161	2.78	34.52	150	2.80	34.48	27.51							
213	3.07	34.61	200	3.00	34.58	27.57							
315	3.73	34.81	300	3.70	34.79	27.67							
414	3.75	34.84	400	3.75	34.84	27.71							
609	3.76	34.88	600	3.75	34.88	27.74							
813	3.73		800	3.70	34.88	27.74							
1,019	3.70	34.88	1,000	3.70	34.88	27.74							
1,541	3.44	34.91											
Station 7776; 31 May; 44°51' N., 48°37' W.; depth 2,926 m.; dynamic height 970.920													
0	4.06	33.25	0	4.06	33.25	26.41							
32	1.76	33.90	25	1.90	33.75	27.00							
58	3.28	34.18	50	2.60	34.09	27.22							
84	4.36	34.48	75	4.05	34.39	27.32							
109	4.45	34.59	100	4.45	34.56	27.41							
160	4.02	34.66	150	4.05	34.64	27.52							
212	4.35	34.78	200	4.30	34.76	27.58							
305	4.38	34.86	300	4.40	34.86	27.66							
388	4.32	34.90	400	4.30	34.90	27.70							
534	4.04	34.88	600	4.00	34.89	27.72							
697	3.90	34.90	800	3.75	34.90	27.76							
852	3.70	34.10	1,000	3.65	34.80	27.76							
1,214	3.54	34.90											
Station 7777; 1 June; 44°41' N., 47°57' W.; depth 3,566 m.; dynamic height 971.003													
0	8.49	33.67	0	8.49	33.67	26.18							
33	5.82	33.93	25	6.60	33.89	26.62							
59	3.57	33.90	50	4.15	33.91	26.93							
86	5.65	34.33	75	4.95	34.16	27.04							
112	5.58	34.43	100	5.60	34.58	27.13							
164	5.86	34.64	150	5.80	34.87	27.27							
217	5.92	34.79	200	5.90	34.75	27.39							
321	5.50	34.90	300	5.60	34.89	27.54							
423	4.84	34.93	400	4.95	34.93	27.65							
625	4.44	34.96	600	4.50	34.96	27.72							
832	4.05	34.94	800	4.10	34.95	27.76							
1,037	3.65	34.91	1,000	3.70	34.92	27.78							
1,551	3.49	34.91											
Station 7778; 1 June; 44°33' N., 47°12' W.; depth 3,932 m.; dynamic height 971.057													
0	10.82	34.43	0	10.82	34.43	26.38							
32	9.65	34.69	25	9.80	34.63	26.72							
58	10.13	34.96	50	9.95	34.88	26.89							
84	10.54	35.09	75	10.45	35.07	26.95							
110	10.29	35.07	100	10.35	35.08	26.97							
161	9.94	35.14	150	10.05	35.13	27.06							
213	7.81	34.84	200	8.10	34.89	27.19							
318	7.63	35.10	300	7.70	35.07	27.39							
422	5.56	34.92	400	5.75	34.95	27.57							
632	4.81	34.99	600	4.90	34.99	27.70							
839	4.17	34.92	800	4.30	34.93	27.72							
1,045	3.85	34.93	1,000	3.90	34.93	27.76							
1,557	3.62	34.93											
Station 7779; 1 June; 44°23.5' N., 46°23' W.; depth 4,079 m.; dynamic height 971.023													
0	9.22	33.71	0	9.22	33.71	26.10							
31	7.98	33.90	25	7.20	33.84	26.50							
57	7.80	34.52	50	7.70	34.44	26.90							
82	7.12	34.52	75	7.30	34.52	27.02							
108	6.46	34.51	100	6.55	34.51	27.12							
158	7.34	34.80	150	7.30	34.79	27.23							
209	6.65	34.82	200	6.80	34.82	27.33							
312	5.50	34.85	300	5.60	34.85	27.51							
414	4.44	34.82	400	4.55	34.83	27.61							
620	4.09	34.90	600	4.10	34.89	27.71							
824	4.07	34.95	800	4.05	34.95	27.76							
1,030	3.78	34.95	1,000	3.80	34.95	27.79							
1,541	3.53	34.92											
Station 7780; 1 June; 44°15' N., 45°40' W.; depth 4,445 m.; dynamic height 970.991													
0	10.82	34.36	0	10.82	34.36	26.33							
31	7.74	34.45	25	7.95	34.43	26.86							
57	7.24	34.51	50	7.35	34.50	27.00							
82	6.82	34.59	75	6.90	34.57	27.12							
108	6.67	34.62	100	6.70	34.61	27.17							
158	6.50	34.77	150	6.55	34.76	27.31							
209	5.88	34.96	200	5.95	34.76	27.39							
313	5.72	34.96	300	5.75	34.95	27.57							
416	5.32	34.99	400	5.35	34.99	27.65							
626	4.68	34.99	600	4.75	34.99	27.72							
832	4.10	34.94	800	4.20	34.95	27.75							
1,038	3.94	34.94	1,000	3.95	34.94	27.77							
1,553	3.63	34.92											

## TABLE OF OCEANOGRAPHIC DATA STATIONS OCCUPIED IN 1961—Continued

Observed values			Scaled values				Observed values			Scaled values			
Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	$\sigma_t$	Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	$\sigma_t$
Station 7781; 1 June; 44°05' N., 44°48' W.; depth 4,663 m.; dynamic height 971.027							Station 7785; 2 June; 45°26' N., 46°49' W.; depth 2,834 m.; dynamic height 970.982						
0	9.71	33.96	0	9.71	33.96	26.21	0	8.26	33.94	0	8.26	33.94	26.42
32	7.09	34.05	25	7.35	34.02	26.62	33	8.66	34.66	25	8.60	34.64	26.92
59	6.62	34.29	50	6.80	34.26	26.88	59	7.53	34.60	50	7.80	34.61	27.02
85	4.86	34.24	75	5.50	34.26	27.05	86	8.36	34.87	75	8.05	34.77	22.11
111	5.10	34.33	100	4.95	34.28	27.13	113	8.04	34.89	100	8.25	34.89	27.17
163	7.75	34.93	150	7.25	34.81	27.28	165	5.93	34.69	150	6.30	34.73	27.32
215	6.26	34.75	200	6.65	34.78	27.31	218	6.51	34.90	200	6.35	34.84	27.40
318	5.53	34.87	300	5.70	34.85	27.49	323	5.36	34.92	300	5.55	34.91	27.56
420	4.80	34.93	400	4.90	34.93	27.65	425	4.94	34.95	400	5.05	34.95	27.65
620	4.75	34.95	600	4.75	34.95	27.69	628	4.29	34.97	600	4.35	34.97	27.75
827	4.12	34.94	800	4.20	34.94	27.74	834	4.02	34.92	800	4.05	34.93	27.75
1,033	3.85	34.91	1,000	3.90	34.92	27.76	1,039	3.86	34.91	1,000	3.90	34.92	27.76
1,553	3.58	34.92					1,546	3.53	34.92				
Station 7782; 2 June; 44°49' N., 45°04' W.; depth 4,572 m.; dynamic height 971.053							Station 7786; 2 June; 45°28.5' N., 47°13' W.; depth 2,671 m.; dynamic height 970.976						
0	9.17	33.96	0	9.17	33.96	26.30	0	8.40	33.71	0	8.40	33.71	26.22
31	9.41	33.95	25	9.40	33.95	26.25	32	7.20	34.13	25	7.55	34.08	26.64
57	5.71	34.12	50	6.25	34.06	26.80	58	3.94	33.95	50	4.70	34.00	26.94
82	7.34	34.51	75	7.00	34.47	27.02	84	4.75	34.26	75	4.50	34.13	27.06
107	5.84	34.36	100	6.25	34.40	27.07	109	4.83	34.39	100	4.80	34.35	27.21
157	6.21	34.56	150	6.20	34.54	27.17	160	4.80	34.60	150	4.80	34.57	27.38
208	6.18	34.66	200	6.20	34.64	27.26	212	1.87	34.77	200	4.85	34.75	27.52
309	6.50	34.98	300	6.50	34.97	27.48	314	3.93	34.75	300	4.10	34.75	27.60
409	5.74	34.99	400	5.80	34.99	27.59	415	3.75	34.83	400	3.75	34.82	27.69
610	4.78	34.99	600	4.80	34.99	27.71	614	4.00	34.88	600	4.00	34.87	27.70
815	4.34	34.97	800	4.35	34.98	27.75	816	3.92	34.90	800	3.90	34.90	27.74
1,021	4.02	34.95	1,000	4.05	34.96	27.77	1,019	3.65	34.91	1,000	3.65	34.91	27.77
1,546	3.62	34.94					1,528	3.51	34.89				
Station 7783; 2 June; 45°22.5' N., 45°21' W.; depth 4,207 m.; dynamic height 971.015							Station 7787; 2 June; 45°40.5' N., 47°42' W.; depth 1,536 m.; dynamic height 970.921						
0	10.84	34.50	0	10.84	34.50	26.43	0	5.17	33.54	0	5.17	33.54	26.52
32	10.05	34.90	25	10.25	34.89	26.84	32	3.61	33.87	25	3.85	33.81	26.88
59	8.77	34.72	50	9.15	34.77	26.93	57	3.58	34.06	50	3.60	34.01	27.06
85	8.05	34.72	75	8.25	34.72	27.04	83	3.56	34.39	75	3.55	34.30	27.30
111	8.00	34.80	100	8.05	34.77	27.11	108	3.98	34.52	100	3.85	34.48	27.41
162	7.03	34.76	150	7.20	34.77	27.23	160	4.25	34.73	150	4.20	34.69	27.54
215	6.47	34.83	200	6.60	34.81	27.34	211	4.75	34.85	200	4.70	34.84	27.60
319	5.77	34.93	300	5.90	34.92	27.52	311	3.61	34.80	300	3.70	34.80	27.68
421	5.10	34.92	400	5.25	34.93	27.61	411	3.71	34.84	400	3.70	34.84	27.71
623	3.92	34.88	600	4.00	34.89	27.72	606	3.69	34.85	600	3.70	34.85	27.72
828	3.83	34.88	800	3.85	34.88	27.73	807	3.65	34.88	800	3.65	34.88	27.75
1,032	3.61	34.91	1,000	3.65	34.90	27.76	1,007	3.54	34.88	1,000	3.55	34.88	27.76
1,539	3.54	34.94					1,506	3.50	34.87				
Station 7784; 2 June; 45°25' N., 46°03' W.; depth 3,658 m.; dynamic height 970.947							Station 7788; 2 June; 45°46' N., 47°56' W.; depth 622 m.; dynamic height 970.944						
0	6.96	33.81	0	6.96	33.81	26.51	0	3.10	32.92	0	3.10	32.92	26.24
30	6.18	34.13	25	6.35	34.10	26.82	31	4.63	33.71	25	4.50	33.68	26.71
55	4.47	34.08	50	4.55	34.09	27.03	55	0.84	33.65	50	0.90	33.66	27.00
80	4.27	34.25	75	4.35	34.22	27.15	80	4.26	34.16	75	4.15	34.13	27.10
105	3.37	34.29	100	3.45	34.29	27.30	105	3.30	34.18	100	3.45	34.18	27.21
153	3.55	34.49	150	3.55	34.48	27.44	154	2.92	34.42	150	2.90	34.39	27.43
203	3.80	34.65	200	3.80	34.65	27.55	204	3.08	34.58	200	3.10	34.58	27.56
305	3.81	34.76	300	3.80	34.76	27.64	304	3.16	34.68	300	3.15	34.68	27.64
407	3.78	34.82	400	3.80	34.82	27.69	404	3.42	34.77	400	3.40	34.77	27.61
619	3.87	34.87	600	3.85	34.87	27.72	604	*3.54	34.79	600	3.55	34.79	27.69
824	3.66	34.88	800	3.70	34.88	27.74							
1,029	3.53	34.88	1,000	3.55	34.88	27.76							
1,543	3.47	34.90											

# TABLE OF OCEANOGRAPHIC DATA

## STATIONS OCCUPIED IN 1961—Continued

Observed values			Sealed values				Observed values			Sealed values			
Depth, meters	Tem-perature, °C.	Salin-ity, ‰	Depth, meters	Tem-perature, °C.	Salin-ity, ‰	$\sigma_t$	Depth, meters	Tem-perature, °C.	Salin-ity, ‰	Depth, meters	Tem-perature, °C.	Salin-ity, ‰	$\sigma_t$
Station 7789; 2 June; 45°51' N., 48°10' W.; depth 169 m.; dynamic height 971.027													
0	3.09	32.95	0	3.09	32.95	26.27	0	2.78	32.91	0	2.78	32.91	26.26
25	-0.83	33.01	25	-0.83	33.01	26.56	26	0.37	32.99	25	0.50	32.99	26.48
50	-0.95	33.21	50	-0.95	33.21	26.72	51	-0.78	33.21	50	-0.75	33.20	26.71
74	-0.40	33.46	75	-0.35	33.45	26.89	77	-0.72	33.32	75	-0.75	33.32	26.80
99	0.32	33.69	100	0.35	33.71	27.07	103	-0.21	33.48	100	-0.30	33.46	26.90
149	0.79	33.87	150	0.80	33.88	27.18	154	0.86	33.88	150	0.80	33.86	27.16
Station 7790; 3 June; 45°54' N., 48°16' W.; depth 117 m.; dynamic height 971.029													
0	3.26	32.93	0	3.26	32.93	26.23	0	2.88	32.88	0	2.88	32.88	26.23
26	0.49	33.09	25	0.70	33.09	26.57	31	2.53	32.94	25	2.65	32.92	26.28
52	-0.20	33.36	50	-0.20	33.33	26.79	56	0.12	33.34	50	0.45	33.27	26.71
78	0.15	33.54	75	0.10	33.53	26.94	81	0.04	33.52	75	0.05	33.48	26.90
104	0.22	33.62	100	0.20	33.61	27.00	107	0.89	33.81	100	0.65	33.73	27.07
							157	1.52	34.08	150	1.40	34.03	27.26
							207	3.13	34.41	200	3.05	34.41	27.43
							307	3.12	34.60	300	3.10	34.59	27.57
							406	3.37	34.74	400	3.35	34.73	27.66
							603	3.67	34.84	600	3.65	34.84	27.77
Station 7791; 3 June; 46°02' N., 48°31' W.; depth 93 m.; dynamic height 971.052													
0	3.13	32.72	0	3.13	32.72	26.08	0	2.59	32.88	0	2.59	32.88	26.25
28	1.64	32.81	25	1.80	32.79	26.24	32	-0.31	33.19	25	0.35	33.14	26.61
55	1.32	33.15	50	1.40	33.09	26.51	58	-0.86	33.32	50	-0.80	33.27	26.77
83	-0.38	33.39	75	0.15	33.35	26.79	83	0.25	33.64	75	-0.15	33.53	26.95
							109	1.26	33.94	100	1.00	33.86	27.15
							160	2.17	34.27	150	2.00	34.21	27.36
							211	2.69	34.52	200	2.60	34.49	27.54
							314	2.98	34.66	300	2.95	34.65	27.63
							417	3.58	34.82	400	3.55	34.81	27.70
							622	3.68	34.86	600	3.65	34.86	27.75
							827	3.65	34.88	800	3.65	34.88	27.75
							1,032	3.61	34.87	1,000	3.60	34.87	27.75
							1,546	3.52	34.89				
Station 7792; 3 June; 46°10' N., 48°46' W.; depth 82 m.; dynamic height 971.054													
0	3.18	32.76	0	3.18	32.76	26.11	0	2.59	32.88	0	2.59	32.88	26.25
22	2.74	32.76	25	2.55	32.77	26.17	32	-0.31	33.19	25	0.35	33.14	26.61
45	0.51	32.94	50	0.05	33.00	26.51	58	-0.86	33.32	50	-0.80	33.27	26.77
67	-0.84	33.19	(75)	-0.90	33.25	26.75	83	0.25	33.64	75	-0.15	33.53	26.95
							109	1.26	33.94	100	1.00	33.86	27.15
							160	2.17	34.27	150	2.00	34.21	27.36
							211	2.69	34.52	200	2.60	34.49	27.54
							314	2.98	34.66	300	2.95	34.65	27.63
							417	3.58	34.82	400	3.55	34.81	27.70
							622	3.68	34.86	600	3.65	34.86	27.75
							827	3.65	34.88	800	3.65	34.88	27.75
							1,032	3.61	34.87	1,000	3.60	34.87	27.75
							1,546	3.52	34.89				
Station 7793; 5 June; 46°17' N., 49°00' W.; depth 66 m.; dynamic height 971.060													
0	3.34	32.78	0	3.34	32.78	26.11	0	2.57	32.77	0	2.57	32.77	26.17
32	1.46	32.83	25	1.80	32.82	26.26	29	0.88	33.54	25	0.90	33.43	26.81
60	0.24	32.89	50	0.60	32.87	26.38	54	3.44	34.08	50	2.95	33.99	27.11
							78	4.13	34.31	75	4.05	34.29	27.24
							103	4.56	34.47	100	4.55	34.46	27.32
							150	3.97	34.56	150	3.95	34.56	27.46
							199	3.81	34.64	200	3.80	34.64	27.54
							296	4.76	34.89	300	4.75	34.90	27.65
							392	4.68	34.92	400	4.65	34.92	27.67
							585	4.01	34.92	(600)	3.95	34.92	27.75
Station 7794; 3 June; 46°14' N., 48°32' W.; depth 89 m.; dynamic height 971.056													
0	3.10	32.69	0	3.10	32.69	26.06	0	2.59	32.88	0	2.59	32.88	26.25
30	2.86	32.81	25	2.95	32.77	26.14	32	-0.31	33.19	25	0.35	33.14	26.61
54	0.70	33.09	50	1.05	33.03	26.48	58	-0.86	33.32	50	-0.80	33.27	26.77
78	-0.36	33.47	75	-0.25	33.43	26.87	83	0.25	33.64	75	-0.15	33.53	26.95
							109	1.26	33.94	100	1.00	33.86	27.15
							160	2.17	34.27	150	2.00	34.21	27.36
							211	2.69	34.52	200	2.60	34.49	27.54
							314	2.98	34.66	300	2.95	34.65	27.63
							417	3.58	34.82	400	3.55	34.81	27.70
							622	3.68	34.86	600	3.65	34.86	27.75
							827	3.65	34.88	800	3.65	34.88	27.75
							1,032	3.61	34.87	1,000	3.60	34.87	27.75
							1,546	3.52	34.89				
Station 7795; 3 June; 46°10.5' N., 48°03' W.; depth 119 m.; dynamic height 971.040													
0	3.08	32.88	0	3.08	32.88	26.21	0	2.59	32.88	0	2.59	32.88	26.25
25	0.31	33.03	25	0.31	33.03	26.52	32	-0.31	33.19	25	0.35	33.14	26.61
50	-0.50	33.23	50	-0.50	33.23	26.72	58	-0.86	33.32	50	-0.80	33.27	26.77
75	-0.87	33.33	75	-0.87	33.33	26.82	83	0.25	33.64	75	-0.15	33.53	26.95
100	-0.21	33.49	100	-0.21	33.49	26.92	109	1.26	33.94	100	1.00	33.86	27.15
							160	2.17	34.27	150	2.00	34.21	27.36
							211	2.69	34.52	200	2.60	34.49	27.54
							314	2.98	34.66	300	2.95	34.65	27.63
							417	3.58	34.82	400	3.55	34.81	27.70
							622	3.68	34.86	600	3.65	34.86	27.75
							827	3.65	34.88	800	3.65	34.88	27.75
							1,032	3.61	34.87	1,000	3.60	34.87	27.75
							1,517	3.47	34.90				
Station 7796; 3 June; 46°08.5' N., 47°48' W.; depth 169 m.; dynamic height 971.041													
0	2.78	32.91	0	2.78	32.91	26.26	0	2.59	32.88	0	2.59	32.88	26.25
26	0.37	32.99	25	0.50	32.99	26.48	32	-0.31	33.19	25	0.35	33.14	26.61
51	-0.78	33.21	50	-0.75	33.20	26.71	58	-0.86	33.32	50	-0.80	33.27	26.77
77	-0.72	33.32	75	-0.75	33.32	26.80	83	0.25	33.64	75	-0.15	33.53	26.95
103	-0.21	33.48	100	-0.30	33.46	26.90	109	1.26	33.94	100	1.00	33.86	27.15
154	0.86	33.88	150	0.80	33.86	27.16	160	2.17	34.27	150	2.00	34.21	27.36
							211	2.69	34.52	200	2.60	34.49	27.54
							314	2.98	34.66	300	2.95	34.65	27.63
							417	3.58	34.82	400	3.55	34.81	27.70
							622	3.68	34.86	600	3.65	34.86	27.75
							827	3.65	34.88	800	3.65	34.88	27.75
							1,032	3.61	34.87	1,000	3.60	34.87	27.75
							1,546	3.52	34.89				
Station 7797; 3 June; 46°06' N., 47°27' W.; depth 659 m.; dynamic height 971.010													
0	2.88	32.88	0	2.88	32.88	26.23	0	2.59	32.88	0	2.59	32.88	26.25
31	2.53	32.94	25	2.65	32.92	26.28	32	-0.31	33.19	25	0.35	33.14	26.61
56	0.12	33.34	50	0.45	33.27	26.71	58	-0.86	33.32	50	-0.80	33.27	26.77
81	0.04	33.52	75	0.05	33.48	26.90	83	0.25	33.64	75	-0.15	33.53	26.95
107	0.89	33.81	100	0.65	33.73	27.07	109	1.26	33.94	100	1.00	33.86	27.15
157	1.52	34.08	150	1.40	34.03	27.26	160	2.17	34.27	150	2.00	34.21	27.36
207	3.13	34.41	200	3.05	34.41	27.43	211	2.69	34.52	200	2.60	34.49	27.54
307	3.12	34.60	300	3.10	34.59	27.57	314	2.98	34.66	300	2.95	34.65	27.63
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## TABLE OF OCEANOGRAPHIC DATA STATIONS OCCUPIED IN 1961—Continued

Observed values			Scaled values				Observed values			Scaled values			
Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	$\sigma_t$	Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	$\sigma_t$
Station 7801; 3 June; 45°57.5' N., 45°09' W.; depth 3,255 m.; dynamic height 970.917													
0	5.96	33.82	0	5.96	33.82	26.65	0	5.76	33.75	0	5.76	33.75	26.62
33	4.31	34.00	25	4.65	33.98	26.93	26	5.78	33.80	25	5.80	33.79	26.64
59	3.72	34.14	50	3.75	34.08	27.10	51	4.82	34.50	50	4.85	34.42	27.26
81	4.15	34.39	75	3.95	34.31	27.27	77	4.43	34.54	75	4.45	34.54	27.40
111	5.72	34.73	100	5.40	34.64	27.36	103	3.28	34.50	100	3.35	34.50	27.48
165	3.99	34.66	150	4.25	34.68	27.53	154	3.13	34.58	150	3.15	34.58	27.56
218	4.25	34.79	200	4.15	34.74	27.59	206	3.42	34.69	200	3.40	34.68	27.61
320	4.62	34.91	300	4.55	34.89	27.66							
420	4.70		400	4.70	34.97	27.71							
610	3.83	34.90	600	3.85	34.91	27.75							
820	3.62	34.87	800	3.65	34.88	27.75							
1,036	3.50	34.89	1,000	3.50	34.89	27.77							
1,592	3.40	34.88											
Station 7802; 4 June; 46°01' N., 44°43' W.; depth 3,841 m.; dynamic height 970.888													
0	7.31	34.46	0	7.31	34.46	26.97							
34	7.24	34.51	25	7.30	34.49	27.00							
60	5.51	34.69	50	6.05	34.62	27.27							
88	5.05	34.76	75	5.25	34.73	27.45							
115	4.44	34.75	100	4.70	34.76	27.54							
170	4.19	34.78	150	4.25	34.77	27.60							
224	4.13	34.85	200	4.15	34.83	27.66							
329	3.91	34.85	300	4.00	34.85	27.69							
432	3.75	34.83	400	3.80	34.85	27.71							
630	3.69	34.86	600	3.70	34.86	27.73							
839	3.66		800	3.65	34.88	27.75							
1,050	3.64	34.91	1,000	3.65	34.91	27.77							
1,576	3.41	34.89											
Station 7803; 4 June; 46°19.5' N., 44°47' W.; depth 3,017 m.; dynamic height 970.885													
0	7.26	34.42	0	7.26	34.42	26.95							
32	6.92	34.52	25	7.05	34.49	27.03							
59	5.56	34.67	50	6.05	34.62	27.27							
85	4.88	34.71	75	5.05	34.72	27.47							
112	4.90	34.77	100	4.90	34.76	27.52							
163	4.69	34.82	150	4.75	34.81	27.58							
216	4.16	34.85	200	4.30	34.84	27.65							
320	4.12	34.87	300	4.15	34.86	27.68							
422	3.96	34.89	400	4.00	34.89	27.72							
626	3.74	34.88	600	3.75	34.89	27.75							
831	3.59	34.88	800	3.60	34.88	27.75							
1,035	3.48	34.90	1,000	3.50	34.90	27.78							
1,544	3.43	34.91											
Station 7804; 4 June; 46°28.5' N., 44°50' W.; depth 595 m.; dynamic height 970.873													
0	6.29	33.88	0	6.29	33.88	26.65							
30	5.79	34.67	25	5.90	34.61	27.28							
55	4.82	34.62	50	5.00	34.63	27.40							
79	4.37	34.65	75	4.15	34.64	27.17							
104	3.97	34.68	100	4.00	34.68	27.55							
153	3.29	34.66	150	3.30	34.66	27.61							
202	3.66	34.79	200	3.65	34.79	27.68							
300	3.83	34.82	300	3.85	34.82	27.68							
398	3.80	34.86	400	3.80	34.86	27.72							
594	3.66	34.87	600	3.65	34.87	27.74							
Station 7805; 4 June; 46°35' N., 44°51' W.; depth 222 m.; dynamic height 970.908													
0	5.76	33.75	0	5.76	33.75	26.62							
26	5.78	33.80	25	5.80	33.79	26.64							
51	4.82	34.50	50	4.85	34.42	27.26							
77	4.43	34.54	75	4.45	34.54	27.40							
103	3.28	34.50	100	3.35	34.50	27.48							
154	3.13	34.58	150	3.15	34.58	27.56							
206	3.42	34.69	200	3.40	34.68	27.61							
Station 7806; 4 June; 46°41' N., 44°52' W.; depth 172 m.; dynamic height 970.905													
0	5.86	33.77	0	5.86	33.77	26.62							
26	3.91	34.02	25	3.95	33.99	27.01							
52	3.78	34.33	50	3.80	34.32	27.29							
78	3.16	34.36	75	3.20	34.36	27.38							
105	3.26	34.47	100	3.25	34.46	27.45							
157	3.30	34.54	150	3.30	34.53	27.50							
Station 7807; 4 June; 46°45.5' N., 44°54' W.; depth 161 m.; dynamic height 970.911													
0	6.07	33.87	0	6.07	33.87	26.67							
25	5.18	33.93	25	5.18	33.93	26.83							
51	3.84	34.34	50	3.90	34.34	27.30							
76	3.05	34.30	75	3.05	34.30	27.34							
101	3.18	34.45	100	3.15	34.45	27.45							
152	3.39	34.55	150	3.40	34.54	27.50							
Station 7808; 4 June; 46°45.5' N., 45°06' W.; depth 183 m.; dynamic height 970.920													
0	5.80	33.81	0	5.80	33.81	26.66							
24	5.80	33.84	25	5.80	33.85	26.69							
49	3.35	34.11	50	3.35	34.12	27.17							
73	3.25	34.27	75	3.25	34.29	27.32							
97	1.07	34.48	100	4.05	34.59	27.40							
146	3.33	34.54	150	3.25	34.55	27.52							
Station 7809; 4 June; 46°46.5' N., 45°20' W.; depth 220 m.; dynamic height 970.908													
0	6.27	33.95	0	6.27	33.95	26.71							
31	4.82	34.06	25	5.10	34.02	26.91							
56	3.50	34.33	50	3.60	34.27	27.27							
81	3.85	34.45	75	3.85	34.45	27.39							
106	3.33	34.44	100	3.45	34.44	27.42							
156	3.04	34.56	150	3.05	34.56	27.55							
206	3.36	34.62	200	3.30	34.62	27.58							
Station 7810; 4 June; 46°46.5' N., 45°44' W.; depth 264 m.; dynamic height 970.908													
0	5.67	33.84	0	5.67	33.84	26.70							
31	4.28	34.15	25	4.10	34.10	27.05							
56	4.00	34.23	50	4.05	34.24	27.17							
81	3.81	34.46	75	3.85	34.43	27.37							
106	4.01	34.50	100	3.95	34.50	27.42							
157	4.25	34.71	150	4.25	34.70	27.54							
207	4.01	34.74	200	4.05	34.74	27.60							

# TABLE OF OCEANOGRAPHIC DATA

## STATIONS OCCUPIED IN 1961—Continued

Observed values			Scaled values				Observed values			Scaled values			
Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	$\sigma_t$	Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	$\sigma_t$
Station 7811; 4 June 46°46.5' N., 46°08' W.; depth 320 m.; dynamic height 970.932							Station 7816; 5 June; 46°47' N., 47°36' W.; depth 169 m.; dynamic height 971.045						
0	5.82	33.80	0	5.82	33.80	26.65	0	2.66	32.79	0	2.66	32.79	26.18
31	4.89	33.88	25	5.05	33.85	26.78	78	1.02	32.85	25	1.15	32.83	26.32
58	4.41	34.13	50	4.55	34.06	27.00	54	-1.10	33.06	50	-1.10	33.04	26.59
83	3.91	34.24	75	4.05	34.21	27.17	82	-0.95	33.19	75	-1.00	33.16	26.68
109	3.63	34.45	100	3.70	34.37	27.34	109	-0.59	33.38	100	-0.75	33.30	26.79
160	3.84	34.59	150	3.80	34.57	27.49	162	1.21	33.93	150	0.80	33.82	27.13
212	4.12	34.73	200	4.10	34.70	27.56							
315	3.82	34.80	300	3.90	34.79	27.65							
Station 7812; 4 June; 46°45' N., 46°37' W.; depth 622 m.; dynamic height 970.892							Station 7817; 5 June; 46°49' N., 48°05' W.; depth 123 m.; dynamic height 971.036						
0	4.91	33.85	0	4.91	33.85	26.80	0	3.05	32.73	0	3.05	32.73	26.09
30	4.11	34.08	25	4.20	34.07	27.05	33	2.22	33.11	25	2.50	33.03	26.38
56	2.97	34.13	50	3.00	34.12	27.21	59	-0.85	33.24	50	-0.35	33.19	26.68
80	3.07	34.37	75	3.05	34.34	27.38	86	-0.08	33.46	75	-0.45	33.36	26.82
106	3.02	34.45	100	3.05	34.43	27.45	112	0.10	33.63	100	0.00	33.55	26.96
155	3.28	34.61	150	3.25	34.59	27.56							
205	3.49	34.76	200	3.50	34.75	27.66							
304	3.59	34.81	300	3.60	34.81	27.70							
403	3.60	34.86	400	3.60	34.85	27.73							
602	3.70	34.87	600	3.70	34.87	27.74							
Station 7813; 4 June; 46°44.5' N., 46°52' W.; depth 1,252 m.; dynamic height 970.892							Station 7818; 5 June; 46°52' N., 48°43' W.; depth 91 m.; dynamic height 971.065						
0	5.30	33.79	0	5.30	33.79	26.70	0	2.95	32.67	0	2.95	32.67	26.06
33	3.78	34.30	25	3.95	34.18	27.16	26	2.16	32.75	25	2.20	32.74	26.17
59	4.23	34.57	50	4.13	34.50	27.40	47	0.28	32.94	50	0.15	32.98	26.49
85	3.67	34.59	75	3.70	34.58	27.49	68	-0.67	33.18	75	-0.85	33.24	26.74
111	3.56	34.62	100	3.60	34.61	27.54							
165	3.10	34.67	150	3.15	34.66	27.62							
217	3.48	34.80	200	3.40	34.70	27.63							
322	3.62	34.81	300	3.60	34.79	27.68							
427	3.66	34.81	400	3.65	34.84	27.72							
636	3.78	34.89	600	3.80	34.85	27.71							
842	3.60	34.85	800	3.65	34.85	27.72							
1,045	3.42	34.89	1,000	3.45	34.88	27.77							
Station 7814; 5 June; 46°44' N., 47°04' W.; depth 668 m.; dynamic height 970.905							Station 7819; 14 June; 50°02' N., 49°00' W.; depth 1,884 m.; dynamic height 970.886						
0	2.94	32.86	0	2.94	32.86	26.21	0	4.29	32.90	0	4.29	32.90	26.11
24	4.72	34.15	25	4.70	34.17	27.07	28	3.40	33.68	25	3.45	33.60	26.75
48	3.65	34.42	50	3.65	34.43	27.39	50	4.42	34.62	50	4.40	34.62	27.46
72	3.62	34.51	75	3.60	34.52	27.47	73	3.75	34.63	75	3.75	34.63	27.54
96	3.67	34.58	100	3.65	34.58	27.51	95	3.58	34.70	100	3.50	34.70	27.62
144	2.98	34.57	150	2.95	34.58	27.58	139	3.24	34.72	150	3.25	34.73	27.67
192	2.92	34.64	200	2.95	34.65	27.63	184	3.26	34.76	200	3.25	34.77	27.70
289	3.35	34.73	300	3.40	34.74	27.66	275	3.38	34.80	300	3.40	34.80	27.71
386	3.60	34.80	400	3.60	34.81	27.70	365	3.42	34.81	400	3.40	34.81	27.72
581	3.70	34.87	(600)	3.70	34.87	27.74	550	3.34	34.80	600	3.35	34.80	27.72
							738	3.34	34.80	800	3.35	34.83	27.74
							928	3.35	34.85	1,000	3.35	34.86	27.76
							1,416	3.45	34.87				
Station 7815; 5 June; 46°44.5' N., 47°12' W.; depth 320 m.; dynamic height 970.943							Station 7820; 14 June; 49°50.5' N., 49°33' W.; depth 1,371 m.; dynamic height 970.866						
0	2.50	32.72	0	2.50	32.72	26.13	0	4.67	33.61	0	4.67	33.61	26.63
26	2.66	33.59	25	2.65	33.53	26.77	32	1.76	34.02	25	1.80	33.93	27.15
52	1.73	33.94	50	1.75	33.91	27.14	59	2.18	34.31	50	2.05	34.21	27.36
78	1.94	34.12	75	1.90	34.10	27.28	85	2.41	34.50	75	2.30	34.44	27.52
105	2.06	34.28	100	2.00	34.25	27.39	112	2.68	34.56	100	2.55	34.54	27.58
156	2.80	34.45	150	2.75	34.44	27.48	163	2.89	34.66	150	2.85	34.64	27.63
208	2.99	34.63	200	2.95	34.61	27.60	216	3.31	34.70	200	3.20	34.69	27.64
297	3.12	34.67					320	3.36	34.78	300	3.35	34.77	27.69
							425	3.50	34.87	400	3.50	34.86	27.75
							628	3.36	34.87	600	3.35	34.85	27.75
							836	3.40	34.87	800	3.40	34.87	27.77
							1,043	3.35	34.87	1,000	3.35	34.87	27.77

**TABLE OF OCEANOGRAPHIC DATA**  
**STATIONS OCCUPIED IN 1961—Continued**

Observed values			Scaled values				Observed values			Scaled values			
Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	$\sigma_t$	Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	$\sigma_t$
Station 7821; 14 June; 49°40.5' N., 50°01' W.; depth 619 m.; dynamic height 970.905													
0	4.54	33.36	0	4.54	33.36	26.45	0	3.65	32.12	0	3.65	32.12	25.56
31	4.07	33.56	25	4.40	33.52	26.61	27	3.98	32.58	25	4.00	32.55	25.86
56	2.67	33.89	50	3.00	33.81	26.90	52	1.12	33.26	50	1.40	33.19	26.59
81	1.83	34.27	75	1.85	34.19	27.36	77	-0.06	33.60	75	-0.05	33.57	26.98
105	1.96	34.36	100	1.90	34.35	27.48	102	0.84	33.94	100	0.80	33.90	27.20
156	2.66	34.56	150	2.60	34.54	27.58	156	1.47	34.15	150	1.40	34.12	27.33
206	2.88	34.66	200	2.85	34.65	27.64	200	2.26	34.40	200	2.20	34.40	27.50
303	3.14	34.75	300	3.15	34.75	27.69	273	3.08	34.69	(300)	3.35	34.77	27.69
400	3.37	34.82	400	3.35	34.82	27.73							
595	3.48	34.86	600	3.50	34.86	27.75							
Station 7822; 15 June; 49°31.5' N., 50°31' W.; depth 346 m.; dynamic height 970.993													
0	4.20	31.58	0	4.20	31.58	25.07	0	4.21	31.70	0	4.21	31.70	25.17
31	-0.36	33.06	25	0.30	32.77	26.32	31	-1.10	32.72	25	-0.10	32.53	26.14
57	-0.56	33.24	50	-0.55	33.20	26.70	58	-1.47	32.95	50	-1.40	32.92	26.50
82	-0.54	33.49	75	-0.55	33.41	26.87	83	-1.59	33.01	75	-1.55	33.00	26.57
108	0.13	33.70	100	-0.10	33.64	27.04	109	-1.36	33.05	100	-1.45	33.03	26.59
158	1.25	34.01	150	1.10	33.96	27.22	160	-0.75	33.40	150	-0.90	33.33	26.82
209	1.90	34.28	200	1.80	34.24	27.40	211	0.22	33.78	200	0.00	33.69	27.07
311	3.13	34.68	300	3.00	34.65	27.63	314	2.17	34.86	300	1.90	34.71	27.77
Station 7823; 15 June; 49°22' N., 51°00' W.; depth 355 m.; dynamic height 970.970													
0	4.03	32.72	0	4.03	32.72	26.03	0	3.16	31.96	0	3.16	31.96	25.47
31	3.28	32.94	25	3.50	32.89	26.18	25	-0.74	32.59	25	-0.74	32.59	26.22
56	0.75	33.28	50	1.30	33.20	26.60	50	-1.26	32.85	50	-1.26	32.85	26.44
81	0.01	33.62	75	0.05	33.54	26.95	74	-1.42	32.92	75	-1.45	32.93	26.51
107	1.02	33.90	100	0.75	33.83	27.14	99	-1.51	33.00	100	-1.50	33.00	26.57
156	1.42	34.12	150	1.35	34.10	27.32	148	-1.50	33.04	150	-1.50	33.04	26.60
207	2.24	34.37	200	2.10	34.33	27.45	198	-1.47	33.05	200	-1.45	33.05	26.61
308	3.16	34.76	300	3.10	34.73	27.68							
Station 7824; 15 June; 49°14.5' N., 51°31' W.; depth 331 m.; dynamic height 970.979													
0	3.10	31.71	0	3.10	31.71	25.28	0	2.48	32.12	0	2.48	32.12	25.66
31	-0.57	32.91	25	-0.15	32.68	26.26	25	-0.50	32.51	25	-0.50	32.51	26.14
57	-0.67	33.22	50	-0.65	33.14	26.66	50	-1.29	32.87	50	-1.29	32.87	26.46
82	-0.21	33.54	75	-0.35	33.45	26.89	76	-1.46	32.88	75	-1.45	32.88	26.47
108	0.31	33.80	100	0.15	33.73	27.10	101	-1.52	32.91	100	-1.50	32.91	26.50
158	1.32	34.10	150	1.15	34.05	27.29	126	-1.52	32.99	(150)	-1.50	33.08	26.63
209	2.15	34.40	200	2.00	34.35	27.47							
311	3.11	34.73	300	3.00	34.71	27.68							
Station 7825; 15 June; 49°05' N., 51°54' W.; depth 300 m.; dynamic height 970.941													
0	4.11	32.23	0	4.11	32.23	25.60	0	5.47	31.83	0	5.47	31.83	25.14
32	1.96	33.27	25	2.55	33.05	26.39	25	-0.42	32.57	25	-0.42	32.57	26.19
57	0.07	33.64	50	0.35	33.54	26.93	50	-1.37	32.82	50	-1.37	32.82	26.42
82	0.86	33.94	75	0.55	33.86	27.18	76	-1.43	32.86	75	-1.45	32.86	26.46
108	1.41	34.11	100	1.25	34.06	27.30	101	-1.51	32.94	100	-1.50	32.94	26.52
159	2.00	34.31	150	1.90	34.27	27.42							
210	2.60	34.55	200	2.50	34.50	27.55							
286	3.15	34.71	(300)	3.20	34.73	27.67							
Station 7826; 15 June; 49°02' N., 52°08' W.; depth 302 m.; dynamic height 970.977													
0	3.65	32.12	0	3.65	32.12	25.56	0	4.13	31.85	0	4.13	31.85	25.30
27	3.98	32.58	25	4.00	32.55	25.86	32	-0.62	32.54	25	-0.05	32.41	26.04
52	1.12	33.26	50	1.40	33.19	26.59	58	-1.27	32.80	50	-1.15	32.74	26.35
77	-0.06	33.60	75	-0.05	33.57	26.98	84	-1.43	32.93	75	-1.35	32.89	26.48
102	0.84	33.94	100	0.80	33.90	27.20	111	-1.54	33.04	100	-1.50	33.00	26.57
156	1.47	34.15	150	1.40	34.12	27.33	162	-1.39	33.10	150	-1.45	33.09	26.64
200	2.26	34.40	200	2.20	34.40	27.50							
273	3.08	34.69	(300)	3.35	34.77	27.69							
Station 7827; 15 June; 48°55.5' N., 52°26' W.; depth 357 m.; dynamic height 971.063													
0	4.21	31.70	0	4.21	31.70	25.17	0	3.16	31.96	0	3.16	31.96	25.47
31	-1.10	32.72	25	-0.10	32.53	26.14	25	-0.74	32.59	25	-0.74	32.59	26.22
58	-1.47	32.95	50	-1.40	32.92	26.50	50	-1.26	32.85	50	-1.26	32.85	26.44
83	-1.59	33.01	75	-1.55	33.00	26.57	74	-1.42	32.92	75	-1.45	32.93	26.51
109	-1.36	33.05	100	-1.45	33.03	26.59	99	-1.51	33.00	100	-1.50	33.00	26.57
160	-0.75	33.40	150	-0.90	33.33	26.82	148	-1.50	33.04	150	-1.50	33.04	26.60
211	0.22	33.78	200	0.00	33.69	27.07	198	-1.47	33.05	200	-1.45	33.05	26.61
314	2.17	34.86	300	1.90	34.71	27.77							
Station 7828; 15 June; 48°49.5' N., 52°39' W.; depth 205 m.; dynamic height 971.121													
0	3.16	31.96	0	3.16	31.96	25.47	0	2.48	32.12	0	2.48	32.12	25.66
25	-0.74	32.59	25	-0.74	32.59	26.22	25	-0.50	32.51	25	-0.50	32.51	26.14
50	-1.26	32.85	50	-1.26	32.85	26.44	50	-1.29	32.87	50	-1.29	32.87	26.46
74	-1.42	32.92	75	-1.45	32.93	26.51	76	-1.46	32.88	75	-1.45	32.88	26.47
99	-1.51	33.00	100	-1.50	33.00	26.57	101	-1.52	32.91	100	-1.50	32.91	26.50
148	-1.50	33.04	150	-1.50	33.04	26.60	126	-1.52	32.99	(150)	-1.50	33.08	26.63
198	-1.47	33.05	200	-1.45	33.05	26.61							
Station 7829; 15 June; 48°46.5' N., 52°49' W.; depth 150 m.; dynamic height 971.121													
0	2.48	32.12	0	2.48	32.12	25.66	0	5.47	31.83	0	5.47	31.83	25.14
25	-0.50	32.51	25	-0.50	32.51	26.14	25	-0.42	32.57	25	-0.42	32.57	26.19
50	-1.29	32.87	50	-1.29	32.87	26.46	50	-1.37	32.82	50	-1.37	32.82	26.42
76	-1.46	32.88	75	-1.45	32.88	26.47	76	-1.43	32.86	75	-1.45	32.86	26.46
101	-1.52	32.91	100	-1.50	32.91	26.50	101	-1.51	32.94	100	-1.50	32.94	26.52
126	-1.52	32.99	(150)	-1.50	33.08	26.63							
Station 7830; 15 June; 48°44.5' N., 52°57' W.; depth 119 m.; dynamic height 971.126													
0	5.47	31.83	0	5.47	31.83	25.14	0	4.13	31.85	0	4.13	31.85	25.30
25	-0.42	32.57	25	-0.42	32.57	26.19	32	-0.62	32.54	25	-0.05	32.41	26.04
50	-1.37	32.82	50	-1.37	32.82	26.42	58	-1.27	32.80	50	-1.15	32.74	26.35
76	-1.43	32.86	75	-1.45	32.86	26.46	84	-1.43	32.93	75	-1.35	32.89	26.48
101	-1.51	32.94	100	-1.50	32.94	26.52	111	-1.54	33.04	100	-1.50	33.00	26.57
							162	-1.39	33.10	150	-1.45	33.09	26.64
Station 7831; 15 June; 48°35.5' N., 52°38' W.; depth 293 m.; dynamic height 971.110													
0	4.13	31.85	0	4.13	31.85	25.30	0	3.16	31.96	0	3.16	31.96	25.47
32	-0.62	32.54	25	-0.05	32.41	26.04	25	-0.74	32.59	25	-0.74	32.59	26.22
58	-1.27	32.80	50	-1.15	32.74	26.35	50	-1.26	32.85	50	-1.26	32.85	26.44
84	-1.43	32.93	75	-1.35	32.89	26.48	74	-1.42	32.92	75	-1.45	32.93	26.51
111	-1.54	33.04	100	-1.50	33.00	26.57	99	-1.51	33.00	100	-1.50	33.00	26.57
162	-1.39	33.10	150	-1.45	33.09	26.64	148	-1.50	33.04	150	-1.50	33.04	26.60

# TABLE OF OCEANOGRAPHIC DATA

## STATIONS OCCUPIED IN 1961—Continued

Observed values			Scaled values			
Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	$\sigma_t$

Station 7832; 15 June; 48°29.5' N., 52°28' W.; depth 233 m.; dynamic height 971.080

0	4.92	31.75	0	4.92	31.75	25.14
25	-0.71	32.66	25	-0.71	32.66	26.27
51	-1.37	32.93	50	-1.35	32.92	26.50
76	-1.39	32.98	75	-1.35	32.98	26.55
102	-1.32	33.04	100	-1.35	33.03	26.59
152	-1.03	33.18	150	-1.05	33.17	26.69
203	0.37	33.72	200	0.30	33.69	27.06

Station 7833; 15 June; 48°14.5' N., 51°56' W.; depth 186 m.; dynamic height 971.117

0	4.30	31.69	0	4.30	31.69	25.15
27	2.76	31.95	25	2.95	31.91	25.45
50	-0.95	32.76	50	-0.95	32.76	26.36
73	-1.35	32.94	75	-1.35	32.93	26.51
96	-1.49	32.92	100	-1.50	32.92	26.50
140	-1.33	33.03	(150)	-1.25	33.06	26.61

Station 7834; 15 June; 48°12.5' N., 51°51' W.; depth 200 m.; dynamic height 971.100

0	4.71	31.67	0	4.71	31.67	25.09
31	-0.29	32.64	25	0.75	32.46	26.04
58	-1.23	32.82	50	-1.10	32.77	26.37
83	-1.33	32.95	75	-1.30	32.92	26.50
109	-1.41	33.01	100	-1.40	32.99	26.56
160	-1.08	33.14	150	-1.15	33.11	26.65

Station 7835; 16 June; 48°06' N., 51°33' W.; depth 218 m.; dynamic height 971.085

0	4.72	31.91	0	4.72	31.91	25.28
29	0.79	32.62	25	1.25	32.52	26.09
53	-0.48	32.88	50	-0.35	32.85	26.41
77	-1.11	33.01	75	-1.10	33.00	26.56
100	-1.18	33.04	100	-1.20	33.04	26.59
147	-1.19	33.22	150	-1.15	33.23	26.75
194	-0.57	33.41	(200)	-0.50	33.44	26.89

Station 7836; 16 June; 47°58.5' N., 51°14' W.; depth 183 m.; dynamic height 971.074

0	4.78	32.19	0	4.78	32.19	25.50
30	0.81	32.70	25	1.45	32.61	26.12
55	-1.32	32.89	50	-1.25	32.86	26.45
79	-1.30	32.99	75	-1.30	32.98	26.55
104	-1.32	33.03	100	-1.30	33.02	26.58
152	-0.72	33.42	150	-0.75	33.40	26.87

Station 7837; 16 June; 47°51' N., 50°56' W.; depth 137 m.; dynamic height 971.077

0	4.56	32.12	0	4.56	32.12	25.46
26	3.73	32.86	25	3.75	32.83	26.11
54	-0.49	32.89	50	0.10	32.88	26.41
80	-1.19	32.92	75	-1.15	32.91	26.49
108	-1.33	33.12	100	-1.30	33.06	26.61

Observed values			Scaled values			
Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	$\sigma_t$

Station 7838; 16 June; 47°42.5' N., 50°40' W.; depth 182 m.; dynamic height 971.056

0	4.98	32.37	0	4.98	32.37	25.62
21	3.01	32.60	25	2.25	32.69	26.13
42	-0.56	33.01	50	-1.05	33.03	26.58
63	-1.13	33.07	75	-1.15	33.17	26.70
85	-1.13	33.25	(100)	-1.05	33.37	26.86

Station 7839; 16 June; 47°35' N., 50°23' W.; depth 229 m.; dynamic height 971.072

0	5.04	32.43	0	5.04	32.43	25.66
30	3.53	32.64	25	3.90	32.60	25.92
55	-0.11	32.88	50	0.55	32.83	26.35
78	-1.03	33.08	75	-1.00	33.04	26.59
103	-1.03	33.33	100	-0.75	33.29	26.78
151	-0.69	33.39	150	-0.70	33.39	26.86
200	-0.68	33.40	200	-0.70	33.40	26.87

Station 7840; 16 June; 47°24' N., 50°00' W.; depth 91 m.; dynamic height 971.091

0	5.45	32.15	0	5.45	32.15	25.39
31	2.93	32.63	25	3.40	32.55	25.92
57	0.35	32.88	50	1.05	32.82	26.31
82	-0.35	32.97	75	-0.20	32.95	26.48

Station 7841; 16 June; 47°45' N., 49°49' W.; depth 121 m.; dynamic height 971.076

0	5.17	32.61	0	5.17	32.61	25.78
26	3.44	32.60	25	3.55	32.60	25.95
53	-0.29	32.98	50	0.15	32.92	26.44
80	-0.99	33.10	75	-0.95	33.07	26.61
106	-0.82	33.30	100	-0.85	33.24	26.74

Station 7842; 16 June; 48°02' N., 49°46' W.; depth 183 m.; dynamic height 971.057

0	4.84	31.97	0	4.84	31.97	25.32
32	-0.98	32.86	25	-0.30	32.67	26.24
57	-1.12	33.04	50	-1.10	32.99	26.55
83	-0.75	33.20	75	-0.85	33.15	26.67
108	-0.69	33.32	100	-0.70	33.28	26.77
160	0.80	33.91	150	0.50	33.80	27.13

Station 7843; 16 June; 48°12' N., 49°41' W.; depth 220 m.; dynamic height 971.054

0	4.51	31.89	0	4.51	31.89	25.29
31	-0.98	32.86	25	0.05	32.67	26.25
56	-1.09	33.03	50	-1.10	33.00	26.56
81	-0.87	33.12	75	-0.95	33.10	26.63
106	-0.48	33.35	100	-0.55	33.30	26.78
157	0.80	33.84	150	0.65	33.78	27.11
207	1.98	34.29	200	1.80	34.22	27.38

## TABLE OF OCEANOGRAPHIC DATA STATIONS OCCUPIED IN 1961—Continued

Observed values			Scaled values				Observed values			Scaled values			
Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	$\sigma_t$	Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	$\sigma_t$
Station 7844; 16 June; 48°34' N., 49°34' W.; depth 659 m.; dynamic height 971.023													
0	4.41	31.85	0	4.41	31.85	25.27	0	5.00	33.39	0	5.00	33.39	26.42
28	-0.93	32.71	25	-0.45	32.62	26.23	33	3.47	34.59	25	3.65	34.36	27.34
52	-1.25	33.04	50	-1.25	33.02	26.58	60	3.26	34.66	50	3.30	34.63	27.58
75	-0.80	33.19	75	-0.80	33.19	26.70	86	3.07	34.74	75	3.15	34.70	27.65
98	0.06	33.55	100	0.10	33.56	26.96	113	3.33	34.79	100	3.20	34.77	27.70
144	0.52	33.81	150	0.65	33.84	27.16	166	3.45	34.82	150	3.45	34.80	27.70
190	1.57	34.10	200	1.75	34.16	27.34	219	3.36	34.82	200	3.40	34.81	27.72
283	2.70	34.59	300	2.85	34.65	27.64	323	3.40	34.84	300	3.40	34.84	27.74
375	3.39	34.87	400	3.45	34.80	27.70	426	3.40	34.84	400	3.40	34.85	27.75
500	3.59	34.87	(600)	3.65	34.88	27.75	626	3.34	34.86	600	3.35	34.85	27.76
							831	3.35	34.86	800	3.35	34.86	27.76
							1,035	3.33	34.86	1,000	3.35	34.86	27.76
							1,544	3.39	34.90				
Station 7845; 16 June; 48°50' N., 49°25' W.; depth 1,371 m.; dynamic height 970.924													
0	4.47	32.68	0	4.47	32.68	25.92	0	6.39	34.12	0	6.39	34.12	26.83
32	2.45	33.29	25	3.20	33.16	26.42	32	6.10	34.55	25	6.20	34.46	27.12
58	0.16	33.75	50	0.35	33.62	27.00	59	3.82	34.66	50	4.60	34.63	27.45
84	1.38	34.08	75	0.85	33.98	27.26	85	3.34	34.70	75	3.40	34.69	27.62
110	2.08	34.26	100	1.85	34.20	27.36	111	3.24	34.75	100	3.25	34.73	27.67
162	2.67	34.44	150	2.60	34.40	27.46	162	3.25	34.77	150	3.25	34.76	27.69
214	2.81	34.58	200	2.75	34.54	27.56	215	3.36	34.83	200	3.35	34.82	27.73
317	3.36	34.77	300	3.30	34.75	27.68	318	3.36	34.83	300	3.35	34.84	27.75
418	3.52	34.83	400	3.50	34.83	27.72	420	3.36	34.84	400	3.35	34.84	27.75
626	3.49	34.90	600	3.50	34.90	27.78	620	3.34	34.84	600	3.35	34.84	27.75
824	3.48	34.92	800	3.50	34.90	27.78	833	3.36	34.85	800	3.35	34.85	27.76
1,030	3.50	34.92	1,000	3.50	34.91	27.79	1,040	3.38	34.89	1,000	3.40	34.89	27.78
1,272	3.44	34.92					1,546	3.34	34.89				
Station 7846; 17 June; 49°10' N., 49°13' W.; depth 1,920 m.; dynamic height 970.887													
0	4.89	33.55	0	4.89	33.55	26.56	0	6.19	34.38	0	6.19	34.38	27.06
32	2.83	33.86	25	3.25	33.77	26.90	32	5.35	34.38	25	5.70	34.38	27.12
58	1.78	34.27	50	1.95	34.15	27.32	57	3.26	34.58	50	3.75	34.52	27.45
83	2.35	34.44	75	2.15	34.40	27.50	83	3.03	34.65	75	3.10	34.64	27.61
109	2.56	34.50	100	2.50	34.49	27.54	108	3.00	34.64	100	3.00	34.65	27.63
160	2.71	34.56	150	2.70	34.54	27.57	159	3.11	34.75	150	3.10	34.74	27.69
211	2.93	34.66	200	2.90	34.65	27.64	210	3.25	34.80	200	3.20	34.79	27.72
315	3.46	34.78	300	3.40	34.76	27.68	313	3.46	34.82	300	3.45	34.82	27.72
417	3.51	34.82	400	3.50	34.82	27.72	416	3.45	34.86	400	3.45	34.86	27.75
622	3.51	34.87	600	3.50	34.87	27.76	622	3.44	34.86	600	3.45	34.86	27.75
826	3.57	34.88	800	3.55	34.88	27.76	828	3.35	34.86	800	3.35	34.86	27.76
1,031	3.52	34.89	1,000	3.50	34.89	27.77	1,034	3.35	34.87	1,000	3.35	34.87	27.77
1,540	3.47	34.90					1,552	3.37	34.87				
Station 7847; 17 June; 49°29' N., 49°00' W.; depth 1,966 m.; dynamic height 970.850													
0	5.59	33.73	0	5.59	33.73	26.62	0	6.38	31.58	0	6.38	34.58	27.19
31	4.97	34.31	25	5.15	34.19	27.04	31	6.26	34.57	25	6.30	34.57	27.20
56	3.50	34.67	50	3.55	34.59	27.53	57	5.40	34.56	50	5.70	34.56	27.26
82	3.42	34.72	75	3.45	34.72	27.64	82	3.66	34.64	75	4.05	34.63	27.51
107	3.23	34.68	100	3.25	34.69	27.64	108	3.10	34.54	100	3.20	34.57	27.55
156	3.25	34.72	150	3.25	34.72	27.66	158	2.94	34.66	150	2.95	34.64	27.62
207	3.26	34.79	200	3.25	34.79	27.72	209	2.88	34.67	200	2.90	34.67	27.65
298	3.31	34.80	300	3.30	34.80	27.72	310	3.16	34.76	300	3.10	34.75	27.70
380	3.38	34.84	400	3.35	34.84	27.75	411	3.33	34.85	400	3.35	34.84	27.75
524	3.35	34.85	600	3.35	34.85	27.76	614	3.38	34.90	600	3.40	34.87	27.76
698	3.38	34.85	800	3.35	34.85	27.76	818	3.36	34.90	800	3.35	34.90	27.79
870	3.32	34.85	1,000	3.35	34.86	27.76	1,021	3.28	34.90	1,000	3.30	34.90	27.80
							1,532	3.00	34.92				
Station 7851; 17 June; 49°16.5' N., 47°54' W.; depth 2,469 m.; dynamic height 970.852													
0	6.38	31.58	0	6.38	34.58	27.19	0	6.38	31.58	0	6.38	34.58	27.19
31	6.26	34.57	25	6.30	34.57	27.20	31	6.26	34.57	25	6.30	34.57	27.20
57	5.40	34.56	50	5.70	34.56	27.26	57	5.40	34.56	50	5.70	34.56	27.26
82	3.66	34.64	75	4.05	34.63	27.51	82	3.66	34.64	75	4.05	34.63	27.51
108	3.10	34.54	100	3.20	34.57	27.55	108	3.10	34.54	100	3.20	34.57	27.55
158	2.94	34.66	150	2.95	34.64	27.62	158	2.94	34.66	150	2.95	34.64	27.62
209	2.88	34.67	200	2.90	34.67	27.65	209	2.88	34.67	200	2.90	34.67	27.65
310	3.16	34.76	300	3.10	34.75	27.70	310	3.16	34.76	300	3.10	34.75	27.70
411	3.33	34.85	400	3.35	34.84	27.75	411	3.33	34.85	400	3.35	34.84	27.75
614	3.38	34.90	600	3.40	34.87	27.76	614	3.38	34.90	600	3.40	34.87	27.76
818	3.36	34.90	800	3.35	34.90	27.79	818	3.36	34.90	800	3.35	34.90	27.79
1,021	3.28	34.90	1,000	3.30	34.90	27.80	1,021	3.28	34.90	1,000	3.30	34.90	27.80
1,532	3.00	34.92					1,532	3.00	34.92				

## TABLE OF OCEANOGRAPHIC DATA STATIONS OCCUPIED IN 1961—Continued

Observed values			Scaled values				Observed values			Scaled values			
Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	$\sigma_t$	Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	$\sigma_t$
Station 7852; 18 June; 48°53' N., 48°11' W.; depth 2,286 m., dynamic height 970.878							Station 7856; 18 June; 47°50' N., 48°50' W.; depth 220 m.; dynamic height 971.073						
0	5.60	33.77	0	5.60	33.77	26.65	0	5.32	31.97	0	5.32	31.97	25.26
32	3.53	33.96	25	3.95	33.90	26.94	25	2.09	32.74	25	2.09	32.74	26.18
57	2.27	34.41	50	2.35	34.28	27.39	51	-0.84	33.00	50	-0.75	32.99	26.54
83	2.67	34.57	75	2.55	34.55	27.59	76	-1.07	33.10	75	-1.05	33.09	26.63
108	2.87	34.62	100	2.80	34.61	27.62	102	-0.73	33.21	100	-0.75	33.20	26.71
159	3.22	34.69	150	3.15	34.68	27.64	153	-0.37	33.44	150	-0.40	33.42	26.87
210	3.58	34.80	200	3.55	34.79	27.69	204	1.39	34.12				
313	3.56	34.82	300	3.55	34.82	27.71							
414	3.52	34.82	400	3.50	34.82	27.72							
618	3.49	34.84	600	3.50	34.84	27.73							
821	3.39		800	3.40	34.83	27.73							
1,021	3.42	34.87	1,000	3.40	34.87	27.76							
1,520	3.38	34.87											
Station 7853; 18 June; 48°29' N., 48°23' W.; depth 1,737 m.; dynamic height 970.895							Station 7857; 18 June; 47°39.5' N., 48°58' W.; depth 165 m.; dynamic height 971.057						
0	5.13	33.24	0	5.13	33.24	26.29	0	5.42	32.16	0	5.42	32.16	25.40
31	4.35	34.28	25	4.55	34.08	27.02	26	0.79	32.80	25	1.10	32.78	26.28
55	2.89	34.40	50	3.00	34.39	27.42	52	-0.20	33.14	50	-0.15	33.11	26.61
80	2.53	34.45	75	2.55	34.44	27.50	78	-0.51	33.19	75	-0.50	33.18	26.68
105	2.88	34.52	100	2.80	34.50	27.53	105	-0.55	33.36	100	-0.55	33.33	26.80
154	2.89	34.59	150	2.90	34.58	27.58	157	0.49	33.77	150	0.35	33.71	27.07
204	3.11	34.70	200	3.10	34.69	27.65							
303	3.26	34.77	300	3.25	34.77	27.70							
402	3.45	34.82	400	3.45	34.82	27.72							
600	3.51	34.82	600	3.50	34.82	27.72							
803	3.56	34.86	800	3.55	34.85	27.73							
1,009	3.47		1,000	3.45	34.86	27.75							
1,534	3.40	34.915											
Station 7854; 18 June; 48°11.5' N., 48°39' W.; depth 606 m., dynamic height 970.995							Station 7858; 18 June; 47°43' N., 48°30' W.; depth 208 m.; dynamic height 971.067						
0	4.63	32.08	0	4.63	32.08	25.43	0	5.61	31.93	0	5.61	31.93	25.20
30	3.17	32.64	25	3.00	32.55	25.90	25	2.99	32.84	25	2.99	32.84	26.19
56	-0.60	33.34	50	-0.50	33.18	26.68	50	-0.01	33.03	50	-0.01	33.03	26.54
80	-0.02	33.63	75	-0.20	33.57	26.98	75	-1.00	33.16	75	-1.00	33.16	26.68
106	1.00	33.90	100	0.75	33.83	27.14	100	-1.01	33.24	100	-1.01	33.24	26.75
155	1.73	34.22	150	1.65	34.19	27.37	150	0.22	33.67	150	0.22	33.67	27.04
205	2.56	34.48	200	2.50	34.46	27.52	200	1.14	33.98	200	1.14	33.98	27.24
303	3.36	34.74	300	3.35	34.74	27.67							
400	3.63	34.82	400	3.65	34.82	27.70							
590	3.67	34.87	600	3.65	34.87	27.74							
Station 7855; 18 June; 48°02.5' N., 48°40' W.; depth 324 m.; dynamic height 971.046							Station 7859; 18 June; 47°47' N., 48°14' W.; depth 242 m.; dynamic height 971.056						
0	4.60	31.92	0	4.60	31.92	25.30	0	4.96	31.75	0	4.96	31.75	25.13
32	3.19	32.66	25	3.70	32.50	25.85	30	-0.38	32.87	25	0.40	32.68	26.24
58	-1.03	33.09	50	-0.30	33.00	26.53	55	-1.31	32.96	50	-1.25	32.95	26.52
84	-0.73	33.28	75	-0.90	33.21	26.72	79	-0.92	33.16	75	-1.00	33.14	26.67
110	0.09	33.64	100	-0.25	33.49	26.92	104	-0.91	33.29	100	-0.90	33.27	26.77
162	1.19	34.00	150	1.00	33.93	27.21	152	0.46	33.80	150	0.40	33.77	27.12
214	1.81	34.32	200	1.65	34.24	27.41	201	1.65	34.20	200	1.60	34.19	27.38
317	2.46	34.45	300	2.40	34.46	27.53							
Station 7860; 18 June; 47°48.5' N., 47°52' W.; depth 302 m.; dynamic height 971.020							Station 7860; 18 June; 47°48.5' N., 47°52' W.; depth 302 m.; dynamic height 971.020						
0	5.68	31.75	0	5.68	31.75	25.05	0	5.68	31.75	0	5.68	31.75	25.05
32	1.27	33.22	25	2.20	32.90	26.30	32	2.20	32.90	25	2.20	32.90	26.30
59	0.14	33.36	50	0.20	33.32	26.76	59	0.14	33.36	50	0.20	33.32	26.76
85	0.35	33.70	75	0.25	33.57	26.96	85	0.35	33.70	75	0.25	33.57	26.96
112	0.83	33.86	100	0.60	33.50	27.13	112	0.83	33.86	100	0.60	33.50	27.13
164	1.55	34.00	150	1.30	34.03	27.27	164	1.55	34.00	150	1.30	34.03	27.27
217	2.54	34.42	200	2.30	34.34	27.44	217	2.54	34.42	200	2.30	34.34	27.44
270	2.53	34.46					270	2.53	34.46				

## TABLE OF OCEANOGRAPHIC DATA STATIONS OCCUPIED IN 1961—Continued

Observed values			Scaled values				Observed values			Scaled values			
Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	$\sigma_t$	Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	$\sigma_t$
Station 7861; 19 June; 47°56.5' N., 47°41' W.; depth 348 m.; dynamic height 970.974													
0	5.25	32.43	0	5.25	32.43	25.64							
33	1.64	33.35	25	2.60	33.13	26.45							
59	0.22	33.61	50	0.50	33.53	26.92							
87	0.82	33.91	75	0.50	33.77	27.11							
113	1.40	34.09	100	1.10	34.00	27.26							
166	2.38	34.40	150	2.10	34.31	27.43							
220	2.92	34.62	200	2.75	34.56	27.58							
327	3.19	34.70	300	3.15	34.69	27.64							
Station 7862; 19 June; 48°16.5' N., 47°20' W.; depth 1,829 m.; dynamic height 970.893													
0	6.30	33.50	0	6.30	33.50	26.35							
32	4.73	34.24	25	5.05	34.07	26.95							
57	2.27	34.40	50	2.55	34.36	27.44							
83	2.62	34.48	75	2.55	34.46	27.52							
108	2.80	34.50	100	2.75	34.49	27.52							
159	3.12	34.66	150	3.05	34.63	27.61							
212	3.36	33.74	200	3.30	34.72	27.66							
313	3.57	34.795	300	3.55	34.79	27.69							
414	3.56	34.83	400	3.55	34.83	27.72							
618	3.53	34.84	600	3.55	34.84	27.73							
823	3.56	34.86	800	3.55	34.85	27.73							
1,030	3.53	34.88	1,000	3.55	34.87	27.75							
1,546	3.43	34.86											
Station 7863; 19 June; 48°38.5' N., 47°01' W.; depth 2,743 m.; dynamic height 970.879													
0	6.14	33.66	0	6.14	33.66	26.50							
30	4.51	33.90	25	4.85	33.85	26.80							
53	2.22	34.41	50	2.25	34.33	27.44							
78	2.55	34.54	75	2.50	34.53	27.58							
102	2.82	34.56	100	2.80	34.56	27.58							
150	3.04	34.68	150	3.05	34.68	27.65							
198	3.38	34.74	200	3.40	34.74	27.66							
295	3.53	34.82	300	3.55	34.82	27.71							
391	3.51	34.84	400	3.50	34.84	27.73							
584	3.50	34.85	600	3.50	34.85	27.74							
778	3.49	34.86	800	3.50	34.86	27.75							
977	3.44	34.86	1,000	3.45	34.86	27.75							
1,474	3.44	34.90											
Station 7864; 19 June; 48°57.5' N., 46°40' W.; depth 2,849 m.; dynamic height 970.885													
0	8.79	34.70	0	8.79	34.70	26.94							
30	8.07	34.78	25	8.30	34.78	27.08							
54	5.24	34.60	50	5.80	34.60	27.28							
79	3.96	34.61	75	4.15	34.64	27.48							
101	3.54	34.62	100	3.60	34.62	27.55							
152	3.94	34.74	150	3.95	34.74	27.61							
201	3.84	34.82	200	3.85	34.81	27.67							
300	3.85	34.86	300	3.85	34.86	27.71							
399	3.80	34.87	400	3.80	34.87	27.725							
598	3.65	34.85	600	3.65	34.85	27.725							
797	3.38	34.82	800	3.40	34.82	27.725							
1,004	3.41	34.87	1,000	3.40	34.87	27.76							
1,524	3.54	34.90											
Station 7865; 19 June; 49°20.5' N., 46°20' W.; depth 3,200 m.; dynamic height 970.880													
0	9.28	34.78	0	9.28	34.78	26.92							
32	7.86	34.72	25	8.25	34.74	27.05							
58	5.99	34.69	50	6.60	34.70	27.26							
85	4.46	34.71	75	4.95	34.71	27.47							
112	3.71	34.64	100	3.95	34.67	27.55							
163	3.86	34.79	150	3.85	34.77	27.64							
216	3.44	34.79	200	3.50	34.79	27.69							
321	3.59	33.82	300	3.60	34.81	27.70							
423	3.58	33.85	400	3.60	34.85	27.73							
629	3.55	34.86	600	3.55	34.85	27.73							
837	3.56	34.86	800	3.55	34.86	27.74							
1,043	3.50	34.86	1,000	3.50	34.87	27.76							
1,560	3.44	34.88											
Station 7866; 19 June; 49°11.5' N., 45°40' W.; depth 3,017 m.; dynamic height 970.885													
0	8.90	34.58	0	8.90	34.58	26.83							
32	7.74	34.69	25	8.10	34.68	27.03							
58	5.29	34.62	50	6.05	34.64	27.28							
84	3.33	34.54	75	3.75	34.56	27.48							
111	3.66	34.61	100	3.55	34.58	27.52							
162	3.38	34.70	150	3.45	34.69	27.62							
214	3.54	34.75	200	3.50	34.74	27.65							
318	3.57	34.82	300	3.55	34.82	27.71							
421	3.69	34.86	400	3.70	34.85	27.72							
618	3.60	34.84	600	3.60	34.84	27.72							
832	3.56	34.88	800	3.55	34.88	27.76							
1,034	3.49	34.90	1,000	3.50	34.88	27.76							
1,531	3.44	34.90											
Station 7867; 19 June; 49°01' N., 45°00' W.; depth 1,646 m.; dynamic height 970.866													
0	7.63	34.30	0	7.63	34.30	26.80							
32	5.12	34.40	25	5.65	34.38	27.13							
57	3.42	34.54	50	3.75	34.51	27.44							
83	3.08	34.58	75	3.15	34.57	27.55							
108	3.21	34.68	100	3.10	34.65	27.62							
159	3.12	34.74	150	3.20	34.73	27.67							
210	3.42	34.76	200	3.40	34.76	27.68							
312	3.53	34.84	300	3.55	34.83	27.72							
413	3.56	34.86	400	3.55	34.84	27.73							
615	3.45	34.86	600	3.45	34.84	27.74							
818	3.37	34.84	800	3.40	34.84	27.74							
1,022	3.37	34.84	1,000	3.35	34.84	27.75							
1,532	3.31	34.91											
Station 7868; 20 June; 48°37.5' N., 45°33' W.; depth 1,134 m.; dynamic height 970.852													
0	7.46	34.29	0	7.46	34.29	26.82							
31	6.33	34.54	25	6.55	34.70	27.11							
57	5.16	34.65	50	5.45	34.64	27.36							
82	3.99	34.67	75	4.30	34.66	27.51							
108	3.56	34.71	100	3.60	34.70	27.61							
158	3.52	34.80	150	3.50	34.79	27.69							
208	3.55	34.83	200	3.55	34.83	27.72							
310	3.53	34.83	300	3.55	34.83	27.72							
411	3.51	34.87	400	3.50	34.87	27.75							
614	3.54	34.88	600	3.55	34.88	27.76							
820	3.54	34.89	800	3.55	34.89	27.77							
1,029	3.48	34.89	1,000	3.50	34.89	27.77							

# TABLE OF OCEANOGRAPHIC DATA

## STATIONS OCCUPIED IN 1961—Continued

Observed values			Scaled values				Observed values			Scaled values			
Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	$\sigma_t$	Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	$\sigma_t$
Station 7869; 20 June; 48°19.5' N., 45°58' W.; depth 1,152 m.; dynamic height 970.886													
0	6.17	33.73	0	6.17	33.73	26.55							
32	1.06	33.88	25	1.40	33.84	27.11							
59	1.71	34.19	50	1.45	34.09	27.31							
85	2.05	34.32	75	1.90	34.27	27.42							
111	2.48	34.48	100	2.30	34.42	27.51							
163	2.97	34.62	150	2.85	34.59	27.59							
214	3.50	34.79	200	3.40	34.75	27.67							
314	3.55	34.82	300	3.55	34.82	27.71							
411	3.44		400	3.45	34.82	27.72							
614	3.48	34.85	600	3.50	34.85	27.74							
818	3.53		800	3.55	34.86	27.74							
1,020	3.54	34.88	1,000	3.55	34.88	27.76							
Station 7870; 20 June; 47°59.5' N., 46°20' W.; depth 1,188 m.; dynamic height 970.857													
0	7.65	34.32	0	7.65	34.32	26.81							
32	6.49	34.34	25	6.85	34.33	26.93							
58	4.31	34.60	50	4.95	34.53	27.33							
85	3.73	34.67	75	3.90	34.65	27.54							
111	3.41	34.72	100	3.50	34.70	27.62							
162	3.52	34.79	150	3.50	34.78	27.68							
213	3.51	34.83	200	3.50	34.82	27.72							
315	3.43	34.86	300	3.45	34.85	27.74							
413	3.47	34.865	400	3.45	34.85	27.74							
616	3.52	34.865	600	3.50	34.86	27.75							
818	3.47		800	3.45	34.88	27.77							
1,019	3.48	34.89	1,000	3.50	34.89	27.77							
Station 7871; 20 June; 47°52' N., 46°02' W.; depth 1,002 m.; dynamic height 970.865													
0	7.61	34.10	0	7.61	34.10	26.65							
32	6.25	34.38	25	6.65	34.33	26.96							
58	3.76	34.54	50	4.10	34.49	27.39							
84	3.71	34.65	75	3.70	34.62	27.54							
110	3.48	34.68	100	3.50	34.67	27.60							
161	3.48	34.76	150	3.45	34.74	27.66							
212	3.64	34.82	200	3.60	34.81	27.70							
315	3.73	34.86	300	3.75	34.86	27.72							
415	3.72	34.86	400	3.70	34.86	27.73							
617	3.67	34.89	600	3.70	34.89	27.75							
818	3.53	34.88	800	3.55	34.88	27.76							
1,018	3.46	34.91	1,000	3.45	34.91	27.79							
Station 7872; 20 June; 47°48.5' N., 45°53' W.; depth 457 m.; dynamic height 970.882													
0	6.97	33.38	0	6.97	33.38	26.17							
31	6.58	34.29	25	6.70	34.11	26.78							
56	4.94	34.62	50	5.35	34.60	27.34							
82	4.20	34.65	75	4.35	34.64	27.48							
107	3.75	34.69	100	3.85	34.68	27.57							
157	3.53	34.76	150	3.55	34.75	27.66							
207	3.46	34.76	200	3.45	34.76	27.67							
307	3.65	34.84	300	3.65	34.83	27.71							
408	3.83	34.87	400	3.80	34.87	27.73							
Station 7873; 20 June; 47°44' N., 45°44' W.; depth 320 m.; dynamic height 970.914													
0	7.89	33.69	0	7.89	33.69	26.28							
25	5.20	33.90	25	5.20	33.90	26.80							
50	4.23	34.17	50	4.23	34.17	27.12							
76	3.71	34.32	75	3.70	34.31	27.29							
101	3.70	34.46	100	3.70	34.46	27.41							
152	3.88	34.60	150	3.90	34.59	27.49							
202	3.94	34.70	200	3.95	34.69	27.57							
303	3.85	34.82	300	3.85	34.82	27.68							
Station 7874; 20 June; 47°28' N., 45°12' W.; depth 220 m.; dynamic height 970.904													
0	7.78	33.76	0	7.78	33.76	26.36							
26	4.85	33.90	25	5.00	33.89	26.82							
51	3.65	34.22	50	3.70	34.21	27.21							
77	3.18	34.36	75	3.20	34.35	27.37							
102	3.40	34.43	100	3.40	34.42	27.41							
154	3.66	34.64	150	3.65	34.63	27.55							
205	3.90	34.72	200	3.85	34.72	27.60							
Station 7875; 20 June; 47°21' N., 44°57' W.; depth 183 m.; dynamic height 970.916													
0	7.94	33.78	0	7.94	33.78	26.35							
32	4.34	34.01	25	5.00	33.95	26.86							
59	3.74	34.10	50	3.90	34.06	27.07							
85	3.41	34.38	75	3.50	34.26	27.27							
111	3.30	34.49	100	3.35	34.46	27.44							
163	3.58	34.58	150	3.50	34.56	27.51							
Station 7876; 20 June; 47°21' N., 45°26' W.; depth 220 m.; dynamic height 970.902													
0	7.91	33.70	0	7.91	33.70	26.29							
32	3.97	34.13	25	4.75	34.04	26.96							
58	3.51	34.32	50	3.60	34.27	27.27							
84	3.36	34.42	75	3.40	34.40	27.39							
110	3.27	34.49	100	3.30	34.46	27.45							
161	3.15	34.55	150	3.15	34.54	27.53							
213	3.86	34.73	200	3.60	34.68	27.60							
Station 7877; 21 June; 47°21' N., 45°39' W.; depth 265 m.; dynamic height 970.930													
0	7.36	33.80	0	7.36	33.80	26.45							
25	5.87	33.90	25	5.87	33.90	26.72							
50	3.44	34.00	50	3.44	34.00	27.07							
76	3.06	34.14	75	3.05	34.14	27.22							
101	3.09	34.32	100	3.10	34.31	27.35							
151	3.48	34.44	150	3.50	34.44	27.41							
202	3.77	34.57	200	3.75	34.56	27.48							
252	3.94	34.70											
Station 7878; 21 June; 47°19' N., 46°02' W.; depth 322 m.; dynamic height 970.937													
0	7.77	33.74	0	7.77	33.74	26.34							
25	6.57	33.82	25	6.57	33.82	26.57							
50	3.55	33.94	50	3.55	33.94	27.01							
76	3.20	34.09	75	3.20	34.08	27.16							
101	3.06	34.22	100	3.05	34.21	27.27							
152	3.67	34.46	150	3.65	34.45	27.41							
202	3.96	34.63	200	3.95	34.62	27.51							
303	4.00	34.84	300	4.00	34.83	27.67							
Station 7879; 21 June; 47°19' N., 46°27' W.; depth 633 m.; dynamic height 970.904													
0	7.85	33.69	0	7.85	33.69	26.29							
32	6.06	33.88	25	6.55	33.83	26.58							
58	3.98	34.15	50	4.25	34.05	27.03							
84	4.19	34.48	75	4.15	34.38	27.30							
111	3.81	34.62	100	3.95	34.57	27.47							
162	3.94	34.73	150	3.95	34.71	27.58							
214	3.72	34.75	200	3.75	34.74	27.63							
324	3.69	34.85	300	3.70	34.83	27.70							
417	3.71	34.87	400	3.70	34.87	27.74							
616	3.69	34.89	600	3.70	34.89	27.75							

# TABLE OF OCEANOGRAPHIC DATA

## STATIONS OCCUPIED IN 1961—Continued

Observed values			Scaled values				Observed values			Scaled values			
Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	$\sigma_t$	Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	$\sigma_t$
Station 7880; 21 June; 47°17' N., 47°01' W.; depth 1,069 m.; dynamic height 970.942													
0	6.62	32.84	0	6.62	32.84	25.79	0	6.10	32.65	0	6.10	32.65	25.71
31	2.70	33.24	25	3.05	33.12	26.40	25	2.78	32.88	25	2.78	32.88	26.24
56	4.86	34.22	50	4.40	34.01	26.98	50	-0.60	33.13	50	-0.60	33.13	26.65
82	2.99	34.34	75	3.35	34.31	27.32							
107	2.58	34.39	100	2.60	34.37	27.44							
156	2.95	34.56	150	2.90	34.54	27.55							
207	2.98	34.59	200	2.95	34.58	27.58							
308	3.37	34.77	300	3.35	34.76	27.68							
408	3.64	34.80	400	3.60	34.80	27.69							
607	3.72	34.85	600	3.70	34.85	27.72							
806	3.62	34.88	800	3.60	34.88	27.75							
1,004	3.48	34.88	1,000	3.50	34.88	27.76							
Station 7881; 21 June; 47°17' N., 47°25' W.; depth 265 m.; dynamic height 971.014													
0	6.72	31.79	0	6.72	31.79	24.95	0	5.35	31.96	0	5.35	31.96	25.25
28	1.51	33.15	25	2.25	33.00	26.38	32	-0.90	32.85	25	0.50	32.63	26.19
54	0.36	33.38	50	0.50	33.34	26.76	58	-1.26	33.02	50	-1.20	32.97	26.54
79	-0.05	33.51	75	-0.05	33.49	26.92	84	-0.64	33.21	75	-0.90	33.14	26.66
106	0.50	33.75	100	0.35	33.71	27.07	109	-0.52	33.40	100	-0.55	33.33	26.81
155	1.39	34.09	150	1.30	34.06	27.29	161	0.96	33.93	150	0.60	33.82	27.14
206	2.08	34.32	200	2.00	34.30	27.43							
256	2.35	34.42											
Station 7882; 21 June; 47°16' N., 47°59' W.; depth 169 m.; dynamic height 971.068													
0	5.34	31.97	0	5.34	31.97	25.26	0	5.58	31.96	0	5.58	31.96	25.22
31	0.56	32.75	25	1.35	32.62	26.14	31	0.50	33.20	25	1.45	32.96	26.40
56	-1.23	32.98	50	-1.10	32.94	26.51	57	0.07	33.37	50	0.20	33.34	26.78
81	-1.33	33.01	75	-1.30	33.00	26.56	82	-0.31	33.42	75	-0.25	33.40	26.85
106	-0.90	33.26	100	-1.05	33.21	26.73	108	0.29	33.69	100	0.05	33.60	27.00
156	-0.21	33.53	150	-0.30	33.50	26.93	159	1.68	34.15	150	1.50	34.09	27.30
							210	2.19	34.29	200	2.10	34.26	27.39
							312	2.96	34.63	300	2.85	34.59	27.59
Station 7883; 21 June; 47°15' N., 48°21' W.; depth 144 m.; dynamic height 971.060													
0	6.21	32.70	0	6.21	32.70	25.73	0	6.25	31.96	0	6.25	31.96	25.15
26	3.41	32.82	25	3.50	32.82	26.12	30	0.42	33.24	25	1.35	33.03	26.46
52	-0.80	33.00	50	-0.40	32.99	26.52	56	-0.40	33.38	50	-0.35	33.35	26.81
77	-1.08	33.16	75	-1.10	33.15	26.68	80	-0.09	33.51	75	-0.20	33.48	26.91
103	-0.81	33.26	100	-0.90	33.25	26.75	106	0.80	33.90	100	0.60	33.81	27.14
							155	1.81	34.15	150	1.75	34.13	27.32
							205	2.19	34.32	200	2.15	34.31	27.43
							305	3.09	34.66	300	3.05	34.64	27.62
							405	3.57	34.84	400	3.55	34.83	27.72
							605	3.62	34.86	600	3.60	34.83	27.73
Station 7884; 21 June; 47°14.5' N., 48°57' W.; depth 91 m.; dynamic height 971.061													
0	6.62	32.60	0	6.62	32.60	25.60	0	6.49	32.46	0	6.49	32.46	25.51
32	1.40	32.81	25	2.55	32.79	26.18	32	5.43	33.90	25	5.70	33.58	26.49
57	-0.53	32.96	50	-0.15	32.92	26.46	57	4.62	34.22	50	4.80	34.12	27.02
83	-0.91	33.27	75	-0.85	33.17	26.69	83	4.40	34.60	75	4.45	34.52	27.38
							109	3.69	34.60	100	3.95	34.60	27.50
							159	3.52	34.68	150	3.50	34.66	27.59
							211	3.64	34.77	200	3.60	34.76	27.66
							313	3.67	34.80	300	3.65	34.80	27.68
							415	3.60	34.85	400	3.60	34.845	27.73
							617	3.58	34.85	600	3.60	34.85	27.73
							819	3.65	34.88	800	3.65	34.87	27.74
							1,019	3.49	34.88	1,000	3.50	34.88	27.76
Station 7885; 21 June; 47°14' N., 49°10' W.; depth 84 m.; dynamic height 971.066													
0	7.01	32.65	0	7.01	32.65	25.59	0	6.49	32.46	0	6.49	32.46	25.51
28	3.09	32.75	25	3.50	32.73	26.05	32	5.43	33.90	25	5.70	33.58	26.49
51	0.35	32.91	50	0.40	32.90	26.42	57	4.62	34.22	50	4.80	34.12	27.02
74	-0.68	33.10	75	-0.70	33.10	26.63	83	4.40	34.60	75	4.45	34.52	27.38
							109	3.69	34.60	100	3.95	34.60	27.50
							159	3.52	34.68	150	3.50	34.66	27.59
							211	3.64	34.77	200	3.60	34.76	27.66
							313	3.67	34.80	300	3.65	34.80	27.68
							415	3.60	34.85	400	3.60	34.845	27.73
							617	3.58	34.85	600	3.60	34.85	27.73
							819	3.65	34.88	800	3.65	34.87	27.74
							1,019	3.49	34.88	1,000	3.50	34.88	27.76
Station 7886; 21 June; 46°48.5' N., 48°42' W.; depth 78 m.; dynamic height 971.052													
0	6.10	32.65	0	6.10	32.65	25.71	0	6.10	32.65	0	6.10	32.65	25.71
25	2.78	32.88	25	2.78	32.88	26.24	25	2.78	32.88	25	2.78	32.88	26.24
50	-0.60	33.13	50	-0.60	33.13	26.65	50	-0.60	33.13	50	-0.60	33.13	26.65
Station 7887; 22 June; 46°47' N., 48°06' W.; depth 110 m.; dynamic height 971.052													
0	6.09	32.78	0	6.09	32.78	25.81	0	6.09	32.78	0	6.09	32.78	25.81
31	2.24	32.94	25	3.00	32.91	26.24	31	2.24	32.94	25	3.00	32.91	26.24
56	-0.74	33.10	50	-0.05	33.06	26.57	56	-0.74	33.10	50	-0.05	33.06	26.57
81	-1.00	33.32	75	-1.00	33.26	26.76	81	-1.00	33.32	75	-1.00	33.26	26.76
106	-0.37	33.49	100	-0.60	33.44	26.90	106	-0.37	33.49	100	-0.60	33.44	26.90
Station 7888; 22 June; 46°47.5' N., 47°32' W.; depth 174 m.; dynamic height 971.062													
0	5.35	31.96	0	5.35	31.96	25.25	0	5.35	31.96	0	5.35	31.96	25.25
32	-0.90	32.85	25	0.50	32.63	26.19	32	-0.90	32.85	25	0.50	32.63	26.19
58	-1.26	33.02	50	-1.20	32.97	26.54	58	-1.26	33.02	50	-1.20	32.97	26.54
84	-0.64	33.21	75	-0.90	33.14	26.66	84	-0.64	33.21	75	-0.90	33.14	26.66
109	-0.52	33.40	100	-0.55	33.33	26.81	109	-0.52	33.40	100	-0.55	33.33	26.81
161	0.96	33.93	150	0.60	33.82	27.14	161	0.96	33.93	150	0.60	33.82	27.14
Station 7889; 22 June; 46°48' N., 47°10' W.; depth 318 m.; dynamic height 971.018													
0	5.58	31.96	0	5.58	31.96	25.22	0	5.58	31.96	0	5.58	31.96	25.22
31	0.50	33.20	25	1.45	32.96	26.40	31	0.50	33.20	25	1.45	32.96	26.40
57	0.07	33.37	50	0.20	33.34	26.78	57	0.07	33.37	50	0.20	33.34	26.78
82	-0.31	33.42	75	-0.25	33.40	26.85	82	-0.31	33.42	75	-0.25	33.40	26.85
108	0.29	33.69	100	0.05	33.60	27.00	108	0.29	33.69	100	0.05	33.60	27.00
159	1.68	34.15	150	1.50	34.09	27.30	159	1.68	34.15	150	1.50	34.09	27.30
210	2.19	34.29	200	2.10	34.26	27.39	210	2.19	34.29	200	2.10	34.26	27.39
312	2.96	34.63	300	2.85	34.59	27.59	312	2.96	34.63	300	2.85	34.59	27.59
Station 7890; 22 June; 46°48' N., 47°04' W.; depth 692 m.; dynamic height 970.998													
0	6.25	31.96	0	6.25	31.96	25.15	0	6.25	31.96	0	6.25	31.96	25.15
30	0.42	33.24	25	1.35	33.03	26.46	30	0.42	33.24	25	1.35	33.03	26.46
56	-0.40	33.38	50	-0.35	33.35	26.81	56	-0.40	33.38	50	-0.35	33.35	26.81
80	-0.09	33.51	75	-0.20	33.48	26.91	80	-0.09	33.51	75	-0.20	33.48	26.91
106	0.80	33.90	100	0.60	33.81	27.14	106	0.80	33.90	100	0.60	33.81	27.14
155	1.81	34.15	150	1.75	34.13	27.32	155	1.81	34.15	150	1.75	34.13	27.32
205	2.19	34.32	200	2.15	34.31	27.43	205	2.19	34.32	200	2.15	34.31	27.43
305	3.09	34.66	300	3.05	34.64	27.62	305	3.09	34.66	300	3.05	34.64	27.62
405	3.57	34.84	400	3.55	34.83	27.72	405	3.57	34.84	400	3.55	34.83	27.72
605	3.62	34.86	600	3.60	34.83	27.73	605	3.62	34.86	600	3.60	34.83	27.73
Station 7891; 22 June; 46°47.5' N., 46°53' W.; depth 1,													

# TABLE OF OCEANOGRAPHIC DATA

## STATIONS OCCUPIED IN 1961—Continued

Observed values			Scaled values				Observed values			Scaled values			
Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	$\sigma_t$	Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	$\sigma_t$
Station 7892; 22 June; 46°47' N., 46°31' W.; depth 622 m.; dynamic height 970.896													
0	8.19	33.42	0	8.19	33.42	26.03	0	5.91	32.62	0	5.91	32.62	25.71
31	5.21	34.00	25	5.80	33.89	26.72	32	4.90	34.23	25	5.20	33.88	26.79
57	3.49	34.36	50	3.70	34.27	27.26	58	3.07	34.67	50	3.35	34.58	27.54
82	3.80	34.56	75	3.70	34.52	27.46	84	3.16	34.75	75	3.15	34.73	27.68
107	3.92	34.62	100	3.90	34.61	27.51	109	3.20	34.78	100	3.20	34.77	27.70
157	3.94	34.70	150	3.95	34.68	27.56	160	3.56	34.86	150	3.50	34.85	27.74
208	3.86	34.79	200	3.85	34.78	27.65	212	3.68	34.89	200	3.65	34.80	27.76
307	3.84	34.85	300	3.85	34.85	27.70	315	3.51		300	3.55	34.88	27.76
407	3.76	34.86	400	3.75	34.86	27.72	416	3.47	34.88	400	3.50	34.88	27.76
606	3.58	34.88	600	3.60	34.88	27.75	620	3.36	34.88	600	3.35	34.88	27.78
							826	3.35	34.88	800	3.35	34.88	27.78
							1,032	3.36	34.89	1,000	3.35	34.89	27.79
							1,548	3.40	34.92				
Station 7893; 22 June; 46°47' N., 46°04' W.; depth 329 m.; dynamic height 970.907													
0	8.35	33.76	0	8.35	33.76	26.27	0	6.55	32.68	0	6.55	32.68	25.67
25	4.67	34.00	25	4.67	34.00	26.94	31	0.77	33.97	25	1.45	33.72	27.01
50	3.98	34.17	50	3.98	34.17	27.15	58	1.42	34.24	50	1.15	34.16	27.38
75	3.60	34.35	75	3.60	34.35	27.33	83	2.44	34.48	75	2.25	34.41	27.50
100	3.34	34.40	100	3.34	34.40	27.40	110	2.67	34.57	100	2.60	34.54	27.58
150	3.16	34.55	150	3.16	34.55	27.53	160	3.13	34.72	150	3.05	34.70	27.66
201	3.64	34.70	200	3.65	34.70	27.61	212	3.49	34.78	200	3.35	34.77	27.69
301	3.85	34.80	300	3.85	34.80	27.66	314	3.48	34.83	300	3.50	34.82	27.72
							414	3.49	34.87	400	3.50	34.87	27.76
							612	3.50	34.88	600	3.50	34.88	27.76
							813	3.47	34.89	800	3.45	34.89	27.75
							1,012	3.39	34.88	1,000	3.40	34.88	27.75
							1,209	3.39					
Station 7894; 22 June; 46°48.5' N., 45°43' W.; depth 278 m.; dynamic height 970.906													
0	8.43	33.73	0	8.43	33.73	26.23	0	6.71	32.64	0	6.71	32.64	25.62
25	5.32	33.92	25	5.32	33.92	26.80	31	-0.18	33.44	25	0.45	33.28	26.72
50	4.05	34.30	50	4.05	34.30	27.25	57	0.28	33.82	50	0.10	33.72	27.09
76	3.74	34.39	75	3.75	34.39	27.35	82	1.11	34.06	75	0.85	33.98	27.26
101	3.31	34.44	100	3.30	34.44	27.43	107	1.70	34.28	100	1.55	34.22	27.40
151	3.37	34.57	150	3.35	34.57	27.53	159	2.48	34.49	150	2.35	34.45	27.53
202	3.95	34.74	200	3.95	34.73	27.60	210	2.74	34.61	200	2.70	34.59	27.61
252	3.82	34.80					310	3.14	34.75	300	3.10	34.74	27.69
							411	3.21	34.78	400	3.20	34.78	27.71
							608	3.38	34.88	600	3.35	34.88	27.78
Station 7895; 22 June; 46°45.5' N., 45°15' W.; depth 224 m.; dynamic height 970.945													
0	8.28	33.60	0	8.28	33.60	26.16	0	6.98	32.18	0	6.98	32.18	25.23
26	6.87	33.72	25	6.95	33.71	26.43	31	-1.40	32.99	25	-0.80	32.83	26.41
52	3.51	33.88	50	3.85	33.87	26.93	56	-0.96	33.19	50	-1.10	33.15	26.68
78	2.63	34.03	75	2.65	34.01	27.15	82	-0.71	33.42	75	-0.80	33.35	26.83
104	2.84	34.17	100	2.80	34.14	27.24	107	0.00	33.74	100	-0.25	33.64	27.04
157	3.35	34.46	150	3.30	34.42	27.42	158	1.59	34.16	150	1.35	34.10	27.32
209	3.42	34.56	200	3.40	34.52	27.51	208	2.33	34.44	200	2.20	34.40	27.50
							309	3.28	34.78	300	3.20	34.76	27.70
Station 7896; 22 June; 46°49' N., 45°01' W.; depth 174 m.; dynamic height 970.922													
0	8.15	33.59	0	8.15	33.59	26.17	0	6.98	32.18	0	6.98	32.18	25.23
31	4.94	33.88	25	5.55	33.83	26.71	31	-1.40	32.99	25	-0.80	32.83	26.41
56	2.56	34.00	50	2.70	33.97	27.11	56	-0.96	33.19	50	-1.10	33.15	26.68
80	2.95	34.25	75	2.85	34.20	27.28	82	-0.71	33.42	75	-0.80	33.35	26.83
105	3.38	34.39	100	3.35	34.36	27.36	107	0.00	33.74	100	-0.25	33.64	27.04
155	3.41	34.54	150	3.40	34.52	27.49	158	1.59	34.16	150	1.35	34.10	27.32
							208	2.33	34.44	200	2.20	34.40	27.50
							309	3.28	34.78	300	3.20	34.76	27.70
Station 7897; 22 June; 46°48' N., 44°51' W.; depth 146 m.; dynamic height 970.906													
0	8.43	33.66	0	8.43	33.66	26.18	0	7.70	32.15	0	7.70	32.15	25.10
31	3.67	34.03	25	4.05	33.97	26.98	31	2.12	33.18	25	3.05	32.98	26.29
56	3.46	34.25	50	3.50	34.20	27.22	57	0.67	33.83	50	0.85	33.70	27.03
80	3.17	34.38	75	3.20	34.35	27.37	82	1.20	34.07	75	1.05	34.01	27.27
105	3.37	34.52	100	3.35	34.50	27.48	108	1.62	34.21	100	1.50	34.17	27.37
130	3.40	34.54					158	2.08	34.58	150	2.00	34.36	27.48
							209	2.61	34.56	200	2.55	34.52	27.56
							311	3.23	34.76	300	3.20	34.74	27.68

# TABLE OF OCEANOGRAPHIC DATA

## STATIONS OCCUPIED IN 1961—Continued

Observed values			Scaled values				Observed values			Scaled values			
Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	$\sigma_t$	Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	$\sigma_t$
Station 7903; 4 July; 49°12' N., 51°29' W.; depth 329 m.; dynamic height 971.046													
0	9.48	31.21	0	9.48	31.21	24.10	0	9.66	31.01	0	9.66	31.01	23.92
31	-1.20	32.64	25	1.00	32.36	25.95	25	0.80	32.29	25	0.80	32.29	25.90
56	-1.42	32.76	50	-1.40	32.72	26.34	51	-1.07	32.67	50	-1.05	32.66	26.28
82	-1.30	33.04	75	-1.35	32.95	26.52	76	-1.35	32.80	75	-1.35	32.80	26.40
107	-0.48	33.30	100	-0.70	33.22	26.72							
158	0.03	33.80	150	-0.05	33.71	27.09							
208	1.35	34.15	200	1.15	34.10	27.33							
309	2.72	34.52	300	2.65	34.50	27.54							
Station 7904; 4 July; 49°06' N., 51°50' W.; depth 302 m.; dynamic height 971.077													
0	7.54	31.45	0	7.54	31.45	24.58							
30	-1.10	32.40	25	0.40	32.24	25.88							
55	-1.43	32.69	50	-1.40	32.64	26.27							
79	-1.43	32.83	75	-1.45	32.81	26.41							
103	-1.47	32.84	100	-1.45	32.84	26.44							
152	-0.98	33.28	150	-1.05	33.25	26.76							
200	0.51	33.88	200	0.50	33.88	27.20							
288	2.58	34.53	(300)	2.80	34.59	27.60							
Station 7905; 4 July; 49°00.5' N., 52°04' W.; depth 298 m.; dynamic height 971.062													
0	7.85	31.52	0	7.85	31.52	24.59							
25	2.18	32.04	25	2.18	32.04	25.61							
49	-1.24	32.78	50	-1.25	32.79	26.39							
74	-1.38	32.93	75	-1.40	32.93	26.51							
98	-1.42	33.06	100	-1.40	33.07	26.62							
148	-0.63	33.38	150	-0.55	33.40	26.86							
197	1.03	33.92	200	1.10	33.96	27.22							
286	2.58	34.54	250	2.05	34.36	27.48							
Station 7906; 4 July; 48°53.5' N., 52°22' W.; depth 315 m.; dynamic height 971.041													
0	8.02	31.50	0	8.02	31.50	24.55							
31	2.51	32.15	25	3.60	32.02	25.48							
56	0.21	33.06	50	0.65	32.84	26.35							
82	-0.50	33.20	75	-0.40	33.16	26.66							
107	-0.54	33.39	100	-0.55	33.33	26.80							
157	0.49	33.81	150	0.35	33.75	27.10							
207	1.49	34.14	200	1.35	34.09	27.31							
308	2.97	34.66	300	2.85	34.62	27.62							
Station 7907; 4 July; 48°50' N., 52°43' W.; depth 229 m.; dynamic height 971.116													
0	9.98	31.04	0	9.98	31.04	23.89							
31	-1.17	32.66	25	-1.05	32.35	26.03							
58	-1.37	32.73	50	-1.35	32.70	26.32							
83	-1.50	32.92	75	-1.45	32.87	26.46							
109	-1.55	33.00	100	-1.55	32.97	26.55							
159	-1.10	33.13	150	-1.20	33.10	26.64							
211	-0.37	33.57	200	-0.55	33.46	26.91							
Station 7908; 4 July; 48°46.5' N., 52°49' W.; depth 169 m.; dynamic height 971.129													
0	10.16	30.88	0	10.16	30.88	23.74							
26	-0.10	32.43	25	0.30	32.37	26.00							
51	-1.45	32.75	50	-1.45	32.74	26.36							
76	-1.47	32.87	75	-1.45	32.87	26.46							
102	-1.46	32.92	100	-1.45	32.92	26.50							
153	-1.57	33.00	150	-1.55	32.99	26.56							
Station 7909; 4 July; 48°43.5' N., 52°58' W.; depth 110 m.; dynamic height 971.133													
0	9.66	31.01	0	9.66	31.01	23.92							
25	0.80	32.29	25	0.80	32.29	25.90							
51	-1.07	32.67	50	-1.05	32.66	26.28							
76	-1.35	32.80	75	-1.35	32.80	26.40							
Station 7910; 5 July; 48°37.5' N., 52°44' W.; depth 274 m.; dynamic height 971.119													
0	9.87	31.06	0	9.87	31.06	23.92							
25	-0.61	32.52	25	-0.61	32.57	26.15							
50	-1.26	32.77	50	-1.26	32.77	26.38							
74	-1.38	32.87	75	-1.40	32.87	26.46							
99	-1.50	32.93	100	-1.50	32.93	26.51							
149	-1.54	32.96	150	-1.55	32.96	26.54							
Station 7911; 5 July; 48°32.5' N., 52°33' W.; depth 245 m.; dynamic height 971.120													
0	9.35	30.99	0	9.35	30.99	23.95							
32	-0.68	32.54	25	-1.50	32.20	25.79							
58	-1.36	32.79	50	-1.30	32.74	26.35							
84	-1.46	32.90	75	-1.45	32.87	26.46							
110	-1.49	32.92	100	-1.50	32.91	26.50							
161	-1.45	33.06	150	-1.45	33.02	26.58							
213	-0.78	33.30	200	-1.00	33.24	26.75							
Station 7912; 5 July; 48°24' N., 52°08' W.; depth 205 m.; dynamic height 971.083													
0	9.10	31.26	0	9.10	31.26	24.20							
31	-0.14	32.54	25	1.65	32.29	25.85							
55	-1.10	32.85	50	-0.95	32.81	26.40							
80	-1.42	32.96	75	-1.40	32.94	26.52							
104	-1.19	33.04	100	-1.25	33.03	26.59							
155	-0.85	33.30	150	-0.85	33.27	26.77							
Station 7913; 5 July; 48°17.5' N., 51°53' W.; depth 201 m.; dynamic height 971.078													
0	8.42	31.81	0	8.42	31.81	24.74							
31	1.26	32.46	25	2.65	32.33	25.81							
57	-0.87	32.96	50	-0.65	32.87	26.44							
83	-1.17	33.03	75	-1.15	33.00	26.56							
109	-1.00	33.18	100	-1.05	33.11	26.65							
159	-0.66	33.42	150	-0.70	33.39	26.86							
Station 7914; 5 July; 48°08' N., 51°33' W.; depth 274 m.; dynamic height 971.078													
0	8.92	32.01	0	8.92	32.01	24.82							
31	0.37	32.52	25	2.00	32.42	25.93							
56	-0.83	32.94	50	-0.65	32.88	26.45							
81	-1.24	33.03	75	-1.15	33.01	26.57							
106	-1.12	33.12	100	-1.15	33.09	26.63							
156	-0.73	33.42	150	-0.75	33.38	26.85							

## TABLE OF OCEANOGRAPHIC DATA STATIONS OCCUPIED IN 1961—Continued

Observed values				Scaled values				Observed values				Scaled values			
Depth, meters	Temperature, °C.	Salinity, ‰	$\sigma_t$	Depth, meters	Temperature, °C.	Salinity, ‰	$\sigma_t$	Depth, meters	Temperature, °C.	Salinity, ‰	$\sigma_t$	Depth, meters	Temperature, °C.	Salinity, ‰	$\sigma_t$
Station 7915; 5 July; 48°01' N., 51°20' W.; depth 172 m.; dynamic height 971.079															
0	8.28	31.86		0	8.28	31.86	24.79	0	8.37	31.74		0	8.37	31.74	24.69
25	2.16	32.56		25	2.16	32.56	26.03	25	1.20	32.56		25	1.20	32.56	26.10
51	-0.68	32.85		50	-0.65	32.85	26.42	49	-0.97	32.95		50	-0.95	32.96	26.52
76	-1.11	32.98		75	-1.10	32.98	26.54	74	-0.87	33.12		75	-0.85	33.12	26.65
103	-1.27	33.16		100	-1.25	33.13	26.67	99	-0.40	33.38		100	-0.40	33.39	26.85
151	-0.80	33.36		150	-0.80	33.35	26.83	148	0.21	33.70		150	0.25	33.71	27.08
Station 7921; 5 July; 48°00.5' N., 49°45' W.; depth 174 m.; dynamic height 971.069															
0	8.37	31.74		0	8.37	31.74	24.69	0	8.37	31.74		0	8.37	31.74	24.69
25	1.20	32.56		25	1.20	32.56	26.10	25	1.20	32.56		25	1.20	32.56	26.10
49	-0.97	32.95		50	-0.95	32.96	26.52	49	-0.97	32.95		50	-0.95	32.96	26.52
74	-0.87	33.12		75	-0.85	33.12	26.65	74	-0.87	33.12		75	-0.85	33.12	26.65
99	-0.40	33.38		100	-0.40	33.39	26.85	99	-0.40	33.38		100	-0.40	33.39	26.85
148	0.21	33.70		150	0.25	33.71	27.08	148	0.21	33.70		150	0.25	33.71	27.08
Station 7922; 6 July; 48°13.5' N., 49°38' W.; depth 222 m.; dynamic height 971.085															
0	7.83	31.55		0	7.83	31.55	24.62	0	7.83	31.55		0	7.83	31.55	24.62
31	-0.71	32.68		25	0.75	32.46	26.04	31	-0.71	32.68		25	0.75	32.46	26.04
57	-1.31	32.86		50	-1.25	32.81	26.41	57	-1.31	32.86		50	-1.25	32.81	26.41
82	-1.33	33.06		75	-1.35	33.00	26.57	82	-1.33	33.06		75	-1.35	33.00	26.57
108	-0.95	33.26		100	-1.05	33.20	26.72	108	-0.95	33.26		100	-1.05	33.20	26.72
158	-0.04	33.59		150	-0.20	33.54	26.96	158	-0.04	33.59		150	-0.20	33.54	26.96
209	1.31	34.12		200	1.05	34.02	27.28	209	1.31	34.12		200	1.05	34.02	27.28
Station 7923; 6 July; 48°34' N., 49°29' W.; depth 592 m.; dynamic height 971.007															
0	7.62	31.81		0	7.62	31.81	24.85	0	7.62	31.81		0	7.62	31.81	24.85
31	-0.17	32.82		25	1.35	32.63	26.14	31	-0.17	32.82		25	1.35	32.63	26.14
55	-0.83	33.12		50	-0.80	33.07	26.60	55	-0.83	33.12		50	-0.80	33.07	26.60
80	-0.54	33.31		75	-0.60	33.27	26.76	80	-0.54	33.31		75	-0.60	33.27	26.76
105	-0.14	33.71		100	-0.20	33.63	27.03	105	-0.14	33.71		100	-0.20	33.63	27.03
154	1.20	34.17		150	1.05	34.14	27.37	154	1.20	34.17		150	1.05	34.14	27.37
204	2.21	34.43		200	2.15	34.41	27.51	204	2.21	34.43		200	2.15	34.41	27.51
303	2.94	34.65		300	2.95	34.64	27.62	303	2.94	34.65		300	2.95	34.64	27.62
402	3.11	34.70		400	3.19	34.70	27.66	402	3.11	34.70		400	3.19	34.70	27.66
600	3.49	34.86		600	3.50	34.86	27.75	600	3.49	34.86		600	3.50	34.86	27.75
Station 7924; 6 July; 48°43.5' N., 49°23' W.; depth 1,334 m.; dynamic height 970.900															
0	7.43	32.69		0	7.43	32.69	25.57	0	7.43	32.69		0	7.43	32.69	25.57
31	1.42	33.54		25	2.45	33.38	26.66	31	1.42	33.54		25	2.45	33.38	26.66
57	0.94	34.02		50	0.95	33.88	27.17	57	0.94	34.02		50	0.95	33.88	27.17
82	1.81	34.30		75	1.60	34.24	27.42	82	1.81	34.30		75	1.60	34.24	27.42
108	2.04	34.40		100	2.00	34.37	27.49	108	2.04	34.40		100	2.00	34.37	27.49
158	2.76	34.59		150	2.65	34.56	27.59	158	2.76	34.59		150	2.65	34.56	27.59
209	3.09	34.72		200	3.00	34.70	27.67	209	3.09	34.72		200	3.00	34.70	27.67
310	3.59	34.83		300	3.55	34.82	27.71	310	3.59	34.83		300	3.55	34.82	27.71
409	3.51			400	3.50	34.85	27.74	409	3.51			400	3.50	34.85	27.74
611	3.48	34.87		600	3.50	34.87	27.76	611	3.48	34.87		600	3.50	34.87	27.76
811	3.46			800	3.45	34.87	27.76	811	3.46			800	3.45	34.87	27.76
1,011	3.38	34.88		1,000	3.40	34.88	27.77	1,011	3.38	34.88		1,000	3.40	34.88	27.77
Station 7925; 6 July; 49°13' N., 49°14' W.; depth 1,700 m.; dynamic height 970.873															
0	7.26	32.52		0	7.26	32.52	25.46	0	7.26	32.52		0	7.26	32.52	25.46
25	2.63	33.42		25	2.63	33.42	26.68	25	2.63	33.42		25	2.63	33.42	26.68
52	2.21	34.44		50	2.20	34.36	27.47	52	2.21	34.44		50	2.20	34.36	27.47
77	2.86	34.60		75	2.85	34.59	27.59	77	2.86	34.60		75	2.85	34.59	27.59
103	2.97	34.67		100	2.95	34.66	27.64	103	2.97	34.67		100	2.95	34.66	27.64
154	3.46	34.78		150	3.45	34.77	27.68	154	3.46	34.78		150	3.45	34.77	27.68
205	3.57	34.83		200	3.55	34.83	27.72	205	3.57	34.83		200	3.55	34.83	27.72
307	3.59	34.84		300	3.60	34.84	27.72	307	3.59	34.84		300	3.60	34.84	27.72
408	3.54	34.87		400	3.55	34.87	27.75	408	3.54	34.87		400	3.55	34.87	27.75
609	3.39	34.86		600	3.40	34.86	27.76	609	3.39	34.86		600	3.40	34.86	27.76
812	3.34	34.86		800	3.35	34.86	27.76	812	3.34	34.86		800	3.35	34.86	27.76
1,015	3.33	34.88		1,000	3.35	34.88	27.78	1,015	3.33	34.88		1,000	3.35	34.88	27.78
1,523	3.44	34.90						1,523	3.44	34.90					

