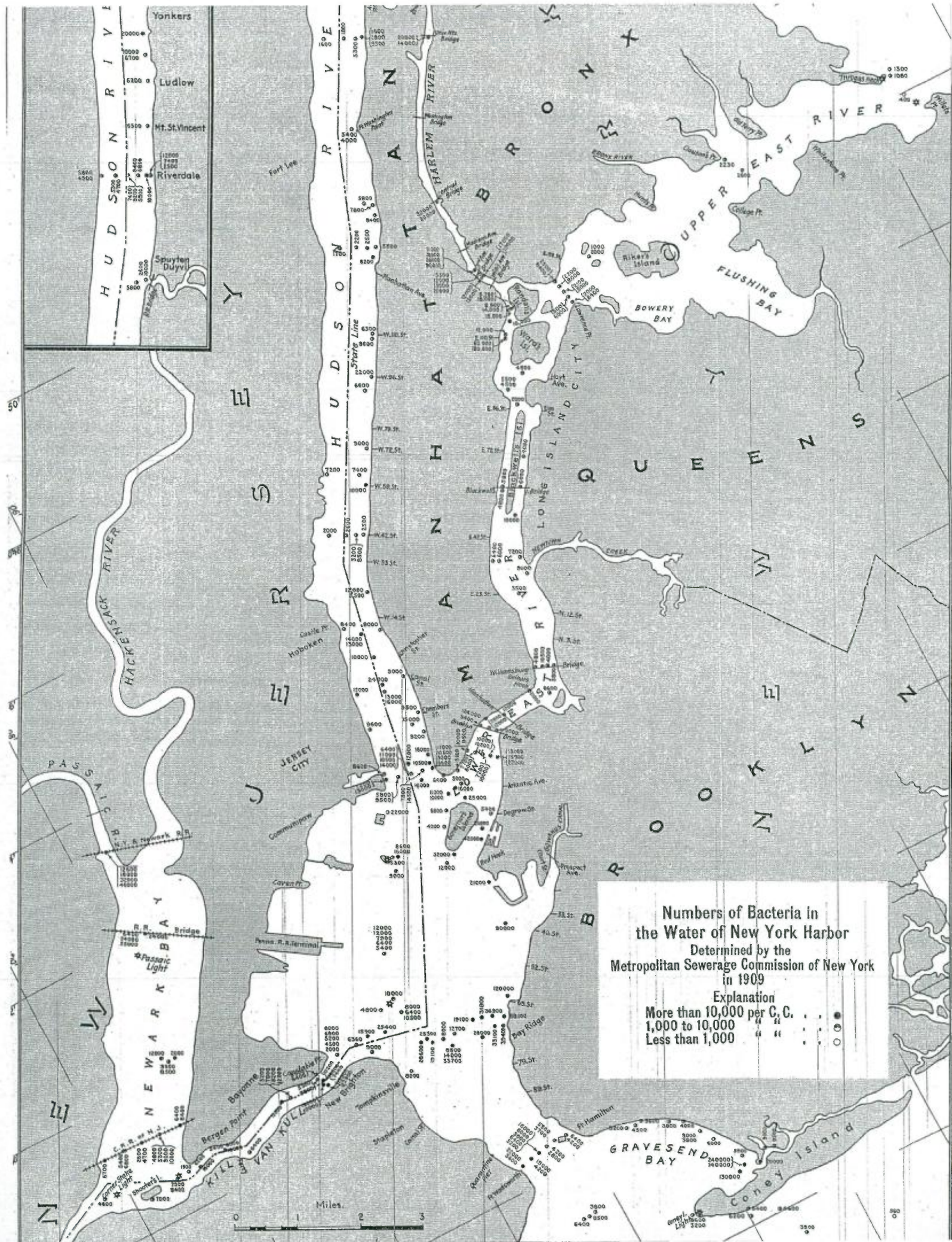






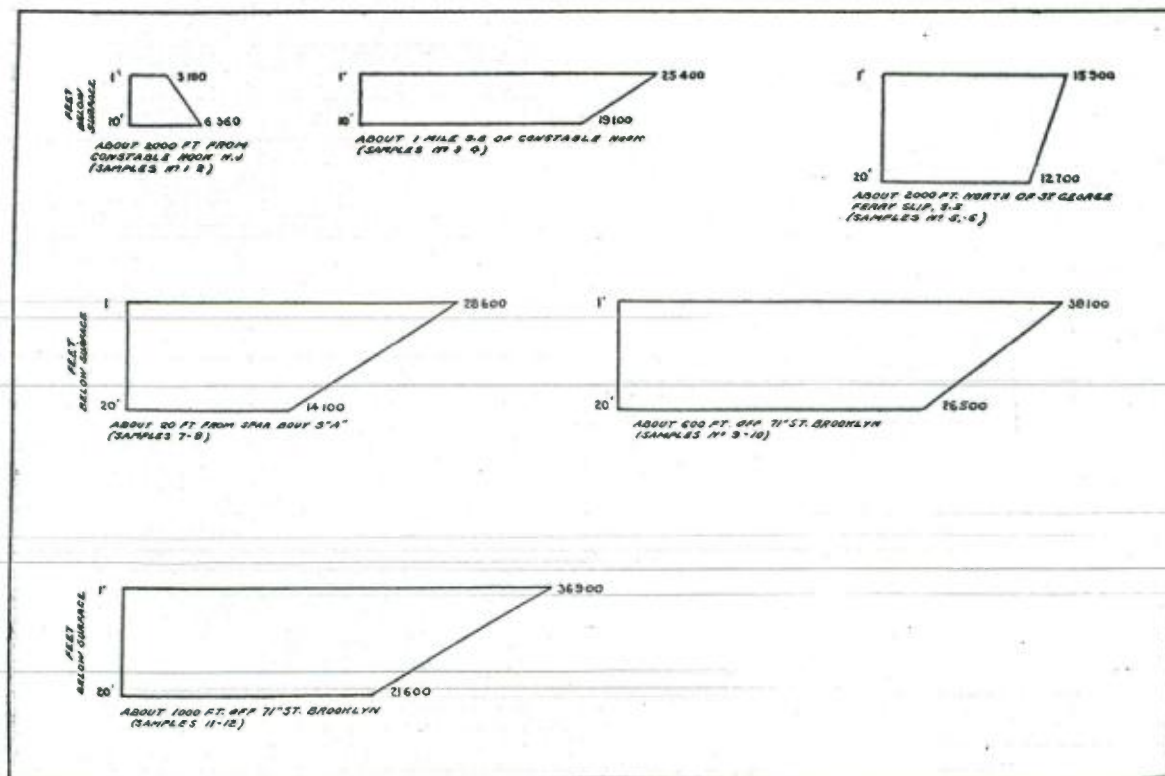
INTRODUCTION TO BACTERIA DIAGRAMS

The following series of diagrams show the numbers of bacteria found in the water at various depths. In each case the depth from which the sample was taken below the surface of the water is indicated by the vertical line and the number of bacteria by a horizontal line opposite the depth at which that number was found. The location and sample numbers are stated in every instance. The data from which these diagrams were made are contained in Table XV, pp. 226-259.

