

*Supplement*

MANUSCRIPT REPORTS OF THE BIOLOGICAL STATIONS

No. 105

Contributions to the hydrography of the waters  
of the Scotian shelf.

Hydrodynamics of the waters - 1932.

by

H. B. Hachey

# **BIOLOGICAL BOARD OF CANADA**

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**Author**

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Contributions to the Hydrography of the Waters  
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Introduction:

The various sources of earlier information on the earlier work in connection with water movements of importance to the Scotian shelf have been referred to in an earlier report ( Hachey, 1932 ). The hydrographical data obtained during the monthly cruises of 1932 have been subjected to the modern hydrodynamical treatment as initiated by Bjerknes ( see Sandstrom, 1919; Smith, 1926; Hachey, 1931.) and modified for inshore waters by Jacobsen and Jensen ( 1926 ).

The pertinent data are furnished in tables 1, 2, 3, and 4. From the gradients, expressed in dynamic centimetres, the topography of the various *isobaric* surfaces ( 0, 50, 100, and 150 decibars ) is indicated in figures 1, 2, 3, and 4 for June, figures 5, 6, 7, and 8 for July, figures 9, 10, 11, and 12 for August, and figures 13, 14, 15, and 16 for September-October.

Topography of Various Isobaric Surfaces for June, 1932.

The topography of the sea's surface in June, 1932, is indicated in figure 1. The *isobaths* are drawn from the plotted gradients in dynamic centimetres referred to station 50 as base. The arrow heads indicate the general direction of the movement of the waters at this time, while the proximity of the *isobaths* to one

another indicate<sup>s</sup> the relative intensity of the movements in different parts of the area.

The general movement in the neighborhood of the coast is coastwise ~~from east to west~~ <sup>towards the south west</sup>. In the neighborhood of the offshore stations ( 48, 49, 50, 51, and 52 ), the movement tends towards an anticlockwise one. The movement of greatest intensity is at right angles to a line joining stations 52 and 53 and amounts to approximately .08 knots or 1.9 nautical miles per day.

The topography of the surface of 50 decibars in June, 1932, is indicated in figure 2. The plotted data are referred to station 50 as base and isobars<sup>ths</sup> are drawn for each dynamic centimetre. The direction of the water movements are much the same as that of the waters of the sea's surface. The intensity of the movement of the waters of the surface of 50 decibars is somewhat less than the intensity of the movement of the waters of the sea's surface.

The topography of the surface of 100 decibars is indicated in figure 3. The plotted data are referred to station 51 as base and isobars<sup>ths</sup> are drawn for each dynamic centimetre. The general movement of the waters in this ~~iso~~ <sup>iso</sup> baric surface is approximately the same as that of the sea's surface and for the isobaric surface of 50 decibars.

The topography of the surface of 150 decibars is indicated in figure 4. The plotted data refer to station 52 as base and the isobars<sup>ths</sup> are drawn for each tenth of a dynamic centimetre. The movements of the waters of this ~~iso~~ <sup>iso</sup> baric surface are shoreward and of comparatively small intensity. The maximum movement is approximately <sup>.00(7)</sup> ~~.0~~ knots or <sup>0.1(7)</sup> ~~0.1~~ nautical miles per day at right angles to a line joining stations 48 and 52.

Topography of the Various Isobaric Surfaces for July, 1932.

The topography of the sea's surface in July, 1932, is indicated in figure 5. The plotted data are referred to station 51 as base, and isobaths are drawn for each dynamic centimetre. The direction of the water movements are indicated by the arrowheads. East of ~~Merice~~<sup>Sambro</sup>, a considerable movement offshore is noted which gradually swings into the predominant <sup>ing</sup> ~~east to west~~<sup>Southwesterly</sup> movement along the coast. In the neighborhood of the stations furthest offshore circulatory tendencies are in evidence. The intensity of the movement at right angles to a line joining stations 51 and 52 is approximately .13 knots or ~~3.0~~<sup>3.0</sup> nautical miles per day.

The topography of the surface of 50 decibars is indicated in figure 6. The plotted data are referred to station 48 as base, and the isobaths are drawn for each dynamic centimetre. East of ~~Merice~~<sup>Sambro</sup> the offshore movement is probably more pronounced in the waters of the surface of 50 decibars than in the waters of the sea's surface. Otherwise, the movements are much the same as those of the sea's surface with but little diminution in the intensity of the movement.