## TABLE OF OCEANOGRAPHIC DATA STATIONS OCCUPIED IN 1961—Continued

Observed values			Scaled values				Observed values			Scaled values			
Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	$\sigma_t$	Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	$\sigma_t$
Station 7926; 6 July; 49°35.5' N., 49°07' W.; depth 1,782 m.; dynamic height 970.846													
0	6.83	32.58	0	6.83	32.58	25.56	0	2.09	31.82	0	2.09	31.82	25.44
30	4.94	34.50	25	5.25	34.18	27.02	31	-0.80	32.50	25	-0.35	32.37	26.02
56	3.31	34.67	50	3.65	34.64	27.56	56	-1.21	32.82	50	-1.20	32.75	26.36
80	3.20	34.74	75	3.20	34.73	27.67	81	-0.81	33.28	75	-0.90	33.20	26.71
105	3.22	—	100	3.20	34.77	27.70	106	-0.78	33.39	100	-0.80	33.37	26.85
154	3.38	34.81	150	3.35	34.81	27.72	156	-0.29	33.70	150	-0.35	33.65	27.06
204	3.39	34.84	200	3.40	34.83	27.73							
304	3.36	34.84	300	3.35	34.85	27.75							
404	3.34	34.87	400	3.35	34.87	27.77							
604	3.34	—	600	3.35	34.87	27.77							
804	3.32	—	800	3.30	34.865	27.77							
1,006	3.32	34.86	1,000	3.30	34.865	27.77							
1,509	3.43	—											
Station 7927; 6 July; 50°00.5' N., 48°57' W.; depth 1,919 m.; dynamic height 970.834													
0	7.01	32.64	0	7.01	32.64	25.58							
31	2.99	34.52	25	3.35	34.15	27.20							
56	3.19	34.71	50	3.15	34.69	27.64							
81	3.28	34.76	75	3.25	34.75	27.68							
106	3.49	—	100	3.45	34.79	27.70							
156	3.58	34.85	150	3.55	34.85	27.73							
206	3.53	—	200	3.55	34.86	27.74							
307	3.50	34.86	300	3.50	34.86	27.75							
408	3.46	34.88	400	3.45	34.88	27.77							
611	3.35	—	600	3.35	34.88	27.78							
814	3.32	34.88	800	3.30	34.88	27.78							
1,017	3.32	—	1,000	3.30	34.88	27.78							
1,526	3.43	34.92											
Station 7928; 8 July; 53°42.5' N., 55°48' W.; depth 124 m.; dynamic height 1454.944													
0	3.84	31.30	0	3.84	31.30	24.89							
25	1.14	31.90	25	1.14	31.90	25.57							
50	-1.58	32.40	50	-1.58	32.40	26.09							
76	-1.31	32.52	75	-1.35	32.52	26.18							
			(100)	-0.95	32.59	26.22							
Station 7929; 8 July; 53°51.5' N., 55°31' W.; depth 208 m.; dynamic height 1454.928													
0	3.18	31.63	0	3.18	31.63	25.21							
25	-0.64	32.25	25	-0.64	32.25	25.94							
50	-1.36	32.48	50	-1.36	32.48	26.14							
74	-1.49	32.48	75	-1.50	32.48	26.15							
124	-1.34	32.85	100	-1.45	32.65	26.28							
174	-1.00	33.24	150	-1.20	33.06	26.61							
			(200)	-0.75	33.40	26.87							
Station 7930; 8 July; 53°56.5' N., 55°23' W.; depth 174 m.; dynamic height 1454.927													
0	2.26	31.63	0	2.26	31.63	25.28							
31	-0.78	32.25	25	-0.25	32.13	25.83							
57	-1.46	32.51	50	-1.35	32.46	26.13							
82	-1.55	32.65	75	-1.55	32.61	26.26							
107	-1.36	32.80	100	-1.40	32.75	26.36							
158	-0.99	33.10	150	-1.05	33.06	26.59							
Station 7931; 8 July; 54°07' N., 55°05' W.; depth 183 m.; dynamic height 1454.870													
0	2.09	31.82	0	2.09	31.82	25.44							
31	-0.80	32.50	25	-0.35	32.37	26.02							
56	-1.21	32.82	50	-1.20	32.75	26.36							
81	-0.81	33.28	75	-0.90	33.20	26.71							
106	-0.78	33.39	100	-0.80	33.37	26.85							
156	-0.29	33.70	150	-0.35	33.65	27.06							
Station 7932; 8 July; 54°18' N., 54°44' W.; depth 192 m.; dynamic height 1454.887													
0	3.19	31.83	0	3.19	31.83	25.37							
25	0.97	32.20	25	0.97	32.20	25.82							
51	-0.88	32.77	50	-0.85	32.74	26.34							
76	-0.94	33.03	75	-0.95	33.02	26.57							
101	-0.94	33.25	100	-0.95	33.24	26.75							
152	-0.43	33.54	150	-0.45	33.53	26.96							
Station 7933; 8 July; 54°26' N., 54°23' W.; depth 225 m.; dynamic height 1454.891													
0	2.60	31.82	0	2.60	31.82	25.41							
25	1.13	31.96	25	1.13	31.96	25.62							
50	-1.08	32.66	50	-1.08	32.66	26.28							
75	-1.02	33.07	75	-1.02	33.07	26.61							
100	-0.91	33.18	100	-0.91	33.18	26.70							
149	-0.67	33.51	150	-0.65	33.52	26.96							
199	0.90	34.06	200	0.95	34.07	27.32							
Station 7934; 8 July; 54°43.5' N., 53°49' W.; depth 325 m.; dynamic height 1454.779													
0	2.29	32.20	0	2.29	32.20	25.73							
25	-0.95	33.08	25	-0.95	33.08	26.62							
50	-0.58	33.50	50	-0.58	33.50	26.94							
74	-0.03	33.80	75	0.00	33.81	27.17							
99	0.67	33.92	100	0.70	33.94	27.23							
149	1.80	34.32	150	1.80	34.32	27.46							
198	2.27	34.39	200	2.30	34.39	27.48							
298	*2.70	34.53	300	2.70	34.53	27.56							
Station 7935; 8 July; 54°50' N., 53°33' W.; depth 632 m.; dynamic height 1454.676													
0	4.42	33.44	0	4.42	33.44	26.53							
25	3.30	34.08	25	3.30	34.08	27.15							
51	3.37	34.58	50	3.35	34.56	27.52							
76	3.43	34.65	75	3.45	34.65	27.59							
102	3.45	34.73	100	3.45	34.73	27.65							
152	3.50	34.75	150	3.50	34.75	27.66							
203	3.61	34.76	200	3.60	34.76	27.66							
303	3.63	34.84	300	3.65	34.83	27.71							
403	3.60	—	400	3.60	34.84	27.72							
600	3.59	34.84	600	3.60	34.84	27.72							

# TABLE OF OCEANOGRAPHIC DATA STATIONS OCCUPIED IN 1961—Continued

Observed values			Scaled values			
Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	$\sigma_t$

Station 7936; 8 July; 54°54.5' N., 53°19' W.; depth 1,554 m.; dynamic height 1454.627

0	5.68	34.20	0	5.68	34.20	26.98
31	3.75	34.64	25	4.00	34.57	27.47
57	3.54	34.79	50	3.55	34.78	27.68
82	3.55	34.80	75	3.55	34.80	27.69
108	3.55	34.80	100	3.55	34.81	27.69
158	3.56	34.82	150	3.55	34.81	27.70
209	3.56	34.83	200	3.55	34.83	27.72
311	3.55	34.86	300	3.55	34.85	27.73
404	3.54	34.86	400	3.55	34.85	27.73
605	3.51	34.86	600	3.50	34.85	27.74
807	3.48	34.85	800	3.50	34.85	27.74
1,008	3.47	34.86	1,000	3.45	34.85	27.74
1,512	3.46	34.86	1,500	3.45	34.86	27.75

Station 7937; 8 July; 55°00' N., 53°11' W.; depth 2,148 m.; dynamic height 1454.600

0	5.88	34.41	0	5.88	34.41	27.12
25	5.25	34.50	25	5.25	34.50	27.27
50	4.59	34.65	50	4.59	34.65	27.47
75	3.98	34.75	75	3.98	34.75	27.61
100	3.71	34.84	100	3.71	34.84	27.71
150	3.58	34.85	150	3.58	34.85	27.73
201	3.56	34.86	200	3.55	34.86	27.74
301	3.52	34.85	300	3.50	34.85	27.74
397	3.53	34.87	400	3.55	34.87	27.75
598	3.50	34.87	600	3.50	34.87	27.76
799	3.46	34.87	800	3.45	34.88	27.77
1,000	3.45	34.88	1,000	3.45	34.88	27.77
1,501	3.42	34.90	1,500	3.40	34.90	27.79
2,001	3.13	34.92	2,000	3.15	34.92	27.83

Station 7938; 9 July; 55°09.5' N., 52°53' W.; depth 2,925 m.; dynamic height 1454.596

0	5.71	34.66	0	5.71	34.66	27.34
25	5.22	34.60	25	5.22	34.60	27.35
51	3.98	34.79	50	4.00	34.79	27.64
76	3.75	34.78	75	3.75	34.78	27.66
102	3.58	34.83	100	3.60	34.83	27.71
152	3.57	34.86	150	3.60	34.86	27.74
203	3.58	34.86	200	3.60	34.86	27.74
305	3.48	34.86	300	3.50	34.86	27.75
388	3.43	34.86	400	3.40	34.86	27.76
585	3.37	34.85	600	3.35	34.85	27.76
782	3.34	34.86	800	3.35	34.86	27.76
989	3.35	34.86	1,000	3.35	34.86	27.76
1,482	3.46	34.88	1,500	3.45	34.88	27.77
1,964	3.17	34.87	2,000	3.10	34.87	27.79
2,456	2.49	34.91	(2,500)	2.45	34.91	27.88
2,925	---	34.91	---	---	---	---

Station 7939; 9 July; 55°30' N., 52°23' W.; depth 3,290 m.; dynamic height 1454.605

0	6.06	34.58	0	6.06	34.58	27.23
31	5.24	34.59	25	5.45	34.59	27.32
57	4.08	34.74	50	4.30	34.72	27.55
82	3.77	34.78	75	3.85	34.77	27.64
108	3.46	34.80	100	3.50	34.80	27.70
159	3.40	34.82	150	3.40	34.82	27.73
210	3.45	34.82	200	3.45	34.82	27.72
312	3.39	34.84	300	3.40	34.84	27.74
402	3.39	34.86	400	3.40	34.85	27.75
605	3.42	34.86	600	3.40	34.85	27.75
807	3.43	34.87	800	3.45	34.87	27.76
1,009	3.37	34.87	1,000	3.35	34.87	27.77
1,510	3.44	34.87	1,500	3.45	34.88	27.77
2,008	3.36	34.88	2,000	3.35	34.88	27.78
2,501	3.00	34.89	2,500	3.00	34.89	27.82
2,992	2.38	34.90	3,000	2.40	34.90	27.88

Observed values			Scaled values			
Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	$\sigma_t$

Station 7940; 9 July; 55°49.5' N., 51°40' W.; depth 3,528 m.; dynamic height 1454.614

0	6.63	34.72	0	6.63	34.72	27.27
25	5.48	34.71	25	5.48	34.71	27.41
49	5.22	34.73	50	5.20	34.73	27.46
74	4.53	34.70	75	4.50	34.70	27.52
98	3.64	34.73	100	3.60	34.73	27.64
148	3.34	34.75	150	3.35	34.75	27.68
197	3.34	34.80	200	3.35	34.80	27.72
298	3.35	34.83	300	3.35	34.83	27.74
400	3.34	34.84	400	3.35	34.84	27.75
596	3.36	34.86	600	3.35	34.86	27.76
793	3.35	34.86	800	3.35	34.86	27.76
990	3.33	34.86	1,000	3.35	34.86	27.76
1,473	3.38	34.86	1,500	3.40	34.87	27.76
1,948	3.40	34.90	2,000	3.40	34.90	27.79
2,414	3.10	34.92	2,500	3.00	34.92	27.84
2,868	2.62	34.90	3,000	2.45	34.90	27.88
3,271	2.02	34.89	---	---	---	---

Station 7941; 9 July; 56°28' N., 50°32' W.; depth 3,656 m.; dynamic height 1454.609

0	5.89	34.70	0	5.89	34.70	27.35
31	5.21	34.70	25	5.35	34.70	27.42
58	4.56	34.74	50	4.75	34.74	27.51
83	3.80	34.72	75	4.05	34.73	27.59
110	3.43	34.78	100	3.50	34.77	27.68
160	3.41	34.80	150	3.40	34.79	27.70
212	3.42	34.81	200	3.40	34.81	27.72
315	3.38	34.84	300	3.40	34.84	27.74
416	3.23	34.84	400	3.25	34.82	27.74
624	3.32	34.84	600	3.30	34.84	27.75
798	3.24	34.84	800	3.25	34.84	27.76
999	3.25	34.84	1,000	3.25	34.84	27.76
1,500	3.26	34.84	1,500	3.25	34.84	27.76
2,000	3.47	34.86	2,000	3.45	34.86	27.75
2,499	3.37	34.92	2,500	3.35	34.92	27.81
2,997	3.00	34.91	3,000	3.00	34.91	27.83
3,494	2.27	34.865	3,500	2.25	34.86	27.86

Station 7942; 10 July; 57°01' N., 49°26' W.; depth 3,656 m.; dynamic height 1454.631

0	6.48	34.68	0	6.48	34.68	27.26
30	5.99	34.68	25	6.10	34.68	27.31
55	5.09	34.68	50	5.25	34.68	27.41
79	3.89	34.72	75	4.00	34.71	27.58
104	3.65	34.75	100	3.65	34.75	27.65
152	3.47	34.78	150	3.45	34.77	27.68
201	3.45	34.80	200	3.45	34.80	27.70
300	3.41	34.82	300	3.40	34.81	27.72
400	3.38	34.82	400	3.40	34.82	27.73
603	3.34	34.83	600	3.35	34.83	27.74
788	3.39	34.84	800	3.40	34.84	27.74
986	3.36	34.86	1,000	3.35	34.86	27.76
1,482	3.49	34.88	1,500	3.50	34.88	27.76
1,978	3.44	34.88	2,000	3.40	34.89	27.78
2,476	3.20	34.91	2,500	3.20	34.91	27.82
2,973	2.84	34.89	3,000	2.80	34.89	27.84
3,468	2.05	34.90	(3,500)	1.95	34.89	27.91

**TABLE OF OCEANOGRAPHIC DATA**  
**STATIONS OCCUPIED IN 1961—Continued**

Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	$\sigma_t$	Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	$\sigma_t$
Station 7943; 10 July; 57°33.5' N., 48°13' W.; depth 3,455 m.; dynamic height 1454.606							Station 7946; 11 July; 59°01.5' N., 45°20' W.; depth 2,382 m.; dynamic height 1454.625						
0	6.32	34.76	0	6.32	34.76	27.34	0	6.63	34.89	0	6.63	34.89	27.39
25	5.98	34.77	25	5.98	34.77	27.40	31	6.62	34.89	25	6.65	34.89	27.39
50	4.74	34.78	50	4.74	34.78	27.55	56	6.09	34.96	50	6.25	34.94	27.49
75	3.86	34.84	75	3.86	34.81	27.70	81	5.62	35.02	75	5.75	35.01	27.61
100	3.83	34.86	100	3.83	34.86	27.79	106	5.41	35.04	100	5.45	35.04	27.68
151	3.82	34.88	150	3.80	34.88	27.73	156	5.22	35.01	150	5.25	35.01	27.68
201	3.66	34.86	200	3.65	34.86	27.73	206	5.09	35.00	200	5.10	35.00	27.68
302	3.70	34.88	300	3.70	34.88	27.74	306	4.88	35.00	300	4.90	35.00	27.71
402	3.50	34.85	400	3.50	34.85	27.74	391	4.59	34.96	400	4.55	34.96	27.72
597	3.46	34.86	600	3.45	34.86	27.75	587	4.09	34.91	600	4.05	34.91	27.73
798	3.41	34.84	800	3.40	34.84	27.75	785	3.76	34.89	800	3.75	34.89	27.75
998	3.32	34.85	1,000	3.30	34.85	27.76	982	3.76	34.91	1,000	3.75	34.91	27.76
1,498	3.48	34.89	1,500	3.50	34.89	27.77	1,479	3.31	34.92	1,500	3.30	34.91	27.81
1,998	3.36	34.92	2,000	3.35	34.92	27.81	1,980	2.72	34.88	2,000	2.70	34.89	27.85
2,496	2.99	34.90	2,500	3.00	34.90	27.83	2,281	2.25	34.90				
2,994	2.45	34.89	3,000	2.45	34.89	27.87	2,383	2.05	34.89				
3,292	1.71	34.87											
Station 7944; 10 July; 58°08.5' N., 47°04' W.; depth 3,217 m.; dynamic height 1454.599							Station 7947; 11 July; 59°13' N., 44°54' W.; depth 2,102 m.; dynamic height 1454.667						
0	6.40	34.86	0	6.40	34.86	27.41	0	4.18	33.80	0	4.18	33.80	26.84
31	6.12	34.82	25	6.20	34.83	27.41	25	7.46	35.01	25	7.46	35.01	27.38
57	5.34	34.805	50	5.55	34.81	27.48	51	6.81	35.03	50	6.85	35.03	27.48
82	4.54	34.86	75	4.75	34.84	27.60	76	6.27	35.04	75	6.25	35.04	27.57
107	4.32	34.92	100	4.35	34.91	27.70	102	6.15	35.05	100	6.15	35.05	27.59
158	4.28	34.92	150	4.30	34.92	27.71	153	6.02	35.08	150	6.00	35.08	27.64
208	4.12	34.94	200	4.15	34.93	27.74	204	5.58	35.04	200	5.60	35.04	27.66
309	3.96	34.90	300	3.95	34.90	27.74	306	5.02	34.98	300	5.05	34.99	27.68
410	3.81	34.90	400	3.80	34.90	27.75	397	4.66	34.96	400	4.65	35.96	27.70
579	3.52	34.87	600	3.50	34.87	27.76	598	4.55	34.94	600	4.55	34.94	27.70
775	3.36	34.86	800	3.35	34.86	27.76	797	4.34	34.95	800	4.35	34.95	27.73
972	3.30	34.86	1,000	3.30	34.86	27.77	996	4.05	34.95	1,000	4.05	34.94	27.75
1,466	3.33	34.86	1,500	3.35	34.88	27.78	1,490	3.42	34.91	1,500	3.40	34.91	27.80
1,962	3.31	34.90	2,000	3.30	34.91	27.81	1,784	2.87	34.91				
2,462	2.88	34.91	2,500	2.85	34.91	27.85	1,833	2.74	34.89				
2,964	2.06	34.90	3,000	1.95	34.90	27.92							
3,066	1.73	34.89											
Station 7945; 11 July; 58°39' N., 46°01' W.; depth 2,559 m.; dynamic height 1454.629							Station 7948; 11 July; 59°24' N., 44°31' W.; depth 987 m.; dynamic height 1454.750						
0	6.45	34.85	0	6.45	34.85	27.40	0	3.82	33.62	0	3.82	33.62	26.73
25	6.46	34.84	25	6.46	34.84	27.39	31	4.07	33.72	25	4.05	33.69	26.76
50	6.29	34.77	50	6.29	34.77	27.35	56	4.21	33.89	50	4.15	33.84	26.87
75	5.59	34.93	75	5.59	34.93	27.57	80	5.23	34.65	75	4.95	34.46	27.28
100	4.90	34.81	100	4.90	34.81	27.56	105	5.75	34.76	100	5.70	34.74	27.41
150	4.81	34.98	150	4.81	34.98	27.70	155	5.54	34.95	150	5.55	34.93	27.58
201	4.74	34.97	200	4.75	34.97	27.70	205	5.86	35.02	200	5.85	35.02	27.61
301	4.56	34.96	300	4.55	34.96	27.72	304	5.14	34.98	300	5.15	34.98	27.66
395	4.41	34.95	400	4.40	34.95	27.73	391	5.01	34.96	400	5.00	34.96	27.66
595	4.03	34.90	600	4.00	34.91	27.74	590	4.71	34.93	600	4.70	34.93	27.68
796	3.69	34.89	800	3.70	34.89	27.75	791	4.70	34.96	800	4.70	34.96	27.70
996	3.53	34.88	1,000	3.55	34.88	27.76	891	4.60	34.96	900	4.60	34.96	27.71
1,497	3.42	34.90	1,500	3.40	34.90	27.79							
1,998	2.89	34.91	2,000	2.90	34.91	27.85							
2,399	2.26	34.88	2,500	2.05	34.89	27.90							
2,499	2.03	34.89											
Station 7950; 11 July; 59°40' N., 43°53' W.; depth 174 m.; dynamic height 1454.814							Station 7949; 11 July; 59°32.5' N., 44°06' W.; depth 183 m.; dynamic height 1454.801						
0	2.03	32.68	0	2.03	32.68	26.14	0	2.12	32.63	0	2.12	32.63	26.09
31	0.93	33.08	25	1.00	33.01	26.47	25	1.70	33.17	25	1.70	33.17	26.55
56	0.87	33.40	50	0.85	33.33	26.74	50	1.25	33.54	50	1.25	33.54	26.88
81	1.13	33.65	75	1.05	33.59	26.93	74	1.46	33.90	75	1.45	33.90	27.16
106	1.50	33.94	100	1.40	33.86	27.13	99	1.88	33.98	100	1.90	33.98	27.18
156	2.67	34.28	150	2.50	34.24	27.34	149	2.72	34.29	150	2.75	34.30	27.37

**TABLE OF OCEANOGRAPHIC DATA**  
**STATIONS OCCUPIED IN 1961—Continued**

Oxygen			Oxygen			Oxygen			Oxygen		
Depth, meters	Ml/liter	Percent saturation	Depth, meters	Ml/liter	Percent saturation	Depth, meters	Ml/liter	Percent saturation	Depth, meters	Ml/liter	Percent saturation
Station 7928; 8 July; 53°42.5' N., 55°48' W.; depth 124 m.						Station 7936; 8 July; 54°54.5' N., 53°19' W.; depth 1,554 m.					
25	8.26	105.9	76.----	7.31	87.3	31	6.96	96.7	311.----	6.68	93.1
50	7.34	88.0				57	6.71	93.5	404.----	6.69	93.2
Station 7929; 8 July; 53°51.5' N., 55°31' W.; depth 208 m.						Station 7937; 8 July; 55°00' N., 53°11' W.; depth 3,290 m.					
25	8.33	102.2	124.----	7.29	88.1	25	7.69	111.8	397.----	6.70	93.5
50	7.52	90.5	174.----	7.09	86.6	50	7.30	104.5	598.----	6.63	92.5
74	7.40	88.7				75	6.99	98.6	799.----	6.66	92.9
Station 7930; 8 July; 53°56.5' N., 55°23' W.; depth 174 m.						Station 7938; 9 July; 55°09.5' N., 52°53' W.; depth 2,925 m.					
31	8.50	103.8	107.----	7.29	88.1	100	6.80	95.2	1,000.----	6.61	92.2
57	7.51	90.2	158.----	6.96	85.1	150	6.71	93.6	1,501.----	6.37	88.7
82	7.41	88.8				201	6.72	93.7	2,001.----	6.30	86.9
Station 7931; 8 July; 54°07' N., 55°05' W.; depth 183 m.						Station 7939; 9 July; 55°30' N., 52°23' W.; depth 3,290 m.					
31	7.77	94.8	106.----	7.17	88.3	25	7.28	105.9	585.----	6.64	92.2
56	7.25	87.9	156.----	6.74	83.8	51	6.92	94.6	782.----	6.67	92.7
81	7.56	92.8				76	6.85	96.0	989.----	6.66	92.5
Station 7932; 8 July; 54°18' N., 54°44' W.; depth 192 m.						Station 7940; 9 July; 55°49.5' N., 51°40' W.; depth 3,528 m.					
25	8.19	104.8	101.----	7.19	88.0	31	7.29	106.1	605.----	6.74	93.7
51	7.81	95.4	152.----	7.10	88.4	57	6.97	98.5	807.----	6.72	93.4
76	7.22	88.4				82	6.90	96.7	1,009.----	6.70	93.1
Station 7933; 8 July; 54°26' N., 54°23' W.; depth 225 m.						Station 7943; 8 July; 54°43.5' N., 53°49' W.; depth 325 m.					
25	8.32	106.3	100.----	7.24	88.6	25	7.34	89.9	149.----	6.64	88.1
50	7.75	94.1	149.----	7.13	88.1	51	7.44	92.2	198.----	6.62	89.2
75	7.23	88.2	199.----	6.58	85.1	74	7.07	88.9	298.----	6.52	88.9
Station 7934; 8 July; 54°43.5' N., 53°49' W.; depth 325 m.						Station 7935; 8 July; 54°50' N., 53°33' W.; depth 632 m.					
25	7.34	89.9	149.----	6.64	88.1	25	7.49	103.0	203.----	6.65	92.6
51	7.07	97.7	303.----	6.64	89.2	49	7.14	104.0	793.----	6.71	93.2
74	7.07	88.9	298.----	6.52	88.9	74	7.04	100.6	990.----	6.70	92.9
99	6.92	88.8				98	6.92	96.7	1,473.----	6.58	91.4
Station 7935; 8 July; 54°50' N., 53°33' W.; depth 632 m.						Station 7940; 9 July; 55°49.5' N., 51°40' W.; depth 3,528 m.					
25	7.49	103.0	203.----	6.65	92.6	148	6.85	95.0	1,948.----	6.36	88.4
49	7.14	104.0	793.----	6.71	93.2	197			2,414.----	6.35	87.6
74	7.04	100.6	990.----	6.70	92.9	298	6.75	93.6	2,868.----	6.64	90.3
98	6.92	96.7	1,473.----	6.58	91.4	400	6.69	92.8	3,271.----	6.59	88.3
148	6.85	95.0	1,948.----	6.36	88.4						
197			2,414.----	6.35	87.6						
298	6.75	93.6	2,868.----	6.64	90.3						
400	6.69	92.8	3,271.----	6.59	88.3						

## TABLE OF OCEANOGRAPHIC DATA STATIONS OCCUPIED IN 1961—Continued

Oxygen			Oxygen			Oxygen			Oxygen		
Depth, meters	Ml/liter	Percent saturation	Depth, meters	Ml/liter	Percent saturation	Depth, meters	Ml/liter	Percent saturation	Depth, meters	Ml/liter	Percent saturation
Station 7941; 9 July; 56°28' N., 50°32' W.; depth 3,656 m.						Station 7946; 11 July; 59°01.5' N., 45°20' W.; depth 2,382 m.					
31	7.23	105.2	624	6.67	92.4	31	7.01	105.6	587	6.54	92.4
58	7.04	100.6	798	6.72	93.4	56	6.71	99.9	785	6.58	92.1
83	6.91	96.7	999	6.75	93.5	81	6.52	96.0	982	6.39	89.4
110	6.85	95.3	1,500	6.70	93.1	106	6.51	95.2	1479	6.39	88.7
160	6.76	93.9	2,000	6.42	89.3	156	6.54	95.8	1980	6.39	87.2
212	6.71	93.2	2,499	6.30	87.4	206	6.53	94.9	2281	6.57	88.8
315	6.69	92.8	2,997	6.29	86.4	306	6.62	96.0	2383	6.69	89.8
416	6.67	92.2	3,494	6.58	89.1	391	6.55	93.8			
Station 7942; 10 July; 57°01' N., 49°26' W.; depth 3,656 m.						Station 7947; 11 July; 59°13' N., 44°54' W.; depth 2,102 m.					
30	7.25	107.4	603	6.68	92.6	25	6.74	103.7	397	6.58	94.6
55	6.94	100.6	788	6.65	92.2	51	6.52	99.7	598	6.56	93.8
79	6.85	96.4	986	6.59	91.3	76	6.50	97.0	797	6.52	93.0
104	6.81	94.9	1,482	6.42	89.1	102	6.42	95.6	996	6.51	92.0
152	6.69	92.9	1,978	6.35	88.0	153	6.41	89.0	1490	6.41	89.3
201	6.66	92.5	2,476	6.30	87.0	204	6.46	95.1	1784	6.52	89.3
300	6.62	92.0	2,973	6.29	86.2	306	6.56	95.3	1833	6.51	89.0
400	6.67	92.5	3,468	6.58	89.3						
Station 7943; 10 July; 57°33' N., 48°13' W.; depth 3,455 m.						Station 7948; 11 July; 59°24' N., 44°31' W.; depth 987 m.					
25	7.44	110.0	597	6.75	93.9	31	7.67	106.1	304	6.52	94.8
50	7.08	101.8	798	6.74	93.6	56	7.56	106.5	391	6.69	97.2
75	6.92	97.2	998	6.74	93.4	80	7.02	102.2	590	6.67	95.8
100	6.83	96.0	1,498	6.44	89.7	105	6.92	101.9	791	6.59	94.8
151	6.80	95.5	1,998	6.13	85.2	155	6.60	96.8	891	6.54	93.7
201	6.76	94.5	2,496	6.33	87.0	205	6.42	95.1			
302	6.75	94.4	2,994	6.40	86.8						
402	6.75	94.0	3,292	6.85	91.0						
Station 7944; 10 July; 58°08.5' N., 47°04' W.; depth 3,217 m.						Station 7949; 11 July; 59°32.5' N., 44°06' W.; depth 183 m.					
31	7.26	108.0	579	6.74	93.8	25	8.19	106.8	99	7.38	97.7
57	7.13	104.0	775	6.79	94.2	50	7.80	101.2	149	7.19	97.9
82	6.87	98.3	972	6.75	93.6	74	7.51	98.4			
107	6.63	94.3	1,466	6.68	92.6						
158	6.65	94.5	1,962	6.38	88.4						
208	6.63	93.8	2,462	6.31	86.6						
309	6.68	94.2	2,964	6.64	89.1						
410	6.68	93.9	3,066	6.75	88.5						
Station 7945; 11 July; 58°39' N., 46°01' W.; depth 2,559 m.						Station 7950; 11 July; 59°40' N., 43°53' W.; depth 174 m.					
25	6.91	103.5	595	6.54	92.4	31	8.17	104.9	106	7.13	93.6
50	6.87	102.5	796	6.52	91.3	56	7.86	101.0	156	7.38	100.4
75	6.69	98.2	996	6.45	89.9	81	7.58	98.4			
100	6.46	93.4	1497	6.30	87.8						
150	6.58	94.9	1998	6.44	88.4						
201	6.59	94.9	2399	6.59	88.8						
301	6.63	94.8	2499	6.62	88.9						
395	6.64	94.9									

U.S. TREASURY DEPARTMENT - - - COAST GUARD

BULLETIN No. 48

REPORT OF THE INTERNATIONAL  
ICE PATROL SERVICE IN THE  
NORTH ATLANTIC OCEAN - [ SEASON *of*  
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COAST GUARD

Bulletin No. 48

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REPORT OF THE INTERNATIONAL  
ICE PATROL SERVICE

IN THE  
NORTH ATLANTIC OCEAN



R. P. BULLARD  
NATHANIEL CORWIN  
V. W. DRIGGERS  
ALFRED P. FRANCESCHETTI  
R. E. LENCZYK  
DAVID A. MCGILL  
R. M. O'HAGAN  
FLOYD M. SOULE



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Season of 1962

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OSR  
15 July 1963

Transmitted herewith is Bulletin No. 48, Report of the International Ice Patrol Service in the North Atlantic Ocean, season of 1962.

A handwritten signature in cursive script that reads "E. J. Roland".

E. J. ROLAND,  
*Admiral, U.S. Coast Guard,  
Commandant.*

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## PREFACE

This bulletin is the annual report of the International Ice Patrol Service for 1962. Annual reports have been published since 1913 with the exception of the war years. This bulletin is divided into two parts. The first is a report of the patrol operations which extended from 6 March to 22 June 1962. Aircraft and communication activities are described and special sections deal with observed monthly ice conditions and statistics on ice and sea temperature reports for 1962.

The second part deals with physical oceanography in the Grand Banks region and the Labrador Sea. Included are charts of dynamic topography of the sea surface demonstrating the ocean current, tables of oceanographic data and a brief discussion of the results of the season's four oceanographic surveys and the special postseason research cruise in the Labrador Sea, Davis Strait and Baffin Bay.

The authors of the section on oceanography are Floyd M. Soule, Oceanographer, U.S.C.G., Alfred P. Franceschetti, Oceanographer, U.S.C.G., Lieut. V. W. Driggers, U.S.C.G., and Lieut. R. M. O'Hagan, U.S.C.G.R., except that that part dealing with the nutrients found during the postseason cruise is the work of Nathaniel Corwin and David A. McGill, both of the Woods Hole Oceanographic Institution. The remainder was written by Capt. R. P. Bullard, U.S.C.G., and Lt. Comdr. R. E. Lenczyk, U.S.C.G.



## INTERNATIONAL ICE PATROL, 1962

The International Ice Patrol was operated in the North Atlantic ocean from 6 March to 22 June, 1962 by the U.S. Coast Guard for the protection of shipping in the vicinity of the Grand Banks, carrying out the provisions of the International Convention for the Safety of Life at Sea, London, 1948.

This was a light ice year for the Grand Banks region. An estimated 120 bergs drifted south of  $48^{\circ}$  N., as compared to the 50-year average of 370. The number of bergs drifting south of  $48^{\circ}$  N. was almost exactly the same as 1961, but this year was marked by a greater number of bergs drifting east along the north slope of the Grand Banks causing more potential threat to the shipping tracks.

Capt. Ross P. Bullard, USCG, served as Commander, International Ice Patrol. Facilities available to the Commander consisted of aircraft from the U.S. Coast Guard Air Detachment, Argentia, Newfoundland; U.S. Coast Guard Radio Station NIK, Argentia, Newfoundland; U.S. Coast Guard Cutter *Evergreen* (Oceanographic vessel); and the U.S. Coast Guard Cutters *Acushnet* and *Tamaroa*, standby patrol vessels. For the third successive year the standby patrol vessels were not required.

As in all the years since World War II, the main source of ice information was from planned aerial reconnaissance. Ice reports from merchant and government vessels traversing the area were a supplementary source. Additional valuable information was received from the Canadian Ice Central, Halifax, the Canadian National Telegraph at St. Johns, Newfoundland, Danish sources in Greenland and the U.S. Navy.

The Office of Commander, International Ice Patrol, was moved from Woods Hole, Mass., to the U.S. Naval Station, Argentia, Newfoundland on 28 February, and patrol services were effective on 6 March with the broadcast of the first ice information bulletin. There was practically no movement of ice in March as the predominant northeasterly surface winds contained the bergs and pack ice close alongshore. In April, a new pattern was established as the average winds became west-southwesterly, driving the pack ice and many bergs from the bays and along the coast out to sea. Approximately one-half of the estimated 170 bergs south of Funk Island in early April moved into the east branch of the Labrador Current and moved rapidly eastward between  $48^{\circ}$  N. and  $49^{\circ}$  N. Only a handful of these bergs

managed to remain in the southeast and south flowing Labrador Current and drifted south of  $47^{\circ}$  N. The other half remained suspended between  $48^{\circ}30'$  N. and  $49^{\circ}30'$  N., and between  $52^{\circ}$  W. and the coast as the west branch of the Labrador Current was very weak. The feature of the year occurred on the last day of April and the first week in May as an intense stationary low east of Newfoundland produced 35 to 50 knot northerly winds for 6 days on the Grand Banks, driving the remaining offshore bergs to the south at a rate of 30-40 miles per day. The climax of the year was on 5 May with the easternmost and southernmost penetration of ice for 1962 with a berg at  $43^{\circ}24'$  N.,  $49^{\circ}14'$  W., and a berg at  $45^{\circ}45'$  N.,  $44^{\circ}30'$  W. Those bergs that drifted east of the Grand Banks all melted by 11 May, and there were no bergs east of  $51^{\circ}30'$  W. on that date. The second group of bergs close along the coast of the Avalon Peninsula disintegrated much more slowly in the cooler waters with a couple lasting until late June near Cape Race. A second movement of about 50 bergs eastward along the north slope of the Banks developed at the end of May and continued through June. The general drift pattern of these bergs was also easterly out of the Labrador Current to the north of Flemish Cap. Only one of these bergs managed to remain in the Labrador Current and drift south of  $47^{\circ}$  N. This berg was last sighted at  $45^{\circ}30'$  N.,  $48^{\circ}58'$  W. on 24 July.

The field ice conditions on the Grand Banks were lighter than average. The close pack ice was generally confined north of  $48^{\circ}$  N. and west of  $52^{\circ}$  W., except for belts and patches drifting to the southern limits of  $46^{\circ}$  N. on 7 March and east in the Labrador Current to the eastern limit of  $49^{\circ}$  W. on 20 April. The Grand Banks region as far north as Funk Island was free of all field ice by 25 April, although some scattered strings and loose patches drifted to a southeast limit of  $48^{\circ}30'$  N.,  $51^{\circ}00'$  W. near the end of May. The Notre Dame-Belle Isle area experienced a slightly more difficult than usual pack ice year. The usual situation where the supply is reduced by offshore drifts of pack ice along the Northern Newfoundland and Labrador Coasts into warmer water did not occur in 1962. An unusually large amount of bergs, estimated well over 100, were driven into the Gulf of St. Lawrence through the Belle Isle Strait. Some of these bergs eventually reached Cabot Strait and three were known to drift south through Cabot Strait into the Atlantic again before disintegration. Detailed monthly ice conditions appear in a later section.

## AERIAL ICE OBSERVATION

Aerial ice observation was performed by three R5D aircraft and one SC-130B of the U.S. Coast Guard Air Detachment at Argentia, Newfoundland, under the operational control of Commander, International Ice Patrol. This year marked the end of the Douglas Skymaster (R5D) aircraft for aerial observation by the Ice Patrol and

the first use of the Lockheed Hercules (SC-130B) aircraft which was used for an ice patrol flight on 24 May and is planned to be used for flying all ice patrol flights starting in 1963.

A total of 42 ice observation flights totaling 299.7 hours during the season were made from 3 March to 21 June 1962. These flights averaged 1,141 miles in length and 7.1 hours duration. Nine preseason flights totaling 50 hours were made between 27 December and 28 February. These preseason ice reconnaissance flights were mainly for the purpose of guarding against any undetected movement of ice into the shipping lanes and to enable determination of the commencement of full ice patrol services. Fifteen postseason flights totaling 88.7 hours were made from 28 June to 10 September, also for the purpose of detecting any unusual post season movement of ice into the effective shipping tracks.

All seasonal flights were planned by the International Ice Patrol Operations Office, whose duties included the continuous search for and location of all ice in the Grand Banks area, the collection, plotting and evaluation of all ice information and the dissemination of pertinent ice information to shipping. The main consideration in the flight planning was the primary Ice Patrol's duty to guard the southwestern, southern and southeastern limits of all ice in the vicinity of the Grand Banks. Other factors taken in account were the ice distribution, meteorological conditions, ocean currents and sea temperature conditions.

Table 1. Aerial Ice Observation Statistics—1962 Season

Month	Number of flights	Number days flights made	Number days good weather	Average effectiveness		Maximum number days between flights	Hours flown
				Visual	Radar		
March.....	10	10	12	70	77	6	71.7
April.....	11	11	17	70	81	6	81.9
May.....	14	13	16	71	69	4	98.7
June (1-21).....	7	7	8	51	80	8	47.4
Total/average.....	42	41	52	67	77	8	299.7

## COMMUNICATIONS

The collection, plotting, and analysis of ice reports would not be of much value unless the ice information were disseminated to shipping. The primary means for dissemination are the twice daily broadcasts of ice bulletins to shipping by U.S. Coast Guard radio station (NIK), Argentia, Newfoundland. Twice daily broadcasts of ice conditions were transmitted simultaneously at 0048 and 1248 Greenwich mean time on 155, 5320 and 8502 kc/s commencing 6 March and terminating 22 June. Also twice daily ice reports were forwarded to the U.S. Hydrographic Office, the Canadian Department of Transport Ice Central, Halifax, and others for further dissemination by them. For the first time, ice charts were successfully broadcast to shipping by

facsimile, daily at 1330 Greenwich mean time on 5320 and 8502 kc/s, from 6 March to 21 June.

The general format of the broadcast included the limits of all known ice in the Grand Banks area, the limits of any berg concentrations and the locations of pertinent bergs or growlers between both limits. Ships were requested to report all ice sighted and to report sea water temperatures, position, course, speed, visibility and surface weather every four hours when between the latitudes of 39° N. and 49° N. and longitudes 42° W. and 60° W. The importance of these reports which are a valuable source of oceanographic and meteorological data cannot be overemphasized. All sea water temperatures are plotted, and a surface isotherm chart is drawn up twice monthly during the season. For this year's isotherm charts, see figures 1-7. The isotherm chart is valuable to the Ice Patrol as general features of the Laborador and Atlantic Currents are indicated. Also ice deterioration rates can be more accurately estimated from the isotherm chart. The meteorological data are important in ice drift forecasts and flight planning. A plot of all reporting ships is also maintained. Thus, the Ice Patrol receives valuable information not otherwise available and the reporting ship receives maximum protection. Commander, International Ice Patrol wishes to thank the reporting merchant ships for their wonderful cooperation.

Ice Patrol radio station NIK worked merchant vessels transmitting on 427, 6477.5, 8734 or 12718.5 kc/s. A total of 9877 ice information messages were sent or received and the Coast Guard communications facilities, including the branch teletype station from the Naval teletype relay at Argentina, handled a total of 41,125 messages of all types. The statistics concerning ship reports is given below:

Number of ice reports received from vessels .....	1, 103
Number of vessels making ice reports .....	252
Number of sea temperature reports .....	7, 916
Number of vessels making sea temperature reports .....	570
Number of requests for special ice reports .....	131
Total number of vessels worked (not including relays) .....	655

The percentage distribution of reporting vessels by nationality was as follows:

Country	Number of reporting ships	Percentage of total	Country	Number of reporting ships	Percentage of total
United Kingdom .....	160	25.8	Israel .....	5	.8
United States .....	128	20.7	Switzerland .....	5	.8
Germany .....	62	10.0	Ireland .....	4	.6
Norway .....	45	7.3	Poland .....	4	.6
Netherlands .....	41	6.6	Iceland .....	2	.3
Sweden .....	40	6.5	Spain .....	2	.3
Liberia .....	19	3.0	United Arab Republic .....	2	.3
Greece .....	18	2.9	Union of Soviet Socialist Republics .....	2	.3
France .....	17	2.7	Yugoslavia .....	2	.3
Italy .....	14	2.3	Chile .....	1	.2
Canada .....	10	1.6	El Salvador .....	1	.2
Panama .....	10	1.6	Sudan .....	1	.2
Belgium .....	7	1.1	Yemen .....	1	.2
Denmark .....	6	1.0			
Finland .....	6	1.0			
Japan .....	5	.8	28 Nations .....	620	100.0

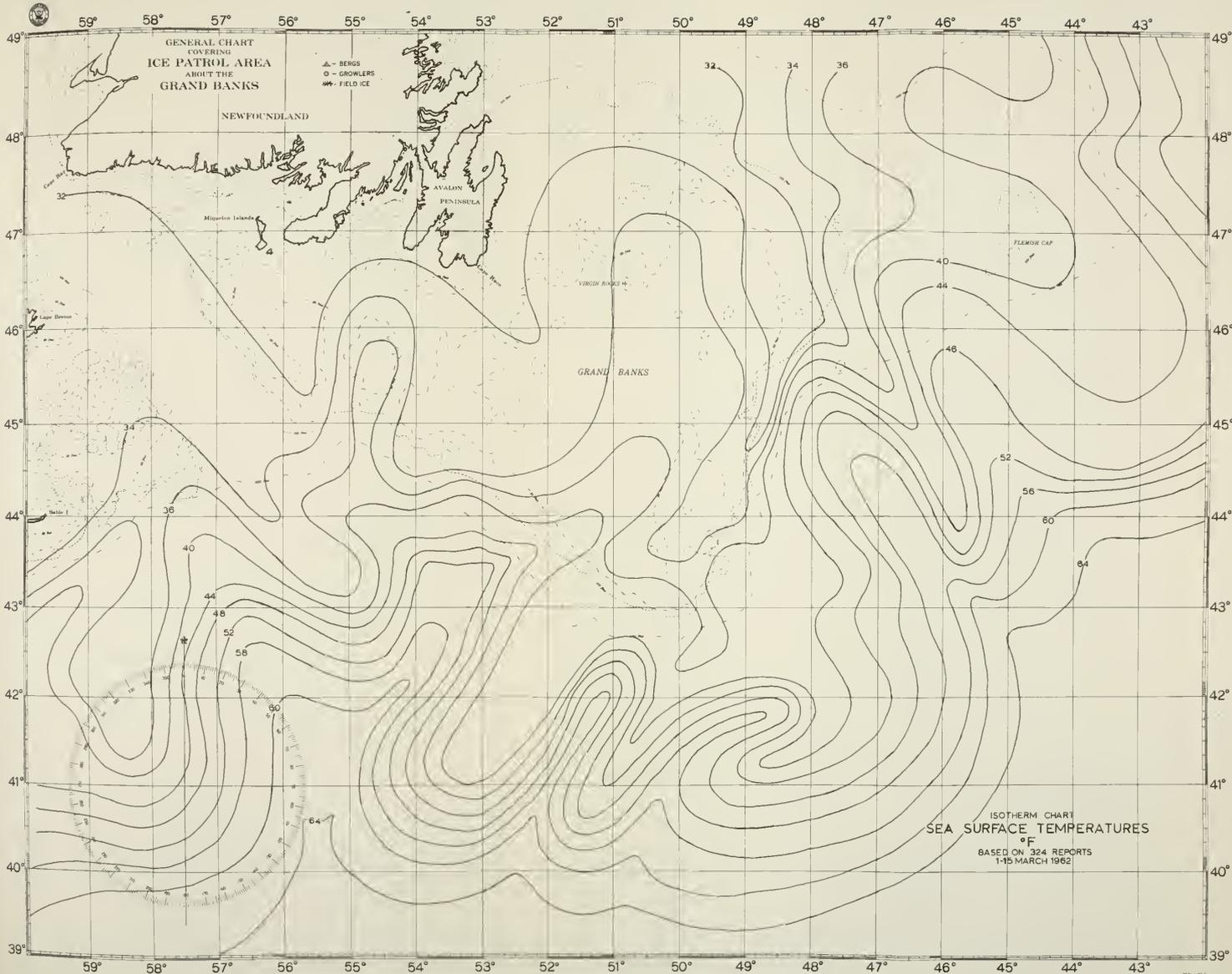


FIGURE 1.—Surface isotherms for the period 1-15 March 1962.



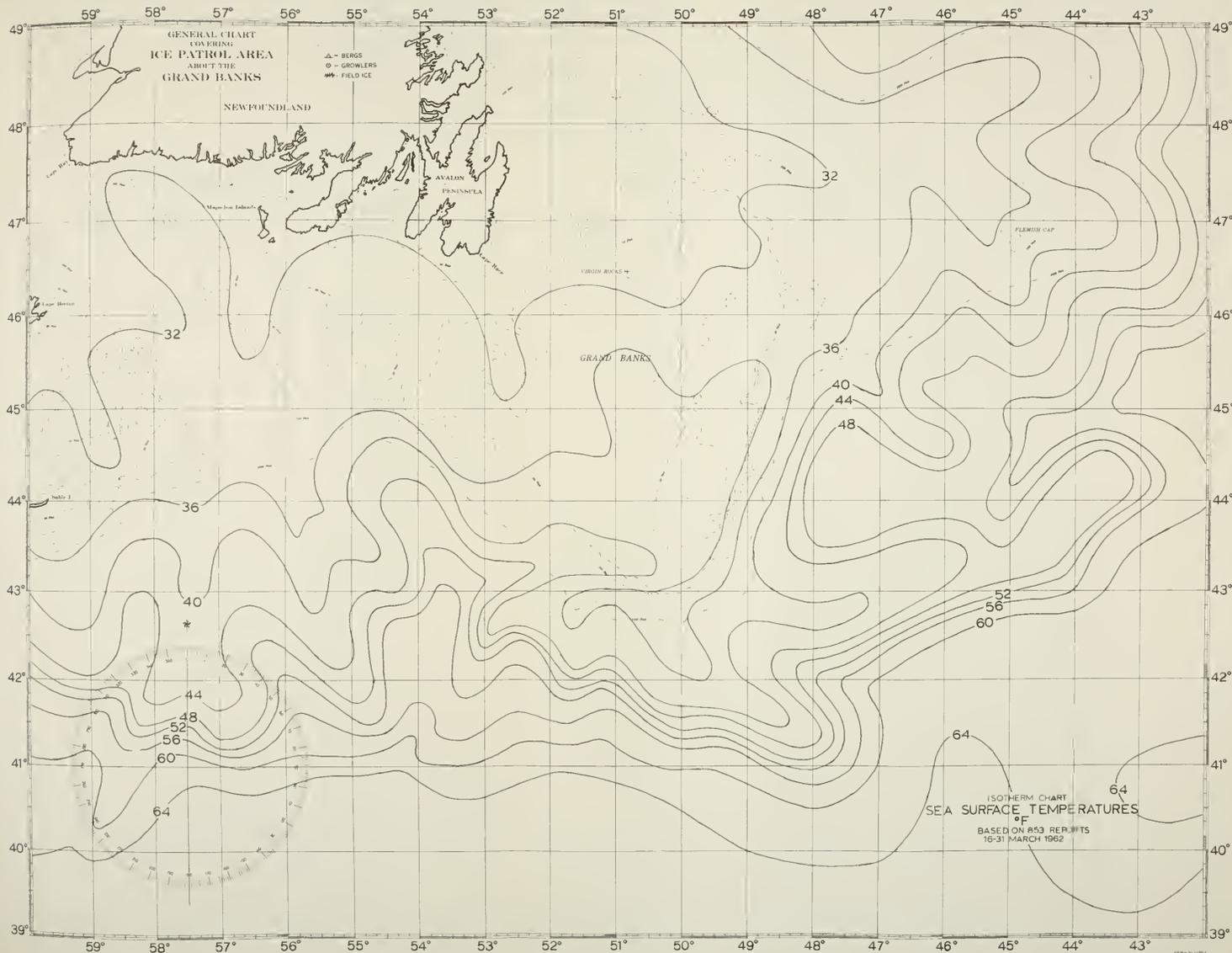


FIGURE 2.—Surface isotherms for the period 16-31 March 1962.



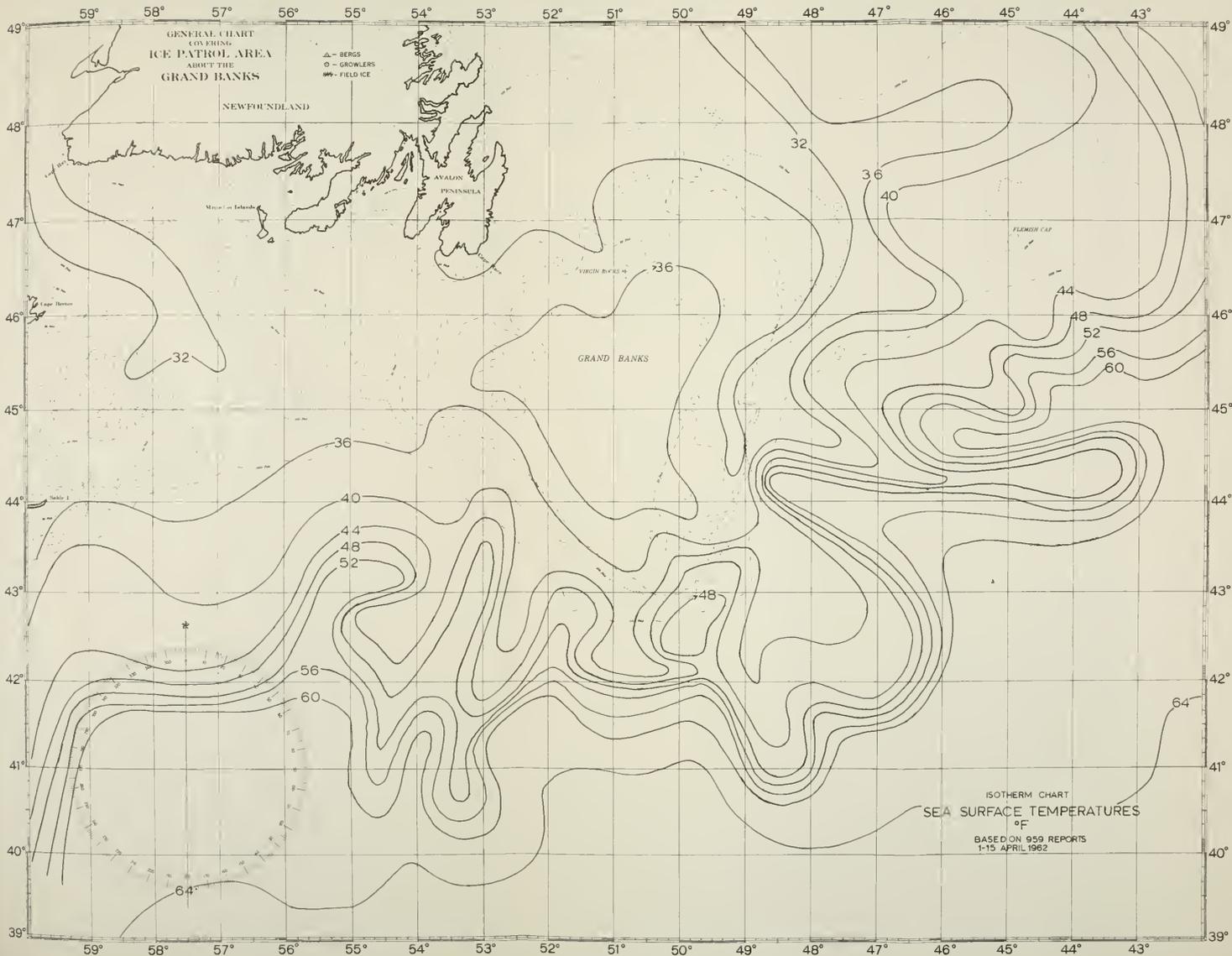


FIGURE 3.—Surface isotherms for the period 1-15 April 1962.



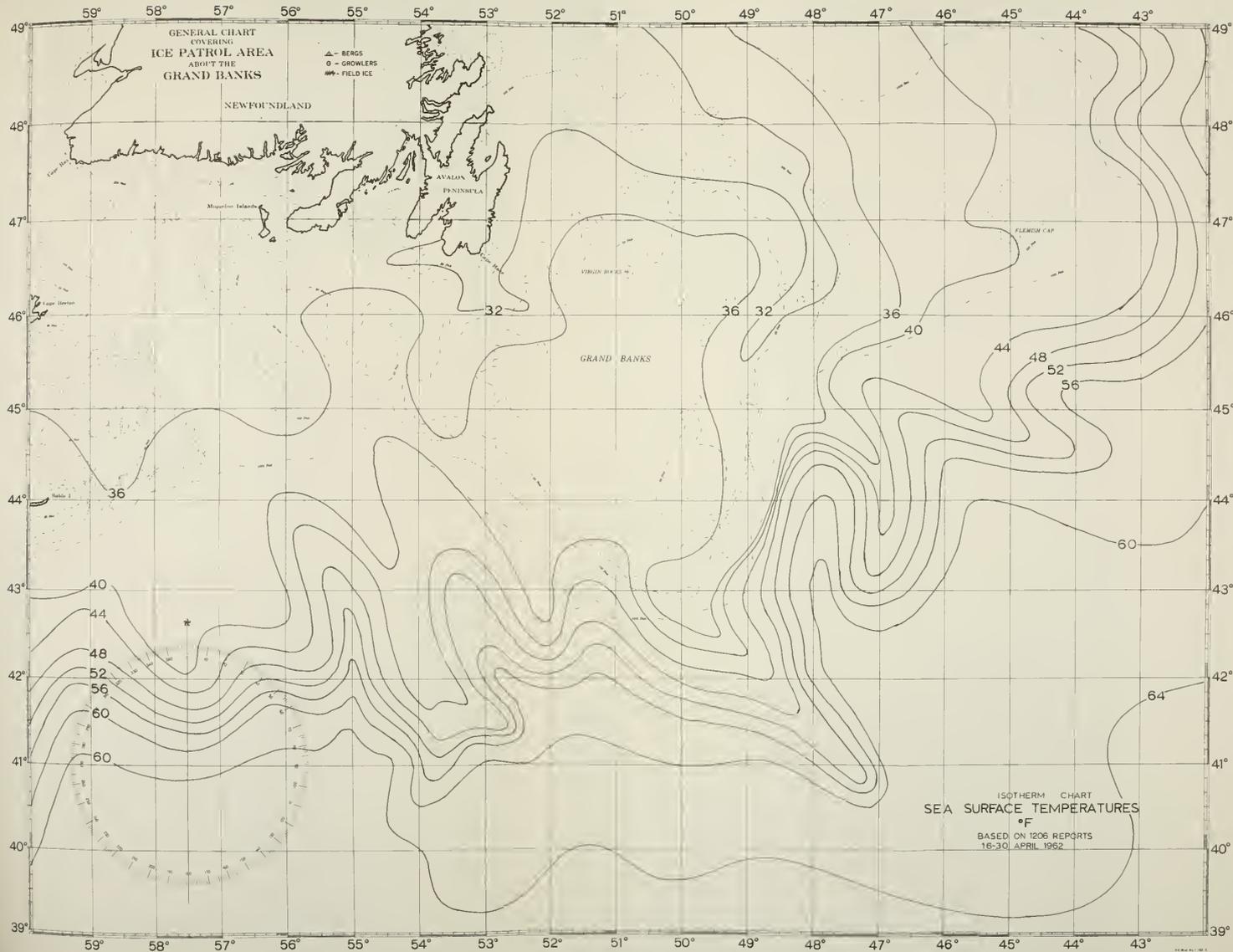


FIGURE 4.—Surface isotherms for the period 16-30 April 1962.







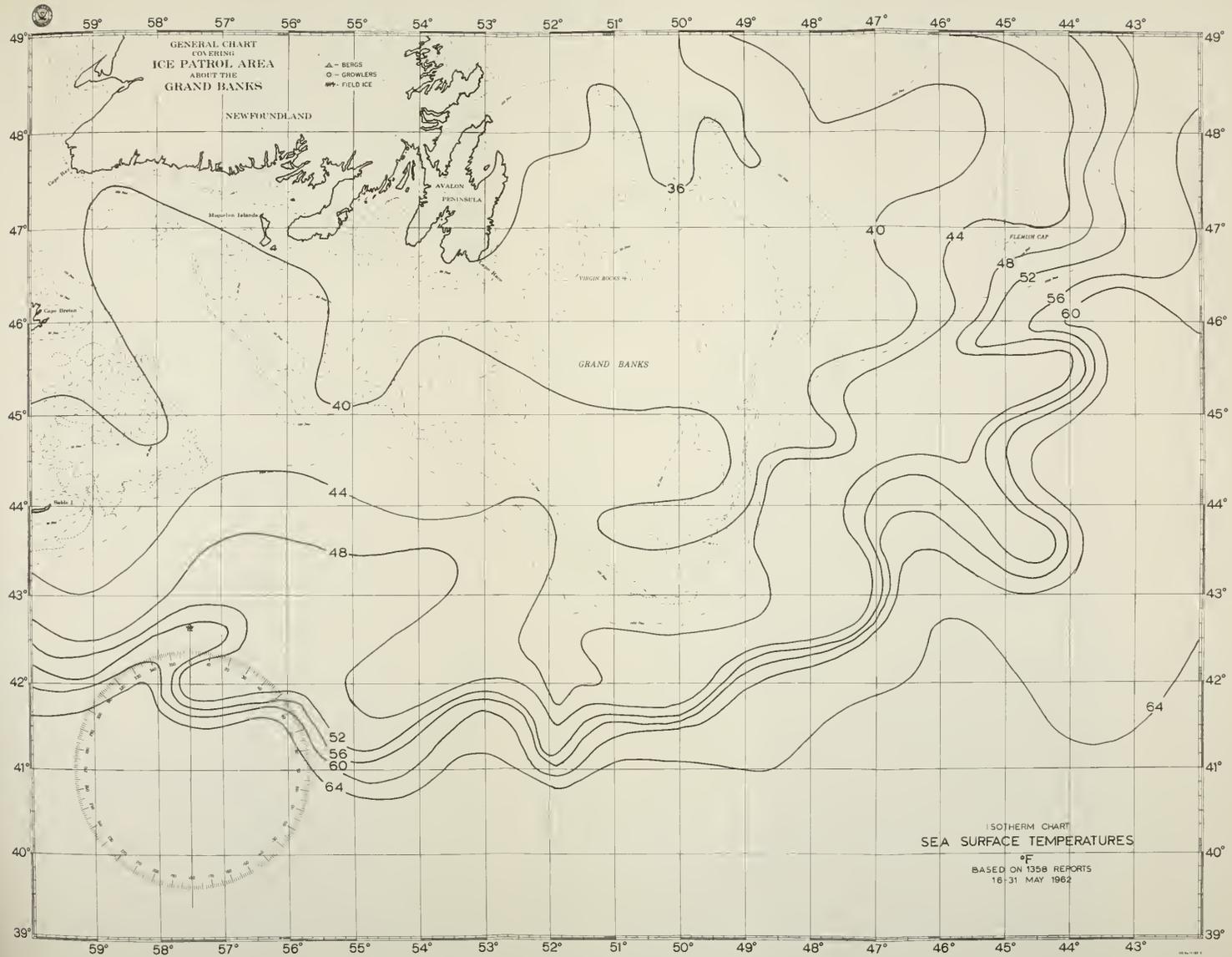


FIGURE 6.—Surface isotherms for the period 16-31 May 1962.



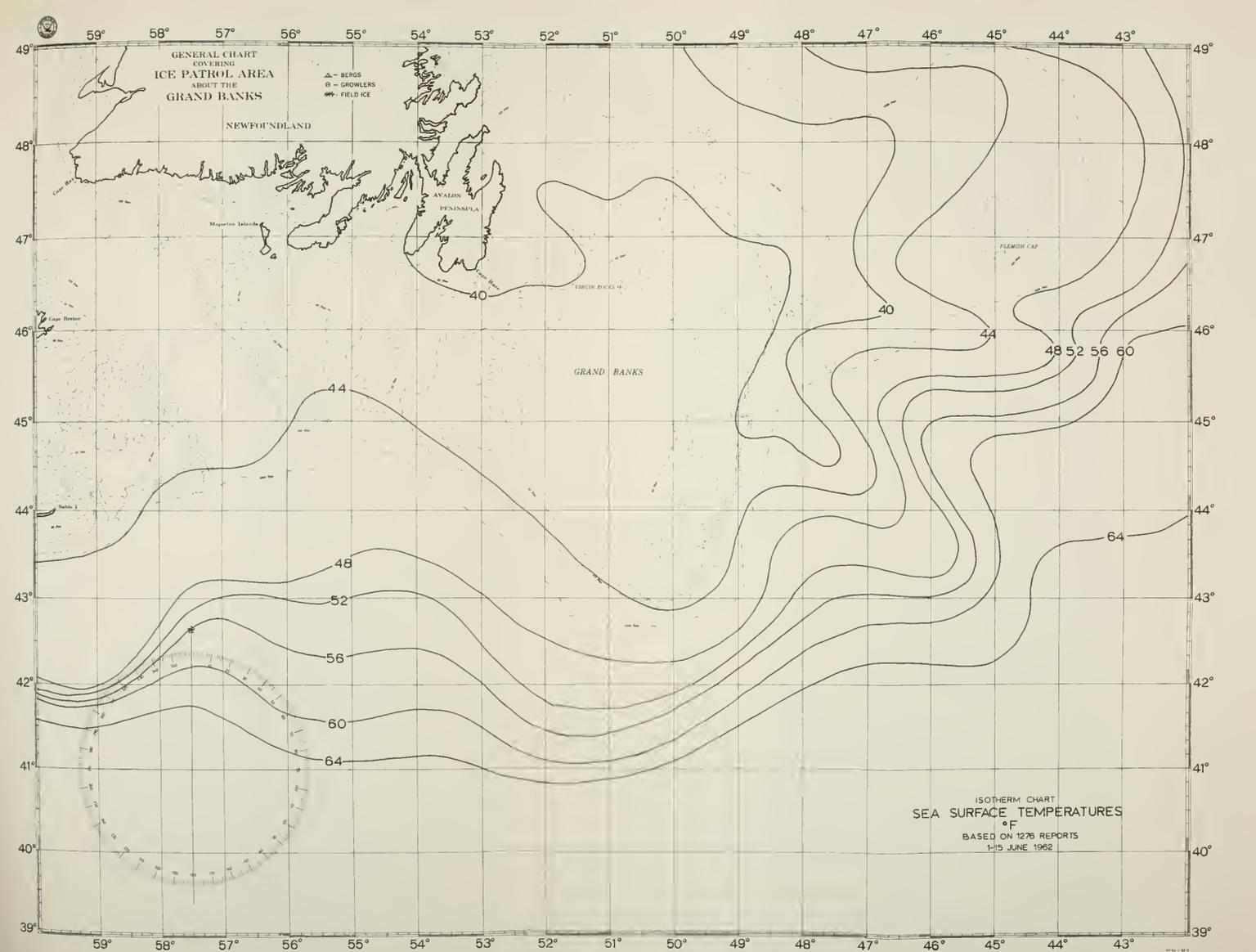


FIGURE 7.—Surface isotherms for the period 1-15 June 1962.



## ICE CONDITIONS 1962

### JANUARY

Weekly pre-season aerial observation flights in the area between latitudes  $48^{\circ}30'$  N. to  $52^{\circ}$  N. and between longitudes  $49^{\circ}$  W. to  $54^{\circ}$  W. showed that this area was free from ice until the end of the month. On the 30th a flight determined the southern limits of the pack ice at  $50^{\circ}30'$  N. and the eastern limits at  $53^{\circ}$  W. The pack ice varied from open to close to  $53^{\circ}$  N., but north of this latitude the pack was solid. Eleven bergs and numerous growlers were sighted between  $52^{\circ}$  N. and  $53^{\circ}$  N. in the vicinity of  $54^{\circ}$  W. Over 40 bergs and numerous growlers were sighted between  $53^{\circ}$  N. and  $55^{\circ}$  N. in the vicinity of  $55^{\circ}$  W. The annual movement of ice toward the Grand Banks of Newfoundland and the trans-Atlantic shipping lanes was underway for 1962. The first report of ice for the year was on the 29th when the U.S. Coast Guard Cutter *Owasco* reported two large bergs and a few unidentified radar targets, presumably bergs, in the vicinity of  $53^{\circ}15'$  N.,  $52^{\circ}$  W.

The limits of the pack ice and the position of the groups of bergs sighted were normal for this time of the year. Newfoundland and Labrador had experienced a mild autumn and early winter, but January was normally cold with northwest surface winds prevailing.

The Gulf of St. Lawrence had experienced a mild early winter and the ice was slow in developing. Except for some local formation of slush and young winter ice, the Gulf was for the most part free from ice and navigable until the end of the month when a couple of frigid cold spells caused a rapid formation and thickening of the ice over most of the Gulf. Belle Isle Strait was navigable until about 25 January.

### FEBRUARY

On 5 February the limits of the sea ice in the form of scattered patches and strings were determined to be from  $49^{\circ}30'$  N.,  $53^{\circ}30'$  W. to  $49^{\circ}45'$  N.,  $52^{\circ}50'$  W. to  $50^{\circ}47'$  N.,  $51^{\circ}50'$  W. then north. No bergs were sighted in the vicinity of these limits. On the 14th the southeast boundary of the pack ice was at  $49^{\circ}43'$  N.,  $52^{\circ}$  W. As of this date there were no known bergs south of  $50^{\circ}50'$  N. and east of  $53^{\circ}$  W. below  $50^{\circ}50'$  N. By 22 February, the pack ice had moved south to  $48^{\circ}20'$  N. and east to  $51^{\circ}$  W., representing an average southeast movement of 6 miles per day since the end of January. Five bergs were sighted in the area bounded by latitudes  $50^{\circ}$  N.,  $52^{\circ}30'$  N. and longitudes  $51^{\circ}10'$  W.,  $52^{\circ}30'$  W. There were 22 bergs between  $49^{\circ}30'$  N. and  $50^{\circ}30'$  N. along  $53^{\circ}$  W.

From the 22d to the end of the month, there were reports indicating a rapid movement of the sea ice to the southeast. On the 27th, the M/V *Topdalsfjord* reported scattered strings of ice from 10 miles

northeast of Cape Race to  $49^{\circ}$  N.,  $50^{\circ}$  W. No bergs are believed to have moved south of  $48^{\circ}$  N. during February.

The Gulf of St. Lawrence experienced colder than normal temperatures during February. The effect on the ice situation was apparent with a rapid worsening of ice conditions. In early February, practically the entire Gulf had six-tenths to nine-tenths young winter and slush ice. By the end of the month the ice had increased in concentration, thickness, and size. Also, the pack ice began to move out of Cabot Strait by the middle of the month and extended south of Cape Breton to  $44^{\circ}30'$  N. and west of Canso to  $62^{\circ}$  W. by the end of the month.

### MARCH

The normal pattern of the gradual movement of the pack ice and bergs to the southeast toward the Grand Banks which had been characteristic of February was abruptly changed in early March. During the first 5 days of March the air circulation over the ice infested area off the east coast of Newfoundland was predominantly northeasterly. The pack ice and bergs contained therein which had drifted as far south as  $48^{\circ}20'$  N. and east to  $51^{\circ}$  W. were driven to the southwest into Conception, Trinity and Bonavista Bays and to the west of Cape Freels into Notre Dame Bay. Two bergs managed to drift south of Cape Race. One berg was sighted on 7 March at  $46^{\circ}49'$  N.,  $52^{\circ}30'$  W. and was last sighted in the form of two growlers near  $46^{\circ}55'$  N.,  $51^{\circ}45'$  W. 3 days later. This berg was probably the first to cross  $48^{\circ}$  N. for 1962 and was the southernmost berg for the month. During this time, a few scattered patches and narrow belts of ice moved south of Cape Race to  $46^{\circ}$  N. and southwest of Cape Race to  $54^{\circ}40'$  W., the west limits south of Cape Race and the south limits of field ice for 1962.

An aerial observation flight on 6 March revealed that the pack ice was west of  $53^{\circ}$  W. except for heavy pack ice in Conception Bay. The strong northeasterly flow of surface winds at the end of February and early March had caused an early if temporary recession of the pack ice and bergs. Of considerable interest now was the extent of pack ice and bergs and their distribution to the north. A report from Belle Isle Radio on 6 March that there was no ice in sight at Belle Isle and Cape Bauld was a good clue as to what had happened, and was a strong indication of a light pack ice year for Newfoundland and Labrador and likely a light iceberg year. Flights made in the middle of March revealed that offshore bergs and field ice as far north as  $51^{\circ}30'$  N. were nonexistent.

A flight on 8 March verified that the pack ice was confined to the bays and close alongshore to the north and west of Cape Freels. For ice conditions this date see figure 8. Reports received indicated that the pack ice to the north was light and mostly close alongshore.

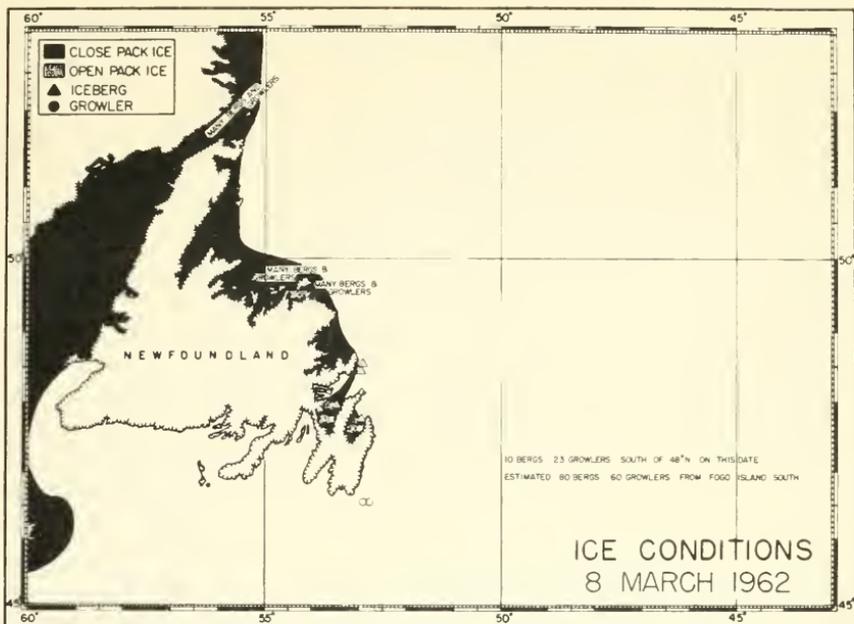


FIGURE 8.—Ice conditions on 8 March 1962.

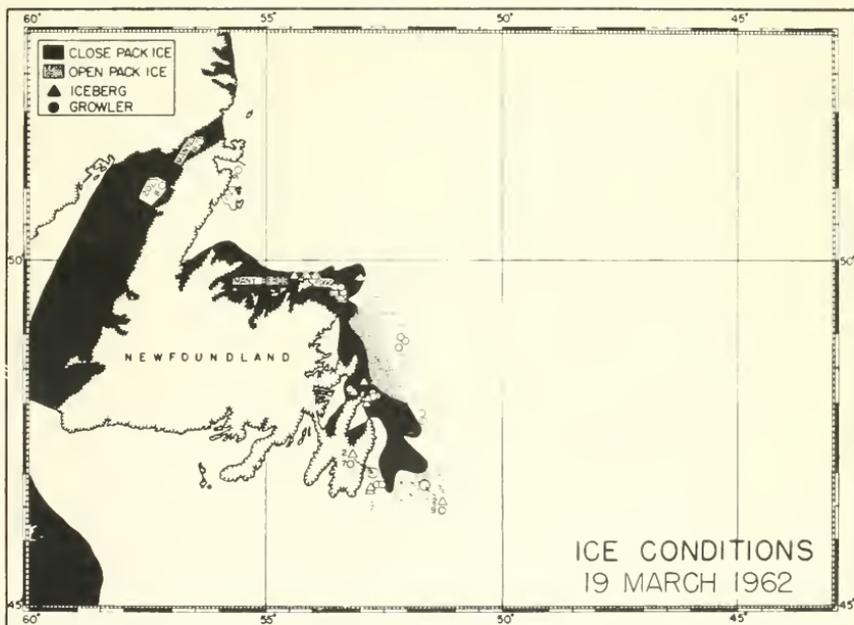


FIGURE 9.—Ice conditions on 19 March 1962.

As of 8 March, it is estimated that 10 bergs were south of  $48^{\circ}$  N. and all 10 were in Trinity and Conception Bay, and it is estimated that there were about 80 bergs and 60 growlers from Fogo Island to the south. For the remainder of the month the surface winds over the ice areas were predominantly northeasterly containing the pack ice in the bays and close alongshore out of the south and east flowing branches of the Labrador Current. On some occasions, the wind direction shifted temporarily to the northwest relaxing some of its pressure on the ice held in the bays and against the coast permitting gradual spilling out of the heavily ridged ice from the bays and the rounding of Cape Freels by some pack ice from the Fogo Island area and the subsequent drift to the east and south. The maximum southern extension of the pack ice for the month occurred on 19 March with a 20- to 40-mile belt of close pack ice extending from Cape Freels south to  $46^{\circ}25'$  N. about 30 miles offshore from Cape Race. The pack ice reached its eastern limits for the month on the 22d extending east of Baccalieu Island to  $51^{\circ}$  W. From these dates of maximum south and east extension to the end of the month, the pack ice gradually deteriorated so that by the end of the month, the pack ice south of  $49^{\circ}$  N. was mostly less than five-tenths concentration with eastern limits of  $52^{\circ}$  W. and southern limits of  $47^{\circ}$  N. The pack ice north of  $49^{\circ}$  N. was contained close ashore. In general, the pack ice in the Grand Banks, East Newfoundland area was quite limited although Notre Dame Bay was reported to have considerable heavy pack ice. However, the supply to the north as far as  $53^{\circ}$  N. was known to be quite limited. Except for a couple of days in early March, St. Johns, Newfoundland was open to navigation, due to a combination of a relatively small amount of pack ice that drifted south and its gradual deterioration.

The many bergs which had been driven into the bays and stranded against the East Coast of Newfoundland in early March for most part remained so during the month and the supply of bergs to the north were prevented from moving south temporarily. Occasionally, the wind shifted to the west and some small bergs were set free to drift slowly to the south and west close along shore until breaking up into growlers and disintegrating. There was no movement of ice to the east and southeast along the north slope of the Grand Banks toward the shipping lanes. On 22 March there were approximately 60 bergs and 100 growlers south of Fogo Island and 10 bergs and 50 growlers south of  $48^{\circ}$  N. However, there were reports of numerous bergs in Notre Dame Bay. The easternmost bergs for March was last sighted as a small berg at  $46^{\circ}55'$  N.,  $50^{\circ}45'$  W. on the 22d. This berg disintegrated by 28 March. By the end of March it is estimated that there were 5 bergs and about 15 growlers south of  $48^{\circ}$  N., and about 55 bergs south of Cape Freels with most of these

bergs aground close ashore or trapped in the bays. Considering the berg distribution and barring abnormal westerly air flow in April, a major iceberg threat to Track C or B before May was unlikely.

A flight on the 22d, north along the coast of Newfoundland and Labrador, to  $53^{\circ} 30' N$ . revealed some interesting information, some of which had already been suspected. The most important fact established was the paucity of offshore bergs north of Funk Island to  $53^{\circ}30' N$ . No bergs were sighted from Belle Isle to just south of Spotted Island. Approximately 125 bergs were sighted in the vicinity of Spotted Island to South Wolf Island. Another interesting fact was the small supply of pack ice to the north. There was no pack ice from St. Barbe Island to Cape Bauld and the pack ice north of Belle Isle to  $53^{\circ}30' N$ . was close inshore and west of  $55^{\circ} W$ . This information was hardly surprising as the air circulation over the Belle Isle Straits and the east coast of Labrador had consistently been northerly to easterly since the end of February, with air temperatures consistently above freezing in this region. Reports from U.S. Navy Hydro Ice Reconnaissance flights further north to Greenland indicated that the limits of pack ice off Labrador during the 3d week of March were less than the minimum limits shown on the U.S.N. Hydro Pilot Chart for March. This suspicion of a light ice year for the East Newfoundland and Grand Banks region was strengthened by fact.

It is estimated that 14 bergs drifted south of  $48^{\circ} N$ . during the month, well below the average of 26 for March during the years from 1950-61. The limits of the field ice were well below the average. The key factor in the ice conditions is the weather, mainly the direction and speed of the wind in the ice regions. During March the air circulation in the East Coast Newfoundland and Labrador Coast region was most unusual. The weather was characterized by a sustained system of stationary lows just east of Newfoundland causing a consistent northeasterly flow of warm moist mid-Atlantic air in the areas. From Belle Isle to the north along the east coast of Labrador, the wind direction was between north and east for 29 days out of 31. The air temperatures were consistently above freezing in this area and instead of new ice forming, there was a steady disintegration taking place balancing the supply from the north. The reason for the almost nonexistent supply of pack ice and offshore bergs to the north at the end of March is obvious. The combination of a mild winter in Newfoundland, Grand Banks area and the abnormal easterly air flow during March also resulted in warmer than average sea surface temperatures in the Grand Banks region. See figures 1 and 2, isotherm charts for 1-15 March and 16-31 March respectively. Figure 15, the ice chart for March shows the maximum and minimum field ice limits for the month and the sightings and reports of bergs and growlers for March.

The ice conditions in the Gulf of St. Lawrence generally were below normal. However, the conditions in the northeast of the Gulf and the area between Cape Breton and Sable Island were more severe than average. A 50- to 80-mile-wide area of closely packed ice persisted from Cape Breton to the south extending as far as  $44^{\circ}$  N. at the end of the month with loosely scattered belts west to  $63^{\circ}$  W. The ice made the east-west passage between Nova Scotia and Sable Island difficult during the latter part of the month. The pack ice in the northeast area of the Gulf was very heavy. There was also an unusual amount of bergs being reported in this area. A Coast Guard aircraft which was diverted from aerial ice observation flight to participate in a search and rescue mission in the vicinity of Riche Pt. on the 19th of March counted 20 bergs between Riche Pt. and Ferole Pt. Flowers Island consistently reported many bergs throughout the month. It is believed that perhaps as many as 100 bergs have already made this passage this year. Bergs have occasionally drifted into the Gulf in the past but never in known memory in this amount for a given year. Without a doubt, this heavy movement of pack ice and bergs through Belle Isle Straits was due to the abnormal northeasterly air flow during the month. Conditions in the central and northern Gulf and the lower River of St. Lawrence gradually improved. On 28 March, Ice Central Halifax reported open water along the shipping track through Cabot Strait and the Gulf into the River to Quebec with some scattered belts of close pack ice northeast of Bird Rocks and south of Anticosti Island.

#### APRIL

April was marked by a significant movement of bergs to the east between  $48^{\circ}$  N. and  $49^{\circ}$  N. along the north slope of the Grand Banks. There were no bergs east of  $52^{\circ}$  W. at the start of the month but by the 27th of April there were about 110 bergs east of  $52^{\circ}$  W. between  $47^{\circ}20'$  N. and  $49^{\circ}$  N. The 200 or so bergs, which had been contained with the pack ice close ashore from Cape Bonavista north to Cape Freels and west past Fogo Island into the Notre Dame Bay area, rapidly moved out and east with winds predominantly from the west southwest. The anticipated movement of the majority of these bergs to the south along the Avalon Peninsula and southwest onto the Grand Banks did not materialize. Instead the movement to the east continued throughout the month until by the end of April some bergs had moved east along  $49^{\circ}$  N. to  $48^{\circ}$  W., then to the east southeast as far as  $44^{\circ}30'$  W., a distance of about 360 miles in about 24 days, an average movement rate of 15 miles per day. The surface air flow although predominantly west southwest was only partly responsible for this drift. The conclusion was that the east branch of the Labrador Current was very vigorous with at least a three-fourths-knot current, and that the west branch along Avalon Peninsula was prac-

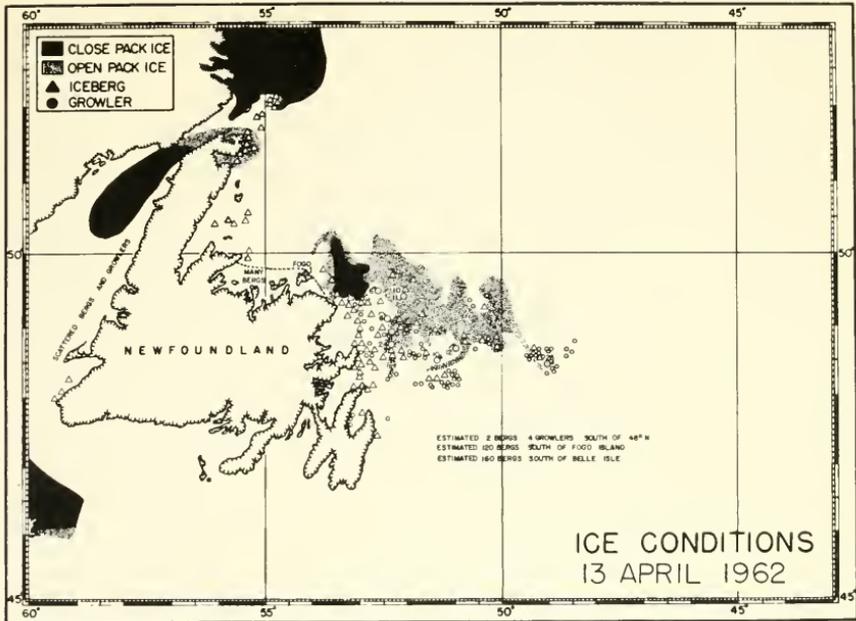


FIGURE 10.—Ice conditions on 13 April 1962.

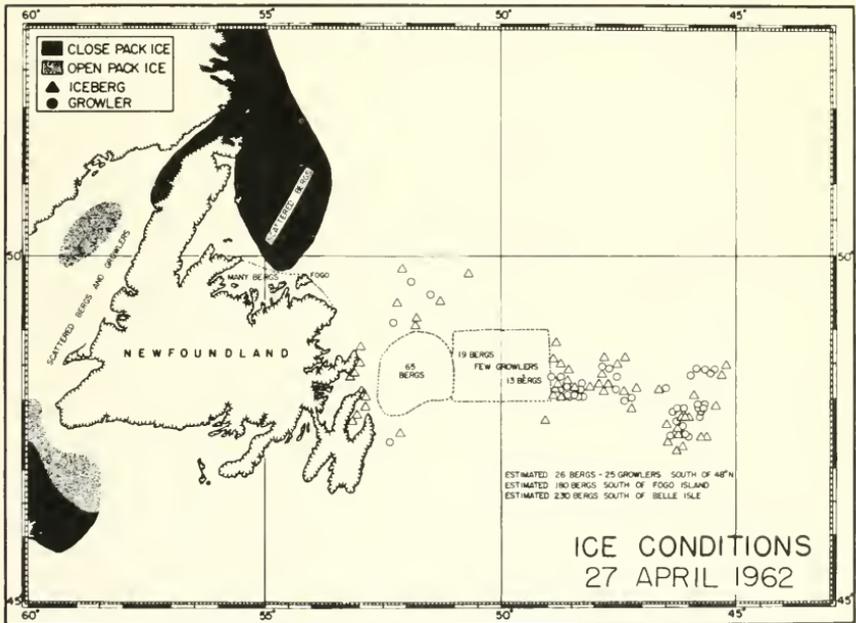


FIGURE 11.—Ice conditions on 27 April 1962.

tically non-existent. The first oceanographic survey by the U.S. Coast Guard Cutter *Evergreen* verified the fact that the eastern branch of the Labrador Current in the area surveyed was indeed well-defined with velocities up to one and one-half knots in some sectors.

Although many of the bergs had moved rapidly to the east during the month, it was especially apparent after the flight of 20 April that there was a very definite branch-off point of berg drift to the east. The branching off of bergs into two groups was occurring at  $49^{\circ}$  N.,  $52^{\circ}$  W. Bergs arriving at  $52^{\circ}$  W., north of  $49^{\circ}$  N. were catching a ride to the east at about 25 miles per day on the east branch of the Labrador Current. Those at  $52^{\circ}$  W. below  $49^{\circ}$  N. had very little noticeable movement until the end of the month as they started to drift very slowly south giving some indication that the west branch of the Labrador Current was finally coming to life. Of the 162 bergs counted 20 April, the bergs were about evenly divided into the two groups. The group of bergs, which remained near the coast in the vicinity of  $52^{\circ}$  W. between  $48^{\circ}$  N. and  $49^{\circ}$  N., was removed as any possible threat to shipping at the tail of the Banks. The bergs moving east although mostly smaller and medium type bergs were under close surveillance. Persistent and strong south westerly surface flow prevailed during the crucial period when the majority of the east-moving bergs were arriving at the northeast slope of the Grand Banks where the Labrador Current curves to the southeast and then south. Instead of remaining in the main branch of the current, most of the bergs were driven by the wind to the east and east-southeast into the warmer waters of about  $40^{\circ}$  F. near Flemish Cap where disintegration was rapid. An indication of the disintegration taking place was given by the flight on 27 April. The flight on 25 April had revealed 28 bergs east of  $47^{\circ}$  W. near  $48^{\circ}$  N. The flight on 27 April counted only 16 bergs. With an estimated five bergs moving across  $47^{\circ}$  W. from the west in the 2 days, an estimated 17 of the 28 bergs had disintegrated in only 2 days. Where there were 69 bergs east of  $51^{\circ}$  W. on the 27th, there were only 22 bergs, some of which were newcomers, east of  $51^{\circ}$  W. on the 30th.

The branching off of the available bergs into the 2 groups was most obvious as a result of the flight on the 30th where there were 2 very distinct concentrations of bergs, 1 of about 50 bergs within 80 miles to the northeast and east of Cape Spear and the other about 20 bergs, the remainder of the group which had moved east, between  $47^{\circ}$  N. and  $48^{\circ}$  N. and from  $45^{\circ}$  W. to  $49^{\circ}$  W. The former group of bergs, which consisted of the larger bergs including 2 large tabular and 1 large dome berg, had also undergone some disintegration and was down to a little over 50 bergs from the estimated 85 at the middle of April. Of the many bergs that moved east during the month, only a handful were able to remain in the east branch of the Labrador Current south of  $47^{\circ}30'$  N., but none were able to drift below  $47^{\circ}$  N. by the end of the

month as they either disintegrated or were driven out of the narrow width of the current to the east and destruction. However, on the last day of the month, of the few bergs that remained east of  $49^{\circ}$  W., two were in the Labrador Current just north of  $47^{\circ}$  N. and moving rapidly to the south with the current and 40 to 50 knot north-northwest winds. From this source would probably come the climax of the year as regards to any potential threat to the shipping lanes at the Tail of the Banks.

Of the 200 or so bergs that had been driven to sea early in the month, some moved rapidly to the east between  $48^{\circ}$  N. and  $49^{\circ}$  N., some escaped the east-flowing branch of the current and hovered between  $48^{\circ}$  N. and  $49^{\circ}$  N. from  $51^{\circ}30'$  W. to the coast during the month, and the remainder disintegrated prior to moving south of  $48^{\circ}$  N. From the start of the month until the end of the month there were 160 to 200 bergs poised between  $48^{\circ}$  N. and  $49^{\circ}$  N. As of 22 April, it is estimated that only seven bergs had moved south of  $48^{\circ}$  N. during the month. From the 22d to the 29th, it is estimated that 23 more bergs moved south of  $48^{\circ}$  N. due mainly to the movement of the east branch of the Labrador Current to the southeast at  $50^{\circ}$  N. Then as a result of a deepening low just east of the area bringing north-northwesterly winds of 40 to 50 knots at the end of the 29th and most of the 30th, it is estimated that 40 bergs were driven south of  $48^{\circ}$  N. in a single day on the 30th, possibly a record. It is estimated that 70 bergs drifted south of  $48^{\circ}$  N. during the month, or a little less than average for April over the last 12 years. The southernmost berg in April was sighted on the 30th at  $47^{\circ}02'$  N.,  $47^{\circ}09'$  W. The main crop of bergs for the 1962 season had made its main push to the east and south and was rapidly disintegrating with little supply of bergs to the northwest in evidence. Indeed 1962 would go down as a light ice year.

Pack ice conditions in the Grand Banks region were well below the annual average for April. The pack ice which had moved south along the Avalon Peninsula rapidly deteriorated so that by 7 April, the southern limits of the pack ice were  $48^{\circ}30'$  N. Simultaneously, a new pattern of ice drift developed at the start of the month set in motion by a shift in prevailing wind direction from the southwest. The heavy pack ice contained along the north coast of Newfoundland from Cape Freels to the west into Notre Dame Bay for the whole of March was abruptly driven westward out to sea continuing its movement along  $49^{\circ}$  N. to the eastern limits for the year of  $49^{\circ}$  W. on 11 April with close pack ice east to  $51^{\circ}$  W. This ice rapidly melted so that by 25 April it had completely disintegrated in the Grand Banks area. By this date the southern limits of pack ice had retracted to about  $50^{\circ}$  N. Westerly and northerly winds in late April over the Belle Isle, Labrador Coast region had driven close pack ice south to the vicinity of  $50^{\circ}$  N. by the end of the month. It is doubtful that this second push of pack ice would reach  $48^{\circ}$  N. due to warming

water and air temperatures. See figure 16 for the maximum and minimum pack ice limits and ice reports during the month.

The ice conditions in the Gulf of St. Lawrence were less severe than average. There was open water through the North Cabot Straits, the North Gulf and the Lower River St. Lawrence from the start of the month. Although the steamer track into the river was encumbered at times by patches and belts, ships were able to make passage throughout the month. There was a steady movement of ice from the Central and Southern Gulf through Cabot Strait mostly along Cape Breton. Although ice conditions in the Gulf were alleviated by this movement, Cabot Strait was largely ice encumbered most of the month. By the end of the month except for some scattered pack ice in the southern Gulf, pack ice in Cabot Strait and around Cape Breton, and pack ice in Belle Isle Strait, the Gulf was for the most part ice free. An unusual occurrence was the large number of bergs and growlers reported from Cabot Strait just below  $48^{\circ}$  N. to the north along the west coast of Newfoundland. It is estimated that two bergs crossed  $48^{\circ}$  N. in the Gulf.

#### MAY

The intense stationary low centered east of Newfoundland at the start of the month produced strong northerly winds for 6 successive days. The remainder of the offshore bergs east of Newfoundland were driven rapidly to the south at a rate of about 35 miles per day. One berg located at  $47^{\circ}25'$  N.,  $47^{\circ}20'$  W. on 29 April moved south to  $43^{\circ}24'$  N.,  $49^{\circ}14'$  W. by 5 May, a distance of about 265 miles in 6 days or 44 miles per day, due to a combination of wind drift and drift from the Labrador Current. It is estimated that 20 bergs drifted south of  $48^{\circ}$  N. in 1 day on the 1st of May. No additional bergs moved south of  $48^{\circ}$  N. until the very end of May. Thus, in 2 days, 30 April–1 May, an estimated 60 bergs drifted south of  $48^{\circ}$  N. or about half the year's total. There were about 70 bergs south of  $48^{\circ}$  N. at this time with the majority close to Avalon Peninsula. The climax was reached on 5 May with the southernmost and easternmost penetration of icebergs for the year. The southernmost berg was the one mentioned previously and the easternmost berg was located at  $45^{\circ}45'$  N.,  $45^{\circ}30'$  W. From 5 May until near the end of the month, the limits of icebergs gradually receded as the dangerous bergs that had drifted east and south in warmer water quickly disintegrated. On the other hand, those many bergs that had been driven south along the Avalon Peninsula and to the southeast, south and southwest of Cape Race disintegrated much more slowly as some of these bergs were larger and the coastal waters were cooler than the mixed water east of the Grand Banks. It was observed that small bergs disintegrated within 5 days upon reaching  $40^{\circ}$  F. water, and medium size bergs lasted approximately 10 days in  $40^{\circ}$  F. water.

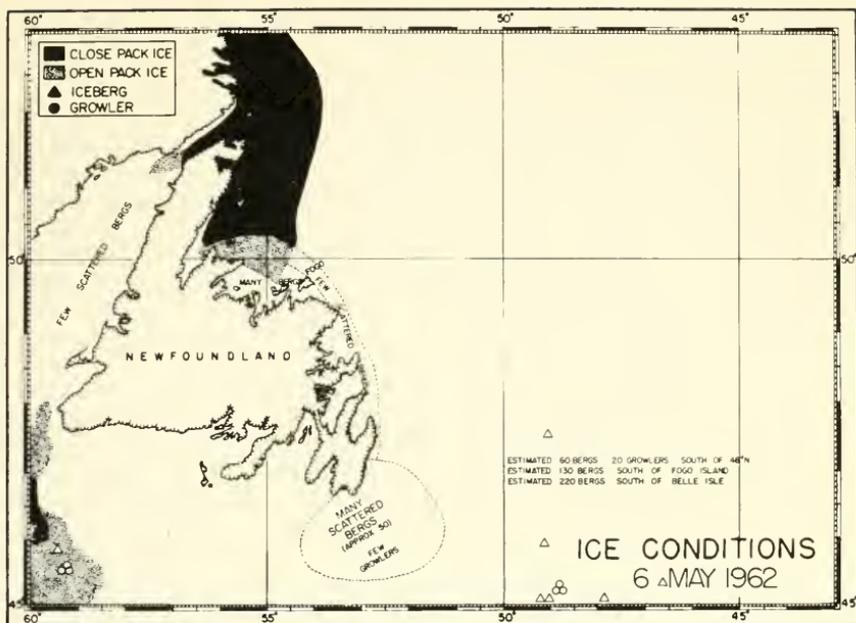


FIGURE 12.—Ice conditions on 6 May 1962.

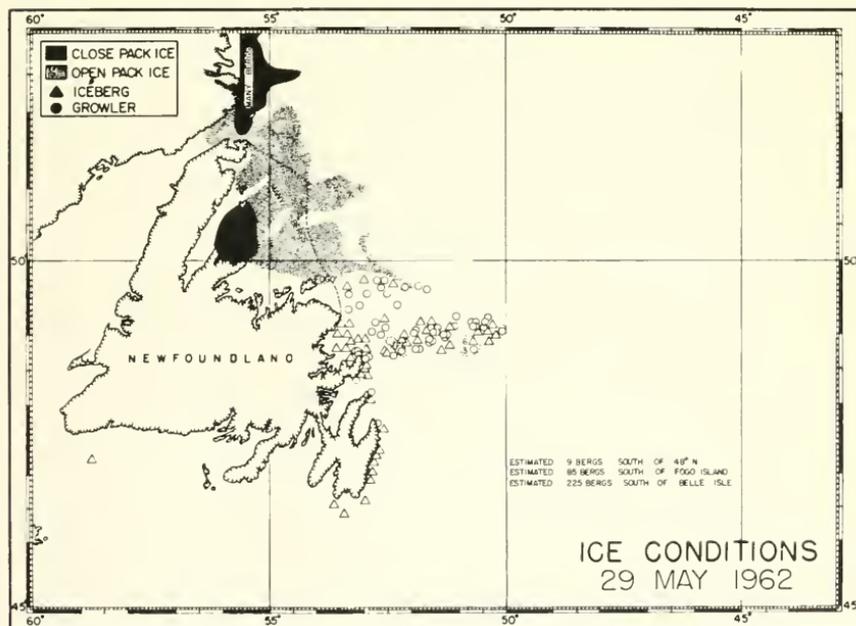


FIGURE 13.—Ice conditions on 29 May 1962.

On 5 May, the U.S. Coast Guard Cutter *Evergreen* which had just completed the second oceanographic survey was ordered to proceed to locate and standby the southernmost berg estimated near  $43^{\circ}$  N.,  $49^{\circ}$  W. Conditions for aerial observation had been very poor and remained so until 9 May when two flights were made to search out all areas where icebergs were suspected from the Tail of the Banks north along the slope to  $48^{\circ}$  N. Due to negative search results by the *Evergreen* and aircraft for the previously reported southernmost berg and because the negligible amount of ice in a potential position to threaten Track B, the *Evergreen* was released from the search. These successful flights on 9 May revealed that there were only four small bergs remaining east of  $51^{\circ}$  W.

By 12 May, 55 bergs were estimated south of  $48^{\circ}$  N. and most of these were close along the east coast of Avalon Peninsula and within a 90-mile radius of Cape Race. A flight on the 14th along the north slope of the Grand Banks and northward to  $50^{\circ}$  N. showed that there were no bergs east of  $52^{\circ}30'$  N. between the north slope of the Grand Banks and  $50^{\circ}$  N. The only bergs south of  $48^{\circ}$  N. were close along shore or in the vicinity of Cape Race and therefore any threat to the Track in effect was considerably reduced and must now come from the vicinity of Cape Freels and Funk Island. On this flight, about 80 bergs were sighted in the latter area, some of which were large bergs. These would bear watching for the next couple of weeks. By 19 May, there were only 20 bergs south of  $48^{\circ}$  N. and on 31 May, only 12 bergs, most of them small, remained south of  $48^{\circ}$  N.

On 19 May, a flight established the fact that the second front of bergs for 1962 was making its move to the east-southeast. These were a few of the many bergs sighted between Funk Island, Fogo Island, and Cape Freels on the 14th. The leading bergs had drifted to the vicinity of  $49^{\circ}40'$  N.,  $52^{\circ}$  W. The past few days had been a period of west to southwest winds driving the bergs near Funk Island out to the east into the Labrador Current for the trip to the south or east. One of these bergs was a very large pinnacled berg estimated about 250 feet high. As a result of an average northerly wind for the next week, the drift of the leaders of the second front was to the south to near  $48^{\circ}30'$  N.,  $52^{\circ}$  W. during this period. Whether or not any of these bergs would drift east with the eastern branch of the Labrador Current or drift slowly south with the weak western branch was determined in the next few days as southwesterly winds moved the bergs into the east branch for the ride to the east. By the end of the month the easternmost berg had reached  $49^{\circ}30'$  W. However, the large pinnacled berg was apparently aground and fortunately failed to drift east at this time, and most of 15 or so bergs moving east were small. It was only a matter of how far they could manage to drift southeast and south into warmer waters prior to melting.

The field ice in the Grand Banks area had completely disintegrated by 25 April. However, a second push of pack ice developed south to  $50^{\circ}$  N. toward Notre Dame Bay with an easterly limit of  $54^{\circ}$  W. With light northwest winds predominating in this region most of May, the pack ice was being fed from the north at about the same rate as it was disintegrating, producing a static situation for most of the month. During the third week of May southwesterly winds followed by northerly winds drove some of the pack ice seaward to the east and south. Loosely scattered strings and patches drifted east and south as far as  $48^{\circ}30'$  N.,  $51^{\circ}$  W., prior to disintegrating.

Ice conditions in the Gulf of St. Lawrence were lighter than normal. However, the conditions in Cabot Strait were more difficult than normal with pack ice persisting there until it moved southeast out into the Atlantic along the southern coast of Cape Breton and disintegrated. By 20 May, the entire Gulf was reported ice free except for the Strait of Belle Isle, and some scattered bergs and growlers in Cabot Strait and along the west coast of Newfoundland. An unusual occurrence was the movement of at least three bergs from the Gulf, south through Cabot Strait.

It is estimated that only 21 bergs moved south of  $48^{\circ}$  N. during May or well below the average of 74 for May over the last 12 years. See figure 17 for the plot of ice reports for May.

## JUNE

At the beginning of June there were an estimated 12 bergs south of  $48^{\circ}$  N., and there were a few scattered bergs in the Labrador Current along the north slope of the Grand Banks eastward to  $48^{\circ}30'$  W. The eastward movement of the latter bergs that began near the end of May continued in June. The third oceanographic survey (see fig. 21) revealed a comparatively weak Labrador Current and a very strong Atlantic Current with a strong meander encroaching the east slope of the Banks between  $43^{\circ}$  N. and  $45^{\circ}$  N. This is also evident in the 1-15 June isotherm chart. (See fig. 7.) Thus, there was little or no threat to shipping Track B or C for the remainder of the year. The majority of the bergs drifted east of  $47^{\circ}$  W. near  $48^{\circ}$  N. into a counterclockwise eddy and out of the southeast and south moving main branch of the Labrador Current. As most of these bergs were small, the deterioration was rapid and within 5 days in the  $40^{\circ}$  F. water between  $46^{\circ}$  W. and  $47^{\circ}$  W. near  $48^{\circ}$  N., the five or six bergs that remained in the current all deteriorated prior to reaching  $47^{\circ}$  N.

One medium-large sized drydock berg, which was the same large 250-foot-high pinnacled berg that had been aground near the 100-fathom curve at  $48^{\circ}50'$  N.,  $52^{\circ}05'$  W. for 2 weeks in May, was cause for some concern. This berg was located at  $48^{\circ}40'$  N.,  $51^{\circ}05'$  W. on 9 June. By 13 June it had drifted 85 miles to the southeast in the Labrador Current and on this date was reported by the U.S. Coast

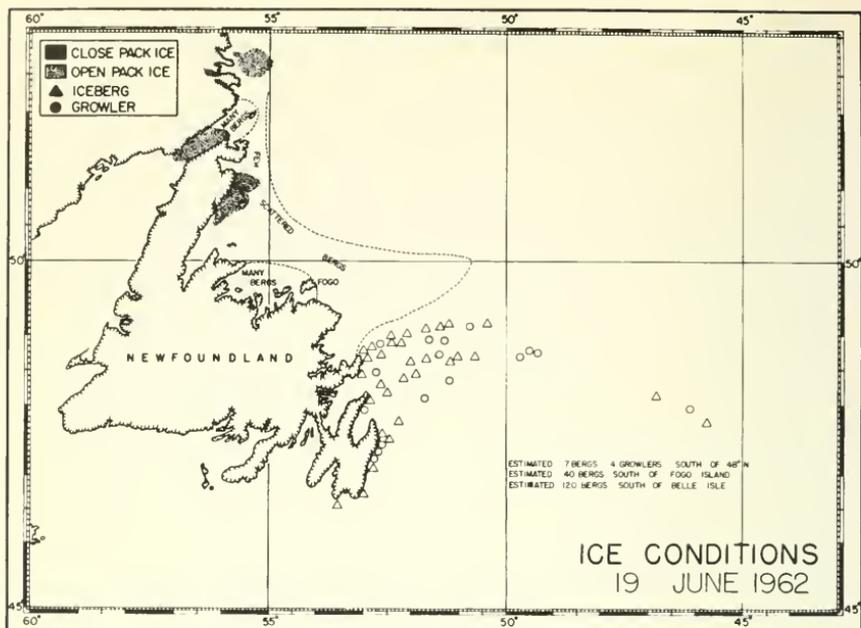


FIGURE 14.—Ice conditions on 19 June 1962.

Guard Cutter *Casco* to be 220 feet high and 700 feet long. During the next few days, southwesterly surface winds prevailed driving this berg eastward out of the Labrador Current. On 19 June, this berg was sighted at  $48^{\circ}04' N.$ ,  $46^{\circ}54' W.$ , well reduced in size and was the only berg east of  $51^{\circ} W.$  The flight on the 19th also revealed about 15 bergs between  $51^{\circ} W.$  and  $52^{\circ} W.$  between  $48^{\circ}40' N.$  and  $49^{\circ}10' N.$  For ice conditions on this date see figure 14.

A flight on the 21st determined that there were only three bergs east of  $53^{\circ} W.$ , north of  $49^{\circ} N.$  to  $51^{\circ}30' N.$  On the basis of the flights of the 19th and 21st and the oceanographic conditions on the Grand Banks as determined by the 3d and 4th surveys by the *Evergreen*, there was no probable threat to Track C and no likely threat to Track E. Therefore, the services of the International Ice Patrol were terminated on 22 June.

It is estimated that 10 bergs drifted south of  $48^{\circ} N.$  during June making a total of 117 bergs for 1962. See figure 18 for the plot of ice sighted and reported during June.

With predominantly northerly surface winds during June, the pack ice was contained close along shore in colder water and persisted longer than usual in the Notre Dame-Belle Isle Straits area. Although the icebreaker U.S. Coast Guard Cutter *Westwind* was the first ship to make passage through the Belle Isle Strait in the 1962 ice season on 8 June, Belle Isle Strait was not considered navigable by merchant vessels until 14 June when the *Topdalsfjord* made passage from the

east through the Belle Isle Strait. Belle Isle Strait was reported free of ice on 27 June, although many bergs and growlers still persisted.

### JULY

At the start of the month there were seven known bergs south of  $48^{\circ}$  N. It is estimated that these bergs disintegrated by 10 July except for one large berg which was reported at  $47^{\circ}38'$  N.,  $48^{\circ}30'$  W. on the 1st. This berg remained in the Labrador Current and drifted south at an average rate of 13 miles daily to  $45^{\circ}45'$  N.,  $48^{\circ}25'$  W. by 14 July. This berg was last reported on 24 July at  $45^{\circ}30'$  N.,  $48^{\circ}58'$  W., where it had apparently grounded making no further progress to the south. By the end of the month there were no known bergs south of  $48^{\circ}30'$  N. A few bergs were being reported in the approaches to Belle Isle Strait and in the vicinity of Belle Isle.

An estimated 3 bergs drifted south of  $48^{\circ}$  N. during the month making a total of 120 bergs for the year.

### AUGUST

The recession of berg limits that began at the end of July continued in early August. There was only one berg reported south of  $50^{\circ}$  N. during the month, at  $49^{\circ}10'$  N.,  $50^{\circ}00'$  W. on the 30th. A few reports were received on bergs in the Belle Isle Straits and the approaches east to  $50^{\circ}$  W.

### SEPTEMBER

A few bergs continued to be reported at the entrance to Belle Isle Strait by ships using Track G. The southernmost known ice penetration in September was a small berg reported at  $47^{\circ}50'$  N.,  $50^{\circ}10'$  W. on the 12th. This was the only ice reported south of  $50^{\circ}30'$  N. during the month and was the 121st and last berg to drift south of  $48^{\circ}$  N. during 1962. By the end of the month, it is estimated that no ice existed south of  $51^{\circ}$  N.

### OCTOBER-DECEMBER

There were still two or three bergs in the vicinity of Belle Isle in early October, but by 16 October there was no known ice south of  $54^{\circ}$  N. and no further reports of ice south of Labrador were forthcoming to the end of the year.

Iceberg counts made by the Canadian Department of Transport in October and November in Hudson Strait and along the east coast of Baffin Island revealed a scarcity of bergs in the Hudson Strait, Frobisher Bay and Resolution Island area apparently due to heavy deterioration as a result of a warm late summer and early autumn in the region. There was a strong indication of light iceberg conditions for the Grand Banks at least until May 1963.

# ICE AND SEA CONDITION REPORT

[By Country]

Vessel	Ice reports	Sea condition reports	Vessel	Ice reports	Sea condition reports
<b>BELGIUM</b>			<b>FRANCE—continued</b>		
SS <i>Lindi</i> .....	---	1	SS <i>Commandant Bourdais</i> .....	8	63
SS <i>Lukuga</i> .....	---	5	SS <i>Douala</i> .....	---	5
SS <i>Lulua</i> .....	---	2	SS <i>Falaise</i> .....	---	2
SS <i>Lusambo</i> .....	---	1	SS <i>Flandre</i> .....	---	3
SS <i>Marly I</i> .....	---	4	SS <i>France</i> .....	---	49
SS <i>Steenstraete</i> .....	---	8	SS <i>Jean L. D.</i> .....	---	12
SS <i>Tervaele</i> .....	---	1	SS <i>Joliette</i> .....	---	21
<b>CANADA</b>			SS <i>Louis L. D.</i> .....	1	---
SS <i>Arthur Cross</i> .....	---	1	SS <i>Melusine</i> .....	1	1
SS <i>A. T. Cameron</i> .....	---	2	SS <i>Saint Malo</i> .....	2	2
SS <i>Crescent</i> .....	---	8	SS <i>Troarn</i> .....	---	14
CMS <i>d'Iberville</i> .....	1	14	SS <i>Ville de Fecamp</i> .....	---	1
SS <i>Eskimo</i> .....	1	14	SS <i>Vire</i> .....	---	22
SS <i>Gulfport</i> .....	1	---	SS <i>Washington</i> .....	---	46
CMS <i>MacDonald</i> .....	1	---	<b>GERMANY</b>		
SS <i>Sackville</i> .....	1	---	SS <i>Admiral Bastian</i> .....	---	6
SS <i>St. Croix</i> .....	---	6	SS <i>Alexander Von Humboldt</i> .....	---	2
CMS <i>Wolfe</i> .....	1	---	SS <i>Alstertal</i> .....	1	17
<b>CHILE</b>			SS <i>Angelica Schulte</i> .....	1	---
SS <i>Gil Eannes</i> .....	---	23	SS <i>Beate Bolton</i> .....	1	---
<b>DENMARK</b>			SS <i>Berlin</i> .....	---	14
SS <i>Cap Ray</i> .....	---	4	SS <i>Bilbao</i> .....	---	12
SS <i>Erika Dan</i> .....	2	1	SS <i>Bochum</i> .....	---	1
SS <i>Hadsund</i> .....	4	---	SS <i>Bremen</i> .....	---	11
SS <i>Leisemaersk</i> .....	---	5	SS <i>Cap Castillo</i> .....	3	4
SS <i>Marius Nielsen</i> .....	1	7	SS <i>Cap Frio</i> .....	4	4
SS <i>Rigmor Nielsen</i> .....	1	10	SS <i>Carl Meentzen</i> .....	---	17
<b>EL SALVADOR</b>			SS <i>Carl Trautwein</i> .....	---	3
SS <i>Avenus</i> .....	1	1	SS <i>Carpathia</i> .....	2	7
<b>FINLAND</b>			SS <i>Christiane Schulte</i> .....	1	11
SS <i>Degero</i> .....	1	---	SS <i>Cleopatra</i> .....	1	---
SS <i>Finn Sailor</i> .....	1	---	SS <i>Elise Schulte</i> .....	2	11
SS <i>Hamno</i> .....	---	1	SS <i>Emma Johanna</i> .....	---	9
SS <i>J. W. Paulin</i> .....	2	36	SS <i>Emsstein</i> .....	---	8
SS <i>Jytte Paulin</i> .....	3	25	SS <i>Erna Witt</i> .....	---	5
SS <i>Wiiri</i> .....	1	1	SS <i>Esperanza</i> .....	1	4
<b>FRANCE</b>			SS <i>Essenberg</i> .....	1	8
SS <i>Cavelier de la Salle</i> .....	---	9	SS <i>Ester Charlotte Schulte</i> .....	---	2
SS <i>Chicago</i> .....	1	---	SS <i>Fischbek</i> .....	---	1
SS <i>Cleveland</i> .....	1	6	SS <i>Ginnheim</i> .....	---	1
			SS <i>Gottingen</i> .....	---	6
			SS <i>Hanseatic</i> .....	---	18

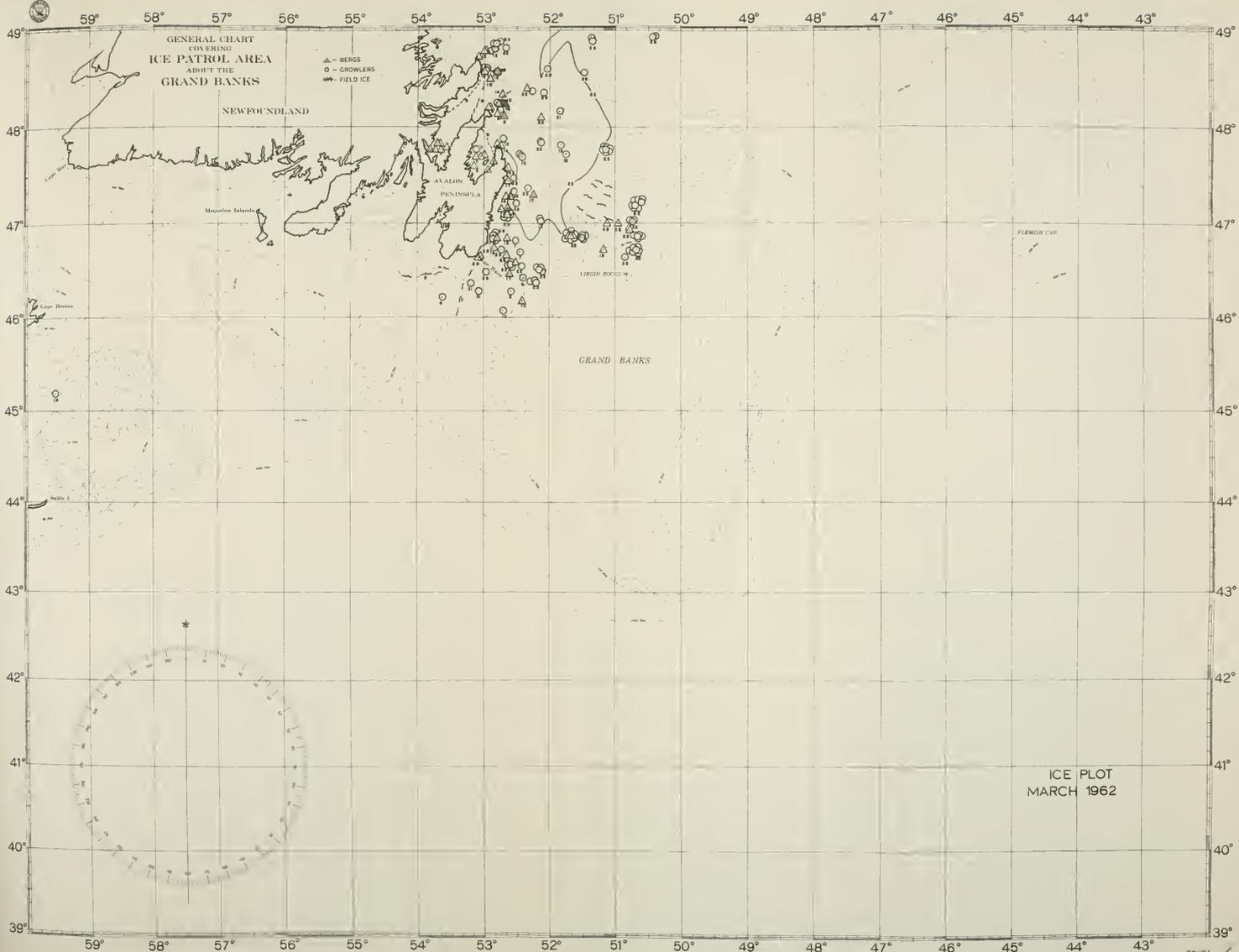


FIGURE 15.—Ice plot, March 1962. Figures indicate day of month ice was sighted or reported.