BACTERIA DIAGRAMS

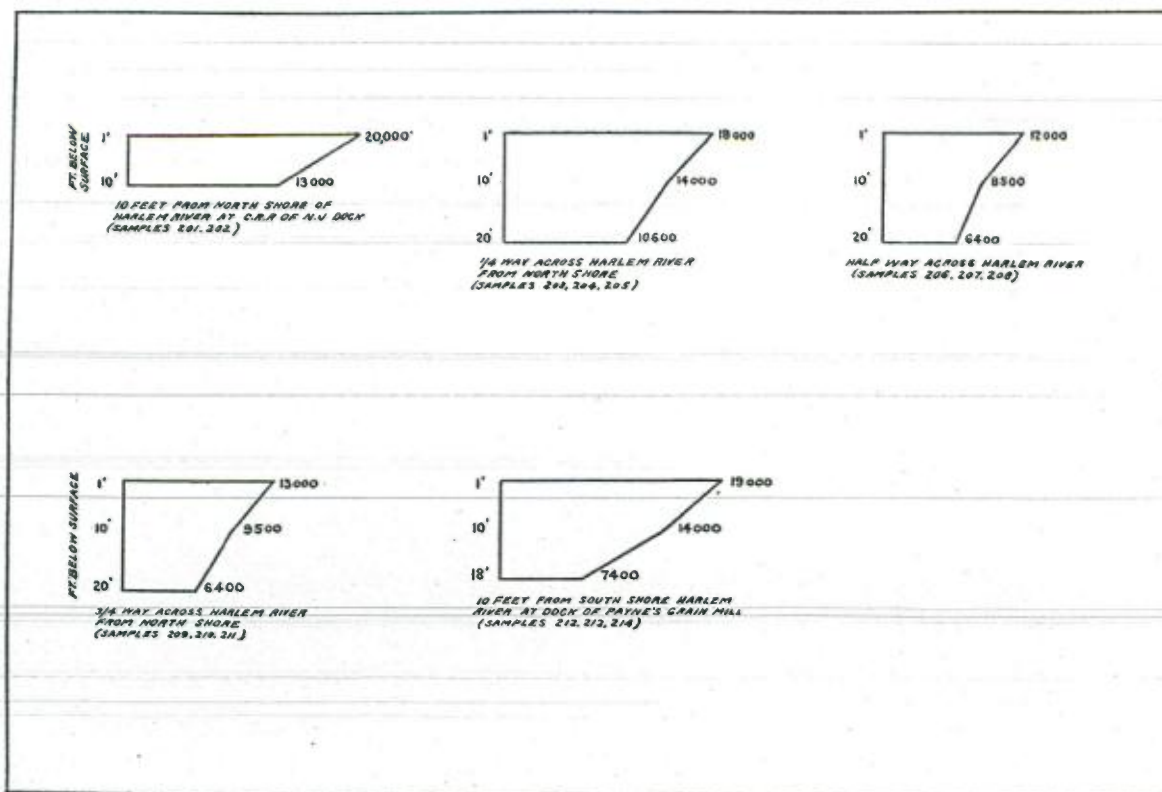
Diagrams showing numbers of bacteria in the water at different depths in various parts of the harbor in the year 1909.

FIG. 22



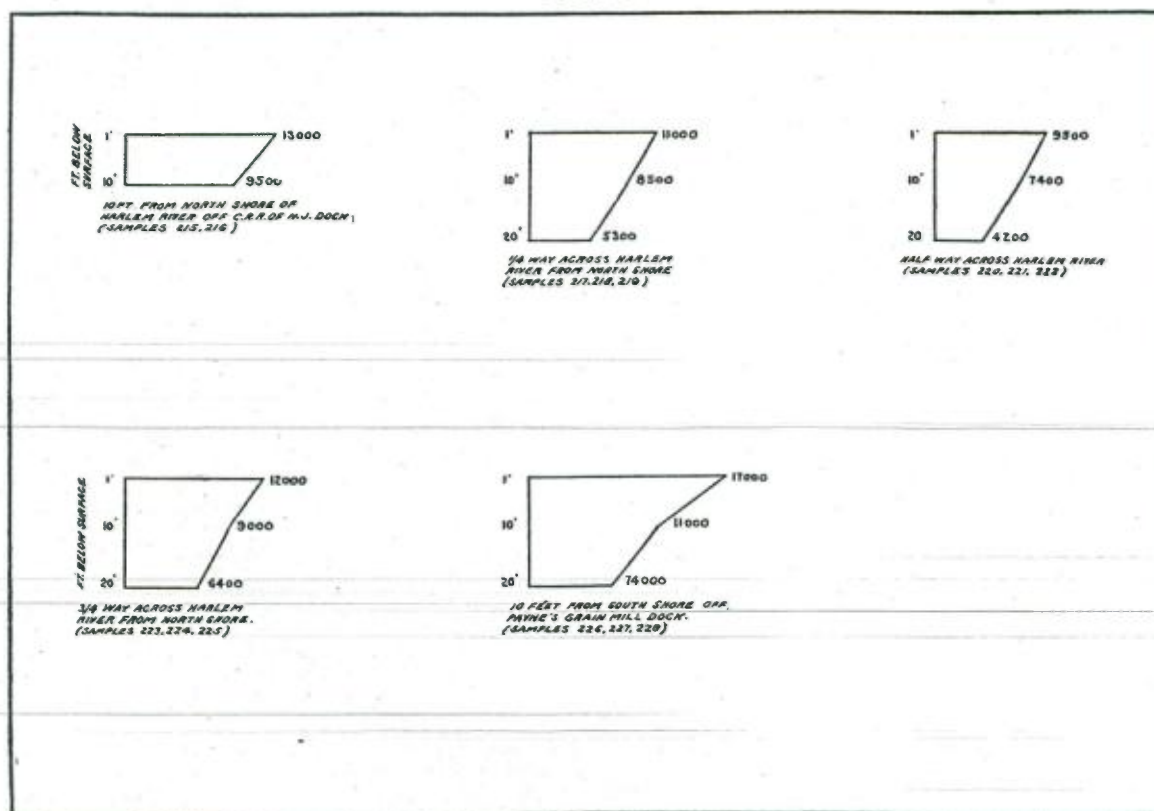
ACROSS UPPER BAY FROM CONSTABLE HOOK N.J. TO 71ST ST. BROOKLYN
 BACTERIA PER C.C. IN WATER AT DIFFERENT DEPTHS BELOW SURFACE
 SAMPLES COLLECTED MARCH 23RD 1909