The topography of the surface of 100 decibars is indicated in figure 7. The plotted data are referred to stations 47 and 48 as base, and the isobaths are drawn for each dynamic centimetre. Indications of an offshore movement west of ~~Merice~~<sup>Sambro</sup> is noted which gradually swings into the ~~east and west~~<sup>Southwesterly</sup> movement along the coast, the predominating movement in this ~~isobaric~~<sup>isobaric</sup> surface. The intensity of the movement is much less than that of the movements in the sea's surface and in the surface of 50 decibars.

The topography of the surface of 150 decibars is indicated in figure 8. The plotted data are referred to stations 47 and 48

and the isobaths are drawn for each tenth of a dynamic centimetre. The movements of the waters of this isobaric surface are offshore and of comparatively small intensity. The maximum movement in this surface amounts to .01(4) knots or 0.3(4) nautical miles per day in a direction offshore at right angles to a line joining stations 48 and 52.

Topography of the Various Decibaric Surfaces for August, 1932.

The topography of the sea's surface in August, 1932, is indicated in figure 9. The plotted data are referred to station 70 as base, and isobaths are drawn for each dynamic centimetre. The direction of the water movements are indicated by the arrowheads. Inshore, the movements are in general southwesterly along the coast. To the east of Sambro there is a tendency for the waters to swing shoreward. Offshore, circulatory movements, probably partly controlled by the configuration of the bottom, are in evidence. The intensity of the movement at right angles to a line joining stations 51 and 52 is approximately .01(7) knots or 0.4 nautical miles per day.

The topography of the surface of 50 decibars is indicated in figure 10. The plotted data are referred to station 49 as base, and the isobaths are drawn for each dynamic centimetre. The general movement is ~~inward~~ southwesterly along the coast. East of ~~the coast~~ <sup>Sambro</sup> the inshore waters tend shoreward. Offshore, certain circulatory tendencies are to be noted.

The topography of the surface of 100 decibars is indicated in figure 11. The plotted data are referred to stations 52 and 72 as base, and the isobaths are drawn for each dynamic centimetre. There is comparatively little movement in this <sup>iso</sup>baric surface. The most marked movement is southwesterly along the coast.

The topography of the surface of 150 decibars is indicated in figure 12. The plotted data are referred to station 51 as base,

and isotherms<sup>baths</sup> are drawn for each tenth of a dynamic centimetre. The movements ~~in~~<sup>on</sup> this isobaric surface are shoreward and of comparatively small intensity. The maximum movement amounts to .01(4) knots ~~for~~ 0.7(4) nautical miles per day, and in a direction shoreward at right angles to a line joining stations 48 and 52.

Topography of the Various Decibaric Surfaces for September-October, 1932.

The topography of the sea's surface in September/October, 1932, is indicated in figure 13. The plotted data are referred to station 48 as base, and the isobaths<sup>th</sup> are drawn for each dynamic centimetre.. East of Sambro, the movement of the waters is shoreward. To the west of Sambro, the movement is northeasterly along the shore, swinging sharply into an offshore movement which swings again into the general southwesterly movement which prevails offshore. The maximum movement ~~is found~~ amounts to 0.7 knots or 16.8 nautical miles per day in a direction southwesterly, at right angles to a line joining stations 51 and 52.

The topography of the surface of 50 decibars is indicated in figure 14. The plotted data are referred to stations 50 and 51 as base, and isobaths<sup>th</sup> are drawn for each dynamic centimetre. Offshore the general movement is southwesterly along the coast. To the east of Sambro the waters tend to undergo a clockwise circulation, while to the west of Sambro the tendency is towards an anticlockwise movement.

The topography of the surface of 100 decibars is indicated in figure 15. The plotted data are referred to stations 49 and 51 as base and isobaths<sup>th</sup> are drawn for each dynamic centimetre. The general movement, as indicated by the arrows, is southwesterly along the coast.

The topography of the surface of 150 decibars is shown in figure 16. The plotted data are referred to station 48 as base, and isobaths are drawn for each tenth of a dynamic centimetre. The general movements as indicated by the arrows are offshore. The maximum movement offshore amounts to .02(8) knots or 0.6(6) nautical miles per day at right angles to a line joining stations 48 and 52.