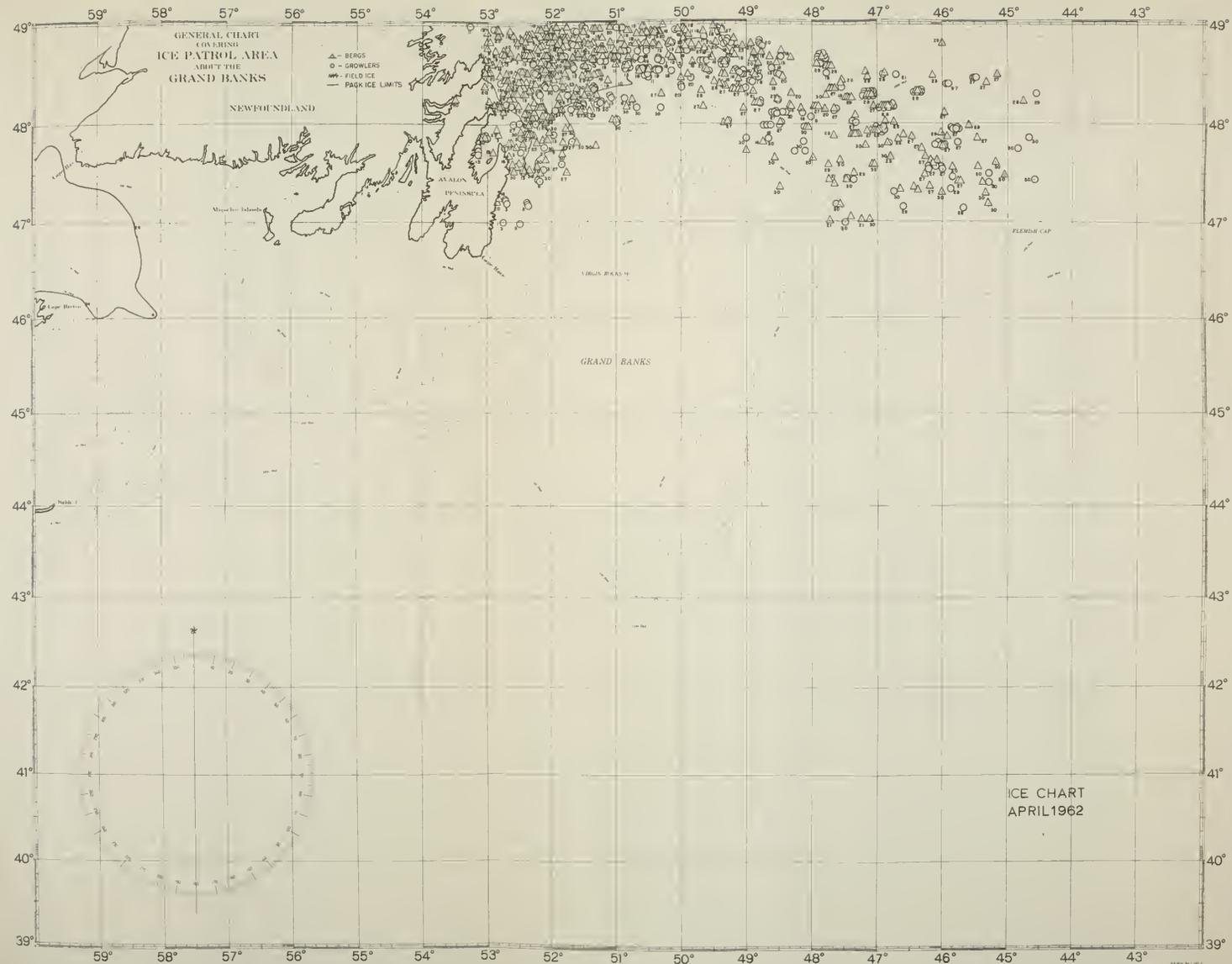


FIGURE 16.—Ice plot, April 1962. Figures indicate day of month ice was sighted or reported.



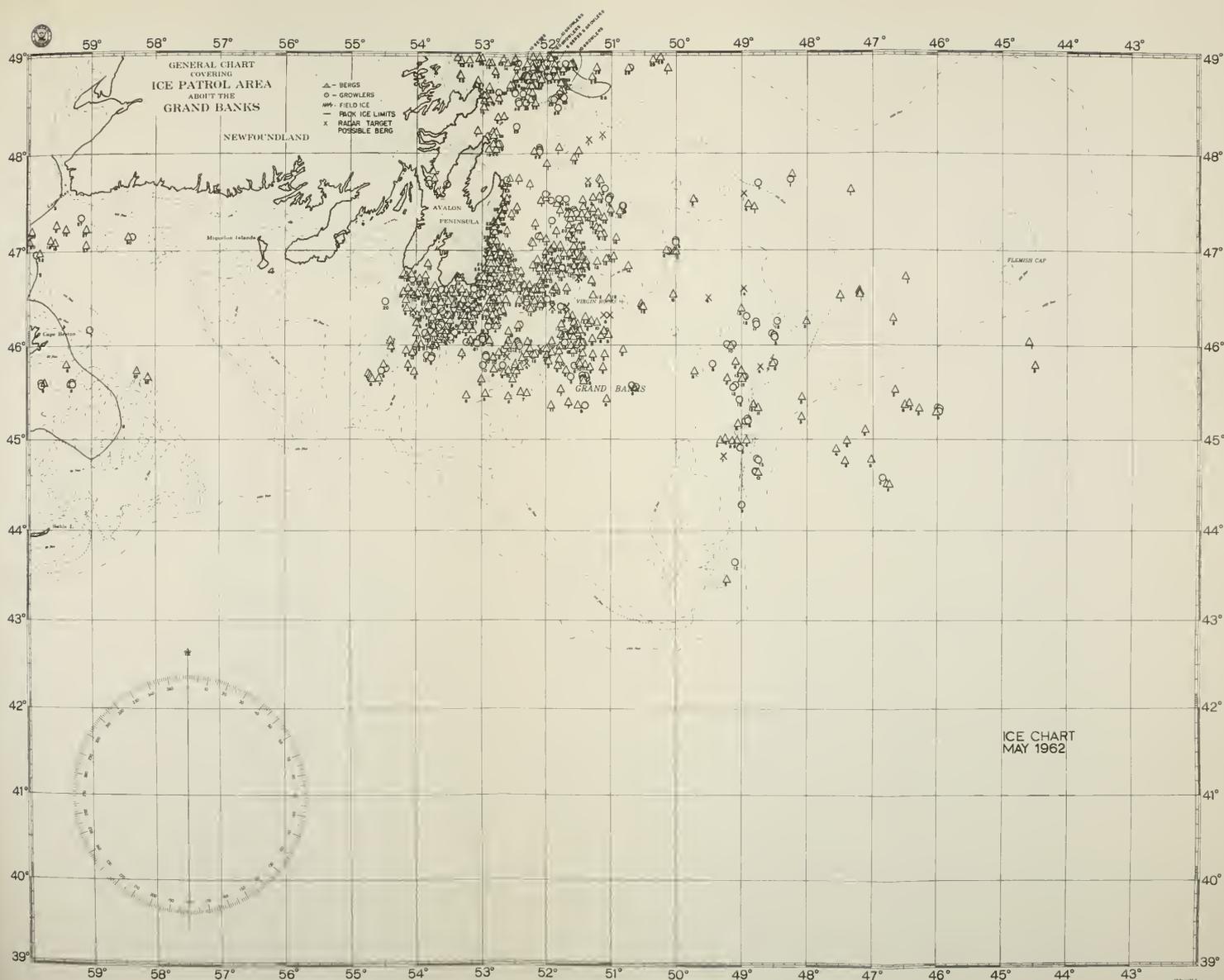


FIGURE 17.—Ice plot, May 1962. Figures indicate day of month ice was sighted or reported.



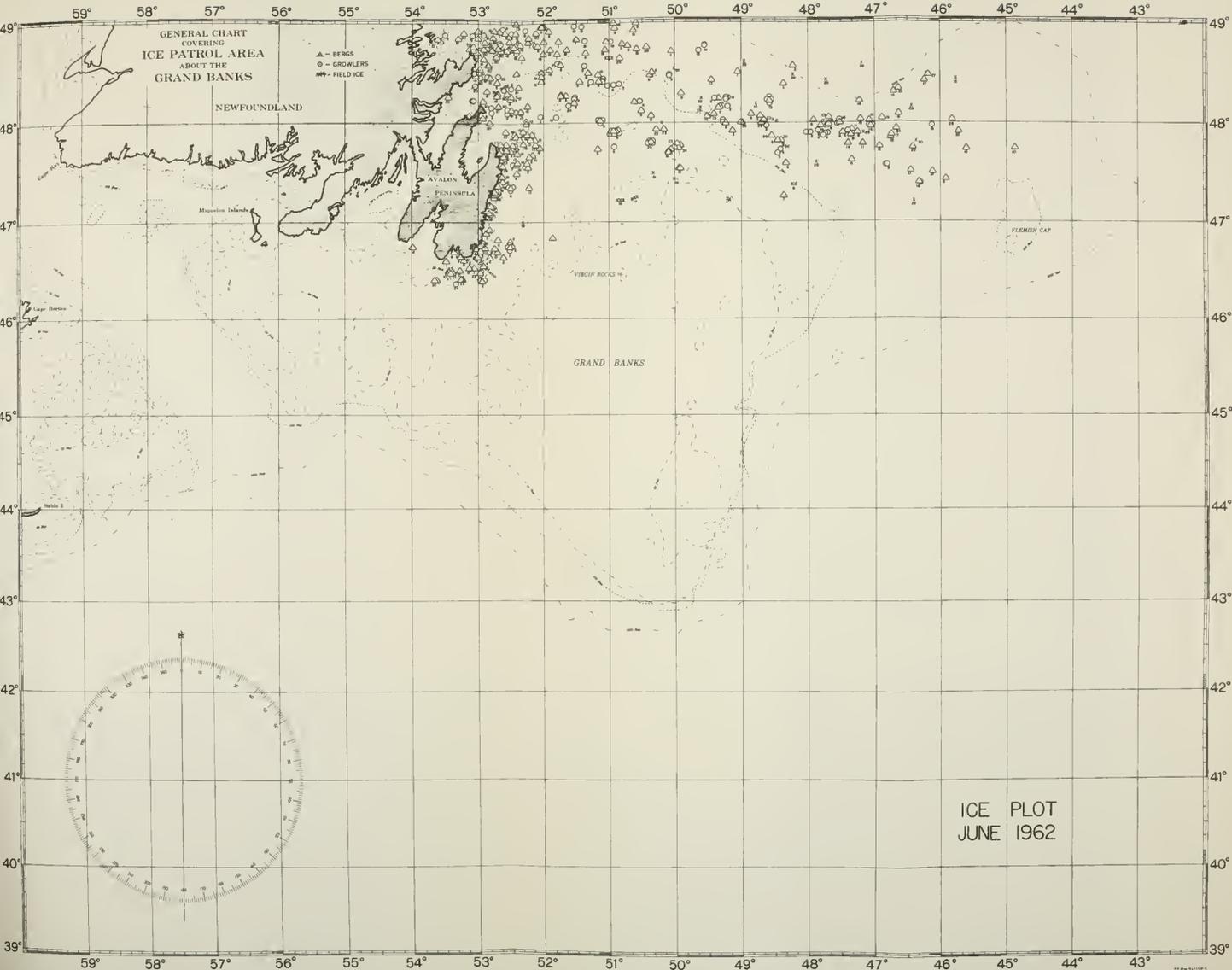


FIGURE 18.—Ice plot, June 1962. Figures indicate day of month ice was sighted or reported.



ICE AND SEA CONDITION REPORT—Continued

[By Country]

Vessel	Ice reports	Sea condition reports	Vessel	Ice reports	Sea condition reports
GERMANY—continued			GREECE—continued		
SS <i>Heinrich Schulte</i> .....	---	9	SS <i>Georgios Manolakis</i> .....	---	2
SS <i>Ingrid Weide</i> .....	2	5	SS <i>Hellenic Laurel</i> .....	---	9
SS <i>Indus</i> .....	---	1	SS <i>Kastor</i> .....	2	---
SS <i>Innstein</i> .....	---	18	SS <i>Mesologi</i> .....	---	18
SS <i>Kybfels</i> .....	---	2	SS <i>Nereus</i> .....	2	17
SS <i>Leada</i> .....	---	1	SS <i>North Lord</i> .....	---	5
SS <i>Lealott</i> .....	3	12	SS <i>North Page</i> .....	---	1
SS <i>Leanna</i> .....	2	27	SS <i>Olympos</i> .....	---	1
SS <i>Learina</i> .....	1	16	SS <i>Queen Frederica</i> .....	---	4
SS <i>Magdalena Olden-</i> <i>dorff</i> .....	3	3	SS <i>Yiannina</i> .....	---	2
SS <i>Magdeburg</i> .....	---	10	ICELAND		
SS <i>Maria Anna Schulte</i> .....	1	5	SS <i>Bruar Foss</i> .....	2	23
SS <i>Marie Leonhardt</i> .....	---	1	SS <i>Jokulfell</i> .....	---	20
SS <i>Marivia</i> .....	2	3	IRELAND		
SS <i>Martin Andersen</i> .....	---	5	SS <i>Irish Maple</i> .....	---	1
SS <i>Mathilde Bolten</i> .....	---	7	SS <i>Irish Oak</i> .....	2	4
SS <i>Mellum</i> .....	4	6	SS <i>Irish Pine</i> .....	4	19
SS <i>Methan</i> .....	---	1	SS <i>Irish Spruce</i> .....	---	2
SS <i>Muelheim-Ruhr</i> .....	4	23	ISRAEL		
SS <i>Naumburg</i> .....	---	5	SS <i>Beersheva</i> .....	---	11
SS <i>Ophelia</i> .....	---	1	SS <i>Dagan</i> .....	---	6
SS <i>Poseidon</i> .....	4	14	SS <i>Har Canaan</i> .....	---	1
SS <i>Rheinstein</i> .....	6	9	SS <i>Israel</i> .....	---	1
SS <i>Saarstein</i> .....	---	21	SS <i>Nahariya</i> .....	1	11
SS <i>S. Marien</i> .....	---	15	SS <i>Nurith</i> .....	1	25
SS <i>Schwanheim</i> .....	---	9	ITALY		
SS <i>Seven Seas</i> .....	2	17	SS <i>Aurelia</i> .....	---	19
SS <i>Susanne Fritzen</i> .....	1	1	SS <i>Cristoforo Colombo</i> .....	---	1
SS <i>Transeuropa</i> .....	2	17	SS <i>Emanuele V. Parodi</i> .....	---	2
SS <i>Transpacific</i> .....	2	4	SS <i>Maina Morasso</i> .....	---	5
SS <i>Uranus</i> .....	1	26	SS <i>Mar Cheto</i> .....	1	20
SS <i>Valeria</i> .....	2	4	SS <i>Mirto</i> .....	1	12
SS <i>Virginia</i> .....	---	3	SS <i>Punta Mesco</i> .....	---	14
SS <i>Weissenburg</i> .....	2	11	SS <i>Punta Vagno</i> .....	---	1
SS <i>Willi Huber</i> .....	1	2	SS <i>S. Isabella</i> .....	---	1
GREECE			SS <i>Saturnia</i> .....	---	29
SS <i>Arkadia</i> .....	7	22	SS <i>Sun Campanella</i> .....	1	1
SS <i>Armar</i> .....	1	4	SS <i>Sun Etna</i> .....	---	6
SS <i>Capt. Anastassis</i> .....	1	4	SS <i>Vulcania</i> .....	---	31
SS <i>Caspiana</i> .....	---	3	SS <i>Zenobia Martini</i> <i>Secondo</i> .....	---	10
SS <i>Costas Michalos</i> .....	---	1			
SS <i>Daphne</i> .....	---	1			
SS <i>Eirini L.</i> .....	---	1			
SS <i>Elena</i> .....	1	1			

ICE AND SEA CONDITION REPORT—Continued

[By Country]

Vessel	Ice reports	Sea condition reports	Vessel	Ice reports	Sea condition reports
JAPAN			NETHERLANDS—continued		
SS Akashisan Maru	----	1	SS Korendyk	----	28
SS Arita Maru	-----	3	SS Leto	-----	1
SS Colorado Maru	-----	3	SS Maasdam	-----	33
SS Hodakasan Maru	-----	3	SS Nieuw Amsterdam	-----	34
SS Musashisan Maru	-----	1	SS Nieuwe Tonge	-----	20
LIBERIA			SS Noordam	-----	40
SS Atholl McBean	-----	3	SS Ootmarsum	-----	2
SS Atlantic Baroness	-----	2	SS Prins F. Hendrik	-----	1
SS Devon	-----	1	SS Prins Johan Willem	-----	
SS Bordabere	-----	2	Frisco	-----	3
SS Carol	-----	2	SS Prins Willem II	-----	2
SS Cruzeiro do Sul	-----	6	SS Prins Willem III	-----	1
SS Electra	-----	1	SS Prins Willem V	-----	1
SS Farah Pahlavi	-----	5	SS Prins Willem	-----	
SS Hong Kong Clipper	-----	1	George Frederik	-----	1
SS Invicta	-----	2	SS Prinses Margriet	-----	3
SS Leonidas	-----	4	SS Rotterdam	-----	22
SS Madison Friendship	-----	3	SS Ryndam	-----	7
SS Olympia	-----	26	SS Salatiga	-----	4
SS Ore Venus	-----	1	SS Sarangan	-----	6
SS Paul Pigott	-----	10	SS Schiedyk	-----	14
SS Texaco Southampton	-----	8	SS Sloterdyk	-----	12
SS Transporter	-----	5	SS Sommelsdyk	-----	7
SS World Campaigner	-----	5	SS Statendam	-----	2
SS World Chieftain	-----	2	SS Westerdam	-----	23
NETHERLANDS			NORWAY		
SS Alca	-----	1	SS Arnfinn Stange	-----	2
SS Ackaar	-----	4	SS Bahia	-----	6
SS Akkrumkyk	-----	8	SS Beatrice	-----	13
SS Ampenan	-----	9	SS Beltana	-----	5
SS Arkeldyk	-----	2	SS Bergensfjord	-----	4
SS Banda	-----	3	SS Bindal	-----	12
SS Barendrecht	-----	1	SS Black Heron	-----	28
SS Bintang	-----	6	SS Borealis	-----	11
SS Colyto	-----	10	SS Borgholt	-----	19
SS Friesland	-----	1	SS Brott	-----	1
SS Gaasterdyk	-----	3	SS Bysanz	-----	1
SS Groole Beer	-----	11	SS Clio	-----	1
SS Johan Van	-----		SS Evita	-----	1
Oldenbarnevelt	-----	9	SS Favorita	-----	1
SS Kamperdyk	-----	9	SS Foldenfjord	-----	4
SS Karakorom	-----	1	SS Forra	-----	1
SS Katsedyk	-----	2	SS Havsul	-----	4
SS Kerkedyk	-----	3	SS Hoegh Favour	-----	4
SS Koratia	-----	7	SS Jarama	-----	1
			SS Jotunfjell	-----	1

ICE AND SEA CONDITION REPORT—Continued

[By Country]

Vessel	Ice reports	Sea condition reports	Vessel	Ice reports	Sea condition reports
NORWAY—continued			SUDAN		
SS <i>Leikanger</i> .....	1	1	SS <i>Tidaholm</i> .....	---	18
SS <i>Lyngenfjord</i> .....	1	1	SWEDEN		
SS <i>Mandeville</i> .....	---	4	SS <i>Alta</i> .....	---	5
SS <i>Matang</i> .....	---	1	SS <i>Amacita</i> .....	1	---
SS <i>Milross</i> .....	---	5	SS <i>Arizona</i> .....	1	16
SS <i>Nardo</i> .....	1	20	SS <i>Arvidsjaur</i> .....	1	7
SS <i>Nopal Branco</i> .....	---	4	SS <i>Atlantic Friend</i> .....	3	6
SS <i>Nordgard</i> .....	---	4	SS <i>Avajors</i> .....	---	11
SS <i>Oslofjord</i> .....	2	22	SS <i>Avasaksa</i> .....	---	6
SS <i>Rogn</i> .....	---	1	SS <i>Bernhard Ingelsson</i> .....	---	3
SS <i>Skiensfjord</i> .....	1	---	SS <i>Birgit Ragne</i> .....	---	9
SS <i>Stavangerfjord</i> .....	---	57	SS <i>Braheholm</i> .....	1	7
SS <i>Stolt Avenir</i> .....	1	1	SS <i>Buccanero</i> .....	---	8
SS <i>Svanefjell</i> .....	---	7	SS <i>Danaholm</i> .....	---	3
SS <i>Sunima</i> .....	---	1	SS <i>Eva Jeanette</i> .....	1	18
SS <i>Sun Karen</i> .....	---	11	SS <i>Fidelio</i> .....	1	1
SS <i>Synia</i> .....	1	4	SS <i>Fredrik Ragne</i> .....	1	---
SS <i>Templar</i> .....	1	---	SS <i>Gripsholm</i> .....	---	46
SS <i>Tennessee</i> .....	---	1	SS <i>Gunilla Billner</i> .....	2	15
SS <i>Thorshope</i> .....	---	1	SS <i>Husaro</i> .....	---	3
SS <i>Tobon</i> .....	---	3	SS <i>Kristina Thorden</i> .....	1	1
SS <i>Topdalsfjord</i> .....	4	18	SS <i>Kungsholm</i> .....	---	28
SS <i>Torvanger</i> .....	5	10	SS <i>Lisbeth</i> .....	1	10
SS <i>Troma</i> .....	2	1	SS <i>Luossa</i> .....	---	17
SS <i>Vesta</i> .....	---	3	SS <i>Minnesota</i> .....	---	4
PANAMA			SS <i>Monica Smith</i> .....	---	4
SS <i>Andros Hill</i> .....	1	1	SS <i>Nebraska</i> .....	---	6
SS <i>Aristides</i> .....	---	7	SS <i>Odensholm</i> .....	1	8
SS <i>Esso Colon</i> .....	---	1	SS <i>Otis</i> .....	5	20
SS <i>Esso Cuba</i> .....	---	3	SS <i>Rangeborg</i> .....	1	6
SS <i>Homeric</i> .....	15	64	SS <i>Rigoletto</i> .....	---	1
SS <i>Kori</i> .....	---	35	SS <i>Rudolph Andersson</i> .....	---	9
SS <i>Louise</i> .....	3	14	SS <i>Rydboholm</i> .....	---	3
SS <i>Nella</i> .....	---	2	SS <i>Soya Atlantic</i> .....	1	---
SS <i>South River</i> .....	1	---	SS <i>Stegesholm</i> .....	2	---
SS <i>Texaco Missouri</i> .....	3	6	SS <i>Svaneholm</i> .....	---	10
POLAND			SS <i>Torsholm</i> .....	---	12
SS <i>Batory</i> .....	5	45	SS <i>Tosca</i> .....	---	2
SS <i>Krynica</i> .....	---	3	SS <i>Vibyholm</i> .....	---	9
SS <i>Legnica</i> .....	1	3	SS <i>Virihaure</i> .....	2	9
SS <i>Polanica</i> .....	---	1	SS <i>Viris</i> .....	---	22
SPAIN			SS <i>Zelos</i> .....	---	1
SS <i>Mar Tirreno</i> .....	---	1	SWITZERLAND		
SS <i>Monte Urbasa</i> .....	---	1	SS <i>Castagnola</i> .....	---	7
			SS <i>Corviglia</i> .....	---	2

ICE AND SEA CONDITION REPORT—Continued

[By Country]

Vessel	Ice reports	Sea condition reports	Vessel	Ice reports	Sea condition reports
SWITZERLAND—continued			UNITED KINGDOM—continued		
SS <i>Nyon</i> .....	---	11	SS <i>City of Johannesburg</i> .....	---	3
SS <i>Regina</i> .....	---	69	SS <i>City of Philadelphia</i> .....	---	11
SS <i>Rigi</i> .....	---	22	SS <i>Clement</i> .....	1	9
UNITED ARAB REPUBLIC			SS <i>Colina</i> .....	1	19
SS <i>Salah El Din</i> .....	---	4	SS <i>Constance Bowater</i> .....	2	12
SS <i>Star of Assuan</i> .....	1	4	SS <i>Consuelo</i> .....	8	43
UNITED KINGDOM			SS <i>Crystal Bell</i> .....	1	4
SS <i>Alert</i> .....	---	1	SS <i>Crystal Crown</i> .....	4	10
SS <i>Alsatia</i> .....	5	28	SS <i>Cydonia</i> .....	1	1
SS <i>Alawmia</i> .....	---	8	SS <i>Cyrus Field</i> .....	8	3
SS <i>Andania</i> .....	---	6	SS <i>Dalhanna</i> .....	7	16
SS <i>Andria</i> .....	2	24	SS <i>Domino</i> .....	---	12
SS <i>Anna</i> .....	---	1	SS <i>Dorset Brook</i> .....	1	---
SS <i>Antigua</i> .....	---	1	SS <i>Dunadd</i> .....	1	36
SS <i>Arabia</i> .....	---	3	SS <i>Dundee</i> .....	3	1
SS <i>Arthur Albright</i> .....	---	2	SS <i>Edenmore</i> .....	---	3
SS <i>Ascanius</i> .....	---	2	SS <i>Egidia</i> .....	---	16
SS <i>Asia</i> .....	2	47	SS <i>Elizabeth Bowater</i> .....	6	2
SS <i>Assyria</i> .....	---	13	SS <i>Empress of Britain</i> .....	12	59
SS <i>Athelduke</i> .....	---	2	SS <i>Empress of Canada</i> .....	4	16
SS <i>Baron Minto</i> .....	1	10	SS <i>Empress of England</i> .....	14	23
SS <i>Beavercove</i> .....	4	10	SS <i>Finnamore Meadow</i> .....	3	7
SS <i>Beaverdell</i> .....	10	44	SS <i>Flowergate</i> .....	2	3
SS <i>Beaverford</i> .....	4	33	SS <i>Gilia</i> .....	---	2
SS <i>Beaverglen</i> .....	2	9	SS <i>Glanclj</i> .....	---	5
SS <i>Beaver Lake</i> .....	3	30	SS <i>Gloucester City</i> .....	1	1
SS <i>Beechmore</i> .....	---	17	SS <i>Goodwood</i> .....	1	1
SS <i>Beltinge</i> .....	---	1	SS <i>Graigfelen</i> .....	2	2
SS <i>Bideford</i> .....	---	7	SS <i>Hinakura</i> .....	---	14
SS <i>Birmingham City</i> .....	1	11	SS <i>Hinniles</i> .....	---	3
SS <i>British Monarch</i> .....	2	51	SS <i>Hudson Sound</i> .....	11	8
SS <i>British Soldier</i> .....	---	8	SS <i>Imperial Star</i> .....	---	9
SS <i>Cairngowan</i> .....	7	47	SS <i>Inishowen Head</i> .....	---	10
SS <i>Cairndhu</i> .....	4	42	SS <i>Inverfield</i> .....	1	7
SS <i>Calgaria</i> .....	3	16	SS <i>Isaac Carter</i> .....	---	4
SS <i>Caltex Kenya</i> .....	---	11	SS <i>Ivernia</i> .....	7	27
SS <i>Carinthia</i> .....	10	36	SS <i>Joya Mccance</i> .....	---	2
SS <i>Carrigan Head</i> .....	---	15	SS <i>King Malcolm</i> .....	2	30
SS <i>Caslon</i> .....	---	10	SS <i>La Estancia</i> .....	---	1
SS <i>Caxton</i> .....	7	58	SS <i>La Hacienda</i> .....	3	---
SS <i>Charlton Mira</i> .....	1	---	SS <i>La Loma</i> .....	---	16
SS <i>Cheviot</i> .....	2	2	SS <i>La Marca</i> .....	1	12
SS <i>City of Auckland</i> .....	3	10	SS <i>La Pradera</i> .....	3	30
SS <i>City of Birkenhead</i> .....	---	1	SS <i>Laurentia</i> .....	3	17
SS <i>City of Coventry</i> .....	---	4	SS <i>Letitia</i> .....	2	11
			SS <i>Lindisfarne</i> .....	6	8
			SS <i>Lismoria</i> .....	1	87

ICE AND SEA CONDITION REPORT—Continued

[By Country]

<i>Vessel</i>	<i>Ice reports</i>	<i>Sea condition reports</i>	<i>Vessel</i>	<i>Ice reports</i>	<i>Sea condition reports</i>
UNITED KINGDOM—continued			UNITED KINGDOM—continued		
SS <i>Lord Kelvin</i> .....	2	32	SS <i>Saint John</i> .....	---	8
SS <i>Manchester City</i> ....	2	12	SS <i>Salvada</i> .....	---	8
SS <i>Manchester Faith</i> ....	1	12	SS <i>Sandsend</i> .....	---	8
SS <i>Manchester Fame</i> ....	3	12	SS <i>Santona</i> .....	2	1
SS <i>Manchester Miller</i> ...	1	1	SS <i>Sarah Bowater</i> .....	---	8
SS <i>Manchester Mariner</i> ..	1	23	SS <i>Sazonia</i> .....	13	57
SS <i>Manchester Merchant</i> .....	1	8	SS <i>Sherbro</i> .....	1	---
SS <i>Manchester Pioneer</i> ..	4	33	SS <i>Sidonia</i> .....	---	16
SS <i>Manchester Port</i> ....	2	8	SS <i>Southern Prince</i> ....	2	7
SS <i>Manchester Progress</i> ..	1	2	SS <i>Spenser</i> .....	---	13
SS <i>Manchester Regiment</i> .....	2	13	SS <i>Sunek</i> .....	---	1
SS <i>Manchester Shipper</i> ..	4	31	SS <i>Sun Rip</i> .....	---	12
SS <i>Manchester Spinner</i> ..	1	3	SS <i>Sussex</i> .....	5	14
SS <i>Manchester Trader</i> ..	1	23	SS <i>Sylvania</i> .....	---	22
SS <i>Manchester Vanguard</i> .....	4	10	SS <i>Telemachus</i> .....	---	2
SS <i>Mangla</i> .....	---	5	SS <i>Toronto City</i> .....	---	6
SS <i>Marengo</i> .....	3	28	SS <i>Torr Head</i> .....	3	8
SS <i>Mauretania</i> .....	---	3	SS <i>Tremorva</i> .....	2	2
SS <i>Montcalm</i> .....	---	12	SS <i>Trinculo</i> .....	1	42
SS <i>Montrose</i> .....	1	8	SS <i>Tynemouth</i> .....	1	---
SS <i>Naess Pioneer</i> .....	---	1	SS <i>Vexilla</i> .....	---	11
SS <i>Naess Clarion</i> .....	3	6	SS <i>Warkworth</i> .....	1	2
SS <i>Newfoundland</i> .....	10	33	SS <i>Wairangi</i> .....	---	5
SS <i>Nina Bowater</i> .....	---	7	SS <i>Western Prince</i> ....	3	7
SS <i>Nottingham</i> .....	3	9	SS <i>Weybridge</i> .....	1	8
SS <i>Nova Scotia</i> .....	1	2	SS <i>Wharanui</i> .....	4	6
SS <i>Perang</i> .....	3	3	SS <i>Wrkingham</i> .....	---	2
SS <i>Perim</i> .....	3	1	SS <i>Yorkshire</i> .....	---	10
SS <i>Phyllis Bowater</i> ....	6	14	SS <i>Yorkwood</i> .....	1	6
SS <i>Port Alfred</i> .....	---	2	SS <i>Zinnia</i> .....	3	3
SS <i>Port Jackson</i> .....	3	11	UNION OF SOVIET SOCIALIST REPUBLICS		
SS <i>Prospero</i> .....	---	11	SS <i>Ecnilgbuet</i> .....	1	---
SS <i>Queen of Bermuda</i> ....	---	14	SS <i>Kandagach</i> .....	---	2
SS <i>Queen Mary</i> .....	---	36	UNITED STATES OF AMERICA		
SS <i>Rakaia</i> .....	---	15	SS <i>Aldersgate</i> .....	2	7
SS <i>Ramore Head</i> .....	3	15	SS <i>America</i> .....	---	62
SS <i>Rembrandt</i> .....	1	6	SS <i>American Angler</i> ....	---	2
SS <i>Rialto</i> .....	3	15	SS <i>American Archer</i> ....	---	3
SS <i>Rievaulx</i> .....	1	4	SS <i>American Banker</i> ....	---	8
SS <i>Ripon</i> .....	---	2	SS <i>American Builder</i> ...	1	67
SS <i>Rocket</i> .....	---	8	SS <i>American Chief</i> ....	---	67
SS <i>Roonagh Head</i> .....	---	6	SS <i>American Clipper</i> ....	---	17
SS <i>Sacramento</i> .....	2	7	SS <i>American Farmer</i> ....	---	3
SS <i>Saint Merriel</i> .....	1	4	SS <i>American Flyer</i> ....	---	44



ICE AND SEA CONDITION REPORT—Continued

[By Country]

<i>Vessel</i>	<i>Ice reports</i>	<i>Sea condition reports</i>	<i>Vessel</i>	<i>Ice reports</i>	<i>Sea condition reports</i>
U.S. GOVERNMENT:			U.S. NAVAL SERVICE (USNS)		
COAST GUARD					
USCGC <i>Absecon</i> .....	1	27	USNS <i>Blue Jacket</i> .....	---	45
USCGC <i>Bibb</i> .....	19	70	USNS <i>Bondia</i> .....	4	12
USCGC <i>Eagle</i> .....	---	24	USNS <i>Comet</i> .....	---	28
USCGC <i>Casco</i> .....	6	33	USNS <i>Eltanin</i> .....	---	23
USCGC <i>Castle Rock</i> ...	7	26	USNS <i>Geiger</i> .....	---	75
USCGC <i>Chincoteague</i> ...	13	38	USNS <i>Gen. Alex Patch</i> ..	---	54
USCGC <i>Cook Inlet</i> ....	1	20	USNS <i>Gen. Maurice</i>		
USCGC <i>Coos Bay</i> ....	4	21	<i>Rose</i> .....	---	91
USCGC <i>Duane</i> .....	1	31	USNS <i>Gen. Simon</i>		
USCGC <i>Escanaba</i> .....	---	19	<i>Buckner</i> .....	---	62
USCGC <i>Evergreen</i> .....	26	454	USNS <i>Gen. S. H. Gordon</i>		
USCGC <i>Half Moon</i> ...	3	19	<i>don</i> .....	---	77
USCGC <i>Ingham</i> .....	---	9	USNS <i>Gen. W. O.</i>		
USCGC <i>Mackinac</i> ....	18	31	<i>Darby</i> .....	---	69
USCGC <i>McCulloch</i> ....	8	33	USNS <i>Greenville Vic-</i>		
USCGC <i>Owasco</i> .....	---	15	<i>tory</i> .....	3	11
USCGC <i>Rockaway</i> ....	4	31	USNS <i>Lt. R. Craig</i> ....	---	6
USCGC <i>Spencer</i> .....	4	34	USNS <i>Mirfak</i> .....	8	9
USCGC <i>Westwind</i> ....	2	3	USNS <i>Pecos</i> .....	1	---
			USNS <i>Pvt. Francis X.</i>		
			<i>McGraw</i> .....	1	---
			USNS <i>Sgt. Kelley</i> ....	3	47
			USNS <i>Taurus</i> .....	---	21
			USNS <i>Upshur</i> .....	---	1
			USNS <i>Point Barrow</i> ...	---	1
NAVY					
USS <i>Chewaucen</i> .....	---	22			
USS <i>Lorain County</i> ....	---	6			
USS <i>Roy O. Hale</i> .....	---	10			



## PHYSICAL OCEANOGRAPHY OF THE GRAND BANKS REGION, THE LABRADOR SEA AND DAVIS STRAIT IN 1962<sup>1</sup>

By Floyd M. Soule, Alfred P. Franceschetti, R. M. O'Hagan and V. W. Driggers  
(U.S. Coast Guard)

For the 1962 field work the USCGC *Evergreen* was again designated as the oceanographic vessel of the International Ice Patrol. The *Evergreen* is a 180-foot tender-class cutter and descriptions of the arrangement of the facilities for oceanographic work will be found in earlier bulletins of this series. No significant changes were made either in the laboratory or deck gear or in such vessel characteristics as affect the oceanographic work. Stainless steel wire rope is now being used on both oceanographic winches.

The *Evergreen* departed Argentia, Newfoundland, on 30 March to conduct the first survey of the 1962 season. The survey covered the waters over and immediately seaward of the southern and eastern slopes of the Grand Banks from just westward of the Tail of the Banks northward to the latitude of Flemish Cap. En route to the first oceanographic station, three Richardson current meters were moored along a line roughly normal to the axis of the Labrador Current at about latitude 45°20' N., 50 meters below the surface in water depths of 47.5, 320 and 900 fathoms respectively. The work of collection of data began on 1 April at station 7951 located off the southwestern slope of the banks and progressed from south to north without major interruption. On April 13, the final station, No. 8036 was completed and the *Evergreen* proceeded to Argentia, arriving there on the afternoon of 16 April.

The second survey covered the waters over and immediately seaward of the northeastern slope of the Grand Banks from Flemish Cap northwestward and included an occupation of the Bonavista triangle. The work of collection of data began on 26 April at Flemish Cap and progressed northwestward to the Bonavista triangle, being completed on 5 May at station 8115. Twenty-eight hours were lost on 1 and 2 May while hove to in a gale. Upon completion of this survey, the *Evergreen* was dispatched to the Tail of the Banks to search for a reported iceberg. After an unsuccessful search the vessel was released for return to Boston, Mass.

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<sup>1</sup> To be reprinted as contribution No. 1369 in the Collected Reprints of the Woods Hole Oceanographic Institution.

A third survey similar to the first, and a fourth survey similar to the second were conducted as one survey. The work of collection of data began on 23 May and progressed from south to north to a point north-northwest of Flemish Cap at station 8218 where the survey was temporarily halted while the *Evergreen* proceeded to St. Johns, Newfoundland. After a 24 hour stay the *Evergreen* left St. Johns and proceeded to the next station, No. 8219, to complete the fourth survey with a total time loss of 76 hours between the two stations. The survey was completed on 13 June at station 8269, whereupon the *Evergreen* returned to Boston, Mass. During the course of the third survey the *Evergreen* diverted from section T to retrieve the moored current meters of which only two were recovered.

A postseason survey was planned to include, in addition to the normal occupation of the Bonavista triangle and Labrador Sea section from South Wolf Island, Labrador, to Cape Farewell, Greenland, a longitudinal section through Davis Strait from the Labrador Sea section to southern Baffin Bay with a transverse section in the Labrador Sea from Loks Land to Fyllas Bank and a transverse section in Baffin Bay from Cape Henry Kater to the Nugssuag Peninsula. The *Evergreen* arrived at the first station, No. 8270, on 9 July and commenced taking oceanographic stations. The Bonavista triangle was completed on 12 July and the *Evergreen* then proceeded to South Wolf Island where the work of collection of data on the Labrador Sea section was begun at station 8300 on the following day. In addition to the normal work of collecting temperature and salinity data on the Labrador Sea and Davis Strait sections, oxygen determinations were made for all depths at all stations occupied excluding surface water, with a total of 1,858 determinations being made using a modification of the Winkler method. A total of 595 water samples were also collected and frozen in 8-ounce polyethylene bottles for the determination of nitrate, nitrite, silicate and phosphate content by the Woods Hole Oceanographic Institution. Completion of the Labrador Sea section was accomplished on 17 July with station 8323 at Cape Farewell, Greenland. The *Evergreen* then proceeded to station 8324 located at  $58^{\circ}04' N.$ ,  $49^{\circ}25' W.$ , and began the longitudinal section. Stations were occupied in a northwest direction to station 8332, located at  $62^{\circ}48' N.$ ,  $56^{\circ}15' W.$  The *Evergreen* then interrupted the longitudinal section to run the transverse section from North Foreland on Hall Island off Loks Land near Frobisher Bay, Baffin Island, in an easterly direction to station 8349, located near Ravne Island off Godthaab, Greenland. The *Evergreen* then proceeded to station 8350 located at  $63^{\circ}58' N.$ ,  $56^{\circ}52' W.$  and station occupation was again resumed in a northerly direction to station 8368 located at  $69^{\circ}15' N.$ ,  $62^{\circ}45' W.$  The *Evergreen* then proceeded to station 8369 located off Cape Henry Kater on Baffin Island and ran the transverse section in an easterly direction to the last station of the survey, No.

8386, located off the Nugssuag Peninsula of Greenland. After taking the last station, on 28 July, the *Evergreen* proceeded to Woods Hole, Mass., arriving on 6 August. Some time was lost because of heavy pack ice off the coast of Baffin Island at Loks Land, Cape Dyer, and Cape Henry Kater but no time was lost due to bad weather. There were some slowdowns because of heavy fog in areas known to contain icebergs and growlers.

The oceanographic work was under the supervision of oceanographer Alfred P. Franceschetti who was assisted by Lt. R. M. O'Hagan and Lt. V. W. Driggers. Other assistants in the observational work and reduction of data included R. C. Norris, aerographer's mate chief; F. N. Brown, yeoman first class; R. A. Lindsay, aerographer's mate second class; J. A. Senefelder, aerographer's mate third class and R. F. Hansen, aerographer's mate third class.

Temperature and salinity observations were made at each of the 436 stations. At the 87 stations included in the Labrador Sea, Davis Strait and Baffin Bay sections, the observations extended from the surface to as near the bottom as was practicable. At the remaining stations, the observations were limited to the upper 1500 meters. The intended depths of observations in meters, were 0, 25, 50, 75, 100, 150, 200, 300, 400, 600, 800, 1000, and thence by 500 meters intervals.

Temperatures were measured with protected deep-sea reversing thermometers, mostly of Richter & Wiese manufacture, but with some manufactured by Negretti & Zambra, G.M. Manufacturing Co. and Kahl Scientific Instrument Corp. Depths of observation are based on unprotected reversing thermometers made by Richter & Wiese and by Kahl Scientific Instrument Corp. As in previous years, a program of intercomparison of protected thermometers was carried out in the field measurements. The thermometers were used in pairs and one of each pair was shifted periodically so that a given thermometer eventually was paired with a number of other thermometers. From a total of 3,019 intercomparisons, the standard deviation between the corrected readings of a pair of protected thermometers was  $\pm 0.009^{\circ}$  C. Of these comparisons, 2,645 involved thermometers having a range of  $-2^{\circ}$  to  $+8^{\circ}$  with a standard deviation of  $\pm 0.009^{\circ}$  C., 294 comparisons between thermometers of range  $-2^{\circ}$  to  $+20^{\circ}$  or greater gave a standard deviation of  $\pm 0.014^{\circ}$  C. and 76 comparisons were between thermometers with a range of  $+3^{\circ}$  to  $+13^{\circ}$  and gave a standard deviation of  $\pm 0.007^{\circ}$  C. As most of the observed temperatures listed in the Table of Oceanographic Data are means of the corrected readings of a pair of thermometers and as many of the thermometers had recent ice point determinations, it is considered that the tabulated observed temperatures are good to  $\pm 0.01^{\circ}$  C.

In January 1962, the oceanographic unit received an inductive salinometer (Australian salinity bridge) that had been designed by N. L. Brown and B. V. Hamon at Commonwealth Scientific Industrial Research Organization in Sydney, Australia, and was constructed by Industria Manufacturing Engineers Pty. Ltd. also in Sydney. Modifications were made here to the siphon system to facilitate operation and allow a more thorough flushing of the cell but time did not permit more than a few comparisons to be made between the inductive salinometer and the Coast Guard Wenner bridge prior to departing on the *Evergreen* in March for the 1962 season of oceanographic work. Additional comparisons were made at sea from duplicate samples taken at random, standardizing the inductive salinometer with Copenhagen water of batch P<sub>29</sub> which was the same technique as was used at Woods Hole. The inductive salinometer performed erratically during all tests with readings drifting and minute bubbles present in the cell. During the middle of May when the *Evergreen* was in Boston, the inductive salinometer was further modified by the isolation of the stirring motor, which had a tendency to overheat, from the cell and a reduction of the impeller speed by approximately 80 percent. This modification eliminated the bubbles but not the drifting. It is believed that the temperature compensation was not adequate for the larger differences in temperature between the cell and sample, encountered under field conditions in the *Evergreen* laboratory.

As in past years, salinities were predominantly measured with a Wenner salinity bridge. Prior to the beginning of the field work, two check runs were made to verify the calibration curve using samples which had been stored in glass for 2 years after the precise chlorinity determinations made in February 1960. No significant change in the calibration curve was observed. In the field measurements, the bridge was standardized with sea water from an oil-sealed carboy. Copenhagen standard water of batch P<sub>29</sub> was measured as unknown twice during each salinity run. At the end of each survey, these measurements were used to correct the tentative value of the salinity of the oil-sealed carboy which had been used as a substandard of salinity and to determine the corrections to the salinities for the survey. The corrections indicated were as follows: first survey  $+0.00_2^{\circ}/_{\infty}$ ; second survey  $+0.00_8^{\circ}/_{\infty}$ ; third survey  $+0.00_8^{\circ}/_{\infty}$ ; fourth survey  $+0.00_2^{\circ}/_{\infty}$ ; postseason Bonavista triangle  $+0.01_8^{\circ}/_{\infty}$ ; Labrador Sea section  $+0.00_2^{\circ}/_{\infty}$ ; the longitudinal section through station 8346 at 100m depth  $-0.00_1^{\circ}/_{\infty}$ ; and from 150m depth at station 8346 to station 8365  $+0.00_1^{\circ}/_{\infty}$ . Difficulties with the Wenner bridge during the longitudinal section of the postseason survey necessitated the termination of shipboard salinity measurements and the storage of water samples for the later determination of salinity at Woods Hole. As there were a limited number of citrate bottles the majority of the samples were stored in some of the polyethylene bottles originally

reserved for the collection of samples to be frozen for the later determination of nitrate, nitrite, silicate, and phosphate content by the Woods Hole Oceanographic Institution. Upon return to Woods Hole, the Wenner bridge was completely overhauled and restandardized.

Two samples each for salinity were drawn and stored in polyethylene bottles for the 300 meters and 400 meters depths at station 8365 and all depths from station 8366 to the end of the postseason survey. In September the paired samples were run on both the Coast Guard Wenner bridge and the inductive salinometer, all samples being at a room temperature of approximately 25° C. One polyethylene bottle did not hold sufficient water for measurements to be made on both the Wenner bridge and the inductive salinometer so that the comparisons of salinities between both instruments were based entirely on samples of the same water stored in different bottles. Both instruments were standardized with the same carboy water and on this basis the inductive salinometer averaged 0.003<sub>5</sub>‰ lower than the Wenner bridge and had a standard deviation of 0.019‰. Thus with the samples apparently at temperature equilibrium and a relatively warm room temperature the performance of the inductive salinometer was far superior to that when at sea on the *Evergreen*. Samples that were too fresh for the Wenner bridge (excluding two relatively fresh samples that were measured on the Woods Hole Oceanographic Institutions Wenner bridge) were measured on the inductive salinometer. The values of salinity for the remainder of the samples stored in polyethylene bottles were determined by averaging the values obtained from both the Wenner bridge and the inductive salinometer.

Sea water stored in polyethylene bottles such as those used by this unit undergoes changes arising from the permeability of the polyethylene walls. R. A. Cox (1954),<sup>2</sup> using pure water, has shown polyethylene to be permeable to water, whereas V. Romanovsky (1954),<sup>3</sup> using sea water, indicated that the permeability was to the solution. A third point of view is that under field conditions the exterior of the bottle would become contaminated with salt water; these salts on the exterior of the bottle, under conditions of a high relative humidity, might create an osmotic effect which could result in either a concentration or a dilution of the sample inside. In the absence of more definite information and in the light of observations by Cox and Romanovsky, we consider that mean changes in the salinity of our samples stored in polyethylene bottles were of the order of twice the variation between the pair of samples measured at the end of the 2 months, storage period. Since the standard deviation of the pairs is  $\pm 0.019$ ‰

<sup>2</sup> Roland A. Cox, Water Transmission of Polythene Bottles, *Journal Du Conseil International Pour L'Exploration De La Mer*, Vol. XIX, No. 3, 1954, 19, p. 297-300.

<sup>3</sup> V. Romanovsky, Conservation Des Echantillons D'Eau De Mer Dans Des Flacons En Polyethylene, *Travaux Du Centre De Recherches Et D'Etudes Oceanographiques*, Vol. 1, No. 12, December 1954, p. 1-3.

we propose an uncertainty in salinity of  $0.04\text{‰}$  for these tabulated values.

Necessary corrections have been applied to the tabulated values appearing in the Table of Oceanographic Data and have been considered in the construction of the dynamic topographic charts. Temperature control of the samples in the electrolytic cells of the Coast Guard's Wenner bridge limit the precision of the individual measurements to  $0.005\text{‰}$ . In view of the precise chlorinity determinations of February 1960 and the check runs on the calibration curve, it would appear that the salinities measured with the Coast Guard Wenner bridge were measured with an accuracy of about  $\pm 0.005\text{‰}$ .

Dissolved oxygen determinations were conducted as in 1961 according to the method described by Jacobsen, J. P., et al.<sup>4</sup> as modified slightly by the Woods Hole Oceanographic Institution.<sup>5</sup> Samples for dissolved oxygen were taken at all levels except the surface at stations 8300 through 8378 and at all levels, including the surface, at stations 8379 through 8386. Nansen type water bottles with teflon-coated interiors were used for sampling, with the exception of the 591 meter level at station 8307 where a silver-lined Nansen bottle was used. The samples were chemically treated and stored until analysis in 150-milliliter glass bottles for stations 8300 through 8352, 8355, 8360, 8364, and 8368; 275-milliliter glass bottles were used for the remainder of the stations. The sodium thiosulfate solution was standardized daily with a previously prepared potassium bi-iodate solution. Aliquot samples of the treated sea water were withdrawn by a 50-ml automatic pipette and titrations were made with a 10-ml burette. The precision is generally considered to be  $\pm 0.03$  ml/liter; however values marked ? in the tables are somewhat questionable and the dissolved oxygen content for these values is considered to be accurate only to  $\pm 0.10$  ml/liter.

Saturation values were determined from the nomograms of Richards and Corwin,<sup>6</sup> which is based on the oxygen saturation values of Truesdale, et al.<sup>7</sup> Since this nomogram is constructed for a minimum temperature of only  $0^{\circ}\text{C}$ ., it was necessary to extrapolate the nomogram for the many negative temperatures found. Some personnel of the Woods Hole Oceanographic Institution now question the validity of Truesdale's values and believe the tables prepared by Fox<sup>8</sup> to be

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<sup>4</sup> Jacobsen, J. P., Rex J. Robinson and Thomas G. Thompson. A review of the determination of dissolved oxygen in sea water by the Winkler method. Union Geodes. et Geophys. Int., Assoc. d'Océanog. Phys., Pub. Scientif. No. 11, 1950.

<sup>5</sup> Personal communication from Dayton E. Carritt.

<sup>6</sup> Richards, Francis A. and Nathaniel Corwin. Some oceanographic applications of recent determinations of the solubility of oxygen in sea water. *Limnol. and Oceanog.*, Vol. 1, pp. 263-267, 1956.

<sup>7</sup> Truesdale, G. A., A. L. Downing and G. F. Lowden. The solubility of oxygen in pure water and sea water. *J. Appl. Chem.*, Vol. 5(2), pp. 53-62, 1955.

<sup>8</sup> Fox, C. J. J. On the coefficients of absorption of nitrogen and oxygen in distilled water and sea water and of atmospheric carbonic acid in sea water. *Faraday Soc. Trans.*, Vol. 5, pp. 68-87, 1909.

closer to the true values. As a basis for comparison, the oxygen solubilities for the Labrador-Greenland section were determined by both the nomogram of Kalle,<sup>9</sup> which is based on the solubility values of Fox, and the nomogram of Richards and Corwin. Percent saturation values obtained by both methods were plotted for the section profile; although the absolute values differed, the relative picture remained essentially unchanged. Since more definitive solubility information concerning this controversy is lacking and furthermore since 1961 oxygen solubilities were based on the Truesdale et al. data, all oxygen solubilities for 1962 are likewise based on Truesdale, et al. data.

Figures 19 through 23 show chronologically the dynamic topography found during the four surveys made during the season and the post-season occupation of the Bonavista triangle. As in past years the reference surface used was that of 1,000 decibars. The topography found during the first survey, figure 19, shows a well defined Labrador Current for the full length of the surveyed area, with a westward set onto the Banks south of  $44^{\circ}$  N. The higher dynamic heights at stations 7988 through 7993 are caused by the lower salinity water found there. South of the Grand Banks the survey does not extend far enough west to define the longitude where the Labrador Current curves south and eastward. Cold mixed water extends southward to about the southern limit of the survey near  $49^{\circ}$  W. An intrusion of warmer Atlantic Current water into the area of mixed water at  $44^{\circ}$  N.,  $47^{\circ}30'$  W., is to be noted. Eastward of this, at about  $46^{\circ}30'$  W., a narrow tongue of colder mixed water extends southward beyond  $43^{\circ}$  N. At the eastern edge of the surveyed area the northwestern margin of the Atlantic Current turns eastward at about  $45^{\circ}$  N.

Figure 20, representing conditions found during the second survey, shows approximately average heights at Cape Bonavista and at the offshore corner of the Bonavista triangle (stations 8086 and 8115). The axis of the Labrador Current, however, is not as far offshore as is usual in the triangle. Characteristically, the Labrador Current bends sharply southward just west of the channel between the Grand Banks and Flemish Cap. Very little relief in the surface topography is to be found in the northeastern part of the surveyed area. The pattern found along the southwestern leg of the Bonavista triangle appears normal for this area at this time of the year. Bergs entering from the northwest between about longitudes  $50^{\circ}$  and  $51^{\circ}50'$  W., would most likely be carried by the eastern branch of the Labrador Current into the southern section.

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<sup>9</sup> Kalle, Kurt. Einige Verbesserungen zur Bestimmung des gelösten Sauerstoffs in Meerwasser. *Annalen der Hydrogr.* Vol. 67, pp. 267-269, 1939.

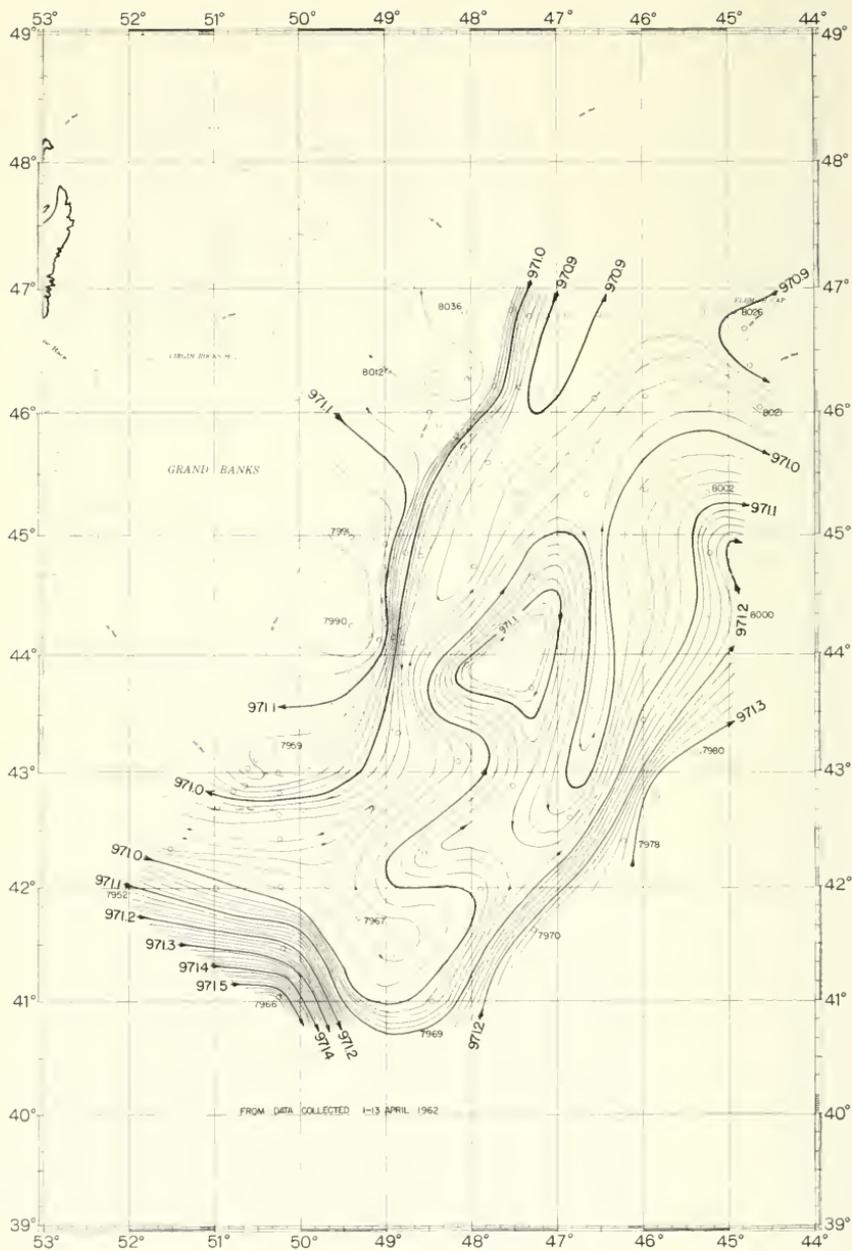


FIGURE 19.—Dynamic topography of the sea surface relative to the 1000-decibar surface, from data collected 1-13 April 1962. Oceanographic station positions are indicated and the station numbers given at turning points.



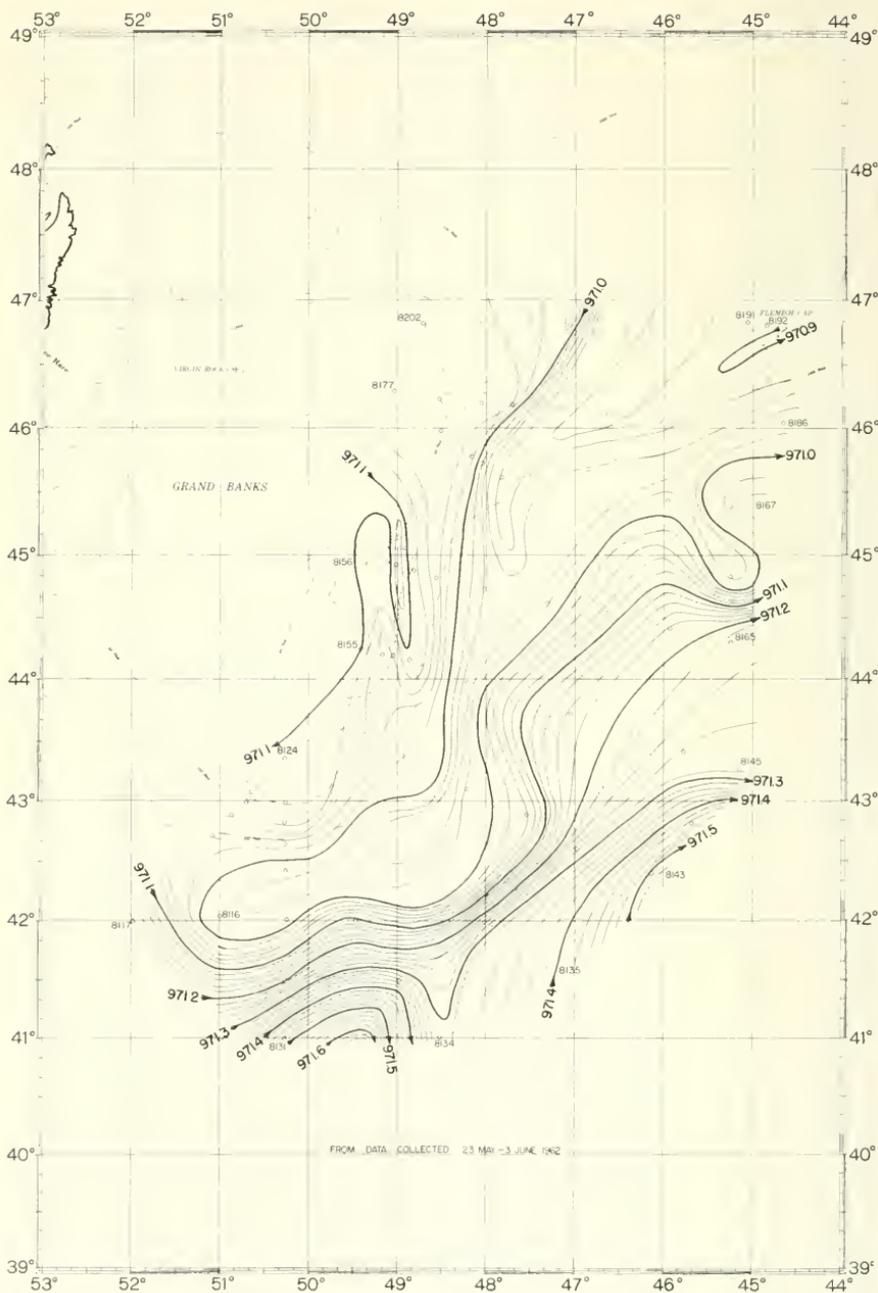


FIGURE 21.—Dynamic topography of the sea surface relative to the 1000-decibar surface from data collected 23 May–3 June 1962. Oceanographic station positions are indicated and the station numbers given at turning points.

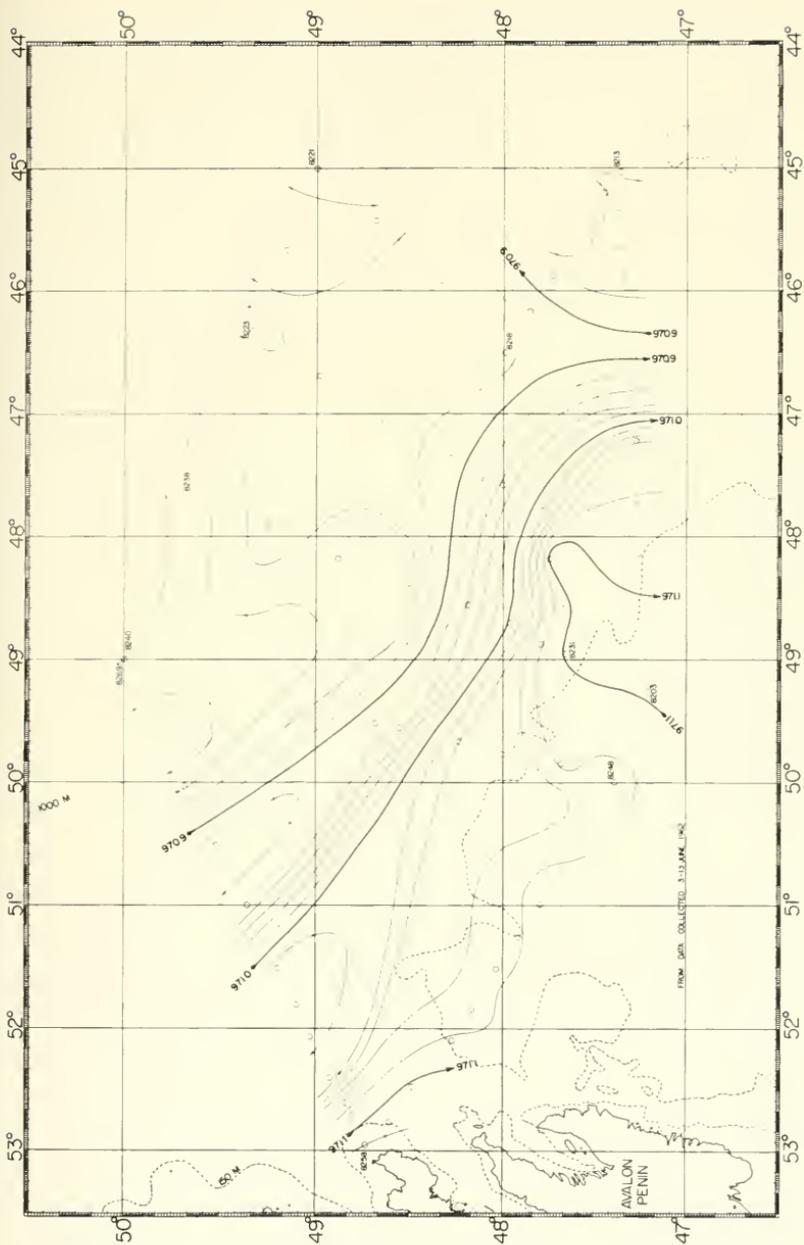


FIGURE 22.—Dynamic topography of the sea surface relative to the 1000-decibar surface from data collected 3-13 June 1962. Oceanographic station positions are indicated and the station numbers given at turning points.

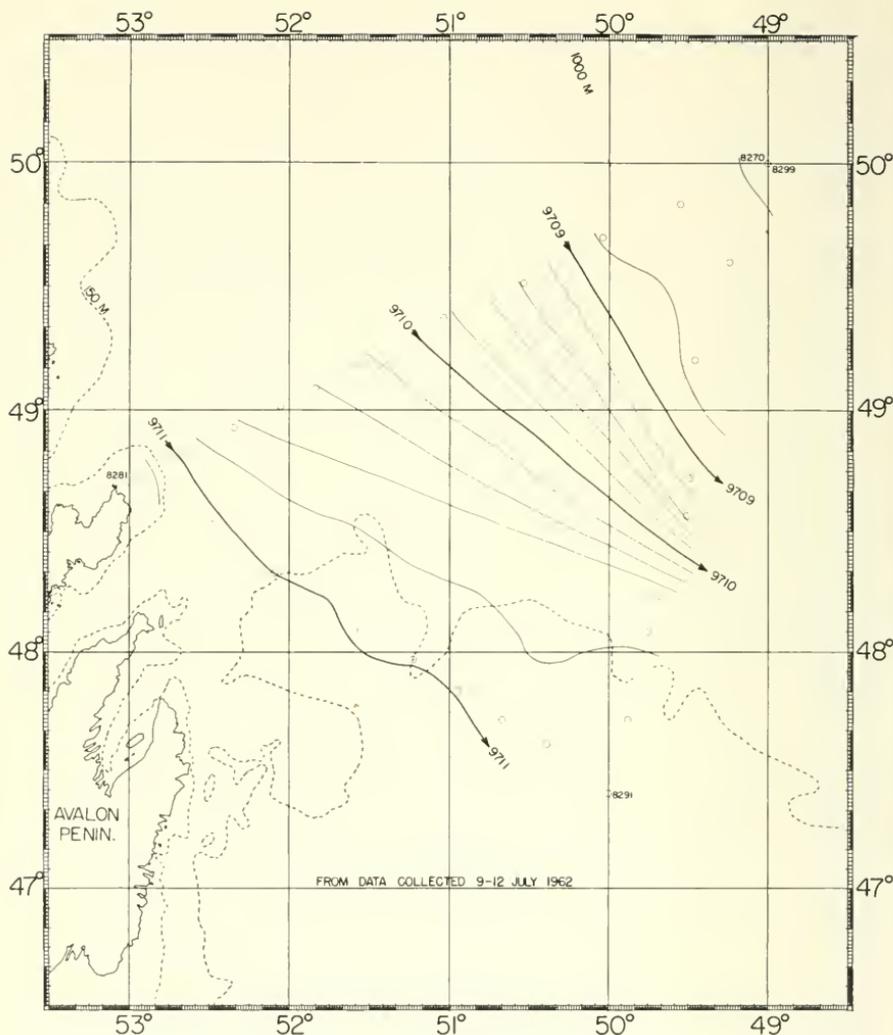


FIGURE 23.—Dynamic topography of the sea surface relative to the 1000-decibar surface from data collected 9–12 July 1962. Oceanographic station positions are indicated and the station numbers given at turning points.

In figure 21, drawn from data collected during the third survey, the Labrador Current is less well defined than during the first survey. There is considerable meandering onto and off of the eastern edge of the Grand Banks, with progressive losses of Labrador Current water through recurvature eastward. The double reversal of direction of the western margin of the Labrador Current in the vicinity of  $45^{\circ}$  N.,  $49^{\circ}$  W., is abnormal and the tongue of higher dynamic heights extending southward along the 49th meridian indicates the remnants of the lower salinity water found in this vicinity in the first survey. In the

southern part of the surveyed area the westward extension of Labrador Current flow has moved eastward to about the western limits of the survey. The margin of the Atlantic Current shows some strengthening and the tongue of cold mixed water which previously extended southward at about  $49^{\circ}$  W., is seen to be somewhat east of that longitude and very nearly obliterated in the third survey. The meander pattern along the margin of the Atlantic Current in the eastern half of the surveyed area has moved northeastward and smoothed out since the first survey.

The dynamic topography found during the fourth survey is shown in figure 22. There appears to be little change between conditions observed during the fourth survey and those found during the second survey. The Labrador Current follows essentially the same path with approximately the same magnitudes, except that in the vicinity of  $48^{\circ}$  N.,  $48^{\circ}$  W. there appears to be less banding than was found during the second survey. The dynamic topography showed little relief in the northeastern part of the area during both the second and fourth surveys. Icebergs entering from the northwest and crossing the 49th parallel east of  $52^{\circ}45'$  W. would follow the eastern branch of the Labrador Current and those crossing east of about  $49^{\circ}35'$  W. would probably be diverted eastward and not get south of  $47^{\circ}$  N.

Figure 23 represents the dynamic topography of the Bonavista triangle found during the postseason survey. The slight irregularities in the Labrador Current in the northwestern section, indicated as eddies in figures 20 and 22, have disappeared, leaving the remarkably simple pattern shown in figure 23. During each of the three occupations of the Bonavista triangle in 1962 the division between eastern and western branches of the Labrador Current occurred closer to the Newfoundland coast than usual.

In the Grand Banks region the temperature-salinity relationships of both the Labrador Current and the Atlantic Current identify them as water masses. Here the mixing of these two masses is usually in a sufficiently constant proportion so that the mixed water may be considered a virtual water mass. The solid lines in figure 24 represent the 1962 T-S averages based on observations made during the first and third surveys; the dashed lines illustrate the normals for the 15-year period 1948-62. In 1962 the temperature minimum in the Labrador Current occurred at a depth of approximately 50 meters whereas the normal depth of this minimum is more nearly 75 meters. Also, the Labrador Current water was warmer than normal through 600 meters. The salinities were greater than normal through 100 meters, and the corresponding densities were slightly heavier than normal; at 150 meters and below, the salinities and densities were less than normal. The Atlantic Current was fresher and colder than normal, but the resultant densities showed hardly any change from the normal. The mixed water mass was warmer than normal; down

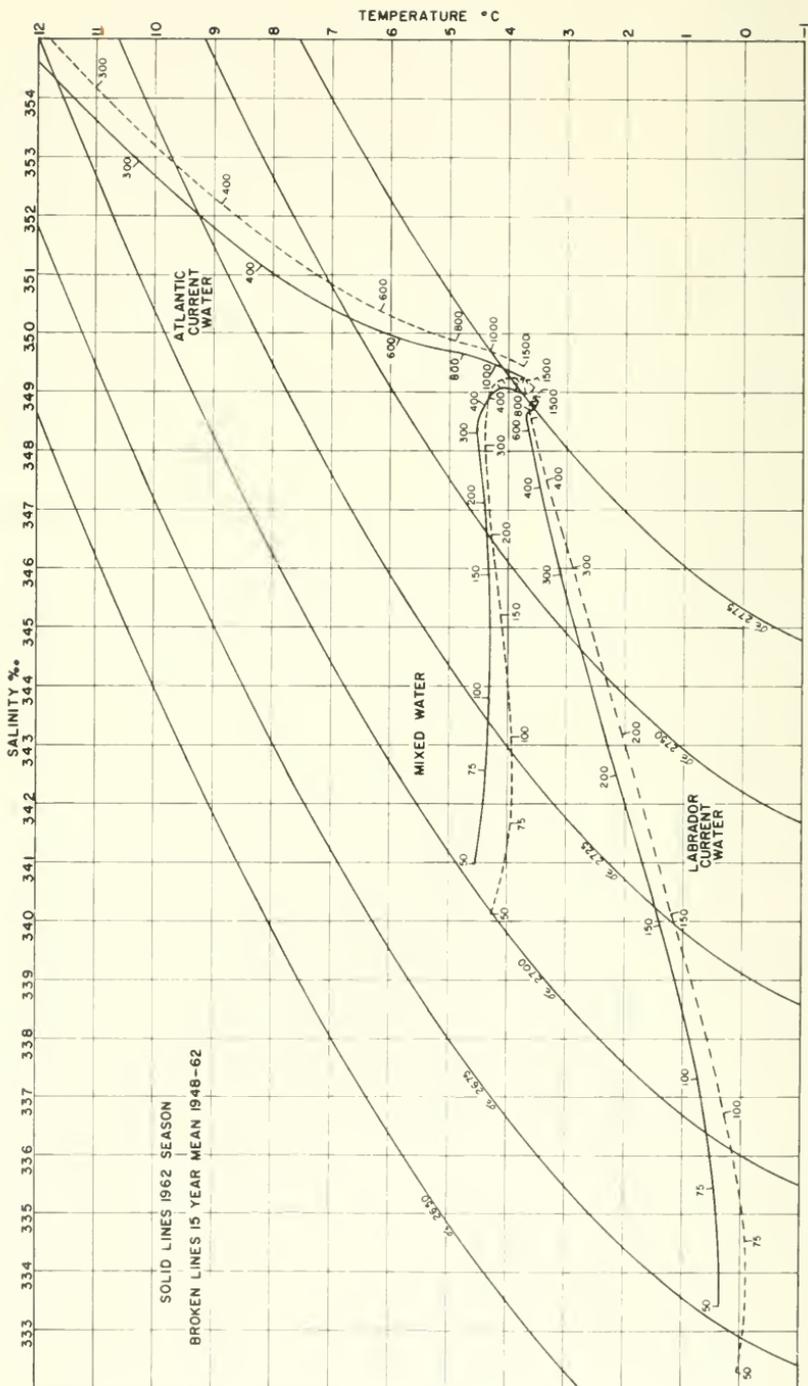


Figure 24.—Temperature-salinity relationships for Labrador Current water, Atlantic Current water and mixed water found in the Grand Banks region. Solid lines show conditions found during 1962 and broken lines represent the 15-year means.

to 300 meters it was more saline and of greater density. More stations in the third survey than the first survey were considered atypical and thus were excluded from the averaging process. The Labrador Current through 150 meters was colder and fresher on the third survey (May) than on the first survey (April); conversely for the same two surveys the Atlantic Current at all depths examined was warmer and generally saltier on the third survey.

As operational requirements have permitted, dynamic topographic surveys have been adjusted to include the reoccupation of certain sections across the Labrador Current from South Wolf Island, Labrador, to the southern slope of the Grand Banks. For each such occupation the temperature and velocity structure of the Labrador Current have been examined and the volume transport, mean temperature, heat transport and minimum observed temperature have been recorded. As these data have accumulated, estimates of tentative normal seasonal variation relationships have been made and published from time to time. The location of these sections, their designations and the most recently published tentative normals are as follows: South Wolf Island, extending  $045^{\circ}$  T from South Wolf Island, Labrador (normals published in Bulletin No. 44 of this series); sections NW., SW., and SE., forming the northwestern, southwestern, and southeastern sides of the Bonavista triangle having corners at Cape Bonavista,  $50^{\circ}$  N.,  $49^{\circ}$  W., and  $47^{\circ}24'$  N.,  $50^{\circ}$  W. (new normals shown in figure 25 of this bulletin); section H, parallel to and about 40 miles southeasterly of section SE. (normals shown in fig. 26 of this bulletin); section G, extending northeasterly from about  $47^{\circ}10'$  N.,  $48^{\circ}40'$  W. (new normals shown in fig. 26 of this bulletin); section  $F_2$ , an east-west section between the Grand Banks and Flemish Cap along the parallel of  $47^{\circ}15'$  N. (normals shown in fig. 27 of this bulletin); section F, similar to section  $F_2$  but about 30 miles farther south (new normals shown in fig. 27 of this bulletin); section T, extending southeasterly from about  $46^{\circ}20'$  N.,  $49^{\circ}00'$  W.; section U, extending easterly from the Grand Banks at about  $45^{\circ}$  N.; section W, extending southerly from the Grand Banks at about  $50^{\circ}15'$  W. (normals for sections T, U, and W published in Bulletin No. 46 of this series).

The normals shown in figures 25, 26, and 27 were derived by taking an average value (in which each year represented was given equal weight) plotted against its mean date as one point on the normal curve which was drawn as a straight line whose slope was taken as the average slope derived from years having two or more occupations of the particular section. Individual occupations are identified by the last two digits of the year of the observations and are shown to indicate the variation from year to year.

It should be explained that the term "heat transport," as used here and in previous bulletins of this series, is the simple product of in-situ temperature and volume transport obtained from the summation

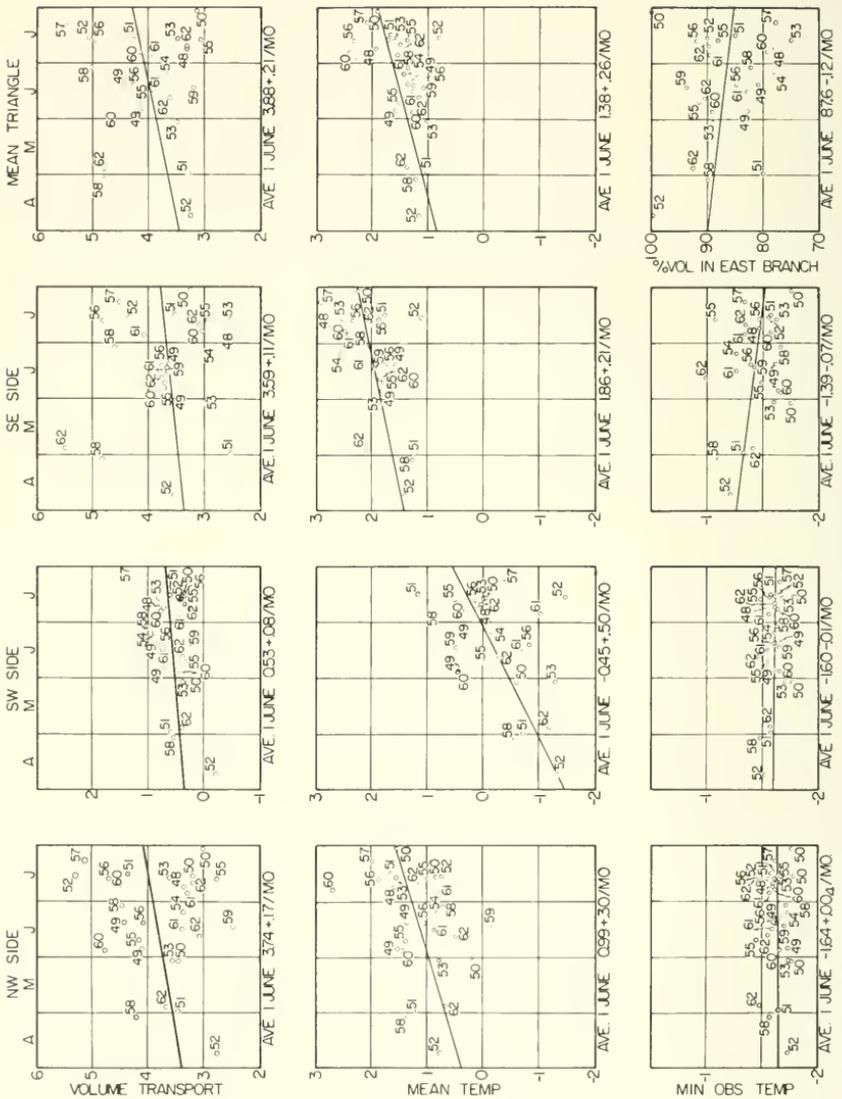


FIGURE 25.—Tentative normal seasonal variation in the elements of the Bonavista triangle.

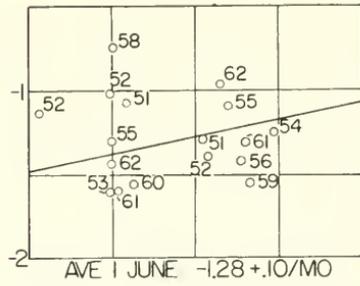
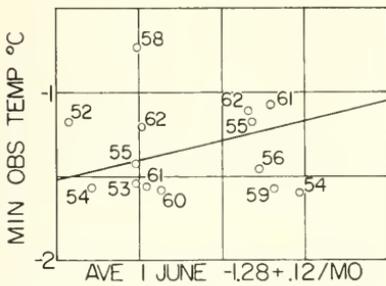
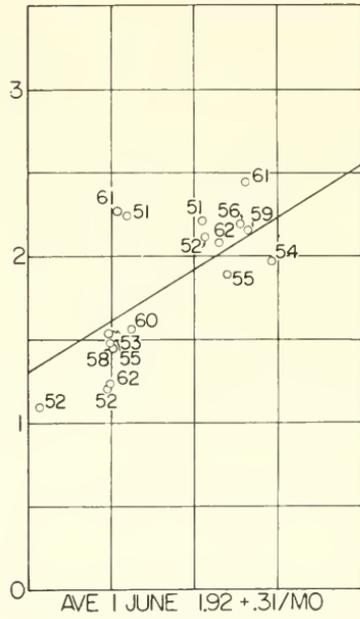
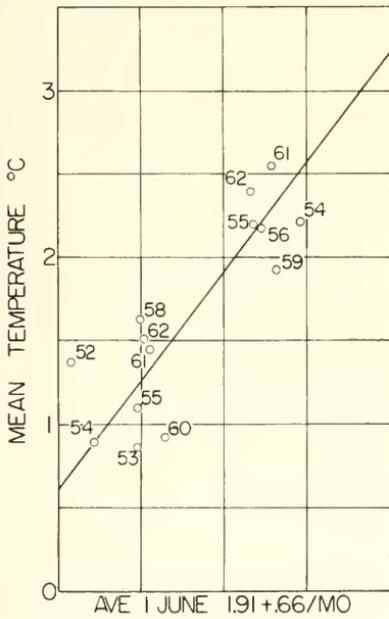
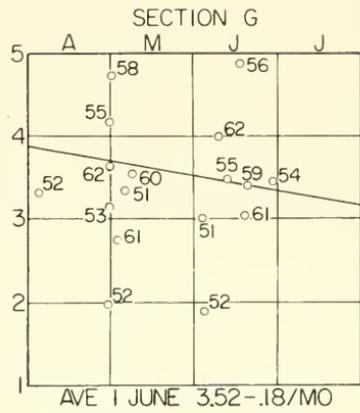
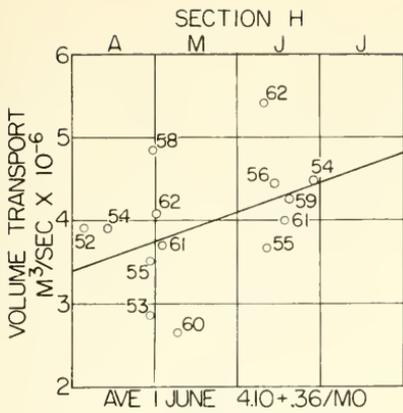


FIGURE 26.—Tentative normal seasonal change in volume transport, mean temperature and minimum observed temperature of the Labrador Current at sections H and G.

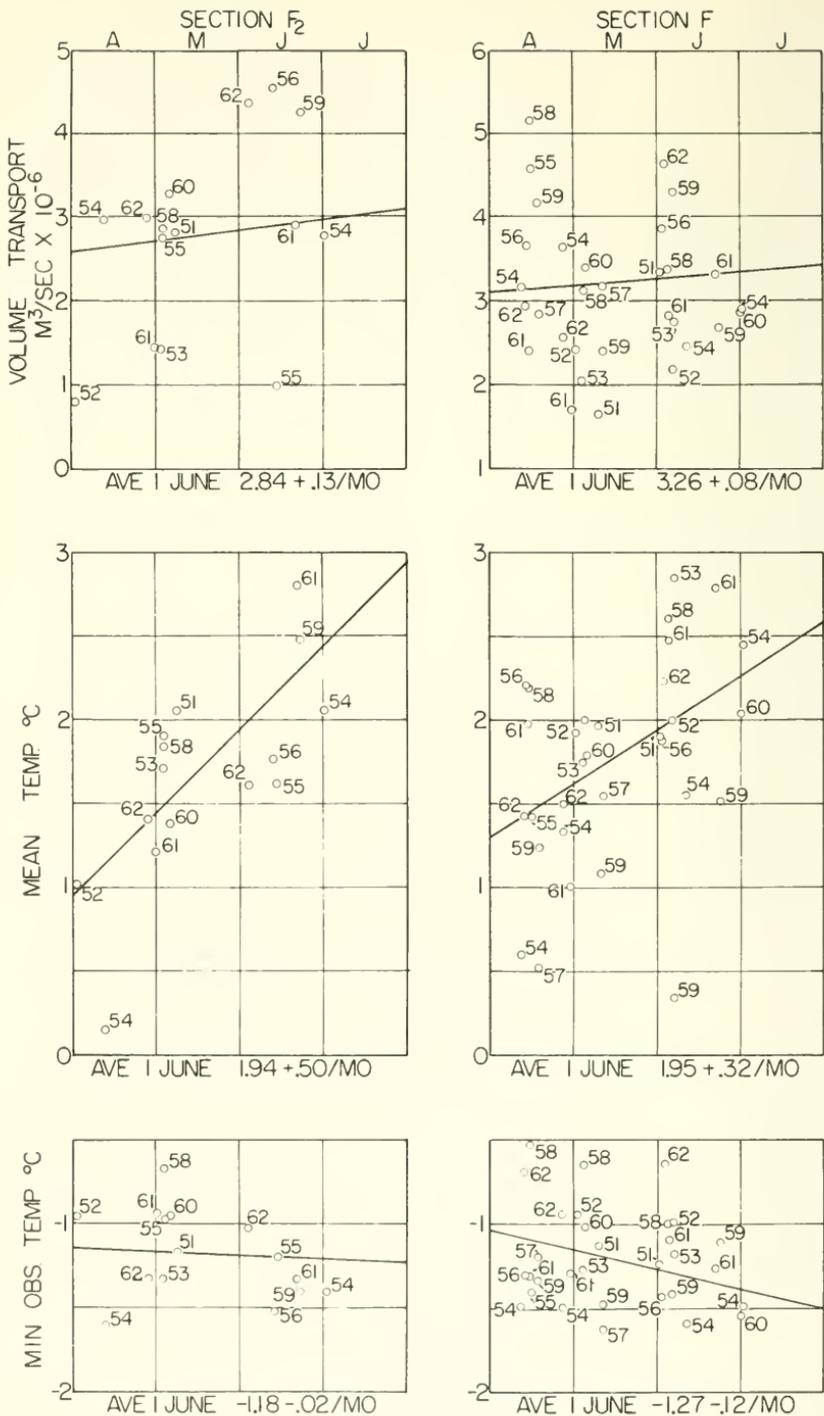


FIGURE 27.—Tentative normal seasonal change in volume transport, mean temperature and minimum observed temperature of the Labrador Current at sections F<sub>2</sub> and F.

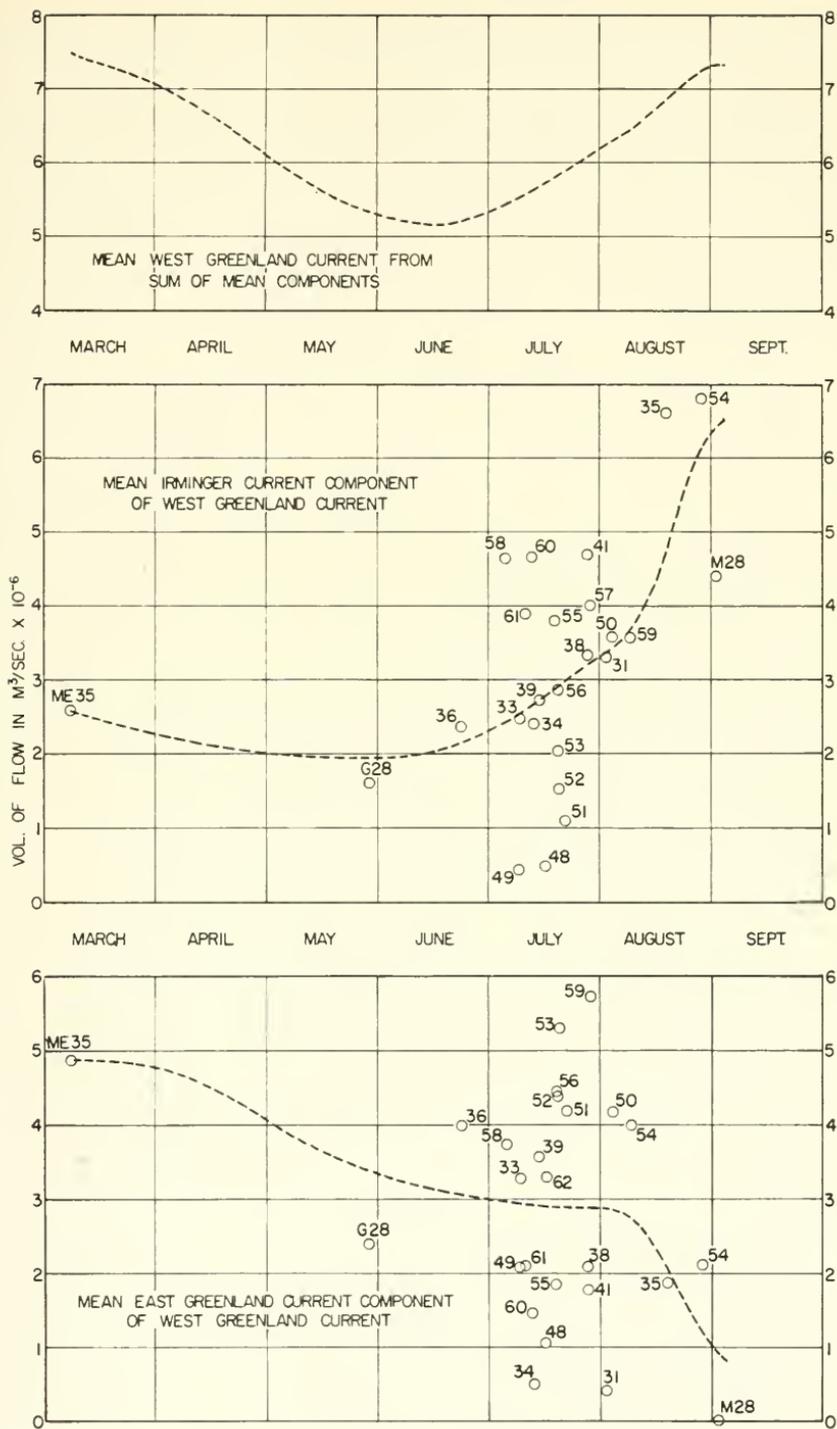


FIGURE 28.—Tentative normal seasonal change in volume transport of the West Greenland Current off Cape Farewell, Greenland and its Irminger Current and East Greenland Current components computed from assumed constant mean temperatures of these components.

of products of elemental graphically determined areas of cross section enclosed between two isotherms and two lines of equal velocity multiplied by the average velocity in this elemental area and by the average temperature in the elemental area. The first two factors give an elemental volume transport and their summation gives a figure for the volume transport across the section. To reduce the effect of planimeter errors arising from the measurement of small areas a figure for the mean temperature is obtained by dividing the summation of area times velocity times temperature by the summation of area times velocity. The figure thus obtained for mean temperature is then used to multiply the best value of volume transport to obtain the heat transport. It has been considered that this best value of volume transport is obtained from computations of the difference between the second depth integrals of specific volume at the stations near the current boundaries, adjusted by graphically determined transports between these station verticals and the appropriate zero velocity lines.

Thus both the mean temperature and the heat transport figures dealt with here do not take into account gain or loss of heat at the water-air interface, the heat of fusion from melting or formation of ice or the heat of compression involved in any vertical component of water motions. It is pointed out, however, that the vertical component of velocity is small compared with the horizontal component, that during the part of the year covered by these observations the seasonal warming of the surface produces a thin layer of large and increasing stability which layer protects the bulk of the Labrador Current from heat exchange with the atmosphere and that the heat of fusion associated with the melting of ice principally affects this surface layer even in the case of large bergs where the disintegration proceeds most rapidly at the surf line and on the air-exposed surface. For the Labrador Current during the summertime, then, the mean temperature and heat transport, derived as explained above, are considered usefully to approximate conservative properties.

At the Bonavista triangle the volume transport entering the triangle usually differs from the volume transport leaving the triangle. Similar discrepancies occur with heat transport. Some of these discrepancies may be the result of time changes, inasmuch as about 3 days are required to complete the observations. There is also the possibility that there may be transfers across the reference surface of 1,000 decibars. In figure 25 the volume transport shown as "mean triangle" is the mean of the volume transports entering and leaving the triangle. Similarly, the mean temperature shown for the mean triangle is the mean of the heat transports entering and leaving the triangle divided by the mean volume transport.

Bearing in mind that true normal seasonal variation relationships must be curvilinear, and that the tentative normals presented here as

straight line approximations for only a fraction of the whole year are still on a rather shaky foundation, one should be careful not to draw from them conclusions that are statistically unwarranted. It is, nevertheless, interesting to note that throughout the summer season covered by the tentative normals shown in figure 25 the volume transport leaving the Bonavista triangle across sections SW. and SE. exceed the volume transport entering the triangle across section NW. by 0.3 to 0.4 million cubic meters per second, and that this discrepancy increases from April through July. Normal barometric charts for these months indicate in this vicinity a geostrophic wind vector which swings from being directed toward about  $097^{\circ}$  T with a weak gradient in April to approximately  $058^{\circ}$  T with a much stronger gradient in July. Thus a possibility exists that normally during this part of the year there is an upwelling in the vicinity of the Bonavista triangle. A qualitative confirmation may be deduced from considering that the temperature at the 1,000-decibar surface is warmer than that at shallower levels and that the excess of heat transport leaving the triangle over that entering the triangle is greater than the product of excess volume transport multiplied by normal mean temperature.

The seasonal change in the normal barometric pressure distribution has been called upon to explain the seasonal change in the number of bergs making the southward passage between the Grand Banks and Flemish Cap (see p. 66 of Bulletin No. 39 of this series). As the season advances, more and more bergs are diverted eastward and northeastward instead of making the southward passage. At both the South Wolf Island section and at the Bonavista triangle the volume transport normally increases as the season advances. For sections T, U, and W, located south of the latitude of Flemish Cap, the volume transport normally decreases as the season advances. At section H, figure 26 shows a seasonal increase in volume transport. At sections G, F<sub>2</sub>, and F, however, the sign of the seasonal change in volume transport is not well established as may be seen from the plot of individual points in figures 26 and 27. While the monthly rates of change have been computed as  $-.18$ ,  $+.13$ , and  $+.08$ , respectively, for these sections, additional observations could very well change both their signs and magnitudes.

When it is remembered that the bulk of the transport is below the depth where seasonal warming can directly affect the Labrador Current, the consistent seasonal increase in its mean temperature during the summer season must find its explanation in seasonal changes in the amounts of water along its margins which move as part of the current, and in changes in velocity distribution between the cold inshore part and the warmer offshore part. This principle was employed in Bulletin No. 35 (pp. 83-85) of this series to explain the steep seasonal increase in mean temperature of the West Greenland Current off Cape Farewell. It was assumed that at this section the West

Greenland Current was made up of an East Greenland Current component having a constant mean temperature of  $3.2^{\circ}$  and an Irminger Current component having a constant mean temperature of  $5.5^{\circ}$ . While the mean temperatures of the components probably are not constant and their means may differ from these values, the method gives a first approximation which is useful in studying the changes at this section, both seasonal and year to year. In figure 28 the similar figure shown in Bulletin No. 35 has been brought up-to-date presenting, on these assumptions, a curvilinear representation of the tentative normal seasonal variation in the volume transport of the West Greenland Current and its components at this section, considering the occupation by *Meteor* in March 1935, that of *Godthaab* in May 1928, that of *Marion* in September 1928 and all occupations by *General Greene* and *Evergreen* at various dates from June to August during 8 different years from 1931 to 1941 and 15 different years from 1948 to 1962.

Figure 29 is a schematic representation of the normal circulation as of 1 July in terms of volume transport deduced from the tentative normal seasonal variation relationships discussed above. The broken line indicating the offshore recurvature southeastward of 1.6 million cubic meters per second of the West Greenland Current passing the Cape Farewell section neglects any exchange through Hudson Strait or the northern openings to Baffin Bay. It also neglects any net vertical transfer across the reference surface. Losses from and gains to the volume transport of the Labrador Current have been deduced from consideration of the differences in mean temperature and in volume transport from section to section. At the Bonavista triangle the values for the mean triangle have been used, thus neglecting any possible upwelling in the triangle. One consequence of this is to call upon the Gulf of St. Lawrence for a net outflow through the Strait of Belle Isle of 0.4 to make up the difference between the volume transport passing the South Wolf Island section and that passing the Bonavista triangle. If the individual sections of the triangle were used instead of the mean triangle the difference required from the Strait of Belle Isle would be only 0.2. Between sections U and W the decrease in volume amounts to about a million cubic meters per second. The thermal alteration which occurs between these sections is so marked, however, as to indicate some larger loss by recurvature, with a partial replacement by much warmer water from the area southeastward of the Tail of the Banks. The volume of this replacement has been estimated as 1 million cubic meters per second for the purpose of constructing figure 29 in which question marks indicate this estimation.



Table II. Summary of Velocity Sections Across the Labrador Current Occupied in 1962

	Volume transport			Mean temperature			Minimum observed temperature			Heat transport		
	1962	Normal	Anomaly	1962	Normal	Anomaly	1962	Normal	Anomaly	1962	Normal	Anomaly
First survey:												
F.....	2.94	3.13	-0.19	1.42	1.44	-0.02	-0.69	-1.08	+0.39	4.17	4.51	-0.34
T.....	3.86	3.27	+0.59	2.05	1.55	+0.50	-1.02	-1.27	+0.25	7.91	5.07	+2.84
U.....	6.31	5.24	+1.07	1.49	1.43	+0.06	-0.97	-1.10	+0.13	9.37	7.49	+1.88
W.....	4.40	3.87	+0.53	2.22	1.91	+0.31	+0.30	-0.35	+0.65	9.77	7.39	+2.38
Second survey:												
NW.....	3.69	3.60	+0.09	0.67	0.74	-0.07	-1.48	-1.65	+0.17	2.46	2.65	-0.19
SW.....	0.43	0.60	-0.17	-1.17	-0.90	-0.27	-1.57	-1.60	+0.03	-0.50	-0.54	+0.04
SE.....	5.49	3.49	+2.00	2.07	1.66	+0.41	-1.40	-1.33	-0.07	11.35	5.79	+5.56
IE.....	4.08	3.75	+0.33	1.51	1.27	+0.24	-1.21	-1.40	+0.19	6.18	4.76	+1.42
G.....	3.64	3.70	-0.06	1.24	1.61	-0.37	-1.44	-1.38	-0.06	4.52	5.96	-1.44
F <sub>1</sub> .....	2.99	2.70	+0.29	1.40	1.39	+0.01	-1.33	-1.16	-0.17	4.17	3.75	+0.42
F <sub>2</sub> .....	2.56	3.17	-0.61	1.49	1.59	-0.10	-0.94	-1.13	+0.19	3.80	5.04	-1.24
Third survey:												
F.....	4.63	3.27	+1.36	2.23	1.98	+0.25	-0.64	-1.28	+0.64	10.30	6.47	+3.83
T.....	2.94	2.80	+0.14	2.18	1.88	+0.30	-0.90	-1.35	+0.45	6.40	5.26	+1.14
U.....	5.24	3.96	+1.28	2.03	2.35	-0.32	-0.69	-1.09	+0.40	10.62	9.31	+1.31
W.....	2.78	3.32	-0.54	2.21	2.85	-0.64	-0.38	-0.34	+0.04	6.14	9.46	-3.32
Fourth survey:												
NW.....	3.09	3.81	-0.72	0.50	1.12	-0.62	-1.55	-1.64	+0.09	1.56	4.26	-2.70
SW.....	0.40	0.56	-0.16	-0.28	-0.26	-0.02	-1.46	-1.61	+0.15	-0.11	-0.15	+0.04
SE.....	3.77	3.62	+0.15	1.87	1.93	-0.06	-0.98	-1.41	+0.43	7.06	7.00	+0.06
IE.....	5.41	4.21	+1.20	2.39	2.11	+0.28	-1.11	-1.24	+0.13	12.93	8.88	+4.05
G.....	4.00	3.47	+0.53	2.05	2.01	+0.07	-0.97	-1.25	+0.28	8.32	6.97	+1.35
F <sub>1</sub> .....	3.57	3.57	+0.00	2.09	2.00	+0.09	-1.03	-1.18	+0.15	7.05	5.70	+1.35
F <sub>2</sub> .....	4.37	2.85	+1.52	1.61	2.00	-0.39	-1.03	-1.18	+0.15	7.05	5.70	+1.35
Postseason:												
NW.....	3.20	3.96	-0.76	1.15	1.38	-0.23	-1.60	-1.64	+0.04	3.68	5.49	-1.81
SW.....	0.35	0.54	-0.19	0.04	0.22	-0.18	-1.62	-1.61	+0.01	0.01	0.14	-0.13
SE.....	3.10	3.73	-0.63	2.03	2.15	-0.12	-1.34	-1.48	+0.14	6.30	8.01	-1.71
South Wolf Island.....	6.45	4.67	+1.78	2.39	2.33	+0.06	-1.47	-1.53	+0.06	15.42	10.88	+4.54

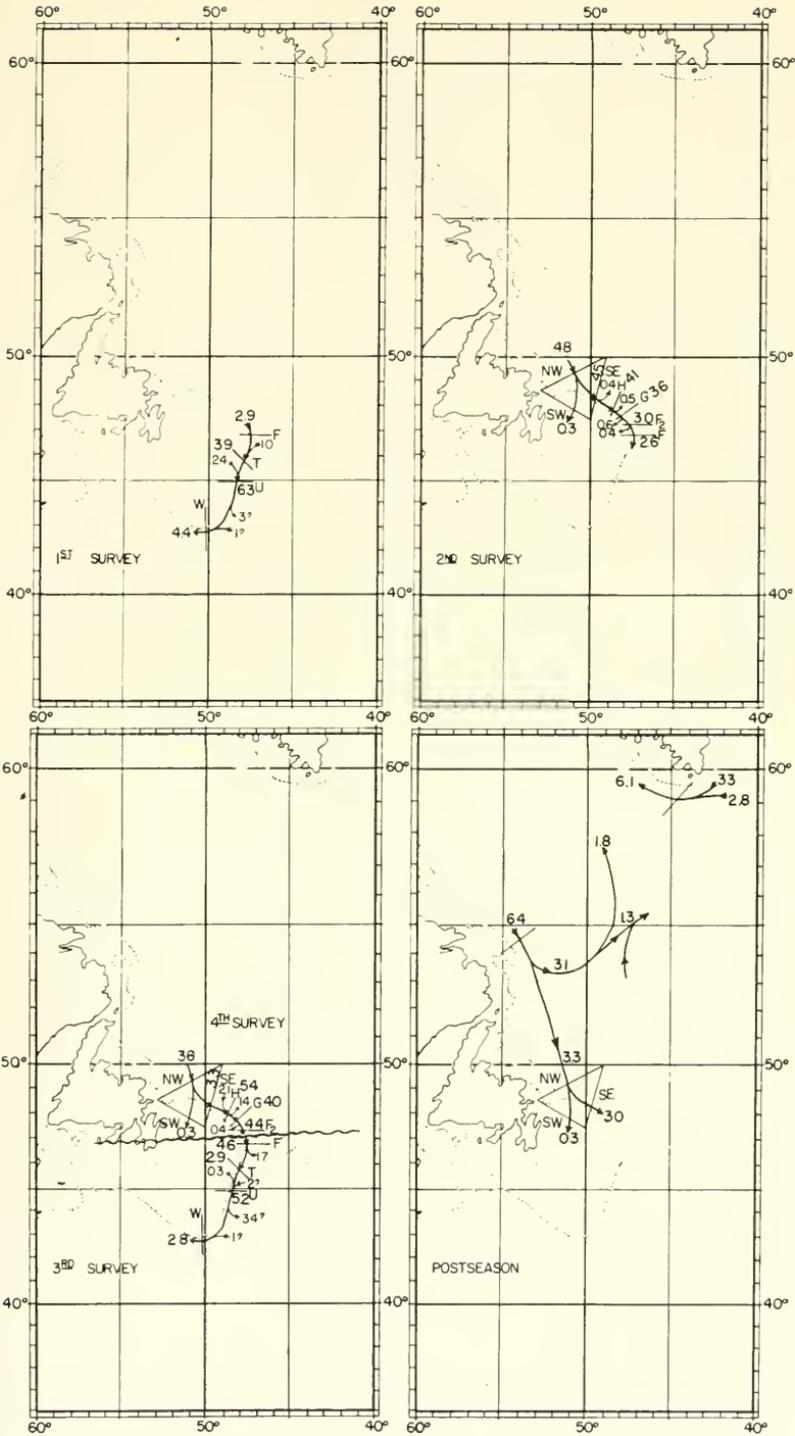


FIGURE 30.—Schematic representation of circulation deduced from sections occupied in 1962. Numerals indicate volume transport in units of  $m^3 \times 10^6/\text{sec}$ .

During the 1962 season and postseason surveys there were 25 reoccupations of the sections across the Labrador Current for which tentative seasonal normals have been published. A summary of the results of the analyses of these data is presented in table II and the volume transports have been shown schematically in figure 30. Volume transports have been given in millions of cubic meters per second, mean temperature and minimum observed temperatures in degrees C. and heat transports in millions of cubic meter degrees C. per second. Similar units will be understood without redesignation in the following discussion. In the construction of figure 30, as in the case of figure 29, the changes in mean temperature from section to section have been considered in the estimates of whether losses and gains in volume transport were associated with the inshore or offshore margins of the Labrador Current.

At the Bonavista triangle the volume transport anomaly decreased from +1.1 during the second survey to  $-0.3$  during the fourth and postseason surveys. In spite of this, however, the volume transport of the Labrador Current in the area north of  $47^{\circ}$  N., taken as a whole, showed an increasing positive anomaly during the second and fourth surveys (+.4 and +.7). The average anomaly of volume transport for the area south of  $47^{\circ}$  N. remained about the same (+.5 and +.6) during the first and third surveys.

The anomaly of mean temperature at the Bonavista triangle dropped from  $+0.24^{\circ}$  to  $-0.31^{\circ}$  from the second to the fourth surveys and showed a slight recovery to  $-0.22^{\circ}$  during the postseason occupation. For the area north of  $47^{\circ}$  N., the average anomaly of mean temperature was small, changing from  $+0.03^{\circ}$  during the second survey to  $-0.09^{\circ}$  during the fourth survey. For the area south of this latitude the average anomaly changed from  $+0.21^{\circ}$  during the first survey to  $-0.10^{\circ}$  during the third survey.

The coldest part of the Labrador Current, as indicated by the minimum observed temperature, was generally warmer than normal with a preponderance of positive anomalies shown in table II. Also there was a general increase in these positive anomalies between successive occupations of individual sections. One notable exception was section W where the anomaly changed from  $+0.65^{\circ}$  at the time of the first survey, to  $-0.04^{\circ}$  during the third survey.