FIG. 31



ACROSS HARLEM RIVER JUST EAST OF 3RD AVE. BRIDGE
 BACTERIA PER C.C. IN WATER AT DIFFERENT DEPTHS BELOW SURFACE
 SAMPLES COLLECTED APRIL 27TH 1909

FIG. 32



ACROSS HARLEM RIVER JUST EAST OF 3RD AVE. BRIDGE
 BACTERIA PER C.C. IN WATER AT DIFFERENT DEPTHS BELOW SURFACE
 SAMPLES COLLECTED APRIL 27TH 1909

RESULTS OF ANALYSES

TABLE XV—Continued

65—EAST RIVER. OCTOBER 1, 1909

High water occurred at Governors Island at 9.21 A. M. The wind was northwest with a velocity of 40 miles per hour.

Sample No.	Hour A. M.	Location of Samples			Feet below surface	Tidal current	Temp. water Deg. C.	Per cent. land water	No. of Bacteria per C.C.
		Approximate	Latitude	Longitude					
1086	9.50	500 feet off Pier 32, Brooklyn.....	40 41 10	74 00 30	1	Flood	18.0	28	5,400
1087	9.52	500 feet off Pier 32, Brooklyn.....	40 41 10	74 00 30	40	Flood	18.0	28	3,600
1088	10.00	At Brooklyn Bridge, 500 feet off Brooklyn shore.....	40 42 15	73 59 45	1	Flood	18.0	28	6,000
1089	10.02	At Brooklyn Bridge, 500 feet off Brooklyn shore.....	40 42 15	73 59 45	20	Flood	18.0	28	4,800
1090	10.04	At Brooklyn Bridge, 500 feet off Brooklyn shore.....	40 42 15	73 59 45	40	Flood	18.0	28	3,800
1091	10.16	At Williamsburg Bridge, 500 feet off Brooklyn shore.....	40 42 45	73 58 10	1	Flood	18.0	28	5,800
1092	10.18	At Williamsburg Bridge, 500 feet off Brooklyn shore.....	40 42 45	73 58 10	40	Flood	18.0	28	4,200
1093	10.30	Opposite East 34th street, 500 feet off Brooklyn shore.....	40 44 20	73 57 45	1	Flood	18.0	28	7,200
1094	10.31	Opposite East 34th street, 500 feet off Brooklyn shore.....	40 44 20	73 57 45	20	Flood	18.0	28	4,500
1095	10.33	Opposite East 34th street, 500 feet off Brooklyn shore.....	40 44 20	73 57 45	40	Flood	18.0	28	3,500
1096	10.50	At Queensboro Bridge, east channel.....	40 45 20	73 57 10	1	Flood	18.0	28	6,000
1097	10.52	At Queensboro Bridge, east channel.....	40 45 20	73 57 10	40	Flood	18.0	28	3,200
1098	11.05	At Hell Gate.....	40 46 50	73 56 00	1	Flood	18.0	28	4,800
1099	11.06	At Hell Gate.....	40 46 50	73 56 00	20	Flood	18.0	28	3,500
1100	11.08	At Hell Gate.....	40 46 50	73 56 00	40	Flood	18.0	28	2,000