Summary:

In June, July, and August, the most prominent movement of the surface waters was southwesterly along the coast. The movement of greatest intensity amounted in June to 1.9 nautical miles per day, in July to 3.0 nautical miles per day, and in August to 0.4 nautical miles per day. In September, the general surface movement to the west of Sambro is offshore with a general tendency towards a clockwise circulation. To the east of Sambro, the surface movements are shorewards with a tendency towards clockwise circulation. In the extreme offshore area the movement is towards the southwest with a tendency towards anticlockwise circulation. The intensity of the movements during September-October has reached as high as 16.8 nautical miles per day.

In June, July, and August, the movements in the surface of 50 decibars was in general coastwise to the southwest. The intensity of the movements in this ~~isobaric~~ surface were somewhat less than that of the movements in the sea's surface. The configuration of the bottom seemingly affects~~s~~ the general direction of the isobaths~~s~~. to a greater degree. In September-October, the movements in the <sup>iso</sup>decibaric surface of 50 decibars followed the movements in the sea's surface, <sup>but</sup> with somewhat diminished intensities.

In all months, the movements in the surface of 100 decibars are in a general southwesterly direction along the coast and conform

quite closely with the configuration of the bottom.

The movements in the isobaric surface <sup>oasi</sup> of 150 decibars alternated from offshore movements to onshore movements and visq versa. In June, the movements were shoreward to the extent of 0.1(7) nautical miles per day. In July, the movements were offshore to the extent of 0.3(4) nautical miles per day. In August, the movements were shoreward to the extent of 0.3(4) nautical miles per day. In September-October, the movements were offshore to the extent of 0.6(7) nautical miles per day.

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Station	Depth	Density	S. Volume (in situ)	Dyn. Depth. (dyn. metres)	Gradient (dyn. cms.)
45	0m.	24.10	97647	0.000	9.2
"	25m.	24.97	97553	24.400	7.8
"	50m.	25.36	97504	48.782	5.6
46	0m.	24.17	97640	0.000	7.9
"	25m.	<sup>25.08</sup> 25.08	97542	24.398	6.7
"	50m.	25.63	97478	48.776	4.9
"	75m.	26.10	97422	73.139	3.2
"	100m.	26.26	97397	97.492	1.8
47	0m.	23.96	97660	0.000	5.6
"	25m.	25.54	97498	24.395	4.7
"	50m.	25.97	97446	48.763	3.9
"	75m.	26.15	97417	73.121	2.7
"	100m.	26.37	97387	97.472	1.5
"	150m.	26.95	97309	146.146	0.4
48	0m.	24.45	97613	0.000	2.8
"	25m.	25.25	97526	24.393	2.1
"	50m.	26.08	97435	48.763	1.1
"	75m.	26.45	97390	73.116	0.4
"	100m.	26.79	97347	97.458	0.1
"	150m.	27.05	97301	146.120	0.2
<i>beam in</i>	<del>200m.</del>	<del>27.19</del>	<del>97266</del>	<del>194.762</del>	<del>---</del>
49	0m.	24.43	97615	0.000	2.1
"	25m.	25.45	97502	24.390	1.7
"	50m.	26.04	97439	48.758	0.9
"	75m.	26.55	97380	73.111	0.2
"	100m.	26.80	97346	97.452	0.0
50	0m.	24.49	97610	0.000	0.0
"	25m.	25.78	97476	24.386	0.0
"	50m.	26.45	97400	48.746	0.0
"	75m.	26.72	97364	73.092	0.0
51	0m.	24.53	97616	0.000	0.7
"	25m.	25.76	97478	24.387	0.6
"	50m.	26.24	97420	48.749	0.4
"	75m.	26.64	97372	73.098	0.1
"	100m.	26.79	97347	97.438	0.0
52	0m.	24.46	97613	0.000	2.1
"	25m.	25.55	97497	24.389	1.8
"	50m.	26.11	97432	48.755	1.2
"	75m.	26.55	97380	73.107	0.6
"	100m.	26.72	97353	97.449	0.3
"	150m.	26.93	97311	146.115	0.0
"	200m.	27.09	97277	194.762	---

Table 1. Hydrodynamic data for June, 1932 ( continued ).