Figure 31 shows the location of the oceanographic stations occupied during the postseason survey and the limits of the sea ice encountered off Loks Land and in the western part of Baffin Bay. The 600-meter and 1,000-meter isobaths in the vicinity of Davis Strait also have been shown. Figure 32 shows the dynamic topography of the sea surface found during the postseason survey, using a 1,500-decibar reference surface. In the absence of a network of stations, figure 32 must be considered to be little more than a schematic representation of the surface circulation. As indicated in figure 30 the volume trans-

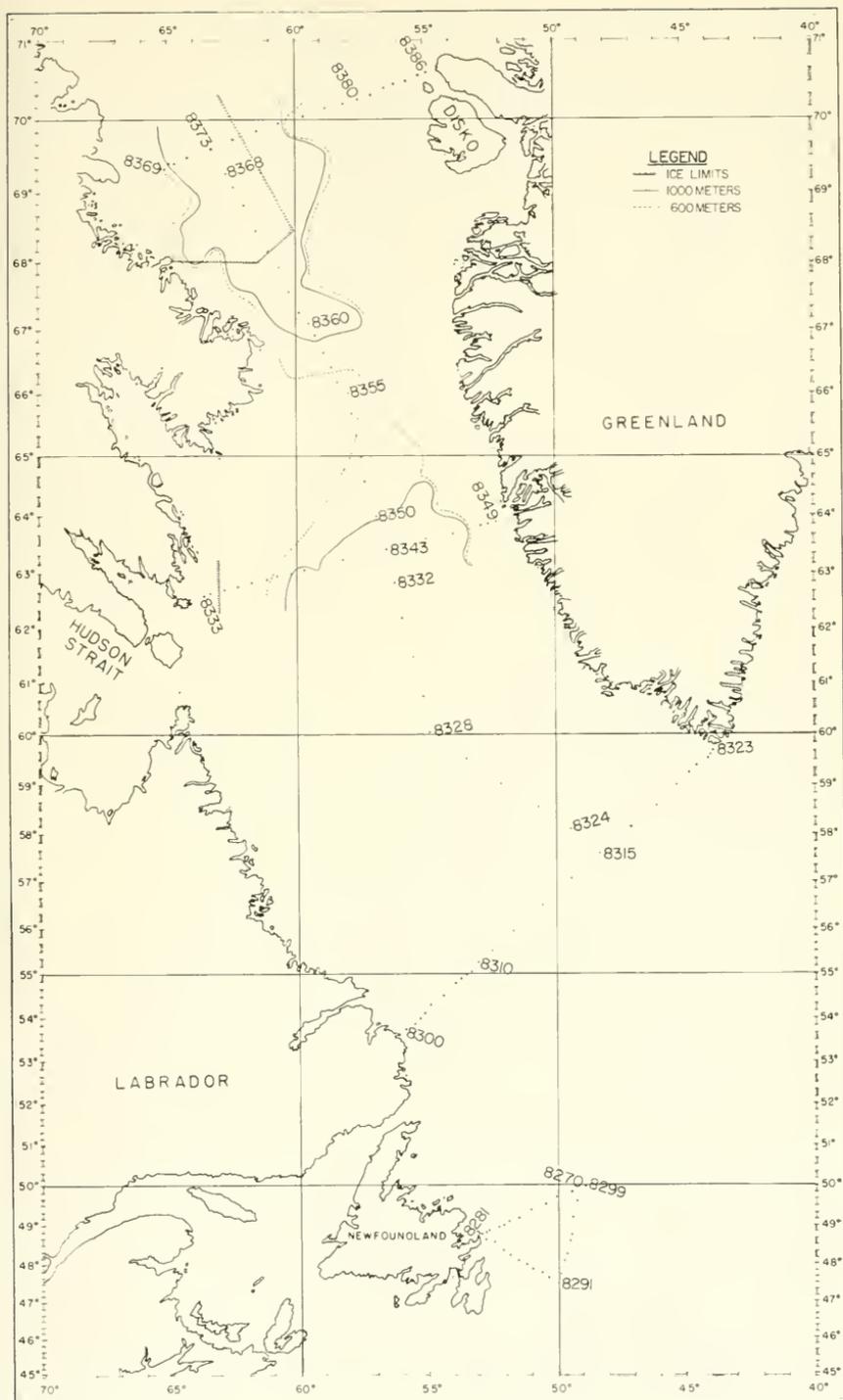


FIGURE 31.—Location of oceanographic stations occupied during postseason survey 9–28 July 1962. Limits of sea ice encountered are indicated.

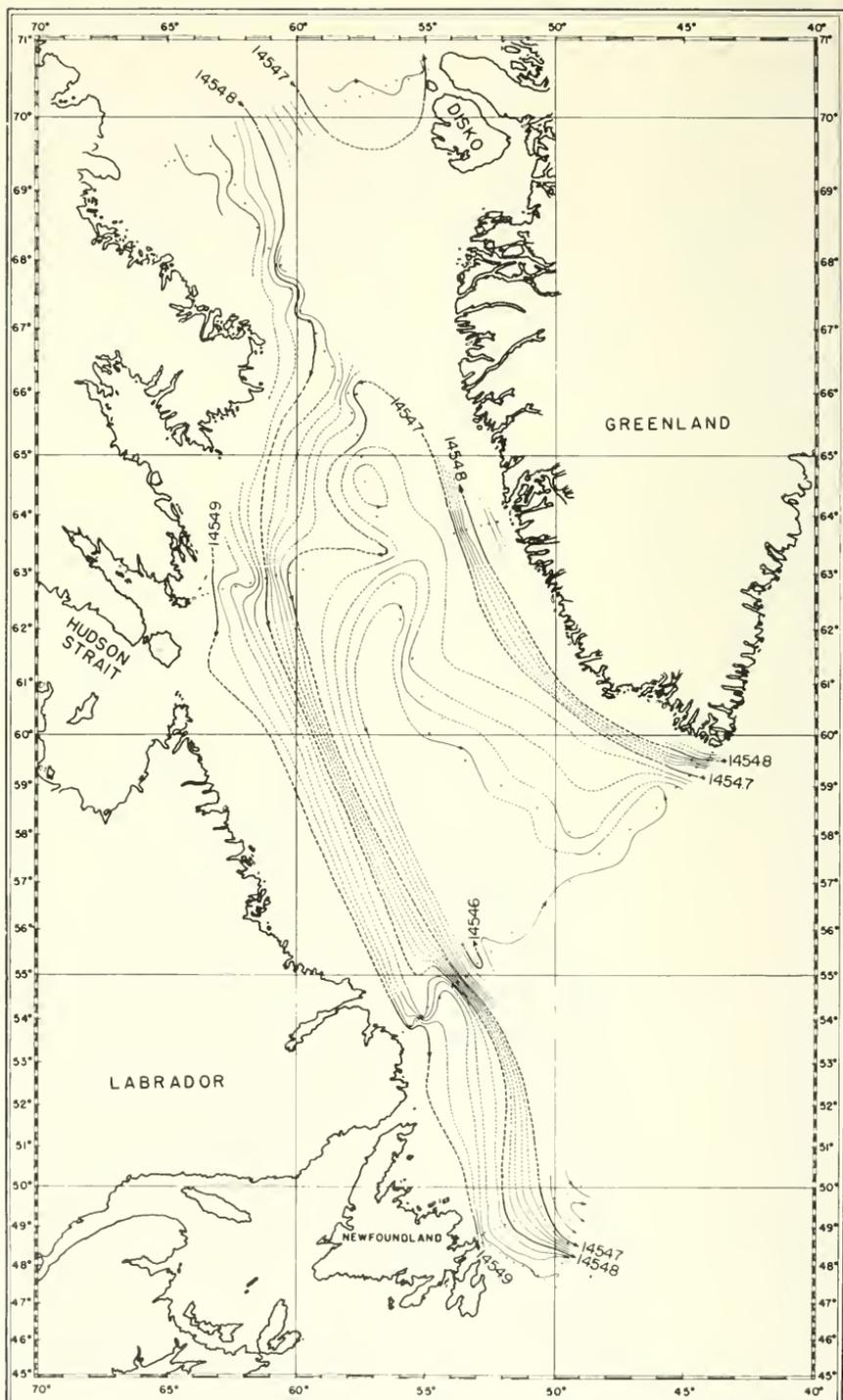


FIGURE 32.—Dynamic topography of the sea surface relative to the 1500-decibar surface from data collected 9-28 July 1962. Oceanographic station positions are indicated.

port of the West Greenland Current off Cape Farewell was found to be 6.1 during the postseason survey. This was made up of an East Greenland Current component of 3.3 and an Irminger Current component of 2.8. In comparison with the seasonal normals shown in figure 28 the total volume transport was 0.4 greater than normal, the excess being supplied by the East Greenland Current component while the Irminger Current component was normal. The mean temperature of  $4.26^{\circ}$  was nearly normal and the heat transport of 25.95 was 1.43 above normal. The net volume transport across the section above 1,500 decibars, from the beach at South Wolf Island, Labrador, to the beach at Cape Farewell, Greenland, was computed as 1.5 northwesterly.

By running a longitudinal section from the Labrador Sea across Davis Strait ridge into Baffin Bay it was hoped to derive the volume transport of the westward branching of the West Greenland Current south of Davis Strait and the eastward branching of the Baffin Land Current north of Davis Strait. It was also hoped that the section from Loks Land to Fyllas Bank would give, on its western side, the sum of the volume transport of the Baffin Land Current transiting Davis Strait plus the contribution from the West Greenland Current; and on its eastern side the West Greenland Current prior to loss from westward branching. Similarly it was hoped that the section from Cape Kater to the Nugssuak Peninsula in Baffin Bay would give the volume transports of the Baffin Land Current prior to loss from eastward branching and the West Greenland Current transiting Davis Strait plus the contribution from the Baffin Land Current. Such a concept of the current pattern in the vicinity of Davis Strait is probably an oversimplification of the characteristic pattern. With the saddle depth of the threshold in Davis Strait of the order of 700 meters or less, the bathymetry may be expected to have a pronounced effect on the current pattern. The bathymetry, while not known in detail, is not simple and the banks along the Greenland shelf south of Davis Strait no doubt add to the complexities of the characteristic circulation pattern.

The surface currents sketched in figure 32 suggest a complicated pattern. Using the same reference surface the resulting volume transports cannot be reconciled. Thus, the West Greenland Current at the Fyllas Bank section has a volume transport of 0.9, its westward branching crossing the longitudinal section south of Davis Strait amounts to 0.5 leaving, by difference, 0.4 transiting Davis Strait into Baffin Bay where it would be joined by 1.6 representing the eastward branching of the Baffin Land Current north of Davis Strait for a total of 2.0; yet the northward flow past the section off the Nugssuak Peninsula is only 0.5. A similar discrepancy is apparent if volume transports along the Baffin Island side are considered. Here the Baffin Land Current off Cape Kater was 2.2 of which 1.6 branched

eastward north of Davis Strait leaving a difference of 0.6 to transit Davis Strait into the Labrador Sea and this, added to the 0.5 which branched westward from the West Greenland Current across the longitudinal section south of Davis Strait, would make a total of 1.1 instead of the 3.8 found as the Labrador Current off Loks Land.

Among the possible reasons for these discrepancies is the treatment as synoptic, the series of observations which extended over a period of more than 2 weeks. It is considered, however, that the major source of trouble is that the reference surface used was not motionless. Farther south in the Labrador Sea a reference surface of 1,500 decibars has been found to approximate a reasonably motionless surface. It is probable that the motionless surface in Baffin Bay is not the same and that it has pronounced relief in the proximity of Davis Strait on both sides of the ridge.

Figures 33 through 36 show the temperature distribution along the South Wolf Island-Cape Farewell section, the longitudinal section across Davis Strait ridge, the Loks Land-Fyllas Bank section and the Cape Kater, Nugsuak Peninsula section in sequence. The South Wolf Island-Cape Farewell section has been occupied in a number of different years and we may compare this occupation with the 15-year average, 1948-62. For this comparison an average temperature and an average salinity is computed for the intermediate water using all observations from depths between 450 and 1,750 meters at stations offshore of the peripheral currents. For the deep water, scaled values have been used for each station at each of the levels, 2,000, 2,500, 3,000 and 3,500 meters. Characterized in this manner the 1962 occupation shows the following comparison with average values:

	Temperature		Potential temperature		Salinity	
	1962	Average	1962	Average	1962	Average
Intermediate water.....	3.41	3.33	-----	-----	34.85 <sub>4</sub>	34.86 <sub>9</sub>
2,000 meters.....	3.14	3.20	2.98	3.04	34.88 <sub>8</sub>	34.91 <sub>8</sub>
2,500 meters.....	2.86	2.88	2.66	2.66	34.90 <sub>5</sub>	34.92 <sub>4</sub>
3,000 meters.....	2.39	2.41	2.15	2.16	34.88 <sub>4</sub>	34.91 <sub>6</sub>
3,500 meters.....	1.90	1.91	1.62	1.63	34.90 <sub>0</sub>	34.90 <sub>3</sub>

Figure 33 shows a smaller than normal area of intermediate water and it appears to be somewhat warmer than usual. The 2,000-meter level is slightly colder than average and the deeper levels are essentially at average temperatures. Because of the small number of stations as deep as 3,500 meters the values for this level are not considered to be representative of the section. The salinities are less than average and the densities are, in general, less than average by about 0.02 in  $\sigma_t$ . The temperature inversion which results in a slight temperature maximum layer between about 1,500 and 2,000 meters was less pronounced than usual. From this section it can be traced northward

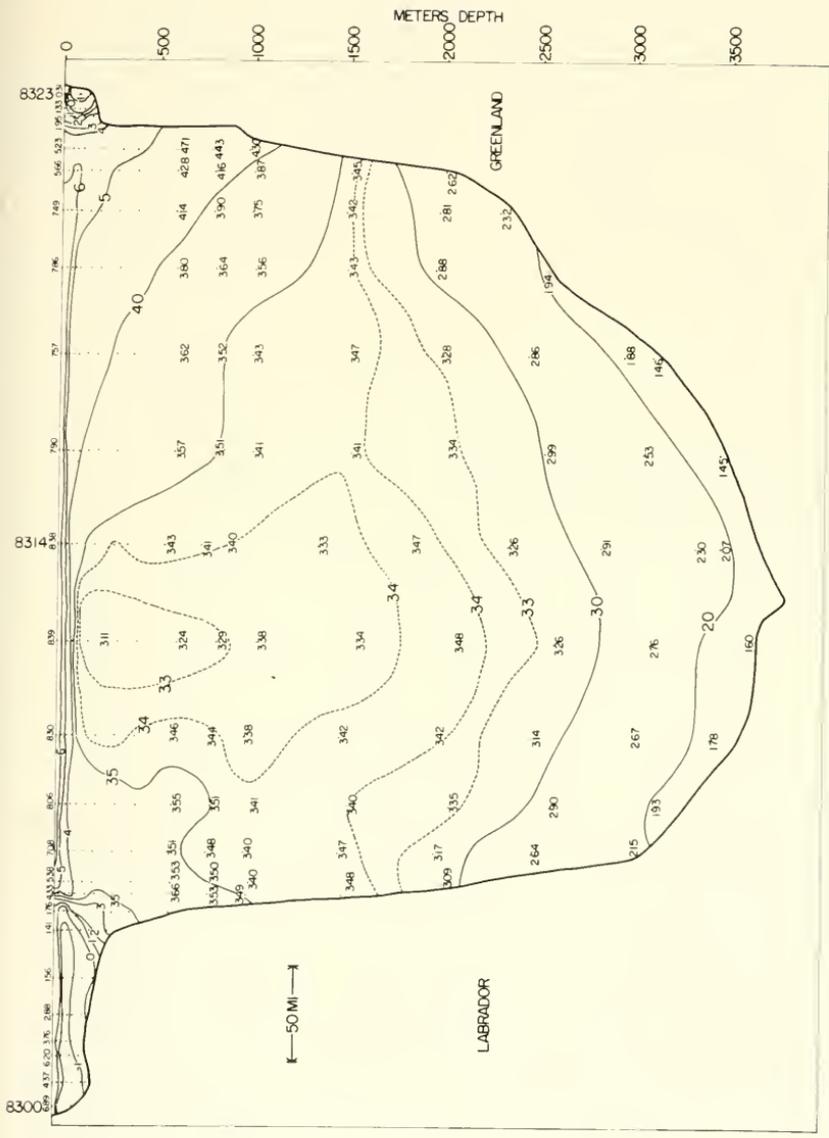


FIGURE 33.—Temperature distribution along section between South Wolf Island, Labrador and Cape Farewell, Greenland, from data collected 13–17 July 1962.



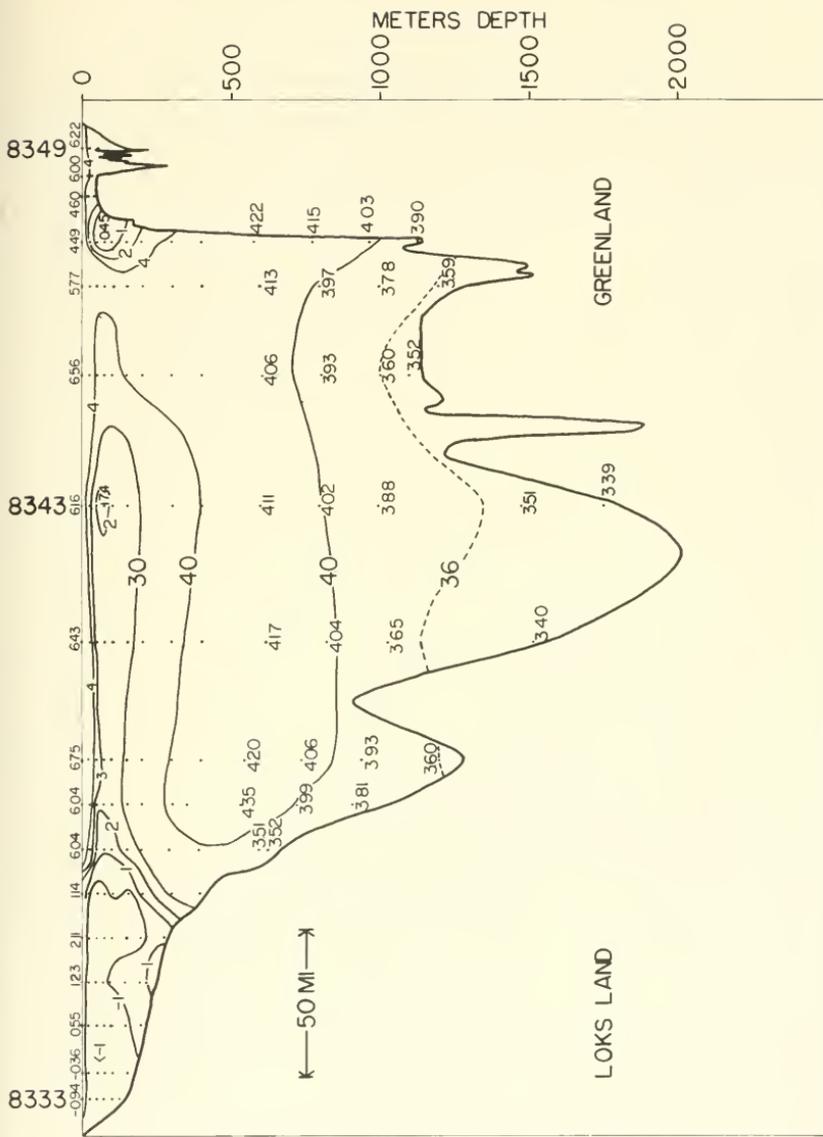


FIGURE 35.—Temperature distribution along section between Loks Land, Baffin Island and Fyllas Bank, Greenland, from data collected 20–22 July 1962.

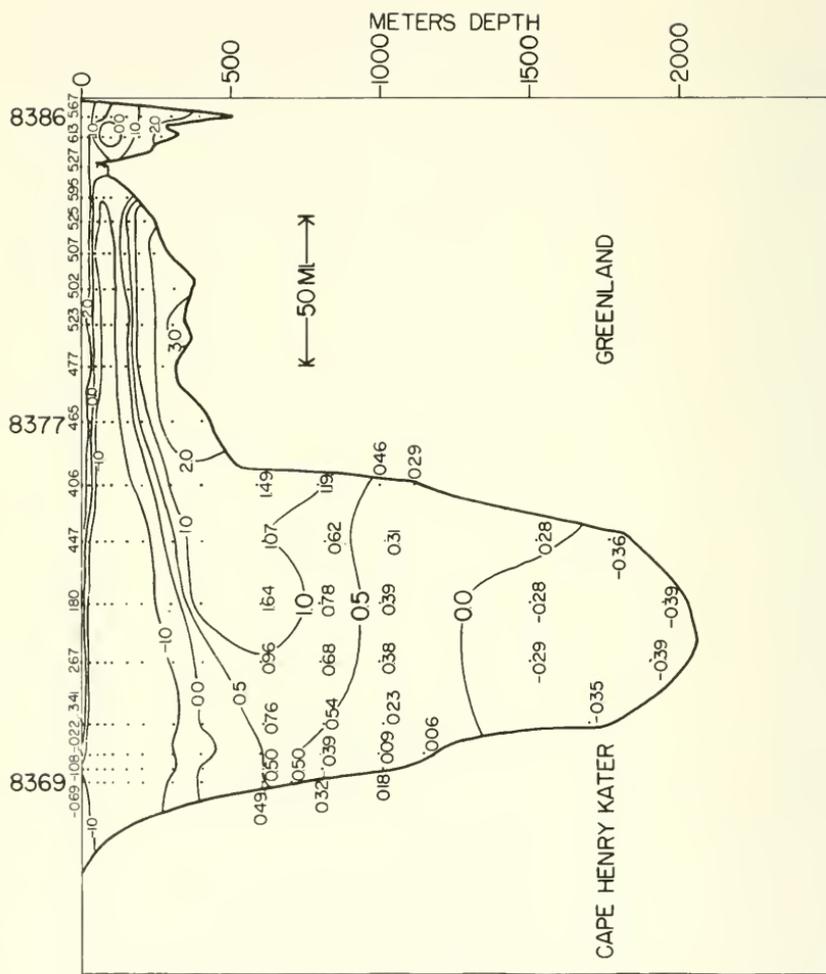


FIGURE 36.—Temperature distribution along section between Cape Kater, Baffin Island and Nugsuak Peninsula, Greenland, from data collected 26–28 July 1962.

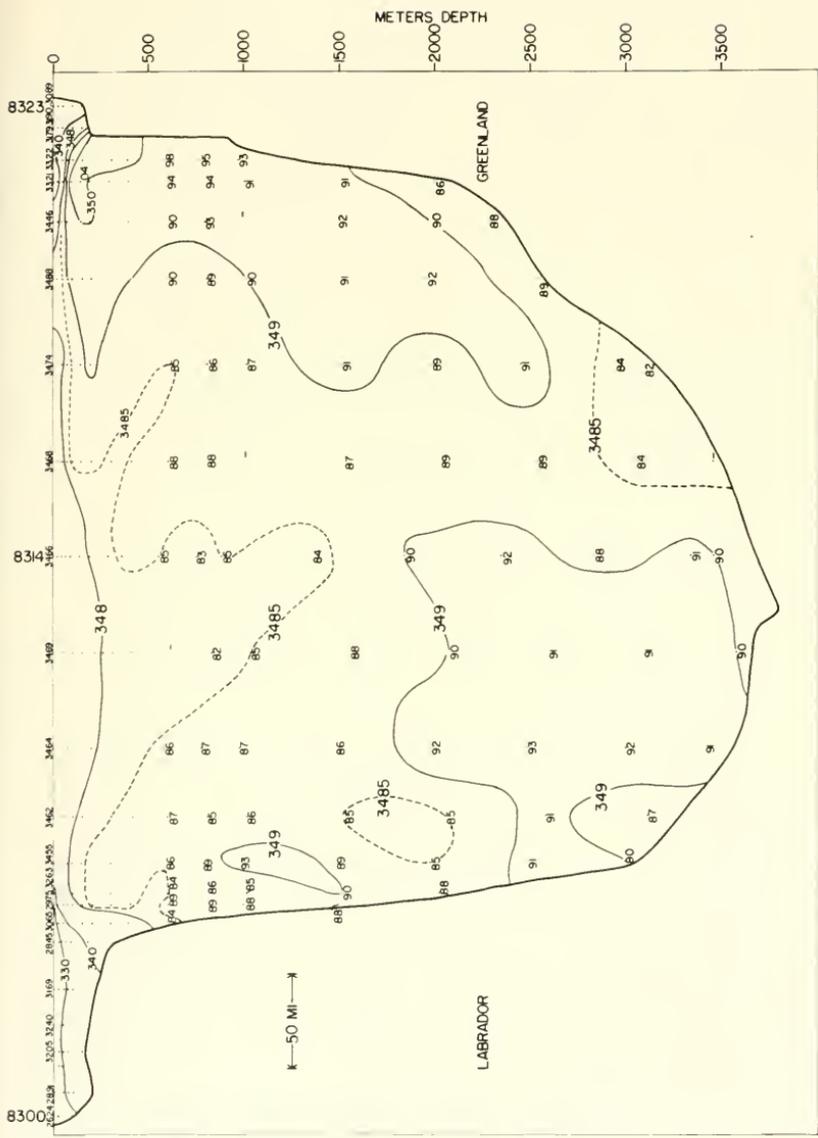


FIGURE 37.—Salinity distribution along section between South Wolf Island, Labrador and Cape Farewell, Greenland, from data collected 13–17 July 1962.

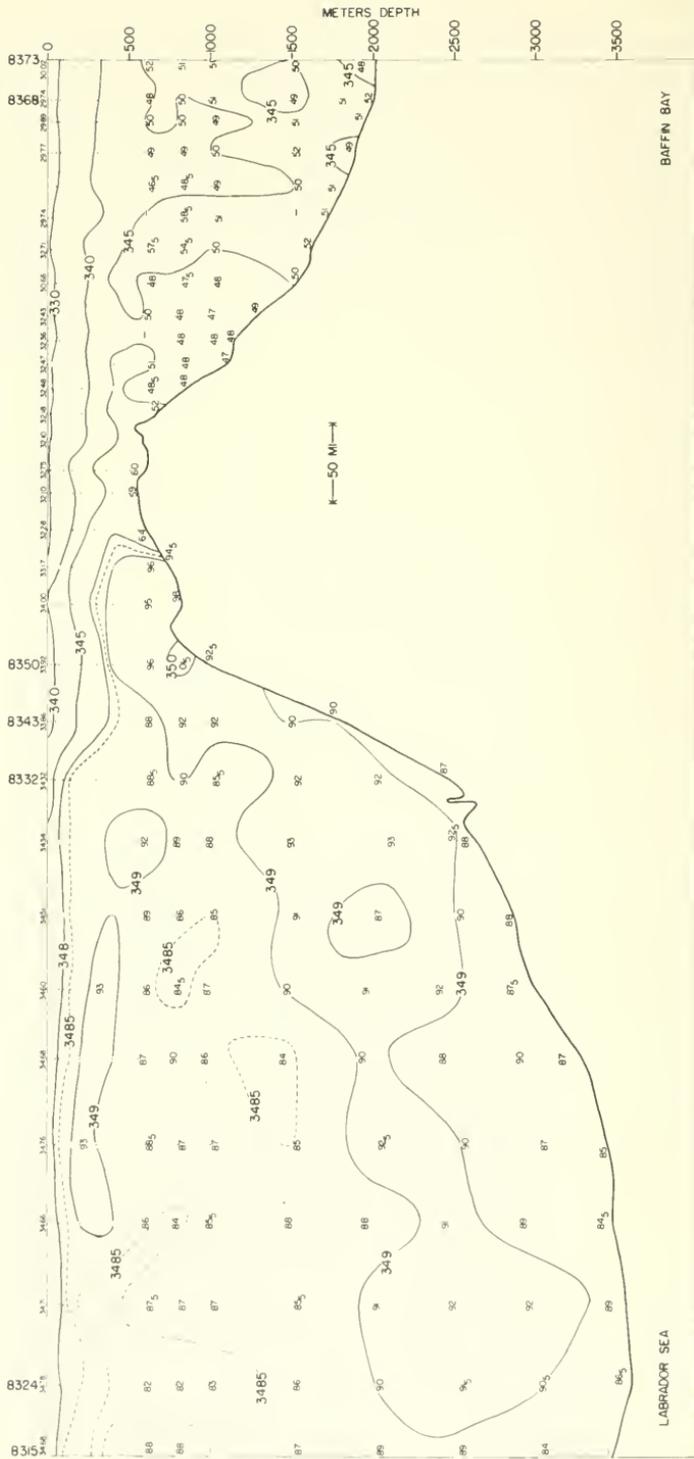


FIGURE 38.—Salinity distribution along longitudinal section between the Labrador Sea and Baffin Bay, from data collected 16–27 July 1962.



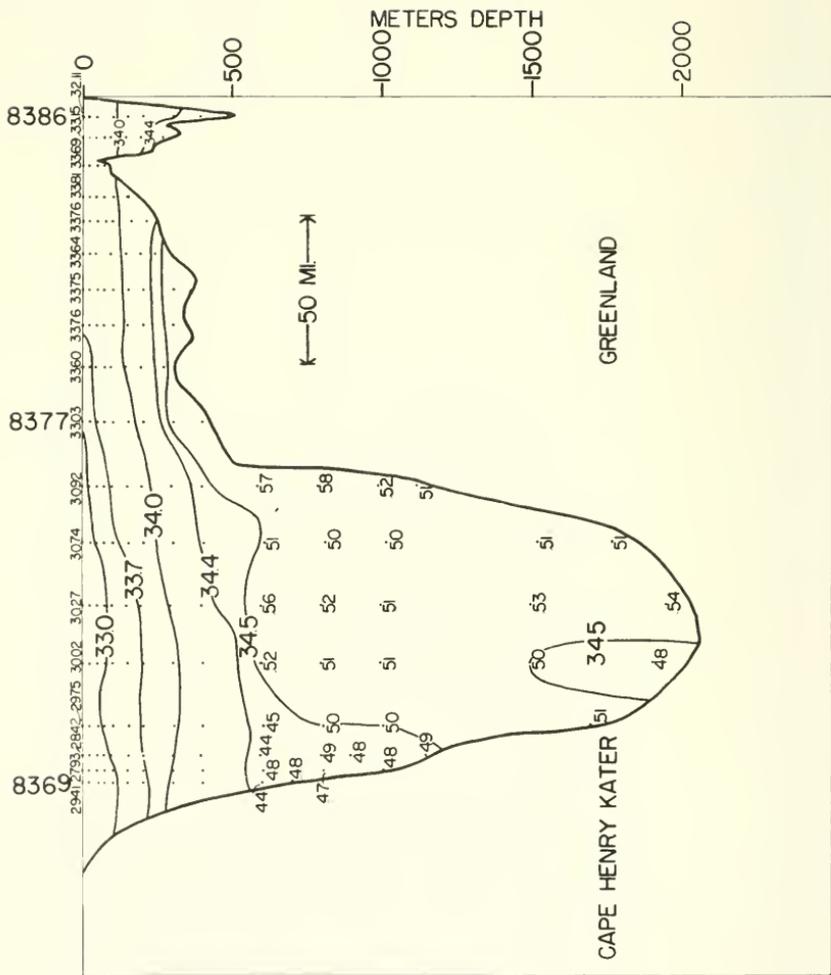


FIGURE 40.—Salinity distribution along section between Cape Kater, Baffin Island and Nugsuak Peninsula, Greenland, from data collected 26-28 July 1962.

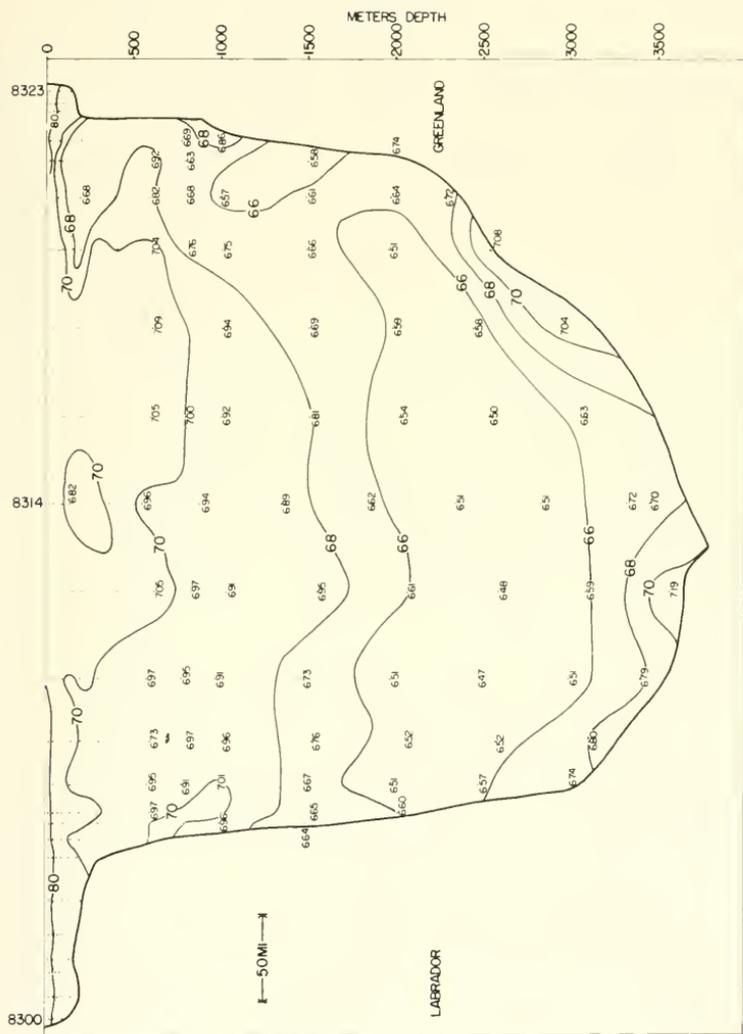


FIGURE 41.—Distribution of dissolved oxygen in ml/l, along section between South Wolf Island, Labrador and Cape Farewell, Greenland, from data collected 13-17 July 1962.

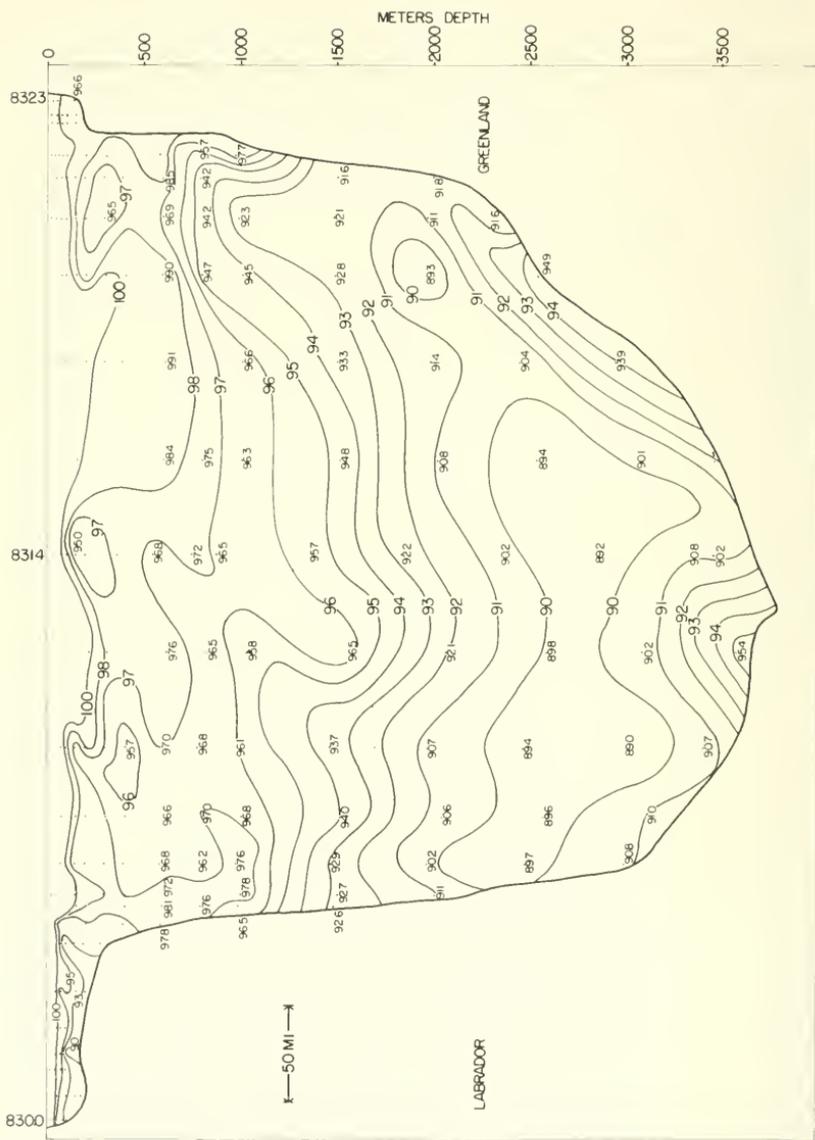


FIGURE 42.—Distribution of dissolved oxygen, in percent saturation, along section between South Wolf Island Labrador and Cape Farewell, Greenland from data collected 13-17 July 1962.

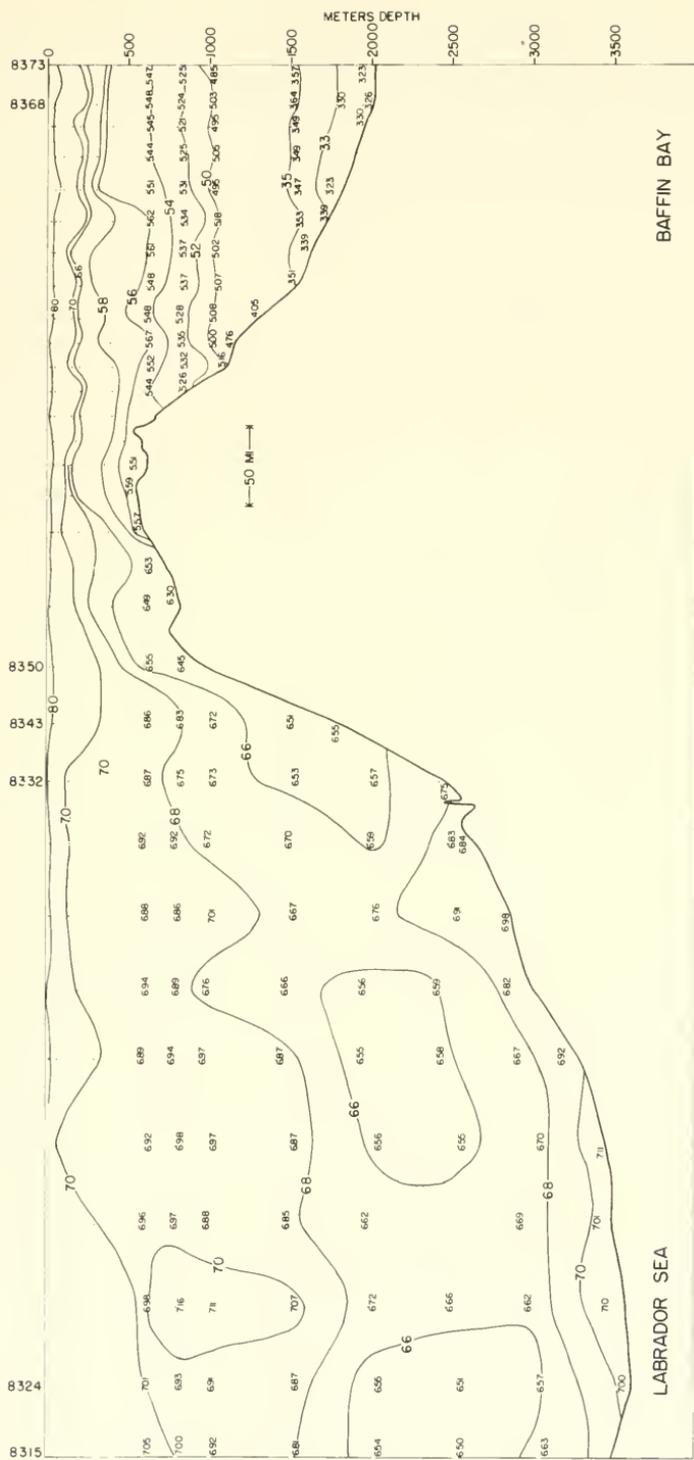


FIGURE 43.—Distribution of dissolved oxygen in ml/l., along longitudinal section between the Labrador Sea and Baffin Bay, from data collected 16-27 July 1962.

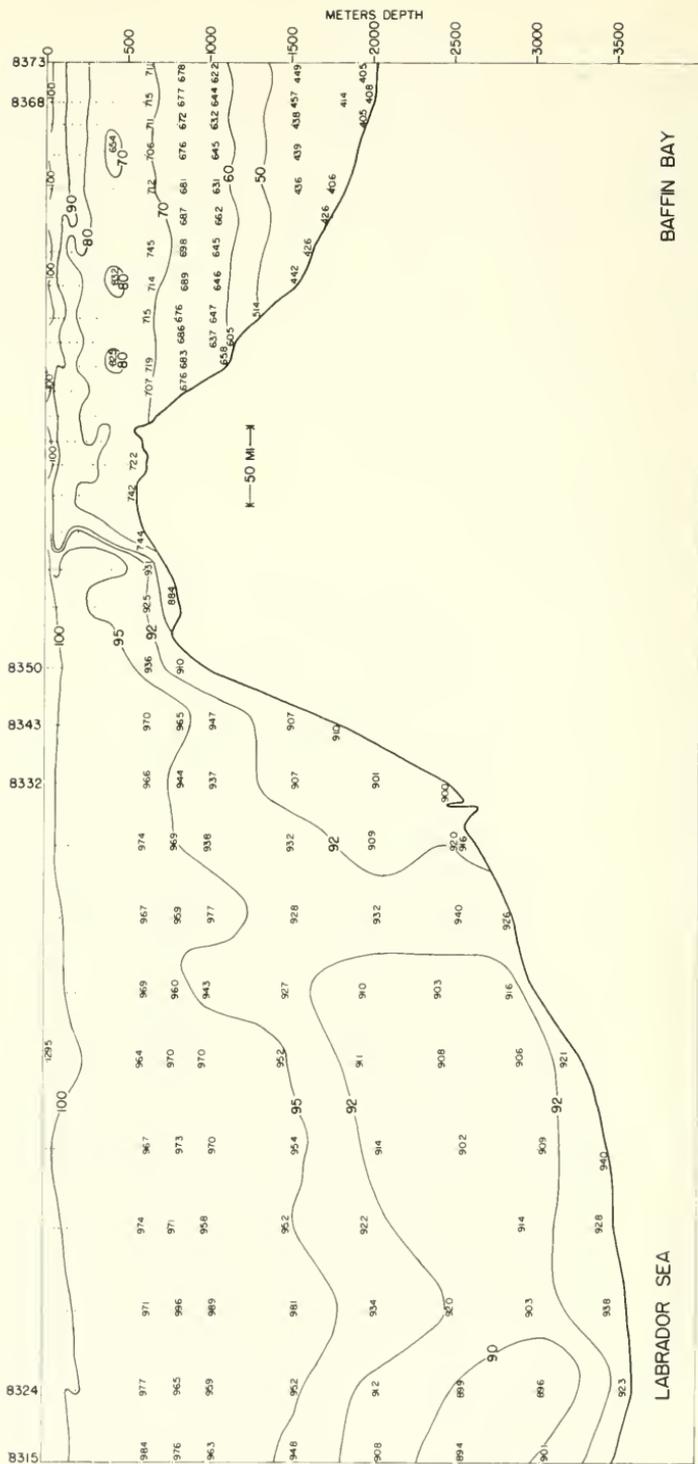


FIGURE 44.—Distribution of dissolved oxygen, in percent saturation, along longitudinal section between the Labrador Sea and Baffin Bay from data collected 16–27 July 1962.

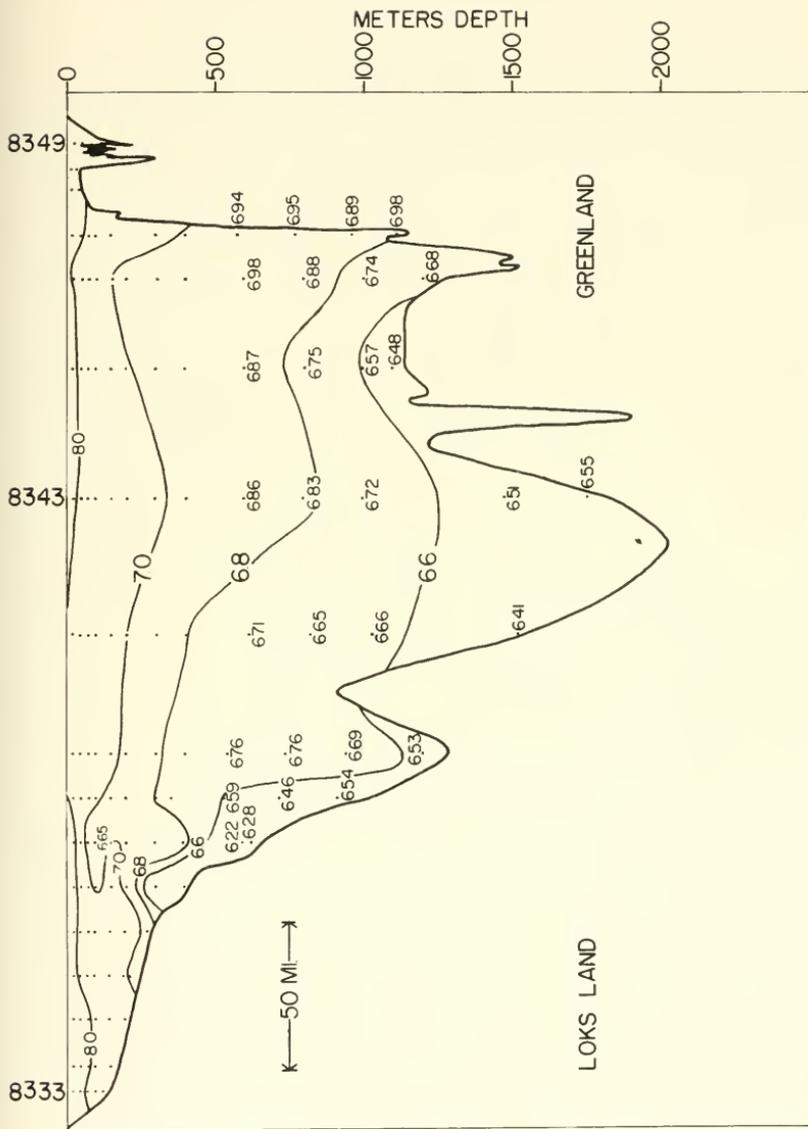


FIGURE 45.—Distribution of dissolved oxygen, in ml/l, along section between Loks Land, Baffin Island and Fyllas Bank, Greenland from data collected 20-22 July 1962.

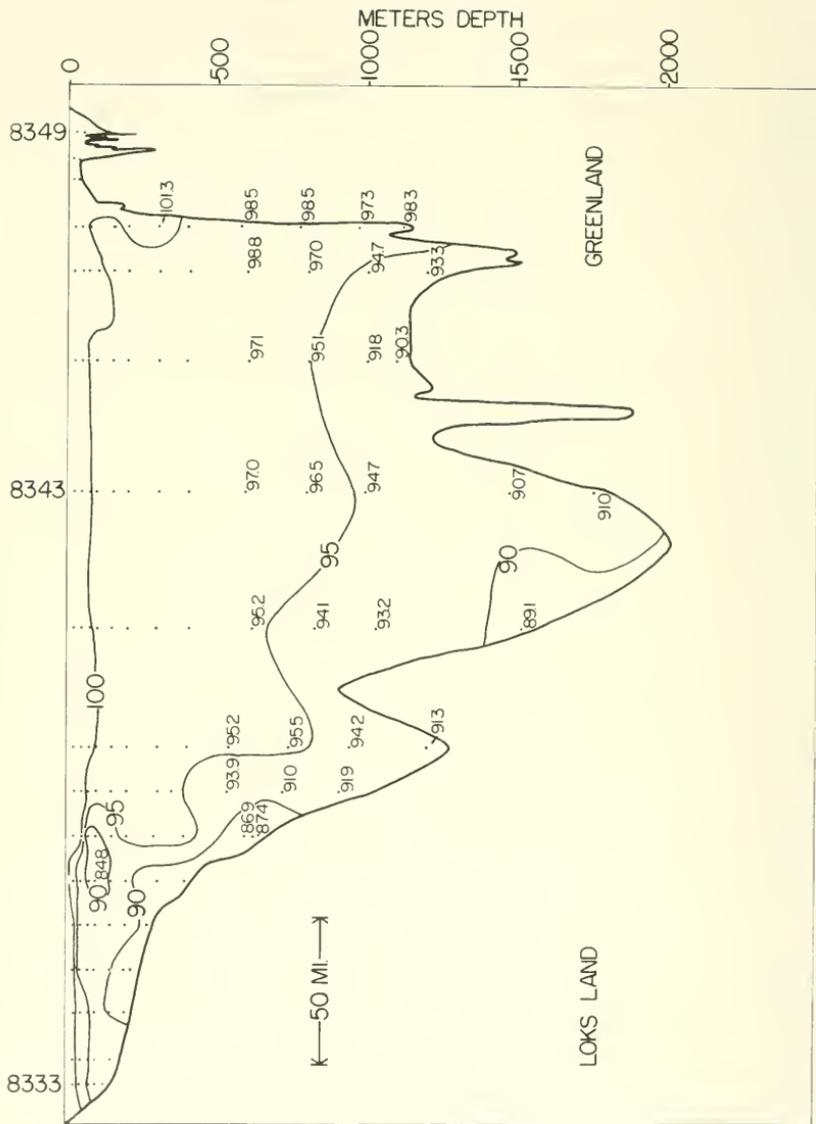


FIGURE 46.—Distribution of dissolved oxygen, in percent saturation, along section between Loks Land, Baffin Island and Fyllas Bank, Greenland from data collected 20-22 July 1962.

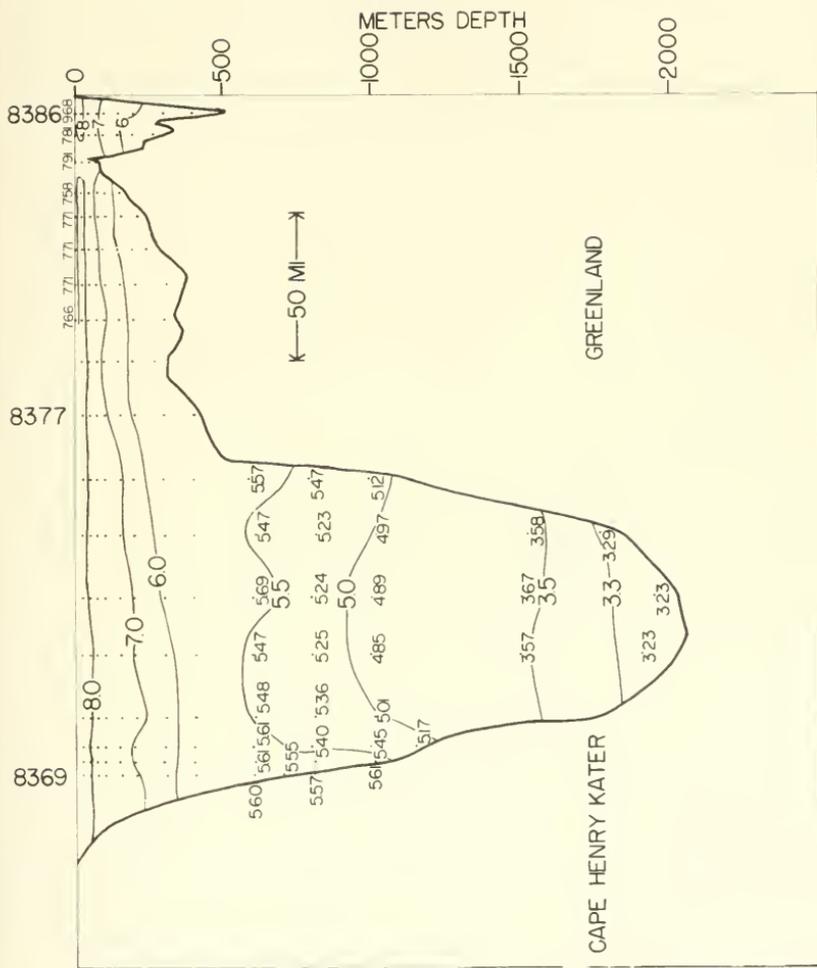


FIGURE 47.—Distribution of dissolved oxygen, in ml/l, along section between Cape Kater, Baffin Island and Nugsuak Peninsula, Greenland from data collected 26–28 July 1962.

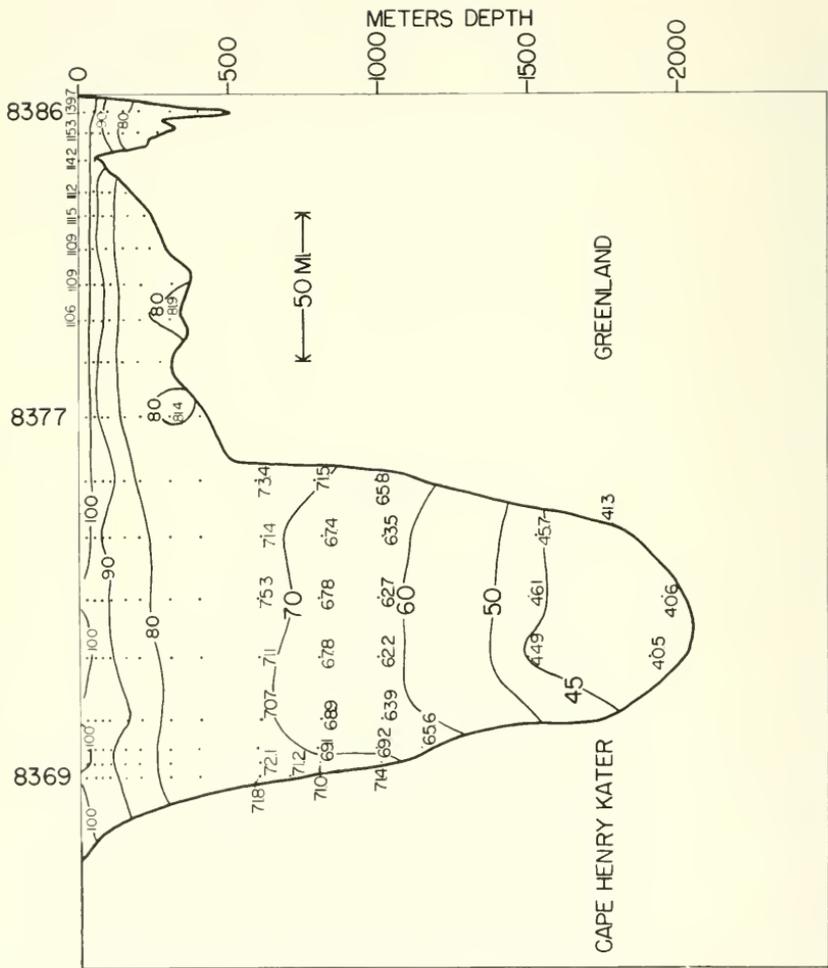


FIGURE 48.—Distribution of dissolved oxygen, in percent saturation, along section between Cape Kater, Baffin Island and Nugsuak Peninsula Greenland from data collected 26–28 July 1962.

in the longitudinal section (fig. 34) about to station 8328, north of which it rises abruptly to become associated with one of the westward branchings of the West Greenland Current. In the Loks Land-Fyllas Bank section (fig. 35) the warm water associated with the West Greenland Current, with a temperature greater than  $4^{\circ}$ , extends as a band centered at about 500 meters almost completely across the section. Figure 36 shows only a remnant of West Greenland Current with a temperature greater than  $3^{\circ}$  on the Greenland shelf. A much larger cross section, however, is enclosed by the  $1^{\circ}$  isotherm. Before leaving the temperature sections we wish to note the manner in which the  $2^{\circ}$  isotherm closely parallels the slope of the bottom in figures 33 and 34.

Figures 37 through 40 show the salinity distribution along the same four sections for which the temperature distribution has been presented above. In figure 37 the highest salinities are found in the core of the Irminger Current component of the West Greenland Current, with a maximum of  $35.04\text{‰}$ . The area of salinity greater than  $34.90$  spreads downward and seaward producing a deep salinity maximum layer at about 2,500 meters. This is interrupted at station 8315, although it usually extends as a continuous layer to the vicinity of the Labrador side of the section. The swifter currents in the upper layers are approximately normal to the South Wolf Island-Cape Farewell section with both the West Greenland Current and the Labrador Current having relatively cold and fresh water shoreward and relatively warm and saline water making up the seaward margins of the current. Also, along the offshore margin of the West Greenland Current the adjacent water of the central Labrador Sea, while not as warm as the warm core of the Irminger Current component of the West Greenland Current, is warmer than the inshore part of the West Greenland Current. Thus there is a possibility of adjacent waters of differing T-S characteristics within a constant density surface mixing to produce a slightly denser mixed water, and this possibility exists, not only along the offshore margin of the warm saline part of the peripheral currents but also to a lesser degree along the steep horizontal gradients of temperature and salinity within the peripheral currents.

Figure 38 shows the same downward and seaward spreading of this salinity maximum layer from the westward branching of the West Greenland Current at the southern end of Davis Strait. Figure 39 is not as definite but the salinity maximum layer is identifiable. In figure 40 there seems to be some indication of downward mixing along the Baffin Island side.

As noted in Bulletin No. 47 (1961 season) of this series, while all of the oxygen values found in the Labrador Sea are high, the higher values are associated with cold parent water masses and the lower oxygen values are associated with warm parent water masses. Thus

in figure 41 an oxygen minimum layer corresponds in position with the salinity maximum layer derived from the warm Irminger Current component of the West Greenland Current. Similarly, in figure 43 the correspondence between the oxygen minimum layer in the Labrador Sea and the salinity maximum layer shown in figure 38 is even more striking. This correspondence is no longer evident in the Loks Land section (fig. 45), but reference to figure 43 indicates that here the picture is complicated by some addition of low oxygen water from the Baffin Land Current through Davis Strait. Figure 47 shows additional indication of downward mixing to about 1,200 meters along the Baffin Island side.

In the summertime conditions shown in figures 41 and 43 the cold bottom water, with oxygen values in excess of 7 ml/l, is separated from the water of high oxygen values at the upper levels along the Greenland coast by water of higher temperature and lower oxygen at intermediate levels. In previous bulletins it has been proposed that this bottom water was formed in the central Labrador Sea in wintertime through vertical convection, probably not every winter and, in winters of its formation, intermittently as to time and geographical location. In the past very few wintertime observations have been available from the central Labrador Sea. During the winter of 1961-62, however, several sections were occupied from the chartered *Erica Dan* by Woods Hole Oceanographic Institution personnel. These observations showed very nearly the same conditions as those characteristically found during the summertime. While it would appear that vertical convection occurs in most winters to depths of about 2,000 meters in the central part of the Labrador Sea, the cold high-oxygen bottom water must have some other source.

As part of the International Geophysical Year the *Anton Dohrn* and *Gauss* occupied several sections between Greenland and the mid-Atlantic ridge from Denmark Strait to Cape Farewell in late summer and again in late winter. These winter observations, made from the *Anton Dohrn* in March 1958, are of particular interest in the present discussion. They indicate that a possible source of the bottom water of the Labrador Sea is water of the Norwegian Sea crossing the Denmark Strait ridge and moving along bottom near the foot of the Greenland continental slope, sinking as the depth of water increases toward Cape Farewell. For consideration as a possibility the mechanism must stipulate that the contributions from the Norwegian Sea across the Denmark Strait ridge are intermittent in order to account for sections in which water of the appropriate temperature, salinity and oxygen content is missing.

Near-bottom water of potential temperatures of about 1.3 has been found on the Greenland slope of the Labrador Sea at depths of about 3,100 meters along the South Wolf Island-Cape Farewell section, and with potential temperatures of about 1.4 on the Labrador slope

at depths of about 3,150 meters. Also near-bottom water has been found having potential temperatures of 1.2 at 3,450 meters on the Greenland slope and 1.3 at 3,600 meters on the Labrador side. These are considered to be representative values for the 15 annual summer-time occupations 1948-62. Other colder values have been observed. For example in 1954 at station 5705 a potential temperature of 1.18 was found at 3,450 meters although the coldest potential temperature found along a section extending east from Cape Farewell was 1.29 at station 5723 at a depth of 2,810 meters and the coldest potential temperature along a section extending southeastward from Cape Farewell was 1.83 at station 5735 at 1,926 meters. Again in 1962 at station S315 at 3,460 meters the potential temperature was 1.18 and northward of this station at station S324 at 3,526 meters the potential temperature was 1.16 and at station S325 at 3,424 meters it was 1.18.

In considering the *Anton Dohrn* sections, then, we must look for oxygen values greater than 7 ml/l and potential temperatures of less than 1.5. In presenting these data in *Deutsche Hydrographische Zeitschrift* in 1960, G. Dietrich has named the sections A, C, D, E, F, H, and J from Denmark Strait to Cape Farewell. Using his section designations and the data from the IGY Data Center, we find the following observations with potential temperatures colder than 1.5:

Section	Station	Depth	Potential temperature	Salinity	Oxygen, ml/liter
A-----	2268	680	0.94	34.92	7.23
		728	0.05	34.94	7.16
	2269	488	0.15	34.91	7.23
C-----			( <sup>1</sup> )	-----	-----
D-----	2313	2,720	1.40	34.88	6.95
E-----	2317	2,875	1.30	34.90	5.94
	2318	2,750	1.44	34.91	6.81
F-----	2328	2,520	1.48	34.88	6.94
H-----			( <sup>1</sup> )	-----	-----
J-----	2340	2,935	1.22	34.88	6.97
	2341	3,220	1.23	34.87	6.98

<sup>1</sup> No potential temperature as low as 1.5.

Thus, while the water found by the *Anton Dohrn* falls short of qualifying, the time of the observations may represent an interval between periods when water of cold enough temperature and high enough oxygen may be contributed across Denmark Strait ridge.

Another possible source of the cold high-oxygen bottom water of the Labrador Sea is in the northwestern part of the Labrador Sea near the juncture of the Baffinland Current which has come through Davis Strait, and the westward branching of the West Greenland Current south of Davis Strait ridge. This involves surface cooling to the freezing point and subsequent increase in salinity through ice formation and convective mixing. Water so cooled (to  $-1.8^{\circ}$ ) and con-

centrated (to a salinity of about 34.80) could mix with the adjacent West Greenland Current water of  $4^{\circ}$  and  $35.00^{\circ}/\text{‰}$  in about equal proportions to produce the mixture of about  $1.13^{\circ}$  and  $34.90^{\circ}/\text{‰}$  which would be of appropriate temperature, salinity and density to supply bottom water of the characteristics found in the deeper parts of the Labrador Sea.

Winter time observations from the northwestern Labrador Sea, at times when sea ice formation has had its presumed effect of salt concentration, are needed to verify this possible source of the bottom water of the Labrador Sea.

## SUMMARY

1. Four charts showing the dynamic topography of the sea surface found during as many surveys made in the Grand Banks region during the 1962 season have been presented.

2. The temperature-salinity relationships in the different water masses found in the Grand Banks region in 1962 have been compared with the average relationships for the 15-year period 1948-62.

3. Tentative normal seasonal variation relationships in the volume transport and mean temperature of the Labrador Current have been revised to include additional measurements at the sections comprising the Bonavista triangle and sections G and F, and have been developed initially for sections H and F<sub>2</sub>. A similar revision for the West Greenland Current at Cape Farewell has been presented.

4. The volume and heat transports and mean temperature found during 25 reoccupations of sections across the Labrador Current in 1962 have been compared with tentative seasonal normal values.

5. The circulation in the upper levels in southern Baffin Bay and Davis Strait, and at all levels in the Labrador Sea has been discussed in the light of the distribution of temperature, salinity and oxygen observed during the 1962 postseason survey. A revised mechanism for the production of the bottom water of the Labrador Sea has been proposed.

# NUTRIENT DISTRIBUTION IN THE LABRADOR SEA AND BAFFIN BAY <sup>1</sup>

By Nathaniel Corwin and David A. McGill

Woods Hole Oceanographic Institution

Woods Hole, Massachusetts

The chemical characteristics of the Labrador Sea have not been as thoroughly studied as more southern regions of the North Atlantic Ocean. The general circulation pattern has been determined from observations of temperature and salinity, but other parameters are not widely available from early surveys, except for such limited data as that obtained by the *Godthaab* expedition of 1928 (Hagen, 1931, 1936). The present paper gives the results of determinations of several nutrient elements in sea water samples obtained in July 1962 during the annual postseason cruise of the International Ice Patrol. The authors gratefully acknowledge the assistance of the U.S. Coast Guard Oceanographic Unit of the Ice Patrol.

## METHODS

Plax bottles (8 ounce) were filled with sea water collected on stations of the USCGC *Evergreen* and were then stored in deep-freeze lockers until the return of the ship to Woods Hole, where the analyses were conducted. Inorganic phosphate and total phosphorus determinations were made for all samples. Nitrate- and nitrite-nitrogen and silicate were also measured. The techniques employed are summarized as follows:

*Inorganic phosphate* was determined by the ammonium molybdate method as described by Wooster and Rakestraw (1951). Stannous chloride was used as the reducing agent and measurements were made colorimetrically using a model DU spectrophotometer with a 10-cm light path at 700 m $\mu$ .

*Total phosphorus* was analysed by the method described by Harvey (1948) as modified by Ketchum, Corwin, and Keen (1955). Following digestion in a steam autoclave for 5 hours at a pressure of 38 pounds per square inch, samples were determined colorimetrically for the molybdate complex reduced by stannous chloride as in the inorganic phosphate method.

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<sup>1</sup> This work has been supported in part by the Office of Naval Research under contract Nonr-2196(00). Contribution No. 1370 from the Woods Hole Oceanographic Institution.

*Nitrate-nitrogen* was determined following reduction with hydrazine in the presence of copper according to the method of Mullin and Riley (1955a). Samples were read on a DU spectrophotometer at 524 m $\mu$ . The value obtained is the total of both the nitrate and the nitrite present in a sample.

*Nitrite-nitrogen* was measured colorimetrically following diazotization with sulfanilic acid coupling with alphanaphthylamine according to the method of Rider and Mellon (1946). The sample was read on a DU spectrophotometer at 520 m $\mu$ .

*Silicate-silicon* was also measured colorimetrically, using the method described by Mullin and Riley (1955b) which depends upon the development of a molybdenum blue complex in acid solution after oxidation with metolsulfite-oxalate solution. Samples were read at 882 m $\mu$  on a DU spectrophotometer.

Simplified profiles of the data for three sections in the Labrador Sea and Baffin Bay are drawn in which the distribution is indicated by smooth contours omitting questionable points. The area of maximum concentration for each figure is shaded.

## DISTRIBUTION OF NUTRIENT PARAMETERS

The inorganic phosphate distribution in the section from South Wolf Island, Labrador to Cape Farewell, Greenland shows a considerable homogeneity in the deep water (fig. 49). Values of 1.20  $\mu\text{gA/l}$  occur from 200 meters to the bottom in the western half of the section and throughout about half this depth range in the eastern part of the region. A phosphate maximum of concentrations greater than 1.30  $\mu\text{gA/l}$  is found in the western region between 1,000 and 2,500 meters. Values near the surface are low but show a quick rise to values of 1.00  $\mu\text{gA/l}$  or greater near 100 meters. Variations in the depth of the 1.00  $\mu\text{gA/l}$  concentration may be a reflection of the strong surface currents which are present near each coast.

Figure 50 presents the inorganic phosphate distribution in a longitudinal section that runs northward into Baffin Bay. The high inorganic phosphate level appears to originate from the north and thence to spread southward. The section in the midline of the basin does not appear to follow the core of the high phosphate water, which is somewhat more pronounced on the western side of the basin. Such, at least, is the impression given by figure 51, in which the inorganic phosphate in a section from Loks Land to the coast of Greenland is shown. The high inorganic phosphate concentration is found in the depth of Baffin Bay well inside and below the region of the sill in Davis Strait (fig. 50). It appears that water with an inorganic phosphate content of about 1.30  $\mu\text{gA/l}$  escapes over the sill and thus contributes to the maximum value observed in the southward sections. The concentrations of phosphate in Baffin Bay below sill depth increase regularly to values of more than 2.00  $\mu\text{gA/l}$  at the bottom.

The distribution of total phosphorus in all three sections is similar to the inorganic phosphate. Values are not significantly greater than for inorganic phosphate except in the surface and especially in the coastal regions of strong currents, where a noticeable amount of organic phosphorus is present. These values represent as much as  $0.30 \mu\text{gA/l}$  of organic phosphorus in the West Greenland Current and the Labrador Current as seen in the two sections across the Labrador Sea from Canada to Greenland.

The distribution of nitrate is also similar to that shown for the inorganic phosphate but less sharply delineated. In the section from South Wolf Island to Cape Farewell, values near the surface increase to a concentration of  $10.0 \mu\text{gA/l}$  at about 100 meters (fig. 52). A small peak of more than  $15.0 \mu\text{gA/l}$  occurs at about 300 meters but with a patchy and sporadic distribution. In the deep water a nitrate maximum of greater than  $15.0 \mu\text{gA/l}$  is observed in the same area as the phosphate maximum was seen. The longitudinal section into Baffin Bay (fig. 53) again points out the possible relation of this high nitrate level to the water which escapes over the sill. A general concentration of  $10.0 \mu\text{gA/l}$  below the surface is seen in the Baffin Bay region, with increases to more than  $20.0 \mu\text{gA/l}$  in the bottom of the basin. Some mixing of low nitrate surface water into the deeper strata is suggested in the cross section from Loks Land to Fyllas Bank (fig. 54).

The distribution of nitrite is of importance only in the near-surface waters, where it represents an important stage in the regeneration of nitrogen. The nitrite distribution from the surface to 500 meters is shown in figure 55, where the top drawing is the southern cross section and the middle figure the northern section from Loks Land to Fyllas Bank. In the bottom figure the longitudinal section is shown. It will be noted that nitrite remains at a very low level in Baffin Bay while elsewhere in all three sections a maximum value up to  $0.40 \mu\text{gA/l}$  is obtained near 100 meters. The nitrite concentration is greatest in the northern cross section in the area off the Greenland coast.

The silicate distribution in general follows the same pattern as seen in other nutrients. A silicate maximum of concentrations greater than  $10.0 \mu\text{gA/l}$  is found in deep water of the southern cross section but not in the northern cross section except for a limited region near the western slope (figs. 56, 58). From the longitudinal section (fig. 57) it is seen that the silicate levels within Baffin Bay show a considerable increase with depth. The level in subsurface water is over  $10.0 \mu\text{gA/l}$  but it is not clear how much of this is carried beyond the region of the sill. A great accumulation of silicate is seen in the bottom waters within Baffin Bay.

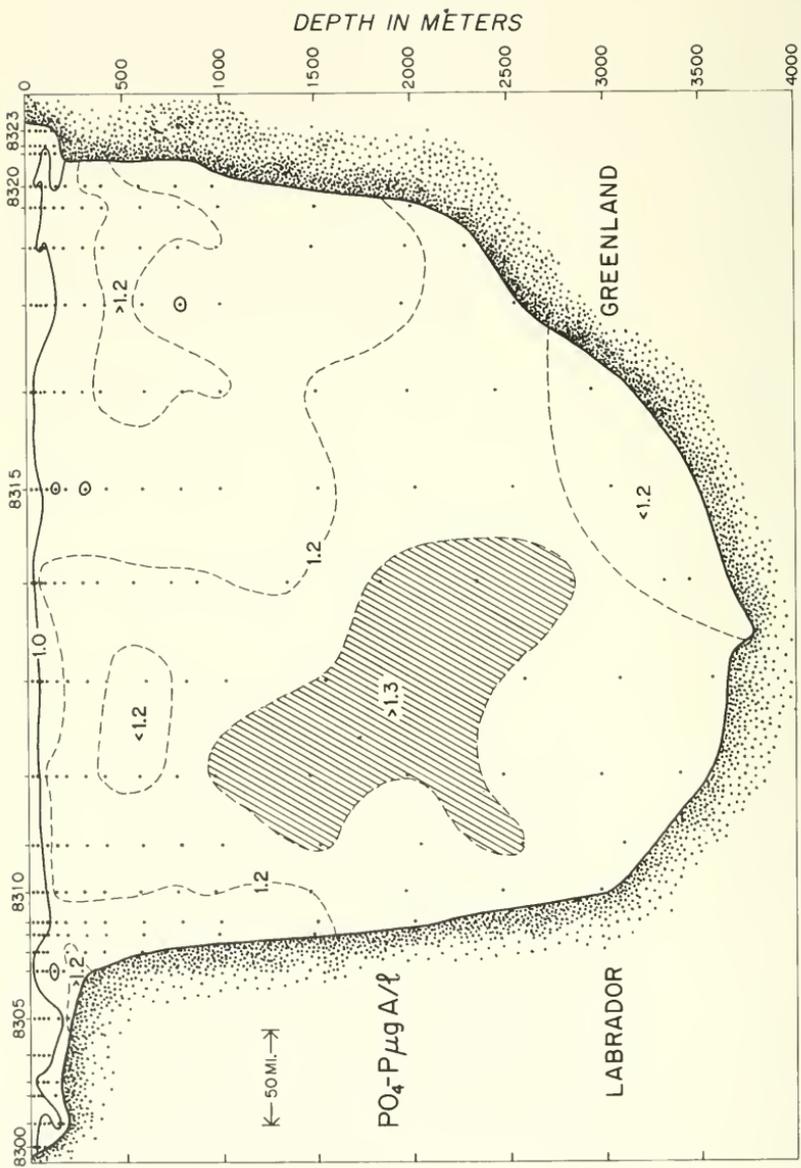


FIGURE 49.—Distribution of inorganic phosphates, with  $\text{PO}_4\text{-P}$  in  $\mu\text{g A/l}$ , along section between South Wolf Island, Labrador and Cape Farewell, Greenland, from samples collected 13–17 July 1962.

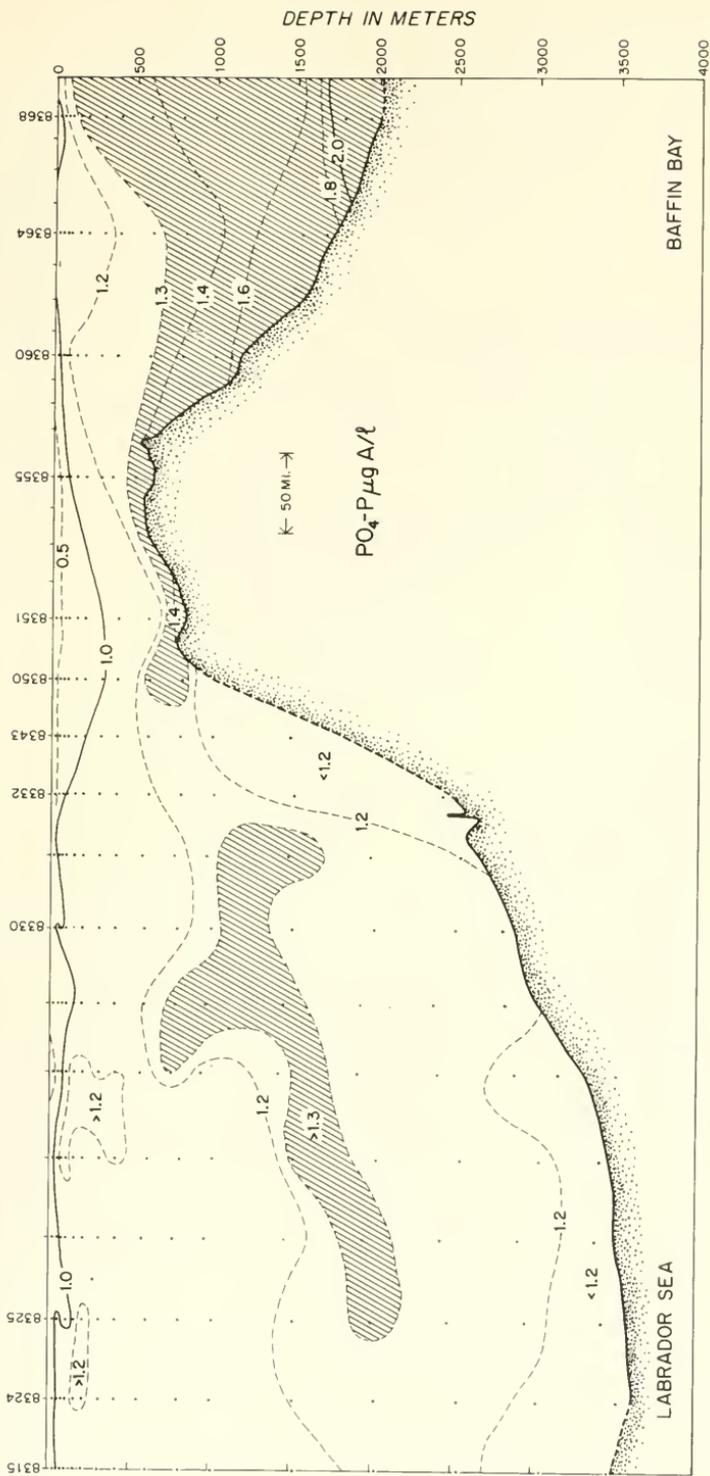


FIGURE 50.—Distribution of inorganic phosphates, with  $\text{PO}_4\text{-P}$  in  $\mu\text{g A/l}$ , along longitudinal section between the Labrador Sea and Baffin Bay, from samples collected 16–26 July 1962.

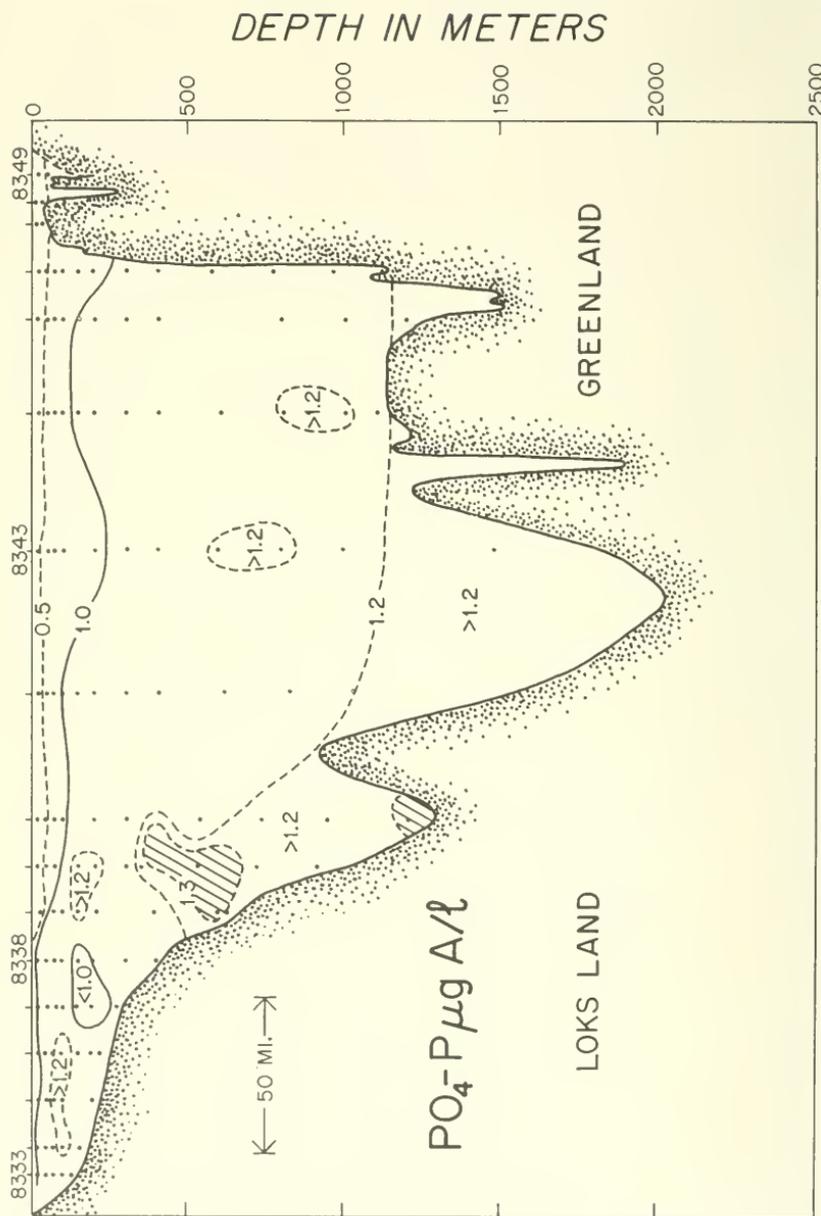


FIGURE 51.—Distribution of inorganic phosphates, with PO<sub>4</sub>-P in μg A/l, along section between Loks Land, Baffin Island and Fyllas Bank, Greenland, from samples collected 20–22 July 1962.

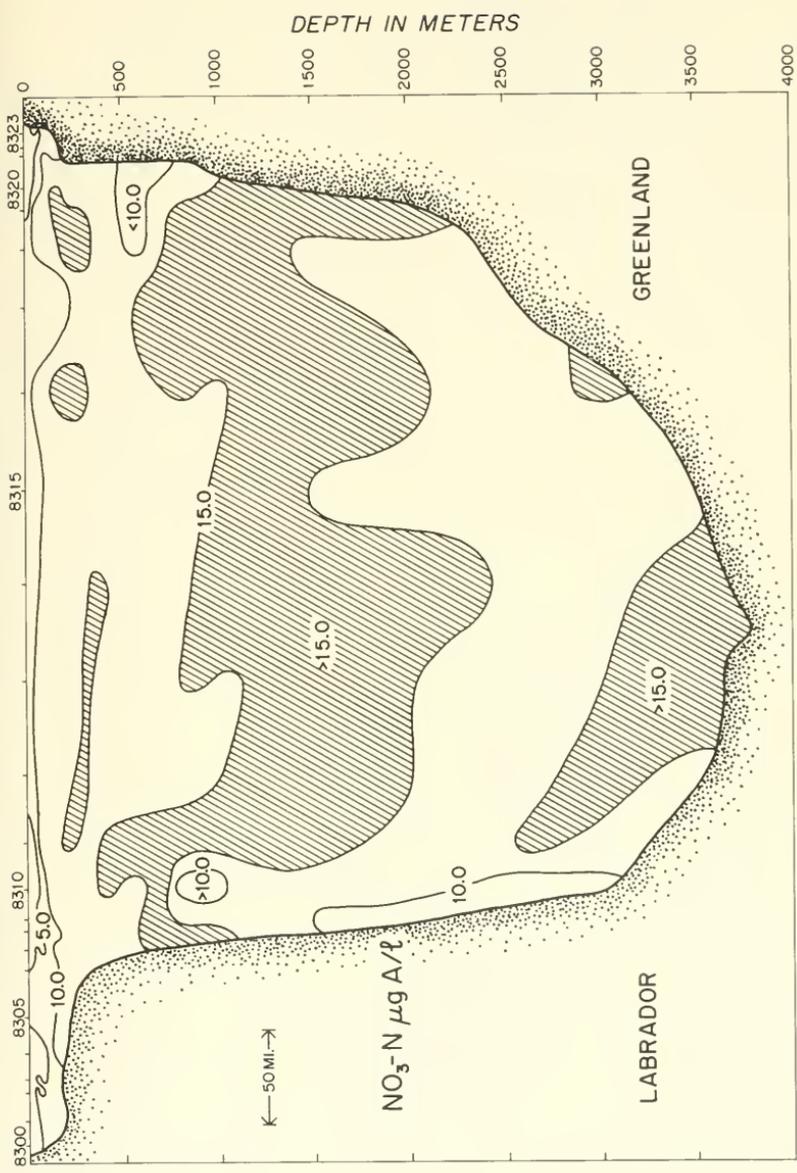


FIGURE 52.—Distribution of nitrate nitrogen, with  $\text{NO}_3\text{-N}$  in  $\mu\text{g}/\text{l}$ , along section between South Wolf Island, Labrador and Cape Farewell, Greenland, from samples collected 13-17 July 1962.

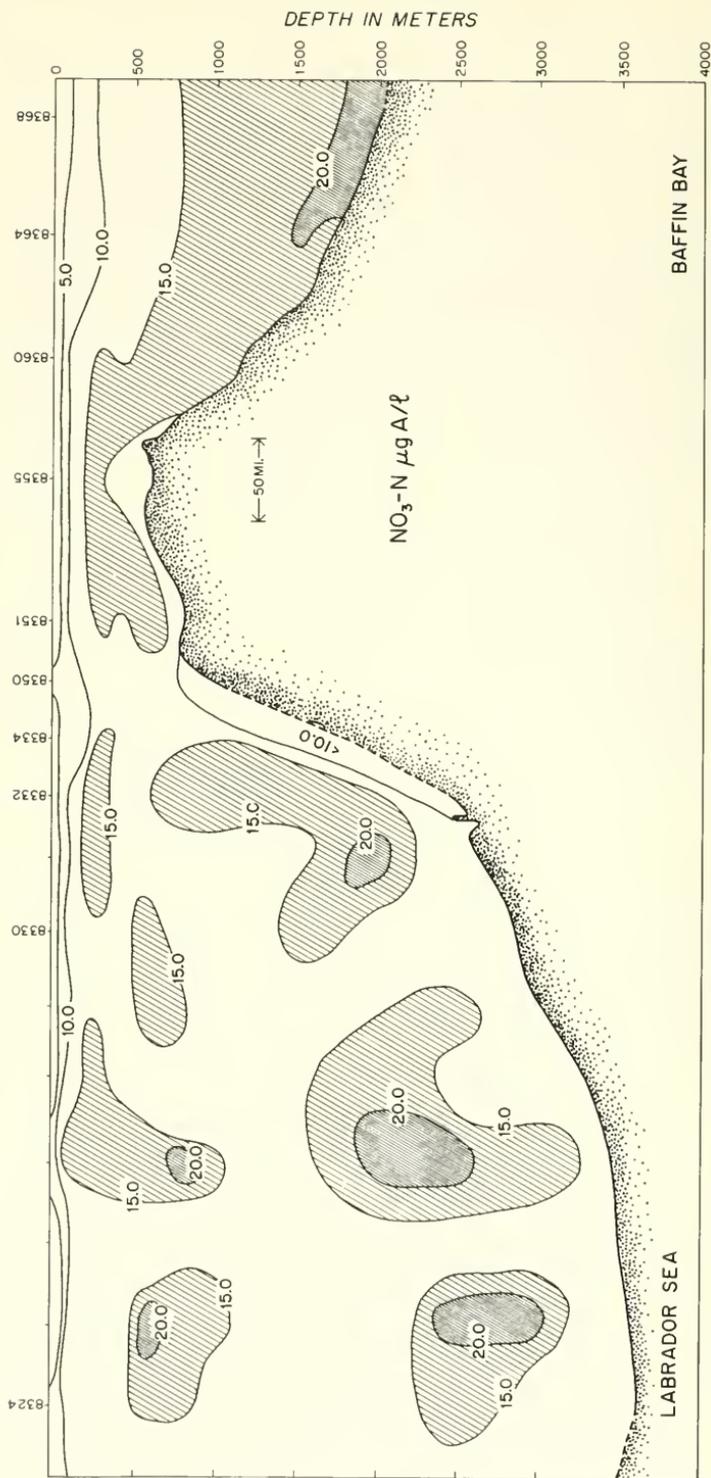


FIGURE 53.—Distribution of nitrate nitrogen, with  $\text{NO}_3\text{-N}$  in  $\mu\text{g A/l}$ , along longitudinal section between the Labrador Sea and Baffin Bay, from samples collected 16-26 July 1962.

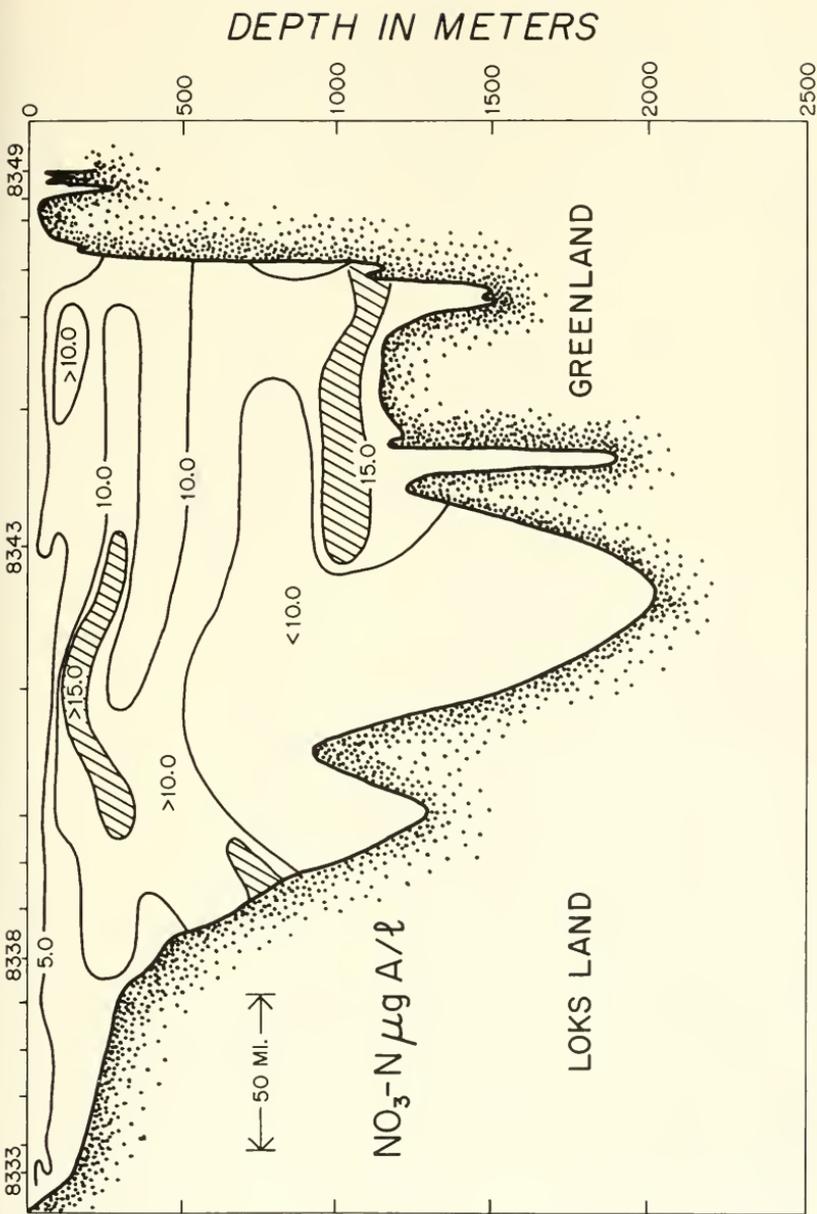


FIGURE 54.—Distribution of nitrate nitrogen, with  $\text{NO}_3\text{-N}$  in  $\mu\text{g A/l}$ , along section between Loks Land, Baffin Island and Fyllas Bank, Greenland, from samples collected 20–22 July 1962.

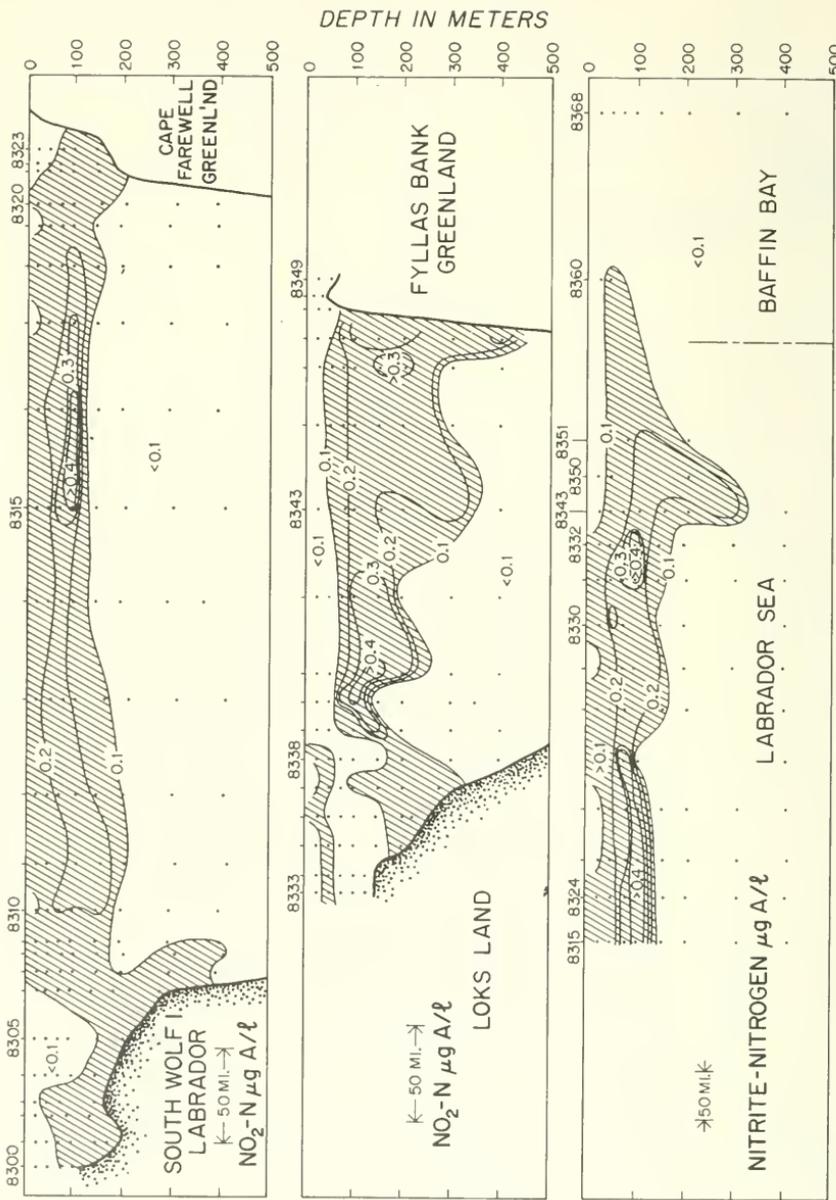


FIGURE 55.—Distribution of nitrite nitrogen, with  $\text{NO}_2\text{-N}$  in  $\mu\text{g A/l}$ , along three sections occupied in July 1962.

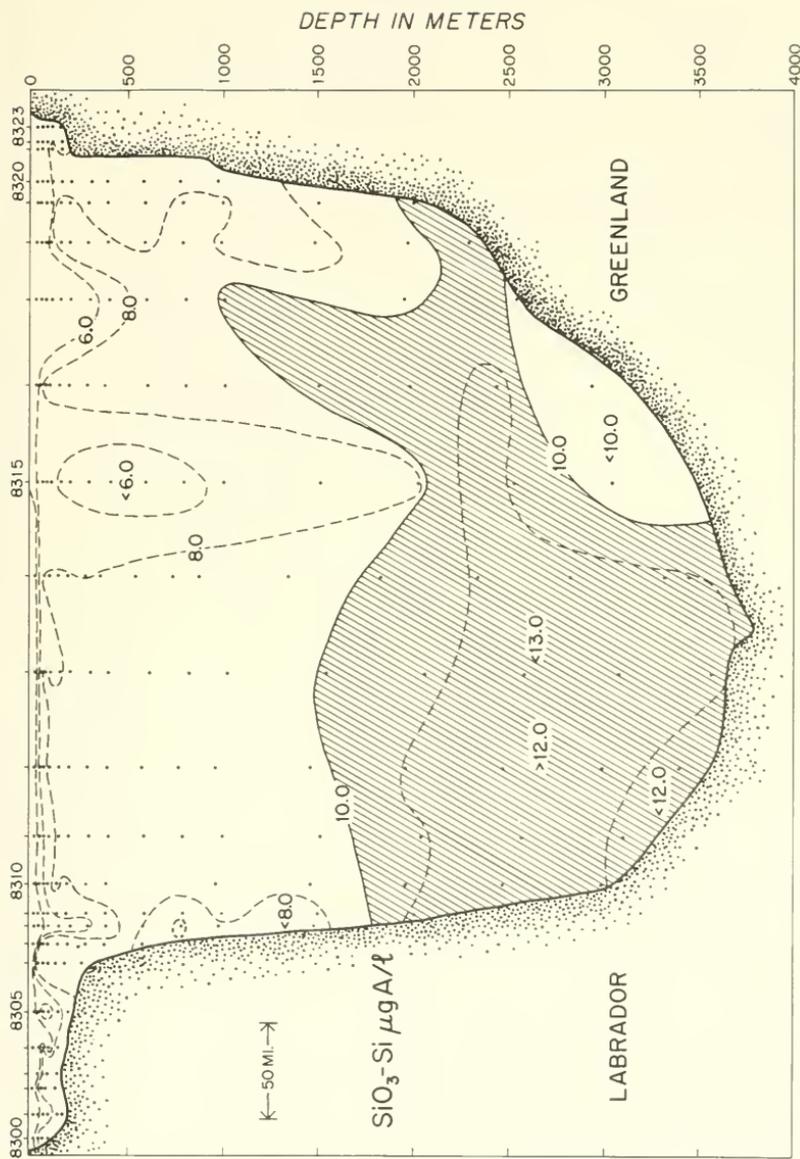


FIGURE 56.—Distribution of silicates, with Si in  $\mu\text{g/l}$ , along section between South Wolf Island, Labrador and Cape Farewell, Greenland from samples collected 13-17 July 1962.

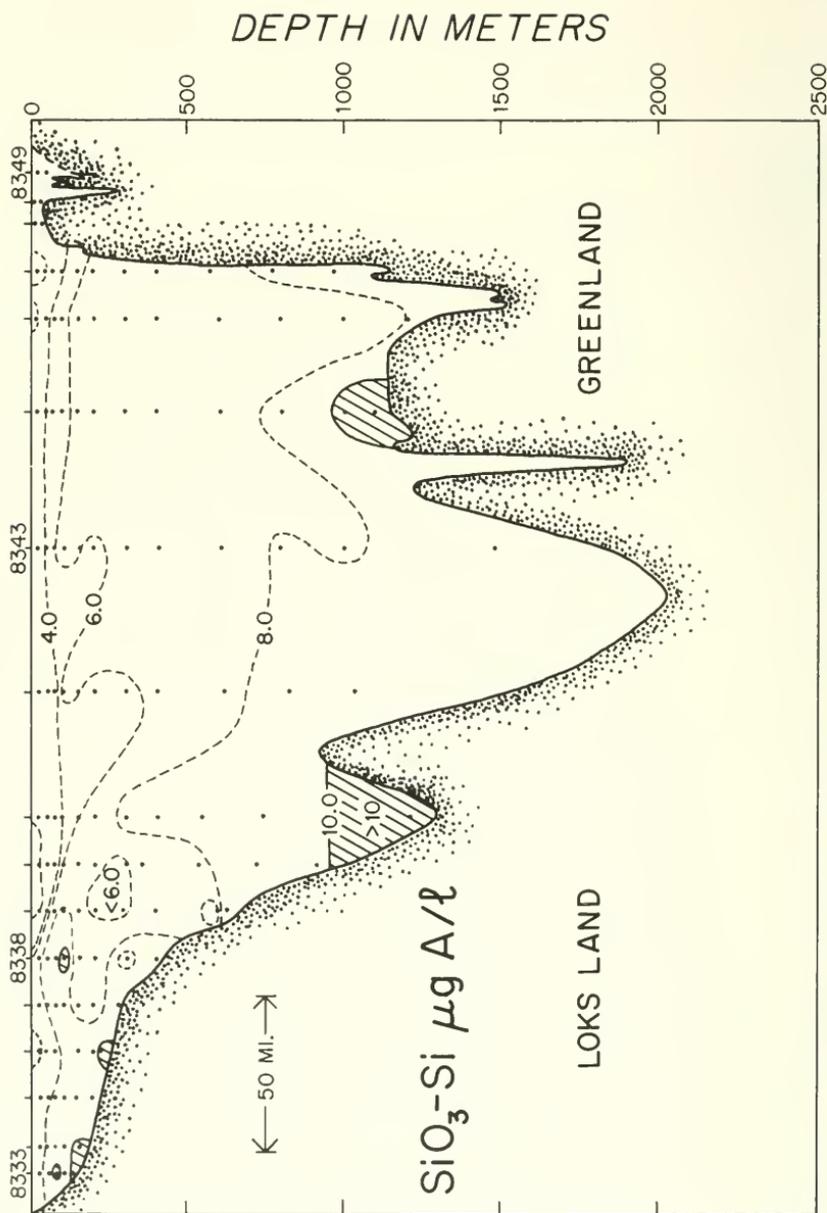


FIGURE 57.—Distribution of silicates, with Si in  $\mu\text{g A/l}$ , along longitudinal section between the Labrador Sea and Baffin Bay, from samples collected 16–26 July 1962.

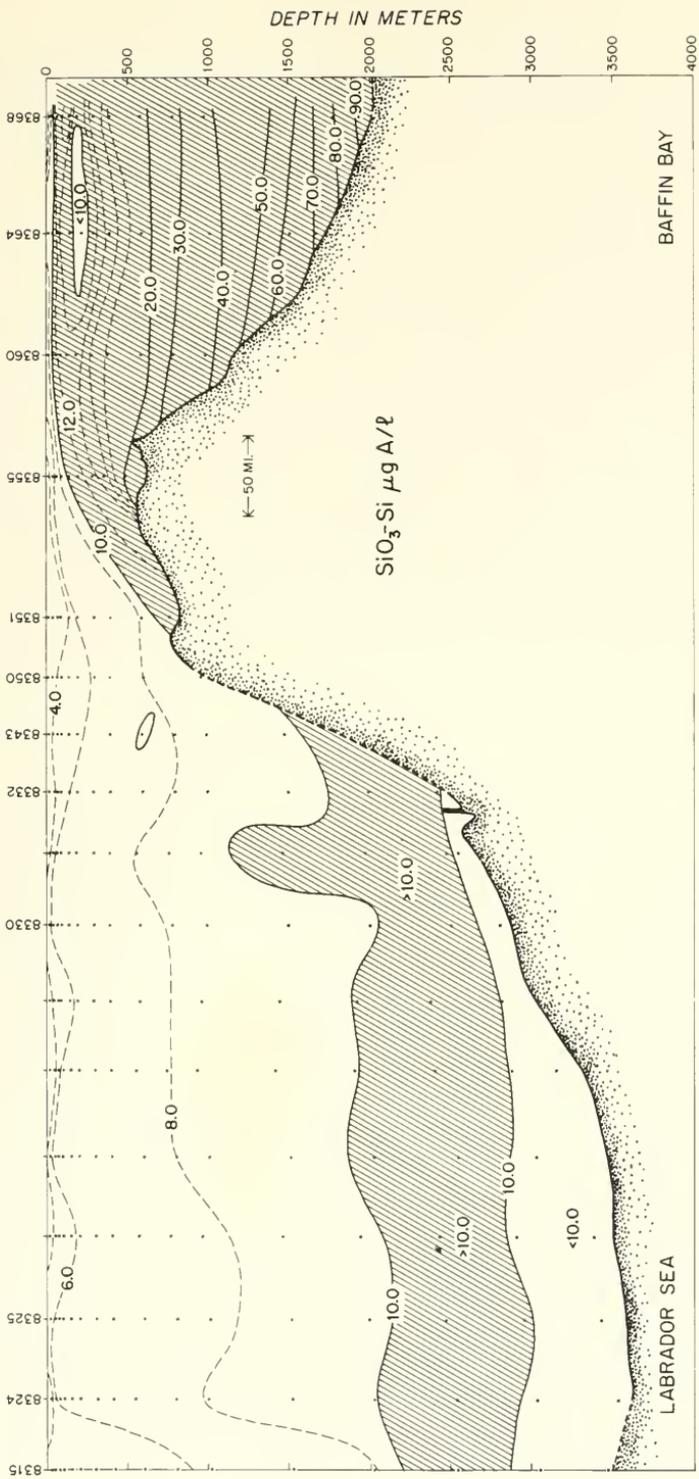


FIGURE 58.—Distribution of silicates, with Si in  $\mu\text{g A/l}$ , along section between Loks Land, Baffin Island and Fyllas Bank, Greenland from samples collected 20–22 July 1962.

## DISCUSSION

The physical circulation of the Labrador Sea region has been determined from the observations of temperature and salinity in the area. The present data agrees with the picture given from such observations: strongly marked surface currents are present near both coasts while the waters of the central part of the Labrador Sea show a nearly uniform character. Baffin Bay is an example of a special type of basin circulation found in the high latitudes, where deep water is formed locally due to cooling of high salinity water, even though precipitation exceeds the evaporation (Sverdrup *et al.*, 1942, p. 150). In this type of basin, stagnant water is not found. The oxygen concentration, however, is much lower than that in the deep water of the Labrador Sea, which is in unrestricted contact with the Atlantic Ocean circulation. The determination of oxygen saturation shows that 90 percent saturation or more occurs throughout each section in the Labrador Sea. This clearly indicates the great amount of vertical mixing which takes place and which produces the homogeneous nutrient distribution seen in the deep water of the Labrador Sea.

Some outflow from Baffin Bay near the sill depths occurs, as seen in the nutrient distributions. The given data suggests that the main core of this outflow is directed southward along the western perimeter of the basin since it appears that the longitudinal midsection taken by the *Evergreen* in 1962 lies to the eastward of the main mass of outflowing Baffin Bay water. Water with a concentration of nutrients equivalent to that found at sill depth or above in Davis Strait forms the deep water maxima in the nutrient distributions in the Labrador Sea.

The nutrient distribution patterns also present some indications of the biological characteristics, since the production of phytoplankton is related to the nutrient supply. It appears that the demand for nutrients can be met from the relatively high concentrations present near the surface. The nitrite analyses provide the most direct suggestion of the probable biological environment. It has been suggested by Vaccaro and Ryther (1960) that an increase in nitrite in the upper layers of the ocean indicates the presence of a significantly large standing crop of phytoplankton and an excess of nitrate. Data of Holmes (1956) show that heterotrophic phytoplankton will be nearing a maximum in July while the autotrophic fraction, though declining, is still abundant. Since no direct biological measurements were obtained, the nitrite data suggest indirectly that such conditions presumably were present in 1962. Digby (1953) has shown that both phyto- and zoo-plankton populations reach a maximum during the summer in these latitudes. Kielhorn (1952) found the zooplankton populations in the central Labrador Sea characterized by relatively few species but very large numbers of individuals, with seasonal increases particularly evident in the late summer.

A visual examination of the distribution patterns presented here shows approximate agreement with the ratios of Si:N:P determined for intermediate depths of the Atlantic Ocean by Richards (1958). A ratio that approximates 15:15:1 is seen, for example in the nutrient maxima at 1,000-2,500 meters in the Labrador Sea. With the limited data available, no more precise estimate of the ratio between nutrients has been attempted. In the isolated deep water of Baffin Bay, higher concentrations of silicate are found than would be expected from the amount of phosphate present. Richards suggests for similar areas where this same phenomenon occurs that the excess silicate may originate from *in situ* re-resolution of skeletal remains of diatoms or from re-resolution of bottom deposits followed by upward diffusion. Increases of nitrate and phosphate in the bottom water of Baffin Bay presumably represent regeneration products from the residues of surface production. This is also suggested by the additional oxygen utilization which is seen in the region.

The present survey of nutrient distribution thus adds evidence to support the circulation pattern deduced from other data and introduces some speculations of a biological nature. No greater elaboration of detail is possible in the absence of additional quantitative biological data.

#### REFERENCES

- DIGBY, P. S. B. 1953. Plankton production in Scoresby Sound, East Greenland. *Jour. Anim. Ecol.* 22: 289-322.
- HAGEN, S. KÜHNEL. 1931. Die Godthaabexpedition 1928. Bericht über die chemischen arbeiten. I. Medd. om Grönland. Komm. Vidensk. Undersogelser i Grönland. Bd. 78 No. 2. 28 pp.
- HAGEN, S. KÜHNEL. 1936. Die Godthaabexpedition 1928. Bericht über die chemischen arbeiten. II. Verteilung von Phosphat und Nitrat im Gewasser zwischen Grönland und Kanada. Medd. om Gronland. Komm. Vidensk. Undersogelser i Grönland. Bd. 78 No. 4. 36 pp.
- HARVEY, H. W. 1948. The estimation of phosphate and of total phosphorus in sea waters. *Jour. Mar. Bio. Assoc. U.K.* 26 (2): 337-359.
- HOLMES, R. W. 1956. The annual cycle of phytoplankton in the Labrador Sea. 1950-51. *Bull. Bingham Oceanogr. Coll.* 16 (1): 1-74.
- KETCHUM, B. H., N. CORWIN and D. J. KEEN. 1955. The significance of organic phosphorus determinations in ocean waters. *Deep Sea Res.* 2: 172-181.

- KIELHORN, WILLIAM V. 1952. The biology of the surface zone zooplankton of a boreo-arctic Atlantic Ocean area. *Jour. Fish. Res. Board of Canada* 9 (5): 223-264.
- MULLIN, J. B. and J. P. RILEY. 1955a. The spectrophotometric determination of nitrate in natural waters, with particular reference to sea water. *Anal. Chim. Acta.* 12 (5): 464-479.
- MULLIN, J. B. and J. P. RILEY. 1955b. The colorimetric determination of silicate with special reference to sea and natural waters. *Anal. Chim. Acta.* 12: 162-176.
- RICHARDS, FRANCIS A. 1958. Dissolved silicate and related properties of some western North Atlantic and Caribbean waters. *Jour. Mar. Res.* 17: 449-465.
- RIDER, B. F. and M. G. MELLON. 1946. Colorimetric determination of nitrites. *Industr. Engng. Chem. (Anal.)* 18: 96-99.
- SVERDRUP, H. U., M. W. JOHNSON and R. H. FLEMING. 1942. *The Oceans*. New York: Prentice-Hall, Inc., 1087 pp.
- VACCARO, R. F. and J. H. RYTHER. 1960. Marine phytoplankton and the distribution of nitrite in the sea. *Journal du Conseil.* 25 (3): 260-271.
- WOOSTER, W. S. and N. W. RAKESTRAW. 1951. The estimation of dissolved phosphate in sea water. *Jour. Mar. Res.* 10 (1): 91-100.

## TABLE OF OCEANOGRAPHIC DATA

The data collected in 1962 are tabulated below. The individual station headings give the station number, date, geographical position, depth of water and dynamic height of the sea surface used in the construction of the dynamic topographic charts shown in figures 19 to 23 and 32. The depths of water are rough approximations, being the uncorrected sonic soundings based on sounding velocity of 800 fathoms per second and containing an additional mechanical speed error of about 1/60. Where the depths of scaled values are enclosed in parentheses, the data are based on extrapolated vertical distribution curves of temperatures or salinity or both. The symbol  $\sigma_t$  signifies 1,000 (density-1) at atmospheric pressure and temperature  $t$ .