66—LONG ISLAND SOUND. OCTOBER 1, 1909

Low water occurred at Governors Island at 4.05 P. M. The wind was northwest with a velocity of 40 miles per hour.

1101	1.20	Long Island Sound, near Throgs Neck.....	40 48 20	73 47 20	1	Ebb	18.0	28	1,300
1102	1.22	Long Island Sound, near Throgs Neck.....	40 48 20	73 47 20	25	Ebb	18.0	28	800
1103	1.24	Long Island Sound, near Throgs Neck.....	40 48 20	73 47 20	50	Ebb	18.0	28	600

67—EAST RIVER. OCTOBER 1, 1909

Low water occurred at Governors Island at 4.05 P. M. The wind was northwest with a velocity of 40 miles per hour.

1104	1.55	Between North and South Brothers Island.....	40 47 55	73 53 55	1	Ebb	18.0	28	2,000
1105	1.57	Between North and South Brothers Islands.....	40 47 55	73 53 55	40	Ebb	18.0	28	1,400

68—HARLEM RIVER. OCTOBER 1, 1909

Low water occurred at Governors Island at 4.05 P. M. The wind was northwest with a velocity of 40 miles per hour.

1106	2.13	Midstream, off East 116th street.....	40 47 35	73 55 50	1	Ebb	18.5	28	10,000
1107	2.15	Midstream, off East 116th street.....	40 47 35	73 55 50	20	Ebb	18.5	28	7,200
1108	2.25	Midstream, off East 110th street.....	40 47 20	73 56 05	1	Ebb	18.5	28	12,000
1109	2.27	Midstream, off East 110th street.....	40 47 20	73 56 05	20	Ebb	18.5	28	6,800

69—EAST RIVER. OCTOBER 1, 1909

Low water occurred at Governors Island at 4.05 P. M. The wind was northwest with a velocity of 40 miles per hour.

1110	2.35	Hell Gate, off East 90th street.....	40 46 40	73 56 20	1	Ebb	18.0	28	5,500
1111	2.36	Hell Gate, off East 90th street.....	40 46 40	73 56 20	20	Ebb	18.0	28	4,800
1112	2.38	Hell Gate, off East 90th street.....	40 46 40	73 56 20	40	Ebb	18.0	28	3,000
1113	2.47	At Queensboro Bridge, west channel.....	40 45 25	73 57 30	1	Ebb	18.0	28	4,800
1114	2.50	At Queensboro Bridge, west channel.....	40 45 25	73 57 30	40	Ebb	18.0	28	3,600