Station	Depth	Density	S. Volume (in situ)	Dyn. Depth. (dyn. metres)	Gradient (dyn. cms.)
53	0m.	24.36	97622	0.000	7.8
"	25m.	25.30	97521	24.393	7.1
"	50m.	25.77	97465	48.766	5.8
"	75m.	26.03	97429	73.128	4.2
"	100m.	26.22	97400	97.482	2.7
54	0m.	24.24	97633	0.000	8.2
"	25m.	25.29	97522	24.395	7.3
"	50m.	25.72	97469	48.769	5.9
55	0m.	24.13	97644	0.000	8.3
"	25m.	25.13	97537	24.398	7.1
"	50m.	25.71	97470	48.774	5.5
56	0m.	24.10	97647	0.000	8.4
"	25m.	25.20	97531	24.397	7.3
"	50m.	25.48	97492	48.775	5.5
"					
57	0m.	24.00	97656	0.000	8.3
"	25m.	25.28	97523	24.398	7.1
"	50m.	25.61	97480	48.774	5.5
58	0m.	23.98	97658	0.000	8.3
"	25m.	25.09	97541	24.400	6.9
"	50m.	25.74	97467	48.776	5.3
"	75m.	25.88	97443	73.140	3.5

Table 1. Hydrodynamic data for June, 1932.

Station	Depth	Density	S. Volume (in situ)	Dyn. Depth. (dyn.metres)	Gradient (dyn.cms.)
45	0m.	23.24	97729	0.000	5.1
"	25m.	25.26	97525	24.407	5.2
"	50m.	25.62	97479	48.785	3.9
46	0m.	23.17	97734	0.000	4.5
"	25m.	25.24	97527	24.408	4.5
"	50m.	25.73	97468	48.782	3.6
"	75m.	26.15	97417	73.143	2.5
"	100m.	26.27	97395	97.495	1.3
47	0m.	23.05	97747	0.000	0.7
"	25m.	25.43	97509	24.407	0.8
"	50m.	26.12	97431	48.775	0.5
"	75m.	26.39	97395	73.128	0.2
"	100m.	26.83	97343	97.470	0.0
"	150m.	27.01	97304	146.132	0.0
"	175m.	27.07	97288	<del>171.500</del>	<del>0.0</del>
48	0m.	22.57	97793	0.000	0.3
"	25m.	25.61	97492	24.411	0.0
"	50m.	26.20	97424	48.776	0.0
"	75m.	26.58	97378	73.126	0.0
"	100m.	26.84	97343	97.466	0.0
"	150m.	27.02	97304	146.128	0.0
"	200m.	27.12	97274	194.773	0.2
49	0m.	22.71	97779	0.000	1.1
"	25m.	25.58	97495	24.409	1.0
"	50m.	26.01	97442	48.776	0.8
"	75m.	26.54	97381	73.129	0.5
"	100m.	26.75	97350	97.470	0.4
50	0m.	22.93	97758	0.000	0.2
"	25m.	25.73	97480	24.405	0.5
"	50m.	26.13	97430	48.769	0.6
"	75m.	26.57	97379	73.120	0.5
"	90m.	26.72	97358	<del>97.470</del>	<del>0.4</del>
51	0m.	22.98	97753	0.000	0.0
"	25m.	25.76	97478	24.404	0.4
"	50m.	26.15	97428	48.767	0.6
"	75m.	26.55	97380	73.118	0.5
"	100m.	26.77	97349	97.459	0.4

Table 2. Hydrodynamic data for July, 1932. ( continued ).

Station	Depth	Density	S. Volume (in situ )	Dyn. Depth. (dyn.metres)	Gradient (dyn.cms.)
52	0m.	23.14	97738	0.000	2.2
"	25m.	25.51	97501	24.405	2.5
"	50m.	26.03	97440	48.773	2.2
"	75m.	26.38	97396	73.128	1.7
"	100m.	26.61	97364	97.473	1.2
"	150m.	26.87	97317	146.143	0.4
"	200m.	26.98	97287	194.794	0.0
53	0m.	23.44	97710	0.000	7.5
"	25m.	25.41	97511	24.403	8.0
"	50m.	25.80	97462	48.775	7.3
"	75m.	25.91	97440	73.138	6.0
"	100m.	25.97	97424	97.496	4.2
54	0m.	23.34	97719	0.000	8.8
"	25m.	25.32	97519	24.405	9.1
"	50m.	25.52	97488	48.781	8.0
55	0m.	23.10	97742	0.000	9.7
"	25m.	25.09	97541	24.410	9.5
"	50m.	25.44	97496	48.790	8.0
56	0m.	23.20	97733	0.000	10.2
"	25m.	25.02	97548	24.410	10.0
"	50m.	25.31	97528	48.795	8.0
57	0m.	23.16	97736	0.000	9.5
"	25m.	25.14	97536	24.409	9.4
"	50m.	25.43	97497	48.788	8.0
58	0m.	23.06	97746	0.000	9.6
"	25m.	25.19	97532	24.410	9.4
"	50m.	25.44	97496	48.789	8.0
"	75m.	25.59	97471	73.160	5.9

Table 2. Hydrodynamic data for July, 1932.