### TABLE OF OCEANOGRAPHIC DATA STATIONS OCCUPIED IN 1962

Observed values			Scaled values				Observed values			Scaled values			
Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	$\sigma_t$	Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	$\sigma_t$
Station 7951; 1 April; 42°00' N., 50°58' W.; depth 3,658 m.; dynamic height 970.985							Station 7953; 2 April; 42°20' N., 51°30' W.; depth 2,789 m.; dynamic height 970.930						
0.....	4.55	33.56	0.....	4.55	33.56	26.61	0.....	5.13	33.66	0.....	5.13	33.66	26.62
21.....	4.05	33.76	25.....	4.05	33.78	26.83	27.....	3.61	33.73	25.....	3.80	33.73	26.82
42.....	4.17	33.84	50.....	4.15	33.87	26.90	54.....	3.21	33.93	50.....	3.20	33.90	27.01
63.....	3.98	33.90	75.....	2.90	33.85	27.00	82.....	3.22	34.12	75.....	3.20	34.07	27.15
84.....	2.72	33.82	100.....	2.65	33.87	27.04	108.....	3.13	34.25	100.....	3.15	34.21	27.26
168.....	2.57	34.25	150.....	2.55	34.15	27.27	164.....	3.81	34.58	150.....	3.60	34.48	27.44
254.....	3.65	34.62	200.....	2.75	34.41	27.46	218.....	4.29	34.75	200.....	4.10	34.70	27.56
343.....	4.39	34.83	300.....	4.10	34.75	27.60	329.....	4.66	34.94	300.....	4.60	34.91	27.67
524.....	4.53	34.94	400.....	4.55	34.89	27.66	442.....	4.45	34.96	400.....	4.55	34.95	27.71
698.....	4.05	34.92	600.....	4.45	34.94	27.71	671.....	3.71	34.91	600.....	3.95	34.93	27.76
870.....	4.19	34.97	800.....	4.15	34.95	27.75	880.....	3.57	34.88	800.....	3.60	34.89	27.76
1,271.....	4.76	34.95	1,000.....	4.40	34.96	27.73	1,081.....	3.51	34.90	1,000.....	3.55	34.89	27.77
Station 7952; 2 April; 41°57.5' N., 51°58' W.; depth 3,804 m.; dynamic height 971.122							Station 7954; 2 April; 42°41' N., 50°58' W.; depth 1,738 m.; dynamic height 970.966						
0.....	6.55	33.28	0.....	6.55	33.28	26.16	0.....	3.36	33.44	0.....	3.36	33.44	26.63
24.....	15.06	35.96	25.....	15.05	35.96	26.65	28.....	4.94	34.00	25.....	4.95	34.00	26.91
46.....	14.25	35.80	50.....	14.00	35.74	26.78	55.....	2.51	33.87	50.....	3.00	33.88	27.01
70.....	12.96	35.50	75.....	12.95	35.50	26.81	84.....	1.10	33.88	75.....	1.40	33.87	27.13
93.....	12.97	35.52	100.....	12.95	35.51	26.81	111.....	1.32	33.94	100.....	1.20	33.91	27.18
140.....	11.33	35.23	150.....	11.30	35.25	26.93	168.....	2.03	34.23	150.....	1.85	34.14	27.32
186.....	11.50	35.44	200.....	11.35	35.42	27.06	223.....	3.91	34.61	200.....	3.20	34.47	27.47
279.....	8.71	35.13	300.....	8.10	35.06	27.33	331.....	3.40	34.66	300.....	3.50	34.65	27.58
363.....	6.28	34.92	400.....	5.85	34.89	27.51	438.....	3.74	34.80	400.....	3.60	34.76	27.66
559.....	3.92	34.79	600.....	3.90	34.81	27.97	645.....	3.72	34.89	600.....	3.75	34.87	27.73
724.....	3.95	34.89	800.....	4.00	34.91	27.74	858.....	3.68	34.88	800.....	3.70	34.88	27.74
879.....	4.02	34.93	1,000.....	3.95	34.93	27.76	1,069.....	3.62	34.89	1,000.....	3.65	34.89	27.76
1,356.....	3.66	34.93					1,596.....	3.56	34.85				

**TABLE OF OCEANOGRAPHIC DATA**  
**STATIONS OCCUPIED IN 1962—Continued**

Observed values			Sealed values				Observed values			Sealed values			
Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	$\sigma_t$	Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	$\sigma_t$
Station 7955; 2 April; 42°50' N., 50°46' W.; depth 735 m.; dynamic height 971.042													
0	1.65	33.18	0	1.65	33.18	26.56	0	1.27	33.16	0	1.27	33.16	26.57
25	0.33	33.44	25	0.33	33.44	26.85	24	0.56	33.19	25	0.55	33.21	26.66
49	0.29	33.52	50	0.30	33.52	26.92	47	0.30	33.52	50	0.30	33.55	26.94
74	0.33	33.58	75	0.35	33.58	26.96	70	0.60	33.69	75	0.65	33.71	27.05
98	0.46	33.63	100	0.45	33.63	27.00	94	0.80	33.79	100	0.90	33.81	27.12
147	0.82	33.78	150	0.85	33.78	27.10	141	1.46	33.98	150	1.55	34.02	27.24
196	1.18	33.88	200	1.20	33.89	27.16	188	1.89	34.13	200	2.00	34.17	27.33
294	2.19	34.30	300	2.25	34.33	27.44	286	2.52	34.40	(300)	2.60	34.42	27.48
392	3.30	34.65	400	3.35	34.67	27.61							
587	3.87	34.85	(600)	3.90	34.85	27.70							
Station 7956; 2 April; 42°53' N., 50°38' W.; depth 283 m.; dynamic height 971.075													
0	1.93	33.26	0	1.93	33.26	26.55	0	1.40	33.17	0	1.40	33.17	26.57
24	0.50	33.42	25	0.50	33.43	26.84	20	6.10	34.16	25	6.10	34.16	26.90
49	0.51	33.59	50	0.50	33.59	26.96	39	5.43	34.13	50	4.65	34.14	27.06
73	0.48	33.62	75	0.50	33.62	26.99	59	4.37	34.16	75	4.25	34.34	27.26
97	0.56	33.62	100	0.55	33.62	26.98	79	4.19	34.35	100	3.85	34.36	27.32
145	0.65	33.73	150	0.65	33.73	27.07	119	3.51	34.36	150	2.30	34.32	27.43
194	0.80	33.78	(200)	0.80	33.78	27.10	158	2.23	34.32	200	2.75	34.43	27.48
							245	3.36	34.63	300	3.75	34.75	27.64
							337	4.02	34.81	400	4.05	34.84	27.68
							527	3.92	34.88	600	3.95	34.89	27.73
							705	4.04	34.92	800	3.90	34.91	27.75
							867	3.74	34.91	1,000	3.70	34.90	27.76
							1,337	3.52	34.88				
Station 7957; 2 April; 43°02.5' N., 50°36' W.; depth 159 m.; dynamic height 971.087													
0	2.70	33.21	0	2.70	33.21	26.51	0	5.12	33.69	0	5.12	33.69	26.64
27	1.09	33.29	25	1.10	33.28	26.68	25	3.87	33.80	25	3.87	33.80	26.87
51	0.49	33.28	50	0.50	33.28	26.72	49	3.00	33.93	50	3.00	33.93	27.05
77	0.25	33.43	75	0.25	33.43	26.85	73	3.42	34.12	75	3.45	34.13	27.17
103	0.28	33.50	100	0.25	33.50	26.91	97	3.74	34.23	100	3.80	34.25	27.23
153	0.99	33.84	150	1.00	33.81	27.11	146	4.45	34.63	150	4.50	34.64	27.47
Station 7958; 2 April; 43°07' N., 50°30' W.; depth 93 m.; dynamic height 971.073													
0	3.54	33.17	0	3.54	33.17	26.40	195	4.90	34.81	200	4.90	34.82	27.57
27	0.82	33.40	25	0.90	33.39	26.78	294	4.62	34.89	300	4.60	34.89	27.66
54	0.24	33.52	50	0.25	33.50	26.91	395	4.50	34.94	400	4.50	34.94	27.71
81	1.06	33.65	75	0.90	33.63	26.97	599	4.33	34.96	600	4.30	34.96	27.74
							786	3.90	34.92	800	3.90	34.92	27.76
							970	3.65	34.91	1,000	3.65	34.91	27.77
							1,489	3.56	34.92				
Station 7959; 2 April; 43°13.5' N., 50°16' W.; depth 68 m.; dynamic height 971.070													
0	3.19	33.16	0	3.19	33.16	26.42	0	5.17	33.64	0	5.17	33.64	26.60
24	2.29	33.47	25	2.25	33.48	26.76	23	4.26	33.61	25	4.25	33.61	26.68
47	1.57	33.71	(50)	1.50	33.74	27.02	46	3.38	33.82	50	3.30	33.85	26.96
							70	3.04	33.95	75	2.90	33.95	27.08
							92	2.60	33.97	100	2.80	34.01	27.14
							139	4.91	34.59	150	4.85	34.59	27.39
							185	3.92	34.55	200	3.90	34.56	27.47
							278	3.90	34.70	300	3.95	34.73	27.60
							372	4.11	34.83	400	4.15	34.85	27.67
							560	4.38	34.93	600	4.35	34.93	27.72
							745	4.22	34.97	800	4.15	34.96	27.76
							929	4.06	34.94	1,000	4.00	34.94	27.76
							1,519	3.68	34.93				
Station 7960; 2 April; 43°00' N., 50°14' W.; depth 84 m.; dynamic height 971.078													
0	2.95	33.20	0	2.95	33.20	26.48	0	5.17	33.64	0	5.17	33.64	26.60
22	0.72	33.23	25	0.70	33.25	26.68	23	4.26	33.61	25	4.25	33.61	26.68
46	0.65	33.46	50	0.65	33.47	26.86	46	3.38	33.82	50	3.30	33.85	26.96
69	0.74	33.48	(75)	0.80	33.48	26.86	70	3.04	33.95	75	2.90	33.95	27.08
Station 7961; 3 April; 42°49' N., 50°14' W.; depth 585 m.; dynamic height 971.025													
0	1.27	33.16	0	1.27	33.16	26.57	0	5.12	33.69	0	5.12	33.69	26.64
24	0.56	33.19	25	0.55	33.21	26.66	25	3.87	33.80	25	3.87	33.80	26.87
47	0.30	33.52	50	0.30	33.55	26.94	49	3.00	33.93	50	3.00	33.93	27.05
70	0.60	33.69	75	0.65	33.71	27.05	73	3.42	34.12	75	3.45	34.13	27.17
94	0.80	33.79	100	0.90	33.81	27.12	97	3.74	34.23	100	3.80	34.25	27.23
141	1.46	33.98	150	1.55	34.02	27.24	146	4.45	34.63	150	4.50	34.64	27.47
188	1.89	34.13	200	2.00	34.17	27.33	195	4.90	34.81	200	4.90	34.82	27.57
286	2.52	34.40	(300)	2.60	34.42	27.48	294	4.62	34.89	300	4.60	34.89	27.66
Station 7962; 3 April; 42°39' N., 50°14' W.; depth 1,920 m.; dynamic height 970.944													
0	1.40	33.17	0	1.40	33.17	26.57	0	5.12	33.69	0	5.12	33.69	26.64
20	6.10	34.16	25	6.10	34.16	26.90	25	3.87	33.80	25	3.87	33.80	26.87
39	5.43	34.13	50	4.65	34.14	27.06	49	3.00	33.93	50	3.00	33.93	27.05
59	4.37	34.16	75	4.25	34.34	27.26	73	3.42	34.12	75	3.45	34.13	27.17
79	4.19	34.35	100	3.85	34.36	27.32	97	3.74	34.23	100	3.80	34.25	27.23
119	3.51	34.36	150	2.30	34.32	27.43	146	4.45	34.63	150	4.50	34.64	27.47
158	2.23	34.32	200	2.75	34.43	27.48	195	4.90	34.81	200	4.90	34.82	27.57
245	3.36	34.63	300	3.75	34.75	27.64	294	4.62	34.89	300	4.60	34.89	27.66
337	4.02	34.81	400	4.05	34.84	27.68	395	4.50	34.94	400	4.50	34.94	27.71
527	3.92	34.88	600	3.95	34.89	27.73	599	4.33	34.96	600	4.30	34.96	27.74
705	4.04	34.92	800	3.90	34.91	27.75	786	3.90	34.92	800	3.90	34.92	27.76
867	3.74	34.91	1,000	3.70	34.90	27.76	970	3.65	34.91	1,000	3.65	34.91	27.77
1,337	3.52	34.88					1,489	3.56	34.92				
Station 7963; 3 April; 42°25' N., 50°14' W.; depth 2,926 m.; dynamic height 970.934													
0	5.12	33.69	0	5.12	33.69	26.64	0	5.17	33.64	0	5.17	33.64	26.60
25	3.87	33.80	25	3.87	33.80	26.87	23	4.26	33.61	25	4.25	33.61	26.68
49	3.00	33.93	50	3.00	33.93	27.05	46	3.38	33.82	50	3.30	33.85	26.96
73	3.42	34.12	75	3.45	34.13	27.17	70	3.04	33.95	75	2.90	33.95	27.08
97	3.74	34.23	100	3.80	34.25	27.23	92	2.60	33.97	100	2.80	34.01	27.14
146	4.45	34.63	150	4.50	34.64	27.47	139	4.91	34.59	150	4.85	34.59	27.39
195	4.90	34.81	200	4.90	34.82	27.57	185	3.92	34.55	200	3.90	34.56	27.47
294	4.62	34.89	300	4.60	34.89	27.66	278	3.90	34.70	300	3.95	34.73	27.60
395	4.50	34.94	400	4.50	34.94	27.71	372	4.11	34.83	400	4.15	34.85	27.67
599	4.33	34.96	600	4.30	34.96	27.74	560	4.38	34.93	600	4.35	34.93	27.72
786	3.90	34.92	800	3.90	34.92	27.76	745	4.22	34.97	800	4.15	34.96	27.76
970	3.65	34.91	1,000	3.65	34.91	27.77	929	4.06	34.94	1,000	4.00	34.94	27.76
1,489	3.56	34.92					1,519	3.68	34.93				
Station 7964; 3 April; 42°01' N., 50°14' W.; depth 4,207 m.; dynamic height 970.974													
0	5.17	33.64	0	5.17	33.64	26.60	0	5.17	33.64	0	5.17	33.64	26.60
23	4.26	33.61	25	4.25	33.61	26.68	23	4.26	33.61	25	4.25	33.61	26.68
46	3.38	33.82	50	3.30	33.85	26.96	46	3.38	33.82	50	3.30	33.85	26.96
70	3.04	33.95	75	2.90	33.95								

# TABLE OF OCEANOGRAPHIC DATA STATIONS OCCUPIED IN 1962—Continued

Observed values			Scaled values				Observed values			Scaled values			
Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	$\sigma_t$	Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	$\sigma_t$
Station 7965; 3 April; 41°28.5' N., 50°12' W.; depth 3,658 m.													
0	17.52	36.38											
23	17.48	36.37											
45	16.66	36.23											
67	16.21	36.15											
89	15.78	36.05											
134		35.91											
179	14.51	35.82											
268	13.00	35.54											
338	12.62	35.54											
536	8.41	35.07											
Station 7966; 3 April; 41°02' N., 50°14' W.; depth 3,841 m.; dynamic height 971.557													
0	17.77	36.40	0	17.77	36.40	26.42							
27	17.72	36.41	25	17.75	36.40	26.42							
52	17.72	36.40	50	17.75	36.40	26.42							
79	17.68	36.41	75	17.70	36.41	26.44							
105	17.67	36.44	100	17.65	36.43	26.47							
158	17.55	36.42	150	17.60	36.43	26.48							
210	16.91	36.31	200	17.05	36.34	26.55							
315	15.27	35.94	300	15.40	35.98	26.66							
421	14.49	35.89	400	14.65	35.90	26.76							
630	9.20	35.17	600	9.60	35.25	27.23							
840	6.04	34.99	800	6.55	35.02	27.52							
1,051	4.98	35.02	1,000	5.15	35.01	27.68							
1,570	4.04	34.98											
Station 7967; 4 April; 41°44' N., 49°18' W.; depth 2,744 m.; dynamic height 970.959													
0	5.87	33.34	0	5.87	33.34	26.28							
28	2.97	33.67	25	3.30	33.64	26.80							
55	2.54	33.85	50	2.55	33.83	27.01							
83	2.69	33.92	75	2.60	33.90	27.06							
109	3.13	34.17	100	2.95	34.08	27.18							
165	4.36	34.63	150	4.15	34.57	27.45							
220	4.16	34.69	200	4.25	34.67	27.52							
332	4.34	34.85	300	4.25	34.80	27.62							
446	4.75	34.97	400	4.60	34.94	27.69							
676	4.26	34.97	600	4.40	34.97	27.74							
887	3.92	34.92	800	4.05	34.93	27.74							
1,089	3.80	34.96	1,000	3.85	34.94	27.78							
1,624	3.55	34.92											
Station 7968; 4 April; 41°28' N., 48°56' W.; depth 3,470 m.; dynamic height 970.947													
0	6.22	33.30	0	6.22	33.30	26.20							
28	4.58	33.51	25	4.80	33.48	26.52							
54	2.89	33.81	50	2.90	33.77	26.94							
82	2.95	34.04	75	2.90	33.97	27.09							
108	3.49	34.33	100	3.40	34.28	27.30							
163	3.46	34.51	150	3.45	34.47	27.44							
217	3.88	34.66	200	3.75	34.62	27.53							
324	4.63	34.88	300	4.50	34.83	27.62							
430	4.77	35.00	400	4.80	34.98	27.70							
639	4.13	34.97	600	4.25	34.98	27.77							
851	3.75	34.93	800	3.80	34.94	27.78							
1,061	3.72	34.94	1,000	3.70	34.94	27.79							
1,580	3.40	34.91											
Station 7969; 4 April; 41°00' N., 48°28' W.; depth 4,005 m.; dynamic height 971.020													
0	5.36	32.92	0	5.36	32.92	26.01							
28	4.06	33.27	25	4.20	33.24	26.39							
54	2.63	33.56	50	2.65	33.53	26.77							
82	4.32	33.99	75	3.75	33.87	26.94							
109	5.30	34.31	100	5.05	34.29	27.13							
164	5.54	34.42	150	5.50	34.41	27.17							
219	3.59	34.44	200	3.95	34.43	27.36							
318	4.43	34.78	300	4.30	34.75	27.58							
412	4.59	34.83	400	4.60	34.82	27.60							
576	4.52	34.97	600	4.60	34.97	27.73							
774	4.13	34.97	800	4.10	34.97	27.77							
975		34.97	1,000	3.90	34.97	27.79							
1,489	3.77	34.97											
Station 7970; 4 April; 41°37' N., 47°16' W.; depth 4,582 m.; dynamic height 971.233													
0	15.41	35.98	0	15.41	35.98	26.65							
31	15.07	35.99	25	15.15	35.99	26.72							
60	14.82	35.94	50	14.90	35.96	26.75							
91	14.24	35.83	75	14.60	35.90	26.77							
120	13.78	35.73	100	14.10	35.79	26.79							
182	13.30	35.66	150	13.50	35.68	26.83							
242	12.52	35.59	200	13.10	35.64	26.89							
355	10.22	35.30	300	11.35	35.45	27.08							
464	7.38	34.97	400	9.00	35.15	27.26							
665	5.23	34.99	600	5.90	34.99	27.58							
878	4.46	34.97	800	4.75	34.97	27.70							
1,085	3.92	34.93	1,000	4.15	34.95	27.75							
1,644	3.66	34.94											
Station 7971; 5 April; 42°00' N., 47°54' W.; depth 4,115 m.; dynamic height 971.013													
0	7.55	33.64	0	7.55	33.64	26.29							
27	4.40	33.86	25	4.40	33.84	26.84							
54	5.05	34.12	50	5.00	34.10	26.98							
82	5.39	34.27	75	5.30	34.24	27.06							
108	6.31	34.52	100	6.15	34.47	27.14							
163	6.92	34.79	150	6.80	34.72	27.24							
217	7.30	34.99	200	7.20	34.95	27.37							
326	5.14	34.84	300	5.65	34.86	27.51							
436	5.07	34.93	400	5.10	34.91	27.61							
657	4.47	34.98	600	4.60	34.96	27.71							
860	4.19	34.95	800	4.30	34.96	27.74							
1,056	3.74	34.92	1,000	3.85	34.93	27.77							
1,600	3.52	34.93											
Station 7972; 5 April; 42°19' N., 48°34' W.; depth 3,877 m.; dynamic height 971.053													
0	7.44	33.51	0	7.44	33.51	26.21							
25	10.50	35.03	25	10.50	35.03	26.91							
50	10.44	35.00	50	10.44	35.00	26.89							
75	10.64	35.09	75	10.64	35.09	26.93							
100	10.05	34.99	100	10.05	34.99	26.56							
150	9.01	34.98	150	9.01	34.98	27.12							
200	8.07	34.95	200	8.07	34.95	27.24							
301	6.32	34.88	300	6.30	34.88	27.44							
402	5.50	34.96	400	5.50	34.95	27.60							
605	4.68	34.95	600	4.70	34.95	27.69							
798	4.15	34.95	800	4.15	34.95	27.75							
988	3.75	34.91	1,000	3.75	34.91	27.76							
1,481	3.59	34.92											

## TABLE OF OCEANOGRAPHIC DATA STATIONS OCCUPIED IN 1962—Continued

Observed values			Scaled values				Observed values			Scaled values			
Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	$\sigma_t$	Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	$\sigma_t$
Station 7973; 5 April; 42°41' N., 48°09' W.; depth 2,744 m.; dynamic height 970.919													
0	4.56	33.77	0	4.56	33.77	26.77							
25	4.28	33.87	25	4.28	33.87	26.88							
50	4.19	33.99	50	4.19	33.99	26.99							
75	4.03	34.06	75	4.03	34.06	27.06							
100	4.04	34.32	100	4.04	34.32	27.26							
149	4.49	34.66	150	4.50	34.67	27.49							
199	4.52	34.79	200	4.50	34.80	27.60							
300	4.85	34.94	300	4.85	34.94	27.67							
402	4.67	34.99	400	4.65	34.99	27.73							
609	4.13	34.96	600	4.15	34.96	27.76							
806	3.78		800	3.80	34.94	27.78							
1,000	3.64	34.92	1,000	3.64	34.92	27.78							
1,503	3.47	34.91											
Station 7977; 6 April; 42°36' N., 46°51' W.; depth 4,572 m.; dynamic height 971.030													
0	6.51	33.51	0	6.51	33.51	26.33							
27	6.49	33.52	25	6.50	33.52	26.34							
54	4.87	33.98	50	5.10	33.96	26.86							
81	4.40	34.05	75	4.40	34.03	27.00							
107	4.55	34.14	100	4.50	34.10	27.04							
162	5.08	34.45	150	5.00	34.40	27.22							
216	5.04	34.60	200	5.05	34.56	27.34							
323	5.00		300	5.00	34.74	27.49							
430	4.71	34.90	400	4.80	34.77	27.54							
641	4.20	34.99	600	4.25	34.99	27.77							
850	4.20	34.97	800	4.20	34.98	27.77							
1,058	4.08	34.95	1,000	4.15	34.96	27.76							
1,590	3.61	34.95											
Station 7974; 5 April; 43°21' N., 48°52' W.; depth 2,469 m.; dynamic height 970.969													
0	4.75	33.68	0	4.75	33.68	26.68							
24	4.70	33.68	25	4.70	33.68	26.68							
48	4.28	33.87	50	4.30	33.88	26.89							
72	4.29	33.95	75	4.30	33.96	26.95							
97	3.85	33.98	100	3.85	33.99	27.02							
144	4.06	34.44	150	4.10	34.50	27.40							
192	4.72	34.68	200	4.70	34.69	27.48							
290	4.38	34.74	300	4.35	34.75	27.57							
387	4.30	34.85	400	4.25	34.85	27.66							
583	3.46	34.87	600	3.45	34.87	27.76							
784	3.43	34.90	800	3.45	34.90	27.78							
988	3.45	34.92	1,000	3.45	34.92	27.80							
1,510	3.31	34.91											
Station 7978; 6 April; 42°23.5' N., 46°13' W.; depth 4,115 m.; dynamic height 971.271													
0	15.24	35.95	0	15.24	35.95	26.67							
24	15.28	35.96	25	15.25	35.96	26.67							
47	15.22	35.93	50	15.25	35.93	26.65							
71	15.21	35.95	75	15.15	35.94	26.68							
95	14.80	35.88	100	14.75	35.86	26.71							
142		35.73	150	13.95	35.70	26.86							
189	13.23	35.60	200	13.00	35.57	26.75							
280		35.42	300	11.00	35.35	27.07							
368	9.68	35.04	400	9.05	35.02	27.15							
538	6.90	35.01	600	6.35	35.02	27.54							
712	5.58	35.03	800	4.90	35.00	27.71							
833	4.70	35.00	1,000	4.35	34.98	27.76							
1,360	3.98	34.96											
Station 7975; 5 April; 43°06' N., 48°09' W.; depth 2,195 m.; dynamic height 970.964													
0	5.48	33.90	0	5.48	33.90	26.77							
24	5.49	33.90	25	5.50	33.90	26.77							
47	4.45	33.90	50	4.35	33.90	26.90							
71	3.85	33.97	75	3.85	33.97	27.01							
94	3.79	33.99	100	3.80	34.02	27.05							
142	3.96	34.35	150	4.05	34.41	27.33							
189	4.34	34.63	200	4.35	34.66	27.50							
283	4.26	34.79	300	4.30	34.82	27.63							
377	4.49	34.91	400	4.45	34.91	27.69							
562	4.23	34.93	600	4.20	34.93	27.73							
751	3.96	34.94	800	3.95	34.94	27.77							
938	3.94	34.95	1,000	3.90	34.95	27.78							
1,452	3.52	34.93											
Station 7979; 6 April; 42°46' N., 45°51' W.; depth 4,207 m.; dynamic height 971.358													
0	16.32	36.19	0	16.32	36.19	26.61							
25	16.33	36.20	25	16.33	36.20	26.61							
48	16.35	36.19	50	16.35	36.19	26.60							
73	16.36	36.20	75	16.35	36.20	26.61							
97	16.36	36.19	100	16.35	36.19	26.60							
146	15.93	36.17	150	15.85	36.16	26.69							
194		35.94	200	15.00	35.92	26.70							
291	13.48	35.71	300	13.30	35.69	26.88							
388	11.44	35.43	400	11.15	35.40	27.08							
581	7.25	34.99	600	7.05	34.99	27.42							
755	5.73	35.12	800	5.60	35.10	27.70							
918	4.92	35.03	1,000	4.65	34.99	27.73							
1,410	4.06	34.96											
Station 7976; 6 April; 42°52.5' N., 47°31' W.; depth 3,749 m.; dynamic height 971.065													
0	4.70	33.30	0	4.70	33.30	26.38							
27	6.87	33.98	25	6.65	33.95	26.66							
53	11.58	35.24	50	11.30	35.10	26.82							
79	12.03	35.38	75	12.00	35.37	26.90							
105	11.67	35.43	100	11.80	35.43	26.98							
159	9.57	35.12	150	9.90	35.14	27.10							
211	8.15	35.03	200	8.50	35.06	27.26							
315	5.01	34.69	300	5.45	34.70	27.41							
420	4.73	34.80	400	4.75	34.78	27.55							
625	4.64	34.97	600	4.65	34.95	27.70							
829	4.31	34.99	800	4.35	34.99	27.76							
1,030	3.83	34.91	1,000	3.90	34.92	27.76							
1,557	3.61	34.95											
Station 7980; 6 April; 43°10' N., 45°22' W.; depth 5,121 m.; dynamic height 971.316													
0	15.53	36.03	0	15.53	36.03	26.66							
27	15.51	36.02	25	15.50	36.02	26.66							
52	15.52	36.03	50	15.50	36.02	26.66							
79	15.41	36.02	75	15.45	36.02	26.67							
105	14.90	35.93	100	15.00	35.96	26.73							
158	14.29	35.82	150	14.35	35.83	26.77							
211		35.76	200	13.80	35.77	26.84							
315	12.38	35.54	300	12.60	35.57	26.93							
421	8.80	35.00	400	9.50	35.08	27.12							
631	6.70	35.05	600	7.00	35.04	27.47							
832	5.26	35.05	800	5.45	35.05	27.68							
1,028	4.70	35.01	1,000	4.80	35.02	27.74							
1,566	3.75	34.95											

## TABLE OF OCEANOGRAPHIC DATA STATIONS OCCUPIED IN 1962—Continued

Observed values			Scaled values				Observed values			Scaled values			
Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	$\sigma_t$	Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	$\sigma_t$
Station 7981; 7 April; 43°26.5' N., 46°00' W.; depth 4,847 m.; dynamic height 971.115							Station 7985; 7 April; 44°01.5' N., 48°31' W.; depth 3,648 m.; dynamic height 970.989						
0	13.63	35.66	0	13.63	35.66	26.79	0	6.71	34.00	0	6.71	34.00	26.69
24	13.62	35.66	25	13.60	35.66	26.79	25	6.66	33.98	25	6.66	33.98	26.69
47	13.61	35.64	50	13.60	35.64	26.78	50	6.15	34.30	50	6.15	34.30	27.00
71	13.42	35.66	75	13.35	35.66	26.85	75	4.88	34.17	75	4.88	34.17	27.05
94	13.10	35.59	100	13.05	35.58	26.85	100	7.75	34.77	100	7.75	34.77	27.15
142	12.73	35.54	150	12.55	35.50	26.89	149	7.39	34.84	150	7.35	34.84	27.26
189	10.52	35.22	200	9.85	35.13	27.10	199	6.66	34.88	200	6.65	34.88	27.39
283	5.42	34.53	300	5.60	34.62	27.32	299	5.60	34.93	300	5.60	34.93	27.57
379	6.85	35.02	400	6.75	35.02	27.49	397	5.06	34.96	400	5.05	34.96	27.66
570	5.06	34.97	600	5.00	34.97	27.67	595	4.60	34.99	600	4.60	34.99	27.73
759	4.53	34.98	800	4.45	34.98	27.74	794	4.09	34.95	800	4.10	34.95	27.76
948	4.18	34.98	1,000	4.10	34.97	27.77	993	3.70	34.91	1,000	3.70	34.91	27.77
1,482	3.62	34.92					1,508	3.54	34.92				
Station 7982; 7 April; 43°34' N., 46°36' W.; depth 4,664 m.; dynamic height 970.964							Station 7986; 7 April; 44°06' N., 48°48' W.; depth 1,556 m.; dynamic height 970.950						
0	6.66	34.11	0	6.66	34.11	26.79	0	0.88	33.18	0	0.88	33.18	26.61
26	6.61	34.31	25	6.60	34.31	26.95	26	0.95	33.20	25	0.95	33.19	26.62
51	5.42	34.17	50	5.45	34.17	26.99	52	1.19	33.49	50	1.20	33.46	26.88
77	5.04	34.16	75	5.05	34.15	27.02	78	1.19	33.82	75	1.00	33.78	27.09
103	4.60	34.25	100	4.60	34.23	27.13	103	2.42	34.19	100	2.40	34.17	27.30
153	4.86	34.56	150	4.85	34.55	27.36	154	2.22	34.36	150	2.20	34.35	27.46
204	4.82	34.71	200	4.80	34.70	27.48	206	2.50	34.51	200	2.45	34.50	27.56
308	5.45	34.99	300	5.45	34.98	27.63	309	3.51	34.75	300	3.45	34.73	27.65
410	5.10	34.98	400	5.10	34.98	27.67	409	3.64	34.80	400	3.60	34.80	27.69
619	4.45	34.98	600	4.50	34.98	27.74	609	3.82	34.87	600	3.80	34.87	27.73
823	3.98	34.93	800	4.05	34.94	27.75	810	3.71	34.87	800	3.70	34.87	27.74
1,025	3.73	34.92	1,000	3.75	34.92	27.77	1,009	3.62	34.88	1,000	3.60	34.88	27.75
1,543	3.57	34.93					1,534	3.40	34.89				
Station 7983; 7 April; 43°43' N., 47°18' W.; depth 4,390 m.; dynamic height 971.151							Station 7987; 8 April; 44°09' N., 48°55' W.; depth 677 m.; dynamic height 971.060						
0	12.29	35.44	0	12.29	35.44	26.89	0	-0.03	32.95	0	-0.03	32.95	26.48
26	12.29	35.45	25	12.30	35.44	26.89	24	-0.44	33.09	25	-0.50	33.10	26.61
53	12.26	35.44	50	12.25	35.44	26.90	49	-0.94	33.20	50	-0.95	33.23	26.74
79	12.28	35.44	75	12.25	35.44	26.90	74	-0.24	33.42	75	-0.25	33.42	26.87
106	12.27	35.44	100	12.25	35.44	26.90	98	-0.02	33.49	100	0.00	33.50	26.92
158	12.06	35.40	150	12.10	35.41	26.91	147	0.39	33.66	150	0.45	33.67	27.03
211	11.50	35.40	200	11.65	35.41	26.99	196	1.02	33.93	200	1.05	33.95	27.22
315	8.72	35.06	300	9.10	35.10	27.20	291	2.01	34.27	300	2.05	34.29	27.42
417	6.18	34.84	400	6.55	34.85	27.28	383	2.45	34.43	400	2.55	34.47	27.53
620	4.60	34.89	600	4.75	34.88	27.63	562	3.70	34.83	(600)	3.95	34.89	27.72
827	4.41	34.97	800	4.45	34.96	27.73							
1,035	3.89	34.92	1,000	3.95	34.93	27.76							
1,552	3.54	34.90											
Station 7984; 7 April; 43°55.5' N., 48°03' W.; depth 4,115 m.; dynamic height 971.123							Station 7988; 8 April; 44°07' N., 49°04' W.; depth 177 m.; dynamic height 971.139						
0	11.71	35.10	0	11.71	35.10	26.74	0	-0.20	33.00	0	-0.20	33.00	26.53
26	11.77	35.08	25	11.75	35.08	26.72	25	-0.70	33.04	25	-0.70	33.04	26.58
52	12.08	35.34	50	12.05	35.32	26.85	51	-0.77	33.09	50	-0.80	33.09	26.61
78	12.06	35.36	75	12.05	35.36	26.88	76	-0.79	33.17	75	-0.80	33.16	26.67
105	11.86	35.33	100	11.90	35.34	26.89	101	-0.64	33.28	100	-0.65	33.27	26.76
156	10.80	35.15	150	11.05	35.17	26.92	152	-0.44	33.34	150	-0.45	33.33	26.80
208	9.29	35.04	200	9.45	35.05	27.10							
310	8.38	35.08	300	8.50	35.08	27.28							
410	5.74	34.85	400	5.90	34.85	27.47							
605	4.94	34.96	600	4.95	34.95	27.66							
803	4.40	34.96	800	4.40	34.96	27.73							
1,000	4.00	34.94	1,000	4.00	34.94	27.76							
1,497	3.62	34.88											
Station 7989; 8 April; 44°10' N., 49°11' W.; depth 91 m.; dynamic height 971.142							Station 7989; 8 April; 44°10' N., 49°11' W.; depth 91 m.; dynamic height 971.142						
0	0.05	32.98	0	0.05	32.98	26.50	0	0.05	32.98	0	0.05	32.98	26.50
25	0.06	33.00	25	0.06	33.00	26.52	25	0.06	33.00	25	0.06	33.00	26.52
51	-0.13	33.25	50	-0.15	33.25	26.72	51	-0.13	33.25	50	-0.15	33.25	26.72
76	-0.24	33.14	75	-0.25	33.14	26.64	76	-0.24	33.14	75	-0.25	33.14	26.64

# TABLE OF OCEANOGRAPHIC DATA STATIONS OCCUPIED IN 1962—Continued

Observed values			Scaled values				Observed values			Scaled values			
Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	$\sigma_t$	Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	$\sigma_t$
Station 7990; 8 April; 44°14' N., 49°24' W.; depth 53 m.; dynamic height 971.131													
0	1.40	33.26	0	1.40	33.26	26.64							
25	1.54	33.42	25	1.54	33.42	26.77							
50	1.53	33.41	50	1.53	33.41	26.76							
Station 7991; 8 April; 44°50' N., 49°23' W.; depth 64 m.; dynamic height 971.138													
0	0.92	33.02	0	0.92	33.02	26.48							
26	0.43	33.04	25	0.50	33.04	26.52							
51	-0.06	33.24	50	0.00	33.24	26.71							
Station 7992; 8 April; 44°56' N., 49°06' W.; depth 97 m.; dynamic height 971.138													
0	0.40	33.02	0	0.40	33.02	26.51							
24	0.10	33.07	25	0.05	33.07	26.57							
49	-0.21	33.15	50	-0.20	33.16	26.65							
73	-0.26	33.27	(75)	-0.25	33.28	26.75							
Station 7993; 8 April; 44°54' N., 49°00' W.; depth 640 m.; dynamic height 971.138													
0	0.28	32.92	0	0.28	32.92	26.44							
25	-0.30	32.95	25	-0.30	32.95	26.48							
50	-0.52	33.06	50	-0.52	33.06	26.59							
76	-0.42	33.17	75	-0.45	33.17	26.67							
101	-0.37	33.29	100	-0.40	33.28	26.76							
152	0.11	33.53	150	0.10	33.52	26.93							
202	0.18	33.55	200	0.15	33.54	26.94							
303	1.38	34.05	300	1.35	34.04	27.27							
403	2.04	34.32	400	2.00	34.31	27.44							
603	3.15	34.72	600	3.10	34.71	27.67							
Station 7994; 8 April; 44°51' N., 48°46' W.; depth 1,920 m.; dynamic height 971.021													
0	0.15	32.95	0	0.15	32.95	26.47							
24	-0.37	32.88	25	-0.40	32.88	26.44							
48	-0.97	33.21	50	-0.95	33.23	26.74							
72	-0.55	33.35	75	-0.50	33.38	26.84							
96	-0.08	33.49	100	-0.05	33.51	26.93							
144	0.74	33.80	150	0.85	33.84	27.14							
192	1.41	34.05	200	1.50	34.10	27.31							
285	2.63	34.51	300	2.70	34.54	27.56							
376	3.07	34.66	400	3.20	34.70	27.65							
552	3.88	34.89	600	3.80	34.89	27.74							
736	3.72	34.89	800	3.70	34.88	27.74							
919	3.64	34.87	1,000	3.60	34.87	27.75							
1,424	3.52	34.89											
Station 7995; 8 April; 44°50' N., 48°35' W.; depth 2,286 m.; dynamic height 970.949													
0	2.35	33.41	0	2.35	33.41	26.70							
27	3.01	33.65	25	3.00	33.64	26.82							
53	3.10	33.70	50	3.10	33.69	26.85							
80	2.21	33.78	75	2.45	33.76	26.96							
106	1.81	34.11	100	1.85	34.07	27.26							
159	2.71	34.40	150	2.55	34.34	27.42							
212	4.04	34.65	200	3.75	34.62	27.53							
317	3.98	34.81	300	4.00	34.79	27.64							
419	4.09	34.88	400	4.05	34.87	27.70							
622	4.02	34.93	600	4.00	34.92	27.75							
828	3.95	34.92	800	3.95	34.92	27.75							
1,034	3.70	34.92	1,000	3.75	34.92	27.77							
1,543	3.49	34.90											
Station 7996; 8 April; 44°44' N., 47°58' W.; depth 3,435 m.; dynamic height 970.905													
0	1.95	33.20	0	1.95	33.20	26.56							
23	1.99	33.65	25	2.00	33.68	26.94							
47	2.33	34.01	50	2.35	34.05	27.20							
70	2.59	34.23	75	2.95	34.30	27.35							
94	4.52	34.64	100	4.70	34.69	27.49							
140	5.08	34.83	150	5.05	34.83	27.55							
187	4.60	34.82	200	4.60	34.83	27.60							
282	4.76	34.95	300	4.70	34.95	27.69							
377	4.34	34.93	400	4.30	34.92	27.71							
570	4.00	34.90	600	3.95	34.90	27.74							
767	3.74	34.91	800	3.70	34.90	27.76							
964	3.57	34.91	1,000	3.55	34.90	27.77							
1,471	3.50	34.91											
Station 7997; 9 April; 44°38.5' N., 47°18.8' N.; depth 4,024 m.; dynamic height 971.047													
0	10.74	35.01	0	10.74	35.01	26.85							
27	10.84	35.07	25	10.80	35.06	26.88							
54	11.11	35.15	50	11.10	35.15	26.90							
80	10.62	35.10	75	10.75	35.11	26.93							
107	9.48	34.93	100	9.80	34.97	26.98							
159	8.07	34.83	150	8.20	34.83	27.13							
213	7.96	34.92	200	8.00	34.91	27.23							
315	5.77	34.80	300	6.00	34.81	27.43							
412	5.77	34.98	400	5.75	34.97	27.58							
597	4.42	34.92	600	4.40	34.91	27.69							
797	4.01	34.93	800	4.00	34.92	27.75							
999	3.90	34.94	1,000	3.90	34.94	27.77							
1,508	3.58	34.92											
Station 7998; 9 April; 44°31.5' N., 46°38' W.; depth 4,115 m.; dynamic height 971.007													
0	8.28	34.38	0	8.28	34.38	26.75							
26	9.24	34.63	25	9.20	34.62	26.81							
53	9.25	34.75	50	9.30	34.75	26.89							
79	7.22	34.47	75	7.65	34.53	26.97							
105	5.55	34.27	100	5.85	34.28	26.99							
157	4.63	34.39	150	4.65	34.35	27.22							
210	6.44	34.88	200	6.35	34.85	27.41							
314	4.95	34.82	300	5.10	34.82	27.54							
417	4.72	34.90	400	4.75	34.89	27.63							
622	4.20	34.92	600	4.25	34.92	27.72							
830	3.88	34.91	800	3.95	34.91	27.74							
1,038	3.69	34.90	1,000	3.70	34.90	27.76							
1,555	3.52	34.91											
Station 7999; 9 April; 44°24' N., 45°56' W.; depth 4,316 m.; dynamic height 971.032													
0	9.79	34.64	0	9.79	34.64	26.72							
25	9.66	34.63	25	9.66	34.63	26.74							
50	9.14	34.64	50	9.14	34.64	26.83							
74	8.25	34.63	75	8.20	34.63	26.97							
99	7.92	34.68	100	7.90	34.68	27.05							
148	7.47	34.81	150	7.45	34.81	27.23							
197	6.43	34.73	200	6.40	34.73	27.30							
299	5.76	34.88	300	5.75	34.88	27.51							
403	5.60	34.99	400	5.60	34.99	27.61							
617	4.17	34.87	600	4.25	34.87	27.68							
821	4.14	34.96	800	4.15	34.94	27.74							
1,025	3.86	34.93	1,000	3.90	34.93	27.76							
1,540	3.60	34.94											

## TABLE OF OCEANOGRAPHIC DATA STATIONS OCCUPIED IN 1962—Continued

Observed values			Scaled values				Observed values			Scaled values			
Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	$\sigma_t$	Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	$\sigma_t$
Station 8000; 9 April; 44°18.5' N., 45°16' W.; depth 4,664 m.; dynamic height 971.131													
0	10.57	34.66	0	10.57	34.66	26.61	0	7.83	34.28	0	7.83	34.28	26.75
26	10.08	34.69	25	10.10	34.68	26.70	26	6.48	34.14	25	6.60	34.15	26.82
53	12.58	35.45	50	12.55	35.45	26.85	51	4.44	34.02	50	4.45	34.02	26.98
79	11.14	35.16	75	11.20	35.16	26.88	77	5.55	34.35	75	5.40	34.33	27.11
106	11.33	35.22	100	11.30	35.21	26.91	103	6.16	34.62	100	6.15	34.59	27.23
159	10.22	35.11	150	10.30	35.11	27.01	153	6.23	34.79	150	6.20	34.78	27.37
212	10.46	35.29	200	10.45	35.27	27.10	204	5.76	34.85	200	5.80	34.84	27.47
311	7.53	34.92	300	7.90	34.94	27.26	307	5.37	34.99	300	5.40	34.99	27.64
404	6.41	34.91	400	6.45	34.91	27.44	408	4.70	34.98	400	4.75	34.98	27.70
577	5.47	35.04	600	5.35	35.03	27.67	511	3.81	34.87	600	3.65	34.83	27.70
765	4.50	34.92	800	4.35	34.92	27.71	713	3.60	34.83	800	3.55	34.84	27.73
951	4.05	34.91	1,000	4.00	34.91	27.74	925	3.52	34.86	1,000	3.50	34.86	27.75
1,419	3.67	34.92					1,438	3.44	34.88				
Station 8001; 9 April; 44°50.5' N., 45°13' W.; depth 4,389 m.; dynamic height 971.161													
0	14.32	35.70	0	14.32	35.70	26.68	0	5.70	33.93	0	5.70	33.93	26.77
25	13.70	35.63	25	13.70	35.63	26.75	26	5.33	33.95	25	5.40	33.95	26.82
51	13.79	35.65	50	13.80	35.65	26.75	52	4.32	34.05	50	4.35	34.04	27.00
76	13.74	35.65	75	13.75	35.65	26.76	78	5.13	34.30	75	5.05	34.23	27.08
101	12.09	35.36	100	12.10	35.35	26.86	103	5.27	34.54	100	5.25	34.53	27.29
151	12.53	35.54	150	12.50	35.54	26.93	154	4.85	34.70	150	4.85	34.68	27.46
201	11.34	35.38	200	11.40	35.38	27.02	206	5.40	34.88	200	5.40	34.86	27.54
303	9.01	35.16	300	9.05	35.16	27.25	310	4.67	34.89	300	4.70	34.89	27.64
403	6.63	34.86	400	6.70	34.86	27.37	414	4.38	34.94	400	4.40	34.94	27.71
604	5.15	34.96	600	5.20	34.96	27.64	623	4.02	34.94	600	4.05	34.94	27.75
803	4.12	34.91	800	4.15	34.91	27.72	828	3.69	34.91	800	3.75	34.91	27.76
1,000	3.84	34.90	1,000	3.84	34.90	27.74	1,031	3.58	34.92	1,000	3.60	34.92	27.79
1,509	3.50	34.90					1,537	3.51	34.94				
Station 8002; 9 April; 45°21' N., 45°15' W.; depth 4,389 m.; dynamic height 971.073													
0	11.99	35.12	0	11.99	35.12	26.71	0	0.78	33.29	0	0.78	33.29	26.70
24	11.37	35.06	25	11.35	35.06	26.78	25	5.60	34.07	25	5.60	34.07	26.89
48	11.69	35.20	50	11.70	35.21	26.83	50	5.25	34.26	50	5.25	34.26	27.08
72	11.63	35.28	75	11.60	35.28	26.90	75	5.13	34.41	75	5.13	34.41	27.21
96	10.69	35.12	100	10.55	35.10	26.95	100	4.89	34.49	100	4.89	34.49	27.38
143	9.55	35.00	150	9.50	35.00	27.05	150	4.61	34.73	150	4.61	34.73	27.52
191	9.29	35.13	200	9.15	35.12	27.21	200	4.88	34.85	200	4.88	34.85	27.59
287	6.29	34.77	300	6.25	34.79	27.37	300	4.44	34.89	300	4.44	34.89	27.67
382	6.12	34.96	400	6.00	34.97	27.55	400	3.89	34.88	400	3.89	34.88	27.72
574	4.85	34.98	600	4.75	34.97	27.70	600	4.14	34.96	600	4.14	34.96	27.76
763	3.91	34.90	800	3.85	34.90	27.74	797	3.55	34.90	800	3.55	34.89	27.76
951	3.65	34.89	1,000	3.65	34.89	27.75	993	3.50	34.88	1,000	3.50	34.88	27.76
1,432	3.52	34.89					1,292	3.46	34.88				
Station 8003; 10 April; 45°22' N., 45°58' W.; depth 3,749 m.; dynamic height 971.034													
0	9.56	34.57	0	9.56	34.57	26.71	0	0.23	33.11	0	0.23	33.11	26.59
23	9.11	34.56	25	9.10	34.55	26.77	22	-0.13	33.50	25	-0.15	33.55	26.97
46	9.22	34.59	50	9.20	34.60	26.79	44	1.04	33.82	50	1.15	33.86	27.14
69	8.79	34.72	75	8.70	34.72	26.97	67	1.32	33.93	75	1.45	34.00	27.23
92	8.17	34.72	100	8.25	34.73	27.04	89	1.71	34.09	100	1.85	34.13	27.30
137	9.31	35.13	150	9.20	35.06	27.15	134	2.04	34.20	150	2.05	34.20	27.35
183	7.40	34.84	200	7.00	34.82	27.30	178	2.01	34.21	200	2.05	34.23	27.37
274	6.03	34.84	300	5.75	34.85	27.49	268	2.25	34.39	300	2.45	34.54	27.58
365	5.19	34.90	400	5.10	34.91	27.61	360	3.13	34.70	400	3.20	34.72	27.67
548	4.65	34.95	600	4.55	34.97	27.73	546	3.36	34.75	(600)	3.40	34.76	27.68
734	4.36	34.96	800	4.20	34.93	27.73							
923	3.98	34.91	1,000	3.90	34.90	27.74							
1,410	3.64	34.89											
Station 8004; 10 April; 45°20' N., 46°39' W.; depth 2,926 m.; dynamic height 970.965													
0	7.83	34.28	0	7.83	34.28	26.75	0	7.83	34.28	0	7.83	34.28	26.75
26	6.48	34.14	25	6.60	34.15	26.82	26	6.48	34.14	25	6.60	34.15	26.82
51	4.44	34.02	50	4.45	34.02	26.98	51	4.44	34.02	50	4.45	34.02	26.98
77	5.55	34.35	75	5.40	34.33	27.11	77	5.55	34.35	75	5.40	34.33	27.11
103	6.16	34.62	100	6.15	34.59	27.23	103	6.16	34.62	100	6.15	34.59	27.23
153	6.23	34.79	150	6.20	34.78	27.37	153	6.23	34.79	150	6.20	34.78	27.37
204	5.76	34.85	200	5.80	34.84	27.47	204	5.76	34.85	200	5.80	34.84	27.47
307	5.37	34.99	300	5.40	34.99	27.64	307	5.37	34.99	300	5.40	34.99	27.64
408	4.70	34.98	400	4.75	34.98	27.70	408	4.70	34.98	400	4.75	34.98	27.70
511	3.81	34.87	600	3.65	34.83	27.70	511	3.81	34.87	600	3.65	34.83	27.70
713	3.60	34.83	800	3.55	34.84	27.73	713	3.60	34.83	800	3.55	34.84	27.73
925	3.52	34.86	1,000	3.50	34.86	27.75	925	3.52	34.86	1,000	3.50	34.86	27.75
1,438	3.44	34.88					1,438	3.44	34.88				
Station 8005; 10 April; 45°20' N., 47°26' W.; depth 2,286 m.; dynamic height 970.934													
0	5.70	33.93	0	5.70	33.93	26.77	0	5.70	33.93	0	5.70	33.93	26.77
26	5.33	33.95	25	5.40	33.95	26.82	26	5.33	33.95	25	5.40	33.95	26.82
52	4.32	34.05	50	4.35	34.04	27.00	52	4.32	34.05	50	4.35	34.04	27.00
78	5.13	34.30	75	5.05	34.23	27.08	78	5.13	34.30	75	5.05	34.23	27.08
103	5.27	34.54	100	5.25	34.53	27.29	103	5.27	34.54	100	5.25	34.53	27.29
154	4.85	34.70	150	4.85	34.68	27.46	154	4.85	34.70	150	4.85	34.68	27.46
206	5.40	34.88	200	5.40	34.86	27.54	206	5.40	34.88	200	5.40	34.86	27.54
310	4.67	34.89	300	4.70	34.89	27.64	310	4.67	34.89	300	4.70	34.89	27.64
414	4.38	34.94	400	4.40	34.94	27.71	414	4.38	34.94	400	4.40	34.94	27.71
623	4.02	34.94	600	4.05	34.94	27.75	623	4.02	34.94	600	4.05	34.94	27.75
828	3.69	34.91	800	3.75	34.91	27.76	828	3.69	34.91	800	3.75	34.91	27.76
1,031	3.58	34.92	1,000	3.60	34.92	27.79	1,031	3.58	34.92	1,000	3.60	34.92	27.79
1,537	3.51	34.94					1,537	3.51	34.94				
Station 8006; 10 April; 45°35' N., 47°48' W.; depth 1,463 m.; dynamic height 970.914													
0	0.78	33.29	0	0.78	33.29	26.70	0	0.78	33.29	0	0.78	33.29	26.70
25	5.60	34.07	25	5.60	34.07	26.89	25	5.60	34.07	25	5.60	34.07	26.89
50	5.25	34.26	50	5.25	34.26	27.08	50	5.25	34.26	50	5.25	34.26	27.08
75	5.13	34.41	75	5.13	34.41	27.21	75	5.13	34.41	75	5.13	34.41	27.21
100	4.89	34.49	100	4.89	34.49	27.38	100	4.89	34.49	100	4.89	34.49	27.38
150	4.61	34.73	150	4.61	34.73	27.52	150	4.61	34.73	150	4.61	34.73	27.52
200	4.88	34.85	200	4.88	34.85	27.59	200	4.88	34.85	200	4.88	34.85	27.59
300	4.44	34.89	300	4.44	34.89	27.67	300	4.44	34.89	300	4.44	34.89	27.67
400	3.89	34.88	400	3.89	34.88	27.72	400	3.89	34.88	400	3.89	34.88	27.72
600	4.14	34.96	600	4.14	34.96	27.76	600	4.14					

# TABLE OF OCEANOGRAPHIC DATA STATIONS OCCUPIED IN 1962—Continued

Observed values			Scaled values				Observed values			Scaled values			
Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	$\sigma_t$	Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	$\sigma_t$
Station 8008; 10 April; 45°48' N., 48°10' W.; depth 168 m.; dynamic height 971.076													
0	0.40	32.84	0	0.40	32.84	26.37	0	0.00	32.93	0	0.00	32.93	26.46
25	-0.85	32.96	25	-0.85	32.96	26.52	26	-0.15	33.06	25	-0.15	33.06	26.57
50	-1.02		50	-1.02	33.09	26.63	53	-0.44	33.25	50	-0.45	33.24	26.73
75	-0.82	33.21	75	-0.82	33.21	26.72	79	-0.06	33.32	75	-0.10	33.30	26.75
100	-0.22	33.40	100	-0.22	33.40	26.85	105	0.54	33.64	100	0.45	33.38	26.95
150	0.49	33.63	150	0.49	33.63	27.00	157	1.23	33.87	150	1.15	33.84	27.12
Station 8009; 10 April; 45°53' N., 48°21' W.; depth 104 m.; dynamic height 971.068													
0	-0.03	32.97	0	-0.03	32.97	26.49	0	0.86	33.28	0	0.86	33.28	26.70
27	-0.40		25	-0.35	33.04	26.58	22	1.04	33.53	25	1.35	33.65	26.96
54	-0.89	33.19	50	-0.90	33.14	26.67	44	2.59	34.09	50	2.60	34.11	27.23
81	-0.77	33.35	75	-0.80	33.31	26.79	67	2.50	34.14	75	2.40	34.14	27.27
			(100)	-0.70	33.45	26.91	89	2.30	34.11	100	2.30	34.17	27.31
							134	2.44	34.44	150	2.50	34.48	27.53
							178	2.64	34.53	200	2.85	34.59	27.59
							271	3.54	34.80	300	3.60	34.82	27.71
							366	3.65	34.84	400	3.65	34.84	27.71
							566	3.71	34.84	(600)	3.70	34.83	27.71
Station 8010; 10 April; 46°00' N., 48°29' W.; depth 95 m.; dynamic height 971.065													
0	1.17	32.90	0	1.17	32.90	26.37	0	1.28	33.53	0	1.28	33.53	26.86
26	0.42	33.04	25	0.50	33.04	26.52	25	2.74	33.92	25	2.74	33.92	27.06
54	-0.33	33.27	50	-0.30	33.24	26.72	49	2.27	34.14	50	2.30	34.15	27.29
80	0.43	33.60	75	0.25	33.54	26.94	74	2.52	34.41	75	2.55	34.42	27.49
							98	2.94	34.53	100	2.95	34.53	27.53
							147	2.80	34.58	150	2.80	34.59	27.59
							196	3.48	34.74	200	3.50	34.74	27.65
							296	3.73	34.83	300	3.75	34.83	27.69
							396	3.77	34.84	400	3.75	34.84	27.70
							599	3.62	34.86	600	3.60	34.86	27.74
							802	3.56	34.87	800	3.55	34.87	27.75
							1,006	3.51		1,000	3.50	34.87	27.76
							1,415	3.46	34.87				
Station 8011; 10 April; 46°08.5' N., 48°43' W.; depth 73 m.; dynamic height 971.052													
0	1.95	33.16	0	1.95	33.16	26.52	0	0.91	33.29	0	0.91	33.29	26.70
26	1.20	33.17	25	1.25	33.17	26.58	26	0.76	33.35	25	0.75	33.34	26.74
52	0.60	33.27	50	0.65	33.26	26.69	51	0.59	33.67	50	0.60	33.66	27.01
							77	2.96	34.19	75	2.90	34.15	27.24
							102	3.30	34.36	100	3.30	34.35	27.38
							152	3.09	34.54	150	3.10	34.53	27.52
							203	4.14	34.75	200	4.10	34.74	27.59
							306	4.23	34.86	300	4.25	34.86	27.67
							408	4.05	34.90	400	4.05	34.90	27.72
Station 8012; 11 April; 46°20.5' N., 48°58' W.; depth 71 m.; dynamic height 971.064													
0	2.04	33.16	0	2.04	33.16	26.52	0	0.91	33.29	0	0.91	33.29	26.70
28	1.14	33.22	25	1.25	33.21	26.62	26	0.76	33.35	25	0.75	33.34	26.74
55	0.69	33.26	50	0.75	33.25	26.68	51	0.59	33.67	50	0.60	33.66	27.01
							77	2.96	34.19	75	2.90	34.15	27.24
							102	3.30	34.36	100	3.30	34.35	27.38
							152	3.09	34.54	150	3.10	34.53	27.52
							203	4.14	34.75	200	4.10	34.74	27.59
							306	4.23	34.86	300	4.25	34.86	27.67
							408	4.05	34.90	400	4.05	34.90	27.72
Station 8013; 11 April; 46°13' N., 48°33' W.; depth 90 m.; dynamic height 971.063													
0	1.46	33.10	0	1.46	33.10	26.51	0	0.91	33.29	0	0.91	33.29	26.70
25	1.39	33.12	25	1.39	33.12	26.53	26	0.76	33.35	25	0.75	33.34	26.74
51	0.29	33.22	50	0.30	33.22	26.68	51	0.59	33.67	50	0.60	33.66	27.01
76	0.26	33.35	75	0.25	33.34	26.78	77	2.96	34.19	75	2.90	34.15	27.24
							102	3.30	34.36	100	3.30	34.35	27.38
							152	3.09	34.54	150	3.10	34.53	27.52
							203	4.14	34.75	200	4.10	34.74	27.59
							306	4.23	34.86	300	4.25	34.86	27.67
							408	4.05	34.90	400	4.05	34.90	27.72
Station 8014; 11 April; 46°16' N., 48°02' W.; depth 106 m.; dynamic height 971.069													
0	1.06	32.96	0	1.06	32.96	26.43	0	4.97	33.89	0	4.97	33.89	26.82
24	0.99	33.03	25	1.00	33.03	26.49	25	4.76	33.86	25	4.76	33.86	26.82
49	0.59	33.10	50	0.55	33.10	26.56	51	4.58	33.96	50	4.60	33.95	26.91
74	0.07	33.22	75	0.05	33.24	26.71	76	5.60	34.27	75	5.60	34.26	27.04
98	0.39	33.51	(100)	0.40	33.54	26.93	102	5.44	34.36	100	5.45	34.35	27.13
							151	5.03	34.57	150	5.05	34.56	27.34
							202	5.80	34.85	200	5.80	34.85	27.48
							301	4.84	34.87	300	4.85	34.87	27.61
							397	4.36	34.90	400	4.35	34.90	27.69
							586	3.96	34.90	600	3.95	34.90	27.73
							790	3.64	34.89	800	3.65	34.89	27.75
							998	3.56	34.89	1,000	3.55	34.89	27.76
							1,513	3.50	34.90				
Station 8015; 11 April; 46°13' N., 47°43' W.; depth 165 m.; dynamic height 971.060													
0	0.00	32.93	0	0.00	32.93	26.46	0	0.91	33.29	0	0.91	33.29	26.70
26	-0.15	33.06	25	-0.15	33.06	26.57	26	0.76	33.35	25	0.75	33.34	26.74
53	-0.44	33.25	50	-0.45	33.24	26.73	51	0.59	33.67	50	0.60	33.66	27.01
79	-0.06	33.32	75	-0.10	33.30	26.75	77	2.96	34.19	75	2.90	34.15	27.24
105	0.54	33.64	100	0.45	33.38	26.95	102	3.30	34.36	100	3.30	34.35	27.38
157	1.23	33.87	150	1.15	33.84	27.12	152	3.09	34.54	150	3.10	34.53	27.52
							203	4.14	34.75	200	4.10	34.74	27.59
							306	4.23	34.86	300	4.25	34.86	27.67
							408	4.05	34.90	400	4.05	34.90	27.72
Station 8016; 11 April; 46°12' N., 47°26' W.; depth 649 m.; dynamic height 970.921													
0	0.86	33.28	0	0.86	33.28	26.70	0	0.91	33.29	0	0.91	33.29	26.70
22	1.04	33.53	25	1.35	33.65	26.96	26	0.76	33.35	25	0.75	33.34	26.74
44	2.59	34.09	50	2.60	34.11	27.23	51	0.59	33.67	50	0.60	33.66	27.01
67	2.50	34.14	75	2.40	34.14	27.27	77	2.96	34.19	75	2.90	34.15	27.24
89	2.30	34.11	100	2.30	34.17	27.31	102	3.30	34.36	100	3.30	34.35	27.38
134	2.44	34.44	150	2.50	34.48	27.53	152	3.09	34.54	150	3.10	34.53	27.52
178	2.64	34.53	200	2.85	34.59	27.59	203	4.14	34.75	200	4.10	34.74	27.59
271	3.54	34.80	300	3.60	34.82	27.71	306	4.23	34.86	300	4.25	34.86	27.67
366	3.65	34.84	400	3.65	34.84	27.71	408	4.05	34.90	400	4.05	34.90	27.72
566	3.71	34.84	(600)	3.70	34.83	27.71							
Station 8017; 11 April; 46°11' N., 47°10' W.; depth 1,509 m.; dynamic height 970.887													
0	1.28	33.53	0	1.28	33.53	26.86	0	0.91	33.29	0	0.91	33.29	26.70
25	2.74	33.92	25	2.74	33.92	27.06	26	0.76	33.35	25	0.75	33.34	26.74
49	2.27	34.14	50	2.30	34.15	27.29	51	0.59	33.67	50	0.60	33.66	27.01
74	2.52	34.41	75	2.55	34.42	27.49	77	2.96	34.19	75	2.90	34.15	27.24
98	2.94	34.53	100	2.95	34.53	27.53	102	3.30	34.36	100	3.30	34.35	27.38
147	2.80	34.58	150	2.80	34.59	27.59	152	3.09	34.54	150	3.10	34.53	27.52
196	3.48	34.74	200	3.50	34.74	27.65							

## TABLE OF OCEANOGRAPHIC DATA STATIONS OCCUPIED IN 1962—Continued

Observed values			Scaled values				Observed values			Scaled values			
Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	$\sigma_t$	Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	$\sigma_t$
Station 8020; 12 April; 46°03.5' N., 45°15' W.; depth 3,566 m.; dynamic height 970.972													
0	5.04	33.94	0	5.04	33.94	26.85	0	4.68	34.15	0	4.68	34.15	27.06
22	5.05	33.95	25	5.05	33.96	26.87	26	4.33	34.23	25	4.35	34.23	27.15
43	5.34	34.09	50	5.45	34.12	26.95	51	3.92	34.30	50	4.00	34.30	27.25
65	5.54	34.21	75	5.50	34.30	27.08	76	3.77	34.34	75	3.80	34.34	27.30
87	5.47	34.36	100	5.50	34.39	27.15	102	3.62	34.44	100	3.65	34.43	27.38
130	5.50	34.48	150	5.50	34.63	27.34	152	3.76	34.62	150	3.75	34.61	27.52
173	5.49	34.69	200	5.25	34.72	27.45	201	3.81	34.76	200	3.80	34.76	27.64
262	4.72	34.79	300	4.60	34.85	27.62							
351	4.40	34.89	400	4.25	34.88	27.68							
532	3.86	34.81	600	3.80	34.84	27.70							
715	3.68	34.90	800	3.65	34.88	27.74							
899	3.61	34.86	1,000	3.60	34.87	27.75							
1,410	3.46	34.88											
Station 8021; 12 April; 46°02' N., 44°38' W.; depth 4,023 m.; dynamic height 970.944													
0	5.37	34.13	0	5.37	34.13	26.96	0	4.64	34.16	0	4.64	34.16	27.07
26	5.36	34.11	25	5.35	34.11	26.95	25	4.62	34.14	25	4.62	34.14	27.06
51	4.91	34.12	50	4.95	34.12	27.01	51	4.28	34.20	50	4.30	34.20	27.14
77	4.58	34.16	75	4.60	34.15	27.07	76	3.90	34.31	75	3.90	34.30	27.26
102	4.85	34.30	100	4.85	34.28	27.14	103	3.74	34.43	100	3.75	34.41	27.36
155	5.10	34.63	150	5.10	34.61	27.38	153	3.77	34.65	150	3.75	34.63	27.53
206	4.75	34.71	200	4.80	34.70	27.48							
310	4.36	34.87	300	4.35	34.85	27.65							
417	4.64	34.97	400	4.60	34.96	27.71							
632	4.13	34.95	600	4.20	34.95	27.75							
841	3.91	34.94	800	3.95	34.94	27.76							
1,051	3.84	34.95	1,000	3.85	34.95	27.78							
1,580	3.50	34.93											
Station 8022; 12 April; 46°23' N., 44°45' W.; depth 1,719 m.; dynamic height 970.885													
0	5.32	34.22	0	5.32	34.22	27.05	0	4.78	34.19	0	4.78	34.19	27.07
25	4.81	34.27	25	4.81	34.27	27.14	25	4.76	34.20	25	4.76	34.20	27.09
50	4.57	34.38	50	4.57	34.38	27.25	51	4.68	34.22	50	4.70	34.21	27.11
75	3.84	34.44	75	3.84	34.44	27.38	76	4.04	34.25	75	4.05	34.24	27.20
100	3.74	34.58	100	3.74	34.58	27.49	101	3.94	34.37	100	3.95	34.36	27.31
150	3.70	34.68	150	3.70	34.68	27.58	153	3.78	34.52	150	3.80	34.51	27.44
200	3.58	34.81	200	3.85	34.81	27.67							
301	3.86	34.83	300	3.85	34.83	27.68							
401	3.78	34.83	400	3.75	34.83	27.69							
603	3.53	34.88	600	3.55	34.88	27.75							
803	3.46	34.87	800	3.45	34.87	27.76							
1,003	3.45	34.88	1,000	3.45	34.88	27.76							
1,504	3.46	34.87											
Station 8023; 12 April; 46°29' N., 44°47' W.; depth 555 m.; dynamic height 970.890													
0	4.60	34.11	0	4.60	34.11	27.04	0	4.90	34.19	0	4.90	34.19	27.07
25	4.51	34.14	25	4.51	34.14	27.07	26	4.89	34.19	25	4.90	34.19	27.06
50	4.21	34.17	50	4.21	34.17	27.12	52	4.81	34.21	50	4.80	34.21	27.09
75	3.64	34.29	75	3.64	34.29	27.28	77	4.59	34.31	75	4.60	34.30	27.19
100	3.67	34.43	100	3.67	34.43	27.39	104	4.41	34.44	100	4.45	34.42	27.30
149	3.74	34.63	150	3.75	34.66	27.56	154	4.09	34.61	150	4.10	34.60	27.48
199	3.84	34.77	200	3.85	34.77	27.64	206	3.88	34.75	200	3.90	34.74	27.61
299	3.83	34.86	300	3.85	34.86	27.71							
399	3.78	34.87	400	3.75	34.88	27.73							
499	3.65	34.89	(500)	3.65	34.89	27.75							
Station 8024; 12 April; 46°35' N., 44°48' W.; depth 238 m.; dynamic height 970.888													
0	4.68	34.15	0	4.68	34.15	27.06	0	4.64	34.16	0	4.64	34.16	27.07
26	4.33	34.23	25	4.35	34.23	27.15	25	4.62	34.14	25	4.62	34.14	27.06
51	3.92	34.30	50	4.00	34.30	27.25	51	4.28	34.20	50	4.30	34.20	27.14
76	3.77	34.34	75	3.80	34.34	27.30	76	3.90	34.31	75	3.90	34.30	27.26
102	3.62	34.44	100	3.65	34.43	27.38	103	3.74	34.43	100	3.75	34.41	27.36
152	3.76	34.62	150	3.75	34.61	27.52	153	3.77	34.65	150	3.75	34.63	27.53
201	3.81	34.76	200	3.80	34.76	27.64							
Station 8025; 12 April; 46°40' N., 44°48' W.; depth 179 m.; dynamic height 970.896													
0	4.64	34.16	0	4.64	34.16	27.07	0	4.78	34.19	0	4.78	34.19	27.07
25	4.62	34.14	25	4.62	34.14	27.06	25	4.76	34.20	25	4.76	34.20	27.09
51	4.28	34.20	50	4.30	34.20	27.14	51	4.42	34.28	50	4.45	34.28	27.18
76	3.90	34.31	75	3.90	34.30	27.26	77	4.24	34.30	75	4.25	34.30	27.22
103	3.74	34.43	100	3.75	34.41	27.36	102	3.84	34.38	100	3.85	34.37	27.33
153	3.77	34.65	150	3.75	34.63	27.53	128	3.79	34.45	125	3.80	34.44	27.38
Station 8026; 12 April; 46°48.5' N., 44°56' W.; depth 144 m.; dynamic height 970.900													
0	4.78	34.20	0	4.78	34.20	27.08	0	4.90	34.19	0	4.90	34.19	27.07
26	4.77	34.21	25	4.75	34.20	27.09	26	4.89	34.19	25	4.90	34.19	27.06
51	4.42	34.28	50	4.45	34.28	27.18	52	4.81	34.21	50	4.80	34.21	27.09
77	4.24	34.30	75	4.25	34.30	27.22	77	4.59	34.31	75	4.60	34.30	27.19
102	3.84	34.38	100	3.85	34.37	27.33	104	4.41	34.44	100	4.45	34.42	27.30
128	3.79	34.45	125	3.80	34.44	27.38	154	4.09	34.61	150	4.10	34.60	27.48
Station 8027; 12 April; 46°50.5' N., 45°04' W.; depth 179 m.; dynamic height 970.904													
0	4.78	34.19	0	4.78	34.19	27.07	0	4.90	34.19	0	4.90	34.19	27.07
25	4.76	34.20	25	4.76	34.20	27.09	26	4.89	34.19	25	4.90	34.19	27.06
51	4.68	34.22	50	4.70	34.21	27.11	52	4.81	34.21	50	4.80	34.21	27.09
76	4.04	34.25	75	4.05	34.24	27.20	77	4.59	34.31	75	4.60	34.30	27.19
101	3.94	34.37	100	3.95	34.36	27.31	104	4.41	34.44	100	4.45	34.42	27.30
153	3.78	34.52	150	3.80	34.51	27.44	154	4.09	34.61	150	4.10	34.60	27.48
Station 8028; 12 April; 46°48' N., 45°18' W.; depth 227 m.; dynamic height 970.902													
0	4.90	34.19	0	4.90	34.19	27.07	0	4.90	34.19	0	4.90	34.19	27.07
26	4.89	34.19	25	4.90	34.19	27.06	26	4.89	34.19	25	4.90	34.19	27.06
52	4.81	34.21	50	4.80	34.21	27.09	52	4.81	34.21	50	4.80	34.21	27.09
77	4.59	34.31	75	4.60	34.30	27.19	77	4.59	34.31	75	4.60	34.30	27.19
104	4.41	34.44	100	4.45	34.42	27.30	104	4.41	34.44	100	4.45	34.42	27.30
154	4.09	34.61	150	4.10	34.60	27.48	154	4.09	34.61	150	4.10	34.60	27.48
206	3.88	34.75	200	3.90	34.74	27.61	206	3.88	34.75	200	3.90	34.74	27.61
Station 8029; 12 April; 46°47.5' N., 45°44' W.; depth 269 m.; dynamic height 970.916													
0	4.98	34.04	0	4.98	34.04	26.94	0	4.98	34.04	0	4.98	34.04	26.94
24	4.98	34.05	25	5.00	34.05	26.94	24	4.98	34.05	25	5.00	34.05	26.94
50	4.90	34.08	50	4.90	34.08	26.98	50	4.90	34.08	50	4.90	34.08	26.98
74	4.28	34.10	75	4.30	34.10	27.06	74	4.28	34.10	75	4.30	34.10	27.06
100	4.37	34.25	100	4.37	34.25	27.17	100	4.37	34.25	100	4.37	34.25	27.17
149	4.20	34.63	150	4.20	34.63	27.49	149	4.20	34.63	150	4.20	34.63	27.49
199	3.94	34.77	200	3.95	34.77	27.62	199	3.94	34.77	200	3.95	34.77	27.62
249	3.82	34.82	(250)	3.80	34.82	27.69	249	3.82	34.82	(250)	3.80	34.82	27.69

## TABLE OF OCEANOGRAPHIC DATA STATIONS OCCUPIED IN 1962—Continued

Observed values			Scaled values				Observed values			Scaled values						
Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	$\sigma_t$	Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	$\sigma_t$			
Station 8030; 12 April; 46°46' N., 46°06' W.; depth 357 m.; dynamic height 970.904							Station 8034; 13 April; 46°46' N., 47°15' W.; depth 357 m.; dynamic height 970.942									
0	4.92	34.14	0	4.92	34.14	27.02	0	0.59	33.20	0	0.59	33.20	26.65			
25	4.91	34.13	25	4.91	34.13	27.01	22	0.59	33.20	25	0.60	33.20	26.65			
49	4.79	34.18	50	4.80	34.18	27.07	43	0.53	33.27	50	0.65	33.38	26.78			
74	4.85	34.35	75	4.85	34.36	27.21	65	1.42	33.59	75	1.65	33.83	27.07			
99	5.12	34.57	100	5.10	34.57	27.35	86	1.94	34.10	100	2.05	34.16	27.32			
147	4.00	34.59	150	4.00	34.59	27.48	129	2.23	34.28	150	2.50	34.41	27.48			
196	4.04	34.76	200	4.05	34.76	27.61	173	2.77	34.55	200	2.90	34.61	27.61			
295	3.62	34.82	(300)	3.60	34.82	27.71	259	3.20	34.76	(300)	3.30	34.81	27.73			
Station 8031; 13 April; 46°47.5' N., 46°30' W.; depth 713 m.; dynamic height 970.901							Station 8035; 13 April; 46°49' N., 47°31' W.; depth 176 m.; dynamic height 971.057									
0	4.81	34.06	0	4.81	34.06	26.98	0	0.12	32.90	0	0.12	32.90	26.43			
24	4.74	34.03	25	4.75	34.03	26.95	27	0.10	32.90	25	0.10	32.90	26.43			
47	2.35	33.99	50	2.35	34.00	27.16	53	-0.21	32.99	50	-0.20	32.97	26.50			
70	5.07	34.54	75	5.05	34.55	27.33	80	-0.69	33.26	75	-0.70	33.21	26.72			
94	4.45	34.59	100	4.40	34.61	27.46	106	-0.33	33.47	100	-0.45	33.42	26.88			
142	4.18	34.70	150	4.20	34.73	27.57	158	0.89	33.74	150	0.70	33.70	27.04			
189	4.62	34.86	200	4.60	34.88	27.64	Station 8036; 13 April; 46°48' N., 48°04' W.; depth 117 m.; dynamic height 971.048									
283	4.41	34.91	300	4.35	34.90	27.69	0	0.57	32.93	0	0.57	32.93	26.43			
378	4.03	34.85	400	3.95	34.85	27.69	25	0.53	32.93	25	0.53	32.93	26.43			
566	3.79	34.88	(600)	3.80	34.88	27.73	50	0.09	33.15	50	0.09	33.15	26.64			
Station 8032; 13 April; 46°47' N., 46°52' W.; depth 1,262 m.; dynamic height 970.868							Station 8037; 26 April; 46°49.5' N., 44°51' W.; depth 143 m.; dynamic height 970.908									
0	2.27	34.00	0	2.27	34.00	27.17	0	4.70	34.21	0	4.70	34.21	27.10			
25	2.20	34.12	25	2.20	34.12	27.28	25	4.70	34.19	25	4.70	34.19	27.09			
50	2.46	34.38	50	2.46	34.38	27.45	50	4.70	34.24	50	4.70	34.24	27.13			
76	2.83	34.46	75	2.85	34.46	27.49	75	4.47	34.27	75	4.47	34.27	27.18			
100	2.79	34.56	100	2.79	34.56	27.58	100	3.93	34.41	100	3.93	34.41	27.35			
151	2.88	34.65	150	2.90	34.64	27.63	125	3.94	34.38	125	3.94	34.38	27.32			
201	3.01	34.69	200	3.00	34.69	27.66	Station 8038; 26 April; 46°49' N., 45°03' W.; depth 174 m.; dynamic height 970.894									
298	3.68	34.81	300	3.70	34.81	27.69	0	4.70	34.22	0	4.70	34.22	27.11			
392	3.91	34.89	400	3.90	34.89	27.73	24	4.69	34.17	25	4.70	34.17	27.08			
574	3.65	34.87	600	3.65	34.86	27.73	49	4.08	34.36	50	4.05	34.36	27.30			
772	3.54	34.86	800	3.55	34.86	27.74	73	3.94	34.43	75	3.95	34.42	27.35			
974	3.46	34.87	1,000	3.45	34.87	27.77	97	3.87	34.46	100	3.85	34.46	27.39			
1,070	3.45	34.87	Station 8033; 13 April; 46°46' N., 47°06' W.; depth 567 m.; dynamic height 970.903							146	3.79	34.56	(150)	3.80	34.56	27.48
0	1.78	33.71	0	1.78	33.71	26.98	Station 8039; 26 April; 46°47' N., 45°16' W.; depth 223 m.; dynamic height 970.877									
22	1.95	33.74	25	2.00	33.82	27.05	0	4.73	34.23	0	4.73	34.23	27.12			
44	2.31	34.06	50	2.25	34.12	27.27	25	4.69	34.21	25	4.69	34.21	27.11			
66	1.92	34.23	75	1.95	34.24	27.39	50	3.69	34.42	50	3.69	34.42	27.38			
88	2.00	34.27	100	2.20	34.32	27.44	75	3.73	34.52	75	3.73	34.52	27.45			
132	2.69	34.48	150	2.80	34.53	27.54	100	3.74	34.62	100	3.74	34.62	27.53			
176	2.92	34.59	200	3.00	34.62	27.61	150	3.80	34.72	150	3.80	34.72	27.61			
263	3.22	34.68	300	3.50	34.73	27.64	200	3.81	34.72	200	3.81	34.72	27.61			
352	3.72	34.78	400	3.80	34.81	27.68										
527	3.83	34.85														

# TABLES OF OCEANOGRAPHIC DATA

## STATIONS OCCUPIED IN 1962—Continued

Observed values			Scaled values				Observed values			Scaled values			
Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	$\sigma_t$	Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	$\sigma_t$
Station 8040; 26 April; 46°45' N., 45°36' W.; depth 271 m.; dynamic height 970.903													
0	4.72	34.10	0	4.72	34.10	27.02	0	-0.11	32.80	0	-0.11	32.80	26.36
25	4.69	34.08	25	4.69	34.08	27.00	25	-0.26	32.91	25	-0.26	32.91	26.46
49	4.59	34.10	50	4.55	34.10	27.03	49	-0.73	33.39	50	-0.75	33.40	26.87
74	3.97	34.30	75	4.95	34.31	27.16	74	-0.20	33.65	75	-0.15	33.65	27.05
99	4.48	34.57	100	4.50	34.57	27.41	98	1.22	33.97	100	1.25	33.98	27.23
148	4.50	34.71	150	4.50	34.70	27.51	147	1.65	34.21	150	1.70	34.21	27.38
198	3.82	34.76	200	3.80	34.75	27.63	197	2.22	34.40	200	2.25	34.40	27.49
247	3.91	34.84	(250)	3.90	34.84	27.69	245	2.73	34.52	(300)	2.75	34.52	27.55
Station 8041; 26 April; 46°44.5' N., 45°58' W.; depth 329 m.; dynamic height 970.920													
0	4.72	34.02	0	4.72	34.02	26.95	0	0.70	32.94	0	0.70	32.94	26.43
25	4.66	34.02	25	4.66	34.02	26.96	25	0.61	32.95	25	0.61	32.95	26.44
50	4.61	33.99	50	4.51	33.99	26.95	50	-0.14	33.01	50	-0.14	33.01	26.53
75	4.58	34.09	75	4.58	34.09	27.02	75	-0.94	33.21	75	-0.94	33.21	26.72
100	3.87	34.30	100	3.87	34.30	27.27	100	-0.87	33.35	100	-0.87	33.35	26.83
150	4.47	34.55	150	4.47	34.54	27.40	150	0.50	33.66	150	0.50	33.66	27.02
200	3.88	34.77	200	3.88	34.77	27.64							
300	3.73	34.85	300	3.73	34.85	27.72							
Station 8042; 26 April; 46°48' N., 46°20' W.; depth 604 m.; dynamic height 970.880													
0	3.02	34.09	0	3.02	34.09	27.18	0	0.82	32.98	0	0.82	32.98	26.46
25	2.94	33.88	25	2.94	33.88	27.02	26	0.65	32.96	25	0.65	32.95	26.44
50	2.24	34.09	50	2.24	34.09	27.25	52	0.50	32.99	50	0.50	32.98	26.47
75	2.98	34.44	75	2.98	34.44	27.46	75	-0.28	33.34	75	-0.30	33.30	26.76
100	3.10	34.55	100	3.10	34.55	27.54	104	0.30	33.54	100	0.25	33.51	26.92
151	3.11	34.67	150	3.10	34.66	27.63							
201	4.29	34.81	200	4.30	34.80	27.62							
301	4.11	34.88	300	4.10	34.87	27.70							
400	3.65	34.83	400	3.65	34.83	27.71							
549	3.59	34.87	(550)	3.60	34.86	27.74							
Station 8043; 26 April; 46°47' N., 46°50' W.; depth 1,244 m.; dynamic height 970.896													
0	2.61	33.75	0	2.61	33.75	26.94	0	1.11	33.08	0	1.11	33.08	26.52
24	2.61	33.99	25	2.60	33.98	27.12	25	1.09	33.03	25	1.09	33.03	26.48
48	2.65	34.12	50	2.70	34.13	27.23	51	1.08	33.05	50	1.10	33.04	26.49
72	2.98	34.38	75	2.95	34.39	27.42	76	0.11	33.23	75	0.15	33.22	26.68
96	2.89	34.49	100	2.90	34.50	27.52							
144	3.07	34.60	150	3.10	34.60	27.58							
192	3.33	34.64	200	3.35	34.64	27.58							
289	3.56	34.75	300	3.60	34.78	27.67							
387	3.83	34.86	400	3.80	34.85	27.71							
583	3.64	34.88	600	3.65	34.87	27.74							
778	3.60	34.88	800	3.60	34.87	27.75							
973	3.48	34.89	1,000	3.45	34.88	27.76							
1,071	3.43	34.88											
Station 8044; 26 April; 46°48' N., 47°04' W.; depth 613 m.; dynamic height 970.947													
0	0.37	33.05	0	0.37	33.05	26.54	0	1.26	33.08	0	1.26	33.08	26.51
23	1.16	33.48	25	1.20	33.48	26.83	27	1.15	33.05	25	1.15	33.04	26.49
46	1.31	33.64	50	1.30	33.68	26.98	53	1.11	33.05	50	1.10	33.04	26.49
70	1.38	33.95	75	1.40	33.98	27.21	80	0.61	33.15	75	0.70	33.12	26.57
93	1.44	34.05	100	1.50	34.07	27.29							
140	2.00	34.25	150	2.05	34.27	27.41							
187	2.19	34.40	200	2.35	34.42	27.50							
279	3.14	34.62	300	3.15	34.64	27.60							
372	3.29	34.77	400	3.35	34.79	27.70							
554	3.70	34.87	(600)	3.80	34.88	27.73							
Station 8045; 27 April; 46°47' N., 47°12' W.; depth 326 m.; dynamic height 970.975													
0	-0.11	32.80	0	-0.11	32.80	26.36	0	0.70	32.94	0	0.70	32.94	26.43
25	-0.26	32.91	25	-0.26	32.91	26.46	25	0.61	32.95	25	0.61	32.95	26.44
49	-0.73	33.39	50	-0.75	33.40	26.87	50	-0.14	33.01	50	-0.14	33.01	26.53
74	-0.20	33.65	75	-0.15	33.65	27.05	75	-0.94	33.21	75	-0.94	33.21	26.72
98	1.22	33.97	100	1.25	33.98	27.23	100	-0.87	33.35	100	-0.87	33.35	26.83
147	1.65	34.21	150	1.70	34.21	27.38	150	0.50	33.66	150	0.50	33.66	27.02
197	2.22	34.40	200	2.25	34.40	27.49							
245	2.73	34.52	(300)	2.75	34.52	27.55							
Station 8046; 27 April; 46°48.5' N., 47°30' W.; depth 177 m.; dynamic height 971.046													
0	0.70	32.94	0	0.70	32.94	26.43	0	0.82	32.98	0	0.82	32.98	26.46
25	0.61	32.95	25	0.61	32.95	26.44	26	0.65	32.96	25	0.65	32.95	26.44
50	-0.14	33.01	50	-0.14	33.01	26.53	52	0.50	32.99	50	0.50	32.98	26.47
75	-0.94	33.21	75	-0.94	33.21	26.72	75	-0.28	33.34	75	-0.30	33.30	26.76
100	-0.87	33.35	100	-0.87	33.35	26.83	104	0.30	33.54	100	0.25	33.51	26.92
150	0.50	33.66	150	0.50	33.66	27.02							
Station 8047; 27 April; 46°49' N., 48°03' W.; depth 121 m.; dynamic height 971.044													
0	0.82	32.98	0	0.82	32.98	26.46	0	1.11	33.08	0	1.11	33.08	26.52
26	0.65	32.96	25	0.65	32.95	26.44	25	1.09	33.03	25	1.09	33.03	26.48
52	0.50	32.99	50	0.50	32.98	26.47	51	1.08	33.05	50	1.10	33.04	26.49
75	-0.28	33.34	75	-0.30	33.30	26.76	76	0.11	33.23	75	0.15	33.22	26.68
104	0.30	33.54	100	0.25	33.51	26.92							
Station 8048; 27 April; 46°48' N., 48°43' W.; depth 91 m.; dynamic height 971.048													
0	1.11	33.08	0	1.11	33.08	26.52	0	1.26	33.08	0	1.26	33.08	26.51
25	1.09	33.03	25	1.09	33.03	26.48	27	1.15	33.05	25	1.15	33.04	26.49
51	1.08	33.05	50	1.10	33.04	26.49	53	1.11	33.05	50	1.10	33.04	26.49
76	0.11	33.23	75	0.15	33.22	26.68	80	0.61	33.15	75	0.70	33.12	26.57
Station 8049; 27 April; 47°13' N., 49°16' W.; depth 91 m.; dynamic height 971.050													
0	1.26	33.08	0	1.26	33.08	26.51	0	0.84	32.92	0	0.84	32.92	26.41
27	1.15	33.05	25	1.15	33.04	26.49	26	0.66	32.94	25	0.65	32.93	26.42
53	1.11	33.05	50	1.10	33.04	26.49	52	0.65	33.01	50	0.65	33.00	26.48
80	0.61	33.15	75	0.70	33.12	26.57	77	-0.51	33.15	75	-0.50	33.14	26.65
							103	-0.27	33.45	100	-0.30	33.42	26.87
Station 8050; 27 April; 47°15' N., 48°40' W.; depth 135 m.; dynamic height 971.046													
0	0.84	32.92	0	0.84	32.92	26.41	0	0.51	32.79	0	0.51	32.79	26.32
26	0.66	32.94	25	0.65	32.93	26.42	24	0.34	32.79	25	0.35	32.78	26.32
52	0.65	33.01	50	0.65	33.00	26.48	49	0.45	32.96	50	0.45	32.96	26.46
77	-0.51	33.15	75	-0.50	33.14	26.65	73	-0.92	33.11	75	-0.95	33.12	26.65
103	-0.27	33.45	100	-0.30	33.42	26.87	99	-0.59	33.29	100	-0.55	33.30	26.77
							147	0.34	33.60	(150)	0.40	33.61	26.99
Station 8051; 27 April; 47°15' N., 48°10' W.; depth 172 m.; dynamic height 971.053													
0	0.51	32.79	0	0.51	32.79	26.32							
24	0.34	32.79	25	0.35	32.78	26.32							
49	0.45	32.96	50	0.45	32.96	26.46							
73	-0.92	33.11	75	-0.95	33.12	26.65							
99	-0.59	33.29	100	-0.55	33.30	26.77							
147	0.34	33.60	(150)	0.40	33.61	26.99							

## TABLE OF OCEANOGRAPHIC DATA STATIONS OCCUPIED IN 1962—Continued

Observed values			Scaled values				Observed values			Scaled values			
Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	$\sigma_t$	Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	$\sigma_t$
Station 8052; 27 April; 47°13.5' N., 47°42' W.; depth 219 m.; dynamic height 971.044													
0	-0.37	32.53	0	-0.37	32.53	26.15	0	4.51	34.03	0	4.51	34.03	26.98
25	-0.91	32.60	25	-0.91	32.60	26.24	24	4.44	34.04	25	4.45	34.04	26.99
50	-1.26	33.07	50	-1.26	33.07	26.62	49	4.47	34.07	50	4.45	34.06	27.01
75	-1.33	33.27	75	-1.33	33.27	26.78	73	4.46	34.10	75	4.45	34.09	27.03
100	-1.19	33.35	100	-1.19	33.35	26.84	98	4.39	34.19	100	4.40	34.20	27.13
149	0.41		150	0.45	33.66	27.02	146	4.59	34.59	150	4.60	34.60	27.42
199	1.25	33.97	(200)	1.25	33.96	27.21	195	4.33	34.76	200	4.30	34.76	27.59
							244	3.78	34.76	(250)	3.75	34.76	27.64
Station 8053; 27 April; 47°21' N., 47°18' W.; depth 293 m.; dynamic height 970.990													
0	-0.16	32.83	0	-0.16	32.83	26.39	0	4.37	33.99	0	4.37	33.99	26.97
25	-0.28	32.85	25	-0.28	32.85	26.41	25	4.37	34.01	25	4.37	34.01	26.98
50	-0.83	33.23	50	-0.83	33.23	26.74	50	4.36	33.99	50	4.36	33.99	26.97
75	-0.52	33.49	75	-0.52	33.49	26.93	75	4.23	34.20	75	4.23	34.20	27.15
100	0.31	33.65	100	0.31	33.65	27.02	100	3.82	34.30	100	3.82	34.30	27.27
150	1.74	34.11	150	1.74	34.11	27.30	149	4.09	34.61	150	4.10	34.61	27.49
200	2.32	34.41	200	2.32	34.41	27.50	199	3.80	34.73	(200)	3.80	34.73	27.61
250	2.78	34.53	250	2.78	34.53	27.55							
Station 8054; 28 April; 47°22.5' N., 46°56' W.; depth 1,042 m.; dynamic height 970.933													
0	0.30	33.11	0	0.30	33.11	26.59	0	4.43	33.97	0	4.43	33.97	26.94
25	0.08	33.25	25	0.08	33.25	26.71	26	4.40	34.04	25	4.40	34.03	26.99
50	1.32	33.82	50	1.32	33.82	27.10	51	4.36	34.01	50	4.35	34.01	26.98
75	1.46	33.95	75	1.46	33.95	27.19	76	4.05	34.18	75	4.05	34.17	27.15
100	1.52	34.12	100	1.52	34.12	27.33	102	3.80	34.37	100	3.80	34.35	27.31
152	1.93	34.26	150	1.95	34.24	27.39	153	3.91	34.59	150	3.90	34.57	27.48
202	2.50	34.53	200	2.50	34.51	27.56							
302	3.14	34.71	300	3.15	34.70	27.65							
404	3.73	34.86	400	3.70	34.85	27.72							
604	3.71		600	3.70	34.87	27.74							
805	3.61	34.88	800	3.60	34.88	27.75							
1,005	3.46	34.88	1,000	3.45	34.88	27.76							
Station 8055; 28 April; 47°18' N., 46°34' W.; depth 585 m.; dynamic height 970.868													
0	1.80	33.90	0	1.80	33.90	27.13	0	4.35	34.02	0	4.35	34.02	26.99
24	2.05	33.92	25	2.10	33.92	27.12	25	4.37	34.01	25	4.37	34.01	26.98
47	3.27	34.32	50	3.25	34.32	27.34	50	4.36	33.99	50	4.36	33.99	26.97
71	2.59	34.37	75	2.60	34.37	27.44	74	4.81	34.20	75	4.80	34.20	27.08
118	2.68	34.55	100	2.65	34.47	27.52	99	4.13	34.25	100	4.10	34.25	27.20
166	2.95	34.69	150	2.85	34.64	27.63	148	3.94	34.57	150	3.95	34.57	27.47
260	3.80	34.83	200	3.30	34.74	27.67	198	3.80	34.73	(200)	3.80	34.73	27.61
354	3.77	34.89	300	3.80	34.85	27.71							
540	3.59	34.88	400	3.70	34.88	27.74							
			(550)	3.60	34.87	27.75							
Station 8056; 28 April; 47°20' N., 45°54' W.; depth 322 m.; dynamic height 970.950													
0	4.51	34.05	0	4.51	34.05	26.99	0	3.68	33.91	0	3.68	33.91	26.97
25	4.48	34.04	25	4.48	34.04	26.99	25	4.41	33.94	25	4.41	33.94	26.92
49	4.48	34.03	50	4.50	34.02	26.98	50	4.59	34.12	50	4.59	34.12	27.05
74	4.48	34.02	75	4.45	34.01	26.97	76	4.42	34.34	75	4.40	34.32	27.23
98	4.47	34.02	100	4.50	34.01	26.97	101	4.51	34.53	100	4.50	34.52	27.37
147	3.82	34.29	150	3.85	34.30	27.27	132	2.63	34.49	150	2.60	34.48	27.52
197	3.86	34.59	200	3.85	34.59	27.49	202	3.50	34.65	200	3.50	34.64	27.57
295	3.77	34.79	(300)	3.75	34.79	27.66	303	3.98	34.83	300	4.00	34.82	27.67
Station 8062; 28 April; 47°47' N., 45°55' W.; depth 444 m.; dynamic height 970.864													
0	2.55	34.15	0	2.55	34.15	27.27	0	2.55	34.15	0	2.55	34.15	27.27
25	2.82	34.23	25	2.82	34.23	27.31	25	2.96	34.33	25	2.96	34.33	27.38
49	4.34	34.54	50	4.34	34.54	27.51	75	3.34	34.54	75	3.34	34.54	27.51
74	4.06	34.68	100	4.06	34.68	27.55	100	4.06	34.68	100	4.06	34.68	27.55
98	3.36	34.64	150	3.35	34.64	27.58	152	3.36	34.64	150	3.35	34.64	27.58
147	3.63	34.77	200	3.60	34.76	27.66	202	3.63	34.77	200	3.60	34.76	27.66
197	3.87	34.82	300	3.85	34.81	27.67	302	3.87	34.82	300	3.85	34.81	27.67
402	3.63	34.88	400	3.65	34.87	27.74	402	3.63	34.88	400	3.65	34.87	27.74

# TABLE OF OCEANOGRAPHIC DATA STATIONS OCCUPIED IN 1962—Continued

Observed values			Scaled values				Observed values			Scaled values			
Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	$\sigma_t$	Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	$\sigma_t$
Station 8063; 29 April; 47°52' N., 46°10' W.; depth 1,064 m.; dynamic height 970.849							Station 8067; 29 April; 49°02' N., 45°02' W.; depth 1,829 m.; dynamic height 970.859						
0	3.26	34.47	0	3.26	34.47	27.46	0	4.47	34.56	0	4.47	34.56	27.41
25	3.27	34.49	25	3.27	34.49	27.48	21	4.50	34.58	25	4.50	34.57	27.41
51	3.30	34.51	50	3.30	34.50	27.48	42	4.30	34.56	50	4.20	34.56	27.44
76	3.29	34.50	75	3.30	34.50	27.48	63	4.03	34.62	75	3.65	34.58	27.50
102	3.35	34.61	100	3.35	34.60	27.55	84	3.39	34.57	100	3.30	34.63	27.58
152	3.53	34.75	150	3.50	34.74	27.65	125	3.22	34.71	150	3.30	34.73	27.66
203	3.77	34.83	200	3.80	34.82	27.69	167	3.21	34.76	200	3.35	34.78	27.69
305	3.70	34.88	300	3.70	34.87	27.74	253	3.40	34.81	300	3.50	34.79	27.69
406	3.70	34.88	400	3.70	34.87	27.74	340	3.52	34.80	400	3.45	34.81	27.71
609	3.58	34.85	600	3.60	34.84	27.72	519	3.38	34.86	600	3.40	34.85	27.75
811	3.48	34.89	800	3.50	34.88	27.76	710	3.48	34.87	800	3.50	34.85	27.74
1,013	3.40	34.89	1,000	3.40	34.88	27.77	909	3.49	34.84	1,000	3.45	34.85	27.74
							1,441	3.36	34.91				
Station 8064; 29 April; 48°01.5' N., 46°23' W.; depth 1,189 m.; dynamic height 970.857							Station 8068; 29 April; 49°12' N., 45°39' W.; depth 2,835 m.; dynamic height 970.855						
0	2.72	34.35	0	2.72	34.35	27.41	0	5.43	34.56	0	5.43	34.56	27.29
26	2.93	34.43	25	2.90	34.42	27.46	26	5.46	34.60	25	5.45	34.59	27.31
51	3.28	34.45	50	3.30	34.44	27.43	52	5.03	34.61	50	5.10	34.60	27.37
76	3.30	34.50	75	3.30	34.49	27.47	78	3.77	34.65	75	3.95	34.60	27.52
102	3.32	34.53	100	3.30	34.52	27.50	104	3.35	34.73	100	3.35	34.71	27.64
154	3.18	34.74	150	3.20	34.73	27.67	157	3.52	34.74	150	3.50	34.73	27.64
205	3.38	34.78	200	3.40	34.76	27.68	209	3.56	34.82	200	3.60	34.81	27.70
306	3.67	34.86	300	3.65	34.85	27.72	313	3.49	34.85	300	3.50	34.84	27.73
406	3.57	34.85	400	3.60	34.84	27.72	418	3.45	34.85	400	3.45	34.84	27.73
603	3.57	34.87	600	3.60	34.86	27.74	626	3.49	34.86	600	3.50	34.85	27.74
803	3.52	34.88	800	3.50	34.87	27.76	833	3.50	34.87	800	3.50	34.86	27.75
1,004	3.48	34.86	1,000	3.50	34.85	27.74	1,040	3.45	34.87	1,000	3.45	34.86	27.75
							1,562	3.38	34.91				
Station 8065; 29 April; 48°20' N., 45°58' W.; depth 1,152 m.; dynamic height 970.853							Station 8069; 29 April; 49°21.5' N., 46°18' W.; depth 3,292 m.; dynamic height 970.863						
0	3.41	34.50	0	3.41	34.50	27.47	0	5.27	34.58	0	5.27	34.58	27.33
25	3.42	34.49	25	3.42	34.49	27.46	23	5.28	34.60	25	5.30	34.58	27.32
50	3.56	34.54	50	3.56	34.54	27.49	47	5.29	34.57	50	5.30	34.56	27.31
75	3.57	34.53	75	3.57	34.53	27.48	70	4.98	34.64	75	4.90	34.65	27.48
100	3.48	34.59	100	3.48	34.59	27.53	94	3.57	34.70	100	4.40	34.70	27.52
150	3.15	34.70	150	3.15	34.70	27.65	140	3.29	34.73	150	3.25	34.72	27.66
200	3.22	34.74	200	3.22	34.74	27.68	187	3.22	34.73	200	3.30	34.74	27.67
298	3.72	34.87	300	3.70	34.86	27.73	283	3.56	34.86	300	3.60	34.86	27.74
396	3.71	34.86	400	3.70	34.85	27.72	380	3.77	34.89	400	3.75	34.88	27.73
588	3.67	34.90	600	3.65	34.89	27.75	581	3.64	34.88	600	3.65	34.88	27.74
785	3.54	34.89	800	3.55	34.88	27.75	782	3.54	34.89	800	3.55	34.88	27.75
982	3.44	34.86	(1,000)	3.45	34.85	27.74	987	3.46	34.85	1,000	3.45	34.87	27.76
							1,479	3.43	34.93				
Station 8066; 29 April; 48°40' N., 45°30' W.; depth 1,143 m.; dynamic height 970.853							Station 8070; 30 April; 49°00' N., 46°39' W.; depth 2,890 m.; dynamic height 970.851						
0	3.24	34.55	0	3.24	34.55	27.53	0	4.90	34.62	0	4.90	34.62	27.41
23	3.23	34.59	25	3.25	34.58	27.54	25	4.90	34.60	25	4.90	34.60	27.39
47	3.18	34.62	50	3.20	34.61	27.58	50	4.89	34.61	50	4.89	34.60	27.40
70	3.16	34.60	75	3.15	34.60	27.57	75	4.42	34.61	75	4.42	34.61	27.45
94	3.14	34.63	100	3.15	34.63	27.59	100	3.83	34.69	100	3.83	34.69	27.58
140	3.11	34.67	150	3.15	34.67	27.63	149	3.71	34.75	150	3.70	34.74	27.63
187	3.37	34.73	200	3.45	34.75	27.66	199	3.50	34.78	200	3.50	34.77	27.68
281	3.67	34.87	300	3.70	34.87	27.74	297	3.78	34.88	300	3.80	34.87	27.73
375	3.69	34.88	400	3.65	34.87	27.74	393	3.83	34.88	400	3.80	34.87	27.73
565	3.57	34.87	600	3.55	34.87	27.74	582	3.64	34.90	600	3.60	34.89	27.76
757	3.51		800	3.50	34.83	27.72	779	3.52	34.89	800	3.50	34.88	27.76
950	3.48	34.82	(1,000)	3.50	34.81	27.71	978	3.45	34.90	1,000	3.45	34.89	27.77
							1,492	3.45	34.92				

## TABLE OF OCEANOGRAPHIC DATA STATIONS OCCUPIED IN 1962—Continued

Observed values			Scaled values				Observed values			Scaled values			
Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	$\sigma_t$	Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	$\sigma_t$
Station 8071: 30 April: 48°39' N., 47°00' W.; depth 2,670 m.; dynamic height 970.848							Station 8075: 30 April: 47°45' N., 48°13' W.; depth 247 m.; dynamic height 971.072						
0	2.23	34.25	0	2.23	34.25	27.38	0	-0.40	32.68	0	-0.40	32.68	26.28
23	2.27	34.28	25	2.25	34.28	27.39	24	-0.40	32.68	25	-0.40	32.68	26.28
45	2.48	34.46	50	2.50	34.46	27.52	47	-1.24	33.02	50	-1.30	33.02	26.58
68	2.43	34.52	75	2.45	34.53	27.57	71	-1.41	33.16	75	-1.40	33.17	26.70
90	2.74	34.58	100	2.85	34.60	27.60	94	-1.30	33.30	100	-1.25	33.30	26.80
136	3.18	34.70	150	3.25	34.71	27.65	142	-1.06	33.39	150	-0.80	33.45	26.91
181	3.32	34.77	200	3.45	34.79	27.69	189	0.65	33.82	(200)	1.10	33.91	27.18
284	3.61	34.87	300	3.60	34.86	27.74							
396	3.57	34.85	400	3.55	34.85	27.73							
644	3.56	34.88	600	3.55	34.86	27.74							
849	3.52	34.87	800	3.55	34.86	27.74							
1,050	3.61	34.94	1,000	3.60	34.91	27.78							
1,588	3.42	34.93											
Station 8072: 30 April: 48°17' N., 47°21' W.; depth 1,783 m.; dynamic height 970.848							Station 8076: 30 April: 47°43' N., 48°36' W.; depth 205 m.; dynamic height 971.071						
0	1.97	34.06	0	1.97	34.06	27.25	0	-0.10	32.76	0	-0.10	32.76	26.33
25	1.97	34.11	25	1.97	34.11	27.28	25	-0.10	32.76	25	-0.10	32.76	26.33
50	1.97	34.10	50	1.97	34.10	27.28	50	-0.16	32.76	50	-0.16	32.76	26.33
75	3.06	34.53	75	3.06	34.53	27.53	76	-1.30	33.24	75	-1.30	33.20	26.72
100	3.34	34.65	100	3.34	34.65	27.60	101	-1.34	33.33	100	-1.35	33.31	26.81
150	3.29	34.74	150	3.29	34.74	27.67	150	-0.34	33.57	150	-0.34	33.57	26.99
166	3.49	34.83	200	3.50	34.82	27.72							
263	3.45	34.83	300	3.40	34.83	27.73							
372	3.37	34.85	400	3.35	34.84	27.74							
616	3.43	34.85	600	3.40	34.84	27.74							
825	3.44		800	3.45	34.87	27.76							
1,037	3.43	34.92	1,000	3.40	34.90	27.79							
1,556	3.44	34.91											
Station 8073: 30 April: 48°05' N., 47°38' W.; depth 430 m.; dynamic height 971.002							Station 8077: 30 April: 47°40' N., 48°58' W.; depth 176 m.; dynamic height 971.073						
0	-0.65	32.77	0	-0.65	32.77	26.36	0	0.09	32.82	0	0.09	32.82	26.37
26	-0.67	32.76	25	-0.65	32.76	26.35	24	0.11	32.76	25	0.10	32.75	26.32
50	-1.13	33.30	50	-1.13	33.30	26.80	48	0.17	32.84	50	0.20	32.87	26.40
76	-1.03	33.36	75	-1.05	33.36	26.84	73	-1.00	33.23	75	-1.00	33.24	26.75
101	0.15	33.63	100	0.15	33.62	27.01	97	-0.53	33.37	100	-0.45	33.37	26.83
152	1.87	34.14	150	1.80	34.12	27.31	145	0.59	33.73	(150)	0.70	33.56	26.93
202	2.28	34.36	200	2.30	34.34	27.44							
303	2.70	34.55	300	2.70	34.54	27.56							
404	3.35	34.68	400	3.35	34.67	27.61							
Station 8074: 30 April: 47°48' N., 47°48' W.; depth 305 m.; dynamic height 971.078							Station 8078: 1 May: 47°48' N., 48°52' W.; depth 203 m.; dynamic height 971.069						
0	-0.14	32.77	0	-0.14	32.77	26.34	0	-0.41	32.61	0	-0.41	32.61	26.22
27	-0.16	32.71	25	-0.20	32.70	26.28	27	-0.39	32.65	25	-0.40	32.64	26.25
53	-0.23	32.79	50	-0.20	32.77	26.34	54	-0.68	33.03	50	-0.60	32.96	26.50
80	-1.44	33.13	75	-1.30	33.05	26.40	81	-1.21	33.27	75	-1.15	33.21	26.73
106	-1.39	33.23	100	-1.40	33.20	26.73	108	-1.16	33.37	100	-1.20	33.33	26.83
159	-0.84	33.44	150	-0.95	33.40	26.88	162	0.60	33.75	150	0.20	33.66	27.04
212	1.34	34.05	200	0.80	33.93	27.21							
264	2.01	34.28	250	1.85	34.22	27.38							
Station 8079: 1 May: 48°03' N., 48°44' W.; depth 283 m.; dynamic height 971.038							Station 8079: 1 May: 48°03' N., 48°44' W.; depth 283 m.; dynamic height 971.038						
0	-0.60	32.84	0	-0.60	32.84	26.41	0	-0.60	32.84	0	-0.60	32.84	26.41
24	-0.58	32.82	25	-0.60	32.82	26.39	24	-0.58	32.82	25	-0.60	32.82	26.39
49	-0.57	32.89	50	-0.55	32.90	26.45	49	-0.57	32.89	50	-0.55	32.90	26.45
73	-1.02	33.34	75	-1.05	33.34	26.83	73	-1.02	33.34	75	-1.05	33.34	26.83
98	-1.17	33.41	100	-1.15	33.42	26.91	98	-1.17	33.41	100	-1.15	33.42	26.91
146	0.03	33.75	150	0.15	33.77	27.13	146	0.03	33.75	150	0.15	33.77	27.13
195	1.81	34.15	200	1.85	34.15	27.32	195	1.81	34.15	200	1.85	34.15	27.32
244	2.11	34.28	(250)	2.15	34.29	27.41	244	2.11	34.28	(250)	2.15	34.29	27.41

# TABLE OF OCEANOGRAPHIC DATA STATIONS OCCUPIED IN 1962—Continued

Observed values			Scaled values				Observed values			Scaled values			
Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	$\sigma_t$	Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	$\sigma_t$
Station 8080: 1 May; 48°12.5' N., 48°38' W.; depth 618 m.; dynamic height 970.970													
0	-0.17	33.20	0	-0.17	33.20	26.68							
24	-0.16	33.20	25	-0.15	33.20	26.69							
47	-0.14	33.25	50	-0.10	33.26	26.72							
71	0.08	33.40	75	0.15	33.43	26.85							
117	0.74	33.84	100	0.50	33.67	27.03							
164	1.82	34.20	150	0.55	34.09	27.36							
261	2.88	34.62	200	2.25	34.35	27.45							
355	3.34	34.76	300	3.10	34.69	27.65							
550	3.65	34.76	400	3.40	34.78	27.69							
			550	3.65	34.87	27.74							
Station 8084: 2 May; 49°40' N., 47°40' W.; depth 2,560 m.; dynamic height 970.825													
0	3.07	34.61	0	3.07	34.61	27.59							
29	3.06	34.58	25	3.05	34.58	27.56							
57	3.07	34.55	50	3.05	34.55	27.54							
86	3.06	34.56	75	3.05	34.54	27.53							
114	3.10	34.63	100	3.10	34.57	27.56							
170	3.19	34.80	150	3.15	34.75	27.69							
227	3.29	34.82	200	3.25	34.81	27.73							
336	3.37	34.83	300	3.35	34.82	27.73							
440	3.41	34.87	400	3.40	34.85	27.75							
641	3.40	34.89	600	3.40	34.88	27.77							
849	3.38	34.87	800	3.40	34.87	27.77							
1,054	3.42	34.87	1,000	3.40	34.86	27.76							
1,599	3.20	34.95											
Station 8085: 3 May; 49°47' N., 48°23' W.; depth 2,195 m.; dynamic height 970.820													
0	3.26	34.66	0	3.26	34.66	27.61							
25	3.26	34.66	25	3.26	34.66	27.61							
50	3.21	34.69	50	3.21	34.69	27.64							
75	3.03	34.65	75	3.03	34.65	27.62							
100	3.04	34.67	100	3.04	34.67	27.64							
148	3.29	34.70	150	3.30	34.70	27.64							
198	3.56	34.86	200	3.60	34.85	27.73							
298	3.60	34.89	300	3.60	34.88	27.75							
397	3.50	34.86	400	3.50	34.85	27.74							
596	3.42	34.88	600	3.40	34.87	27.77							
797	3.43	34.88	800	3.45	34.88	27.76							
998	3.43	34.88	1,000	3.45	34.89	27.77							
1,512	3.37	34.93											
Station 8086: 3 May; 50°00' N., 49°00' W.; depth 1,847 m.; dynamic height 970.814													
0	3.05	34.68	0	3.05	34.68	27.64							
25	3.05	34.67	25	3.05	34.67	27.64							
50	3.05	34.65	50	3.05	34.65	27.62							
75	3.04	34.69	75	3.04	34.69	27.65							
100	3.05	34.72	100	3.05	34.72	27.68							
150	3.32	34.81	150	3.32	34.81	27.73							
200	3.37	34.86	200	3.37	34.86	27.76							
301	3.44	34.85	300	3.45	34.84	27.73							
402	3.41	34.80	400	3.40	34.80	27.71							
607	3.40	34.89	600	3.40	34.88	27.77							
807	3.39	34.88	800	3.40	34.87	27.77							
1,006	3.37	34.88	1,000	3.35	34.87	27.77							
1,513	3.39	34.77											
Station 8087: 3 May; 49°35.5' N., 49°10' W.; depth 1,664 m.; dynamic height 970.830													
0	2.72	34.53	0	2.72	34.53	27.56							
24	2.72	34.54	25	2.70	34.53	27.55							
49	2.73	34.53	50	2.75	34.52	27.55							
73	2.72	34.45	75	2.70	34.45	27.49							
97	2.82	34.55	100	2.85	34.56	27.57							
145	3.08	34.70	150	3.10	34.75	27.70							
194	3.22	34.80	200	3.25	34.80	27.72							
292	3.32	34.81	300	3.35	34.80	27.71							
390	3.39	34.82	400	3.40	34.82	27.73							
589	3.40	34.89	600	3.40	34.88	27.77							
782	3.42	34.89	800	3.40	34.88	27.77							
973	3.40	34.89	1,000	3.40	34.88	27.77							
1,469	3.42	34.89											
Station 8082: 2 May; 49°00.5' N., 48°28' W.; depth 1,920 m.; dynamic height 970.841													
0	2.95	34.61	0	2.95	34.61	27.60							
24	2.95	34.58	25	2.95	34.57	27.57							
47	2.95	34.62	50	2.95	34.61	27.60							
71	2.96	34.59	75	2.95	34.58	27.57							
94	3.04	34.57	100	3.05	34.57	27.56							
142	3.30	34.68	150	3.30	34.69	27.63							
189	3.18	34.78	200	3.20	34.79	27.72							
282	3.57	34.87	300	3.55	34.85	27.73							
373	3.36	34.82	400	3.35	34.82	27.73							
553	3.40	34.83	600	3.40	34.83	27.73							
735	3.44	34.87	800	3.45	34.86	27.75							
916	3.43	34.86	1,000	3.45	34.86	27.75							
1,384	3.45	34.92											
Station 8083: 2 May; 49°20.5' N., 48°18' W.; depth 2,103 m.; dynamic height 970.839													
0	3.08	34.59	0	3.08	34.59	27.57							
26	3.09	34.57	25	3.10	34.56	27.55							
51	3.08	34.61	50	3.10	34.60	27.58							
77	3.07	34.61	75	3.05	34.60	27.58							
103	3.08	34.64	100	3.10	34.63	27.60							
133	3.24	34.77	150	3.20	34.76	27.67							
204	3.48	34.77	200	3.50	34.76	27.67							
300	3.51	34.76	300	3.51	34.76	27.67							
390	3.50	34.82	400	3.50	34.82	27.72							
557	3.46	34.88	600	3.45	34.87	27.76							
749	3.43	34.87	800	3.40	34.86	27.76							
943	3.41	34.87	1,000	3.40	34.87	27.77							
1,447	3.40	34.90											