Station	Depth	Density	S. Volume (in situ )	Dyn. Depth <sup>3</sup> (dyn.metres)	Gradient (dyn.cms.)
45	0m.	22.05	97843	0.000	5.0
"	25m.	24.84	97565	24.426	4.6
"	50m.	25.43	97497	48.797	4.6
46	0m.	22.05	97843	0.000	4.8
"	25m.	24.70	97579	24.428	4.2
"	50m.	25.93	97449	48.807	3.4
"	75m.	26.17	97416	73.165	2.9
"	100m.	26.22	97400	97.516	1.9
47	0m.	22.06	97842	0.000	1.5
"	25m.	24.70	97579	24.428	0.9
"	50m.	26.13	97430	48.804	0.4
"	75m.	26.59	97377	73.155	0.6
"	100m.	26.75	97350	97.496	0.6
"	150m.	27.00	97306	146.160	0.5
"	175m.	27.76	97223	-----	-----
48	0m.	22.09	97839	0.000	2.4
"	25m.	24.66	97583	24.428	1.8
"	50m.	26.05	97438	48.806	1.1
"	75m.	26.23	97410	73.162	0.8
"	100m.	26.78	97348	97.507	0.4
"	150m.	27.03	97303	146.170	0.4
"	200m.	28.02	97188	194.793	2.2
49	0m.	21.96	97851	0.000	2.2
"	25m.	24.25	97621	24.434	1.0
"	50m.	26.14	97429	48.815	0.0
"	75m.	26.50	97384	73.167	0.1
"	100m.	26.85	97341	97.508	0.1
50	0m.	21.98	97849	0.000	0.2
"	25m.	25.23	97528	24.422	0.2
"	50m.	26.08	97435	48.792	0.3
"	75m.	-----	-----	-----	-----
<del>50</del>	100m.	26.76	97349	97.488	0.7
51	0m.	21.98	97849	0.000	0.4
"	25m.	25.05	97545	24.424	0.2
"	50m.	26.11	97432	48.796	0.1
"	75m.	26.52	97383	73.148	0.2
"	100m.	26.73	97351	97.490	0.1
52	0m.	21.87	97858	0.000	0.1
"	25m.	25.22	97529	24.423	0.0
"	50m.	26.10	97433	48.793	0.1
"	75m.	26.46	97388	73.146	0.1
"	100m.	26.80	97346	97.488	0.0
"	150m.	27.00	97305	146.151	0.0
"	175m.	27.05	97290	-----	-----
53	0m.	22.11	97837	0.000	1.6
"	25m.	25.54	97498	24.417	2.1
"	50m.	25.92	97450	48.786	2.3
"	75m.	26.18	97415	73.144	1.8
"	100m.	26.43	97381	97.494	0.9

Table 3. Hydrodynamic data for August, 1932 (continued)

Station	Depth	Density	S. Volume (in situ )	Dyn. Depth. (dyn.metres)	Gradient (dyn.cms.)
54	0m.	22.14	97834	0.000	4.7
"	25m.	24.65	97584	24.427	4.3
"	50m.	25.63	97478	48.810	3.0
55	0m.	22.45	97804	0.000	4.5
"	25m.	24.70	97579	24.423	4.4
"	50m.	25.39	97501	48.808	3.0
<del>X</del>	<del>65m.</del>	<del>25.91</del>	<del>97445</del>	<del>-----</del>	<del>-----</del>
56	0m.	22.49	97800	0.000	4.2
"	25m.	24.72	97577	24.422	4.2
"	50m.	25.52	97488	48.805	3.0
57	0m.	21.83	97864	0.000	3.8
"	25m.	25.23	97528	24.424	3.6
"	50m.	25.51	97489	48.801	3.0
58	0m.	21.83	97864	0.000	4.6
"	25m.	25.03	97547	24.426	4.2
"	50m.	25.36	97504	48.807	3.2
"	75m.	25.92	97439	73.175	1.7
70	0m.	22.08	97840	0.000	0.0
"	25m.	25.68	97485	24.416	0.6
"	50m.	26.04	97439	48.782	1.1
71	0m.	22.06	97842	0.000	1.1
"	25m.	24.84	97565	24.426	0.7
"	50m.	26.18	97426	48.800	0.1
"	75m.	26.61	97374	73.150	0.7
"	100m.	26.73	97352	97.491	0.7
"	150m.	26.94	97310	146.157	0.4
"	175m.	26.99	97296	-----	-----
72	0m.	21.89	97858	0.000	0.1
"	25m.	25.22	97529	24.423	0.0
"	50m.	26.06	97437	48.794	0.0
"	75m.	26.49	97386	73.147	0.0
"	100m.	26.87	97339	97.488	0.0
"	150m.	27.03	97303	146.149	0.2
"	200m.	27.18	97267	194.792	0.0