## TABLE OF OCEANOGRAPHIC DATA STATIONS OCCUPIED IN 1962—Continued

Observed values			Scaled values				Observed values			Scaled values			
Depth, meters	Tem-perature, °C.	Salin-ity, ‰	Depth, meters	Tem-perature, °C.	Salin-ity, ‰	$\sigma_t$	Depth, meters	Tem-perature, °C.	Salin-ity, ‰	Depth, meters	Tem-perature, °C.	Salin-ity, ‰	$\sigma_t$
Station 8088; 3 May; 49°12' N., 49°18' W.; depth 1,628 m.; dynamic height 970.859													
0	2.46	34.33	0	2.46	34.33	27.42							
26	2.45	34.42	25	2.45	34.41	27.48							
51	2.46	34.43	50	2.45	34.42	27.49							
77	2.44	34.45	75	2.45	34.44	27.50							
102	2.61	34.47	100	2.60	34.46	27.51							
152	3.13	34.70	150	3.10	34.69	27.65							
203	3.28	34.76	200	3.30	34.75	27.68							
305	3.56	34.82	300	3.55	34.81	27.70							
407	3.55	34.87	400	3.55	34.86	27.74							
612	3.43	34.87	600	3.45	34.87	27.76							
813	3.44	34.82	800	3.45	34.82	27.72							
1,013	3.44	34.81	1,000	3.45	34.81	27.71							
1,523	3.44	34.89											
Station 8089; 3 May; 48°49' N., 49°28' W.; depth 1,463 m.; dynamic height 970.947													
0	0.95	33.78	0	0.95	33.78	27.09							
24	0.94	33.75	25	0.95	33.74	27.05							
49	0.97	33.74	50	1.00	33.73	27.04							
73	1.07	33.81	75	1.05	33.80	27.10							
98	1.01	33.82	100	1.00	33.81	27.11							
146	2.11	34.33	150	2.15	34.34	27.45							
195	2.42	34.50	200	2.50	34.51	27.56							
293	3.38	34.67	300	3.40	34.68	27.61							
393	3.57	34.78	400	3.55	34.77	27.67							
593	3.54	34.82	600	3.55	34.81	27.70							
790	3.46	34.87	800	3.45	34.86	27.75							
986	3.48	34.85	1,000	3.50	34.84	27.73							
1,331	3.44	34.85											
Station 8090; 3 May; 48°34.5' N., 49°33' W.; depth 708 m.; dynamic height 970.977													
0	0.40	33.42	0	0.40	33.42	26.83							
25	0.39	33.46	25	0.39	33.46	26.87							
49	-0.02	33.57	50	0.00	33.57	26.98							
74	0.21	33.65	75	0.25	33.65	27.03							
98	0.95	33.81	100	1.00	33.81	27.11							
148	1.58	34.09	150	1.60	34.09	27.29							
197	2.20	34.27	200	2.25	34.28	27.39							
296	2.88	34.61	300	2.90	34.61	27.61							
397	3.38	34.77	400	3.35	34.76	27.68							
600	3.40	34.82	600	3.40	34.82	27.73							
Station 8091; 3 May; 48°14' N., 49°42' W.; depth 232 m.; dynamic height 971.004													
0	0.02	33.21	0	0.02	33.21	26.68							
24	-0.09	33.28	25	-0.10	33.27	26.73							
49	-0.47	33.64	50	-0.45	33.65	27.06							
74	0.18	33.83	75	0.20	33.84	27.18							
98	0.78	33.99	100	0.80	33.99	27.26							
147	1.44	34.17	150	1.55	34.18	27.36							
196	2.07	34.30	(200)	2.15	34.30	27.42							
Station 8092; 3 May; 48°04' N., 49°45' W.; depth 174 m.; dynamic height 971.085													
0	-0.95	32.77	0	-0.95	32.77	26.37							
25	-0.97	32.89	25	-0.97	32.89	26.46							
50	-0.91	32.96	50	-0.91	32.96	26.52							
75	-1.18	33.06	75	-1.18	33.06	26.61							
100	-1.40	33.21	100	-1.40	33.21	26.74							
149	-0.40	33.58	(150)	-0.35	33.59	27.00							
Station 8093; 4 May; 47°42' N., 49°53' W.; depth 119 m.; dynamic height 971.104													
0	-0.18	32.77	0	-0.18	32.77	26.34							
25	-0.18	32.76	25	-0.18	32.76	26.33							
50	-0.17	32.69	50	-0.17	32.69	26.27							
76	-0.19	32.81	75	-0.20	32.80	26.37							
101	-0.28	33.35	100	-0.25	33.30	26.76							
Station 8094; 4 May; 47°24' N., 50°00' W.; depth 86 m.; dynamic height 971.095													
0	0.46	32.99	0	0.46	32.99	26.49							
25	0.45	32.97	25	0.45	32.97	26.47							
49	0.45	32.94	50	0.45	32.93	26.44							
74	0.41	32.97	(75)	0.40	32.97	26.47							
Station 8095; 4 May; 47°34' N., 50°23' W.; depth 238 m.; dynamic height 971.100													
0	-0.09	32.78	0	-0.09	32.78	26.34							
25	-0.09	32.75	25	-0.09	32.75	26.32							
50	-0.09	32.72	50	-0.09	32.72	26.29							
75	-0.03	32.85	75	-0.03	32.85	26.40							
100	-0.03	33.28	100	-0.03	33.28	26.74							
Station 8096; 4 May; 47°42' N., 50°40' W.; depth 128 m.; dynamic height 971.088													
0	-0.04	32.71	0	-0.04	32.71	26.28							
25	-0.02	32.69	25	-0.02	32.69	26.27							
50	0.00	32.82	50	0.00	32.82	26.37							
75	-0.57	33.12	75	-0.57	33.12	26.63							
100	-0.40	33.28	100	-0.40	33.28	26.76							
Station 8097; 4 May; 47°50' N., 50°58' W.; depth 128 m.; dynamic height 971.108													
0	-0.10	32.59	0	-0.10	32.59	26.19							
25	-0.13	32.64	25	-0.13	32.64	26.23							
50	-0.15	32.70	50	-0.15	32.70	26.28							
75	-0.38	32.79	75	-0.38	32.79	26.36							
100	-0.60	33.13	100	-0.60	33.13	26.65							
Station 8098; 4 May; 47°58' N., 51°16' W.; depth 157 m.; dynamic height 971.116													
0	-0.30	32.45	0	-0.30	32.45	26.09							
25	-0.32	32.52	25	-0.32	32.52	26.14							
50	-0.36	32.63	50	-0.36	32.63	26.22							
75	-0.82	32.78	75	-0.82	32.78	26.37							
100	-1.16	32.92	100	-1.16	32.92	26.49							
150	-0.32	33.32	150	-0.32	33.32	26.79							
Station 8099; 4 May; 48°06' N., 51°34' W.; depth 256 m.; dynamic height 971.114													
0	-0.37	32.52	0	-0.37	32.52	26.14							
25	-0.42	32.50	25	-0.42	32.50	26.13							
51	-0.49	32.38	50	-0.50	32.37	26.03							
76	-1.43	32.87	75	-1.40	32.84	26.44							
101	-1.45	33.03	100	-1.45	33.01	26.58							
152	-1.05	33.21	150	-1.05	33.20	26.72							

# TABLE OF OCEANOGRAPHIC DATA STATIONS OCCUPIED IN 1962—Continued

Observed values			Scaled values				Observed values			Scaled values			
Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	$\sigma_t$	Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	$\sigma_t$
Station 8100; 4 May; 48°14' N., 51°52' W.; depth 192 m.; dynamic height 971.082													
0	-0.39	32.57	0	-0.39	32.57	26.19	0	-0.39	32.57	0	-0.39	32.57	26.19
25	-0.41	32.47	25	-0.41	32.47	26.11	25	-0.41	32.47	25	-0.41	32.47	26.11
50	-0.45	32.48	50	-0.45	32.48	26.12	50	-0.45	32.48	50	-0.45	32.48	26.12
76	-1.02	33.22	75	-1.00	33.20	26.72	75	-1.00	33.20	75	-1.00	33.20	26.72
101	-1.17	33.26	100	-1.15	33.25	26.76	100	-1.15	33.25	100	-1.15	33.25	26.76
151	-0.50	33.52	150	-0.50	33.51	26.95	150	-0.50	33.51	150	-0.50	33.51	26.95
Station 8106; 5 May; 48°50' N., 52°38' W.; depth 225 m.; dynamic height 971.103													
0	-0.89	32.86	0	-0.89	32.86	26.44	0	-0.89	32.86	0	-0.89	32.86	26.44
26	-0.96	32.95	25	-0.95	32.94	26.50	25	-0.95	32.94	25	-0.95	32.94	26.50
51	-0.98	32.95	50	-1.00	32.94	26.50	50	-1.00	32.94	50	-1.00	32.94	26.50
77	-1.35	33.02	75	-1.35	33.00	26.57	75	-1.35	33.00	75	-1.35	33.00	26.57
102	-1.48	33.05	100	-1.45	33.04	26.60	100	-1.45	33.04	100	-1.45	33.04	26.60
154	-1.44	33.18	150	-1.45	33.17	26.70	150	-1.45	33.17	150	-1.45	33.17	26.70
205	-1.24	33.23	200	-1.25	33.22	26.74	200	-1.25	33.22	200	-1.25	33.22	26.74
Station 8101; 4 May; 48°22' N., 52°09' W.; depth 183 m.; dynamic height 971.088													
0	-0.54	32.56	0	-0.54	32.56	26.18	0	-0.54	32.56	0	-0.54	32.56	26.18
25	-0.59	32.59	25	-0.59	32.59	26.21	25	-0.59	32.59	25	-0.59	32.59	26.21
50	-0.63	32.61	50	-0.63	32.61	26.23	50	-0.63	32.61	50	-0.63	32.61	26.23
75	-1.31	33.04	75	-1.31	33.04	26.60	75	-1.31	33.04	75	-1.31	33.04	26.60
100	-1.31	33.05	100	-1.31	33.05	26.60	100	-1.31	33.05	100	-1.31	33.05	26.60
150	-0.91	33.42	150	-0.91	33.42	26.89	150	-0.91	33.42	150	-0.91	33.42	26.89
Station 8107; 5 May; 48°55' N., 52°23' W.; depth 370 m.; dynamic height 971.076													
0	-0.76	32.86	0	-0.76	32.86	26.43	0	-0.76	32.86	0	-0.76	32.86	26.43
26	-0.84	32.94	25	-0.85	32.93	26.49	25	-0.85	32.93	25	-0.85	32.93	26.49
46	-1.01	32.94	50	-1.05	32.94	26.51	50	-1.05	32.94	50	-1.05	32.94	26.51
69	-1.12	33.03	75	-1.15	33.04	26.59	75	-1.15	33.04	75	-1.15	33.04	26.59
92	-1.29	33.09	100	-1.30	33.10	26.64	100	-1.30	33.10	100	-1.30	33.10	26.64
137	-1.24	33.18	150	-1.20	33.20	26.72	150	-1.20	33.20	150	-1.20	33.20	26.72
184	-1.04	33.35	200	-0.50	33.50	26.94	200	-0.50	33.50	200	-0.50	33.50	26.94
276	2.06	34.27	275	2.00	34.25	27.47	275	2.00	34.25	275	2.00	34.25	27.47
Station 8108; 5 May; 49°00.5' N., 52°06' W.; depth 329 m.; dynamic height 971.091													
0	-0.97	33.04	0	-0.97	33.04	26.59	0	-0.97	33.04	0	-0.97	33.04	26.59
25	-1.02	32.98	25	-1.02	32.98	26.54	25	-1.02	32.98	25	-1.02	32.98	26.54
50	-1.38	32.99	50	-1.38	32.99	26.56	50	-1.38	32.99	50	-1.38	32.99	26.56
76	-1.48	33.13	75	-1.50	33.12	26.66	75	-1.50	33.12	75	-1.50	33.12	26.66
101	-1.43	33.16	100	-1.45	33.15	26.68	100	-1.45	33.15	100	-1.45	33.15	26.68
151	-1.28	33.25	150	-1.30	33.24	26.75	150	-1.30	33.24	150	-1.30	33.24	26.75
201	-0.95	33.33	200	-0.95	33.31	26.80	200	-0.95	33.31	200	-0.95	33.31	26.80
302	2.00	34.24	300	1.95	34.22	27.38	300	1.95	34.22	300	1.95	34.22	27.38
Station 8109; 5 May; 49°05' N., 51°52' W.; depth 322 m.; dynamic height 971.044													
0	-0.94	33.06	0	-0.94	33.06	26.60	0	-0.94	33.06	0	-0.94	33.06	26.60
24	-0.93	33.14	25	-0.95	33.13	26.66	25	-0.95	33.13	25	-0.95	33.13	26.66
49	-1.05	33.12	50	-1.05	33.11	26.64	50	-1.05	33.11	50	-1.05	33.11	26.64
73	-1.01	33.18	75	-1.00	33.18	26.70	75	-1.00	33.18	75	-1.00	33.18	26.70
98	-0.89	33.22	100	-0.90	33.22	26.73	100	-0.90	33.22	100	-0.90	33.22	26.73
147	-0.98	33.44	150	-0.95	33.45	26.92	150	-0.95	33.45	150	-0.95	33.45	26.92
195	-0.25	33.73	200	-0.10	33.75	27.12	200	-0.10	33.75	200	-0.10	33.75	27.12
293	2.72	34.48	(300)	2.95	34.53	27.53	(300)	2.95	34.53	(300)	2.95	34.53	27.53
Station 8104; 4 May; 48°43.5' N., 52°56' W.; depth 101 m.; dynamic height 971.151													
0	-0.38	32.16	0	-0.38	32.16	25.86	0	-0.38	32.16	0	-0.38	32.16	25.86
26	-0.79	32.42	25	-0.80	32.40	26.07	25	-0.80	32.40	25	-0.80	32.40	26.07
52	-0.90	32.51	50	-0.90	32.49	26.14	50	-0.90	32.49	50	-0.90	32.49	26.14
78	-0.99	32.55	75	-1.00	32.54	26.19	75	-1.00	32.54	75	-1.00	32.54	26.19
Station 8105; 4 May; 48°49.5' N., 52°45' W.; depth 141 m.; dynamic height 971.117													
0	-0.79	32.78	0	-0.79	32.78	26.37	0	-0.79	32.78	0	-0.79	32.78	26.37
26	-0.79	32.78	25	-0.80	32.77	26.36	25	-0.80	32.77	25	-0.80	32.77	26.36
52	-0.93	32.79	50	-0.90	32.78	26.37	50	-0.90	32.78	50	-0.90	32.78	26.37
77	-1.12	32.86	75	-1.10	32.85	26.44	75	-1.10	32.85	75	-1.10	32.85	26.44
103	-1.41	32.99	100	-1.40	32.96	26.53	100	-1.40	32.96	100	-1.40	32.96	26.53
129	-1.42	33.07	125	-1.40	33.05	26.60	125	-1.40	33.05	125	-1.40	33.05	26.60
Station 8110; 5 May; 49°11.5' N., 51°32' W.; depth 342 m.; dynamic height 971.010													
0	-0.55	33.16	0	-0.55	33.16	26.67	0	-0.55	33.16	0	-0.55	33.16	26.67
25	-0.35	33.25	25	-0.35	33.25	26.73	25	-0.35	33.25	25	-0.35	33.25	26.73
50	-0.15	33.36	50	-0.15	33.36	26.81	50	-0.15	33.36	50	-0.15	33.36	26.81
76	0.28	33.50	75	0.30	33.49	26.89	75	0.30	33.49	75	0.30	33.49	26.89
101	0.33	33.53	100	0.30	33.52	26.92	100	0.30	33.52	100	0.30	33.52	26.92
152	0.55	33.96	150	0.55	33.94	27.00	150	0.55	33.94	150	0.55	33.94	27.00
202	0.95	34.04	200	0.90	34.01	27.28	200	0.90	34.01	200	0.90	34.01	27.28
303	2.85	34.57	300	2.85	34.55	27.56	300	2.85	34.55	300	2.85	34.55	27.56

## TABLE OF OCEANOGRAPHIC DATA STATIONS OCCUPIED IN 1962—Continued

Observed values			Scaled values				Observed values			Scaled values			
Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	$\sigma_t$	Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	$\sigma_t$
Station 8111; 5 May; 49°19.5' N., 51°01' W.; depth 355 m.; dynamic height 970.943													
0	0.58	33.51	0	0.58	33.51	26.90	0	3.46	34.66	0	3.46	34.66	27.59
25	0.59	33.60	25	0.59	33.60	26.97	22	3.46	34.71	25	3.45	34.71	27.63
50	0.79	33.65	50	0.79	33.65	27.00	45	3.36	34.74	50	3.35	34.73	27.65
76	0.80	33.72	75	0.80	33.70	27.03	68	3.28	34.73	75	3.25	34.72	27.66
101	0.75	33.90	100	0.75	33.88	27.18	91	3.21	34.73	100	3.20	34.72	27.67
151	2.20	34.28	150	2.20	34.27	27.40	136	3.20	34.72	150	3.25	34.74	27.67
201	2.37	34.45	200	2.35	34.44	27.51	181	3.37	34.82	200	3.40	34.83	27.73
302	3.01	34.70	300	3.00	34.68	27.65	274	3.43	34.86	300	3.45	34.85	27.74
							369	3.42	34.84	400	3.40	34.83	27.73
							562	3.42	34.81	600	3.40	34.81	24.72
							758	3.40	34.82	800	3.40	34.82	27.73
							957	3.40	34.88	1,000	3.40	34.87	27.77
							1,458	3.40	34.92				
Station 8112; 5 May; 49°32' N., 50°32' W.; depth 357 m.; dynamic height 970.920													
0	0.43	33.44	0	0.43	33.44	26.83	0	5.64	33.37	0	5.64	33.37	26.33
25	0.70	33.57	25	0.70	33.57	26.94	25	3.25	33.50	25	3.25	33.50	26.69
50	0.85	33.74	50	0.85	33.74	27.06	50	2.15	33.79	50	2.15	33.79	27.01
75	0.87	33.74	75	0.87	33.74	27.06	75	2.82	34.01	75	2.82	34.01	27.13
100	1.74	34.22	100	1.74	34.22	27.39	100	4.40	34.31	100	4.40	34.31	27.22
150	2.26	34.45	150	2.26	34.45	27.53	149	3.88	34.43	150	3.90	34.43	27.36
201	2.58	34.57	200	2.55	34.56	27.60	199	4.72	34.66	200	4.70	34.65	27.45
301	3.15	34.74	300	3.10	34.73	27.68	300	4.69	34.81	300	4.69	34.81	27.58
							401	4.62	34.91	400	4.60	34.90	27.66
							607	4.22	34.94	600	4.20	34.93	27.73
							808	3.99	34.91	800	4.00	34.90	27.73
							1,009	3.82	34.87	1,000	3.85	34.86	27.71
							1,531	3.59	34.91				
Station 8113; 5 May; 49°41' N., 50°01' W.; depth 649 m.; dynamic height 970.910													
0	1.46	33.92	0	1.46	33.92	27.17	0	6.31	32.98	0	6.31	32.98	25.94
24	1.35	33.98	25	1.35	33.97	27.22	26	10.27	34.42	25	10.15	34.41	26.49
49	1.24	34.00	50	1.25	33.99	27.24	53	11.97	34.35	50	11.95	34.34	26.11
74	1.35	34.04	75	1.35	34.04	27.27	78	10.48	34.88	75	10.50	34.82	26.74
98	1.61	34.14	100	1.65	34.14	27.33	105	11.05	35.08	100	10.95	35.05	26.84
147	2.09	34.43	150	2.10	34.43	27.52	157	11.65	35.32	150	11.60	35.30	26.92
196	2.68	34.59	200	2.70	34.59	27.60	210	9.16	34.90	200	9.70	34.95	26.98
294	3.18	34.73	300	3.20	34.72	27.67	311	7.77	34.92	300	7.90	34.91	27.24
393	3.40	34.75	400	3.40	34.74	27.66	408	5.91	34.85	400	6.05	34.85	27.45
591	3.48	34.84	(600)	3.45	34.83	27.72	596	5.12	34.97	600	5.10	34.96	27.65
							792	4.46	34.97	800	4.45	34.96	27.73
							986	4.21	34.96	1,000	4.20	34.95	27.75
							1,488	3.68	34.93				
Station 8114; 5 May; 49°50' N., 49°30' W.; depth 1,381 m.; dynamic height 970.855													
0	2.68	34.57	0	2.68	34.57	27.59	0	6.12	33.35	0	6.12	33.35	26.26
24	2.68	34.53	25	2.70	34.52	27.55	25	3.90	33.67	25	3.90	33.67	26.76
48	2.09	34.59	50	3.00	31.60	27.59	50	2.76	33.80	50	2.76	33.80	26.97
72	3.24	34.68	75	3.25	34.67	27.62	75	2.34	33.87	75	2.34	33.87	27.06
96	3.22	34.68	100	3.20	34.67	27.62	100	1.12	33.87	100	1.12	33.87	27.15
144	3.22	34.68	150	3.20	31.68	27.63	150	1.67	34.11	150	1.67	34.10	27.30
192	3.16	34.69	200	3.15	34.69	27.64	200	2.34	34.30	200	2.34	34.30	27.41
287	3.66	34.79	300	3.65	34.79	27.67	301	3.36	34.60	300	3.35	34.59	27.54
380	3.68	34.83	400	3.65	34.83	27.70	396	4.61	34.87	400	4.60	34.87	27.64
567	3.41	34.85	600	3.40	34.84	27.74	580	4.30	34.95	600	4.25	34.93	27.72
754	3.43	34.86	800	3.45	34.85	27.74	774	3.96	34.91	800	3.95	34.89	27.72
938	3.42	34.85	1,000	3.40	34.85	27.75	968	3.74	34.84	1,000	3.70	34.83	27.70
1,229	3.43	34.90					1,457	3.53	34.85				
Station 8115; 5 May; 50°00' N., 49°00' W.; depth 1,920 m.; dynamic height 970.833													
0	3.46	34.66	0	3.46	34.66	27.59	0	5.64	33.37	0	5.64	33.37	26.33
22	3.46	34.71	25	3.45	34.71	27.63	25	3.25	33.50	25	3.25	33.50	26.69
45	3.36	34.74	50	3.35	34.73	27.65	50	2.15	33.79	50	2.15	33.79	27.01
68	3.28	34.73	75	3.25	34.72	27.66	75	2.82	34.01	75	2.82	34.01	27.13
91	3.21	34.73	100	3.20	34.72	27.67	100	4.40	34.31	100	4.40	34.31	27.22
136	3.20	34.72	150	3.25	34.74	27.67	149	3.88	34.43	150	3.90	34.43	27.36
181	3.37	34.82	200	3.40	34.83	27.73	199	4.72	34.66	200	4.70	34.65	27.45
274	3.43	34.86	300	3.45	34.85	27.74	300	4.69	34.81	300	4.69	34.81	27.58
369	3.42	34.84	400	3.40	34.83	27.73	401	4.62	34.91	400	4.60	34.90	27.66
562	3.42	34.81	600	3.40	34.81	24.72	607	4.22	34.94	600	4.20	34.93	27.73
758	3.40	34.82	800	3.40	34.82	27.73	808	3.99	34.91	800	4.00	34.90	27.73
957	3.40	34.88	1,000	3.40	34.87	27.77	1,009	3.82	34.87	1,000	3.85	34.86	27.71
1,458	3.40	34.92					1,531	3.59	34.91				
Station 8116; 23 May; 42°01.5' N., 50°58' W.; depth 3,072 m.; dynamic height 970.956													
0	5.64	33.37	0	5.64	33.37	26.33	0	6.31	32.98	0	6.31	32.98	25.94
25	3.25	33.50	25	3.25	33.50	26.69	26	10.27	34.42	25	10.15	34.41	26.49
50	2.15	33.79	50	2.15	33.79	27.01	53	11.97	34.35	50	11.95	34.34	26.11
75	2.82	34.01	75	2.82	34.01	27.13	78	10.48	34.88	75	10.50	34.82	26.74
100	4.40	34.31	100	4.40	34.31	27.22	105	11.05	35.08	100	10.95	35.05	26.84
149	3.88	34.43	150	3.90	34.43	27.36	157	11.65	35.32	150	11.60	35.30	26.92
199	4.72	34.66	200	4.70	34.65	27.45	210	9.16	34.90	200	9.70	34.95	26.98
300	4.69	34.81	300	4.69	34.81	27.58	311	7.77	34.92	300	7.90	34.91	27.24
401	4.62	34.91	400	4.60	34.90	27.66	408	5.91	34.85	400	6.05	34.85	27.45
607	4.22	34.94	600	4.20	34.93	27.73	596	5.12	34.97	600	5.10	34.96	27.65
808	3.99	34.91	800	4.00	34.90	27.73	792	4.46	34.97	800	4.45	34.96	27.73
1,009	3.82	34.87	1,000	3.85	34.86	27.71	986	4.21	34.96	1,000	4.20	34.95	27.75
1,531	3.59	34.91					1,488	3.68	34.93				
Station 8117; 23 May; 42°00' N., 51°58' W.; depth 4,023 m.; dynamic height 971.179													
0	6.31	32.98	0	6.31	32.98	25.94	0	6.12	33.35	0	6.12	33.35	26.26
26	10.27	34.42	25	10.15	34.41	26.49	25	3.90	33.67	25	3.90	33.67	26.76
53	11.97	34.35	50	11.95	34.34	26.11	50	2.76	33.80	50	2.76	33.80	26.97
78	10.48	34.88	75	10.50	34.82	26.74	75	2.34	33.87	75	2.34	33.87	27.06
105	11.05	35.08	100	10.95	35.05	26.84	100	1.12	33.87	100	1.12	33.87	27.15
157	11.65	35.32	150	11.60	35.30	26.92	150	1.67	34.11	150	1.67	34.10	27.30
210	9.16	34.90	200	9.70	34.95	26.98	200	2.34	34.30	200	2.34	34.30	27.41
311	7.77	34.92	300	7.90	34.91	27.24	301	3.36	34.60	300	3.35	34.59	27.54
408	5.91	34.85	400	6.05	34.85	27.45	396	4.61	34.87	400	4.60	34.87	27.64
596	5.12	34.97	600	5.10	34.96	27.65	580	4.30	34.95	600	4.25	34.93	27.72
792	4.46	34.97	800	4.45	34.96	27.73	774	3.96	34.91	800	3.95	34.89	27.72
986	4.21	34.96	1,000	4.20	34.95	27.75	968	3.74	34.84	1,000			

# TABLE OF OCEANOGRAPHIC DATA

## STATIONS OCCUPIED IN 1962—Continued

Observed values			Scaled values				Observed values			Scaled values			
Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	$\sigma_t$	Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	$\sigma_t$
Station 8119; 23 May; 42°41.5' N., 51°04' W.; depth 1,902 m.; dynamic height 971.023													
0	3.50	32.89	0	3.50	32.89	26.18	0	5.52	33.18	0	5.52	33.18	26.20
25	4.67	33.59	25	4.67	33.59	26.62	26	3.50	33.20	25	3.70	33.19	26.40
50	2.61	33.47	50	2.61	33.47	26.72	53	1.86	33.24	50	2.05	33.23	26.57
75	2.69	33.82	75	2.69	33.82	26.99							
100	2.23	33.91	100	2.23	33.91	27.10							
150	2.24	34.12	150	2.24	34.12	27.27							
201	2.30	34.25	200	2.30	34.24	27.36							
302	5.32	34.90	300	5.30	34.89	27.57							
402	3.71	34.72	400	3.70	34.71	27.61							
602	3.89	34.85	600	3.90	34.84	27.69							
806	4.08	34.93	800	4.10	34.92	27.74							
1,011	3.61	34.87	1,000	3.65	34.86	27.73							
1,511	3.58	34.89											
Station 8124; 24 May; 43°20' N., 50°15' W.; depth 71 m.; dynamic height 971.006													
0	5.52	33.18	0	5.52	33.18	26.20							
26	3.50	33.20	25	3.70	33.19	26.40							
53	1.86	33.24	50	2.05	33.23	26.57							
Station 8125; 24 May; 42°58.5' N., 50°15' W.; depth 95 m.; dynamic height 971.089													
0	4.00	33.02	0	4.00	33.02	26.24							
26	1.54	33.19	25	1.75	33.18	26.56							
52	0.49	33.33	50	0.65	33.31	26.73							
78	0.09	33.42	75	0.15	33.40	26.83							
Station 8120; 23 May; 42°52.5' N., 50°50' W.; depth 1,114 m.; dynamic height 971.104													
0	3.81	32.90	0	3.81	32.90	26.16							
27	2.94	32.87	25	3.00	32.86	26.20							
55	-0.62	33.15	50	-0.40	33.09	26.60							
82	-0.77	33.31	75	-0.65	33.26	26.75							
110	-0.22	33.45	100	-0.40	33.40	26.86							
163	0.66	33.75	150	0.40	33.67	27.04							
218	1.14	33.88	200	1.00	33.82	27.12							
323	4.42	34.54	300	4.00	34.42	27.35							
425	4.73	34.83	400	4.70	34.77	27.54							
622	3.93	34.89	600	4.00	34.88	27.71							
824	3.75	34.89	800	3.75	34.88	27.73							
1,024	3.68	34.88	1,000	3.70	34.88	27.74							
Station 8126; 24 May; 42°49' N., 50°15' W.; depth 315 m.; dynamic height 971.094													
0	3.04	32.86	0	3.04	32.86	26.20							
24	1.53	33.01	25	1.45	33.01	26.44							
49	0.08	33.23	50	0.05	33.23	26.70							
72	-0.11	33.36	75	-0.10	33.36	26.81							
98	-0.11	33.37	100	-0.10	33.36	26.81							
146	0.38	33.57	150	0.40	33.57	26.96							
195	0.66	33.73	200	0.80	33.75	27.08							
293	3.06	34.37	(300)	3.25	34.42	27.42							
Station 8127; 24 May; 42°38' N., 50°15' W.; depth 1,737 m.; dynamic height 971.035													
0	2.57	32.86	0	2.57	32.86	26.24							
21	2.33	33.16	25	1.85	33.19	26.56							
42	-0.04	33.34	50	-0.15	33.37	26.82							
63	-0.38	33.43	75	-0.05	33.50	26.92							
84	0.21	33.56	100	0.45	33.63	26.99							
125	0.65	33.73	150	0.80	33.75	27.07							
167	0.91	33.78	200	2.45	34.17	27.29							
250	4.95	34.74	300	3.80	34.67	27.57							
333	3.11	34.65	400	3.30	34.71	27.65							
497	3.62	34.81	600	3.70	34.82	27.70							
671	3.79	34.84	800	3.75	34.85	27.71							
850	3.71	34.86	1,000	3.70	34.86	27.73							
1,322	3.63	34.90											
Station 8122; 23 May; 43°03.5' N., 50°38' W.; depth 174 m.; dynamic height 971.090													
0	4.44	33.05	0	4.44	33.05	26.21							
25	2.70	33.08	25	2.70	33.08	26.40							
50	-0.02	33.31	50	-0.02	33.31	26.77							
75	-0.19	33.35	75	-0.19	33.35	26.81							
100	0.03	33.48	100	0.03	33.48	26.90							
150	0.31	33.55	150	0.31	33.55	26.94							
Station 8123; 24 May; 43°07' N., 50°33' W.; depth 95 m.; dynamic height 971.092													
0	4.16	33.05	0	4.16	33.05	26.24							
25	1.42	33.09	25	1.42	33.09	26.51							
51	0.72	33.17	50	0.75	33.16	26.60							
76	0.57	33.37	75	0.55	33.35	26.77							
Station 8128; 24 May; 42°24' N., 50°15' W.; depth 2,542 m.; dynamic height 970.997													
0	6.71	33.34	0	6.71	33.34	26.17							
23	4.70	33.41	25	4.45	33.42	26.51							
46	2.81	33.59	50	2.90	33.64	26.83							
70	3.30	33.91	75	3.15	33.93	27.03							
93	2.42	34.04	100	2.65	34.10	27.22							
139	4.30	34.49	150	4.20	34.46	27.36							
185	3.76	34.52	200	3.85	34.55	27.46							
277	4.36	34.78	300	4.45	34.80	27.60							
368	4.55	34.89	400	4.50	34.90	27.67							
551	4.24	34.95	600	4.15	34.93	27.73							
735	3.91	34.91	800	3.85	34.88	27.72							
920	3.77	34.86	1,000	3.75	34.86	27.71							
1,415	3.55	34.91											

## TABLE OF OCEANOGRAPHIC DATA STATIONS OCCUPIED IN 1962—Continued

Observed values			Scaled values				Observed values			Scaled values			
Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	$\sigma_t$	Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	$\sigma_t$
Station 8129; 24 May; 42°00' N., 50°14' W.; depth 3,475 m.; dynamic height 970.998													
0	6.68	33.13	0	6.68	33.13	26.01	0	16.60	35.97	0	16.60	35.97	26.37
26	5.09	33.30	25	5.20	33.28	26.31	24	16.62	36.00	25	16.60	35.99	26.38
51	3.22	33.67	50	3.25	33.64	26.80	47	15.95	35.95	50	15.85	35.94	26.52
76	4.11	34.11	75	4.10	34.08	27.06	71	15.37	35.93	75	15.30	35.92	26.63
102	3.04	34.14	100	3.05	34.13	27.20	95	15.07	35.88	100	15.00	35.86	26.65
152	5.06	34.65	150	5.05	34.63	27.39	142	14.37	35.77	150	14.25	35.75	26.80
203	4.69	34.70	200	4.70	34.69	27.48	189	13.76	35.69	200	13.60	35.66	26.80
305	4.38	34.82	300	4.40	34.81	27.58	282	12.53	35.55	300	12.15	35.50	26.97
407	4.31	34.87	400	4.30	34.86	27.66	374	10.68	35.32	400	10.05	35.26	27.16
613	4.11	34.88	600	4.10	34.87	27.70	555	6.54	34.94	600	6.20	34.94	27.50
816	4.01	34.93	800	4.00	34.92	27.75	744	5.22	34.99	800	5.00	34.98	27.68
1,019	3.68	34.91	1,000	3.70	34.90	27.76	933	4.54	34.98	1,000	4.45	34.97	27.74
1,537	3.56	34.93					1,437	3.90	34.95				
Station 8130; 24 May; 41°29.5' N., 50°15' W.; depth 4,005 m.; dynamic height 971.196													
0	9.95	34.10	0	9.95	34.10	26.28	0	16.74	36.09	0	16.74	36.09	26.43
26	11.47	34.92	25	11.40	34.90	26.65	26	16.44	36.08	25	16.50	36.07	26.47
53	14.12	35.73	50	14.10	35.71	26.73	53	15.61	36.00	50	15.65	36.01	26.62
79	14.04	35.73	75	14.05	35.72	26.75	79	15.73	36.10	75	15.70	36.08	26.66
106	13.85	35.70	100	13.90	35.70	26.76	106	15.74	36.13	100	15.75	36.12	26.68
158	12.49	35.49	150	12.65	35.50	26.87	158	15.16	36.00	150	15.30	36.02	26.71
211	11.89	35.46	200	12.05	35.46	26.96	211	13.70	35.69	200	13.95	35.75	26.79
312	8.16	34.91	300	8.55	34.91	27.14	316	12.14	35.48	300	12.40	35.50	26.92
410	6.79	34.94	400	6.90	34.93	27.39	418	9.33	35.15	400	9.80	35.20	27.16
597	4.38	34.81	600	4.35	34.80	27.61	623	5.22	34.86	600	5.65	34.88	27.52
795	4.14	34.88	800	4.15	34.87	27.69	831	4.49	34.95	800	4.60	34.93	27.68
993	3.89	34.92	1,000	3.90	34.91	27.75	1,039	4.04	34.90	1,000	4.10	34.90	27.72
1,514	3.90	34.92					1,543	3.74	34.92				
Station 8131; 24 May; 41°00' N., 50°15' W.; depth 3,585 m.; dynamic height 971.471													
0	19.00	36.43	0	19.00	36.43	26.13	0	18.40	36.33	0	18.40	36.33	26.20
26	19.02	36.43	25	19.00	36.42	26.12	25	18.30	36.32	25	18.30	36.32	26.23
52	18.29	36.39	50	18.35	36.39	26.26	50	18.25	36.31	50	18.25	36.31	26.23
78	17.95	36.36	75	18.00	36.36	26.33	75	15.69	35.95	75	15.69	35.95	26.56
104	17.08	36.20	100	17.20	36.20	26.40	100	15.57	35.99	100	15.57	35.99	26.62
157	16.63	36.23	150	16.70	36.22	26.54	150	15.03	35.91	150	15.03	35.91	26.68
209	15.90	35.90	200	15.80	35.95	26.54	200	14.41	35.80	200	14.41	35.80	26.73
313	13.59	35.71	300	13.85	35.72	26.79	302	13.04	35.63	300	13.05	35.62	26.88
418	11.80	35.49	400	12.10	35.52	26.99	400	11.21	35.39	400	11.21	35.39	27.06
626	7.50	35.06	600	8.05	35.10	27.36	591	7.00	34.95	600	6.90	34.94	27.40
825	5.28	34.98	800	5.55	34.98	27.61	780	5.52	35.01	800	5.40	35.00	27.65
1,020	4.64	35.00	1,000	4.70	34.99	27.72	967	4.46	34.96	1,000	4.40	34.95	27.72
1,536	3.94	34.96					1,455	3.92	34.92				
Station 8132; 25 May; 41°59.5' N., 49°27' W.; depth 3,292 m.; dynamic height 971.109													
0	7.20	33.14	0	7.20	33.14	25.95	0	15.98	35.73	0	15.98	35.73	26.33
20	4.49	33.21	25	4.75	33.36	26.42	28	15.70	35.70	25	15.75	35.70	26.36
41	6.62	33.95	50	8.70	34.46	26.76	57	13.64	35.55	50	14.05	35.56	26.63
61	10.99	35.11	75	12.50	35.46	26.87	85	13.82	35.63	75	13.75	35.60	26.72
81	12.57	35.52	100	12.10	35.39	26.89	114	13.41	35.56	100	13.55	35.59	26.75
121	11.05	35.24	150	9.00	34.91	27.07	170	13.35	35.63	150	13.40	35.60	26.79
162	8.25	34.84	200	8.05	34.89	27.20	238	12.51	35.48	200	13.00	35.55	26.84
246	7.84	34.94	300	6.95	34.92	27.39	335	11.07	35.36	300	11.60	35.40	26.99
332	6.41	34.92	400	5.60	34.90	27.54	438	8.58	35.10	400	9.55	35.18	27.18
509	4.72	34.88	600	4.30	34.87	27.67	633	5.43	34.91	600	5.90	34.91	27.52
686	4.13	34.88	800	4.05	34.90	27.72	828	4.84	34.98	800	4.90	34.97	27.69
864	4.00	34.92	1,000	3.90	34.90	27.74	1,017	4.40	34.97	1,000	4.45	34.96	27.73
1,342	3.64	34.90					1,514	3.85	34.92				
Station 8133; 25 May; 41°30' N., 48°58' W.; depth 3,402 m.; dynamic height 971.318													
0	16.60	35.97	0	16.60	35.97	26.37	0	16.60	35.97	0	16.60	35.97	26.37
24	16.62	36.00	25	16.60	35.99	26.38	24	16.62	36.00	25	16.60	35.99	26.38
47	15.95	35.95	50	15.85	35.94	26.52	47	15.95	35.95	50	15.85	35.94	26.52
71	15.37	35.93	75	15.30	35.92	26.63	71	15.37	35.93	75	15.30	35.92	26.63
95	15.07	35.88	100	15.00	35.86	26.65	95	15.07	35.88	100	15.00	35.86	26.65
142	14.37	35.77	150	14.25	35.75	26.80	142	14.37	35.77	150	14.25	35.75	26.80
189	13.76	35.69	200	13.60	35.66	26.80	189	13.76	35.69	200	13.60	35.66	26.80
282	12.53	35.55	300	12.15	35.50	26.97	282	12.53	35.55	300	12.15	35.50	26.97
374	10.68	35.32	400	10.05	35.26	27.16	374	10.68	35.32	400	10.05	35.26	27.16
555	6.54	34.94	600	6.20	34.94	27.50	555	6.54	34.94	600	6.20	34.94	27.50
744	5.22	34.99	800	5.00	34.98	27.68	744	5.22	34.99	800	5.00	34.98	27.68
933	4.54	34.98	1,000	4.45	34.97	27.74	933	4.54	34.98	1,000	4.45	34.97	27.74
1,437	3.90	34.95					1,437	3.90	34.95				
Station 8134; 25 May; 41°00' N., 48°30' W.; depth 3,292 m.; dynamic height 971.312													
0	16.74	36.09	0	16.74	36.09	26.43	0	16.74	36.09	0	16.74	36.09	26.43
26	16.44	36.08	25	16.50	36.07	26.47	26	16.44	36.08	25	16.50	36.07	26.47
53	15.61	36.00	50	15.65	36.01	26.62	53	15.61	36.00	50	15.65	36.01	26.62
79	15.73	36.10	75	15.70	36.08	26.66	79	15.73	36.10	75	15.70	36.08	26.66
106	15.74	36.13	100	15.75	36.12	26.68	106	15.74	36.13	100	15.75	36.12	26.68
158	15.16	36.00	150	15.30	36.02	26.71	158	15.16	36.00	150	15.30	36.02	26.71
211	13.70	35.69	200	13.95	35.75	26.79	211	13.70	35.69	200	13.95	35.75	26.79
316	12.14	35.48	300	12.40	35.50	26.92	316	12.14	35.48	300	12.40	35.50	26.92
418	9.33	35.15	400	9.80	35.20	27.16	418	9.33	35.15	400	9.80	35.20	27.16
623	5.22	34.86	600	5.65	34.88	27.52	623	5.22	34.86	600	5.65	34.88	27.52
831	4.49	34.95	800	4.60	34.93	27.68	831	4.49	34.95	800	4.60	34.93	27.68
1,039	4.04	34.90	1,000	4.10	34.90	27.72	1,039	4.04	34.90	1,000	4.10	34.90	27.72
1,543	3.74	34.92					1,543	3.74	34.92				
Station 8135; 25 May; 41°36' N., 47°17' W.; depth 4,371 m.; dynamic height 971.395													
0	18.40	36.33	0	18.40	36.33	26.20	0	18.40	36.33	0	18.40	36.33	26.20
25	18.30	36.32	25	18.30	36.32	26.23	25	18.30	36.32	25	18.30	36.32	26.23
50	18.25	36.31	50	18.25	36.31	26.23	50	18.25	36.31	50	18.25	36.31	26.23
75	15.69	35.95	75	15.69	35.95	26.56	75	15.69	35.95	75	15.69	35.95	26.56
100	15.57	35.99	100	15.57	35.99	26.62	100	15.57	35.99	100	15.57	35.99	26.62
150	15.03	35.91	150	15.03	35.91	26.68	150	15.03	35.91	150	15.03	35.91	

## TABLE OF OCEANOGRAPHIC DATA STATIONS OCCUPIED IN 1962—Continued

Observed values			Scaled values				Observed values			Scaled values			
Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	$\sigma_t$	Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	$\sigma_t$
Station 8137; 26 May; 42°20' N., 48°34' W.; depth 3,347 m.; dynamic height 970.992													
0	6.81	33.27	0	6.81	33.27	26.10	0	7.59	33.06	0	7.59	33.06	25.83
23	6.36	33.24	25	5.70	33.23	26.22	22	5.92	33.19	25	5.65	33.28	26.26
47	2.62	33.48	50	2.60	33.67	26.88	44	4.25	33.57	50	3.75	33.59	26.71
70	2.71	33.94	75	3.70	34.03	27.15	66	2.82	33.68	75	3.05	33.84	26.97
93	2.67	34.10	100	2.80	34.15	27.25	88	3.57	33.98	100	3.45	34.01	27.08
139	4.18	34.51	150	4.40	34.55	27.41	131	3.19	34.10	150	3.00	34.15	27.23
186	4.80	34.70	200	4.80	34.72	27.50	175	3.00	34.27	200	3.30	34.41	27.41
280	4.84	34.87	300	4.75	34.86	27.61	269	4.46	34.77	300	4.75	34.84	27.60
373	4.43	34.88	400	4.40	34.88	27.66	366	5.04	34.93	400	4.95	34.92	27.64
562	4.23	34.91	600	4.40	34.90	27.71	574	4.50	34.92	600	4.45	34.91	27.69
759	3.77	34.89	800	3.75	34.88	27.73	970	3.98	34.90	800	3.95	34.90	27.73
962	3.68	34.88	1,000	3.65	34.87	27.74	970	3.68	34.90	1,000	3.65	34.90	27.76
1,453	3.55	34.92					1,466	3.56	34.91				
Station 8138; 26 May; 42°41' N., 49°10' W.; depth 2,140 m.; dynamic height 970.940													
0	5.24	33.45	0	5.24	33.45	26.44	0	15.74	35.80	0	15.74	35.80	26.44
23	3.86	33.61	25	3.70	33.63	26.75	25	15.71	35.80	25	15.71	35.80	26.45
47	2.61	33.91	50	2.60	33.95	27.10	50	15.12	35.89	50	15.12	35.89	26.65
70	2.98	34.21	75	2.95	34.22	27.29	75	14.59	35.80	75	14.59	35.80	26.70
94	2.50	34.27	100	2.60	34.31	27.39	100	14.19	35.75	100	14.19	35.75	26.74
140	4.17	34.60	150	4.30	34.62	27.48	150	13.67	35.69	150	13.67	35.69	26.81
187	4.57	34.73	200	4.60	34.75	27.54	200	13.59	35.66	200	13.59	35.66	26.80
279	4.71	34.89	300	4.55	34.87	27.65	299	12.13	35.48	300	12.10	35.46	26.95
369	4.07	34.86	400	4.00	34.86	27.70	399	9.53	35.18	400	9.50	35.17	27.19
546	3.76	34.89	600	3.70	34.87	27.74	596	6.39	35.04	600	6.35	35.03	27.55
733	3.62	34.84	800	3.60	34.84	27.72	816	4.41	---	800	4.25	34.96	27.75
922	3.56	34.86	1,000	3.55	34.85	27.73	1,021	4.03	34.93	1,000	4.05	34.92	27.74
1,326	3.49	34.86					1,460	3.69	34.88				
Station 8142; 26 May; 42°39' N., 46°53' W.; depth 4,206 m.; dynamic height 971.275													
0	15.74	35.80	0	15.74	35.80	26.44	0	15.74	35.80	0	15.74	35.80	26.44
25	15.71	35.80	25	15.71	35.80	26.45	25	15.71	35.80	25	15.71	35.80	26.45
50	15.12	35.89	50	15.12	35.89	26.65	50	15.12	35.89	50	15.12	35.89	26.65
75	14.59	35.80	75	14.59	35.80	26.70	75	14.59	35.80	75	14.59	35.80	26.70
100	14.19	35.75	100	14.19	35.75	26.74	100	14.19	35.75	100	14.19	35.75	26.74
150	13.67	35.69	150	13.67	35.69	26.81	150	13.67	35.69	150	13.67	35.69	26.81
200	13.59	35.66	200	13.59	35.66	26.80	200	13.59	35.66	200	13.59	35.66	26.80
299	12.13	35.48	300	12.10	35.46	26.95	299	12.13	35.48	300	12.10	35.46	26.95
399	9.53	35.18	400	9.50	35.17	27.19	399	9.53	35.18	400	9.50	35.17	27.19
596	6.39	35.04	600	6.35	35.03	27.55	596	6.39	35.04	600	6.35	35.03	27.55
816	4.41	---	800	4.25	34.96	27.75	816	4.41	---	800	4.25	34.96	27.75
1,021	4.03	34.93	1,000	4.05	34.92	27.74	1,021	4.03	34.93	1,000	4.05	34.92	27.74
1,460	3.69	34.88					1,460	3.69	34.88				
Station 8139; 26 May; 43°20' N., 48°50' W.; depth 2,250 m.; dynamic height 971.013													
0	2.38	32.74	0	2.38	32.74	26.16	0	17.88	36.28	0	17.88	36.28	26.30
23	3.86	33.30	25	3.85	33.30	26.46	26	17.88	36.28	25	17.90	36.28	26.29
47	0.53	33.33	50	0.40	33.33	26.76	51	16.91	36.29	50	16.05	36.28	26.52
70	0.15	33.48	75	0.15	33.52	26.93	77	16.51	36.21	75	16.53	36.21	26.57
93	0.24	33.69	100	0.65	33.78	27.10	102	15.99	36.11	100	16.05	36.12	26.62
139	3.87	34.30	150	4.30	34.38	27.28	152	14.89	35.87	150	14.90	35.86	26.67
186	5.48	34.65	200	5.45	34.70	27.40	203	14.71	35.86	200	14.70	35.85	26.71
280	5.01	34.82	300	4.65	34.80	27.58	304	14.02	35.73	300	14.05	35.72	26.75
374	3.59	34.73	400	3.65	34.74	27.63	402	13.44	35.71	400	13.45	35.71	26.87
564	4.22	34.93	600	4.20	34.91	27.72	598	10.37	35.32	600	10.35	35.31	27.15
762	3.78	34.89	800	3.75	34.88	27.73	795	6.63	35.00	800	6.60	34.99	27.48
965	3.59	34.91	1,000	3.60	34.90	27.77	989	5.30	35.01	1,000	5.25	35.00	27.67
1,462	3.51	34.89					1,489	3.98	34.95				
Station 8143; 27 May; 42°23.5' N., 46°06' W.; depth 4,755 m.; dynamic height 971.511													
0	17.88	36.28	0	17.88	36.28	26.30	0	17.88	36.28	0	17.88	36.28	26.30
26	17.88	36.28	25	17.90	36.28	26.29	26	17.88	36.28	25	17.90	36.28	26.29
51	16.91	36.29	50	16.05	36.28	26.52	51	16.91	36.29	50	16.05	36.28	26.52
77	16.51	36.21	75	16.53	36.21	26.57	77	16.51	36.21	75	16.53	36.21	26.57
102	15.99	36.11	100	16.05	36.12	26.62	102	15.99	36.11	100	16.05	36.12	26.62
152	14.89	35.87	150	14.90	35.86	26.67	152	14.89	35.87	150	14.90	35.86	26.67
203	14.71	35.86	200	14.70	35.85	26.71	203	14.71	35.86	200	14.70	35.85	26.71
304	14.02	35.73	300	14.05	35.72	26.75	304	14.02	35.73	300	14.05	35.72	26.75
402	13.44	35.71	400	13.45	35.71	26.87	402	13.44	35.71	400	13.45	35.71	26.87
598	10.37	35.32	600	10.35	35.31	27.15	598	10.37	35.32	600	10.35	35.31	27.15
795	6.63	35.00	800	6.60	34.99	27.48	795	6.63	35.00	800	6.60	34.99	27.48
989	5.30	35.01	1,000	5.25	35.00	27.67	989	5.30	35.01	1,000	5.25	35.00	27.67
1,489	3.98	34.95					1,489	3.98	34.95				
Station 8144; 27 May; 42°49' N., 45°40' W.; depth 4,847 m.; dynamic height 971.454													
0	16.24	36.11	0	16.24	36.11	26.56	0	16.24	36.11	0	16.24	36.11	26.56
25	16.23	36.11	25	16.23	36.11	26.56	25	16.23	36.11	25	16.23	36.11	26.56
50	15.68	36.13	50	15.68	36.13	26.71	50	15.68	36.13	50	15.68	36.13	26.71
74	15.49	36.10	75	15.50	36.10	26.72	74	15.49	36.10	75	15.50	36.10	26.72
99	15.44	36.11	100	15.45	36.10	26.74	99	15.44	36.11	100	15.45	36.10	26.74
148	15.39	36.10	150	15.40	36.09	26.74	148	15.39	36.10	150	15.40	36.09	26.74
198	15.33	36.07	200	15.30	36.06	26.74	198	15.33	36.07	200	15.30	36.06	26.74
299	14.51	35.91	300	14.50	35.90	26.79	299	14.51	35.91	300	14.50	35.90	26.79
403	13.00	35.68	400	13.05	35.68	26.92	403	13.00	35.68	400	13.05	35.68	26.92
608	9.05	35.17	600	9.20	35.17	27.24	608	9.05	35.17	600	9.20	35.17	27.24
810	6.40	35.06	800	6.50	35.05	27.54	810	6.40	35.06	800	6.50	35.05	27.54
1,011	5.06	35.04	1,000	5.10	35.03	27.70	1,011	5.06	35.04	1,000	5.10	35.03	27.70
1,527	4.01	34.98					1,527	4.01	34.98				

## TABLE OF OCEANOGRAPHIC DATA STATIONS OCCUPIED IN 1962—Continued

Observed values			Scaled values				Observed values			Scaled values			
Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	$\sigma_t$	Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	$\sigma_t$
Station 8145; 27 May; 43°16' N., 45°08' W.; depth 4,755 m.; dynamic height 971.279													
0	14.67	35.39	0	14.67	35.39	26.36	0	7.42	33.07	0	7.42	33.07	25.87
24	14.69	35.46	25	14.70	35.50	26.44	22	6.22	33.20	25	5.95	33.23	26.19
49	14.91	35.84	50	14.90	35.83	26.65	44	4.71	33.47	50	5.65	33.46	26.40
73	14.25	35.74	75	14.20	35.76	26.75	66	9.08	34.76	75	7.75	34.75	27.13
98	13.60	35.62	100	13.60	35.61	26.76	88	6.70	34.39	100	6.95	34.50	27.05
146	13.64	35.68	150	13.60	35.67	26.81	131	7.62	34.72	150	7.25	34.69	27.16
195	13.21	35.59	200	13.15	35.58	26.83	175	6.82	34.66	200	6.15	34.62	27.26
291	12.11	35.48	300	11.65	35.41	26.99	263	4.55	34.54	300	4.10	34.52	27.42
385	7.56	34.76	400	7.30	34.76	27.21	351	3.64	34.54	400	3.95	34.63	27.51
569	5.67	34.85	600	5.55	34.86	27.52	530	4.35	34.92	600	4.35	34.93	27.71
772	4.84	34.97	800	4.75	34.96	27.69	712	4.31	34.95	800	4.20	34.94	27.74
983	4.11	34.94	1,000	4.10	34.93	27.74	896	4.11	34.95	1,000	3.95	34.93	27.75
1,474	3.79	34.91					1,430	3.63	34.91				
Station 8146; 27 May; 43°24.5' N., 45°46' W.; depth 4,847 m.; dynamic height 971.266													
0	12.79	34.93	0	12.79	34.93	26.40	0	6.76	33.80	0	6.76	33.80	26.53
24	13.28	35.20	25	13.30	35.24	26.54	24	4.99	33.75	25	5.00	33.74	26.71
49	14.30	35.76	50	14.30	35.75	26.72	47	5.46	34.19	50	5.45	34.20	27.01
73	13.85	35.65	75	13.80	35.63	26.73	71	5.25	34.28	75	5.20	34.29	27.11
98	13.34	35.54	100	13.30	35.53	26.76	95	4.95	34.38	100	5.00	34.40	27.22
146	13.09	35.53	150	13.05	35.52	26.81	142	6.84	34.88	150	6.60	34.87	27.39
195	12.57	35.50	200	12.50	35.48	26.88	189	5.43	34.85	200	5.35	34.85	27.54
290	10.61	35.30	300	11.40	35.27	26.94	282	4.87	34.92	300	4.70	34.90	27.65
381	8.85	35.09	400	8.50	35.05	27.26	374	4.13	34.85	400	4.10	34.84	27.67
559	5.58	34.86	600	5.35	34.86	27.59	555	3.73	34.86	600	3.70	34.85	27.72
745	4.64	34.93	800	4.50	34.93	27.64	745	3.63	34.86	800	3.60	34.86	27.74
933	4.23	34.95	1,000	4.15	34.93	27.73	938	3.53	34.88	1,000	3.50	34.87	27.76
1,422	3.59	34.90					1,431	3.44	34.85				
Station 8147; 27 May; 43°33' N., 46°22' W.; depth 4,664 m.; dynamic height 971.213													
0	9.96	33.96	0	9.96	33.96	26.17	0	2.18	32.71	0	2.18	32.71	26.15
27	11.95	34.83	25	11.80	34.77	26.47	25	-0.06	32.89	25	-0.06	32.89	26.43
54	13.85	35.63	50	13.75	35.60	26.72	50	-0.61	33.13	50	-0.61	33.13	26.65
81	13.72	35.67	75	13.75	35.66	26.77	75	-0.96	33.33	75	-0.96	33.33	26.82
108	13.40	35.59	100	13.50	35.60	26.77	100	-0.29	33.63	100	-0.29	33.63	27.01
166	12.36	35.43	150	12.55	35.43	26.83	149	1.04	33.80	150	1.20	33.84	27.12
216	12.01	35.46	200	12.20	35.44	26.91	199	6.35	34.66	200	6.35	34.65	27.25
321	9.30	35.13	300	9.85	35.18	27.13	300	4.78	34.59	300	4.78	34.59	27.40
424	6.87	34.95	400	7.40	34.96	27.35	400	4.38	34.76	400	4.38	34.76	27.58
623	5.12	34.96	600	5.35	34.95	27.61	604	4.35	34.89	600	4.35	34.88	27.67
825	4.34	34.95	800	4.45	34.95	27.72	807	3.78	34.87	800	3.80	34.86	27.72
1,025	3.70	34.89	1,000	3.80	34.89	27.74	1,011	3.59	34.87	1,000	3.60	34.86	27.74
1,539	3.55	34.86					1,524	3.54	34.79				
Station 8148; 27 May; 43°43' N., 47°02' W.; depth 4,334 m.; dynamic height 971.169													
0	7.59	33.06	0	7.59	33.06	25.83	0	2.21	32.85	0	2.21	32.85	26.26
27	8.85	33.90	25	8.75	33.86	26.29	28	-0.04	32.96	25	0.20	32.94	26.46
54	11.60	35.11	50	11.55	34.98	26.68	56	-0.65	33.24	50	-0.60	33.18	26.68
81	11.75	35.27	75	11.75	35.25	26.85	84	-0.75	33.39	75	-0.75	33.34	26.82
108	11.37	35.23	100	11.50	35.24	26.89	112	-0.03	33.51	100	-0.30	33.46	26.90
160	10.46	35.08	150	10.70	35.11	26.94	169	0.15	33.66	150	0.10	33.61	27.00
214	8.81	34.92	200	9.10	34.94	27.07	225	0.48	33.76	200	0.30	33.70	27.06
320	7.97	35.05	300	8.20	35.03	27.28	331	2.44	34.24	300	1.85	34.09	27.27
424	6.11	34.91	400	6.55	34.91	27.43	434	4.58	34.81	400	3.95	34.74	27.60
620	4.85	34.95	600	5.00	34.94	27.65	628	3.68	34.82	600	3.75	34.81	27.68
832	4.41	34.92	800	4.50	34.91	27.68							
1,032	3.90	34.93	1,000	4.00	34.92	27.75							
1,554	3.65	34.93											
Station 8149; 28 May; 43°49' N., 47°42' W.; depth 4,060 m.; dynamic height 971.078													
0	7.42	33.07	0	7.42	33.07	25.87	0	2.18	32.71	0	2.18	32.71	26.15
22	6.22	33.20	25	5.95	33.23	26.19	25	-0.06	32.89	25	-0.06	32.89	26.43
44	4.71	33.47	50	5.65	33.46	26.40	50	-0.61	33.13	50	-0.61	33.13	26.65
66	9.08	34.76	75	7.75	34.75	27.13	75	-0.96	33.33	75	-0.96	33.33	26.82
88	6.70	34.39	100	6.95	34.50	27.05	100	-0.29	33.63	100	-0.29	33.63	27.01
131	7.62	34.72	150	7.25	34.69	27.16	149	1.04	33.80	150	1.20	33.84	27.12
175	6.82	34.66	200	6.15	34.62	27.26	199	6.35	34.66	200	6.35	34.65	27.25
263	4.55	34.54	300	4.10	34.52	27.42	300	4.78	34.59	300	4.78	34.59	27.40
351	3.64	34.54	400	3.95	34.63	27.51	400	4.38	34.76	400	4.38	34.76	27.58
530	4.35	34.92	600	4.35	34.93	27.71	604	4.35	34.89	600	4.35	34.88	27.67
712	4.31	34.95	800	4.20	34.94	27.74	807	3.78	34.87	800	3.80	34.86	27.72
896	4.11	34.95	1,000	3.95	34.93	27.75	1,011	3.59	34.87	1,000	3.60	34.86	27.74
1,430	3.63	34.91					1,524	3.54	34.79				
Station 8150; 28 May; 43°58' N., 48°12' W.; depth 3,841 m.; dynamic height 970.955													
0	6.76	33.80	0	6.76	33.80	26.53	0	2.18	32.71	0	2.18	32.71	26.15
24	4.99	33.75	25	5.00	33.74	26.71	25	-0.06	32.89	25	-0.06	32.89	26.43
47	5.46	34.19	50	5.45	34.20	27.01	50	-0.61	33.13	50	-0.61	33.13	26.65
71	5.25	34.28	75	5.20	34.29	27.11	75	-0.96	33.33	75	-0.96	33.33	26.82
95	4.95	34.38	100	5.00	34.40	27.22	100	-0.29	33.63	100	-0.29	33.63	27.01
142	6.84	34.88	150	6.60	34.87	27.39	149	1.04	33.80	150	1.20	33.84	27.12
189	5.43	34.85	200	5.35	34.85	27.54	199	6.35	34.66	200	6.35	34.65	27.25
282	4.87	34.92	300	4.70	34.90	27.65	300	4.78	34.59	300	4.78	34.59	27.40
374	4.13	34.85	400	4.10	34.84	27.67	400	4.38	34.76	400	4.38	34.76	27.58
555	3.73	34.86	600	3.70	34.85	27.72	604	4.35	34.89	600	4.35	34.88	27.67
745	3.63	34.86	800	3.60	34.86	27.74	807	3.78	34.87	800	3.80	34.86	27.72
938	3.53	34.88	1,000	3.50	34.87	27.76	1,011	3.59	34.87	1,000	3.60	34.86	27.74
1,431	3.44	34.85					1,524	3.54	34.79				
Station 8151; 28 May; 44°07' N., 48°44' W.; depth 1,668 m.; dynamic height 971.082													
0	2.18	32.71	0	2.18	32.71	26.15	0	2.21	32.85	0	2.21	32.85	26.26
25	-0.06	32.89	25	-0.06	32.89	26.43	28	-0.04	32.96	25	0.20	32.94	26.46
50	-0.61	33.13	50	-0.61	33.13	26.65	56	-0.65	33.24	50	-0.60	33.18	26.68
75	-0.96	33.33	75	-0.96	33.33	26.82	84	-0.75	33.39	75	-0.75	33.34	26.82
100	-0.29	33.63	100	-0.29	33.63	27.01	112	-0.03	33.51	100	-0.30	33.46	26.90
149	1.04	33.80	150	1.20	33.84	27.12	169	0.15	33.66	150	0.10	33.61	27.00
199	6.35	34.66	200	6.35	34.65	27.25	225	0.48	33.76	200	0.30	33.70	27.06
300	4.78	34.59	300	4.78	34.59	27.40	331	2.44	34.24	300	1.85	34.09	27.27
400	4.38	34.76	400	4.38	34.76	27.58	434	4.58	34.81	400	3.95	34.74	27.60
604	4.35	34.89	600	4.35	34.88	27.67	628	3.68	34.82	600	3.75	34.81	27.68
807	3.78	34.87	800	3.80	34.86	27.72							
1,011	3.59	34.87	1,000	3.60	34.86	27.74							

## TABLE OF OCEANOGRAPHIC DATA STATIONS OCCUPIED IN 1962—Continued

Observed values			Scaled values				Observed values			Scaled values			
Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	$\sigma_t$	Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	$\sigma_t$
Station 8153; 28 May; 44°11' N., 49°02' W.; depth 177 m.; dynamic height 971.054													
0	1.62	32.92	0	1.62	32.92	26.36	0	2.44	32.72	0	2.44	32.72	26.14
25	-0.16	33.17	25	-0.16	33.17	26.61	23	0.79	32.93	25	0.60	32.95	26.44
50	-0.43	33.30	50	-0.43	33.30	26.78	46	-0.69	33.12	50	-0.70	33.18	26.69
75	0.18	33.43	75	0.18	33.43	26.85	69	-0.51	33.36	75	-0.45	33.36	26.82
100	2.78	33.71	100	2.78	33.71	26.90	92	-0.39	33.41	100	-0.30	33.44	26.88
150	5.72	34.25	150	5.72	34.25	27.02	153	0.22	33.64	150	0.15	33.62	27.02
							184	1.70	33.86	200	2.05	34.00	27.69
							272	3.46	34.37	300	3.30	34.41	27.41
							358	2.92	34.51	400	3.00	34.56	27.56
							520	3.27	34.73	600	3.50	34.80	27.70
							701	3.70	34.86	800	3.70	34.85	27.72
							886	3.68	34.85	(1,000)	3.65	34.83	27.70
Station 8154; 28 May; 44°12' N., 49°10' W.; depth 95 m.; dynamic height 971.041													
0	3.61	33.06	0	3.61	33.06	26.31							
26	3.66	33.59	25	3.65	33.57	26.71							
51	1.16	33.54	50	1.15	33.53	26.87							
77	5.13	34.14	75	4.60	34.07	27.01							
Station 8155; 28 May; 44°14' N., 49°23' W.; depth 49 m.; dynamic height 971.099													
0	3.33	32.95	0	3.33	32.95	26.24							
22	2.05	33.03	25	1.85	33.04	26.44							
45	0.52	33.10	(50)	0.25	33.12	26.60							
Station 8156; 28 May; 44°56' N., 49°20' W.; depth 106 m.; dynamic height 971.092													
0	3.37	32.92	0	3.37	32.92	26.22							
20	3.21	33.29	25	2.60	33.29	26.57							
46	-0.37	33.30	50	-0.35	33.30	26.76							
71	-0.14	33.36	75	-0.15	33.36	26.81							
97	-0.09	33.39	(100)	-0.10	33.38	26.82							
Station 8157; 28 May; 44°57' N., 49°06' W.; depth 106 m.; dynamic height 971.118													
0	2.83	32.74	0	2.83	32.74	26.12							
26	2.30	32.75	25	2.35	32.74	26.16							
52	0.32	32.88	50	0.50	32.86	26.37							
78	-0.42	33.15	75	-0.30	33.12	26.62							
Station 8158; 28 May; 44°55' N., 49°00' W.; depth 635 m.; dynamic height 971.132													
0	2.83	32.72	0	2.83	32.72	26.11							
24	2.33	32.74	25	2.15	32.75	26.18							
48	0.37	32.95	50	0.30	32.99	26.50							
73	-0.34	33.19	75	-0.35	33.18	26.67							
97	-0.54	33.22	100	-0.55	33.22	26.71							
146	-0.55	33.35	150	-0.50	33.40	26.86							
194	2.52	33.96	200	2.60	33.99	27.13							
290	3.69	34.50	300	3.70	34.51	27.45							
385	3.52	34.65	400	3.50	34.65	27.58							
572	3.45	34.75	(600)	3.45	34.76	27.67							
Station 8159; 29 May; 44°52' N., 48°48' W.; depth 1,207 m.; dynamic height 971.084													
0	2.44	32.72	0	2.44	32.72	26.14							
23	0.79	32.93	25	0.60	32.95	26.44							
46	-0.69	33.12	50	-0.70	33.18	26.69							
69	-0.51	33.36	75	-0.45	33.36	26.82							
92	-0.39	33.41	100	-0.30	33.44	26.88							
153	0.22	33.64	150	0.15	33.62	27.02							
184	1.70	33.86	200	2.05	34.00	27.69							
272	3.46	34.37	300	3.30	34.41	27.41							
358	2.92	34.51	400	3.00	34.56	27.56							
520	3.27	34.73	600	3.50	34.80	27.70							
701	3.70	34.86	800	3.70	34.85	27.72							
886	3.68	34.85	(1,000)	3.65	34.83	27.70							
Station 8160; 29 May; 44°49' N., 48°33' W.; depth 2,286 m.; dynamic height 971.046													
0	2.08	32.67	0	2.08	32.67	26.12							
26	0.82	32.92	25	0.85	32.91	26.40							
52	-0.26	33.32	50	-0.25	33.30	26.76							
79	-0.19	33.54	75	-0.20	33.52	26.95							
105	-0.12	33.56	100	-0.15	33.54	26.96							
158	0.51	33.82	150	0.40	33.78	27.12							
210	1.07	34.01	200	0.90	33.97	27.24							
306	2.90	34.49	300	2.80	34.45	27.48							
395	3.33	34.73	400	3.35	34.73	27.65							
555	3.73	34.86	600	3.75	34.85	27.71							
750	3.86	34.87	800	3.80	34.86	27.72							
952	3.57	34.87	1,000	3.55	34.86	27.74							
1,456	3.52	34.86											
Station 8161; 29 May; 44°43' N., 48°00' W.; depth 3,283 m.; dynamic height 970.959													
0	3.75	33.23	0	3.75	33.23	26.43							
28	0.56	33.54	25	0.65	33.50	26.88							
56	0.72	33.66	50	0.65	33.63	26.98							
84	1.27	33.91	75	1.10	33.83	27.11							
112	2.05	34.18	100	1.75	34.01	27.22							
168	2.55	34.37	150	2.40	34.27	27.38							
224	5.07	34.89	200	4.25	34.76	27.59							
337	4.50	34.88	300	4.65	34.88	27.64							
451	4.43	34.92	400	4.45	34.90	27.68							
680	3.98	34.92	600	4.15	34.91	27.72							
894	3.65	34.86	800	3.80	34.88	27.73							
1,000	3.50	34.88	1,000	3.60	34.86	27.74							
1,643	3.40	34.90											
Station 8162; 29 May; 44°36.5' N., 47°18' W.; depth 3,840 m.; dynamic height 970.972													
0	6.72	33.68	0	6.72	33.68	26.44							
25	5.89	33.77	25	5.89	33.77	26.62							
50	5.56	34.22	50	5.56	34.22	27.01							
75	4.74	34.19	75	4.74	34.19	27.08							
99	5.77	34.47	100	5.75	34.46	27.18							
149	4.03	34.46	150	4.00	34.45	27.37							
199	3.83	34.55	200	3.85	34.55	27.46							
300	4.89	34.87	300	4.89	34.87	27.61							
404	4.55	34.93	400	4.55	34.92	27.69							
615	4.22	34.96	600	4.25	34.95	27.74							
823	3.94	34.91	800	3.95	34.91	27.74							
1,032	3.69	34.91	1,000	3.70	34.90	27.76							
1,562	3.53	34.91											

## TABLE OF OCEANOGRAPHIC DATA STATIONS OCCUPIED IN 1962—Continued

Observed values			Scaled values				Observed values			Scaled values			
Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	$\sigma_t$	Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	$\sigma_t$
Station 8163; 29 May; 44°32' N., 46°38' W.; depth 3,913 m.; dynamic height 971.074													
0	7.92	33.20	0	7.92	33.20	25.90	0	7.00	33.26	0	7.00	33.26	26.07
22	11.32	34.93	25	11.55	35.07	26.75	26	4.49	33.42	25	4.50	33.40	26.48
43	12.81	35.51	50	12.80	35.46	26.81	53	5.01	34.02	50	5.00	33.95	26.87
76	12.02	35.34	75	12.05	35.33	26.85	79	6.44	34.47	75	6.30	34.41	27.07
102	11.78	35.38	100	11.80	35.38	26.94	105	8.22	34.89	100	8.20	34.86	27.15
129	8.44	34.84	150	8.15	34.77	27.09	157	7.90	34.95	150	7.95	34.94	27.25
172	7.85	34.75	200	7.40	34.74	27.18	210	6.96	34.92	200	7.15	34.91	27.35
270	6.36	34.90	300	6.10	34.82	27.42	314	5.68	34.90	300	5.85	34.89	27.50
376	5.38	34.91	400	5.30	34.91	27.59	416	5.05	34.94	400	5.15	34.93	27.62
611	4.50	34.95	600	4.50	34.94	27.70	619	3.88	34.87	600	4.00	34.87	27.71
811	4.19	34.95	800	4.20	34.94	27.74	824	3.73	34.89	800	3.75	34.88	27.73
1,011	3.96	34.95	1,000	3.95	34.94	27.76	1,028	3.56	34.89	1,000	3.55	34.88	27.75
1,530	3.61	34.91					1,537	3.64	34.97				
Station 8164; 29 May; 44°25' N., 45°56' W.; depth 3,886 m.; dynamic height 971.182													
0	8.93	33.49	0	8.93	33.49	25.97	0	8.04	33.84	0	8.04	33.84	26.38
26	10.23	34.33	25	10.20	34.28	26.37	26	6.82	34.09	25	6.85	34.07	26.73
42	10.02	34.83	50	10.00	34.79	26.80	51	6.66	34.34	50	6.65	34.33	26.99
77	11.41	35.25	75	11.30	35.21	26.91	77	6.37	34.38	75	6.35	34.36	27.02
102	11.65	35.30	100	11.65	35.29	26.90	103	6.70	34.61	100	6.70	34.58	27.15
152	11.55	35.31	150	11.55	35.30	26.93	153	5.95	34.76	150	6.00	34.74	27.37
203	10.08	35.08	200	10.15	35.07	27.08	205	5.51	34.81	200	5.55	34.80	27.47
304	8.46	34.98	300	8.50	34.98	27.20	307	4.46	34.81	300	4.50	34.80	27.59
402	6.31	34.87	400	6.35	34.86	27.42	407	4.95	34.93	400	4.95	34.92	27.64
597	5.30	34.97	600	5.25	34.96	27.64	608	4.52	34.94	600	4.55	34.93	27.69
806	4.57	34.99	800	5.25	34.98	27.65	821	4.16	34.95	800	4.20	34.94	27.74
1,018	4.15	34.95	1,000	4.20	34.94	27.74	1,041	3.86	34.94	1,000	3.90	34.94	27.77
1,510	3.85	34.93					1,528	3.57	34.91				
Station 8165; 29 May; 44°18' N., 45°15' W.; depth 4,480 m.; dynamic height 971.211													
0	14.56	35.76	0	14.56	35.76	26.67	0	7.59	33.89	0	7.59	33.89	26.48
27	14.56	35.76	25	14.55	35.75	26.66	26	7.05	34.21	25	7.10	34.20	26.80
53	14.50	35.77	50	14.55	35.76	26.67	52	4.70	34.19	50	4.70	34.18	27.08
80	13.40	35.58	75	13.50	35.58	26.76	78	4.86	34.36	75	4.85	34.34	27.19
106	13.23	35.58	100	13.25	35.57	26.80	103	4.84	34.46	100	4.85	34.44	27.27
159	12.32	35.40	150	12.60	35.42	26.82	154	5.81	34.83	150	5.80	34.80	27.44
212	11.09	35.21	200	11.30	35.22	26.91	206	5.44	34.89	200	5.50	34.88	27.54
315	9.87	35.21	300	10.15	35.20	27.10	310	4.79	34.89	300	4.85	34.88	27.61
414	7.03	34.89	400	7.40	34.89	27.29	414	4.31	34.89	400	4.35	34.88	27.67
608	5.12	34.93	600	5.20	34.92	27.61	623	3.89	34.89	600	3.95	34.88	27.71
818	4.35	34.95	800	4.40	34.94	27.71	831	3.71	34.89	800	3.75	34.88	27.73
1,032	4.05	34.94	1,000	4.10	34.93	27.74	1,039	3.53	34.91	1,000	3.55	34.90	27.77
1,552	3.73	34.91					1,553	3.45	34.91				
Station 8166; 30 May; 44°50' N., 45°15' W.; depth 4,279 m.; dynamic height 970.974													
0	7.42	34.10	0	7.42	34.10	26.67	0	7.41	34.01	0	7.41	34.01	26.60
26	7.26	34.12	25	7.25	34.10	26.70	26	4.91	33.97	25	4.90	33.96	26.89
53	5.64	34.29	50	5.80	34.27	27.03	51	6.20	34.31	50	6.20	34.29	26.98
79	5.45	34.41	75	5.50	34.40	27.16	77	5.21	34.41	75	5.30	34.40	27.18
105	4.71	34.40	100	4.85	34.39	27.23	102	2.25	34.16	100	2.25	34.16	27.30
157	4.27	34.52	150	4.30	34.49	27.37	152	6.10	34.81	150	6.10	34.80	27.40
210	3.92	34.61	200	4.00	34.58	27.47	203	5.76	34.89	200	5.80	34.88	27.50
314	3.76	34.75	300	3.75	34.72	27.61	306	4.74	34.89	300	4.80	34.88	27.62
416	3.84	34.81	400	3.80	34.80	27.67	409	4.01	34.88	400	4.05	34.87	27.70
620	3.89	34.88	600	3.90	34.86	27.71	617	3.97	34.90	600	3.95	34.89	27.72
826	3.70	34.89	800	3.90	34.88	27.72	825	3.78	34.93	800	3.80	34.92	27.77
1,032	3.58	34.86	1,000	3.60	34.86	27.74	1,032	3.61	34.88	1,000	3.60	34.88	27.75
1,553	3.52	34.89					1,547	3.44	34.90				
Station 8170; 30 May; 45°20' N., 47°23' W.; depth 3,036 m.; dynamic height 970.947													
0	7.41	34.01	0	7.41	34.01	26.60	0	7.41	34.01	0	7.41	34.01	26.60
26	4.91	33.97	25	4.90	33.96	26.89	26	4.91	33.97	25	4.90	33.96	26.89
53	6.20	34.31	50	6.20	34.29	26.98	51	6.20	34.31	50	6.20	34.29	26.98
77	5.21	34.41	75	5.30	34.40	27.18	77	5.21	34.41	75	5.30	34.40	27.18
105	2.25	34.16	100	2.25	34.16	27.30	102	2.25	34.16	100	2.25	34.16	27.30
157	6.10	34.81	150	6.10	34.80	27.40	152	6.10	34.81	150	6.10	34.80	27.40
210	5.76	34.89	200	5.80	34.88	27.50	203	5.76	34.89	200	5.80	34.88	27.50
314	4.74	34.89	300	4.80	34.88	27.62	306	4.74	34.89	300	4.80	34.88	27.62
416	4.01	34.88	400	4.05	34.87	27.70	409	4.01	34.88	400	4.05	34.87	27.70
620	3.97	34.90	600	3.95	34.89	27.72	617	3.97	34.90	600	3.95	34.89	27.72
826	3.78	34.93	800	3.80	34.92	27.77	825	3.78	34.93	800	3.80	34.92	27.77
1,032	3.61	34.88	1,000	3.60	34.88	27.75	1,032	3.61	34.88	1,000	3.60	34.88	27.75
1,547	3.44	34.90					1,547	3.44	34.90				

# TABLE OF OCEANOGRAPHIC DATA STATIONS OCCUPIED IN 1962—Continued

Observed values			Scaled values				Observed values			Scaled values			
Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	$\sigma_t$	Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	$\sigma_t$
Station 8171; 31 May; 45°35' N., 47°50' W.; depth 1,207 m.; dynamic height 970.916													
0	2.90	33.26	0	2.90	33.26	26.53	0	3.77	33.02	0	3.77	33.02	26.26
25	2.67	33.23	25	2.67	33.23	26.52	24	3.73	33.04	25	3.70	33.03	26.27
50	1.96	34.06	50	1.96	34.06	27.24	48	1.25	33.13	(50)	0.95	33.14	26.58
74	2.94	34.33	75	2.95	34.33	27.37							
99	3.01	34.41	100	3.00	34.41	27.44							
148	3.05	34.54	150	3.05	34.54	27.53							
197	3.03	34.66	200	3.05	34.65	27.62							
297	3.44	34.78	300	3.45	34.77	27.68							
397	3.61	34.82	400	3.60	34.81	27.70							
600	3.61	34.89	600	3.61	34.89	27.76							
813	3.52	34.87	800	3.55	34.86	27.74							
1,023	3.54	34.86	1,000	3.55	34.86	27.74							
Station 8172; 31 May; 45°43' N., 48°02' W.; depth 686 m.; dynamic height 970.963													
0	2.58	32.92	0	2.58	32.92	25.81							
22	-0.90	33.33	25	-0.85	33.35	26.82							
45	0.33	33.53	50	0.55	33.59	26.96							
67	1.26	33.84	75	1.25	33.89	27.15							
90	1.26	34.00	100	1.40	34.08	27.30							
134	2.23	34.35	150	2.35	34.40	27.48							
179	2.61	34.50	200	2.70	34.52	27.55							
272	2.98	34.64	300	3.05	34.65	27.62							
367	3.28	34.70	400	3.30	34.72	27.66							
564	3.58	34.83	(600)	3.60	34.85	27.73							
Station 8173; 1 June; 45°46.5' N., 48°10' W.; depth 172 m.; dynamic height 971.035													
0	2.37	32.78	0	2.37	32.78	26.19							
24	2.27	32.77	25	2.35	32.76	26.18							
49	-0.06	33.31	50	-0.10	33.31	26.76							
73	-0.29	33.49	75	-0.30	33.50	26.93							
97	0.32	33.70	100	0.35	33.70	27.06							
146	0.75	33.85	(150)	0.80	33.85	27.15							
Station 8174; 1 June; 45°51.5' N., 48°20' W.; depth 117 m.; dynamic height 971.047													
0	2.59	32.74	0	2.59	32.74	26.14							
25	2.53	32.79	25	2.53	32.79	26.18							
50	-0.40	33.23	50	-0.40	33.23	26.72							
74	-0.45	33.40	75	-0.45	33.40	26.86							
99	-0.38	33.45	(100)	-0.35	33.45	26.89							
Station 8175; 1 June; 45°57.5' N., 48°31' W.; depth 97 m.; dynamic height 971.051													
0	2.60	32.70	0	2.60	32.70	26.11							
26	0.96	32.76	25	1.00	32.74	26.26							
52	-0.36	33.07	50	-0.35	33.04	26.56							
78	-0.16	33.37	75	-0.20	33.32	26.78							
Station 8176; 1 June; 46°04.5' N., 48°45' W.; depth 82 m.; dynamic height 971.057													
0	2.60	32.79	0	2.60	32.79	26.18							
25	2.56	32.83	25	2.56	32.83	26.21							
50	-0.16	32.93	50	-0.16	33.93	26.47							
Station 8177; 1 June; 46°15' N., 49°03' W.; depth 69 m.; dynamic height 971.054													
0	3.77	33.02	0	3.77	33.02	26.26							
24	3.73	33.04	25	3.70	33.03	26.27							
48	1.25	33.13	(50)	0.95	33.14	26.58							
Station 8178; 1 June; 46°13.5' N., 48°32' W.; depth 90 m.; dynamic height 971.061													
0	2.62	32.78	0	2.62	32.78	26.17							
25	2.54	32.77	25	2.54	32.77	26.17							
51	0.37	32.89	50	0.45	32.87	26.39							
76	0.15	33.29	75	0.15	33.25	26.71							
Station 8179; 1 June; 46°11.5' N., 48°03' W.; depth 119 m.; dynamic height 971.055													
0	2.72	32.71	0	2.72	32.71	26.12							
26	2.59	32.70	25	2.60	32.70	26.10							
52	-0.34	33.20	50	-0.30	33.14	26.64							
77	-0.28	33.42	75	-0.30	33.39	26.84							
103	-0.13	33.52	100	-0.15	33.50	26.93							
Station 8180; 1 June; 46°11' N., 47°44' W.; depth 168 m.; dynamic height 971.052													
0	2.70	32.83	0	2.70	32.83	26.20							
25	2.45	32.90	25	2.45	32.90	26.27							
50	-0.87	33.21	50	-0.87	33.21	26.72							
76	-0.95	33.32	75	-0.95	33.31	26.80							
101	0.39	33.43	100	0.30	33.41	26.83							
151	0.81	33.85	150	0.80	33.83	27.13							
Station 8181; 1 June; 46°09' N., 47°25' W.; depth 686 m.; dynamic height 970.936													
0	2.84	33.18	0	2.84	33.18	26.47							
22	2.73	33.30	25	2.75	33.40	26.65							
45	2.95	33.98	50	2.85	33.98	27.10							
67	1.88	34.03	75	1.85	34.09	27.27							
89	1.83	34.19	100	2.00	34.27	27.41							
133	2.85	34.51	150	2.85	34.53	27.54							
178	2.80	34.58	200	2.90	34.62	27.62							
271	3.33	34.75	300	3.40	34.77	27.69							
365	3.59	34.82	400	3.60	34.81	27.70							
561	3.72	34.84	(600)	3.75	34.84	27.70							
Station 8182; 1 June; 46°09' N., 47°11' W.; depth 1,555 m.; dynamic height 970.903													
0	4.64	33.71	0	4.64	33.71	26.72							
24	4.64	33.73	25	4.65	33.76	26.75							
49	3.22	34.14	50	3.20	34.15	27.21							
73	3.08	34.37	75	3.10	34.38	27.40							
98	3.18	34.50	100	3.20	34.50	27.49							
146	3.29	34.64	150	3.30	34.64	27.59							
195	3.43	34.74	200	3.45	34.74	27.65							
292	3.73	34.82	300	3.75	34.81	27.68							
390	3.85	34.86	400	3.85	34.86	27.71							
584	3.68	34.86	600	3.65	34.86	27.73							
779	3.57	34.88	800	3.55	34.88	27.75							
975	3.49	34.89	1,000	3.50	34.88	27.76							
1,478	3.47	34.89											

## TABLE OF OCEANOGRAPHIC DATA STATIONS OCCUPIED IN 1962—Continued

Observed values				Scaled values				Observed values				Scaled values			
Depth, meters	Temperature, °C.	Salinity, ‰	$\sigma_t$	Depth, meters	Temperature, °C.	Salinity, ‰	$\sigma_t$	Depth, meters	Temperature, °C.	Salinity, ‰	$\sigma_t$	Depth, meters	Temperature, °C.	Salinity, ‰	$\sigma_t$
Station 8183; 1 June; 46°06.5' N., 46°37' W.; depth 669 m.; dynamic height 970.932															
0	4.94	33.75		0	4.94	33.75	26.72	0	5.79	34.11		0	5.79	34.11	26.90
23	5.02	33.79		25	5.00	33.80	26.75	24	5.74	34.12		25	5.75	34.11	26.90
46	4.99	34.27		50	4.95	34.25	27.11	49	6.08	34.53		50	6.10	34.53	27.19
70	3.06	34.16		75	3.10	34.18	27.24	73	5.51	34.62		75	5.50	34.63	27.34
93	4.07	34.45		100	4.00	34.46	27.38	98	5.66	34.75		100	5.65	34.75	27.42
140	3.22	34.49		150	3.55	34.50	27.45	146	5.53	34.84		150	5.50	34.84	27.51
186	5.00	34.84		200	5.00	34.85	27.58	195	5.15	34.90		200	5.10	34.89	27.59
280	5.05	34.96		300	5.00	34.95	27.66	293	4.33	34.87		300	4.30	34.86	27.66
375	4.60	34.97		400	4.50	34.96	27.72	393	4.20	34.92		400	4.15	34.91	27.72
567	3.98	34.92		(600)	3.90	34.90	27.74	593	3.60	34.87		600	3.60	34.86	27.74
								789	3.55	34.86		800	3.55	34.85	27.73
								985	3.49	34.88		1,000	3.50	34.87	27.76
								1,483	3.51	34.88					
Station 8184; 1 June; 46°04' N., 46°01' W.; depth 2,103 m.; dynamic height 970.913															
0	4.62	33.70		0	4.62	33.70	26.71	0	5.96	34.09		0	5.96	34.09	26.86
25	4.62	33.69		25	4.62	33.69	26.70	25	5.88	34.11		25	5.88	34.11	26.89
49	2.68	34.23		50	2.70	34.24	27.32	49	4.33	34.41		50	4.33	34.41	27.30
74	2.74	34.39		75	2.75	34.39	27.44	74	4.29	34.51		75	4.30	34.51	27.38
98	2.96	34.46		100	2.95	34.46	27.48	99	4.25	34.57		100	4.25	34.56	27.43
147	3.23	34.57		150	3.55	34.58	27.53	148	4.36	34.74		150	4.35	34.73	27.55
196	4.90	34.89		200	4.90	34.87	27.61	198	3.82	34.75		200	3.80	34.74	27.62
291	3.96	34.85		300	3.95	34.84	27.68	297	3.87	34.87		300	3.85	34.86	27.71
386	3.64	34.85		400	3.65	34.84	27.71	396	3.69	34.88		400	3.70	34.87	27.74
508	3.65	34.84		600	3.65	34.83	27.70	594	3.57	34.85		(600)	3.55	34.84	27.72
761	3.60	34.85		800	3.60	34.85	27.73								
956	3.57	34.87		1,000	3.60	34.86	27.74								
1,451	3.53	34.91													
Station 8185; 2 June; 46°03.5' N., 45°18' W.; depth 2,926 m.; dynamic height 970.926															
0	5.98	34.11		0	5.98	34.11	26.87	0	5.76	34.10		0	5.76	34.10	26.89
23	5.98	34.09		25	6.00	34.09	26.85	25	5.74	34.11		25	5.74	34.11	26.90
46	5.05	34.12		50	5.00	34.15	27.02	51	5.38	34.16		50	5.40	34.15	26.98
69	4.82	34.34		75	4.80	34.36	27.21	76	3.83	34.51		75	3.85	34.50	27.42
92	4.66	34.43		100	4.55	34.46	27.32	102	3.77	34.55		100	3.80	34.54	27.46
138	4.06	34.61		150	4.05	34.64	27.51	152	3.60	34.64		150	3.60	34.63	27.55
184	4.13	34.76		200	4.20	34.79	27.62	203	3.87	34.82		200	3.85	34.80	27.66
276	4.60	34.94		300	4.60	34.94	27.69								
368	4.55	34.96		400	4.45	34.94	27.71								
552	4.12	34.90		600	4.00	34.89	27.72								
740	3.61	34.88		800	3.60	34.87	27.75								
1,035	3.53	34.86		1,000	3.55	34.86	27.74								
1,428	3.48	34.91													
Station 8186; 2 June; 46°02' N., 44°40' W.; depth 3,018 m.; dynamic height 970.970															
0	8.02	34.22		0	8.02	34.22	26.68	0	5.77	34.13		0	5.77	34.13	26.92
28	8.04	34.19		25	8.05	34.19	26.65	25	5.63	34.12		25	5.63	34.12	26.93
55	5.54	34.09		50	5.55	34.09	26.91	50	3.95	34.33		50	3.95	34.33	27.28
83	5.60	34.32		75	5.55	34.24	27.03	74	3.87	34.48		75	3.85	34.48	27.41
110	5.66	34.52		100	5.65	34.44	27.17	99	3.82	34.57		100	3.80	34.57	27.49
166	4.99	34.67		150	5.05	34.62	27.39	149	3.76	34.75		(150)	3.75	34.75	27.63
221	4.81	34.77		200	4.90	34.72	27.49								
333	4.55	34.90		300	4.60	34.85	27.62								
446	4.50	34.94		400	4.50	34.92	27.69								
676	4.08	34.93		600	4.20	34.92	27.73								
892	3.91	34.92		800	4.00	34.92	27.75								
1,104	3.78	34.89		1,000	3.85	34.90	27.74								
1,660	3.45	34.88													
Station 8187; 2 June; 46°23.5' N., 44°50' W.; depth 1,664 m.; dynamic height 970.914															
0	5.79	34.11		0	5.79	34.11	26.90	0	5.79	34.11		0	5.79	34.11	26.90
24	5.74	34.12		25	5.75	34.11	26.90	24	5.74	34.12		25	5.75	34.11	26.90
49	6.08	34.53		50	6.10	34.53	27.19	49	6.08	34.53		50	6.10	34.53	27.19
73	5.51	34.62		75	5.50	34.63	27.34	73	5.51	34.62		75	5.50	34.63	27.34
98	5.66	34.75		100	5.65	34.75	27.42	98	5.66	34.75		100	5.65	34.75	27.42
146	5.53	34.84		150	5.50	34.84	27.51	146	5.53	34.84		150	5.50	34.84	27.51
195	5.15	34.90		200	5.10	34.89	27.59	195	5.15	34.90		200	5.10	34.89	27.59
293	4.33	34.87		300	4.30	34.86	27.66	293	4.33	34.87		300	4.30	34.86	27.66
393	4.20	34.92		400	4.15	34.91	27.72	393	4.20	34.92		400	4.15	34.91	27.72
593	3.60	34.87		600	3.60	34.86	27.74	593	3.60	34.87		600	3.60	34.86	27.74
789	3.55	34.86		800	3.55	34.85	27.73	789	3.55	34.86		800	3.55	34.85	27.73
985	3.49	34.88		1,000	3.50	34.87	27.76	985	3.49	34.88		1,000	3.50	34.87	27.76
1,483	3.51	34.88						1,483	3.51	34.88					
Station 8188; 2 June; 46°29.5' N., 44°52' W.; depth 667 m.; dynamic height 970.900															
0	5.96	34.09		0	5.96	34.09	26.86	0	5.96	34.09		0	5.96	34.09	26.86
25	5.88	34.11		25	5.88	34.11	26.89	25	5.88	34.11		25	5.88	34.11	26.89
49	4.33	34.41		50	4.33	34.41	27.30	49	4.33	34.41		50	4.33	34.41	27.30
74	4.29	34.51		75	4.30	34.51	27.38	74	4.29	34.51		75	4.30	34.51	27.38
99	4.25	34.57		100	4.25	34.56	27.43	99	4.25	34.57		100	4.25	34.56	27.43
148	4.36	34.74		150	4.35	34.73	27.55	148	4.36	34.74		150	4.35	34.73	27.55
198	3.82	34.75		200	3.80	34.74	27.62	198	3.82	34.75		200	3.80	34.74	27.62
297	3.87	34.87		300	3.85	34.86	27.71	297	3.87	34.87		300	3.85	34.86	27.71
396	3.69	34.88		400	3.70	34.87	27.74	396	3.69	34.88		400	3.70	34.87	27.74
594	3.57	34.85		(600)	3.55	34.84	27.72	594	3.57	34.85		(600)	3.55	34.84	27.72
Station 8189; 2 June; 46°35.5' N., 44°52' W.; depth 241 m.; dynamic height 970.907															
0	5.76	34.10		0	5.76	34.10	26.89	0	5.76	34.10		0	5.76	34.10	26.89
25	5.74	34.11		25	5.74	34.11	26.90	25	5.74	34.11		25	5.74	34.11	26.90
51	5.38	34.16		50	5.40	34.15	26.98	51	5.38	34.16		50	5.40	34.15	26.98
76	3.83	34.51		75	3.85	34.50	27.42	76	3.83	34.51		75	3.85	34.50	27.42
102	3.77	34.55		100	3.80	34.54	27.46	102	3.77	34.55		100	3.80	34.54	27.46
152	3.60	34.64		150	3.60	34.63	27.55	152	3.60	34.64		150	3.60	34.63	27.55
203	3.87	34.82		200	3.85	34.80	27.66	203	3.87	34.82		200	3.85	34.80	27.66
Station 8190; 2 June; 46°39.5' N., 44°53' W.; depth 183 m.; dynamic height 970.894															
0	5.77	34.13		0	5.77	34.13	26.92	0	5.77	34.13		0	5.77	34.13	26.92
25	5.63	34.12		25	5.63	34.12	26.93	25	5.63	34.12		25	5.63	34.12	26.93
50	3.95	34.33		50	3.95	34.33	27.28	50	3.95	34.33		50	3.95	34.33	27.28
74	3.87	34.48		75	3.85	34.									

## TABLE OF OCEANOGRAPHIC DATA STATIONS OCCUPIED IN 1962—Continued

Observed values			Scaled values				Observed values			Scaled values			
Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	$\sigma_t$	Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	$\sigma_t$
Station 8192; 2 June; 46°49.5' N., 45°04' W.; depth 141 m.; dynamic height 970.910													
0	5.70	34.05	0	5.70	34.05	26.86	0	5.70	34.05	0	5.70	34.05	26.86
24	5.71	34.07	25	5.70	34.06	26.87	24	5.71	34.07	25	5.70	34.06	26.87
49	5.38	34.09	50	5.15	34.08	26.95	47	1.84	33.98	50	1.85	34.01	27.21
73	3.85	34.23	75	3.85	34.25	27.23	71	2.58	34.20	75	2.70	34.26	27.34
98	3.94	34.46	100	3.95	34.47	27.39	94	3.04	34.43	100	3.05	34.44	27.45
122	3.87	34.61	(125)	3.85	34.62	27.52	142	3.16	34.53	150	3.25	34.55	27.52
							189	3.62	34.69	200	3.65	34.70	27.60
							284	3.85	34.82	300	3.90	34.82	27.68
							379	3.94	34.86	400	3.90	34.85	27.70
							564	3.66	34.86	600	3.65	34.85	27.72
							752	3.59	34.86	800	3.55	34.86	27.74
							940	3.51	34.87	1,000	3.50	34.85	27.74
							1,129	3.47	34.82				
Station 8193; 2 June; 46°48' N., 45°17' W.; depth 223 m.; dynamic height 970.914													
0	6.06	34.14	0	6.06	34.14	26.89	0	6.06	34.14	0	6.06	34.14	26.89
25	6.05	34.11	25	6.05	34.11	26.86	25	6.05	34.11	25	6.05	34.11	26.86
50	4.40	34.18	50	4.40	34.18	27.12	50	4.40	34.18	50	4.40	34.18	27.12
76	4.32	34.26	75	4.30	34.24	27.17	76	4.32	34.26	75	4.30	34.24	27.17
101	4.38	34.43	100	4.40	34.41	27.30	101	4.38	34.43	100	4.40	34.41	27.30
152	3.95	34.67	150	3.95	34.65	27.53	152	3.95	34.67	150	3.95	34.65	27.53
202	3.91	34.81	200	3.90	34.80	27.66	202	3.91	34.81	200	3.90	34.80	27.66
Station 8194; 2 June; 46°46' N., 45°42' W.; depth 283 m.; dynamic height 970.925													
0	5.93	34.02	0	5.93	34.02	26.81	0	5.93	34.02	0	5.93	34.02	26.81
25	5.90	34.02	25	5.90	34.02	26.81	25	5.90	34.02	25	5.90	34.02	26.81
51	5.16	34.08	50	5.20	34.06	26.93	51	5.16	34.08	50	5.20	34.06	26.93
76	4.56	34.27	75	4.60	34.25	27.15	76	4.56	34.27	75	4.60	34.25	27.15
102	4.20	34.43	100	4.25	34.40	27.30	102	4.20	34.43	100	4.25	34.40	27.30
152	3.85	34.59	150	3.85	34.58	27.48	152	3.85	34.59	150	3.85	34.58	27.48
203	3.83	34.79	200	3.85	34.78	27.64	203	3.83	34.79	200	3.85	34.78	27.64
254	3.83	34.81	250	3.85	34.80	27.66	254	3.83	34.81	250	3.85	34.80	27.66
Station 8195; 3 June; 46°46' N., 46°08' W.; depth 320 m.; dynamic height 970.924													
0	6.02	34.07	0	6.02	34.07	26.84	0	6.02	34.07	0	6.02	34.07	26.84
25	5.99	34.08	25	5.99	34.08	26.85	25	5.99	34.08	25	5.99	34.08	26.85
50	5.07	34.16	50	5.07	34.16	27.02	50	5.07	34.16	50	5.07	34.16	27.02
75	4.72	34.21	75	4.72	34.21	27.10	75	4.72	34.21	75	4.72	34.21	27.10
101	4.30	34.33	100	4.30	34.31	27.23	101	4.30	34.33	100	4.30	34.31	27.23
150	4.23	34.69	150	4.23	34.69	27.54	150	4.23	34.69	150	4.23	34.69	27.54
201	3.81	34.75	200	3.80	34.74	27.62	201	3.81	34.75	200	3.80	34.74	27.62
302	3.70	34.84	300	3.70	34.83	27.70	302	3.70	34.84	300	3.70	34.83	27.70
Station 8196; 3 June; 46°45' N., 46°26' W.; depth 640 m.; dynamic height 970.908													
0	5.79	34.06	0	5.79	34.06	26.86	0	5.79	34.06	0	5.79	34.06	26.86
25	5.54	34.06	25	5.54	34.06	26.89	25	5.54	34.06	25	5.54	34.06	26.89
50	2.59	34.12	50	2.59	34.12	27.24	50	2.59	34.12	50	2.59	34.12	27.24
75	2.55	34.28	75	2.55	34.28	27.37	75	2.55	34.28	75	2.55	34.28	27.37
100	4.19	34.53	100	4.19	34.53	27.41	100	4.19	34.53	100	4.19	34.53	27.41
150	3.99	34.68	150	3.99	34.68	27.56	150	3.99	34.68	150	3.99	34.68	27.56
200	3.85	34.77	200	3.85	34.77	27.64	200	3.85	34.77	200	3.85	34.77	27.64
299	3.88	34.83	300	3.90	34.82	27.68	299	3.88	34.83	300	3.90	34.82	27.68
398	3.85	34.85	400	3.85	34.84	27.69	398	3.85	34.85	400	3.85	34.84	27.69
546	3.66	34.87	(550)	3.65	34.87	27.74	546	3.66	34.87	(550)	3.65	34.87	27.74
Station 8197; 3 June; 46°44.5' N., 46°48' W.; depth 1,262 m.; dynamic height 970.916													
0	3.17	33.65	0	3.17	33.65	26.82	0	3.17	33.65	0	3.17	33.65	26.82
24	3.36	33.70	25	3.35	33.71	26.85	24	3.36	33.70	25	3.35	33.71	26.85
47	1.84	33.98	50	1.85	34.01	27.21	47	1.84	33.98	50	1.85	34.01	27.21
71	2.58	34.20	75	2.70	34.26	27.34	71	2.58	34.20	75	2.70	34.26	27.34
94	3.04	34.43	100	3.05	34.44	27.45	94	3.04	34.43	100	3.05	34.44	27.45
142	3.16	34.53	150	3.25	34.55	27.52	142	3.16	34.53	150	3.25	34.55	27.52
189	3.62	34.69	200	3.65	34.70	27.60	189	3.62	34.69	200	3.65	34.70	27.60
284	3.85	34.82	300	3.90	34.82	27.68	284	3.85	34.82	300	3.90	34.82	27.68
379	3.94	34.86	400	3.90	34.85	27.70	379	3.94	34.86	400	3.90	34.85	27.70
564	3.66	34.86	600	3.65	34.85	27.72	564	3.66	34.86	600	3.65	34.85	27.72
752	3.59	34.86	800	3.55	34.86	27.74	752	3.59	34.86	800	3.55	34.86	27.74
940	3.51	34.87	1,000	3.50	34.85	27.74	940	3.51	34.87	1,000	3.50	34.85	27.74
1,129	3.47	34.82					1,129	3.47	34.82				
Station 8198; 3 June; 46°48' N., 47°04' W.; depth 686 m.; dynamic height 971.022													
0	1.41	32.94	0	1.41	32.94	26.37	0	1.41	32.94	0	1.41	32.94	26.37
24	0.95	33.01	25	0.95	33.02	26.48	24	0.95	33.01	25	0.95	33.02	26.48
48	0.92	33.36	50	0.95	33.38	26.76	48	0.92	33.36	50	0.95	33.38	26.76
72	1.53	33.63	75	1.50	33.63	26.93	72	1.53	33.63	75	1.50	33.63	26.93
96	0.42	33.66	100	0.45	33.67	27.03	96	0.42	33.66	100	0.45	33.67	27.03
145	1.22	34.03	150	1.30	34.04	27.27	145	1.22	34.03	150	1.30	34.04	27.27
193	1.92	34.24	200	2.00	34.26	27.40	193	1.92	34.24	200	2.00	34.26	27.40
289	2.96	34.65	300	3.00	34.65	27.63	289	2.96	34.65	300	3.00	34.65	27.63
384	3.26	34.75	400	3.30	34.74	27.67	384	3.26	34.75	400	3.30	34.74	27.67
574	3.58	34.78	(600)	3.60	34.77	27.67	574	3.58	34.78	(600)	3.60	34.77	27.67
Station 8199; 3 June; 46°48' N., 47°16' W.; depth 347 m.; dynamic height 971.064													
0	1.49	32.97	0	1.49	32.97	26.41	0	1.49	32.97	0	1.49	32.97	26.41
25	1.17	33.05	25	1.17	33.05	26.49	25	1.17	33.05	25	1.17	33.05	26.49
50	0.36	33.24	50	0.36	33.24	26.69	50	0.36	33.24	50	0.36	33.24	26.69
75	-0.64	33.28	75	-0.64	33.28	26.77	75	-0.64	33.28	75	-0.64	33.28	26.77
100	0.52	33.48	100	0.52	33.48	26.87	100	0.52	33.48	100	0.52	33.48	26.87
150	0.22	33.76	150	0.22	33.76	27.12	150	0.22	33.76	150	0.22	33.76	27.12
201	1.93	34.23	200	1.90	34.21	27.37	201	1.93	34.23	200	1.90	34.21	27.37
301	2.77	34.55	300	2.75	34.53	27.55	301	2.77	34.55	300	2.75	34.53	27.55
Station 8200; 3 June; 46°48' N., 47°30' W.; depth 179 m.; dynamic height 971.081													
0	2.32	32.80	0	2.32	32.80	26.21	0	2.32	32.80	0	2.32	32.80	26.21
25	2.42	32.90	25	2.42	32.89	26.28	25	2.42	32.90	25	2.42	32.89	26.28
51	-0.02	33.18	50	0.15	33.14	26.62	51	-0.02	33.18	50	0.15	33.14	26.62
76	-0.16	33.38	75	-0.15	33.35	26.80	76	-0.16	33.38	75	-0.15	33.35	26.80
101	0.08	33.57	100	0.05	33.54	26.95	101	0.08	33.57	100	0.05	33.54	26.95
152	1.00	33.92	150	1.00	33.90	27.18	152	1.00	33.92	150	1.00	33.90	27.18
Station 8201; 3 June; 46°48' N., 48°04' W.; depth 123 m.; dynamic height 971.100													
0	2.98	32.65	0	2.98	32.65	26.04	0	2.98	32.65	0	2.98	32.65	26.04
26	2.54	32.71	25	2.55	32.69	26.10	26	2.54	32.71	25	2.55	32.69	26.10
52													

## TABLE OF OCEANOGRAPHIC DATA STATIONS OCCUPIED IN 1962—Continued

Observed values			Scaled values				Observed values			Scaled values			
Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	$\sigma_t$	Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	$\sigma_t$
Station 8202; 3 June; 46°48.5' N., 48°43' W.; depth 80 m.; dynamic height 971.107													
0	3.24	32.74	0	3.24	32.74	26.09							
25	2.90	32.78	25	2.90	32.78	26.15							
51	1.11	32.96	50	1.25	32.94	26.40							
76	0.32	33.15	75	0.40	33.13	26.60							
Station 8203; 3 June; 47°13' N., 49°13' W.; depth 90 m.; dynamic height 971.106													
0	2.51	32.76	0	2.51	32.76	26.16							
26	2.48	32.74	25	2.50	32.74	26.15							
53	0.79	32.88	50	0.95	32.96	26.43							
79	0.19	33.10	75	0.30	33.09	26.57							
Station 8204; 3 June; 47°13.5' N., 48°38' W.; depth 119 m.; dynamic height 971.107													
0	2.46	32.64	0	2.46	32.64	26.07							
26	2.30	32.63	25	2.30	32.63	26.08							
52	0.63	32.89	50	0.80	32.88	26.38							
78	0.08	33.14	75	0.15	33.12	26.60							
104	-0.26	33.28	100	-0.20	33.26	26.73							
Station 8205; 4 June; 47°15.5' N., 48°08' W.; depth 165 m.; dynamic height 971.087													
0	2.26	32.77	0	2.26	32.77	26.19							
26	1.19	32.84	25	1.25	32.83	26.31							
52	-0.61	33.03	50	-0.40	33.01	26.55							
78	-0.89	33.23	75	-0.90	33.22	26.73							
104	-0.67	33.35	100	-0.70	33.33	26.81							
156	0.09	33.62	150	0.00	33.59	26.99							
Station 8206; 4 June; 47°17' N., 47°44' W.; depth 216 m.; dynamic height 971.087													
0	1.79	32.77	0	1.79	32.77	26.23							
25	0.45	32.88	25	0.45	32.88	26.40							
50	-0.94	33.06	50	-0.94	33.06	26.60							
76	-1.03	33.18	75	-1.05	33.18	26.70							
101	-0.74	33.27	100	-0.75	33.27	26.76							
152	0.16	33.54	150	0.15	33.52	26.93							
202	0.83	33.87	200	0.80	33.86	27.16							
Station 8207; 4 June; 47°17' N., 47°13' W.; depth 293 m.; dynamic height 971.059													
0	1.83	32.78	0	1.83	32.78	26.23							
25	1.61	32.86	25	1.61	32.86	26.31							
51	-0.42	33.14	50	-0.25	33.14	26.64							
76	-0.48	33.33	75	-0.50	33.32	26.79							
102	0.65	33.54	100	0.65	33.52	26.90							
152	0.19	33.76	150	0.20	33.75	27.11							
203	1.42	34.08	200	1.35	34.07	27.30							
254	2.22	34.39	250	2.15	34.37	27.48							
Station 8208; 4 June; 47°18' N., 46°54' W.; depth 1,097 m.; dynamic height 970.953													
0	2.27	33.43	0	2.27	33.43	26.72							
26	2.18	33.44	25	2.20	33.44	26.73							
52	-0.38	33.50	50	-0.35	33.49	26.92							
78	0.60	33.75	75	0.45	33.72	27.07							
104	1.28	33.88	100	1.20	33.86	27.14							
155	2.03	34.32	150	1.95	34.28	27.42							
207	2.65	34.51	200	2.55	34.48	27.53							
311	3.37	34.70	300	3.30	34.68	27.62							
414	3.60	34.84	400	3.60	34.83	27.71							
622	3.63	34.87	600	3.65	34.87	27.74							
826	3.57	34.85	800	3.60	34.85	27.73							
1,029	3.43	34.89	1,000	3.45	34.88	27.76							
Station 8209; 4 June; 47°18' N., 46°32' W.; depth 649 m.; dynamic height 970.899													
0	5.46	33.93	0	5.46	33.93	26.80							
24	5.19	33.93	25	5.05	33.93	26.84							
48	3.49	34.18	50	3.50	34.22	27.24							
73	4.52	34.50	75	4.50	34.51	27.37							
97	4.17	34.58	100	4.15	34.59	27.46							
146	3.54	34.63	150	3.50	34.63	27.56							
194	3.46	34.72	200	3.45	34.72	27.64							
292	3.87	34.83	300	3.85	34.83	27.68							
390	3.72	34.86	400	3.70	34.86	27.73							
589	3.54	34.89	(600)	3.55	34.89	27.76							
Station 8210; 4 June; 47°20.5' N., 45°52' W.; depth 311 m.; dynamic height 970.942													
0	6.15	33.98	0	6.15	33.98	26.74							
25	5.86	33.99	25	5.86	33.99	26.79							
50	5.62	34.01	50	5.62	34.01	26.84							
76	4.26	34.09	75	4.35	34.08	27.03							
101	3.75	34.20	100	3.75	34.20	27.20							
152	4.18	34.55	150	4.20	34.54	27.42							
202	3.96	34.70	200	4.00	34.69	27.56							
278	3.85	34.83	275	3.85	34.83	27.68							
Station 8211; 4 June; 47°22' N., 45°39' W.; depth 274 m.; dynamic height 970.926													
0	6.12	33.96	0	6.12	33.96	26.74							
25	5.83	33.97	25	5.83	33.97	26.78							
50	4.64	34.13	50	4.64	34.13	27.05							
76	4.28	34.24	75	4.30	34.24	27.17							
101	4.38	34.39	100	4.40	34.38	27.27							
151	3.90	34.59	150	3.90	34.59	27.49							
202	3.86	34.73	200	3.85	34.73	27.60							
252	3.80	34.79	250	3.80	34.79	27.66							
Station 8212; 4 June; 47°22.5' N., 45°22' W.; depth 229 m.; dynamic height 970.931													
0	6.15	33.98	0	6.15	33.98	26.74							
25	5.92	33.94	25	5.92	33.94	26.75							
50	4.71	34.11	50	4.71	34.11	27.02							
74	4.50	34.19	75	4.50	34.20	27.12							
99	4.44	34.34	100	4.45	34.35	27.24							
148	3.79	34.57	150	3.80	34.58	27.49							
198	3.81	34.69	(200)	3.80	34.70	27.59							

# TABLE OF OCEANOGRAPHIC DATA STATIONS OCCUPIED IN 1962—Continued

Observed values			Scaled values				Observed values			Scaled values			
Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	$\sigma_t$	Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	$\sigma_t$
Station 8213; 4 June; 47°22' N., 45°02' W.; depth 174 m.; dynamic height 970.919													
0	6.11	33.97	0	6.11	33.97	26.70	0	4.15	34.17	0	4.15	34.17	27.14
26	5.97	33.99	25	6.00	33.99	26.77	23	3.52	34.22	25	3.35	34.22	27.25
53	4.45	34.13	50	4.65	34.11	27.03	46	2.20	34.27	50	2.20	34.30	27.42
79	3.77	34.35	75	3.80	34.32	27.29	69	2.41	34.43	75	2.50	34.46	27.52
106	4.15	34.56	100	4.10	34.52	27.42	92	2.71	34.55	100	2.80	34.57	27.58
158	3.82	34.66	150	3.90	34.65	27.54	138	3.08	34.67	150	3.10	34.68	27.64
							184	3.23	34.70	200	3.30	34.72	27.66
							277	3.53	34.79	300	3.50	34.79	27.69
							370	3.48	34.81	400	3.50	34.82	27.72
							557	3.46	34.86	600	3.45	34.85	27.74
							759	3.53	34.83	800	3.50	34.83	27.72
							970	3.48	34.85	(1,000)	3.45	34.85	27.74
Station 8214; 4 June; 47°27' N., 45°12' W.; depth 219 m.; dynamic height 970.941													
0	6.14	33.97	0	6.14	33.97	26.74	0	5.09	34.30	0	5.10	34.30	27.14
26	6.08	34.00	25	6.10	34.00	26.77	26	5.07	34.32	25	5.10	34.31	27.15
51	4.64	34.06	50	4.80	34.05	26.97	51	3.83	34.56	50	3.95	34.55	27.45
76	4.43	34.10	75	4.45	34.09	27.03	77	3.72	34.60	75	3.75	34.60	27.51
102	3.86	34.24	100	3.85	34.22	27.21	103	3.61	34.62	100	3.65	34.61	27.53
153	3.83	34.55	150	3.85	34.53	27.44	153	3.34	34.74	150	3.35	34.74	27.66
204	3.86	34.69	200	3.85	34.68	27.56	205	3.46	34.80	200	3.45	34.80	27.70
							306	3.54	34.83	300	3.55	34.82	27.71
							406	3.52	34.86	400	3.50	34.85	27.74
							603	3.52	34.81	600	3.50	34.81	27.71
							809	3.50	34.83	800	3.50	34.83	27.72
							1,017	3.43	34.89	1,000	3.45	34.88	27.76
Station 8215; 5 June; 47°39.5' N., 45°38' W.; depth 302 m.; dynamic height 970.956													
0	5.77	33.96	0	5.77	33.96	26.78	0	5.19	34.43	0	5.19	34.43	27.22
25	5.69	33.99	25	5.69	33.99	26.82	25	5.19	34.38	25	5.19	34.38	27.18
49	5.48	33.99	50	5.45	33.99	26.84	50	5.15	34.42	50	5.15	34.42	27.22
74	4.82	34.03	75	4.80	34.03	26.95	75	3.84	34.59	75	3.84	34.59	27.50
98	4.68	34.09	100	4.65	34.11	27.03	100	3.51	34.66	100	3.51	34.66	27.59
148	4.20	34.46	150	4.20	34.47	27.37	150	3.49	34.77	150	3.49	34.77	27.67
197	4.16	34.64	200	4.15	34.65	27.51	200	3.71	34.82	200	3.71	34.82	27.70
246	3.82	34.75	(250)	3.80	34.76	27.64	300	3.58	34.84	300	3.58	34.84	27.72
							399	3.64	34.89	400	3.65	34.88	27.74
							598	3.56	34.87	600	3.55	34.87	27.75
							800	3.50	34.87	800	3.50	34.87	27.76
							1,002	3.41	34.89	1,000	3.40	34.89	27.78
Station 8216; 5 June; 47°44' N., 45°53' W.; depth 443 m.; dynamic height 970.906													
0	6.34	34.03	0	6.34	34.03	26.76	0	4.68	34.50	0	4.68	34.50	27.33
25	6.11	34.09	25	6.11	34.09	26.84	26	4.67	34.49	25	4.70	34.49	27.32
50	5.31	34.34	50	5.31	34.34	27.14	52	4.43	34.52	50	4.45	34.52	27.38
75	4.95	34.48	75	4.95	34.48	27.29	78	4.03	34.54	75	4.10	34.54	27.43
100	3.88	34.48	100	3.88	34.48	27.41	105	3.59	34.56	100	3.65	34.56	27.49
150	3.90	34.68	150	3.90	34.68	27.56	156	3.17	34.64	150	3.20	34.63	27.59
200	3.51	34.73	200	3.51	34.73	27.64	208	3.22	34.79	200	3.20	34.78	27.71
300	3.97	34.87	300	3.97	34.87	27.71	313	3.48	34.84	300	3.45	34.83	27.72
400	3.61	34.83	400	3.61	34.83	27.71	418	3.44	34.84	400	3.45	34.84	27.73
							629	3.47	34.85	600	3.45	34.85	27.74
							830	3.48	34.82	800	3.50	34.82	27.72
							1,027	3.43	34.86	1,000	3.45	34.85	27.74
							1,550	3.35	34.93				
Station 8217; 5 June; 47°51.5' N., 46°10' W.; depth 1,052 m.; dynamic height 970.887													
0	5.31	34.16	0	5.31	34.16	27.00	0	4.68	34.50	0	4.68	34.50	27.33
25	4.87	34.25	25	4.87	34.25	27.12	26	4.67	34.49	25	4.70	34.49	27.32
50	3.83	34.53	50	3.83	34.53	27.45	52	4.43	34.52	50	4.45	34.52	27.38
75	3.57	34.57	75	3.57	34.57	27.51	78	4.03	34.54	75	4.10	34.54	27.43
100	3.36	34.58	100	3.36	34.58	27.53	105	3.59	34.56	100	3.65	34.56	27.49
151	3.43	34.70	150	3.45	34.69	27.61	156	3.17	34.64	150	3.20	34.63	27.59
201	3.47	34.77	200	3.45	34.76	27.67	208	3.22	34.79	200	3.20	34.78	27.71
301	3.67	34.83	300	3.65	34.83	27.70	313	3.48	34.84	300	3.45	34.83	27.72
401	3.63	34.83	400	3.65	34.83	27.70	418	3.44	34.84	400	3.45	34.84	27.73
599	3.56	34.81	600	3.55	34.81	27.70	629	3.47	34.85	600	3.45	34.85	27.74
797	3.48	34.83	800	3.50	34.83	27.72	830	3.48	34.82	800	3.50	34.82	27.72
994	3.43	34.86	(1,000)	3.40	34.86	27.76	1,027	3.43	34.86	1,000	3.45	34.85	27.74
							1,550	3.35	34.93				
Station 8221; 8 June; 49°00' N., 45°00' W.; depth 1,628 m.; dynamic height 970.870													
0	4.68	34.50	0	4.68	34.50	27.33	0	4.68	34.50	0	4.68	34.50	27.33
26	4.67	34.49	25	4.67	34.49	27.32	26	4.67	34.49	25	4.70	34.49	27.32
52	4.43	34.52	50	4.43	34.52	27.38	52	4.43	34.52	50	4.45	34.52	27.38
78	4.03	34.54	75	4.03	34.54	27.43	78	4.03	34.54	75	4.10	34.54	27.43
105	3.59	34.56	100	3.59	34.56	27.49	105	3.59	34.56	100	3.65	34.56	27.49
156	3.17	34.64	150	3.17	34.64	27.59	156	3.17	34.64	150	3.20	34.63	27.59
208	3.22	34.79	200	3.22	34.79	27.71	208	3.22	34.79	200	3.20	34.78	27.71
313	3.48	34.84	300	3.45	34.83	27.72	313	3.48	34.84	300	3.45	34.83	27.72
418	3.44	34.84	400	3.45	34.84	27.73	418	3.44	34.84	400	3.45	34.84	27.73
629	3.47	34.85	600	3.45	34.85	27.74	629	3.47	34.85	600	3.45	34.85	27.74
830	3.48	34.82	800	3.50	34.82	27.72	830	3.48	34.82	800	3.50	34.82	27.72
1,027	3.43	34.86	1,000	3.45	34.85	27.74	1,027	3.43	34.86	1,000	3.45	34.85	27.74
1,550	3.35	34.93					1,550	3.35	34.93				

# TABLE OF OCEANOGRAPHIC DATA

## STATIONS OCCUPIED IN 1962—Continued

Observed values			Scaled values				Observed values			Scaled values			
Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	$\sigma_t$	Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	$\sigma_t$
Station 8222; 8 June; 49°09.5' N., 45°40' W.; depth 2,743 m.; dynamic height 970.846													
0	5.65	34.55	0	5.65	34.55	27.26	0	3.59	33.95	0	3.59	33.95	27.01
25	5.48	34.53	25	5.48	34.53	27.27	25	3.55	34.00	25	3.55	34.00	27.06
50	3.49	34.62	50	3.49	34.62	27.56	50	2.48	34.18	50	2.48	34.18	27.30
75	3.63	34.66	75	3.63	34.66	27.58	74	2.15	34.31	75	2.15	34.32	27.44
100	3.35	34.66	100	3.35	34.66	27.60	99	2.33	34.47	100	2.35	34.47	27.54
149	3.23	34.72	150	3.25	34.72	27.65	148	2.88	34.62	150	2.90	34.62	27.62
199	3.32	34.77	200	3.30	34.77	27.70	197	3.22	34.73	200	3.25	34.73	27.69
298	3.41	34.84	300	3.40	34.84	27.74	296	3.52	34.80	300	3.55	34.80	27.66
396	3.45	34.85	400	3.45	34.85	27.74	393	3.61	34.83	400	3.60	34.83	27.71
592	3.44	34.84	600	3.45	34.84	27.73	589	3.50	34.81	600	3.50	34.81	27.73
791	3.43	34.87	800	3.45	34.87	27.76	786	3.44	34.85	800	3.45	34.85	27.74
991	3.40	34.88	1,000	3.40	34.88	27.77	983	3.41	34.81	1,000	3.40	34.81	27.72
1,514	3.38	34.92					1,489	3.44	34.89				
Station 8223; 9 June; 49°20' N., 46°20' W.; depth 3,383 m.; dynamic height 970.882													
0	6.40	34.57	0	6.40	34.57	27.18	0	2.66	33.29	0	2.66	33.29	26.57
26	6.40	34.57	25	6.40	34.57	27.18	25	2.39	33.83	25	2.39	33.83	27.03
52	6.38	34.56	50	6.40	34.56	27.17	50	0.56	33.89	50	0.56	33.89	27.20
78	4.15	34.62	75	6.20	34.61	27.27	75	1.62	34.14	75	1.52	34.14	27.34
105	3.90	34.71	100	3.95	34.70	27.54	100	2.28	34.36	100	2.28	34.36	27.46
156	4.10	34.80	150	4.10	34.79	27.63	150	2.64	34.49	150	2.64	34.49	27.53
208	3.91	34.82	200	3.95	34.82	27.67	200	2.75	34.56	200	2.75	34.56	27.58
312	3.79	34.84	300	3.80	34.84	27.70	299	3.03	34.64	300	3.05	34.64	27.62
413	3.69	34.87	400	3.70	34.86	27.73	373	3.18	34.68				
616	3.60	34.86	600	3.60	34.86	27.74							
821	3.56	34.86	800	3.55	34.86	27.74							
1,028	3.50	34.87	1,000	3.50	34.87	27.76							
1,542	3.43	34.89											
Station 8224; 9 June; 48°59' N., 46°42' W.; depth 2,835 m.; dynamic height 970.867													
0	5.45	34.64	0	5.45	34.64	27.36	0	2.13	32.96	0	2.13	32.96	26.35
26	5.43	34.65	25	5.45	34.65	27.36	25	1.76	32.97	25	1.76	32.97	26.39
53	4.36	34.58	50	5.40	34.58	27.31	49	1.15	33.45	50	1.00	33.46	26.73
79	3.79	34.70	75	3.80	34.68	27.57	74	-0.32	33.48	75	-0.30	33.51	26.94
106	3.86	34.75	100	3.85	34.74	27.61	99	0.42	33.76	100	0.45	33.78	27.11
158	3.42	34.74	150	3.45	34.74	27.65	148	1.53	34.15	150	1.60	34.16	27.35
211	3.64	34.78	200	3.60	34.77	27.67	198	2.40	34.40	200	2.40	34.41	27.49
315	3.72	34.81	300	3.75	34.80	27.67	272	3.00	34.68				
416	3.62	34.87	400	3.65	34.86	27.73							
617	3.48	34.85	600	3.50	34.85	27.74							
826	3.45	34.83	800	3.45	34.83	27.73							
1,025	3.45	34.83	1,000	3.45	34.83	27.73							
1,542	3.41	34.85											
Station 8225; 9 June; 48°38' N., 47°04' W.; depth 2,378 m.; dynamic height 970.873													
0	6.39	34.57	0	6.39	34.57	27.18	0	1.94	32.64	0	1.94	32.64	26.11
23	6.33	34.60	25	6.30	34.60	27.22	25	1.47	32.68	25	1.47	32.68	26.15
47	5.98	34.60	50	5.65	34.60	27.30	50	0.20	32.71	50	0.20	32.71	26.27
70	4.00	34.63	75	3.90	34.64	27.53	75	0.81	32.92	75	0.81	32.92	26.41
94	3.56	34.68	100	3.50	34.68	27.60	100	-0.97	33.19	100	-0.91	33.19	26.71
141	3.36	34.73	150	3.35	34.75	27.67	150	-0.32	33.50	150	-0.32	33.50	26.93
188	3.44	34.82	200	3.45	34.82	27.70	200	0.20	33.80	200	0.20	33.80	27.15
282	3.54	34.82	300	3.55	34.81	27.72							
376	3.48	34.77	400	3.45	34.78	27.68							
573	3.48	34.82	600	3.45	34.82	27.72							
758	3.41	34.82	800	3.40	34.83	27.73							
957	3.39	34.88	1,000	3.40	34.88	27.77							
1,465	3.34	34.89											
Station 8226; 9 June; 48°16.5' N., 47°22' W.; depth 1,646 m.; dynamic height 970.888													
0	3.59	33.95	0	3.59	33.95	27.01	0	2.35	33.75	0	2.35	33.75	26.82
25	3.55	34.00	25	3.55	34.00	27.06	25	2.48	34.18	25	2.48	34.18	27.30
50	2.48	34.18	50	2.48	34.18	27.30	50	2.15	34.31	50	2.15	34.32	27.44
74	2.15	34.31	75	2.15	34.32	27.44	74	2.33	34.47	75	2.35	34.47	27.54
99	2.33	34.47	100	2.35	34.47	27.54	99	2.88	34.62	100	2.90	34.62	27.62
148	2.88	34.62	150	2.90	34.62	27.62	148	3.22	34.73	150	3.25	34.73	27.69
197	3.22	34.73	200	3.25	34.73	27.69	197	3.52	34.80	200	3.55	34.80	27.66
296	3.52	34.80	300	3.55	34.80	27.66	296	3.61	34.83	300	3.60	34.83	27.71
393	3.61	34.83	400	3.60	34.83	27.71	393	3.50	34.81	400	3.50	34.81	27.73
589	3.50	34.81	600	3.50	34.81	27.73	589	3.44	34.85	600	3.45	34.85	27.74
786	3.44	34.85	800	3.45	34.85	27.74	786	3.41	34.81	800	3.40	34.81	27.72
983	3.41	34.81	1,000	3.40	34.81	27.72	983	3.44	34.89	1,000	3.44	34.89	27.77
1,489	3.44	34.89											
Station 8227; 9 June; 48°00' N., 47°35' W.; depth 393 m.; dynamic height 970.943													
0	2.66	33.29	0	2.66	33.29	26.57	0	2.39	33.83	0	2.39	33.83	27.03
25	2.39	33.83	25	2.39	33.83	27.03	25	0.56	33.89	25	0.56	33.89	27.20
50	0.56	33.89	50	0.56	33.89	27.20	50	1.62	34.14	50	1.52	34.14	27.34
75	1.62	34.14	75	1.52	34.14	27.34	75	2.28	34.36	75	2.28	34.36	27.46
100	2.28	34.36	100	2.28	34.36	27.46	100	2.64	34.49	100	2.64	34.49	27.53
150	2.64	34.49	150	2.64	34.49	27.53	150	2.75	34.56	150	2.75	34.56	27.58
200	2.75	34.56	200	2.75	34.56	27.58	200	3.03	34.64	200	3.05	34.64	27.62
299	3.03	34.64	300	3.05	34.64	27.62	299	3.18	34.68	300	3.18	34.68	27.67
373	3.18	34.68											
Station 8228; 9 June; 47°47' N., 47°45' W.; depth 311 m.; dynamic height 970.016													
0	2.13	32.96	0	2.13	32.96	26.35	0	1.76	32.97	0	1.76	32.97	26.39
25	1.76	32.97	25	1.76	32.97	26.39	25	1.15	33.45	25	1.00	33.46	26.73
49	1.15	33.45	50	1.00	33.46	26.73	49	-0.32	33.48	50	-0.30	33.51	26.94
74	-0.32	33.48	75	-0.30	33.51	26.94	74	0.42	33.76	75	0.45	33.78	27.11
99	0.42	33.76	100	0.45	33.78	27.11	99	1.53	34.15	100	1.60	34.16	27.35
148	1.53	34.15	150	1.60	34.16	27.35	148	2.40	34.40	150	2.40	34.41	27.49
198	2.40	34.40	200	2.40	34.41	27.49	198	3.00	34.68	200	3.00	34.68	27.67
272	3.00	34.68											
Station 8229; 9 June; 47°44.5' N., 48°12' W.; depth 247 m.; dynamic height 971.106													
0	1.94	32.64	0	1.94	32.64	26.11	0	1.47	32.68	0	1.47	32.68	26.15
25	1.47	32.68	25	1.47	32.68	26.15	25	0.20	32.71	25	0.20	32.71	26.27
50	0.20	32.71	50	0.20	32.71	26.27	50	0.81	32.92	50	0.81	32.92	26.41
75	0.81	32.92	75	0.81	32.92	26.41	75	-0.97	33.19	75	-0.91	33.19	26.71
100	-0.97	33.19	100	-0.91	33.19	26.71	100	-0.32	33.50	100	-0.32	33.50	26.93
150	-0.32	33.50	150	-0.32	33.50	26.93	150	0.20	33.80	150	0.20	33.80	27.15
200	0.20	33.80	200	0.20	33.80	27.15							
Station 8230; 9 June; 47°42' N., 48°35' W.; depth 201 m.; dynamic height 971.089													
0	2.35	32.71	0	2.35	32.71	26.13	0	2.35	32.71	0	2.35	32.71	26.13
26	2.35	32.71	25	2.35	32.71	26.13	25	-0.64	33.02	25	-0.35	33.00	26.53
52	-0.64	33.02	50	-0.35	33.00	26.53	52	-0.94	33.16	50	-0.90	33.15	26.68
78	-0.94	33.16	75	-0.90	33.15	26.68	78	-0.54	33.39	75	-0.60	33.36	26.82
104	-0.54	33.39	100	-0.60	33.36								

# TABLE OF OCEANOGRAPHIC DATA STATIONS OCCUPIED IN 1962—Continued

Observed values			Scaled values				Observed values			Scaled values			
Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	$\sigma_t$	Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	$\sigma_t$
Station 8231; 10 June; 47°39.5' N., 48°58' W.; depth 168 m.; dynamic height 971.102													
0	2.33	32.67	0	2.33	32.67	26.11	0	5.94	34.63	0	5.94	34.63	27.29
26	2.30	32.65	25	2.30	32.65	26.10	24	5.61	34.63	25	5.60	34.63	27.33
51	-0.36	33.00	50	-0.15	32.97	26.50	50	5.44	34.61	50	5.44	34.61	27.34
77	-0.89	33.13	75	-0.90	33.12	26.65	74	4.05	34.67	75	4.00	34.66	27.57
103	-0.87	33.21	100	-0.90	33.20	26.72	100	3.65	34.66	100	3.65	34.66	27.57
154	-0.26	33.44	150	-0.30	33.42	26.87	149	3.70	34.79	150	3.70	34.79	27.67
							199	3.36	34.79	200	3.35	34.79	27.70
							300	3.64	34.87	300	3.64	34.87	27.74
							400	3.50	34.87	400	3.48	34.87	27.76
							603	3.47	34.87	600	3.45	34.87	27.76
							801	3.44	34.87	800	3.45	34.87	27.76
							998	3.41	34.87	1,000	3.40	34.87	27.77
							1,421	3.42	34.91				
Station 8232; 10 June; 47°47.5' N., 48°52' W.; depth 210 m.; dynamic height 971.078													
0	2.03	32.63	0	2.03	32.63	26.10	0	5.90	34.51	0	5.90	34.51	27.20
24	1.28	32.78	25	1.25	32.79	26.28	23	5.34	34.58	25	5.35	34.58	27.32
49	0.44	32.89	50	0.30	32.91	26.43	47	5.41	34.61	50	5.40	34.61	27.34
74	-1.11	33.19	75	-1.10	33.20	26.72	70	5.39	34.62	75	5.35	34.63	27.36
98	-0.80	33.30	100	-0.75	33.32	26.80	94	4.49	34.68	100	4.45	34.69	27.51
147	-0.30	33.59	150	-0.20	33.63	27.03	140	4.13	34.74	150	4.10	34.75	27.60
196	1.30	34.07	(200)	1.40	34.10	27.32	187	4.04	34.79	200	4.00	34.79	27.64
							282	3.65	34.83	300	3.60	34.84	27.72
							375	3.53	34.87	400	3.50	34.86	27.75
							565	3.45	---	600	3.45	34.85	27.74
							754	3.45	34.84	800	3.45	34.85	27.74
							942	3.43	34.88	1,000	3.45	34.88	27.76
							1,426	3.46	34.91				
Station 8233; 10 June; 48°02' N., 48°42' W.; depth 296 m.; dynamic height 971.006													
0	2.31	33.24	0	2.31	33.24	26.56	0	5.90	34.51	0	5.90	34.51	27.20
27	2.26	33.26	25	2.25	33.28	26.60	26	5.34	34.58	25	5.35	34.58	27.32
44	1.97	33.52	50	1.85	33.53	26.83	47	5.41	34.61	50	5.40	34.61	27.34
70	1.10	33.61	75	1.05	33.68	27.00	70	5.39	34.62	75	5.35	34.63	27.36
94	0.92	33.88	100	1.00	33.95	27.22	94	4.49	34.68	100	4.45	34.69	27.51
141	2.04	34.31	150	2.15	34.33	27.44	140	4.13	34.74	150	4.10	34.75	27.60
188	2.36	34.38	200	2.45	34.41	27.48	187	4.04	34.79	200	4.00	34.79	27.64
282	2.85	34.62					282	3.65	34.83	300	3.60	34.84	27.72
							375	3.53	34.87	400	3.50	34.86	27.75
							565	3.45	---	600	3.45	34.85	27.74
							754	3.45	34.84	800	3.45	34.85	27.74
							942	3.43	34.88	1,000	3.45	34.88	27.76
							1,426	3.46	34.91				
Station 8234; 10 June; 48°11' N., 48°34' W.; depth 580 m.; dynamic height 970.948													
0	2.52	33.34	0	2.52	33.34	26.62	0	4.91	34.59	0	4.91	34.59	27.38
23	2.43	33.37	25	2.35	33.37	26.66	26	4.45	34.60	25	4.45	34.59	27.43
47	1.82	33.62	50	1.75	33.68	26.85	52	4.29	34.62	50	4.30	34.61	27.47
70	1.42	34.00	75	1.45	34.05	27.27	78	3.60	34.71	75	3.70	34.70	27.60
94	1.70	34.24	100	1.75	34.27	27.43	103	3.34	34.76	100	3.35	34.76	27.68
140	2.23	34.36	150	2.30	34.39	27.56	154	3.40	34.74	150	3.40	34.74	27.66
187	2.40	34.50	200	2.45	34.54	27.58	206	3.41	34.81	200	3.40	34.80	27.71
283	2.97	34.68	300	3.00	34.68	27.65	309	3.52	34.85	300	3.50	34.85	27.74
380	3.01	34.69	400	3.00	34.70	27.67	412	3.42	34.82	400	3.45	34.82	27.72
580	3.32	34.78					619	3.42	34.87	600	3.40	34.86	27.76
							826	3.42	34.87	800	3.40	34.87	27.77
							1,032	3.38	34.85	1,000	3.40	34.85	27.75
							1,546	3.39	34.90				
Station 8235; 10 June; 48°30' N., 48°26' W.; depth 1,737 m.; dynamic height 970.843													
0	4.48	34.44	0	4.48	34.44	27.35	0	4.68	34.67	0	4.68	34.67	27.47
24	4.40	---	25	4.40	34.45	27.33	25	4.31	34.67	25	4.31	34.67	27.51
48	4.01	34.55	50	4.00	34.57	27.47	50	4.26	34.66	50	4.26	34.66	27.51
72	3.72	34.68	75	3.65	34.68	27.58	75	4.11	---	75	4.11	34.70	27.56
96	3.30	34.69	100	3.30	34.69	27.63	100	3.48	34.75	100	3.48	34.75	27.66
143	3.12	34.70	150	3.10	34.70	27.66	150	3.16	34.80	150	3.16	34.80	27.73
191	3.20	34.75	200	3.25	34.76	27.69	200	3.18	34.81	200	3.18	34.81	27.74
288	3.50	34.83	300	3.50	34.83	27.72	299	3.38	34.84	300	3.40	34.84	27.74
386	3.43	34.84	400	3.40	34.84	27.74	398	3.44	34.85	400	3.45	34.85	27.74
586	3.44	34.87	600	3.45	34.87	27.76	596	3.43	34.88	600	3.40	34.88	27.77
786	3.43	34.87	800	3.45	34.87	27.76	789	3.40	34.89	800	3.40	34.89	27.78
986	3.40	34.86	(1,000)	3.40	34.86	27.76	980	3.40	34.89	1,000	3.40	34.89	27.78
							1,488	3.26	34.92				
Station 8236; 10 June; 48°53' N., 48°11' W.; depth 2,286 m.; dynamic height 970.843													
0	5.94	34.63	0	5.94	34.63	27.29	0	5.94	34.63	0	5.94	34.63	27.29
24	5.61	34.63	25	5.60	34.63	27.33	24	5.61	34.63	25	5.60	34.63	27.33
50	5.44	34.61	50	5.44	34.61	27.34	50	5.44	34.61	50	5.44	34.61	27.34
74	4.05	34.67	75	4.00	34.66	27.57	74	4.05	34.67	75	4.00	34.66	27.57
100	3.65	34.66	100	3.65	34.66	27.57	100	3.65	34.66	100	3.65	34.66	27.57
149	3.70	34.79	150	3.70	34.79	27.67	149	3.70	34.79	150	3.70	34.79	27.67
199	3.36	34.79	200	3.35	34.79	27.70	199	3.36	34.79	200	3.35	34.79	27.70
300	3.64	34.87	300	3.64	34.87	27.74	300	3.64	34.87	300	3.64	34.87	27.74
400	3.50	34.87	400	3.48	34.87	27.76	400	3.50	34.87	400	3.48	34.87	27.76
603	3.47	34.87	600	3.45	34.87	27.76	603	3.47	34.87	600	3.45	34.87	27.76
801	3.44	34.87	800	3.45	34.87	27.76	801	3.44	34.87	800	3.45	34.87	27.76
998	3.41	34.87	1,000	3.40	34.87	27.77	998	3.41	34.87	1,000	3.40	34.87	27.77
1,421	3.42	34.91					1,421	3.42	34.91				
Station 8237; 10 June; 49°15' N., 47°56' W.; depth 2,414 m.; dynamic height 970.870													
0	5.90	34.51	0	5.90	34.51	27.20	0	5.90	34.51	0	5.90	34.51	27.20
23	5.34	34.58	25	5.35	34.58	27.32	23	5.34	34.58	25	5.35	34.58	27.32
47	5.41	34.61	50	5.40	34.61	27.34	47	5.41	34.61	50	5.40	34.61	27.34
70	5.39	34.62	75	5.35	34.63	27.36	70	5.39	34.62	75	5.35	34.63	27.36
94	4.49	34.68	100	4.45	34.69	27.51	94	4.49	34.68	100	4.45	34.69	27.51
140	4.13	34.74	150	4.10	34.75	27.60	140	4.13	34.74	150	4.10	34.75	27.60
187	4.04	34.79	200	4.00	34.79	27.64	187	4.04	34.79	200	4.00	34.79	27.64
282	3.65	34.83	300	3.60	34.84	27.72	282	3.65	34.83	300	3.60	34.84	27.72
375	3.53	34.87	400	3.50	34.86	27.75	375	3.53	34.87	400	3.50	34.86	27.75
565	3.45	---	600	3.45	34.85	27.74	565	3.45	---	600	3.45	34.85	27.74
754	3.45	34.84	800	3.45	34.85	27.74	754	3.45	34.84	800	3.45	34.85	27.74
942	3.43	34.88	1,000	3.45	34.88	27.76	942	3.43	34.88	1,000	3.45	34.88	27.76
1,426	3.46	34.91					1,426	3.46	34.91				
Station 8238; 10 June; 49°50' N., 48°20' W.; depth 2,432 m.; dynamic height 970.819													
0	4.68	34.67	0	4.68	34.67	27.47	0	4.68	34.67	0	4.68	34.67	27.47
25	4.31	34.67	25	4.31	34.67	27.51	25	4.31	34.67	25	4.31	34.6	

## TABLE OF OCEANOGRAPHIC DATA STATIONS OCCUPIED IN 1962—Continued

Observed values			Scaled values				Observed values			Scaled values			
Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	$\sigma_t$	Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	$\sigma_t$
Station 8240; 11 June; 50°00' N., 49°00' W.; depth 1,920 m.; dynamic height 970.823													
0	4.35	34.63	0	4.35	34.63	27.49	0	2.36	33.14	0	2.36	33.14	26.48
24	4.03	34.64	25	4.00	34.64	27.52	24	1.93	33.28	25	1.90	33.33	26.67
48	3.92		50	3.90	34.63	27.52	48	1.90	33.82	50	1.90	33.85	27.08
72	3.75	34.64	75	3.70	34.64	27.55	73	1.95	34.06	75	1.95	34.08	27.26
97	3.32	34.76	100	3.30	34.77	27.70	97	1.62	34.18	100	1.60	34.19	27.37
145	3.24	34.79	150	3.25	34.79	27.71	146	2.09	34.35	150	2.10	34.36	27.47
193	3.30	34.81	200	3.30	34.81	27.73	194	2.40	34.48	200	2.45	34.50	27.55
291	3.28	34.84	300	3.30	34.84	27.75	292	3.12	34.69	300	3.10	34.70	27.66
388	3.42	34.86	400	3.40	34.86	27.76	390	3.15	34.74	400	3.15	34.75	27.69
586	3.33	34.86	600	3.35	34.86	27.76	588	3.47	34.86	(600)	3.50	34.87	27.76
775	3.44	34.86	800	3.45	34.86	27.75							
962	3.39	34.88	1,000	3.40	34.88	27.77							
1,464	3.42	34.91											
Station 8241; 11 June; 49°36' N., 49°10' W.; depth 1,756 m.; dynamic height 970.834													
0	4.33	34.37	0	4.33	34.37	27.27	0	2.30	32.57	0	2.30	32.57	26.03
25	3.96	34.43	25	3.96	34.43	27.36	25	1.88	32.67	25	1.88	32.67	26.14
50	4.12	34.60	50	4.12	34.60	27.48	50	-0.37	33.07	50	-0.37	33.07	26.59
75	3.49	34.68	75	3.49	34.68	27.61	75	-0.15	33.37	75	-0.15	33.37	26.82
100	3.20	34.71	100	3.20	34.71	27.66	100	-0.58	33.50	100	-0.58	33.50	26.89
149	3.12	34.76	150	3.10	34.76	27.71	151	0.41	33.84	150	0.40	33.83	27.16
199	3.26	34.80	200	3.25	34.80	27.72	201	1.60	34.19	200	1.55	34.18	27.36
299	3.36	34.83	300	3.35	34.83	27.73							
398	3.41	34.82	400	3.40	34.82	27.73							
597	3.42	34.86	600	3.40	34.86	27.76							
796	3.43	34.88	800	3.40	34.88	27.77							
995	3.39	34.87	1,000	3.40	34.87	27.77							
1,498	3.42	34.91											
Station 8242; 11 June; 49°13' N., 49°19' W.; depth 1,637 m.; dynamic height 970.832													
0	4.42	34.45	0	4.42	34.45	27.34	0	1.84	32.71	0	1.84	32.71	26.17
25	4.03	34.45	25	4.03	34.45	27.37	25	1.72	32.78	25	1.75	32.77	26.23
50	4.15	34.59	50	4.15	34.59	27.46	51	-0.98	33.09	50	-1.00	33.08	26.59
75	3.23	34.64	75	3.23	34.64	27.60	76	-0.90	33.24	75	-0.90	33.23	26.74
100	3.17	34.71	100	3.17	34.71	27.66	102	-0.31	33.43	100	-0.35	33.41	26.86
150	3.70	34.84	150	3.70	34.84	27.71	153	0.31	33.82	150	0.25	33.81	27.16
200	3.56	34.82	200	3.56	34.82	27.71							
300	3.47	34.79	300	3.47	34.79	27.70							
400	3.41	34.85	400	3.41	34.85	27.75							
600	3.43	34.89	600	3.43	34.89	27.78							
798	3.43		800	3.45	34.88	27.76							
996	3.38	34.87	1,000	3.40	34.87	27.77							
1,500	3.42	34.93											
Station 8243; 11 June; 48°41' N., 49°31' W.; depth 1,052 m.; dynamic height 970.909													
0	2.58	33.18	0	2.58	33.18	26.50	0	2.83	32.66	0	2.83	32.66	26.06
23	2.39	33.39	25	2.40	33.46	26.73	26	2.82	32.66	25	2.80	32.66	26.06
45	2.36	34.03	50	2.30	34.07	27.23	52	1.06	33.06	50	1.25	33.05	26.49
68	1.59	34.18	75	1.65	34.23	27.40	78	0.61	33.14	75	0.65	33.13	26.59
90	2.02	34.33	100	2.10	34.36	27.47							
136	2.33	34.48	150	2.45	34.51	27.56							
181	2.65	34.57	200	2.80	34.60	27.60							
271	3.18	34.71	300	3.30	34.75	27.68							
362	3.44	34.80	400	3.40	34.80	27.71							
542	3.33	34.81	600	3.40	34.82	27.73							
731	3.51	34.86	800	3.50	34.86	27.75							
926	3.44	34.85	(1,000)	3.40	34.85	27.75							
Station 8244; 11 June; 48°33.5' N., 49°34' W.; depth 704 m.; dynamic height 970.931													
0	2.36	33.14	0	2.36	33.14	26.48	0	2.30	32.57	0	2.30	32.57	26.03
24	1.93	33.28	25	1.90	33.33	26.67	25	1.88	32.67	25	1.88	32.67	26.14
48	1.90	33.82	50	1.90	33.85	27.08	50	-0.37	33.07	50	-0.37	33.07	26.59
73	1.95	34.06	75	1.95	34.08	27.26	75	-0.15	33.37	75	-0.15	33.37	26.82
97	1.62	34.18	100	1.60	34.19	27.37	100	-0.58	33.50	100	-0.58	33.50	26.89
146	2.09	34.35	150	2.10	34.36	27.47	151	0.41	33.84	150	0.40	33.83	27.16
194	2.40	34.48	200	2.45	34.50	27.55	201	1.60	34.19	200	1.55	34.18	27.36
292	3.12	34.69	300	3.10	34.70	27.66							
390	3.15	34.74	400	3.15	34.75	27.69							
588	3.47	34.86	(600)	3.50	34.87	27.76							
Station 8245; 11 June; 48°14' N., 49°40' W.; depth 229 m.; dynamic height 971.039													
0	2.30	32.57	0	2.30	32.57	26.03	0	1.84	32.71	0	1.84	32.71	26.17
25	1.88	32.67	25	1.88	32.67	26.14	25	1.72	32.78	25	1.75	32.77	26.23
50	-0.37	33.07	50	-0.37	33.07	26.59	51	-0.98	33.09	50	-1.00	33.08	26.59
75	-0.15	33.37	75	-0.15	33.37	26.82	76	-0.90	33.24	75	-0.90	33.23	26.74
100	-0.58	33.50	100	-0.58	33.50	26.89	102	-0.31	33.43	100	-0.35	33.41	26.86
151	0.41	33.84	150	0.40	33.83	27.16	153	0.31	33.82	150	0.25	33.81	27.16
201	1.60	34.19	200	1.55	34.18	27.36							
Station 8246; 11 June; 48°00' N., 49°46' W.; depth 183 m.; dynamic height 971.045													
0	1.84	32.71	0	1.84	32.71	26.17	0	2.71	32.64	0	2.71	32.64	26.05
26	1.72	32.78	25	1.75	32.77	26.23	25	2.70	32.61	25	2.70	32.61	26.03
51	-0.98	33.09	50	-1.00	33.08	26.59	50	2.33	32.64	50	2.33	32.64	26.08
76	-0.90	33.24	75	-0.90	33.23	26.74	75	0.65	33.03	75	0.65	33.03	26.50
102	-0.31	33.43	100	-0.35	33.41	26.86	100	-0.16	33.27	100	-0.16	33.27	26.74
153	0.31	33.82	150	0.25	33.81	27.16							
Station 8247; 11 June; 47°41' N., 49°51' W.; depth 119 m.; dynamic height 971.081													
0	2.71	32.64	0	2.71	32.64	26.05	0	2.83	32.66	0	2.83	32.66	26.06
25	2.70	32.61	25	2.70	32.61	26.03	26	2.82	32.66	25	2.80	32.66	26.06
50	2.33	32.64	50	2.33	32.64	26.08	52	1.06	33.06	50	1.25	33.05	26.49
75	0.65	33.03	75	0.65	33.03	26.50	78	0.61	33.14	75	0.65	33.13	26.59
100	-0.16	33.27	100	-0.16	33.27	26.74							
Station 8248; 12 June; 47°23' N., 50°00' W.; depth 91 m.; dynamic height 971.070													
0	2.83	32.66	0	2.83	32.66	26.06	0	2.45	32.56	0	2.45	32.56	26.00
26	2.82	32.66	25	2.80	32.66	26.06	25	2.42	32.56	25	2.42	32.56	26.01
52	1.06	33.06	50	1.25	33.05	26.49	50	0.16	32.93	50	0.16	32.93	26.45
78	0.61	33.14	75	0.65	33.13	26.59	75	-0.18	33.20	75	-0.18	33.20	26.68
							100	-0.32	33.31	100	-0.32	33.31	26.78
Station 8249; 12 June; 47°33' N., 50°23' W.; depth 126 m.; dynamic height 971.067													
0	2.45	32.56	0	2.45	32.56	26.00	0	2.83	32.66	0	2.83	32.66	26.06
25	2.42	32.56	25	2.42	32.56	26.01	26	2.82	32.66	25	2.80	32.66	26.06
50	0.16	32.93	50	0.16	32.93	26.45	52	1.06	33.06	50	1.25	33.05	26.49
75	-0.18	33.20	75	-0.18	33.20	26.68	78	0.61	33.14	75	0.65	33.13	26.59
100	-0.32	33.31	100	-0.32	33.31	26.78							

# TABLE OF OCEANOGRAPHIC DATA

## STATIONS OCCUPIED IN 1962—Continued

Observed values				Scaled values				Observed values				Scaled values			
Depth, meters	Temperature, °C.	Salinity, ‰	$\sigma_t$	Depth, meters	Temperature, °C.	Salinity, ‰	$\sigma_t$	Depth, meters	Temperature, °C.	Salinity, ‰	$\sigma_t$	Depth, meters	Temperature, °C.	Salinity, ‰	$\sigma_t$
Station 8250; 12 June; 47°41' N., 50°42' W.; depth 126 m.; dynamic height 971.083															
0	2.41	32.46		0	2.41	32.46	25.93	0	2.34	31.33		0	2.34	31.33	25.03
25	2.38	32.54		25	2.38	32.54	26.00	25	0.48	32.43		25	0.48	32.43	26.03
50	0.12	32.68		50	0.12	32.68	26.25	50	-1.46	32.94		50	-1.46	32.94	26.52
75	-0.76	32.86		75	-0.76	32.86	26.43	75	-1.32	33.02		75	-1.32	33.02	26.58
100	-0.85	33.17		100	-0.85	33.17	26.69	100	-1.32	33.02		100	-1.32	33.02	26.58
								149	-1.30	33.08		150	-1.30	33.09	26.63
								199	-1.00	33.25		(200)	-1.00	33.26	26.76
Station 8251; 12 June; 47°48' N., 51°00' W.; depth 128 m.; dynamic height 971.088															
0	2.84	32.46		0	2.84	32.46	25.90	0	1.89	31.11		0	1.89	31.11	24.89
25	2.81	32.45		25	2.81	32.45	25.89	25	-0.89	32.67		25	-0.89	32.67	26.28
50	1.24	32.59		50	1.24	32.59	26.12	51	-1.05	32.80		50	-1.05	32.80	26.40
75	-0.80	32.93		75	-0.80	32.93	26.49	76	-1.18	32.90		75	-1.20	32.89	26.47
100	-0.75	33.20		100	-0.75	33.20	26.71	101	-1.23	32.95		100	-1.25	32.95	26.52
								152	-1.05	33.22		150	-1.05	33.20	26.72
Station 8252; 12 June; 47°55' N., 51°16' W.; depth 177 m.; dynamic height 971.077															
0	3.34	32.40		0	3.34	32.40	25.81	0	2.47	30.91		0	2.47	30.91	24.69
25	1.32	32.59		25	1.32	32.59	26.11	26	-0.35	32.27		25	-0.20	32.75	26.36
50	-0.96	32.79		50	-0.96	32.79	26.38	49	-1.38	32.85		50	-1.40	32.86	26.45
74	-1.17	32.98		75	-1.20	32.99	26.55	74	-1.37	32.97		75	-1.40	32.97	26.54
99	-1.16	33.03		100	-1.15	33.04	26.59	98	-1.36	33.02		100	-1.35	33.03	26.59
149	-0.74	33.42		(150)	-0.75	33.44	26.90	147	-1.16	33.19		(150)	-1.15	33.20	26.72
Station 8253; 12 June; 48°02' N., 51°31' W.; depth 223 m.; dynamic height 971.078															
0	2.61	32.17		0	2.61	32.17	25.68	0	0.70	31.85		0	0.70	31.85	25.56
25	1.42	32.20		25	2.42	32.20	25.72	24	-1.15	32.73		25	-1.20	32.75	26.36
50	-1.28	32.96		50	-1.28	32.96	26.56	49	-1.38	32.85		50	-1.40	32.86	26.45
75	-1.25	33.02		75	-1.25	33.02	26.58	74	-1.37	32.97		75	-1.40	32.97	26.54
100	-0.52	33.28		100	-0.52	33.28	26.76	98	-1.36	33.02		100	-1.35	33.03	26.59
151	-0.68	33.39		150	-0.70	33.39	26.86	147	-1.16	33.19		(150)	-1.15	33.20	26.72
201	-0.32	33.55		200	-0.35	33.55	26.97								
Station 8254; 12 June; 48°10' N., 51°51' W.; depth 183 m.; dynamic height 971.068															
0	2.88	32.06		0	2.88	32.06	25.58	0	1.47	31.97		0	1.47	31.97	25.61
27	-1.12	32.87		25	-0.65	32.82	26.40	25	0.15	32.44		25	0.15	32.44	26.06
52	-1.26	33.01		50	-1.25	33.00	26.56	50	-1.55	32.92		50	-1.55	32.92	26.51
79	-1.27	33.07		75	-1.25	33.06	26.61	75	-1.41	33.03		75	-1.41	33.03	26.59
105	-1.25	33.11		100	-1.25	33.10	26.64	100	-1.16	33.18		100	-1.16	33.18	26.71
158	-0.70	33.38		150	-0.80	33.37	26.68	149	-0.93	33.30		150	-0.90	33.31	26.80
								199	-0.54	33.51		(200)	-0.50	33.52	26.96
Station 8255; 12 June; 48°16' N., 52°06' W.; depth 188 m.; dynamic height 971.052															
0	2.29	31.89		0	2.29	31.89	25.49	0	1.85	32.20		0	1.85	32.20	25.76
25	1.73	32.36		25	1.73	32.36	25.90	26	0.75	32.35		25	0.80	32.34	25.95
51	-1.28	33.01		50	-1.25	33.01	26.57	51	0.45	33.09		50	0.50	33.05	26.53
76	-1.27	33.04		75	-1.25	33.03	26.58	76	-0.17	33.37		75	-0.15	33.36	26.81
102	-1.20	33.13		100	-1.20	33.12	26.66	102	-0.26	33.51		100	-0.25	33.49	26.92
152	-1.03	33.29		150	-1.05	33.28	26.78	152	0.32	33.83		150	0.30	33.82	27.16
178	-0.67	33.44		(200)	-0.70	33.43	26.89	203	1.64	34.20		200	1.00	34.18	27.36
								304	2.82	34.66		300	2.80	34.64	27.63
Station 8261; 13 June; 48°55.5' N., 52°24' W.; depth 366 m.; dynamic height 971.007															
0	1.85	32.20		0	1.85	32.20	25.76	0	1.85	32.20		0	1.85	32.20	25.76
26	0.75	32.35		25	0.80	32.34	25.95	26	0.75	32.35		25	0.80	32.34	25.95
51	0.45	33.09		50	0.50	33.05	26.53	51	0.45	33.09		50	0.50	33.05	26.53
76	-0.17	33.37		75	-0.15	33.36	26.81	76	-0.17	33.37		75	-0.15	33.36	26.81
102	-0.26	33.51		100	-0.25	33.49	26.92	102	-0.26	33.51		100	-0.25	33.49	26.92
152	0.32	33.83		150	0.30	33.82	27.16	152	0.32	33.83		150	0.30	33.82	27.16
203	1.64	34.20		200	1.00	34.18	27.36	203	1.64	34.20		200	1.00	34.18	27.36
304	2.82	34.66		300	2.80	34.64	27.63	304	2.82	34.66		300	2.80	34.64	27.63

## TABLE OF OCEANOGRAPHIC DATA STATIONS OCCUPIED IN 1962—Continued

Observed values			Scaled values				Observed values			Scaled values			
Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	$\sigma_t$	Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	$\sigma_t$
Station 8262; 13 June; 49°01.5' N., 52°04' W.; depth 302 m.; dynamic height 971.036							Station 8267; 13 June; 49°41' N., 50°02' W.; depth 640 m.; dynamic height 970.839						
0	1.04	32.35	0	1.04	32.35	25.94	0	3.62	33.84	0	3.62	33.84	26.92
23	0.30	32.42	25	0.10	32.47	26.08	24	2.95	33.95	25	2.90	33.96	27.09
45	-1.38	32.91	50	-1.40	32.95	26.52	48	2.30	34.23	50	2.30	34.27	27.39
68	-1.41	33.08	75	-1.40	33.10	26.64	72	2.59	34.51	75	2.65	34.55	27.58
91	-1.32	33.13	100	-1.25	33.17	26.70	96	2.81	34.62	100	2.85	34.63	27.62
136	-0.96	33.36	150	-0.70	33.43	26.89	143	2.99	34.68	150	3.00	34.69	27.66
181	-0.22	33.60	200	0.35	33.77	27.12	191	3.05	34.73	200	3.05	34.73	27.68
272	2.44	34.47	(300)	3.25	34.72	27.66	288	3.18	34.78	300	3.20	34.79	27.72
							385	3.37	34.84	400	3.40	34.85	27.75
							582	3.43	34.90	(600)	3.45	34.90	27.78
Station 8263; 13 June; 49°05.5' N., 51°50' W.; depth 302 m.; dynamic height 971.025							Station 8268; 13 June; 49°51' N., 49°30' W.; depth 1,417 m.; dynamic height 970.845						
0	1.59	31.98	0	1.59	31.98	25.61	0	3.95	34.10	0	3.95	34.10	27.10
23	-1.34	32.89	25	-1.35	32.92	26.50	25	2.13	34.22	25	3.13	34.22	27.27
45	-1.35	33.02	50	-1.35	33.04	26.60	50	2.89	34.52	50	2.89	34.52	27.54
68	-1.32	33.10	75	-1.30	33.11	26.65	75	3.18	34.65	75	3.18	34.65	27.61
91	-1.31	33.14	100	-1.20	33.18	26.70	100	2.92	34.67	100	2.92	34.67	27.62
136	-0.62	33.35	150	-0.50	33.45	26.90	149	3.02	34.72	150	3.00	34.72	27.69
181	-0.14	33.67	200	0.40	33.84	27.17	199	3.15	34.77	200	3.15	34.77	27.71
272	2.51	34.51	(300)	3.30	34.77	27.70	299	3.10	34.78	300	3.10	34.78	27.72
							399	3.36	34.85	400	3.35	34.85	27.75
							600	3.44	34.85	600	3.44	34.85	27.74
							798	3.44	34.85	800	3.45	34.85	27.74
							997	3.42	34.89	1,000	3.40	34.89	27.78
							1,297	3.40	34.87				
Station 8264; 13 June; 49°11.5' N., 51°31' W.; depth 324 m.; dynamic height 971.035							Station 8269; 13 June; 50°00' N., 49°00' W.; depth 1,939 m.; dynamic height 970.818						
0	1.26	31.67	0	1.26	31.67	25.38	0	4.54	34.50	0	4.54	34.50	27.35
24	-0.18	32.79	25	-0.25	32.82	26.38	23	4.36	34.59	25	4.35	34.60	27.45
48	-1.45	33.06	50	-1.45	33.07	26.62	46	4.03	34.62	50	4.05	34.62	27.50
72	-1.25	33.18	75	-1.25	33.19	26.71	69	4.00	34.71	75	3.95	34.75	27.61
96	-1.07	33.28	100	-1.05	33.30	26.79	92	3.70	34.75	100	3.65	34.77	27.66
144	-0.76	33.48	150	-0.65	33.51	26.96	139	3.56	34.86	150	3.55	34.86	27.74
193	-0.05	33.76	200	0.10	33.87	27.15	185	3.57	34.86	200	3.55	34.86	27.74
289	2.21	34.37	(300)	2.50	34.44	27.50	281	3.32	34.86	300	3.35	34.86	27.76
							377	3.45	34.89	400	3.45	34.89	27.77
							569	3.42	34.88	600	3.40	34.88	27.77
							763	3.43	34.88	800	3.40	34.88	27.77
							960	3.40	34.88	1,000	3.40	34.88	27.77
							1,454	3.43	34.90				
Station 8265; 13 June; 49°21' N., 51°00' W.; depth 340 m.; dynamic height 970.903							Station 8270; 9 July; 50°01' N., 49°00' W.; depth 1,900 m.; dynamic height 970.853						
0	2.33	33.16	0	2.33	33.16	26.50	0	7.50	34.34	0	7.50	34.34	26.85
25	2.14	33.42	25	2.14	33.42	26.72	23	6.34	34.60	25	6.25	34.61	27.23
50	1.02	33.68	50	1.02	33.68	27.00	48	5.25	34.65	50	5.15	34.65	27.40
75	0.94	34.00	75	0.93	34.00	27.27	71	4.39	34.62	75	4.30	34.63	27.48
100	1.77	34.23	100	1.77	34.23	27.40	95	4.01	34.71	100	4.00	34.73	27.59
150	2.05	34.40	150	2.05	34.40	27.51	142	3.76	34.82	150	3.70	34.82	27.70
201	2.68	34.58	200	2.65	34.58	27.60	190	3.46	34.79	200	3.45	34.80	27.70
301	3.14	34.74	300	3.15	34.74	27.68	284	3.45	34.85	300	3.45	34.85	27.74
							375	3.41		400	3.40	34.85	27.75
							556	3.42	34.84	600	3.45	34.85	27.74
							742	3.44	34.87	800	3.45	34.87	27.76
							929	3.42	34.86	1,000	3.40	34.87	27.77
							1,412	3.44	34.90	(1,500)	3.45	34.91	27.79
Station 8266; 13 June; 49°31' N., 50°31' W.; depth 347 m.; dynamic height 970.936													
0	1.73	33.09	0	1.73	33.09	26.49							
25	0.10	33.27	25	0.10	33.27	26.73							
50	-0.22	33.48	50	-0.22	33.48	26.91							
76	0.13	33.65	75	0.10	33.64	27.02							
101	0.52	33.96	100	0.50	33.92	27.23							
152	1.93	34.29	150	1.85	34.27	27.42							
202	2.34	34.48	200	2.30	34.48	27.55							
303	2.99	34.53	300	2.95	34.53	27.53							

# TABLE OF OCEANOGRAPHIC DATA STATIONS OCCUPIED IN 1962—Continued

Observed values			Scaled values				Observed values			Scaled values			
Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	$\sigma_t$	Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	$\sigma_t$
Station 8271; 9 July; 49°50' N., 49°33' W.; depth 1,350 m.; dynamic height 970.873													
0	5.43	33.54	0	5.43	33.54	26.49	0	6.52	31.42	0	6.52	31.42	24.69
23	4.81	33.76	25	4.65	33.87	26.84	24	-0.24	32.58	25	-0.30	32.60	26.21
46	3.47	34.42	50	3.40	34.45	27.43	49	-1.44	32.87	50	-1.45	32.88	26.47
70	3.17	34.58	75	3.10	34.62	27.60	73	-1.50	33.08	75	-1.50	33.10	26.64
93	3.04	34.68	100	3.05	34.69	27.65	98	-0.95	33.26	100	-0.90	33.29	26.78
140	3.16	34.74	150	3.15	34.75	27.69	146	-0.37	33.73	150	-0.25	33.75	27.13
187	3.21	34.79	200	3.20	34.79	27.72	195	0.97	34.05	200	1.05	34.07	27.62
281	3.31	34.75	300	3.35	34.75	27.67	293	2.76	34.55	(300)	2.90	34.59	27.59
375	3.44	34.77	400	3.40	34.78	27.69							
564	3.40	34.87	600	3.40	34.87	27.77							
756	3.42	34.85	800	3.40	34.85	27.75							
949	3.40	34.83	1,000	3.40	34.84	27.74							
1,240	3.41	34.88	(1,250)	3.40	34.88	27.77							
Station 8272; 10 July; 49°42' N., 50°02' W.; depth 640 m.; dynamic height 970.877													
0	4.84	33.17	0	4.84	33.17	26.26	0	7.01	31.19	0	7.01	31.19	24.44
25	2.70	33.74	25	2.70	33.74	26.92	25	0.78	32.55	25	0.78	32.55	26.12
50	1.64	34.27	50	1.64	34.27	27.44	50	-1.51	32.81	50	-1.51	32.81	26.42
75	2.40	34.42	75	2.40	34.42	27.50	76	-1.51	32.93	75	-1.50	32.92	26.50
100	2.81	34.55	100	2.81	34.55	27.56	101	-1.40	33.09	100	-1.40	33.08	26.63
151	3.04	34.66	150	3.05	34.66	27.63	151	-0.21	33.74	150	-0.25	33.72	27.11
201	3.07	34.74	200	3.05	34.74	27.69	201	1.31	34.13	200	1.25	34.12	27.35
301	3.21	34.80	300	3.20	34.80	27.73	277	2.74	34.57	(300)	2.70	34.56	27.58
402	3.28	34.78	400	3.25	34.78	27.70							
601	3.40	34.85	600	3.40	34.85	27.75							
Station 8273; 10 July; 49°31' N., 50°32' W.; depth 345 m.; dynamic height 970.937													
0	5.00	32.59	0	5.00	32.59	25.79	0	5.73	31.30	0	5.73	31.30	24.69
25	1.73	33.22	25	1.73	33.22	26.59	25	1.38	32.29	25	1.38	32.29	25.86
50	0.87	33.68	50	0.87	33.68	27.01	50	-0.92	32.82	50	-0.92	32.82	26.41
75	0.99	33.97	75	0.99	33.97	27.24	75	-1.41	33.03	75	-1.41	33.03	26.59
100	1.43	34.14	100	1.43	34.14	27.34	100	-1.29	33.23	100	-1.29	33.23	26.74
150	2.11	34.32	150	2.11	34.32	27.44	151	-0.28	33.68	150	-0.30	33.67	27.07
201	2.72	34.57	200	2.70	34.57	27.59	202	0.37	33.98	200	0.35	33.97	27.28
301	3.11	34.70	300	3.10	34.70	27.66	302	2.56	34.52	300	2.50	34.51	27.56
Station 8274; 10 July; 49°22.5' N., 51°02' W.; depth 340 m.; dynamic height 970.988													
0	4.91	32.21	0	4.91	32.21	25.50	0	5.77	31.32	0	5.77	31.32	24.70
24	3.73	32.64	25	3.45	32.69	26.02	25	-1.55	32.86	25	-1.55	32.86	26.46
48	-0.77	33.17	50	-0.75	33.21	26.72	50	-1.50	33.02	50	-1.50	33.02	26.58
72	-0.35	33.53	75	-0.30	33.55	26.97	76	-1.45	33.07	75	-1.45	33.07	26.62
97	-0.13	33.74	100	-0.05	33.76	27.13	101	-1.36	33.11	100	-1.40	33.11	26.65
146	1.21	34.08	150	1.30	34.11	27.33	152	-1.14	33.31	150	-1.15	33.30	26.80
194	2.24	34.38	200	2.30	34.40	27.49	202	-0.70	33.49	200	-0.75	33.48	26.93
291	2.94	34.64	(300)	3.00	34.66	27.64							
Station 8275; 10 July; 49°10.5' N., 51°34' W.; depth 322 m.; dynamic height 971.026													
0	5.41	32.02	0	5.41	32.02	25.29	0	7.09	31.06	0	7.09	31.06	24.33
26	-0.95	32.62	25	-0.80	32.58	26.21	25	-1.42	32.82	25	-1.42	32.82	26.42
51	-1.41	33.02	50	-1.40	32.99	26.56	50	-1.60	32.88	50	-1.60	32.88	26.47
77	-1.05	33.33	75	-1.05	33.32	26.81	76	-1.53	32.93	75	-1.55	32.93	26.51
102	-0.92	33.40	100	-0.95	33.39	26.87	101	-1.45	33.05	100	-1.45	33.05	26.60
152	-0.17	33.73	150	-0.20	33.72	27.11	151	-1.40	33.10	150	-1.40	33.10	26.64
204	1.48	34.08	200	1.40	34.06	27.28							
255	2.32	34.44	250	2.25	34.41	27.50							
Station 8276; 10 July; 49°05' N., 51°50' W.; depth 322 m.; dynamic height 971.043													
0	6.52	31.42	0	6.52	31.42	24.69	0	6.52	31.42	0	6.52	31.42	24.69
24	-0.24	32.58	25	-0.30	32.60	26.21	24	-0.24	32.58	25	-0.30	32.60	26.21
49	-1.44	32.87	50	-1.45	32.88	26.47	49	-1.44	32.87	50	-1.45	32.88	26.47
73	-1.50	33.08	75	-1.50	33.10	26.64	73	-1.50	33.08	75	-1.50	33.10	26.64
98	-0.95	33.26	100	-0.90	33.29	26.78	98	-0.95	33.26	100	-0.90	33.29	26.78
146	-0.37	33.73	150	-0.25	33.75	27.13	146	-0.37	33.73	150	-0.25	33.75	27.13
195	0.97	34.05	200	1.05	34.07	27.62	195	0.97	34.05	200	1.05	34.07	27.62
293	2.76	34.55	(300)	2.90	34.59	27.59	293	2.76	34.55	(300)	2.90	34.59	27.59
Station 8277; 10 July; 49°01' N., 52°04' W.; depth 300 m.; dynamic height 971.054													
0	7.01	31.19	0	7.01	31.19	24.44	0	7.01	31.19	0	7.01	31.19	24.44
25	0.78	32.55	25	0.78	32.55	26.12	25	0.78	32.55	25	0.78	32.55	26.12
50	-1.51	32.81	50	-1.51	32.81	26.42	50	-1.51	32.81	50	-1.51	32.81	26.42
76	-1.51	32.93	75	-1.50	32.92	26.50	76	-1.51	32.93	75	-1.50	32.92	26.50
101	-1.40	33.09	100	-1.40	33.08	26.63	101	-1.40	33.09	100	-1.40	33.08	26.63
151	-0.21	33.74	150	-0.25	33.72	27.11	151	-0.21	33.74	150	-0.25	33.72	27.11
201	1.31	34.13	200	1.25	34.12	27.35	201	1.31	34.13	200	1.25	34.12	27.35
277	2.74	34.57	(300)	2.70	34.56	27.58	277	2.74	34.57	(300)	2.70	34.56	27.58
Station 8278; 10 July; 48°56' N., 52°21' W.; depth 350 m.; dynamic height 971.062													
0	5.73	31.30	0	5.73	31.30	24.69	0	5.73	31.30	0	5.73	31.30	24.69
25	1.38	32.29	25	1.38	32.29	25.86	25	1.38	32.29	25	1.38	32.29	25.86
50	-0.92	32.82	50	-0.92	32.82	26.41	50	-0.92	32.82	50	-0.92	32.82	26.41
75	-1.41	33.03	75	-1.41	33.03	26.59	75	-1.41	33.03	75	-1.41	33.03	26.59
100	-1.29	33.23	100	-1.29	33.23	26.74	100	-1.29	33.23	100	-1.29	33.23	26.74
151	-0.28	33.68	150	-0.30	33.67	27.07	151	-0.28	33.68	150	-0.30	33.67	27.07
202	0.37	33.98	200	0.35	33.97	27.28	202	0.37	33.98	200	0.35	33.97	27.28
302	2.56	34.52	300	2.50	34.51	27.56	302	2.56	34.52	300	2.50	34.51	27.56
Station 8279; 10 July; 48°50.5' N., 52°39' W.; depth 232 m.; dynamic height 971.086													
0	5.77	31.32	0	5.77	31.32	24.70	0	5.77	31.32	0	5.77	31.32	24.70
25	-1.55	32.86	25	-1.55	32.86	26.46	25	-1.55	32.86	25	-1.55	32.86	26.46
50	-1.50	33.02	50	-1.50	33.02	26.58	50	-1.50	33.02	50	-1.50	33.02	26.58
76	-1.45	33.07	75	-1.45	33.07	26.62	76	-1.45	33.07	75	-1.45	33.07	26.62
101	-1.36	33.11	100	-1.40	33.11	26.65	101	-1.36	33.11	100	-1.40	33.11	26.65
152	-1.14	33.31	150	-1.15	33.30	26.80	152	-1.14	33.31	150	-1.15	33.30	26.80
202	-0.70	33.49	200	-0.75	33.48	26.93	202	-0.70	33.49	200	-0.75	33.48	26.93
Station 8280; 10 July; 48°49.5' N., 52°46' W.; depth 163 m.; dynamic height 971.107													
0	7.09	31.06	0	7.09	31.06	24.33	0	7.09	31.06	0	7.09	31.06	24.33
25	-1.42	32.82	25	-1.42	32.82	26.42	25	-1.42	32.82	25	-1.42	32.82	26.42
50	-1.60	32.88	50	-1.60	32.88	26.47	50	-1.60	32.88	50	-1.60	32.88	26.47
76	-1.53	32.93	75	-1.55	32.93	26.51	76	-1.53	32.93	75	-1.55	32.93	26.51
101	-1.45	33.05	100	-1.45	33.05	26.60	101	-1.45	33.05	100	-1.45	33.05	26.60
151	-1.40	33.10	150	-1.40	33.10	26.64	151	-1.40	33.10	150	-1.40	33.10	26.64
Station 8281; 10 July; 48°44' N., 52°58' W.; depth 93 m.; dynamic height 971.129													
0	6.87	30.89	0	6.87	30.89	24.33	0	6.87	30.89	0	6.87	30.89	24.33
26	-0.10	32.35	25	0.20	32.25	25.90	26	-0.10	32.35	25	0.20	32.25	25.90
52	-1.26	32.69											

## TABLE OF OCEANOGRAPHIC DATA STATIONS OCCUPIED IN 1962—Continued

Observed values			Scaled values				Observed values			Scaled values			
Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	$\sigma_t$	Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	$\sigma_t$
Station 8282; 10 July; 48°38.5' N., 52°44' W.; depth 258 m.; dynamic height 971.112							Station 8288; 11 July; 47°50' N., 50°57' W.; depth 123 m.; dynamic height 971.098						
0	6.81	31.04	0	6.81	31.04	24.35	0	7.22	31.91	0	7.22	31.91	24.98
25	-0.18	32.60	25	-0.18	32.60	26.21	26	5.33	32.33	25	5.45	32.31	25.52
51	-1.44	32.89	50	-1.35	32.87	26.46	51	-0.64	32.93	50	-0.30	32.92	26.46
76	-1.62	32.95	75	-1.65	32.95	26.53	76	-1.17	33.05	75	-1.15	33.05	26.60
101	-1.52	33.00	100	-1.50	33.00	26.57	102	-0.70	33.25	100	-0.75	33.24	26.74
152	-1.29	33.17	150	-1.30	33.16	26.69							
Station 8283; 10 July; 48°32' N., 52°29' W.; depth 258 m.; dynamic height 971.106							Station 8289; 11 July; 47°43' N., 50°40' W.; depth 123 m.; dynamic height 971.085						
0	6.81	31.10	0	6.81	31.10	24.40	0	7.63	32.23	0	7.63	32.23	25.17
25	0.67	32.58	25	0.67	32.58	26.15	25	2.80	32.49	25	2.80	32.49	25.91
50	-1.12	32.74	50	-1.12	32.74	26.35	50	-0.21	32.81	50	-0.21	32.81	26.38
75	-1.54	32.82	75	-1.54	32.82	26.43	75	-0.77	33.18	75	-0.77	33.18	26.69
100	-1.53	32.93	100	-1.53	32.93	26.51	100	-0.64	33.31	100	-0.64	33.31	26.79
151	-1.02	33.26	150	-1.05	33.25	26.76							
201	0.54	33.79	200	0.50	33.77	27.11							
Station 8284; 11 July; 48°20' N., 52°06' W.; depth 194 m.; dynamic height 971.100							Station 8290; 11 July; 47°36.5' N., 50°23' W.; depth 117 m.; dynamic height 971.096						
0	6.66	31.84	0	6.66	31.84	25.00	0	8.20	32.44	0	8.20	32.44	25.26
25	1.98	32.38	25	1.98	32.38	25.90	25	4.10	32.49	25	4.10	32.49	25.80
50	-1.14	32.86	50	-1.14	32.86	26.44	50	0.49	32.72	50	0.49	32.72	26.27
75	-1.54	32.97	75	-1.54	32.97	26.55	76	-0.59	32.97	75	-0.60	32.96	26.50
100	-1.44	32.98	100	-1.44	32.98	26.55	101	-0.60	33.21	100	-0.60	33.20	26.70
150	-1.11	33.26	150	-1.11	33.26	26.76							
Station 8285; 11 July; 48°13' N., 51°50' W.; depth 194 m.; dynamic height 971.107							Station 8291; 11 July; 47°24' N., 50°00' W.; depth 92 m.; dynamic height 971.093						
0	6.65	31.59	0	6.65	31.59	24.80	0	9.14	32.66	0	9.14	32.66	25.29
25	3.42	31.97	25	3.42	31.97	25.46	25	4.11	32.57	25	4.11	32.57	25.87
50	-1.00	32.91	50	-1.00	32.91	26.48	50	1.59	32.98	50	1.59	32.98	26.41
75	-1.21	33.00	75	-1.21	33.00	26.56	75	0.68	33.08	75	0.68	33.08	26.54
100	-1.23	33.01	100	-1.23	33.01	26.57							
150	-0.68	33.38	150	-0.68	33.38	26.85							
Station 8286; 11 July; 48°05.5' N., 51°36' W.; depth 218 m.; dynamic height 971.092							Station 8292; 11 July; 47°43' N., 49°53' W.; depth 118 m.; dynamic height 971.094						
0	7.07	31.74	0	7.07	31.74	24.87	0	8.68	32.36	0	8.68	32.36	25.12
25	2.84	32.34	25	2.84	32.34	25.80	26	5.05	32.47	25	5.20	32.46	25.67
50	-0.58	32.80	50	-0.58	32.80	26.38	52	-0.16	32.94	50	0.20	32.92	26.44
74	-0.97	33.04	75	-0.95	33.05	26.59	78	-0.30	33.20	75	-0.30	33.19	26.68
99	-0.43	33.21	100	-0.45	33.22	26.71	104	-0.34	33.26	100	-0.35	33.25	26.72
148	-0.36	33.52	150	-0.35	33.53	26.95							
198	-0.08	33.62	(200)	-0.05	33.62	27.02							
Station 8287; 11 July; 47°58' N., 51°14' W.; depth 170 m.; dynamic height 971.099							Station 8293; 11 July; 48°05' N., 49°45' W.; depth 184 m.; dynamic height 971.076						
0	7.28	31.92	0	7.28	31.92	21.98	0	7.84	32.25	0	7.84	32.25	25.16
25	3.39	32.36	25	3.39	32.36	25.76	26	0.64	32.65	25	0.80	32.63	26.18
51	-0.93	32.81	50	-0.60	32.78	26.36	51	-1.34	32.97	50	-1.30	32.95	26.52
76	-1.16	33.03	75	-1.15	33.02	26.58	76	-1.21	33.07	75	-1.20	33.06	26.61
101	-1.18	33.12	100	-1.20	33.11	26.65	102	-0.90	33.29	100	-0.95	33.27	26.77
152	-0.49	33.44	150	-0.50	33.43	26.88	153	-0.06	33.55	150	-0.10	33.53	26.94
Station 8294; 11 July; 48°14' N., 49°41' W.; depth 220 m.; dynamic height 971.072							Station 8294; 11 July; 48°14' N., 49°41' W.; depth 220 m.; dynamic height 971.072						
0	7.14	32.21	0	7.14	32.21	25.23	0	7.14	32.21	0	7.14	32.21	25.23
25	2.62	32.54	25	2.62	32.54	25.98	25	2.62	32.54	25	2.62	32.54	25.98
50	-1.00	33.05	50	-1.00	33.05	26.59	50	-1.00	33.05	50	-1.00	33.05	26.59
76	-0.82	33.13	75	-0.85	33.13	26.65	76	-0.82	33.13	75	-0.85	33.13	26.65
101	-0.63	33.27	100	-0.65	33.26	26.75	101	-0.63	33.27	100	-0.65	33.26	26.75
152	-0.42	33.61	150	-0.45	33.60	27.02	152	-0.42	33.61	150	-0.45	33.60	27.02
202	1.33	34.07	200	1.25	34.05	27.29	202	1.33	34.07	200	1.25	34.05	27.29

## TABLE OF OCEANOGRAPHIC DATA STATIONS OCCUPIED IN 1962—Continued

Observed values			Scaled values				Observed values			Scaled values			
Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	$\sigma_t$	Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	$\sigma_t$
Station 8295; 12 July; 48°34' N., 49°30' W.; depth 605 m.; dynamic height 970.937													
0	6.33	32.40	0	6.33	32.40	25.48	0	8.30	34.42	0	8.30	34.42	26.79
25	3.91	33.36	25	3.91	33.36	26.51	25	6.14	34.57	25	6.14	34.57	27.22
50	1.53	33.82	50	1.53	33.82	27.08	50	4.53	34.69	50	4.60	34.69	27.49
76	2.25	34.22	75	2.25	34.22	27.35	76	3.90	34.74	75	3.95	34.74	27.60
101	1.76	34.30	100	1.80	34.30	27.45	101	3.72	34.77	100	3.75	34.77	27.65
153	2.38	34.46	150	2.35	34.46	27.52	151	3.62	34.80	150	3.60	34.80	27.69
203	2.77	34.56	200	2.75	34.55	27.57	202	3.47	34.83	200	3.50	34.83	27.72
303	3.12	34.75	300	3.10	34.75	27.70	303	3.42	34.85	300	3.40	34.85	27.75
404	3.24	34.77	400	3.25	34.77	27.70	404	3.46	34.84	400	3.45	34.84	27.73
600	3.33	34.81	600	3.33	34.81	27.72	605	3.43	34.86	600	3.45	34.86	27.75
							806	3.43	34.84	800	3.45	34.84	27.73
							1,008	3.44	34.88	1,000	3.45	34.88	27.76
							1,511	3.43	34.91	1,500	3.40	34.91	27.80
Station 8296; 12 July; 48°43.5' N., 49°30' W.; depth 1,100 m.; dynamic height 970.906													
0	6.11	33.18	0	6.11	33.18	26.13	0	6.89	26.24	0	6.89	26.24	20.58
26	3.50	33.54	25	3.60	33.53	26.86	25	-1.17	32.18	25	-1.17	32.18	25.90
52	0.95	34.03	50	0.95	34.00	27.26	50	-1.47	32.72	50	-1.47	32.72	26.54
78	1.82	34.22	75	1.75	34.20	27.37	76	-1.44	32.83	75	-1.45	32.83	26.43
105	2.18	34.43	100	2.15	34.39	27.49	101	-1.44	32.92	100	-1.45	32.92	26.50
156	2.70	34.57	150	2.65	34.56	27.59							
208	2.95	34.67	200	2.90	34.66	27.65							
312	3.32	34.75	300	3.30	34.74	27.67							
414	3.52	34.79	400	3.50	34.79	27.69							
618	3.47	34.85	600	3.45	34.85	27.74							
825	3.45	34.86	800	3.45	34.86	27.75							
1,031	3.42	34.88	1,000	3.45	34.88	27.76							
Station 8297; 12 July; 49°12' N., 49°28' W.; depth 1,510 m.; dynamic height 970.872													
0	7.40	34.04	0	7.40	34.04	26.63	0	4.37	28.91	0	4.37	28.91	22.94
25	5.07	34.38	25	5.07	34.38	27.20	25	2.32	32.72	25	2.32	32.72	26.15
50	4.10	34.54	50	4.10	34.54	27.43	50	-0.92	32.98	50	-0.92	32.98	26.53
75	3.87	34.65	75	3.87	34.65	27.54	75	-1.24	33.10	75	-1.24	33.10	26.64
100	3.27	34.69	100	3.27	34.69	27.63	100	-1.16	33.29	100	-1.16	33.29	26.79
150	3.25	34.78	150	3.25	34.78	27.70	150	-1.04	33.48	150	-1.04	33.48	26.94
200	3.25	34.78	200	3.25	34.78	27.70	175	-0.72	33.64	175	-0.72	33.64	27.06
299	3.33	34.80	300	3.35	34.80	27.71							
398	3.41	34.81	400	3.40	34.81	27.72							
595	3.40	34.83	600	3.40	34.83	27.73							
792	3.44	34.83	800	3.45	34.83	27.72							
987	3.40	34.84	1,000	3.40	34.84	27.74							
1,481	3.39	34.91	(1,500)	3.40	34.91	27.80							
Station 8298; 12 July; 49°36' N., 49°15' W.; depth 1,550 m.; dynamic height 970.879													
0	6.97	33.69	0	6.97	33.69	26.42	0	3.76	32.05	0	3.76	32.05	25.49
24	4.48	34.02	25	4.30	34.04	27.01	24	-0.35	32.82	25	-0.40	32.82	26.39
48	2.79	34.27	50	2.80	34.30	27.37	48	-1.03	33.10	50	-1.05	33.12	26.65
72	2.80	34.58	75	2.80	34.59	27.59	72	-1.11	33.35	75	-1.10	33.35	26.84
97	2.86	34.61	100	2.90	34.61	27.61	97	-0.91	33.55	100	-0.85	33.55	26.99
144	3.12	34.70	150	3.15	34.71	27.66	145	0.19	33.95	(150)	0.30	33.97	27.28
193	3.28	34.75	200	3.30	34.75	27.68							
291	3.38	34.79	300	3.40	34.79	27.70							
388	3.29	34.81	400	3.30	34.81	27.73							
585	3.39	34.84	600	3.40	34.84	27.74							
780	3.45	34.84	800	3.45	34.84	27.73							
975	3.43	34.85	1,000	3.45	34.85	27.74							
1,480	3.41	34.88	(1,500)	3.40	34.88	27.77							
Station 8299; 12 July; 50°00' N., 49°00' W.; depth 1,885 m.; dynamic height 970.853													
0	8.30	34.42	0	8.30	34.42	26.79	0	8.30	34.42	0	8.30	34.42	26.79
25	6.14	34.57	25	6.14	34.57	27.22	25	6.14	34.57	25	6.14	34.57	27.22
51	4.53	34.69	50	4.60	34.69	27.49	51	4.53	34.69	50	4.60	34.69	27.49
76	3.90	34.74	75	3.95	34.74	27.60	76	3.90	34.74	75	3.95	34.74	27.60
101	3.72	34.77	100	3.75	34.77	27.65	101	3.72	34.77	100	3.75	34.77	27.65
151	3.62	34.80	150	3.60	34.80	27.69	151	3.62	34.80	150	3.60	34.80	27.69
202	3.47	34.83	200	3.50	34.83	27.72	202	3.47	34.83	200	3.50	34.83	27.72
303	3.42	34.85	300	3.40	34.85	27.75	303	3.42	34.85	300	3.40	34.85	27.75
404	3.46	34.84	400	3.45	34.84	27.73	404	3.46	34.84	400	3.45	34.84	27.73
605	3.43	34.86	600	3.45	34.86	27.75	605	3.43	34.86	600	3.45	34.86	27.75
806	3.43	34.84	800	3.45	34.84	27.73	806	3.43	34.84	800	3.45	34.84	27.73
1,008	3.44	34.88	1,000	3.45	34.88	27.76	1,008	3.44	34.88	1,000	3.45	34.88	27.76
1,511	3.43	34.91	1,500	3.40	34.91	27.80	1,511	3.43	34.91	1,500	3.40	34.91	27.80
Station 8300; 13 July; 53°43' N., 55°48' W.; depth 110 m.; dynamic height 1454.946													
0	6.89	26.24	0	6.89	26.24	20.58	0	6.89	26.24	0	6.89	26.24	20.58
25	-1.17	32.18	25	-1.17	32.18	25.90	25	-1.17	32.18	25	-1.17	32.18	25.90
50	-1.47	32.72	50	-1.47	32.72	26.54	50	-1.47	32.72	50	-1.47	32.72	26.54
76	-1.44	32.83	75	-1.45	32.83	26.43	76	-1.44	32.83	75	-1.45	32.83	26.43
101	-1.44	32.92	100	-1.45	32.92	26.50	101	-1.44	32.92	100	-1.45	32.92	26.50
Station 8301; 13 July; 53°52' N., 55°31' W.; depth 200 m.; dynamic height 1454.882													
0	4.37	28.91	0	4.37	28.91	22.94	0	4.37	28.91	0	4.37	28.91	22.94
25	2.32	32.72	25	2.32	32.72	26.15	25	2.32	32.72	25	2.32	32.72	26.15
50	-0.92	32.98	50	-0.92	32.98	26.53	50	-0.92	32.98	50	-0.92	32.98	26.53
75	-1.24	33.10	75	-1.24	33.10	26.64	75	-1.24	33.10	75	-1.24	33.10	26.64
100	-1.16	33.29	100	-1.16	33.29	26.79	100	-1.16	33.29	100	-1.16	33.29	26.79
150	-1.04	33.48	150	-1.04	33.48	26.94	150	-1.04	33.48	150	-1.04	33.48	26.94
175	-0.72	33.64	175	-0.72	33.64	27.06	175	-0.72	33.64	175	-0.72	33.64	27.06
Station 8302; 14 July; 53°56.5' N., 55°24' W.; depth 175 m.; dynamic height 1454.896													
0	6.20	27.20	0	6.20	27.20	21.41	0	6.20	27.20	0	6.20	27.20	21.41
22	0.04	32.67	25	-0.15	32.66	26.25	22	0.04	32.67	25	-0.15	32.66	26.25
45	-1.14	32.90	50	-1.15	32.95	26.52	45	-1.14	32.90	50	-1.15	32.95	26.52
67	-1.11	33.15	75	-1.05	33.18	26.70	67	-1.11	33.15	75	-1.05	33.18	26.70
89	-1.24	33.25	100	-1.15	33.30	26.80	89	-1.24	33.25	100	-1.15	33.30	26.80
134	-0.76	33.49	(150)	-0.55	33.51	26.95	134	-0.76	33.49	(150)	-0.55	33.51	26.95
Station 8303; 14 July; 54°07' N., 55°08' W.; depth 164 m.; dynamic height 1454.817													
0	3.76	32.05	0	3.76	32.05	25.49	0	3.76	32.05	0	3.76	32.05	25.49
24	-0.35	32.82	25	-0.40	32.82	26.39	24	-0.35	32.82	25	-0.40	32.82	26.39
48	-1.03	33.10	50	-1.05	33.12	26.65	48	-1.03	33.10	50	-1.05	33.12	26.65
72	-1.11	33.35	75	-1.10	33.35	26.84	72	-1.11	33.35	75	-1.10	33.35	26.84
97	-0.91	33.55	100	-0.85	33.55	26.99	97	-0.91	33.55	100	-0.85	33.55	26.99
145	0.19	33.95	(150)	0.30	33.97	27.28	145	0.19	33.95	(150)	0.30	33.97	27.28
Station 8304; 14 July; 54°17' N., 54°50' W.; depth 185 m.; dynamic height 1454.826													
0	2.88	32.40	0	2.88	32.40	25.85	0	2.88	32.40	0	2.88	32.40	25.85
25	0.24	32.68	25	0.24	32.68	26.25	25	0.24	32.68	25	0.24	32.68	26.25
51	-0.98	33.05	50	-0.90	33.0								

## TABLE OF OCEANOGRAPHIC DATA STATIONS OCCUPIED IN 1962—Continued

Observed values			Scaled values				Observed values			Scaled values			
Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	$\sigma_t$	Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	$\sigma_t$
Station 8305; 14 July; 54°29' N., 54°24' W.; depth 220 m.; dynamic height 1454.864													
0	1.56	31.69	0	1.56	31.69	25.38	0	5.38	32.63	0	5.38	32.63	25.78
26	3.13	32.69	25	3.15	32.57	25.96	24	5.01	34.60	25	5.00	34.61	27.39
51	-1.31	32.87	50	-1.30	32.82	26.42	49	4.44	34.78	50	4.40	34.78	27.58
77	-1.07	33.11	75	-1.10	33.08	26.62	73	4.11	34.78	75	4.10	34.78	27.62
102	-1.08	33.36	100	-1.05	33.31	26.80	98	3.75	34.82	100	3.75	34.82	27.69
154	-0.85	33.56	150	-0.90	33.51	26.97	147	3.57	34.83	150	3.55	34.83	27.71
205	0.18	33.95	200	0.10	33.89	27.22	196	3.57	34.86	200	3.55	34.86	27.74
							298	3.58	34.87	300	3.60	34.87	27.75
							401	3.57	34.89	400	3.55	34.89	27.76
							605	3.53	34.84	600	3.55	34.84	27.72
							808	3.50	34.86	800	3.50	34.86	27.75
							1,011	3.40	34.85	1,000	3.40	34.85	27.75
							1,516	3.48	34.90	1,500	3.50	34.90	27.78
							2,020	3.09	34.88	2,000	3.10	34.88	27.80
Station 8306; 14 July; 54°44.5' N., 53°52' W.; depth 322 m.; dynamic height 1454.844													
0	1.41	28.45	0	1.41	28.45	22.79							
23	-0.87	32.53	25	-1.00	32.58	26.22							
46	-1.22	33.08	50	-1.20	33.09	26.63							
70	-1.11	33.32	75	-1.05	33.37	26.85							
93	-0.81	33.57	100	-0.65	33.59	27.02							
139	0.25	33.89	150	0.70	33.95	27.24							
185	1.98	34.28	200	2.15	34.29	27.41							
278	3.05	34.56	(300)	3.30	34.60	27.56							
Station 8307; 14 July; 54°52' N., 53°40' W.; depth 640 m.; dynamic height 1454.737													
0	1.76	30.65	0	1.76	30.65	24.53							
25	-0.53	33.35	25	-0.53	33.35	26.81							
50	-0.19	33.77	50	-0.19	33.77	27.15							
75	1.22	34.12	75	1.22	34.12	27.35							
100	2.05	34.35	100	2.05	34.35	27.47							
151	2.50	34.50	150	2.50	34.50	27.55							
201	2.82	34.55	200	2.80	34.55	27.56							
295	3.27	34.69	300	3.30	34.69	27.63							
394	3.48	34.75	400	3.50	34.75	27.66							
591	3.61	34.84	(600)	3.60	34.84	27.72							
Station 8308; 14 July; 54°57.5' N., 53°26' W.; depth 1,650 m.; dynamic height 1454.660													
0	4.33	29.75	0	4.33	29.75	23.61							
25	3.85	34.32	25	3.85	34.32	27.29							
52	4.52	34.73	50	4.50	34.73	27.53							
77	4.19	34.74	75	4.20	34.74	27.58							
103	3.90	34.78	100	3.90	34.78	27.64							
154	3.62	34.83	150	3.65	34.83	27.70							
205	3.39	34.83	200	3.40	34.83	27.73							
307	3.62	34.86	300	3.60	34.86	27.74							
408	3.62		400	3.60	34.86	27.74							
600	3.66	34.87	600	3.66	34.87	27.74							
800	3.53	34.89	800	3.53	34.89	27.77							
999	3.49	34.89	1,000	3.50	34.89	27.77							
1,495	3.48	34.88	(1,500)	3.50	34.88	27.76							
Station 8309; 14 July; 55°01' N., 53°17' W.; depth 2,140 m.; dynamic height 1454.631													
0	5.38	32.63	0	5.38	32.63	25.78							
24	5.01	34.60	25	5.00	34.61	27.39							
49	4.44	34.78	50	4.40	34.78	27.58							
73	4.11	34.78	75	4.10	34.78	27.62							
98	3.75	34.82	100	3.75	34.82	27.69							
147	3.57	34.83	150	3.55	34.83	27.71							
196	3.57	34.86	200	3.55	34.86	27.74							
298	3.58	34.87	300	3.60	34.87	27.75							
401	3.57	34.89	400	3.55	34.89	27.76							
605	3.53	34.84	600	3.55	34.84	27.72							
808	3.50	34.86	800	3.50	34.86	27.75							
1,011	3.40	34.85	1,000	3.40	34.85	27.75							
1,516	3.48	34.90	1,500	3.50	34.90	27.78							
2,020	3.09	34.88	2,000	3.10	34.88	27.80							
Station 8310; 14 July; 55°13.5' N., 53°00' W.; depth 3,050 m.; dynamic height 1454.585													
0	7.08	34.55	0	7.08	34.55	27.07							
24	4.91	34.72	25	4.90	34.72	27.49							
50	4.40	34.78	50	4.40	34.78	27.58							
74	3.95	34.79	75	3.90	34.79	27.65							
99	3.61	34.82	100	3.60	34.82	27.71							
148	3.51	34.85	150	3.50	34.85	27.74							
198	3.46	34.85	200	3.45	34.85	27.74							
300	3.59	34.88	300	3.59	34.88	27.75							
402	3.59		400	3.60	34.87	27.75							
588	3.51	34.86	600	3.50	34.86	27.75							
784	3.48	34.89	800	3.45	34.89	27.77							
981	3.40	34.93	1,000	3.40	34.93	27.81							
1,477	3.47	34.89	1,500	3.45	34.89	27.77							
1,975	3.17	34.85	2,000	3.15	34.85	27.77							
2,482	2.64	34.91	2,500	2.60	34.91	27.87							
2,996	2.15	34.90	(3,000)	2.15	34.90	27.90							
Station 8311; 14 July; 55°30' N., 52°28' W.; depth 3,270 m.; dynamic height 1454.625													
0	8.06	34.62	0	8.06	34.62	26.99							
26	5.64	34.68	25	5.70	34.68	27.35							
51	4.12	34.71	50	4.20	34.70	27.55							
77	3.90	34.79	75	3.90	34.79	27.65							
103	3.80	34.79	100	3.80	34.79	27.66							
153	3.58	34.81	150	3.60	34.81	27.70							
205	3.55	34.81	200	3.55	34.81	27.70							
310	3.55	34.85	300	3.55	34.85	27.73							
417	3.51	34.86	400	3.50	34.86	27.75							
602	3.55	34.87	600	3.55	34.87	27.75							
807	3.51	34.85	800	3.50	34.85	27.74							
1,014	3.41	34.86	1,000	3.40	34.86	27.76							
1,529	3.40	34.85	1,500	3.40	34.85	27.75							
2,052	3.35	34.85	2,000	3.35	34.85	27.75							
2,580	2.90	34.91	2,500	2.95	34.90	27.83							
3,113	1.93	34.87	3,000	2.15	34.88	27.88							
			3,100	1.95	34.87	27.90							

# TABLE OF OCEANOGRAPHIC DATA

## STATIONS OCCUPIED IN 1962—Continued

Observed values			Scaled values				Observed values			Scaled values			
Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	$\sigma_t$	Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	$\sigma_t$
Station 8312; 15 July; 55°53.5' N., 51°41' W.; depth 3,550 m.; dynamic height 1454.614													
0	8.30	34.64	0	8.30	34.64	26.96	0	7.90	34.68	0	7.90	34.68	27.05
25	5.54	34.68	25	5.54	34.68	27.37	26	5.03	34.73	25	5.10	34.73	27.47
51	4.73	34.67	50	4.75	34.69	27.48	51	4.62	34.70	50	4.65	34.79	27.57
76	4.13	34.73	75	4.15	34.73	27.57	77	4.17	34.84	75	4.20	34.84	27.66
102	3.50	34.77	100	3.50	34.77	27.68	103	4.03	34.86	100	4.05	34.86	27.69
151	3.40	34.78	150	3.40	34.78	27.69	153	3.84	34.87	150	3.85	34.87	27.72
202	3.33	34.77	200	3.30	34.77	27.70	204	3.76	34.88	200	3.75	34.88	27.73
305	3.36	34.84	300	3.35	34.84	27.74	309	3.71	34.84	300	3.70	34.84	27.71
409	3.43	34.83	400	3.40	34.83	27.73	414	3.64	34.86	400	3.65	34.86	27.73
584	3.46	34.86	600	3.45	34.86	27.75	605	3.57	34.88	600	3.60	34.88	27.75
780	3.44	34.87	800	3.40	34.87	27.77	807	3.51	34.88	800	3.50	34.88	27.76
976	3.38	34.87	1,000	3.40	34.87	27.77	1,010	3.41	34.88	1,000	3.40	34.88	27.77
1,473	3.42	34.86	1,500	3.40	34.87	27.77	1,520	3.41	34.87	1,500	3.40	34.87	27.77
1,973	3.42	34.92	2,000	3.40	34.92	27.81	2,029	3.34	34.89	2,000	3.35	34.89	27.78
2,482	3.14	34.93	2,500	3.15	34.93	27.83	2,538	2.99	34.89	2,500	3.00	34.89	27.82
2,997	2.67	34.92	3,000	2.65	34.92	27.88	3,050	2.53	34.84	3,000	2.55	34.85	27.83
3,409	1.78	34.91	3,400	1.80	34.91	27.94	3,460	1.45	34.84	3,450	1.50	34.85	27.83
Station 8313; 15 July; 56°28' N., 50°35' W.; depth 3,650 m.; dynamic height 1454.620													
0	8.39	34.69	0	8.39	34.69	26.99	0	7.57	34.74	0	7.57	34.74	27.15
27	5.15	34.70	25	5.25	34.70	27.43	24	6.66	34.77	25	6.65	34.77	27.31
54	4.26	34.74	50	4.35	34.74	27.56	49	4.44	34.79	50	4.40	34.79	27.59
80	3.88	34.74	75	3.95	34.74	27.60	73	4.28	34.84	75	4.25	34.84	27.65
107	3.32	34.72	100	3.45	34.72	27.64	98	4.16	34.85	100	4.05	34.85	27.68
159	3.13	34.75	150	3.15	34.74	27.68	147	4.03	34.88	150	4.05	34.88	27.70
213	3.11	34.78	200	3.10	34.77	27.72	196	4.12	34.92	200	4.10	34.92	27.74
316	3.22	34.82	300	3.20	34.81	27.74	293	3.94	34.87	300	3.95	34.87	27.71
416	3.22	34.83	400	3.20	34.83	27.75	387	3.74	34.89	400	3.75	34.89	27.74
625	3.29	34.82	600	3.25	34.83	27.74	614	3.62	34.85	600	3.60	34.85	27.73
832	3.24	34.82	800	3.30	34.82	27.74	815	3.52	34.86	800	3.50	34.86	27.75
1,039	3.33	34.85	1,000	3.35	34.85	27.75	1,015	3.43	34.87	1,000	3.45	34.87	27.76
1,555	3.34	34.88	1,500	3.35	34.88	27.77	1,510	3.47	34.91	1,500	3.50	34.91	27.79
2,074	3.48	34.90	2,000	3.45	34.90	27.78	1,985	3.28	34.89	2,000	3.25	34.89	27.79
2,596	3.26	34.91	2,500	3.30	34.91	27.81	2,449	2.86	34.91	2,500	2.75	34.90	27.85
3,090	2.76	34.91	3,000	2.85	34.91	27.85	2,945	1.83	34.84	3,000	1.70	34.84	27.88
3,575	1.60	34.90	3,500	1.80	34.90	27.93	3,095	1.46	34.82	(3,100)	1.45	34.82	27.89
Station 8314; 15 July; 57°02.5' N., 49°24' W.; depth 3,670 m.; dynamic height 1454.621													
0	8.38	34.66	0	8.38	34.66	26.97	0	7.86	34.88	0	7.86	34.88	27.22
24	5.40	34.68	25	5.30	34.68	27.40	26	7.23	34.84	25	7.25	34.84	27.28
48	4.40	34.64	50	4.35	34.64	27.48	51	5.31	34.85	50	5.35	34.85	27.54
72	3.71	34.73	75	3.65	34.74	27.63	76	4.54	34.90	75	4.60	34.90	27.66
96	3.42	34.77	100	3.40	34.77	27.69	102	4.43	34.92	100	4.45	34.92	27.70
145	3.48	34.77	150	3.45	34.77	27.68	152	4.65	34.96	150	4.65	34.96	27.71
194	3.43	34.81	200	3.45	34.81	27.71	203	4.48	34.95	200	4.50	34.95	27.71
290	3.39	34.84	300	3.40	34.84	27.74	307	4.29	34.96	300	4.30	34.96	27.74
366	3.42	34.87	400	3.40	34.87	27.77	410	4.17	34.90	400	4.20	34.90	27.71
556	3.43	34.85	600	3.40	34.85	27.75	601	3.80	34.90	600	3.80	34.90	27.75
751	3.41	34.83	800	3.40	34.84	27.74	806	3.64	34.89	800	3.65	34.86	27.75
884	3.40	34.85	1,000	3.40	34.85	27.75	1,013	3.56	34.90	1,000	3.60	34.90	27.77
1,354	3.33	34.84	1,500	3.40	34.86	27.76	1,496	3.43	34.91	1,500	3.40	34.91	27.80
1,841	3.47	34.90	2,000	3.40	34.91	27.80	1,959	2.88	34.92	2,000	2.80	34.92	27.86
2,349	3.26	34.92	2,500	3.15	34.91	27.82	2,545	1.94	34.88	2,500	2.00	34.89	27.90
2,836	2.91	34.88	3,000	2.70	34.89	27.84	(2,550)			1.95	34.88	27.90	
3,328	2.30	34.91	(3,500)										
3,458	2.07	34.90											

# TABLE OF OCEANOGRAPHIC DATA STATIONS OCCUPIED IN 1962—Continued

Observed values			Scaled values				Observed values			Scaled values			
Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	$\sigma_t$	Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	$\sigma_t$
Station 8318: 16 July; 59°00.5' N., 45°20' W.; depth 2,370 m.; dynamic height 1454.638													
0	7.49	34.46	0	7.49	34.46	26.94							
25	6.81	34.71	25	6.81	34.71	27.24							
49	6.37	34.89	50	6.35	34.89	27.44							
74	5.82	34.93	75	5.80	34.93	27.54							
98	5.57	34.93	100	5.55	34.93	27.57							
147	5.05	35.00	150	5.05	35.00	27.69							
196	4.95	35.00	200	4.95	35.00	27.70							
297	4.64	34.98	300	4.65	34.98	27.72							
398	4.38	34.94	400	4.40	34.94	27.71							
597	4.14	34.90	600	4.15	34.90	27.71							
796	3.90	34.93	800	3.90	34.93	27.76							
996	3.75	34.92	1,000	3.75	34.93	27.77							
1,489	3.42	34.92	1,500	3.40	34.92	27.81							
1,977	2.81	34.90	2,000	2.75	34.90	27.85							
2,285	2.32	34.88	(2,300)	2.30	34.88	27.87							
Station 8319: 17 July; 59°13.5' N., 44°48' W.; depth 2,070 m.; dynamic height 1454.697													
0	5.66	33.21	0	5.66	33.21	26.21							
24	5.30	33.45	25	5.30	33.51	26.48							
49	6.39	34.13	50	6.40	34.20	26.89							
73	6.04	34.98	75	6.00	34.99	27.56							
98	5.80	35.01	100	5.80	35.01	27.61							
146	5.41	35.04	150	5.40	35.04	27.68							
195	5.10	34.98	200	5.10	34.98	27.66							
294	4.84	34.99	300	4.80	34.99	27.71							
393	4.63	34.97	400	4.60	34.97	27.72							
596	4.28	34.94	600	4.30	34.94	27.72							
798	4.16	34.94	800	4.15	34.94	27.74							
1,002	3.87	34.91	1,000	3.90	34.91	27.75							
1,504	3.45	34.91	1,500	3.45	34.91	27.79							
2,006	2.62	34.86	2,000	2.60	34.86	27.83							
Station 8320: 17 July; 59°21.5' N., 44°32' W.; depth 1,260 m.; dynamic height 1454.710													
0	5.23	33.22	0	5.23	33.22	26.26							
26	4.85	34.05	25	4.85	34.03	26.94							
52	5.48	34.71	50	5.45	34.67	27.38							
78	5.74	34.86	75	5.75	34.85	27.49							
104	5.82	34.96	100	5.80	34.95	27.56							
155	5.44	35.02	150	5.45	35.02	27.66							
206	5.45	35.01	200	5.45	35.01	27.65							
310	5.24	35.03	300	5.25	35.03	27.69							
391	5.07	35.01	400	5.05	35.01	27.70							
585	4.71	34.98	600	4.70	34.98	27.71							
778	4.43	34.95	800	4.40	34.95	27.72							
972	4.30	34.93	(1,000)	4.30	34.93	27.71							
Station 8321: 17 July; 59°32' N., 44°06' W.; depth 183 m.; dynamic height 1454.796													
0	1.95	31.79	0	1.95	31.79	25.43							
25	1.74	32.56	25	1.74	32.56	26.06							
50	0.81	33.72	50	0.81	33.72	27.05							
76	1.42	34.07	75	1.40	34.07	27.28							
101	2.17	34.27	100	2.15	34.27	27.40							
151	2.41	34.34	150	2.40	34.34	27.43							
Station 8322: 17 July; 59°34.5' N., 44°01' W.; depth 172 m.; dynamic height 1454.830													
0	1.33	31.90	0	1.33	31.90	25.56							
25	-0.04	32.39	25	-0.04	32.39	26.03							
50	-0.95	32.93	50	-0.95	32.93	26.49							
76	-0.66	33.62	75	-0.65	33.58	27.01							
101	-0.12	33.76	100	-0.15	33.75	27.13							
151	1.62	34.13	150	1.60	34.12	27.32							
Station 8323: 17 July; 59°40' N., 43°52' W.; depth 172 m.; dynamic height 1454.845													
0	0.31	30.89	0	0.31	30.89	24.80							
26	-1.23	32.93	25	-1.25	32.82	26.42							
51	-1.25	33.15	50	-1.25	33.14	26.67							
76	-1.21	33.28	75	-1.20	33.28	26.78							
102	-1.10	33.49	100	-1.10	33.48	26.94							
143	-0.44	33.70	(150)	-0.30	33.74	27.12							
Station 8324: 18 July; 58°04' N., 49°25' W.; depth 3,610 m.; dynamic height 1454.650													
0	7.58	34.78	0	7.58	34.78	27.18							
26	5.98	34.74	25	6.00	34.74	27.37							
52	4.65	34.78	50	4.75	34.78	27.55							
78	4.08	34.78	75	4.10	34.77	27.62							
105	3.97	34.84	100	4.00	34.84	27.68							
156	3.83	34.84	150	3.85	34.84	27.69							
208	3.96	34.85	200	3.95	34.85	27.69							
310	3.73	34.88	300	3.75	34.87	27.73							
408	3.58	34.84	400	3.60	34.84	27.72							
592	3.55	34.82	600	3.55	34.82	27.71							
793	3.52	34.82	800	3.50	34.82	27.72							
996	3.43	34.83	1,000	3.40	34.83	27.73							
1,512	3.37	34.86	1,500	3.40	34.86	27.76							
2,020	3.45	34.90	2,000	3.45	34.90	27.78							
2,531	3.14	34.915	2,500	3.15	34.91	27.82							
3,028	2.64	34.905	3,000	2.70	34.91	27.86							
3,526	1.43	34.865	3,500	1.50	34.87	27.93							
Station 8325: 18 July; 58°32.5' N., 50°42' W.; depth 3,570 m.; dynamic height 1454.623													
0	8.46	34.71	0	8.46	34.71	27.00							
26	5.59	34.69	25	5.60	34.69	27.38							
52	4.52	34.80	50	4.60	34.79	27.52							
78	4.02	34.77	75	4.05	34.77	27.62							
104	3.91	34.84	100	3.90	34.84	27.69							
156	3.77	34.88	150	3.80	34.88	27.73							
208	3.77	34.84	200	3.80	34.85	27.71							
310	3.69	34.83	300	3.70	34.83	27.70							
410	3.61	34.83	400	3.60	34.83	27.71							
603	3.54	34.875	600	3.55	34.87	27.75							
805	3.46	34.87	800	3.45	34.87	27.76							
1,006	3.44	34.87	1,000	3.45	34.87	27.76							
1,511	3.35	34.855	1,500	3.35	34.86	27.76							
1,994	3.44	34.91	2,000	3.45	34.91	27.79							
2,468	3.12	34.92	2,500	3.10	34.92	27.84							
2,946	2.62	34.92	3,000	2.50	34.92	27.89							
3,424	1.44	34.89	3,400	1.50	34.89	27.94							

## TABLE OF OCEANOGRAPHIC DATA STATIONS OCCUPIED IN 1962—Continued

Observed values			Scaled values				Observed values			Scaled values			
Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	$\sigma_t$	Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	$\sigma_t$
Station 8326; 18 July; 59°02' N., 52°04' W.; depth 3,490 m.; dynamic height 1454.633							Station 8329; 19 July; 60°43' N., 55°06' W.; depth 3,000 m.; dynamic height 1454.649						
0	8.73	34.66	0	8.73	34.66	26.91	0	8.62	34.60	0	8.62	34.60	26.89
25	5.90	34.70	25	5.90	34.70	27.35	25	6.55	34.66	25	6.55	34.66	27.23
52	4.19	34.76	50	4.20	34.76	27.60	50	4.84	34.72	50	4.84	34.72	27.49
77	3.90	34.81	75	3.90	34.81	27.67	75	4.17	34.78	75	4.17	34.78	27.61
104	3.82	34.82	100	3.80	34.82	27.69	100	4.12	34.81	100	4.12	34.81	27.65
154	3.97	34.89	150	3.95	34.89	27.72	149	4.01	34.86	150	4.00	34.86	27.70
206	3.96	34.90	200	3.95	34.90	27.73	199	4.03	34.86	200	4.05	34.86	27.69
308	3.90	34.90	300	3.90	34.90	27.74	300	4.02	34.93	300	4.02	34.93	27.75
408	3.91	34.90	400	3.90	34.90	27.74	401	3.83	34.91	400	3.85	34.91	27.75
573	3.68	34.86	600	3.65	34.85	27.72	581	3.58	34.86	600	3.60	34.86	27.74
766	3.57	34.84	800	3.55	34.84	27.72	772	3.52	34.845	800	3.55	34.85	27.73
961	3.51	34.855	1,000	3.50	34.86	27.75	962	3.58	34.87	1,000	3.60	34.87	27.75
1,454	3.42	34.88	1,500	3.45	34.84	27.76	1,443	3.49	34.90	1,500	3.45	34.90	27.78
1,939	3.50	34.88	2,000	3.45	34.88	27.76	1,921	3.27	34.91	2,000	3.20	34.91	27.82
2,425	3.20	34.91	2,500	3.10	34.91	27.83	2,379	2.84	34.92	2,500	2.90	34.91	27.87
2,900	2.70	34.89	3,000	2.45	34.88	27.85	2,814	2.10	34.875	2,800	2.10	34.88	27.88
3,377	1.50	34.845	3,375	1.50	34.85	27.91							
Station 8327; 18 July; 59°30.5' N., 53°24' W.; depth 3,450 m.; dynamic height 1454.609							Station 8330; 19 July; 61°27.5' N., 55°32' W.; depth 2,860 m.; dynamic height 1454.676						
0	8.91	34.76	0	8.91	34.76	26.97	0	8.04	34.51	0	8.04	34.51	26.90
25	5.00	34.76	25	5.00	34.76	27.51	25	5.73	34.56	25	5.73	34.56	27.26
51	3.98	34.84	50	4.00	34.84	27.68	51	3.81	34.71	50	3.80	34.71	27.60
76	3.92	34.85	75	3.90	34.85	27.70	76	3.96	34.76	75	3.95	34.76	27.62
103	3.97	34.88	100	3.95	34.88	27.71	101	3.92	34.80	100	3.95	34.80	27.65
153	4.00	34.90	150	4.00	34.90	27.73	151	4.00	34.88	150	4.00	34.87	27.71
204	4.01	34.93	200	4.00	34.91	27.74	202	4.03	34.83	200	4.05	34.83	27.66
307	3.95	34.90	300	3.95	34.91	27.74	303	4.06	34.87	300	4.05	34.87	27.70
408	3.73	34.88	400	3.75	34.89	27.74	404	4.04	34.90	400	4.05	34.90	27.72
605	3.62	34.885	600	3.60	34.89	27.76	582	3.86	34.89	600	3.85	34.89	27.73
806	3.53	34.87	800	3.55	34.87	27.75	788	3.68	34.86	800	3.65	34.86	27.73
1,007	3.47	34.87	1,000	3.45	34.87	27.76	998	3.52	34.85	1,000	3.55	34.85	27.73
1,509	3.38	34.85	1,500	3.40	34.85	27.75	1,500	3.49	34.91	1,500	3.49	34.91	27.79
2,022	3.45	34.925	2,000	3.45	34.92	27.80	2,004	3.11	34.87	2,000	3.10	34.87	27.80
2,540	3.05	34.90	2,500	3.10	34.90	27.82	2,502	2.56	34.90	2,500	2.55	34.90	27.87
3,028	2.42	34.87	3,000	2.45	34.87	27.85	2,803	1.66	34.88	2,800	1.65	34.88	27.92
3,403	1.48	34.85	3,400	1.45	34.85	27.91							
Station 8328; 19 July; 60°01.5' N., 54°50' W.; depth 3,290 m.; dynamic height 1454.627							Station 8331; 19 July; 62°11' N., 55°55' W.; depth 2,640 m.; dynamic height 1454.619						
0	8.76	34.68	0	8.76	34.68	26.92	0	7.69	34.54	0	7.69	34.54	26.97
25	6.35	34.73	25	6.35	34.73	27.31	25	4.94	34.60	25	4.94	34.60	27.38
52	4.27	34.76	50	4.40	34.76	27.58	51	3.79	34.69	50	3.80	34.69	27.58
77	4.10	34.82	75	4.10	34.82	27.66	76	3.99	34.80	75	4.00	34.79	27.64
103	3.94	34.80	100	3.95	34.80	27.65	101	4.03	34.83	100	4.05	34.82	27.66
154	3.97	34.88	150	3.95	34.88	27.71	151	4.09	34.86	150	4.10	34.86	27.69
205	4.05	34.90	200	4.05	34.90	27.72	202	3.97	34.88	200	4.00	34.88	27.71
305	3.91	34.92	300	3.90	34.92	27.76	304	3.94	34.89	300	3.95	34.89	27.72
403	3.87	34.90	400	3.85	34.90	27.74	405	4.13	34.91	400	4.15	34.91	27.72
560	3.74	34.87	600	3.70	34.88	27.74	567	3.93	34.92	600	3.90	34.92	27.76
749	3.58	34.90	800	3.55	34.89	27.76	765	3.73	34.89	800	3.70	34.89	27.75
939	3.50	34.86	1,000	3.50	34.86	27.75	968	3.55	34.88	1,000	3.55	34.88	27.75
1,418	3.38	34.84	1,500	3.40	34.85	27.75	1,468	3.46	34.93	1,500	3.40	34.93	27.81
1,906	3.45	34.90	2,000	3.35	34.90	27.79	1,976	3.06	34.93	2,000	3.00	34.93	27.85
2,400	3.06	34.88	2,500	2.95	34.88	27.81	2,477	2.18	34.925	2,500	2.10	34.91	27.91
2,879	2.54	34.90	3,000	2.20	34.89	27.89	2,534	2.00	34.88				
3,147	1.80	34.87	(3,150)	1.80	34.87	27.91							