Table 3. Hydrodynamic data for August, 1932.

Station	Depth	Density	S. Volume (in situ)	Dyn. Depth (dyn.metres)	Gradient (dyn.cms.)
45	0m.	22.46	97803	0.000	8.6
"	25m.	23.81	97663	24.433	7.2
"	50m.	25.42	97498	48.828	5.9
46	0m.	23.17	97736	0.000	8.5
"	25m.	23.78	97666	24.425	7.9
"	50m.	25.26	97514	48.823	6.3
"	75m.	25.69	97461	73.195	4.2
"	100m.	26.12	97410	97.554	2.3
47	0m.	23.04	97748	0.000	7.6
"	25m.	23.62	97681	24.429	5.6
"	50m.	25.43	97498	48.826	4.1
"	75m.	26.00	97432	73.192	2.6
"	100m.	26.46	97378	97.543	1.5
"	150m.	26.85	97319	146.217	0.3
48	0m.	23.37	97716	0.000	0.0
"	25m.	24.59	97589	24.413	0.6
"	50m.	26.02	97441	48.792	0.9
"	75m.	26.43	97391	73.146	0.6
"	100m.	26.73	97352	97.489	0.3
"	150m.	26.97	97308	146.154	0.0
"	200m.	27.18	97268	194.798	-----
49	0m.	23.05	97747	0.000	1.1
"	25m.	24.26	97621	24.421	0.9
"	50m.	25.88	97454	48.805	0.7
"	75m.	26.43	97391	73.161	0.2
"	100m.	26.80	97346	97.503	0.0
50	0m.	23.33	97720	0.000	0.1
"	25m.	24.10	97636	24.420	0.0
"	50m.	26.28	97416	48.802	0.0
"	75m.	26.48	97386	73.152	0.1
51	0m.	23.31	97722	0.000	0.7
"	25m.	23.94	97651	24.422	0.4
"	50m.	26.10	97433	48.808	0.0
"	75m.	26.60	97376	73.159	0.0
"	100m.	26.83	97343	97.499	0.0
52	0m.	22.79	97772	0.000	13.0
"	25m.	22.88	97752	24.441	10.8
"	50m.	24.39	97597	48.860	7.1
"	75m.	25.84	97447	73.241	4.1
"	100m.	26.29	97394	97.596	2.6
"	150m.	26.78	97326	146.276	0.8
"	200m.	26.93	97290	194.930	-----

Table 4. Hydrodynamic data for September-October, 1932.

(continued)

Station	Depth	Density	S. Volume ( in situ )	Dyn. Depth (dynamic metres)	Gradient (dyn.cms.)
53	0m.	22.72	97778	0.000	12.5
"	25m.	22.85	97755	24.442	10.2
"	50m.	24.94	97544	48.854	7.2
"	75m.	25.68	97463	73.230	4.7
"	100m.	26.23	97400	97.588	2.9
54	0m.	22.93	97758	0.000	6.3
"	25m.	24.00	97645	24.425	5.7
"	50m.	25.80	97462	48.813	5.1
55	0m.	22.86	97765	0.000	4.9
"	25m.	24.65	97583	24.419	4.9
"	50m.	25.88	97454	48.799	5.1
56	0m.	22.90	97761	0.000	5.3
"	25m.	24.55	97593	24.419	5.3
"	50m.	25.64	97477	48.803	5.1
57	0m.	22.94	97757	0.000	4.1
"	25m.	25.04	97546	24.413	4.7
"	50m.	25.66	97475	48.791	5.1
58	0m.	22.86	97765	0.000	5.8
"	25m.	24.54	97594	24.420	5.7
"	50m.	25.49	97491	48.806	5.3
"	75m.	25.90	97441	73.173	3.7

Table 4. Hydrodynamic data for September-October, 1932.