# TABLE OF OCEANOGRAPHIC DATA STATIONS OCCUPIED IN 1962—Continued

Observed values			Scaled values				Observed values			Scaled values			
Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	$\sigma_t$	Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	$\sigma_t$
Station 8332; 20 July; 62°48' N., 56°15' W.; depth 2,470 m.; dynamic height 1454.626													
0	6.81	34.32	0	6.81	34.32	26.93	0	2.11	31.66	0	2.11	31.66	25.32
24	5.59	34.44	25	5.50	34.45	27.20	25	-1.29	32.96	25	-1.29	32.96	26.53
50	3.52	34.56	50	3.52	34.56	27.51	50	-1.71	33.06	50	-1.71	33.06	26.62
74	3.42	34.67	75	3.40	34.68	27.61	75	-1.65	33.34	75	-1.65	33.34	26.85
99	3.67	34.79	100	3.70	34.79	27.67	100	-1.65	33.46	100	-1.65	33.46	26.96
148	3.87	34.86	150	3.90	34.86	27.71	149	-1.49	33.60	150	-1.50	33.60	27.05
198	3.97	34.89	200	4.00	34.89	27.72	199	-1.45	33.70	200	-1.45	33.71	27.15
300	3.95	34.86	300	3.95	34.86	27.70	274	0.83	34.05	(200)	0.90	34.06	27.32
403	3.85	34.88	400	3.85	34.88	27.72							
602	3.88	34.885	600	3.90	34.89	27.73							
803	3.62	34.90	800	3.60	34.90	27.77							
1,005	3.51	34.855	1,000	3.50	34.86	27.75							
1,503	3.37	34.92	1,500	3.35	34.92	27.81							
1,997	2.85	34.92	2,000	2.85	34.92	27.86							
2,422	1.83	34.87	2,400	1.85	34.87	27.90							
Station 8337; 21 July; 62°49.5' N., 61°45' W.; depth 287 m.; dynamic height 1454.870													
0	2.11	31.66	0	2.11	31.66	25.32	0	2.11	31.66	0	2.11	31.66	25.32
25	-1.29	32.96	25	-1.29	32.96	26.53	25	-1.29	32.96	25	-1.29	32.96	26.53
50	-1.71	33.06	50	-1.71	33.06	26.62	50	-1.71	33.06	50	-1.71	33.06	26.62
75	-1.65	33.34	75	-1.65	33.34	26.85	75	-1.65	33.34	75	-1.65	33.34	26.85
100	-1.65	33.46	100	-1.65	33.46	26.96	100	-1.65	33.46	100	-1.65	33.46	26.96
149	-1.49	33.60	150	-1.50	33.60	27.05	149	-1.49	33.60	150	-1.50	33.60	27.05
199	-1.45	33.70	200	-1.45	33.71	27.15	199	-1.45	33.70	200	-1.45	33.71	27.15
274	0.83	34.05	(200)	0.90	34.06	27.32	274	0.83	34.05	(200)	0.90	34.06	27.32
Station 8338; 21 July; 62°53' N., 61°16' W.; depth 412 m.; dynamic height 1454.817													
0	1.14	31.77	0	1.14	31.77	25.47	0	1.14	31.77	0	1.14	31.77	25.47
26	-1.66	32.94	25	-1.60	32.92	26.51	26	-1.66	32.94	25	-1.60	32.92	26.51
51	-1.77	33.27	50	-1.75	33.26	26.78	51	-1.77	33.27	50	-1.75	33.26	26.78
76	-1.43	33.42	75	-1.45	33.42	26.91	76	-1.43	33.42	75	-1.45	33.42	26.91
102	-0.72	33.56	100	-0.70	33.55	26.99	102	-0.72	33.56	100	-0.70	33.55	26.99
153	-1.12	33.69	150	-1.10	33.67	27.11	153	-1.12	33.69	150	-1.10	33.67	27.11
203	1.69	34.29	200	1.55	34.27	27.44	203	1.69	34.29	200	1.55	34.27	27.44
302	3.18	34.66	300	3.20	34.66	27.62	302	3.18	34.66	300	3.20	34.66	27.62
399	3.23	34.66	(400)	3.25	34.66	27.61	399	3.23	34.66	(400)	3.25	34.66	27.61
Station 8334; 21 July; 62°38.5' N., 63°24' W.; depth 172 m.; dynamic height 1454.911													
0	-0.94	30.50	0	-0.94	30.50	24.53	0	-0.94	30.50	0	-0.94	30.50	24.53
25	-1.27	32.56	25	-1.27	32.56	26.21	25	-1.27	32.56	25	-1.27	32.56	26.21
50	-1.71	33.03	50	-1.71	33.03	26.59	50	-1.71	33.03	50	-1.71	33.03	26.59
76	-1.76	33.12	75	-1.75	33.12	26.67	76	-1.76	33.12	75	-1.75	33.12	26.67
101	-1.60	33.16	100	-1.60	33.16	26.70	101	-1.60	33.16	100	-1.60	33.16	26.70
126	-1.51	33.31	125	-1.50	33.30	26.81	126	-1.51	33.31	125	-1.50	33.30	26.81
Station 8339; 21 July; 62°56.5' N., 60°45' W.; depth 658 m.; dynamic height 1454.725													
0	6.04	33.76	0	6.04	33.76	26.59	0	6.04	33.76	0	6.04	33.76	26.59
25	3.68	33.94	25	3.68	33.94	26.99	25	3.68	33.94	25	3.68	33.94	26.99
50	1.18	33.96	50	1.18	33.96	27.22	50	1.18	33.96	50	1.18	33.96	27.22
76	1.11	34.08	75	1.10	34.08	27.32	76	1.11	34.08	75	1.10	34.08	27.32
101	1.80	34.26	100	1.80	34.25	27.41	101	1.80	34.26	100	1.80	34.25	27.41
152	2.42	34.44	150	2.40	34.44	27.51	152	2.42	34.44	150	2.40	34.44	27.51
202	3.12	34.57	200	3.10	34.57	27.56	202	3.12	34.57	200	3.10	34.57	27.56
292	3.84	34.79	300	3.85	34.79	27.65	292	3.84	34.79	300	3.85	34.79	27.65
393	3.98	34.78	400	4.00	34.78	27.63	393	3.98	34.78	400	4.00	34.78	27.63
594	3.51	34.77	600	3.50	34.76	27.67	594	3.51	34.77	600	3.50	34.76	27.67
624	3.52	34.74	(625)	3.50	34.74	27.65	624	3.52	34.74	(625)	3.50	34.74	27.65
Station 8340; 21 July; 63°00.5' N., 60°13' W.; depth 1,013 m.; dynamic height 1454.692													
0	6.04	33.71	0	6.04	33.71	26.55	0	6.04	33.71	0	6.04	33.71	26.55
25	4.42	34.06	25	4.42	34.06	27.02	25	4.42	34.06	25	4.42	34.06	27.02
51	2.07	34.21	50	2.05	34.20	27.35	51	2.07	34.21	50	2.05	34.20	27.35
76	2.12	34.56	75	2.10	34.56	27.57	76	2.12	34.56	75	2.10	34.56	27.57
102	2.71	34.54	100	2.65	34.53	27.56	102	2.71	34.54	100	2.65	34.53	27.56
152	3.34	34.64	150	3.35	34.63	27.57	152	3.34	34.64	150	3.35	34.63	27.57
203	3.56	34.72	200	3.55	34.72	27.63	203	3.56	34.72	200	3.55	34.72	27.63
305	4.14	34.80	300	4.10	34.80	27.64	305	4.14	34.80	300	4.10	34.80	27.64
352	4.34	34.85	400	4.35	34.86	27.66	352	4.34	34.85	400	4.35	34.86	27.66
534	4.35	34.88	600	4.20	34.89	27.70	534	4.35	34.88	600	4.20	34.89	27.70
720	3.99	34.90	800	3.90	34.90	27.74	720	3.99	34.90	800	3.90	34.90	27.74
910	3.81	34.885	900	3.80	34.89	27.74	910	3.81	34.885	900	3.80	34.89	27.74
Station 8336; 21 July; 62°45.5' N., 62°20' W.; depth 247 m.; dynamic height 1454.854													
0	1.23	30.84	0	1.23	30.84	24.72	0	1.23	30.84	0	1.23	30.84	24.72
24	-1.20	33.01	25	-1.25	33.03	26.58	24	-1.20	33.01	25	-1.25	33.03	26.58
48	-1.58	33.22	50	-1.60	33.25	26.77	48	-1.58	33.22	50	-1.60	33.25	26.77
72	-1.34	33.40	75	-1.25	33.43	26.91	72	-1.34	33.40	75	-1.25	33.43	26.91
96	-0.92	33.56	100	-0.90	33.57	27.02	96	-0.92	33.56	100	-0.90	33.57	27.02
145	-0.96	33.60	150	-0.95	33.62	27.06	145	-0.96	33.60	150	-0.95	33.62	27.06
193	0.05	33.93	200	0.40	34.01	27.31	193	0.05	33.93	200	0.40	34.01	27.31
217	1.11	34.18	(225)	1.45	34.25	27.43	217	1.11	34.18	(225)	1.45	34.25	27.43

# TABLE OF OCEANOGRAPHIC DATA STATIONS OCCUPIED IN 1962—Continued

Observed values			Scaled values				Observed values			Scaled values			
Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	$\sigma_t$	Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	$\sigma_t$
Station 8341; 21 July; 63°03.5' N., 59°40' W.; depth 1,280 m.; dynamic height 1454.686													
0	6.75	34.05	0	6.75	34.05	26.72	0	5.77	32.80	0	5.77	32.80	25.87
25	5.78	34.04	25	5.78	34.04	26.84	25	6.45	33.97	25	6.45	33.97	26.70
51	3.62	34.27	50	3.75	34.26	27.25	52	5.33	34.64	50	5.40	34.60	27.33
76	2.89	34.37	75	2.95	34.37	27.41	77	4.60	34.79	75	4.65	34.79	27.57
101	2.53	34.43	100	2.55	34.43	27.49	103	4.42	34.82	100	4.45	34.81	27.61
151	3.13	34.62	150	3.10	34.62	27.60	154	4.40	34.87	150	4.40	34.87	27.66
202	3.56	34.76	200	3.55	34.76	27.66	205	4.36	34.86	200	4.35	34.86	27.66
303	4.06	34.82	300	4.05	34.82	27.66	307	4.25	34.92	300	4.25	34.91	27.71
401	4.20	34.88	400	4.20	34.88	27.69	407	4.31	34.91	400	4.30	34.91	27.70
543	4.20	34.90	600	4.15	34.90	27.71	600	4.13	34.90	600	4.13	34.90	27.71
739	4.06	34.89	800	4.00	34.90	27.73	800	3.97	34.875	800	3.97	34.87	27.71
942	3.93	34.93	1,000	3.85	34.92	27.76	1,000	3.78	34.905	1,000	3.78	34.905	27.75
1,202	3.60	34.90	1,200	3.60	34.90	27.77	1,199	3.59	34.90	(1,200)	3.60	34.90	27.77
Station 8342; 21–22 July; 63°14' N., 58°14' W.; depth 1,550 m.; dynamic height 1454.687													
0	6.43	33.96	0	6.43	33.96	26.69	0	4.49	31.90	0	4.49	31.90	25.30
25	4.38	34.02	25	4.38	34.02	26.99	25	1.12	32.70	25	1.12	32.70	26.21
51	2.64	34.17	50	2.75	34.17	27.27	50	0.86	33.17	50	0.86	33.17	26.61
76	2.29	34.28	75	2.30	34.28	27.39	75	0.45	33.36	75	0.45	33.36	26.78
103	2.29	34.41	100	2.30	34.40	27.49	100	0.61	33.90	100	0.64	33.53	26.90
153	2.90	34.56	150	2.85	34.56	27.57	150	0.27	33.90	150	1.27	33.90	27.16
204	3.42	34.65	200	3.40	34.64	27.58	200	2.81	34.35	200	2.81	34.35	27.40
305	3.90	34.79	300	3.90	34.78	27.64	301	4.28	34.82	300	4.30	34.81	27.63
405	4.19	34.87	400	4.20	34.87	27.69	401	4.25	34.90	400	4.25	34.90	27.70
619	4.17	34.90	600	4.20	34.90	27.71	577	4.22	34.95	600	4.20	34.95	27.75
825	4.04	34.92	800	4.05	34.92	27.74	771	4.15	34.95	800	4.15	34.95	27.75
1,030	3.65	34.905	1,000	3.70	34.91	27.77	966	4.03	34.945	1,000	4.00	34.95	27.77
1,519	3.40	34.905	1,500	3.40	34.91	27.80	1,114	3.90	35.01	1,100	3.90	35.00	27.82
Station 8343; 22 July; 63°23.5' N., 56°34' W.; depth 1,810 m.; dynamic height 1454.705													
0	6.16	33.86	0	6.16	33.86	26.66	0	4.60	33.33	0	4.60	33.33	26.41
25	2.99	33.95	25	2.99	33.95	27.07	20	3.48	33.45	25	3.45	33.45	26.63
52	1.85	34.08	50	1.90	34.07	27.26	40	3.43	33.45	40	3.43	33.45	26.63
77	1.74	34.17	75	1.75	34.16	27.34							
103	2.29	34.35	100	2.30	34.34	27.44							
154	2.55	34.44	150	2.50	34.43	27.50							
205	3.24	34.60	200	3.20	34.58	27.55							
306	3.78	34.74	300	3.75	34.73	27.62							
405	4.03	34.84	400	4.00	34.84	27.68							
599	4.11	34.88	600	4.10	34.88	27.70							
799	4.02	34.92	800	4.00	34.92	27.75							
998	3.88	34.92	1,000	3.90	34.92	27.76							
1,477	3.51	34.89	1,500	3.50	34.90	27.78							
1,757	3.39	34.89	1,750	3.40	34.90	27.79							
Station 8344; 22 July; 63°35' N., 54°58' W.; depth 1,140 m.; dynamic height 1454.673													
0	6.56	34.06	0	6.56	34.06	26.76	0	6.00	32.77	0	6.00	32.77	25.82
25	5.23	34.24	25	5.23	34.24	27.06	15	4.39	33.27	25	3.80	33.41	26.57
51	3.89	34.50	50	3.95	34.48	27.40	31	3.44	33.50	30	3.44	33.49	26.66
76	3.74	34.64	75	3.75	34.64	27.54							
101	3.52	34.58	100	3.50	34.58	27.52							
151	4.41	34.82	150	4.40	34.82	27.62							
202	4.22	34.82	200	4.25	34.82	27.64							
302	4.22	34.83	300	4.20	34.83	27.65							
402	4.17	34.89	400	4.15	34.89	27.70							
606	4.06	34.87	600	4.05	34.87	27.70							
805	3.93	34.89	800	3.95	34.89	27.72							
1,001	3.60	34.90	1,000	3.60	34.90	27.77							
1,099	3.52	34.91	(1,100)	3.50	34.91	27.79							
Station 8345; 22 July; 63°42' N., 53°52' W.; depth 1,280 m.; dynamic height 1454.689													
0	5.77	32.80	0	5.77	32.80	25.87	0	6.37	33.92	0	6.37	33.92	26.68
25	6.45	33.97	25	6.45	33.97	26.70	25	3.23	33.96	25	3.23	33.96	27.05
52	5.33	34.64	50	5.40	34.60	27.33	52	1.37	34.02	50	1.35	34.01	27.25
77	4.60	34.79	75	4.65	34.79	27.57	77	1.37	34.10	75	1.35	34.09	27.31
103	4.42	34.82	100	4.45	34.81	27.61	104	1.58	34.22	100	1.55	34.21	27.39
154	4.40	34.87	150	4.40	34.87	27.66	154	2.04	34.32	150	2.00	34.32	27.45
205	4.36	34.86	200	4.35	34.86	27.66	206	2.46	34.48	200	2.40	34.43	27.50
307	4.25	34.92	300	4.25	34.91	27.71	310	3.48	34.71	300	3.40	34.69	27.62
407	4.31	34.91	400	4.30	34.91	27.70	404	4.16	34.92	400	4.15	34.91	27.72
600	4.13	34.90	600	4.13	34.90	27.71	603	4.44	34.96	600	4.45	34.96	27.73
800	3.97	34.875	800	3.97	34.87	27.71	803	3.98	35.015	800	4.00	35.01	27.82
1,000	3.78	34.905	1,000	3.78	34.905	27.75	968	3.54	34.925	(975)	3.50	34.92	27.80
1,199	3.59	34.90	(1,200)	3.60	34.90	27.77							
Station 8346; 22 July; 63°46.5' N., 53°20' W.; depth 1,150 m.; dynamic height 1454.793													
0	4.49	31.90	0	4.49	31.90	25.30	0	6.62	30.59	0	6.62	30.59	24.02
25	1.12	32.70	25	1.12	32.70	26.21	25	2.69	32.92	25	2.90	32.81	26.18
50	0.86	33.17	50	0.86	33.17	26.61	51	2.13	33.20	50	2.15	33.18	26.53
75	0.45	33.36	75	0.45	33.36	26.78							
100	0.61	33.90	100	0.64	33.53	26.90							
150	0.27	33.90	150	1.27	33.90	27.16							
200	2.81	34.35	200	2.81	34.35	27.40							
301	4.28	34.82	300	4.30	34.81	27.63							
401	4.25	34.90	400	4.25	34.90	27.70							
577	4.22	34.95	600	4.20	34.95	27.75							
771	4.15	34.95	800	4.15	34.95	27.75							
966	4.03	34.945	1,000	4.00	34.95	27.77							
1,114	3.90	35.01	1,100	3.90	35.00	27.82							
Station 8347; 22 July; 63°50.5' N., 52°46' W.; depth 47 m.; dynamic height 1454.811													
0	4.60	33.33	0	4.60	33.33	26.41	0	6.00	32.77	0	6.00	32.77	25.82
20	3.48	33.45	25	3.45	33.45	26.63	15	4.39	33.27	25	3.80	33.41	26.57
40	3.43	33.45	40	3.43	33.45	26.63	31	3.44	33.50	30	3.44	33.49	26.66
Station 8348; 22 July; 63°52' N., 52°30' W.; depth 42 m.; dynamic height 1454.818													
0	6.00	32.77	0	6.00	32.77	25.82	0	6.00	32.77	0	6.00	32.77	25.82
15	4.39	33.27	25	3.80	33.41	26.57	15	4.39	33.27	25	3.80	33.41	26.57
31	3.44	33.50	30	3.44	33.49	26.66	31	3.44	33.50	30	3.44	33.49	26.66
Station 8349; 22 July; 63°53.5' N., 52°10' W.; depth 139 m.; dynamic height 1454.859													
0	6.62	30.59	0	6.62	30.59	24.02	0	6.62	30.59	0	6.62	30.59	24.02
26	2.69	32.92	25	2.90	32.81	26.18	26	2.69	32.92	25	2.90	32.81	26.18
51	2.13	33.20	50	2.15	33.18	26.53	51	2.13	33.20	50	2.15	33.18	26.53
Station 8350; 23 July; 63°58' N., 56°52' W.; depth 984 m.; dynamic height 1454.676													
0	6.37	33.92	0	6.37	33.92	26.68	0	6.37	33.92	0	6.37	33.92	26.68
25	3.23	33.96	25	3.23	33.96	27.05	25	3.23	33.96	25	3.23	33.96	27.05
52	1.37	34.02	50	1.35	34.01	27.25	52	1.37	34.10	50	1.35	34.01	27.25
77	1.37	34.10	75	1.35	34.09	27.31	77	1.37	34.10	75	1.35	34.09	27.31
104	1.58	34.22	100										

## TABLE OF OCEANOGRAPHIC DATA STATIONS OCCUPIED IN 1962—Continued

Observed values			Scaled values				Observed values			Scaled values			
Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	$\sigma_t$	Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	$\sigma_t$
Station 8351; 23 July; 64°34' N., 57°21' W.; depth 823 m.; dynamic height 1454.649													
0	6.30	34.00	0	6.30	34.00	26.74							
25	4.83	34.06	25	4.83	34.06	26.97							
52	1.71	34.06	50	2.00	34.06	27.24							
77	1.20	34.25	75	1.20	34.24	27.44							
103	1.73	34.34	100	1.70	34.33	27.47							
154	2.67	34.63	150	2.60	34.62	27.64							
205	3.55	34.74	200	3.45	34.74	27.65							
308	4.18	34.86	300	4.10	34.85	27.68							
407	4.45	34.92	400	4.45	34.92	27.70							
594	4.35	34.95	600	4.35	34.95	27.73							
771	3.74	34.98	(800)	3.65	34.99	27.83							
Station 8355; 24 July; 66°00' N., 58°03' W.; depth 612 m.; dynamic height 1454.705													
0	2.80	32.75	0	2.80	32.75	26.14							
25	1.01	33.54	25	1.01	33.54	26.89							
51	-1.36	33.66	50	-1.25	33.66	27.10							
76	-1.66	33.73	75	-1.65	33.73	27.16							
101	-1.47	33.91	100	-1.50	33.90	27.30							
151	0.16	34.07	150	0.10	34.07	27.37							
202	1.95	34.32	200	1.90	34.31	27.45							
293	2.70	34.55	300	2.65	34.55	27.58							
367	1.88	34.54	400	1.75	34.55	27.65							
505	1.23	34.60	500	1.25	34.59	27.72							
Station 8352; 23 July; 64°57' N., 57°28' W.; depth 747 m.; dynamic height 1454.668													
0	3.72	33.17	0	3.72	33.17	26.38							
25	1.46	33.83	25	1.46	33.83	27.09							
51	-0.75	33.85	50	-0.75	33.85	27.23							
76	0.43	34.00	75	0.40	33.99	27.29							
102	1.03	34.27	100	1.00	34.24	27.45							
153	3.19	34.57	150	3.20	34.57	27.55							
203	3.11	34.63	200	3.10	34.63	27.60							
305	3.86	34.77	300	3.85	34.77	27.64							
408	4.39	34.90	400	4.35	34.89	27.68							
607	4.37	34.96	600	4.35	34.96	27.74							
730	3.87	34.945	730	3.87	34.945	27.77							
Station 8356; 24 July; 66°12' N., 58°24' W.; depth 587 m.; dynamic height 1454.778													
0	1.00	32.10	0	1.00	32.10	25.74							
22	-1.23	33.01	25	-1.35	33.09	26.63							
46	-1.55	33.29	50	-1.55	33.32	26.83							
68	-1.54	33.46	75	-1.55	33.56	27.03							
91	-1.61	33.63	100	-1.60	33.65	27.10							
136	-1.60	33.72	150	-1.55	33.74	27.17							
182	-1.39	33.80	200	-1.05	33.85	27.24							
251	-0.06	34.04	300	1.30	34.28	27.46							
341	2.18	34.46	400	1.90	34.50	27.60							
476	1.48	34.52	(500)	1.35	34.53	27.66							
Station 8357; 24 July; 66°26' N., 58°38' W.; depth 669 m.; dynamic height 1454.770													
0	1.46	32.18	0	1.46	32.18	25.78							
26	-1.57	33.04	25	-1.55	33.02	26.59							
53	-1.52	33.32	50	-1.55	33.29	26.80							
79	-1.60	33.52	75	-1.60	33.50	26.98							
106	-1.59	33.67	100	-1.60	33.62	27.08							
158	-1.61	33.74	150	-1.60	33.72	27.16							
211	-0.93	33.91	200	-1.25	33.87	27.27							
304	1.67	34.37	300	1.60	34.36	27.51							
404	2.27	34.61	400	2.25	34.61	27.66							
645	1.22	34.52	600	1.40	34.54	27.67							
Station 8358; 24 July; 66°40' N., 58°54' W.; depth 860 m.; dynamic height 1454.798													
0	0.57	32.48	0	0.57	32.48	26.07							
26	-1.38	32.96	25	-1.35	32.93	26.51							
53	-1.56	33.22	50	-1.55	33.21	26.74							
79	-1.59	33.40	75	-1.60	33.38	26.88							
105	-1.60	33.62	100	-1.60	33.60	27.06							
157	-1.60	33.75	150	-1.60	33.74	27.17							
210	-1.55	33.79	200	-1.55	33.78	27.20							
315	0.81	34.21	300	0.40	34.13	27.40							
402	2.03	34.50	400	2.05	34.50	27.59							
607	0.90	34.48	600	0.95	34.49	27.65							
815	0.53	34.48	800	0.55	34.48	27.67							
Station 8354; 23-24 July; 65°41.5' N., 57°51' W.; depth 558 m.; dynamic height 1454.728													
0	1.84	32.10	0	1.84	32.10	25.69							
25	-1.51	33.48	25	-1.51	33.48	26.96							
52	-1.64	33.67	50	-1.65	33.66	27.11							
77	-1.62	33.75	75	-1.65	33.75	27.18							
103	-1.54	33.76	100	-1.55	33.76	27.19							
154	-1.16	33.87	150	-1.20	33.86	27.26							
205	0.39	34.19	200	0.25	34.16	27.41							
302	2.03	34.45	300	2.00	34.45	27.55							
402	1.98	34.55	400	2.00	34.55	27.63							
500	1.75	34.59	500	1.75	34.59	27.68							

# TABLE OF OCEANOGRAPHIC DATA STATIONS OCCUPIED IN 1962—Continued

Observed values			Scaled values				Observed values			Scaled values			
Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	$\sigma_t$	Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	$\sigma_t$
Station 8359; 24 July; 66°54' N., 59°14' W.; depth 1,100 m.; dynamic height 1454.782													
0	2.51	32.47	0	2.51	32.47	25.93							
26	-1.55	33.00	25	-1.50	32.98	26.55							
51	-1.64	33.20	50	-1.65	33.20	26.73							
77	-1.58	33.52	75	-1.60	33.51	26.99							
102	-1.38	33.63	100	-1.40	33.62	27.07							
153	-1.28	33.77	150	-1.30	33.76	27.18							
204	-0.83	33.92	200	-0.85	33.91	27.28							
306	0.18	34.18	300	0.15	34.16	27.44							
406	2.74	34.59	400	2.70	34.59	27.60							
608	1.00	34.51	600	1.00	34.51	27.67							
810	0.47	34.48	800	0.50	34.48	27.67							
1,062	0.27	34.47	1,000	0.30	34.47	27.68							
			1,050	0.30	34.47	27.68							
Station 8363; 25 July; 67°54.5' N., 60°40' W.; depth 1,620 m.; dynamic height 1454.742													
0		4.15	32.71	0	4.15	32.71	25.97						
25	-0.06	33.30	25	-0.06	33.30	26.75							
50	-1.62	33.56	50	-1.62	33.56	27.03							
76	-1.64	33.65	75	-1.65	33.65	27.10							
101	-1.59	33.72	100	-1.60	33.72	27.16							
152	-1.20	33.84	150	-1.20	33.84	27.24							
203	-0.72	33.97	200	-0.75	33.96	27.32							
304	-0.65	34.26	300	0.60	34.26	27.49							
406	1.38	34.47	400	1.35	34.46	27.61							
608	1.70	34.57	600	1.70	34.58	27.67							
809	0.99	34.54	800	1.00	34.55	27.70							
1,009	0.47	34.50	1,000	0.50	34.50	27.69							
1,571	-0.29	34.52	1,500	-0.20	34.52	27.75							
			(1,575)	-0.30	34.52	27.75							
Station 8360; 24 July; 67°06' N., 59°31' W.; depth 1,150 m.; dynamic height 1454.807													
0	0.10	32.36	0	0.10	32.36	26.00							
23	-1.69	32.78	25	-1.70	32.80	26.41							
48	-1.61	32.98	50	-1.60	33.02	26.59							
71	-1.59	33.23	75	-1.60	33.25	26.77							
95	-1.50	33.37	100	-1.50	33.40	26.90							
142	-1.64	33.62	150	-1.60	33.65	27.10							
190	-1.30	33.79	200	-1.05	33.83	27.22							
289	0.67	34.19	300	0.75	34.22	27.46							
390	1.15	34.42	400	1.20	34.43	27.59							
597			600	1.00	34.47	27.64							
796	0.46	34.48	800	0.45	34.48	27.67							
995	0.20	34.48	1,000	0.20	34.48	27.69							
1,097	0.15	34.48	(1,100)	0.15	34.48	27.69							
Station 8364; 25 July; 68°11' N., 61°08' W.; depth 1,720 m.; dynamic height 1454.823													
0		0.52	29.74	0	0.52	29.74	23.87						
26	-1.65	32.97	25	-1.65	32.75	26.37							
51	-1.66	33.08	50	-1.65	33.08	26.63							
76	-1.63	33.26	75	-1.65	33.25	26.77							
102	-1.68	33.49	100	-1.65	33.49	26.97							
154	-1.80	33.58	150	-1.80	33.58	27.04							
205	-1.75	33.66	200	-1.75	33.65	27.10							
304	-0.92	33.91	300	-1.00	33.90	27.28							
401	1.65	34.38	400	1.65	34.38	27.52							
603	1.41		600	1.40	34.60	27.72							
810	0.59	34.585	800	0.60	34.59	27.76							
1,020	0.29	34.51	1,000	0.30	34.52	27.72							
1,528	-0.27		1,500	-0.25	34.51	27.74							
1,678	-0.32	34.51	1,675	-0.30	34.51	27.74							
Station 8361; 25 July; 67°15' N., 59°52' W.; depth 1,290 m.; dynamic height 1454.777													
0	2.79	32.43	0	2.79	32.43	25.88							
25	-0.40	32.88	25	-0.40	32.88	26.44							
52	-1.54	33.38	50	-1.55	33.37	26.87							
77	-1.55	33.54	75	-1.55	33.53	27.00							
104	-1.32	33.68	100	-1.35	33.67	27.11							
154	-1.30	33.82	150	-1.30	33.81	27.22							
206	-0.66	33.91	200	-0.75	33.90	27.27							
310	1.88	34.36	300	1.85	34.34	27.47							
392	1.54	34.44	400	1.50	34.44	27.58							
589	1.05	34.50	600	1.00	34.49	27.65							
786	0.46	34.48	800	0.45	34.48	27.67							
986	0.22	34.47	1,000	0.20	34.47	27.69							
1,258	0.00	34.49	(1,250)	0.00	34.49	27.71							
Station 8365; 25 July; 68°28.5' N., 61°34' W.; depth 1,820 m.; dynamic height 1454.864													
0		0.64	29.76	0	0.64	29.76	23.88						
26	-1.23	32.56	25	-1.10	32.54	26.19							
51	-1.62	33.92	50	-1.60	33.87	26.47							
76	-1.68	33.02	75	-1.70	33.02	26.59							
102	-1.64	33.11	100	-1.65	33.10	26.65							
154	-1.48	33.30	150	-1.50	33.29	26.80							
205	-1.40	33.62	200	-1.40	33.60	27.05							
305	0.22	34.25	300	0.15	34.22	27.49							
405	0.70	34.38	400	0.70	34.37	27.58							
605	0.72	34.465	600	0.70	34.46	27.65							
805	0.44	34.485	800	0.45	34.48	27.68							
1,004	0.26	34.49	1,000	0.25	34.49	27.70							
1,511	-0.33	34.50	1,500	-0.30	34.50	27.74							
1,713	-0.39	34.51	1,700	-0.40	34.51	27.75							
Station 8362; 25 July; 67°36' N., 60°14' W.; depth 1,530 m.; dynamic height 1454.825													
0	-1.03	30.66	0	-1.03	30.66	24.67							
25	-1.51	32.79	25	-1.51	32.79	26.40							
51	-1.63	33.10	50	-1.65	33.09	26.64							
76	-1.59	33.28	75	-1.60	33.28	26.79							
102	-1.57	33.44	100	-1.55	33.43	26.92							
152	-1.71	33.66	150	-1.70	33.65	27.10							
203	-1.33	33.80	200	-1.35	33.80	27.21							
305	0.85	34.20	300	0.75	34.19	27.43							
409	2.95	34.58	400	2.90	34.57	27.58							
612	1.01	34.48	600	1.05	34.48	27.64							
815	0.46	34.47	800	0.50	34.48	27.67							
1,018	0.19	34.48	1,000	0.20	34.48	27.69							
1,498	-0.24	34.50	(1,500)	-0.25	34.50	27.73							
Station 8366; 25 July; 68°47.5' N., 62°00' W.; depth 1,890 m.; dynamic height 1454.856													
0	-0.49	29.77	0	-0.49	29.77	23.93							
25	-1.67	32.78	25	-1.67	32.78	26.39							
50	-1.69	32.94	50	-1.69	32.94	26.53							
76	-1.62	33.03	75	-1.65	33.03	26.60							
101	-1.55	33.16	100	-1.55	33.16	26.70							
153	-1.61	33.50	150	-1.60	33.48	26.96							
203	-1.50	33.69	200	-1.50	33.68	27.12							
303	-0.34	34.05	300	-0.35	34.04	27.37							
403	0.70	34.31	400	0.70	34.30	27.52							
601	0.96	34.49	600	0.95	34.49	27.66							
801	0.59	34.49	800	0.60	34.49	27.68							
1,001	0.28	34.50	1,000	0.30	34.50	27.71							
1,501	-0.29	34.52	1,500	-0.30	34.52	27.75							
1,840	-0.38	34.49	(1,850)	-0.40	34.49	27.74							

## TABLE OF OCEANOGRAPHIC DATA STATIONS OCCUPIED IN 1962—Continued

Observed values			Scaled values				Observed values			Scaled values			
Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	$\sigma_t$	Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	$\sigma_t$
Station 8367; 26 July; 69°04' N., 62°24' W.; depth 1,950 m.; dynamic height 1454.845													
0	1.98	29.89	0	1.98	29.89	23.91	0	-0.22	28.42	0	-0.22	28.42	22.84
25	-1.46	32.69	25	-1.46	32.69	26.32	25	-1.57	32.58	25	-1.57	32.58	26.23
51	-1.67	32.97	50	-1.65	32.96	26.54	50	-1.69	32.79	50	-1.69	32.79	26.40
76	-1.58	33.14	75	-1.60	33.13	26.68	76	-1.63	32.95	75	-1.65	32.95	26.53
101	-1.43	33.35	100	-1.45	33.34	26.84	101	-1.63	33.06	100	-1.65	33.05	26.61
153	-1.46	33.62	150	-1.45	33.61	27.06	151	-1.40	33.32	150	-1.40	33.32	26.82
204	-1.38	33.78	200	-1.40	33.77	27.19	201	-1.39	33.70	200	-1.40	33.69	27.12
305	-0.19	34.04	300	-0.25	34.03	27.36	302	-0.99	33.98	300	-1.00	33.98	27.35
406	0.87	34.32	400	0.80	34.30	27.52	399	-0.15	34.20	400	-0.15	34.20	27.49
599	1.10	34.50	600	1.10	34.50	27.66	597	0.49	34.44	600	0.50	34.42	27.63
799	0.62	34.50	800	0.60	34.50	27.69	794	0.39	34.49	800	0.40	34.49	27.69
998	0.29	34.49	1,000	0.30	34.49	27.70	990	0.09	34.48	1,000	0.10	34.48	27.70
1,498	-0.31	34.51	1,500	-0.30	34.51	27.75	1,143	0.06	34.49	(1,150)	0.05	34.49	27.71
1,900	-0.39	34.51	1,900	-0.39	34.51	27.75							
Station 8371; 26 July; 69°25' N., 64°42' W.; depth 1,170 m.; dynamic height 1454.898													
0	-0.22	28.42	0	-0.22	28.42	22.84	0	3.41	29.75	0	3.41	29.75	23.69
25	-1.57	32.58	25	-1.57	32.58	26.23	25	-1.66	32.86	25	-1.66	32.86	26.46
50	-1.69	32.79	50	-1.69	32.79	26.40	50	-1.73	32.94	50	-1.75	32.94	26.53
76	-1.63	32.95	75	-1.65	32.95	26.53	76	-1.58	33.05	75	-1.60	33.04	26.60
101	-1.63	33.06	100	-1.65	33.05	26.61	102	-1.63	33.16	100	-1.65	33.15	26.69
151	-1.40	33.32	150	-1.40	33.32	26.82	153	-1.53	33.47	150	-1.55	33.45	26.94
201	-1.39	33.70	200	-1.40	33.69	27.12	204	-1.68	33.73	200	-1.65	33.71	27.15
302	-0.99	33.98	300	-1.00	33.98	27.35	305	-1.10	33.95	300	-1.15	33.94	27.32
399	-0.15	34.20	400	-0.15	34.20	27.49	406	0.10	34.22	400	0.05	34.20	27.48
597	0.49	34.44	600	0.50	34.42	27.63	605	0.76	34.45	600	0.75	34.45	27.64
794	0.39	34.49	800	0.40	34.49	27.69	806	0.54	34.50	800	0.55	34.50	27.69
990	0.09	34.48	1,000	0.10	34.48	27.70	1,008	0.23	34.50	1,000	0.25	34.50	27.71
1,143	0.06	34.49	(1,150)	0.05	34.49	27.71	1,694	-0.35	34.51	(1,700)	-0.20	34.51	27.74
Station 8372; 26 July; 69°25.5' N., 64°16' W.; depth 1,760 m.; dynamic height 1454.869													
0	3.41	29.75	0	3.41	29.75	23.69	0	2.67	30.02	0	2.67	30.02	23.97
25	-1.66	32.86	25	-1.66	32.86	26.46	25	-1.51	32.78	25	-1.51	32.78	26.39
50	-1.73	32.94	50	-1.75	32.94	26.53	50	-1.71	32.91	50	-1.71	32.91	26.50
76	-1.58	33.05	75	-1.60	33.04	26.60	75	-1.66	32.99	75	-1.66	32.99	26.57
102	-1.63	33.16	100	-1.65	33.15	26.69	100	-1.66	33.14	100	-1.66	33.14	26.69
153	-1.53	33.47	150	-1.55	33.45	26.94	152	-1.40	33.46	150	-1.40	33.45	26.93
204	-1.68	33.73	200	-1.65	33.71	27.15	202	-1.50	33.71	200	-1.50	33.70	27.14
305	-1.10	33.95	300	-1.15	33.94	27.32	302	-0.91	33.96	300	-0.90	33.96	27.33
406	0.10	34.22	400	0.05	34.20	27.48	403	0.20	34.23	400	0.20	34.22	27.49
605	0.76	34.45	600	0.75	34.45	27.64	597	0.96	34.52	600	0.95	34.52	27.68
806	0.54	34.50	800	0.55	34.50	27.69	797	0.68	34.51	800	0.70	34.51	27.69
1,008	0.23	34.50	1,000	0.25	34.50	27.71	996	0.38	34.51	1,000	0.35	34.51	27.71
1,694	-0.35	34.51	(1,700)	-0.20	34.51	27.74	1,498	-0.29	34.50	1,500	-0.30	34.50	27.74
							1,903	-0.39	34.48	1,900	-0.40	34.48	27.73
Station 8369; 26 July; 69°21.5' N., 65°05' W.; depth 730 m.; dynamic height 1454.889													
0	-0.69	29.41	0	-0.69	29.41	23.65	0	1.80	30.27	0	1.80	30.27	24.23
25	-1.66	32.66	25	-1.66	32.66	26.30	25	-1.66	32.79	25	-1.66	32.79	26.40
51	-1.72	32.80	50	-1.70	32.80	26.41	50	-1.73	32.87	50	-1.73	32.87	26.47
76	-1.72	32.90	75	-1.70	32.90	26.49	74	-1.67	32.99	75	-1.65	33.00	26.57
102	-1.68	32.93	100	-1.70	32.93	26.52	99	-1.64	33.12	100	-1.65	33.14	26.69
152	-1.58	33.13	150	-1.60	33.12	26.67	150	-1.29	33.52	150	-1.29	33.52	26.98
203	-1.36	33.62	200	-1.40	33.59	27.04	199	-1.49	33.76	200	-1.50	33.77	27.19
305	-0.81	34.04	300	-0.85	34.02	27.37	298	-0.42	34.04	300	-0.35	34.05	27.38
402	0.21	34.32	400	0.20	34.32	27.57	398	1.53	34.37	400	1.55	34.38	27.53
601	0.49	34.44	600	0.50	34.44	27.65	597	1.64	34.56	600	1.65	34.56	27.67
700	0.50	34.48	700	0.50	34.48	27.68	796	0.78	34.52	800	0.80	34.52	27.69
							997	0.39	34.51	1,000	0.40	34.51	27.71
							1,498	-0.28	34.53	1,500	-0.30	34.53	27.76
							1,942	-0.39	34.54	(1,950)	-0.40	34.54	27.78
Station 8370; 26 July; 69°25' N., 64°56' W.; depth 1,045 m.; dynamic height 1454.891													
0	-1.08	27.93	0	-1.08	27.93	22.46	0	1.80	30.27	0	1.80	30.27	24.23
25	-1.57	32.63	25	-1.57	32.63	26.27	25	-1.66	32.79	25	-1.66	32.79	26.40
50	-1.71	32.82	50	-1.71	32.82	26.43	50	-1.73	32.87	50	-1.73	32.87	26.47
75	-1.69	32.88	75	-1.69	32.88	26.48	74	-1.67	32.99	75	-1.65	33.00	26.57
101	-1.62	32.97	100	-1.60	32.96	26.54	99	-1.64	33.12	100	-1.65	33.14	26.69
150	-1.32	33.29	150	-1.32	33.29	26.80	150	-1.29	33.52	150	-1.29	33.52	26.98
201	-1.39	33.08	200	-1.40	33.07	27.11	199	-1.49	33.76	200	-1.50	33.77	27.19
302	-1.05	34.02	300	-1.05	34.01	27.37	298	-0.42	34.04	300	-0.35	34.05	27.38
402	0.13	34.28	400	0.10	34.28	27.54	398	1.53	34.37	400	1.55	34.38	27.53
604	0.50	34.48	600	0.50	34.48	27.68	597	1.64	34.56	600	1.65	34.56	27.67
805	0.32	34.47	800	0.35	34.47	27.68	796	0.78	34.52	800	0.80	34.52	27.69
1,007	0.18	34.48	1,000	0.20	34.48	27.70	997	0.39	34.51	1,000	0.40	34.51	27.71
							1,498	-0.28	34.53	1,500	-0.30	34.53	27.76
							1,942	-0.39	34.54	(1,950)	-0.40	34.54	27.78

## TABLE OF OCEANOGRAPHIC DATA STATIONS OCCUPIED IN 1962—Continued

Observed values			Scaled values				Observed values			Scaled values			
Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	$\sigma_t$	Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	$\sigma_t$
Station 8375: 27 July; 69°52' N., 61°33' W.; depth 1,830 m.; dynamic height 1454.800													
0	4.47	30.74	0	4.47	30.74	24.38	0	5.23	33.76	0	5.23	33.76	26.69
25	-1.27	32.75	25	-1.27	32.75	26.36	25	1.55	33.80	25	1.55	33.80	27.07
50	-1.53	33.34	50	-1.53	33.34	26.85	50	-0.67	33.81	50	-0.67	33.81	27.20
76	-1.60	33.58	75	-1.60	33.57	27.04	76	-1.19	33.85	75	-1.15	33.85	27.25
101	-1.66	33.66	100	-1.65	33.66	27.11	101	-1.20	33.88	100	-1.20	33.88	27.27
152	-1.52	33.78	150	-1.55	33.78	27.20	152	-0.05	34.06	150	-0.10	34.05	27.37
203	-1.28	33.84	200	-1.30	33.84	27.24	202	1.69	34.30	200	1.60	34.29	27.46
302	0.44	34.16	300	0.40	34.15	27.42	303	3.09	34.61	300	3.05	34.60	27.58
402	1.53	34.43	400	1.55	34.43	27.57							
608	1.07	34.51	600	1.10	34.51	27.67							
810	0.62	34.50	800	0.65	34.50	27.69							
1,012	0.31	34.50	1,000	0.30	34.50	27.71							
1,520	0.28	34.51	1,500	0.30	34.51	27.72							
1,766	-0.36	34.51	1,750	-0.30	34.51	27.75							
Station 8376: 27 July; 69°56.5' N., 60°40' W.; depth 1,120 m.; dynamic height 1454.760													
0	4.06	30.92	0	4.06	30.92	24.56	0	5.02	33.75	0	5.02	33.75	26.71
25	1.01	33.09	25	1.01	33.09	26.63	25	2.38	33.76	25	2.55	33.76	26.96
50	-1.45	33.53	50	-1.45	33.53	27.00	52	-0.88	33.80	50	-0.60	33.80	27.19
75	-1.42	33.64	75	-1.42	33.64	27.08	78	-1.16	33.82	75	-1.15	33.82	27.22
100	-1.45	33.74	100	-1.45	33.74	27.17	104	-1.16	33.87	100	-1.20	33.86	27.26
150	-1.43	33.84	150	-1.43	33.84	27.25	156	0.12	34.06	150	0.00	34.04	27.35
200	-0.45	33.94	200	-0.45	33.94	27.29	208	1.60	34.32	200	1.40	34.29	27.47
299	1.09	34.28	300	1.10	34.28	27.48	312	2.85	34.61	300	2.70	34.58	27.60
400	1.71	34.49	400	1.71	34.49	27.61							
587	1.49	34.57	600	1.45	34.57	27.69							
788	1.19	34.58	800	1.15	34.58	27.72							
988	0.46	34.52	1,000	0.45	34.52	27.72							
1,113	0.29	34.51	1,100	0.30	34.51	27.72							
Station 8377: 27 July; 70°03' N., 59°40' W.; depth 424 m.; dynamic height 1454.703													
0	4.65	33.03	0	4.65	33.03	26.18	0	5.07	33.64	0	5.07	33.64	26.61
25	2.02	33.44	25	2.02	33.44	26.75	24	2.70	33.78	25	2.60	33.78	26.97
51	-1.39	33.74	50	-1.15	33.74	27.16	48	-1.25	33.78	50	-1.30	33.78	27.20
76	-1.59	33.78	75	-1.60	33.78	27.20	73	-1.29	33.82	75	-1.30	33.82	27.23
102	-1.47	33.82	100	-1.50	33.82	27.23	97	-1.20	33.86	100	-1.10	33.87	27.26
152	-0.34	33.87	150	-0.40	33.87	27.23	145	0.20	34.09	150	0.30	34.11	27.39
203	0.81	34.19	200	0.75	34.17	27.42	194	1.26	34.27	200	1.40	34.30	27.48
303	2.93	34.64	300	2.90	34.64	27.63	242	2.15	34.47	(250)	2.30	34.50	27.57
402	2.75	34.63	400	2.75	34.63	27.64							
Station 8378: 27 July; 70°09' N., 58°48' W.; depth 310 m.; dynamic height 1454.689													
0	4.77	33.60	0	4.77	33.60	26.62	0	5.25	33.76	0	5.25	33.76	26.69
25	2.19	33.69	25	2.19	33.69	26.93	27	2.38	33.81	25	2.60	33.81	26.99
49	-0.60	33.75	50	-0.65	33.75	27.15	53	-0.74	33.82	50	-0.30	33.82	27.19
74	-1.37	33.80	75	-1.35	33.80	27.21	80	-1.16	33.85	75	-1.15	33.84	27.24
98	-1.22	33.86	100	-1.15	33.87	27.26	107	-0.73	33.94	100	-0.85	33.91	27.29
147	-0.04	34.03	150	0.05	34.05	27.36	161	0.73	34.17	150	0.45	34.12	27.39
196	1.18	34.24	200	1.25	34.25	27.45	214	1.53	34.34	200	1.30	34.30	27.48
270	2.37	34.49	(275)	2.45	34.50	27.56							
Station 8380: 28 July; 70°17' N., 57°35' W.; depth 365 m.; dynamic height 1454.684													
0	5.02	33.75	0	5.02	33.75	26.71	0	5.02	33.75	0	5.02	33.75	26.71
26	2.38	33.76	25	2.55	33.76	26.96	25	2.55	33.76	25	2.55	33.76	26.96
52	-0.88	33.80	50	-0.60	33.80	27.19	52	-0.88	33.80	50	-0.60	33.80	27.19
78	-1.16	33.82	75	-1.15	33.82	27.22	78	-1.16	33.82	75	-1.15	33.82	27.22
104	-1.16	33.87	100	-1.20	33.86	27.26	104	-1.16	33.87	100	-1.20	33.86	27.26
156	0.12	34.06	150	0.00	34.04	27.35	156	0.12	34.06	150	0.00	34.04	27.35
208	1.60	34.32	200	1.40	34.29	27.47	208	1.60	34.32	200	1.40	34.29	27.47
312	2.85	34.61	300	2.70	34.58	27.60	312	2.85	34.61	300	2.70	34.58	27.60
Station 8381: 28 July; 70°20' N., 57°01' W.; depth 283 m.; dynamic height 1454.681													
0	5.07	33.64	0	5.07	33.64	26.61	0	5.07	33.64	0	5.07	33.64	26.61
24	2.70	33.78	25	2.60	33.78	26.97	24	2.70	33.78	25	2.60	33.78	26.97
48	-1.25	33.78	50	-1.30	33.78	27.20	48	-1.25	33.78	50	-1.30	33.78	27.20
73	-1.29	33.82	75	-1.30	33.82	27.23	73	-1.29	33.82	75	-1.30	33.82	27.23
97	-1.20	33.86	100	-1.10	33.87	27.26	97	-1.20	33.86	100	-1.10	33.87	27.26
145	0.20	34.09	150	0.30	34.11	27.39	145	0.20	34.09	150	0.30	34.11	27.39
194	1.26	34.27	200	1.40	34.30	27.48	194	1.26	34.27	200	1.40	34.30	27.48
242	2.15	34.47	(250)	2.30	34.50	27.57	242	2.15	34.47	(250)	2.30	34.50	27.57
Station 8382: 28 July; 70°25' N., 56°32' W.; depth 242 m.; dynamic height 1454.679													
0	5.25	33.76	0	5.25	33.76	26.69	0	5.25	33.76	0	5.25	33.76	26.69
27	2.38	33.81	25	2.60	33.81	26.99	27	2.38	33.81	25	2.60	33.81	26.99
53	-0.74	33.82	50	-0.30	33.82	27.19	53	-0.74	33.82	50	-0.30	33.82	27.19
80	-1.16	33.85	75	-1.15	33.84	27.24	80	-1.16	33.85	75	-1.15	33.84	27.24
107	-0.73	33.94	100	-0.85	33.91	27.29	107	-0.73	33.94	100	-0.85	33.91	27.29
161	0.73	34.17	150	0.45	34.12	27.39	161	0.73	34.17	150	0.45	34.12	27.39
214	1.53	34.34	200	1.30	34.30	27.48	214	1.53	34.34	200	1.30	34.30	27.48

## TABLE OF OCEANOGRAPHIC DATA STATIONS OCCUPIED IN 1962—Continued

Observed values			Scaled values				Observed values			Scaled values			
Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	$\sigma_t$	Depth, meters	Temperature, °C.	Salinity, ‰	Depth, meters	Temperature, °C.	Salinity, ‰	$\sigma_t$
Station 8383; 28 July; 70°28.5' N., 56°08' W.; depth 174 m.; dynamic height 1454.675							Station 8385; 28 July; 70°34' N., 55°10' W.; depth 310 m.; dynamic height 1454.680						
0	5.95	33.81	0	5.95	33.81	26.64	0	6.13	33.75	0	6.13	33.75	26.57
25	2.34	33.81	25	2.34	33.81	27.01	24	2.46	33.83	25	2.40	33.83	27.03
50	-0.33	33.89	50	-0.33	33.89	27.25	49	0.58	33.88	50	0.50	33.88	27.20
76	-0.81	33.93	75	-0.80	33.93	27.30	73	-0.30	33.95	75	-0.30	33.95	27.29
101	-0.69	33.97	100	-0.70	33.97	27.33	97	-0.41	33.97	100	-0.40	33.97	27.32
152	-0.15	34.08	150	-0.15	34.08	27.39	146	0.05	34.07	150	0.15	34.09	27.39
							195	1.23	34.29	200	1.30	34.31	27.49
							268	2.44	34.58	(275)	2.55	34.61	27.64
Station 8384; 28 July; 70°31' N., 55°38' W.; depth 87 m.; dynamic height 1454.683							Station 8386; 28 July; 70°37' N., 54°51' W.; depth 505 m.; dynamic height 1454.721						
0	5.27	33.69	0	5.27	33.69	26.63	0	5.67	32.11	0	5.67	32.11	25.34
25	2.01	33.83	25	2.01	33.83	27.06	25	3.41	33.75	25	3.41	33.75	26.87
50	1.57	33.86	50	1.47	33.86	27.12	50	1.85	33.93	50	1.85	33.93	27.15
75	1.08	33.88	75	1.08	33.88	27.16	75	1.05	33.94	75	1.05	33.94	27.21
							100	0.63	33.99	100	0.63	33.99	27.28
							151	0.67	34.09	150	0.65	34.09	27.36
							201	1.14	34.25	200	1.15	34.25	27.45
							301	1.75	34.39	300	1.75	34.39	27.52
							397	2.19	34.54	400	2.20	34.54	27.61
							491	2.12	34.56	(500)	2.10	34.56	27.63

## TABLE OF ADDITIONAL DATA FROM POSTSEASON CRUISE 1962

In the following table the column-headings have the following significance: Depth is given in meters; O<sub>2</sub> is the dissolved oxygen expressed as milliliters per liter and as percent saturation; PO<sub>4</sub>-P is phosphate-phosphorus; NO<sub>2</sub>-N is nitrite-nitrogen; NO<sub>3</sub>-N is nitrate-nitrogen and SiO<sub>3</sub>-Si is silicate-silicon all expressed in microgram-atoms per liter. Oxygen values marked ? are questionable and are considered to be accurate only to ±0.10 ml/l.

Depth, meters	O <sub>2</sub>		PO <sub>4</sub> -P	NO <sub>2</sub> -N	NO <sub>3</sub> -N	SiO <sub>3</sub> -Si
	Ml/liter	Per cent				
Station 8300; 13 July; 53°43' N., 55°48' W.; depth 110 m.						
25-----	9.02	109.0	0.66	0.018	0.60	2.5
50-----	7.75	93.2	1.11	0.065	4.36	10.1?
76-----	7.74	93.2	1.11	0.100	6.82	7.0
101-----	7.66	92.4	1.15	0.102	6.54	7.8
Station 8301; 13 July; 53°52' N., 55°31' W.; depth 200 m.						
25-----	8.62	114.6	0.42	0.018	0.01	1.4
50-----	8.14	99.7	0.81	0.083	4.52	1.32
75-----	7.71	93.6	1.13	0.153	6.96	6.4
100-----	7.64	93.1	1.06	0.089	7.15	5.8
150-----	7.54	92.4	0.88	0.121	9.10	8.0
175-----	7.50	92.7	1.10	0.139	9.88	4.4
Station 8302; 14 July; 53°56.5' N., 55°24' W.; depth 175 m.						
22-----	8.84	110.8	0.58	0.053	1.25	1.1
45-----	7.95	96.8	0.91	0.133	5.07	5.2
67-----	7.80	95.2	0.96	0.103	4.29	9.5
89-----	7.73	94.0	1.01	0.112	7.37	7.4
134-----	7.49	92.4	1.10?	0.118	9.58	7.2
Station 8303; 14 July; 54°07' N., 55°08' W.; depth 164 m.						
24-----	8.58	106.5	-----	-----	-----	-----
48-----	7.98	97.5	1.01	0.094	5.61	1.92
72-----	7.80	95.2	1.14	0.171	0.21?	6.60
97-----	7.19?	88.4?	1.10	0.150	12.1	7.92
145-----	7.03	89.2	0.86	0.133	6.89	4.32
Station 8304; 14 July; 54°17' N., 54°50' W.; depth 185 m.						
25-----	8.62	108.6	0.59	0.053	1.54	1.6
51-----	7.95	97.4	0.87	0.080	1.60	3.0
76-----	7.87	96.0	0.91	0.080	2.31	6.8
101-----	7.77	95.6	0.96	0.086	7.90	4.6
152-----	7.30	92.0	1.08	0.136	10.1	8.2
Station 8305; 14 July; 54°29' N., 54°24' W.; depth 220 m.						
26-----	8.44	114.7	0.46	0.00?	10.7?	0.5
51-----	7.83	94.9	0.95	0.094	5.46	7.7
77-----	7.79	94.9	0.95	0.097	11.8?	3.7
102-----	7.79	95.2	0.93	0.097	6.23	3.0
154-----	7.63	93.9	0.95	0.100	14.2	5.6
205-----	7.21	91.5	1.42	0.180	9.84	7.0
Station 8306; 14 July; 54°44.5' N., 53°52' W.; depth 322 m.						
23-----	8.86	108.2	-----	-----	-----	-----
46-----	8.04	97.7	1.02	0.103	7.34	8.2
70-----	7.60	92.7	1.14	0.150	6.44	8.0
93-----	7.48	92.2	1.13	0.130	11.5	9.4
139-----	7.41	94.1	0.99	0.115	8.78	8.0
185-----	7.06	94.3	1.11	0.168	13.1	8.2
278-----	6.85	94.3	1.22	0.180	14.9	9.8

# TABLE OF ADDITIONAL DATA FROM POSTSEASON CRUISE 1962—Continued

Depth, meters	O <sub>2</sub>		PO <sub>4</sub> -P	NO <sub>2</sub> -N	NO <sub>3</sub> -N	SiO <sub>3</sub> -Si	Depth, meters	O <sub>2</sub>		PO <sub>4</sub> -P	NO <sub>2</sub> -N	NO <sub>3</sub> -N	SiO <sub>3</sub> -Si
	Ml/liter	Per cent						Ml/liter	Per cent				
Station 8307; 14 July; 54°52' N., 53°40' W.; depth 640 m.							Station 8311; 14 July; 58°30' N., 52°28' W.; depth 3,270 m.						
25	8.44	105.0	0.73	0.118	3.68	3.1	26	8.62	126.7	0.31	0.180	2.52	1.1
50	7.53	94.4	1.10	0.210	9.04	8.2	51	7.42	105.0	0.86	0.153	9.49	1.0
75	7.24	94.5	1.09	0.133	4.57	7.2	77	7.27	102.5	1.17	0.171	10.5	6.1
100	7.05	94.4	1.09	0.186	1.35	10.1	103	7.21	101.3	1.12	0.215	12.1	7.1
151	6.95	94.2	-----	0.746	13.4	10.2	153	7.03	98.0	1.22	0.254	11.6	8.9
201	6.95	95.0	1.30	0.088	10.4	9.8	205	6.99	97.5	1.30	0.106	16.2	9.0
295	6.73	93.3	1.12	0.142	11.5	8.5	310	6.95	96.9	1.23	0.038	3.42	9.6
394	6.81	94.9	1.04	0.097	11.7	8.4	417	6.90	96.1	1.29	0.056	18.4	9.2
591	7.00?	97.8?	1.13	0.074	13.9	7.9	602	6.93	96.6	1.26	0.041	15.9	8.5
							807	6.97	97.0	1.33	0.009	14.3	8.6
							1,014	6.96	96.8	1.20	0.003	15.3	8.4
							1,529	6.76	94.0	1.36?	0.047	16.4	9.5
							2,052	6.52	90.6	1.19	0.000	14.2	10.6
							2,580	6.52	89.6	1.33	0.032	15.7	12.5
							3,113	6.80	91.0	1.27	0.000	14.2	10.0
Station 8308; 14 July; 54°57.5' N., 53°26' W.; depth 1,650 m.							Station 8312; 15 July; 55°53.5' N., 51°41' W.; depth 3,550 m.						
25	8.08	113.2	0.60	0.180	4.47	2.2	25	7.76	113.8	0.54	0.136	6.29	2.5
52	7.88	112.6	0.66	0.124	3.54	1.6	51	7.22	104.0	0.96	0.183	11.5	6.0
77	7.45	105.6	0.71	0.112	6.97	3.2	76	7.26	102.9	1.13	0.221	11.5	7.2
103	7.30	102.8	1.00	0.189	8.84	5.3	102	7.01	97.6	1.24	0.077	12.7	8.4
154	7.03	98.3	1.03	0.198	5.89	5.0	151	6.95	96.6	1.31	0.055	2.79	9.2
205	7.04	97.9	1.13	0.065	12.1	7.4	202	7.11	98.6	1.19	0.006	14.6	7.1
307	6.95	97.2	1.00?	0.156?	9.78?	5.6?	305	6.98	96.9	1.23	0.015	16.2	8.8
408	6.99	97.8	1.09	0.118	11.9	6.7	409	6.87	95.7	1.19	0.041	13.7	7.7
600	7.00	98.1	1.13	0.018	17.4	7.3	581	6.97?	97.0?	1.03	0.047	14.6	5.8
800	7.00	97.6	0.98?	0.044?	7.30?	4.8?	780	6.95	96.8	1.21	0.053	13.7	6.7
999	6.92	96.5	1.10	0.006	15.9	7.3	976	6.91	96.1	1.32	0.000	14.4	9.0
1,495	6.64	92.6	1.11	0.038	11.5	7.6	1,473	6.73	93.7	1.45	0.012	15.9	9.5
							1,973	6.51	90.7	1.30	0.021	19.4	12.1
							2,482	6.47	89.4	1.20	0.000	8.71	11.2
							2,997	6.51	89.0	1.28?	0.000	16.4	15.5
							3,409	6.79	90.7	1.27	0.000	14.5	11.5
Station 8309; 14 July; 55°01' N., 53°17' W.; depth 2,140 m.							Station 8313; 15 July; 56°28' N., 50°35' W.; depth 3,650 m.						
24	8.54	123.6	0.38	0.136	1.94	0.6	27	7.68	111.6	0.92	0.198	6.86	3.6
49	7.60	108.4	0.88	0.168	6.25	3.7	54	7.34	104.5	0.99	0.248	13.3	7.0
73	7.43	105.1	0.88	0.142	7.44	6.6	80	7.28	102.4	1.29	0.298	13.8	8.2
98	7.29	102.2	0.95	0.145	8.45	4.9	107	7.26	100.7	1.05	0.186	15.5	7.3
147	7.13	99.4	1.05	0.153	15.0	6.2	159	7.27	100.3	1.18	0.103	14.1	7.6
196	7.05?	98.3?	1.10	0.094	14.3	8.4	213	7.26	100.2	1.24	0.062	14.5	9.1
298	7.02?	97.9?	1.14	0.065	17.4	7.8	316	7.06	97.7	1.33	0.059	15.0	9.1
401	6.95	96.9	1.19	0.086	14.2	7.1	416	7.02	97.2	1.20	0.047	12.5	9.4
605	6.97	97.2	1.13	0.021	15.3	8.6	625	7.05	97.6	1.13	0.030	15.5	8.3
808	-----	-----	1.08	0.009	11.8	6.7	832	6.97	96.5	1.23	0.030	13.3	9.2
1,011	7.02	97.8	1.15	0.041	14.0	10.3	1,039	6.91	95.8	1.27	0.21	12.9	9.6
1,516	6.65	92.7	1.18	0.015	4.29	7.6	1,555	6.95	96.5	1.31	0.018	18.5	10.8
2,020	6.60	91.1	1.30	0.009	6.18	12.6	2,074	6.61	92.1	1.18	0.030	11.4	10.0
							2,596	6.48	89.8	1.26	0.021	14.3	13.0
							3,090	6.59	90.2	1.27	0.030	15.3	12.7
							3,575	7.19	95.4	1.23	0.038	15.6	12.2

TABLE OF ADDITIONAL DATA FROM POSTSEASON  
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Depth, meters	O <sub>2</sub>		PO <sub>4</sub> -P	NO <sub>2</sub> -N	NO <sub>3</sub> -N	SiO <sub>3</sub> -Si	Depth, meters	O <sub>2</sub>		PO <sub>4</sub> -P	NO <sub>2</sub> -N	NO <sub>3</sub> -N	SiO <sub>3</sub> -Si
	Ml/liter	Per-cent						Ml/liter	Per-cent				
Station 8314; 15 July; 57°02.5' N., 49°24' W.; depth 3,670 m.							Station 8317; 16 July; 58°33.5' N., 46°02' W.; depth 2,560 m.						
24	7.76	113.5	0.87	0.165	7.37	3.4	26	7.85	120.0	1.17?	0.091	11.9	7.0
48	7.22	102.9	1.03	0.171	11.8?	7.2	51	7.15	104.3	0.53	0.165	4.02	1.6?
72	7.09	99.2	1.28	0.245	7.30	8.2	76	7.19	103.1	0.74	0.127	8.31	4.7
96	7.06	98.3	1.25	0.106	16.9	9.4	102	7.10	101.4	0.95	0.304	12.9	5.5
145	6.82	95.0	1.31	0.080	19.6	9.4	152	6.82	98.1	0.83	0.027	9.98	4.0
194	6.88	95.7	1.38	0.050	13.1	9.6	203	6.78	97.1	1.02	0.056	8.37	4.8
290	6.95	96.5	1.48?	0.027	12.5	5.8	307	7.11	101.2	1.07	0.056	10.7	5.5
366	7.00	97.3	1.28	0.047	16.8	9.0	410	7.00	99.4	1.23	0.044	14.2	6.6
356	6.96	96.8	1.33	0.035	14.5	9.1	601	7.04	99.0	1.11	0.015	18.9	8.5
751	6.99	97.2	1.26	0.024	14.0	9.8	806	6.76	94.7	0.91	0.006	7.68?	4.2
884	6.94	96.5	1.29	0.032	15.3	10.0	1,013	6.75	94.3	1.19	0.024	19.5	10.4
1,354	6.89	95.7	1.17	0.000	20.4	9.5	1,496	6.66	92.8				
1,841	6.62	92.2	1.39	0.009	16.7	10.3	1,959	6.51	89.3	1.16	0.180	10.9	8.5
2,349	6.51	90.2	1.36	0.032	16.5	12.1	2,545	7.08	94.9	1.30	0.012	12.4	9.2
2,836	6.51	89.2	1.43	0.00	13.7	13.4							
3,328	6.72	90.8	1.14	0.000	17.9	12.4							
3,458	6.70	90.2	1.15	0.009	19.4	12.1							
Station 8315; 16 July; 57°36.5' N., 48°17' W.; depth 3,490 m.							Station 8318; 16 July; 59°00.5' N., 45°20' W.; depth 2,370 m.						
26	7.31	106.0	0.93	0.168	10.9	6.1	25	7.71	116.6	0.56	0.159	6.83	1.3
51	7.24	103.9	1.01	0.198	7.84	5.2	49	7.13	106.9	0.86	0.245	12.0	5.1
77	7.23	102.6	0.97	0.372	8.91	4.2	74	6.93	102.5	1.11	0.180	10.6	6.7
103	7.23	102.3	1.17	0.513	12.5	6.4	98	6.85	100.7	0.97	0.242	13.2	6.0
153	7.14	100.2	0.93	0.030	13.5	5.8	147	6.74	97.9	1.22	0.118	14.0	8.3
204	7.11	99.6	1.14	0.083	12.5	5.3	196	6.68	96.8	1.10	0.038	19.6	8.8
309	7.08	99.2	0.92?	0.038	12.7	5.2	297	6.71	96.5	1.11	0.006	18.8	8.1
414	7.05	98.5	1.04	0.059	8.71?	4.3	398	6.80	97.0	1.23	0.094	12.5	8.3
605	7.05	98.4	1.14	0.032	7.62?	4.8	597	6.82	96.7	1.30	0.006	5.40	7.7
807	7.00	97.6	1.08	0.027	6.60?	5.3	796	6.68	94.2	1.16	0.018	17.4	9.0
1,010	6.92	96.3	1.08	0.018	15.4	6.8	996	6.57	92.3	1.20	0.032	16.8	7.7
1,520	6.81	94.8	1.12	0.059	12.1	6.4	1,489	6.61	92.1	1.16	0.053	12.9	7.6
2,029	6.54	90.8	1.23	0.000	11.1	6.7	1,977	6.64	91.1	1.06	0.030	14.9	9.7
2,538	6.50	89.4	1.23	0.103	12.9	11.3	2,285	6.77	91.6	1.20	0.062	11.6	10.3
3,050	6.63	90.1	0.93	0.050	8.51	6.3							
Station 8316; 16 July; 58°08' N., 47°04' W.; depth 3,150 m.							Station 8319; 17 July; 59°13.5' N., 44°48' W.; depth 2,070 m.						
24	7.54	113.8	0.72	0.121	6.50	5.3	24	8.30	119.8	0.23	0.071	1.16	6.6
49	7.33	104.8	1.15	0.221	14.5	7.1	49	7.00	104.4	0.81	0.151	10.9	4.0
73	7.25	103.3	1.14	0.263	10.8	8.6	73	6.86	102.0	0.93	0.165	11.2	5.0
98	7.18	101.9	1.29	0.422	13.3	8.5	98	6.75	99.8	1.10	0.148	10.7	5.5
147	7.27	102.9	1.15	0.035	16.5	9.5	146	6.71	98.2	1.13	0.097	19.8	8.5
196	7.09	100.4	1.10	0.018	19.1	8.9	195	6.72	97.6	1.15	0.015	20.1	8.6
293	7.06	99.5	1.14	0.009	19.3	8.9	294	6.68	96.5	1.11	0.030	15.4	7.7
387	7.04	98.8	1.27	0.044	14.1	9.1	393	6.76	97.2	1.17	0.024	12.9	6.8
614	7.09	99.1	1.44	0.015	13.5	9.1	596	6.92	98.5	1.29	0.003	5.67	7.0
815			1.19	0.009	18.4	9.2	798	6.63	94.2	1.35	0.062	15.9	9.0
1,015	6.94	96.6	1.26	0.035	11.6	9.5	1,002			1.08	0.015	17.9	8.8
1,510	6.69	93.3	1.35	0.030	21.1	10.8	1,504	6.58	91.6	1.12	0.012	17.2	9.4
1,985	6.59	91.4	1.23	0.009	19.9	11.8	2,006	6.74	91.8	1.26	0.062	15.9	10.2
2,449	6.58	90.4	1.31?	0.006	14.1	13.1							
2,945	7.04	93.9	1.01	0.006	16.7	9.4							

## TABLE OF ADDITIONAL DATA FROM POSTSEASON CRUISE 1962—Continued

Depth, meters	O <sub>2</sub>		PO <sub>4</sub> - P	NO <sub>2</sub> - N	NO <sub>3</sub> - N	SiO <sub>3</sub> - Si	Depth, meters	O <sub>2</sub>		PO <sub>4</sub> - P	NO <sub>2</sub> - N	NO <sub>3</sub> - N	SiO <sub>3</sub> - Si
	Ml/ liter	Per- cent						Ml/ liter	Per- cent				
Station 8320; 17 July; 59°21.5' N., 44°32' W.; depth 1,260 m.							Station 8325; 18 July; 58°32.5' N., 52°42' W.; depth 3,570 m.						
26	7.89	113.4	0.58	0.121	3.98	0.4	26	7.65	112.1	0.85	0.094	8.38	1.7
52	7.15	104.9	1.10	0.177	9.91	4.1	52	7.31	104.3	1.06	0.180	9.68	6.4
78	7.03	103.8	0.77	0.118	8.58	2.8	78	7.23	102.1	0.98	0.277	9.58	6.0
104	6.87	101.6	1.14	0.227	11.0	6.8	104	7.28?	102.6?	0.97	0.431	12.7	5.9
156	6.78	99.4	0.95	0.257	15.1	6.7	156	7.20	101.0	1.04	0.056	12.6	6.6
206	6.70	98.2	1.10	0.086	11.8	7.7	208	7.07	99.1	1.23	0.047	12.8	9.8
310			1.23	0.032	13.9	7.8	310	7.03	98.4	1.05	0.018	11.3	5.3
391	6.70	97.4	1.28	0.024	14.0	7.4	410	7.07	98.8	1.08	0.068	11.4	6.1
585			1.12	0.041	5.72	5.8	693	6.98	97.1	1.54	-----	20.6	7.8
778	6.69	95.7	1.12	0.021	10.8	7.6	805	7.16	99.6	1.07	0.071	11.3	5.9
972	6.86	97.7	1.13	0.024	10.7	6.7	1,006	7.11	98.9	1.13	-----	15.4	6.6
							1,511	7.07	98.1	1.26	0.035	13.4	9.8
							1,994	6.72	93.4	1.50	0.059	14.6	9.8
							2,468	6.66	92.0	1.18	-----	20.5	11.8
							2,946	6.62	90.3	1.23	-----	20.8	13.4
							3,424	7.10	93.8	1.00	0.091	13.4	9.8
Station 8321; 17 July; 59°32' N., 44°06' W.; depth 183 m.													
25	8.54	111.7	0.38	0.080	0.62	0.5							
50	8.07	104.0	0.72	0.145	4.98	1.8							
76	7.45	97.8	0.92	0.156	9.63	5.0							
101	7.36	98.8	1.02	0.174	11.3	6.1							
151	7.29	98.5	0.84	0.148	8.34	5.0							
Station 8322; 17 July; 59°34.5' N., 44°01' W.; depth 172 m.													
25	9.24	115.2	0.30	0.053	0.43	0.2							
50	8.83	108.1	0.45	0.080	1.09	0.7							
76	7.81	96.7	0.81	0.106	5.66	4.2							
101	7.72	97.1	0.88	0.139	7.31	5.6							
151	7.44	98.3	0.86	0.142	6.15	4.6							
Station 8323; 17 July; 59°40' N., 43°52' W.; depth 157 m.													
26	8.54	103.6	0.57	0.074	1.71	1.1							
51	8.34	101.3	0.77	0.089	5.52	2.8							
76	8.01	97.6	0.81	0.103	4.26	3.2							
102	7.90	96.7	0.83	0.121	5.12	4.3							
143	7.75	96.6	0.93	0.139	6.83	5.0							
Station 8324; 18 July; 58°04' N., 49°25' W.; depth 3,610 m.													
26	7.78	115.4	0.61	0.150	6.87	1.8							
52	7.29	104.8	1.03	0.136	9.12	5.6							
78	7.25	102.6	1.04	0.398	12.9	6.7							
105	7.23	101.9	1.13	0.569	15.8	6.6							
156	7.11	99.9	1.27	0.047	13.0	8.4							
208	7.12	100.5	1.22	0.059	11.6	7.9							
310	7.02?	98.4?	1.12	0.062	14.2	7.9							
408	7.01?	97.8?	1.08	0.053	14.6	8.6							
592	7.01	97.7	1.15	0.086	16.8	9.1							
793	6.93	96.5	1.04	0.086	15.8	6.8							
996	6.91	95.9	1.14	0.027	12.2	7.0							
1,512	6.87	95.2	1.28	0.032	12.4	9.0							
2,020	6.55	91.2	1.15	0.077	14.0	10.1							
2,531	6.51	89.9	1.29	0.044	17.9	12.5							
3,028	6.57	89.6	1.07	0.030	12.7	9.0							
3,526	7.00	92.3	1.11	0.024	13.1	9.6							
							Station 8327; 18 July; 59°30.5' N., 53°24' W.; depth 3,450 m.						
25	7.67	111.0	0.74	-----	10.2	4.8							
51	7.12	100.3	1.09	-----	10.7	7.3							
76	6.99	98.2	1.29	0.540	16.0	6.8							
103	6.91	97.3	1.22	0.086	19.4	8.3							
153	6.96	98.2	1.17	-----	17.4	8.6							
204	6.99	98.8	1.18	-----	19.2	8.9							
307	6.99	98.5	1.19	-----	16.9	8.9							
408	6.96	97.6	1.21	0.059	19.7	8.8							
605	6.92	96.7	1.17	-----	19.0	9.0							
806	6.98	97.3	1.13	0.083	22.3	9.0							
1,007	6.97	97.0	1.16	0.068	17.0	9.2							
1,509	6.87	95.4	1.36	0.027	14.7	9.1							
2,022	6.56	91.4	1.21	0.044	22.1	10.8							
2,540	6.55	90.2	1.22	-----	21.5	13.3							
3,028	6.70	90.9	1.21	0.086	17.3	12.6							
3,403	7.11?	94.0?	-----	-----	-----	-----							

# TABLE OF ADDITIONAL DATA FROM POSTSEASON CRUISE 1962—Continued

Station 8328; 19 July; 60°01.5' N., 54°50' W.; depth 3,290 m.

Depth, meters	O <sub>2</sub>		PO <sub>4</sub> -P	NO <sub>2</sub> -N	NO <sub>3</sub> -N	SiO <sub>3</sub> -Si
	Ml/liter	Per-cent				
25	8.67	129.5	0.36	0.109	1.58	1.3
52	7.25	103.0	0.87	0.150	9.04	3.6
77	7.21	102.0	0.96	0.248	9.19	4.4
103	7.11	100.6	1.13	0.16	7.4	7.4
154	7.15	100.7	1.27	0.109	13.5	7.8
205	7.11	100.6	1.20	0.047	16.5	6.7
305	7.03	99.1	1.16	0.055	17.3	10.1
403	6.96	97.8	1.20	0.065	12.6	7.4
560	6.89	96.4	1.11	0.027	14.8	6.7
749	6.94	97.0	1.30	0.032	13.7	8.5
939	6.97	97.4	1.16	0.047	11.5	7.7
1,418	6.87	95.2	1.21	0.030	11.6	7.6
1,906	6.55	91.1	1.27	0.044	17.1	8.8
2,400	6.58	90.8	1.25	0.041	11.8	9.5
2,879	6.67	90.6	1.12	0.035	8.89?	8.3
3,147	6.92	92.1	1.00	0.059	14.8	8.0

Station 8329; 19 July; 60°43' N., 55°06' W.; depth 3,000 m.

Depth, meters	O <sub>2</sub>		PO <sub>4</sub> -P	NO <sub>2</sub> -N	NO <sub>3</sub> -N	SiO <sub>3</sub> -Si
	Ml/liter	Per-cent				
25	7.78	116.8	0.57	0.091	2.81	3.6
50	7.62	109.9	0.85	0.127	6.76	4.7
75	7.19	101.9	0.95	0.227	8.80	5.8
100	7.11	100.6	0.94	0.198	7.61	5.2
149	7.05	99.8	1.00	0.407	11.6	5.2
190	6.99	98.7	1.17	0.044	14.6	8.0
300	6.98	98.5	1.00	0.100	12.3	6.1
401	6.92	97.3	1.13	0.068	13.4	8.3
581	6.94	96.9	1.24	0.055	19.9	9.1
772	6.89	96.0	1.34	0.027	15.8	8.4
962	6.76	94.3	1.40	0.003	14.0	9.4
1,443	6.66	92.7	1.36	0.021	14.4	10.7
1,921	6.56	91.0	1.27	0.015	13.1	10.3
2,379	6.59?	90.3?	1.26	0.062	19.3	11.6
2,814	6.82	91.6	1.24	0.012	13.8	11.3

Station 8330; 19 July; 61°27.5' N., 55°32' W.; depth 2,860 m.

Depth, meters	O <sub>2</sub>		PO <sub>4</sub> -P	NO <sub>2</sub> -N	NO <sub>3</sub> -N	SiO <sub>3</sub> -Si
	Ml/liter	Per-cent				
25	8.04	118.3	0.82	0.124	2.86	2.3
51	7.22	101.3	1.14	0.333	8.00	5.2
76	7.17	101.0	0.94	0.298	10.5	5.9
101	7.21	101.6	1.12	0.16	17.3	6.6
151	6.92	97.7	1.12	0.059	12.8	7.2
202	6.94	98.1	1.05	0.056	14.8	6.0
303	6.97	98.7	1.02	0.055	14.9	7.8
404	6.97	98.5	1.08	0.059	13.8	6.0
582	6.88	96.7	1.11	0.038	10.2	9.0
788	6.86	95.9	1.19	0.044	12.6	8.2
998	7.01	97.7	1.24	0.062	11.0	7.2
1,500	6.67	92.8	1.12	0.055	17.0	8.9
2,004	6.76	93.2	1.04	0.032	13.1	8.2
2,502	6.91	94.0	1.13	0.055	11.4	10.7
2,803	6.98	92.6	1.21?	0.103	10.2	8.8

Station 8331; 19 July; 62°11' N., 55°55' W.; depth 2,640 m.

Depth, meters	O <sub>2</sub>		PO <sub>4</sub> -P	NO <sub>2</sub> -N	NO <sub>3</sub> -N	SiO <sub>3</sub> -Si
	Ml/liter	Per-cent				
25	8.23	118.8	0.51	0.115	3.00	1.3
51	7.17	100.5	1.15	0.215	6.75	4.8
76	7.06	99.6	1.04	0.339	2.71	6.2
101	7.00	98.9	1.11	0.448	10.4	6.6
151	7.00	98.9	0.91	0.165	12.3	5.9
202	6.86	96.6	1.13	0.056	15.9	7.2
304	6.90	97.3	1.09	0.056	15.6	6.1
405	6.94	98.2	1.30?	0.056	12.1	6.8
465	6.92	97.4	1.19	0.055	14.9	9.4
765	6.92	96.9	1.19	0.086	14.9	9.6
968	6.72	93.8	1.82?	0.077	14.9	9.8
1,468	6.70	93.2	1.35	0.030	14.3	10.4
1,976	6.59	90.9	1.45	0.055	21.3	12.2
2,477	6.83	92.0	1.21	0.071	12.8	10.4
2,534	6.84	91.6	1.03	0.055	12.2	9.7

Station 8332; 20 July; 62°48' N., 56°15' W.; depth 2,470 m.

Depth, meters	O <sub>2</sub>		PO <sub>4</sub> -P	NO <sub>2</sub> -N	NO <sub>3</sub> -N	SiO <sub>3</sub> -Si
	Ml/liter	Per-cent				
24	7.67	112.3	0.43	0.118	2.09	2.2
50	7.45	103.5	0.64	0.162	5.87	2.6
74	7.12	98.9	0.91	0.055	9.59	4.9
99	7.05	98.7	1.01	0.445	13.0	5.9
148	6.91	97.3	1.08	0.118	14.8	6.2
198	6.87	96.9	1.06	0.068	15.9	6.4
300	7.00	98.5	0.96	0.077	8.52	6.2
403	7.01	98.5	1.10	0.053	14.0	7.4
602	6.87	96.6	0.96	0.100	14.9	6.5
803	6.75	94.4	1.25	0.056	15.8	8.8
1,005	6.73	93.7	1.21	0.071	4.41	9.4
1,503	6.53	90.7	1.03	0.041	14.2	8.9
1,997	6.57	90.1	1.14	0.059	17.4	11.9
2,422	6.75	90.0	2.15?	0.363	8.13	12.2

Station 8333; 20 July; 62°35.5' N., 63°41' W.; depth 148 m.

Depth, meters	O <sub>2</sub>		PO <sub>4</sub> -P	NO <sub>2</sub> -N	NO <sub>3</sub> -N	SiO <sub>3</sub> -Si
	Ml/liter	Per-cent				
25	8.59	103.8	0.93	0.068	1.41	6.8
50	8.10	97.1	1.12	0.148	5.16	9.4
76	7.97	95.5	1.14	0.083	3.53	10.4
101	7.71	92.6	1.09	0.050	5.79	8.9
126	7.63	92.1	1.17	0.074	5.65	10.3

Station 8334; 21 July; 62°38.5' N., 63°24' W.; depth 172 m.

Depth, meters	O <sub>2</sub>		PO <sub>4</sub> -P	NO <sub>2</sub> -N	NO <sub>3</sub> -N	SiO <sub>3</sub> -Si
	Ml/liter	Per-cent				
25	8.60	103.7	1.00	0.077	2.86	6.7
50	8.07	96.9	1.04	0.139	4.47	8.3
76	8.01	96.0	1.15	0.080	7.80	9.6
101	7.82	93.8	1.21	0.053	4.16	9.7
151	7.67	92.4	1.19	0.089	6.52	10.9

# TABLE OF ADDITIONAL DATA FROM POSTSEASON CRUISE 1962—Continued

Depth, meters	O <sub>2</sub>		PO <sub>4</sub> -P	NO <sub>2</sub> -N	NO <sub>3</sub> -N	SiO <sub>3</sub> -Si	Depth, meters	O <sub>2</sub>		PO <sub>4</sub> -P	NO <sub>2</sub> -N	NO <sub>3</sub> -N	SiO <sub>3</sub> -Si
	Ml/liter	Per-cent						Ml/liter	Per-cent				
Station 8335; 21 July; 62°41.5' N., 62°50' W.; depth 214 m.							Station 8340; 21 July; 63°00.5' N., 60°13' W.; depth 1,013 m.						
25	8.49	102.3	0.96	0.083	2.38	5.9	25	7.77	110.4	0.40	0.056	0.34	0.7
50	8.02	96.1	1.13	0.130	4.82	8.8	51	7.76	103.8	0.54	0.083	4.50	1.2
74	8.10	97.1	1.32	0.080	1.07	6.8	76	7.34	98.4	0.98	0.313	9.59	3.5
99	7.77	93.2	1.04	0.038	6.61	9.1	102	7.15	97.3	1.13	0.425	16.2	6.5
148	7.31	89.2	0.82?	0.038	4.91?	4.7?	152	6.93	95.9	1.26	0.047	5.46	7.6
198	7.16	89.3	1.04	0.106	5.88	9.1	203	6.91	96.2	1.23	0.018	13.7	7.6
							305	6.79	96.2	1.11	0.000	11.7	6.2
							352	6.71	95.5	1.30	0.062	11.5	6.7
							534	6.59?	93.9?	1.32	0.038	11.0	7.7
							720	6.46	91.0	1.29	0.041	16.0	12.0
							910	6.54	91.9	1.14	0.035	8.87	9.6
Station 8336; 21 July; 62°45.5' N., 62°20' W.; depth 247 m.							Station 8341; 21 July; 63°03.5' N., 59°40' W.; depth 1,280 m.						
24	8.46	102.8	0.92	0.100	1.99	3.7	25	7.53	110.2	0.24	0.027	0.33	1.2
48	7.87	94.8	1.05	0.071	3.73	5.5	51	7.69	107.0	0.49	0.068	2.84	1.9
72	7.82	94.9	1.12	0.071	0.84	6.1	76	7.51	102.6	0.79	0.103	5.46	2.6
96	7.55	92.7	1.25?	0.053	11.2?	11.4?	101	7.35	99.6	0.88	0.242	10.5	4.0
145	7.34	90.1	1.16	0.065	7.18	8.5	151	7.13	98.3	1.11	0.454	12.5	5.9
193	7.03	88.9	1.02	0.109	6.25	7.9	202	6.95	96.9	1.14	0.339	13.2	7.8
217	6.72	87.6	1.08	0.118	12.1	10.1	303	6.82	96.4	1.14	0.047	17.0	8.2
							401	6.74	95.7	1.40?	0.024	13.7	8.0
							543	6.76	95.2	1.16	0.021	14.5	8.3
							739	6.76	95.5	1.23	0.030	9.35	8.8
							942	6.69	94.2	1.28	0.018	15.4	10.0
							1,202	6.53	91.3	1.39	0.106	7.82	10.9
Station 8337; 21 July; 62°49.5' N., 61°48' W.; depth 287 m.							Station 8342; 21-22 July; 63°14' N., 58°14' W.; depth 1,550 m.						
25	8.38	101.6	1.00	0.080	4.25	6.4	25	7.94	112.3	0.28	0.021	1.22	1.1
50	7.85	94.1	1.15	0.136	6.28	9.5	51	7.78	105.5	0.65	0.077	2.27	1.9
75	7.66	92.1	1.17	0.056	5.78	7.7	76	7.48	100.5	0.79	0.153	4.30	2.9
100	7.71	93.0	1.06	0.121	4.57	8.2	103	7.28	98.0	1.09	0.357	13.5	6.1
149	7.63	92.3	0.97	0.106	8.25	6.6	153	7.13	97.7	1.02	0.351	15.5	5.9
199	7.58	92.0	0.96	0.068	8.43	6.2	204	7.00	97.2	1.02	0.097	12.0	5.6
274	6.87	88.6	1.00	0.130	9.81	8.8	305	6.86	96.5	1.07	0.065	7.77	5.9
							405	6.80	96.4	1.16	0.074	12.3	6.5
							619	6.71	95.2	1.12	0.032	7.93	7.8
							825	6.65	94.1	1.15	0.032	8.93	8.6
							1,030	6.66	93.2	1.20	0.059	8.61	9.1
							1,519	6.41	89.1	-----	-----	-----	-----
Station 8338; 21 July; 62°53' N., 61°16' W.; depth 412 m.							Station 8343; 22 July; 63°23.5' N., 56°34' W.; depth 1,810 m.						
26	8.09	97.1	1.17	0.124	4.13	5.8	25	8.66	118.1	0.21	0.018	0.30	1.8
51	7.73	92.7	1.25	0.121	0.79?	8.5	52	7.73	102.6	0.83	0.118	5.63	4.0
76	7.39	89.5	1.04	0.056	7.53	9.6	77	7.58	100.2	0.90	0.148	6.70	4.2
102	6.87	84.8	1.20	0.050	8.67	11.6	103	7.32	98.5	0.97	0.224	4.55	10.8
153	7.38	90.3	0.85	0.065	8.23	7.6	154	7.30	98.9	0.00	0.130	7.27	7.6
203	6.84	90.5	1.01	0.186	10.5	7.6	205	7.14	98.8	0.94	0.177	5.25	5.4
302	6.31	87.4	1.10	0.053	14.6	11.4	306	7.07	98.9	1.36?	0.327	15.5	7.2
399	6.28	87.2	1.11	0.083	7.46	10.1	405	6.89	97.3	1.17	0.047	8.19	9.7
							599	6.86	97.0	1.22	0.068	11.0	4.8
							799	6.83	96.5	1.22	0.041	7.61	8.9
							998	6.72	94.7	1.09	0.038	15.0	7.1
							1,477	6.51	90.7	1.23	0.077	9.40?	9.4
							1,757	6.55	91.0	-----	-----	-----	-----
Station 8339; 21 July; 62°56.5' N., 60°45' W.; depth 658 m.													
25	8.07	112.2	0.40	0.074	0.13	0.5							
50	7.87	102.6	0.54	0.062	2.52	2.9							
76	6.84	89.0	1.04	0.171	12.1	7.6							
101	6.65	88.3	1.08	0.183	10.2	8.2							
152	7.00	94.5	1.34	0.351	3.26	6.6							
202	6.93	95.4	1.09	0.068	13.4	5.4							
292	6.91	97.0	0.98	0.021	10.3	5.5							
393	6.63	96.3	1.03	0.035	8.66	6.6							
594	6.22	86.9	1.39	0.091	-----	6.2							
624	6.28	87.4	1.20	0.121	10.6	9.7							

# TABLE OF ADDITIONAL DATA FROM POSTSEASON CRUISE 1962—Continued

Depth, meters	O <sub>2</sub>		PO <sub>4</sub> -P	NO <sub>2</sub> -N	NO <sub>3</sub> -N	SiO <sub>3</sub> -Si	Depth, meters	O <sub>2</sub>		PO <sub>4</sub> -P	NO <sub>2</sub> -N	NO <sub>3</sub> -N	SiO <sub>3</sub> -Si
	Ml/liter	Percent						Ml/liter	Percent				
Station 8344; 22 July; 63°35' N., 54°58' W.; depth 1,140 m.							Station 8350; 23 July; 63°58' N., 56°52' W.; depth 984 m.						
25	8.39	121.7	0.19	0.041	1.03	0.6	25	8.74	120.0	0.26	0.035	0.34	1.4
51	7.38	103.5	0.84	0.150	4.10	3.7	52	7.71	100.9	0.71	0.106	5.05	1.7
76	7.14	99.8	0.98	0.148	8.25	4.6	77	7.65	100.2	0.85	-----	6.13	4.2
101	7.08	98.7	0.96	0.218	10.0	5.3	104	7.60	100.3	0.86	-----	9.75	5.4
151	7.01	99.9	1.03	0.254	5.19	6.5	154	7.45	99.6	1.06?	-----	8.37	4.9
202	7.01	99.5	1.04	0.266	5.46	6.2	206	7.25	98.1	0.79	0.224	13.4	3.1
302	6.83	97.0	1.00	0.041	12.7	6.1	310	7.03	97.8	0.97	-----	13.1	6.2
402	6.87	97.3	1.14?	0.044	8.45	7.1	404	6.85	97.1	1.19?	-----	12.1	6.7
606	6.87	97.1	1.10	0.032	13.2	7.3	603	6.55	93.6	1.33?	-----	14.5	9.8
805	6.75	95.1	1.20	0.044	8.72	8.5	803	6.45	91.0	1.32?	0.047	9.85	7.4
1,001	6.57	91.8	1.29	0.074	21.9	11.3							
1,099	6.48	90.3	1.17	0.038	14.2	10.3							
Station 8345; 22 July; 63°42' N., 53°52' W.; depth 1,280 m.							Station 8351; 23 July; 64°34' N., 57°21' W.; depth 823 m.						
25	7.99	119.1	0.24	0.053	0.03	0.5	25	7.62	109.1	0.18	-----	0.52	0.8
52	7.83	114.2	0.67	0.145	4.23	1.1	52	7.86	104.0	0.46	-----	1.36	0.5
77	7.14	102.2	0.92	0.177	5.57	4.7	77	7.61	99.3	0.64	0.124	5.19	2.3
103	7.03	100.2	0.89	0.204	9.7	5.4	103	7.32	96.9	0.80	0.360	10.2	3.4
154	7.00	99.8	1.09	0.342	11.7	7.0	154	7.09	96.5	0.92	-----	9.14	3.7
205	6.96	99.1	1.16?	0.360	7.51	7.6	205	-----	-----	0.95	0.089	12.6	6.1
307	6.95	98.7	1.31?	0.065	11.2	6.7	308	6.68	94.7	1.02	-----	15.0	6.6
407	6.92	98.5	1.02	0.077	7.30	6.2	407	6.61	94.5	1.11	-----	12.2	7.4
600	6.98	98.8	1.64	0.059	14.6	7.9	594	6.49	92.5	1.07	0.003	15.6	8.0
800	6.88	97.0	1.13	0.044	10.9	5.5	771	6.30	88.4	1.40	-----	13.0	11.4
1,000	6.74	94.7	1.19	0.038	13.6	7.3							
1,199	6.68	93.3	1.32	0.059	12.6	8.0							
Station 8346; 22 July; 63°46.5' N., 53°20' W.; depth 1,150 m.							Station 8352; 23 July; 64°57' N., 57°25' W.; depth 747 m.						
25	9.35	120.5	0.27	0.047	0.08	0.4	25	8.06	105.7	-----	-----	-----	-----
50	8.40	107.9	0.49	0.097	0.62	0.5	51	7.49	92.5	-----	-----	-----	-----
75	7.85	99.8	1.18	0.212	1.56	1.7	76	7.34	93.6	-----	-----	-----	-----
100	7.77	-----	0.89	0.127	1.97	3.7	102	7.49	97.5	-----	-----	-----	-----
150	7.64	99.7	0.86	0.124	3.18	5.3	152	7.07	97.4	-----	-----	-----	-----
200	7.38	100.5	0.96	0.180	4.56	6.7	305	6.80	95.5	-----	-----	-----	-----
301	7.13	101.3	1.03	0.254	6.14	6.6	408	6.74	96.0	-----	-----	-----	-----
401	6.99	99.2	1.08	0.360	5.41	6.2	607	6.53	93.1	-----	-----	-----	-----
577	6.94	98.5	1.32	0.041	15.0	7.4							
771	6.95	98.5	1.16	0.044	8.45	8.2							
966	6.89	97.3	1.15	0.056	9.24	8.2							
1,114	6.98	98.3	1.18	0.032	17.5	8.9							
Station 8347; 22 July; 63°50.5' N., 52°46' W.; depth 47 m.							Station 8353; 23 July; 65°19.5' N., 57°41' W.; depth 603 m.						
20	8.19	112.9	0.28	0.047	0.45	0.0	25	8.02	96.8	-----	-----	-----	-----
40	8.15	112.1	0.46	0.038	0.36	0.7	51	7.42	89.4	-----	-----	-----	-----
							76	7.15	86.4	-----	-----	-----	-----
							102	6.97	84.5	-----	-----	-----	-----
							204	6.95	93.5	-----	-----	-----	-----
							557	5.57	74.4	-----	-----	-----	-----
Station 8348; 22 July; 63°52' N., 52°30' W.; depth 42 m.							Station 8354; 23-24 July; 65°41.5' N., 57°51' W.; depth 558 m.						
15	8.27	116.3	0.35	0.077	0.04	0.2	52	7.45	89.8	-----	-----	-----	-----
31	8.19	112.8	0.30	0.044	0.35	0.2	77	7.11	85.7	-----	-----	-----	-----
							103	7.06	85.4	-----	-----	-----	-----
							154	6.83	83.5	-----	-----	-----	-----
							205	6.06	77.3	-----	-----	-----	-----
							302	5.90	79.0	-----	-----	-----	-----
							402	5.73	76.7	-----	-----	-----	-----
							500	5.59	74.2	-----	-----	-----	-----
Station 8349; 22 July; 63°53.5' N., 52°10' W.; depth 139 m.													
26	8.39	113.1	0.34	0.083	0.40	1.2							
51	8.36	111.1	0.43	0.053	1.44	1.2							

# TABLE OF ADDITIONAL DATA FROM POSTSEASON CRUISE 1962—Continued

Depth, meters	O <sub>2</sub>		PO <sub>4</sub> - P	NO <sub>2</sub> - N	NO <sub>3</sub> - N	SiO <sub>3</sub> - Si	Depth, meters	O <sub>2</sub>		PO <sub>4</sub> - P	NO <sub>2</sub> - N	NO <sub>3</sub> - N	SiO <sub>3</sub> - Si
	MI/ liter	Per- cent						MI/ liter	Per- cent				
Station 8355; 24 July; 66°00' N., 58°03' W.; depth 612 m.							Station 8360; 24 July; 67°06' N., 59°31' W.; depth 1,150 m.						
25	9.05	116.9	0.34	-----	0.59	2.2	23	7.94	95.0	0.97	0.077	3.32	6.4
51	7.89	95.9	1.11	-----	7.88	6.0	48	7.81	93.8	1.29	0.115	6.72	11.9
76	7.51	90.4	0.98	-----	9.00	7.4	71	7.53	90.6	1.15	-----	5.58	10.2
101	7.21	87.5	1.22	-----	10.1	9.0	95	7.27	87.7	1.24	-----	11.5	14.3
151	6.67	84.6	1.11	-----	13.5	10.3	142	7.26	87.5	1.22	-----	10.5	12.4
202	6.38	85.1	1.17	-----	15.1	11.9	190	6.81	83.0	1.29	-----	10.4	13.2
293	6.03	82.0	1.21	0.030	14.6	12.2	289	5.83	75.1	1.39	-----	17.3	16.1
367	5.77	76.9	1.27	0.032	14.4	15.2	390	5.68	74.3	1.25	0.050	14.5	18.5
505	5.51	72.2	1.31	-----	11.9	20.2	597	5.67	-----	1.27	0.059	17.0	17.9
							796	5.35	68.6	1.46	-----	19.0	31.9
							995	5.00	63.7	1.42	-----	18.2	37.2
							1,097	4.76	60.5	1.68	-----	15.9	47.9
Station 8356; 24 July; 66°12' N., 58°24' W.; depth 587 m.													
22	8.33	101.2	-----	-----	-----	-----							
46	7.81	94.2	-----	-----	-----	-----							
68	7.46	90.1	-----	-----	-----	-----							
91	7.30	88.2	-----	-----	-----	-----							
136	7.12	86.0	-----	-----	-----	-----							
182	6.91	84.1	-----	-----	-----	-----							
251	6.16	77.8	-----	-----	-----	-----							
341	6.01	80.7	-----	-----	-----	-----							
476	5.61	74.0	-----	-----	-----	-----							
Station 8357; 24 July; 66°26' N., 58°38' W.; depth 669 m.													
26	7.85	94.5	-----	-----	-----	-----							
53	7.76	93.7	-----	-----	-----	-----							
79	7.44	89.9	-----	-----	-----	-----							
106	7.30	88.2	-----	-----	-----	-----							
158	7.12	86.1	-----	-----	-----	-----							
211	6.49	79.9	-----	-----	-----	-----							
304	6.02	79.7	-----	-----	-----	-----							
404	5.92	79.6	-----	-----	-----	-----							
Station 8358; 24 July; 66°40' N., 58°54' W.; depth 860 m.													
26	8.33	100.6	-----	-----	-----	-----							
53	7.39	89.0	-----	-----	-----	-----							
79	7.35	88.5	-----	-----	-----	-----							
105	7.43	89.7	-----	-----	-----	-----							
157	7.20	86.9	-----	-----	-----	-----							
210	7.20	87.1	-----	-----	-----	-----							
315	5.94	76.7	-----	-----	-----	-----							
402	5.88	78.7	-----	-----	-----	-----							
607	5.44	70.7	-----	-----	-----	-----							
815	5.26	67.6	-----	-----	-----	-----							
Station 8359; 24 July; 66°54' N., 59°14' W.; depth 1,100 m.													
26	8.06	96.9	-----	-----	-----	-----							
51	7.78	93.7	-----	-----	-----	-----							
77	7.41	89.6	-----	-----	-----	-----							
102	7.50	91.1	-----	-----	-----	-----							
153	6.76	82.3	-----	-----	-----	-----							
204	6.41	79.1	-----	-----	-----	-----							
306	5.70	72.2	-----	-----	-----	-----							
406	6.05	82.5	-----	-----	-----	-----							
608	5.52	71.9	-----	-----	-----	-----							
810	5.32	68.3	-----	-----	-----	-----							
1,062	5.16	65.8	-----	-----	-----	-----							
							Station 8361; 25 July; 67°15' N., 59°52' W.; depth 1,290 m.						
25	8.98	111.3	-----	-----	-----	-----							
52	7.77	93.7	-----	-----	-----	-----							
77	7.69	93.0	-----	-----	-----	-----							
104	7.59	92.5	-----	-----	-----	-----							
154	7.21	87.9	-----	-----	-----	-----							
206	6.18	76.8	-----	-----	-----	-----							
310	5.95	79.1	-----	-----	-----	-----							
392	5.72	75.5	-----	-----	-----	-----							
589	5.48	71.5	-----	-----	-----	-----							
786	5.28	67.6	-----	-----	-----	-----							
986	5.08	64.7	-----	-----	-----	-----							
1,258	4.05	51.4	-----	-----	-----	-----							
							Station 8362; 25 July; 67°36' N., 60°14' W.; depth 1,530 m.						
25	8.31	99.8	-----	-----	-----	-----							
51	7.89	94.8	-----	-----	-----	-----							
76	7.46	89.9	-----	-----	-----	-----							
102	7.26	87.4	-----	-----	-----	-----							
152	7.33	88.3	-----	-----	-----	-----							
203	6.75	82.3	-----	-----	-----	-----							
305	5.78	74.7	-----	-----	-----	-----							
409	6.07	83.2	-----	-----	-----	-----							
612	5.48	71.4	-----	-----	-----	-----							
815	5.37	68.9	-----	-----	-----	-----							
1,018	5.07	64.6	-----	-----	-----	-----							
1,498	3.51	44.2	-----	-----	-----	-----							
							Station 8363; 25 July; 67°54.5' N., 60°40' W.; depth 1,620 m.						
25	8.82	110.6	-----	-----	-----	-----							
50	7.48	90.3	-----	-----	-----	-----							
76	7.47	90.2	-----	-----	-----	-----							
101	7.24	87.7	-----	-----	-----	-----							
152	6.12	74.9	-----	-----	-----	-----							
203	6.72	83.1	-----	-----	-----	-----							
304	5.48	70.6	-----	-----	-----	-----							
406	5.57	73.2	-----	-----	-----	-----							
608	5.61	74.5	-----	-----	-----	-----							
809	5.37	69.8	-----	-----	-----	-----							
1,009	5.02	64.5	-----	-----	-----	-----							
1,571	3.39	42.6	-----	-----	-----	-----							

# TABLE OF ADDITIONAL DATA FROM POSTSEASON CRUISE 1962—Continued

Depth, meters	O <sub>2</sub>		PO <sub>4</sub> -P	NO <sub>2</sub> -N	NO <sub>3</sub> -N	SiO <sub>3</sub> -Si	Depth, meters	O <sub>2</sub>		PO <sub>4</sub> -P	NO <sub>2</sub> -N	NO <sub>3</sub> -N	SiO <sub>3</sub> -Si
	Ml/liter	Percent						Ml/liter	Percent				
Station 8364; 25 July; 68°11' N., 61°08' W.; depth 1,720 m.							Station 8368; 26 July; 69°15' N., 62°45' W.; depth 2,010 m.						
26	8.17	98.1	1.08		4.92	9.1	25	8.53	102.4	0.87	0.053	1.85	5.3
51	7.91	95.1	1.01		5.79	8.4	50	7.99	95.8	1.13	0.089	4.86	11.0
76	7.56	90.9	1.20		6.20	12.1	75	7.77	93.3	1.33	0.063	4.55	13.7
102	7.46	89.8	1.12		8.40	11.3	100	7.57	91.1	1.27	0.012	8.3	12.4
154	7.53	90.5	1.16		6.90	10.6	152	7.32	88.6	1.35	0.041	9.0	15.1
205	7.42	89.3	0.89		6.71	8.4	202	7.33	88.4	1.40?	0.053	8.24	10.1
304	6.31	77.8	1.09		10.4	11.4	302	6.12	75.7	1.33	0.027	11.6	14.3
401	5.83	77.1	1.26		12.2	14.2	402	5.52	71.7	1.35	0.015	16.7	18.6
603	5.62		2.13		11.5	19.9	591	5.48	71.5	1.21	0.027	12.5	18.4
810	5.34	68.7	1.30		16.1	2.5?	789	5.24	67.7	1.51	0.018	15.3	28.4
1,020	5.15	66.2	1.35	0.047	15.5	33.6	986	5.03	64.4	1.53	0.024	18.3	38.8
1,528	3.53		1.78		24.9	67.4	1,482	3.64	45.7	1.54	0.012	17.4	53.6
1,678	3.39	42.6	1.78		16.4	70.8	1,780	3.40	41.4	2.08	0.030	4.9	82.8
							1,943	3.26	40.8	2.07	0.030	22.2	92.0
Station 8365; 25 July; 68°25.5' N., 61°34' W.; depth 1,820 m.							Station 8369; 26 July; 69°21.5' N., 65°05' W.; depth 730 m.						
26	8.83	106.6					25	8.12	97.2				
51	8.08	96.9					51	7.98	95.4				
76	8.00	96.1					76	7.90	94.6				
102	7.79	93.6					102	7.74	92.8				
154	7.26	87.9					152	7.46	89.9				
205	6.84	82.9					203	7.03	85.7				
305	5.61	71.4					305	6.14	75.9				
405	5.55	71.6					402	5.65	71.9				
605	5.51	71.2					601	5.60	71.8				
805	5.31	68.1					700	5.55	71.2				
1,004	4.95	63.1											
1,511	3.47	43.6											
1,713	3.23	40.6											
Station 8366; 25 July; 68°47.5' N., 62°00' W.; depth 1,890 m.							Station 8370; 26 July; 69°25' N., 64°56' W.; depth 1,045 m.						
50	7.91	94.8					25	8.43	101.1				
76	7.73	92.8					50	8.01	95.9				
101	7.58	91.3					75	7.83	93.7				
153	7.30	88.1					101	7.63	91.6				
203	7.03	85.3					150	7.08	85.9				
303	5.88	73.7					201	6.97	84.6				
403	5.07	65.4					302	6.30	77.4				
601	5.44	70.6					402	5.66	71.9				
801	5.25	67.6					604	5.61	72.1				
1,001	5.05	64.5					805	5.57	71.0				
1,501	3.49	43.9					1,007	5.61	71.4				
Station 8367; 26 July; 69°04' N., 62°24' W.; depth 1,950 m.							Station 8371; 26 July; 69°25' N., 64°42' W.; depth 1,170 m.						
25	8.49	102.2					25	8.47	101.4				
51	7.77	93.2					50	7.99	95.6				
76	7.52	94.1					76	7.87	94.4				
101	7.43	90.1					101	7.73	92.9				
153	7.09	85.9					151	7.23	87.6				
204	6.77	82.2					201	6.91	84.0				
305	5.84	73.4					302	6.27	77.2				
406	5.55	72.0					399	5.75	72.4				
599	5.45	71.1					597	5.61	72.1				
799	5.21	67.2					794	5.40	69.1				
998	4.95	63.2					990	5.45	69.2				
1,498	3.49	43.8					1,143	5.17?	65.6?				
1,900	3.23	40.5											

## TABLE OF ADDITIONAL DATA FROM POSTSEASON CRUISE 1962—Continued

Depth, meters	O <sub>2</sub>		PO <sub>4</sub> -P	NO <sub>2</sub> -N	NO <sub>3</sub> -N	SiO <sub>3</sub> -Si	Depth, meters	O <sub>2</sub>		PO <sub>4</sub> -P	NO <sub>2</sub> -N	NO <sub>3</sub> -N	SiO <sub>3</sub> -Si
	Ml/liter	Percent						Ml/liter	Percent				
Station 8372; 26 July; 69°25.5' N., 64°16' W.; depth 1,760 m.							Station 8376; 27 July; 69°56.5' N., 60°40' W.; depth 1,120 m.						
25	8.16	98.0					25	9.25	119.3				
51	8.02	96.0					50	7.97	96.6				
76	7.46	89.9					75	7.87	95.6				
102	7.64	91.8					100	7.66	93.0				
153	7.48	90.4					150	7.12	86.6				
204	7.29	88.1					200	6.33	79.1				
305	6.38	78.2					299	5.62	73.2				
406	5.65	71.7					400	5.71	75.7				
605	5.48	70.7					587	5.57	73.4				
806	5.36	68.9					788	5.47	71.5				
1,008	5.01	63.9					988	5.12	65.8				
Station 8373; 27 July; 69°36.5' N., 63°21' W.; depth 2,020 m.							Station 8377; 27 July; 70°03' N., 59°40' W.; depth 424 m.						
25	9.27	111.5					25	8.76	116.2				
50	8.03	96.2					51	7.71	93.6				
75	7.63	91.5					76	7.22	87.4				
100	7.63	91.6					102	7.06	85.8				
152	7.10	86.1					152	6.29	78.7				
202	6.99	84.8					203	5.93	76.5				
302	6.20	76.5					303	5.94	81.4				
403	5.58	71.0					402	5.84	79.6				
597	5.47	71.1											
797	5.25	67.8											
996	4.85	62.2											
1,498	3.57	44.9											
1,903	3.23	40.5											
Station 8374; 27 July; 69°43.5' N., 62°28' W.; depth 2,020 m.							Station 8378; 27 July; 70°09' N., 58°48' W.; depth 310 m.						
25	8.16	98.0					25	8.59	114.8				
50	7.92	94.7					49	7.92	98.4				
74	7.67	92.1					74	7.21	87.8				
99	7.58	91.1					98	6.98	85.3				
150	7.11	86.6					147	6.15	77.8				
199	6.98	84.7					196	5.97	77.9				
298	5.96	74.6					270	5.68	76.6				
398	5.71	75.4											
597	5.69	75.3											
796	5.24	67.8											
997	4.89	62.7											
1,498	3.67	46.1											
1,942	3.23	40.6											
Station 8375; 27 July; 69°52' N., 61°33' W.; depth 1,830 m.							Station 8379; 28 July; 70°13' N., 58°08' W.; depth 342 m.						
25	8.76	106.0					0	7.66	110.6				
50	7.89	95.3					25	8.42	110.5				
76	7.46	90.0					50	7.87	97.6				
101	7.37	88.8					76	7.40	90.4				
152	7.04	85.3					101	7.06	86.3				
203	6.85	83.5					152	6.16	77.7				
302	5.73	73.3					202	5.97	79.0				
402	5.67	74.8					303	5.97	81.9				
608	5.47	71.4											
810	5.23	67.4											
1,012	4.97	63.5											
1,520	3.58	45.7											
1,766	3.29	41.3											
Station 8380; 28 July; 70°17' N., 57°35' W.; depth 365 m.							Station 8389; 28 July; 70°17' N., 57°35' W.; depth 365 m.						
26	7.71	110.9					0	7.71	110.9				
52	7.71	95.2					26	8.35	112.1				
78	7.48	91.5					52	7.71	95.2				
104	6.96	85.3					78	7.48	91.5				
156	6.12	77.5					104	6.96	85.3				
208	5.77	76.2					156	6.12	77.5				
312	5.82	79.6					208	5.77	76.2				
							312	5.82	79.6				

## TABLE OF ADDITIONAL DATA FROM POSTSEASON CRUISE 1962—Continued

Depth, meters	O <sub>2</sub>		PO <sub>4</sub> - P	NO <sub>2</sub> - N	NO <sub>3</sub> - N	SiO <sub>3</sub> - Si	Depth, meters	O <sub>2</sub>		PO <sub>4</sub> - P	NO <sub>2</sub> - N	NO <sub>3</sub> - N	SiO <sub>3</sub> - Si
	Ml/ liter	Per- cent						Ml/ liter	Per- cent				
Station 8381; 28 July; 70°20' N., 57°01' W.; depth 283 m.													
0	7.71	110.9					0	7.91	114.2				
24	8.40	113.7					25	7.82	104.0				
48	7.56	92.3					50	7.61	99.6				
73	7.42						75	7.50	97.4				
97	6.82	83.3											
145	6.00	76.2											
194	5.69	74.4											
242	5.37	72.1											
Station 8382; 28 July; 70°25' N., 56°32' W.; depth 242 m.													
0	7.71	111.5					0	7.81	115.3				
27	8.31	111.7					24	8.36	112.5				
53	7.91	97.8					49	7.59	97.1				
80	6.71	82.1					73	7.22	90.3				
107	6.76	83.7					97	6.76	84.5				
161	5.87	75.7					146	6.11	77.4				
214	5.32	70.2					195	5.66	73.9				
							268	5.63	76.2				
Station 8383; 28 July; 70°28.5' N., 56°08' W.; depth 174 m.													
0	7.58	111.2					0	9.68	139.7				
25	8.34	112.0					25	8.39	115.7				
50	7.46	93.3					50	7.69	101.9				
76	6.94	85.7					75	7.06	91.7				
101	6.61	82.0					100	6.98	89.6				
152	5.89	74.0					151	6.60	84.8				
							201	6.02	78.6				
							301	5.71	75.7				
							397	5.58	75.0				
							491	5.41	72.6				
Station 8384; 28 July; 70°31' N., 55°38' W.; depth 87 m.													
0	7.91	114.2					0	7.91	114.2				
25	7.82	104.0					25	7.82	104.0				
50	7.61	99.6					50	7.61	99.6				
75	7.50	97.4					75	7.50	97.4				
Station 8385; 28 July; 70°34' N., 55°10' W.; depth 310 m.													
0	7.81	115.3					0	7.81	115.3				
24	8.36	112.5					24	8.36	112.5				
49	7.59	97.1					49	7.59	97.1				
73	7.22	90.3					73	7.22	90.3				
97	6.76	84.5					97	6.76	84.5				
146	6.11	77.4					146	6.11	77.4				
195	5.66	73.9					195	5.66	73.9				
268	5.63	76.2					268	5.63	76.2				
Station 8386; 28 July; 70°37' N., 54°51' W.; depth 505 m.													
0	9.68	139.7					0	9.68	139.7				
25	8.39	115.7					25	8.39	115.7				
50	7.69	101.9					50	7.69	101.9				
75	7.06	91.7					75	7.06	91.7				
100	6.98	89.6					100	6.98	89.6				
151	6.60	84.8					151	6.60	84.8				
201	6.02	78.6					201	6.02	78.6				
301	5.71	75.7					301	5.71	75.7				
397	5.58	75.0					397	5.58	75.0				
491	5.41	72.6					491	5.41	72.6				