BACTERIA IN THE WATER

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TABLE XV—Continued

69—EAST RIVER. OCTOBER 1, 1909—Continued

Sample No.	Hour P. M.	Location of Samples			Feet below surface	Tidal current	Temp. water Deg. C.	Per cent. land water	No. of Bacteria per C.C.
		Approximate	Latitude	Longitude					
1115	3.08	1000 feet off mouth of Newton creek.....	40 44 10	73 57 55	1	Ebb	18.5	28	9,000
1116	3.10	1000 feet off mouth of Newton creek.....	40 44 10	73 57 55	30	Ebb	18.0	28	6,800
1117	3.28	1000 feet off Wallabout bay.....	40 42 25	73 58 30	1	Ebb	18.5	28	8,600
1118	3.30	1000 feet off Wallabout bay.....	40 42 25	73 58 30	20	Ebb	18.0	28	7,000
1119	3.32	1000 feet off Wallabout bay.....	40 42 25	73 58 30	40	Ebb	18.0	28	4,800
1120	9.20	500 feet off Pier 4, Manhattan.....	40 42 00	74 00 40	1	Flood	17.0	28	5,100
1121	9.21	500 feet off Pier 4, Manhattan.....	40 42 00	74 00 40	20	Flood	17.0	28	4,200
1122	9.23	500 feet off Pier 4, Manhattan.....	40 42 00	74 00 40	40	Flood	17.0	28	3,200
1123	9.35	At Brooklyn Bridge, 500 feet off Manhattan shore.....	40 42 25	73 59 55	1	Flood	17.0	28	5,400
1124	9.37	At Brooklyn Bridge, 500 feet off Manhattan shore.....	40 42 25	73 59 55	40	Flood	17.0	28	3,800
1125	9.50	At Williamsburg Bridge, 500 feet off Manhattan shore.....	40 42 50	73 58 30	1	Flood	17.0	28	4,800
1126	9.52	At Williamsburg Bridge, 500 feet off Manhattan shore.....	40 42 50	73 58 30	20	Flood	17.0	28	5,200
1127	9.55	At Williamsburg Bridge, 500 feet off Manhattan shore.....	40 42 50	73 58 30	40	Flood	17.0	28	3,700
1128	10.15	Opposite East 34th street, 500 feet off shore.....	40 44 30	73 58 15	1	Flood	17.0	28	6,400
1129	10.18	Opposite East 34th street, 500 feet off shore.....	40 44 30	73 58 15	40	Flood	17.0	28	4,800
1130	10.30	At Queensboro Bridge, west channel.....	40 45 25	73 57 30	1	Flood	17.0	28	5,800
1131	10.31	At Queensboro Bridge, west channel.....	40 45 25	73 57 30	20	Flood	17.0	28	5,200
1132	10.33	At Queensboro Bridge, west channel.....	40 45 25	73 57 30	40	Flood	17.0	28	4,100
1133	10.40	Hell Gate, off East 90th street.....	40 46 30	73 56 20	1	Flood	17.0	28	4,500
1134	10.41	Hell Gate, off East 90th street.....	40 46 30	73 56 20	20	Flood	17.0	28	4,000
1135	10.43	Hell Gate, off East 90th street.....	40 46 30	73 56 20	40	Flood	17.0	28	3,600

70—HUDSON RIVER. OCTOBER 5, 1909

High water occurred at Governors Island at 1.00 P. M. The wind was northwest with a velocity of 10 miles per hour.

1136	10.55	1 way across from foot of West 42d street.....	40 45 50	74 00 20	1	Flood	17.0	52	3,200
1137	10.56	1 way across from foot of West 42d street.....	40 45 50	74 00 20	20	Flood	17.0	52	2,800
1138	10.57	1 way across from foot of West 42d street.....	40 45 50	74 00 20	40	Flood	17.0	52	2,100
1139	11.05	1 way across from foot of West 42d street.....	40 45 55	74 00 30	1	Flood	17.0	52	2,600
1140	11.07	1 way across from foot of West 42d street.....	40 45 55	74 00 30	20	Flood	17.0	52	2,200
1141	11.09	2 way across from foot of West 42d street.....	40 45 55	74 00 30	40	Flood	17.0	52	1,600
1142	11.15	3/4 way across from foot of West 42d street.....	40 46 00	74 00 50	1	Flood	17.0	52	2,000
1143	11.17	3/4 way across from foot of West 42d street.....	40 46 00	74 00 50	20	Flood	17.0	52	1,700
1144	11.19	3/4 way across from foot of West 42d street.....	40 46 00	74 00 50	40	Flood	17.0	52	1,200
1145	12.15	1 way across from foot of West 137th street.....	40 49 30	73 57 35	1	Flood	17.0	52	2,500
1146	12.16	1 way across from foot of West 137th street.....	40 49 30	73 57 35	20	Flood	17.0	52	2,000
1147	12.18	1 way across from foot of West 137th street.....	40 49 30	73 57 35	40	Flood	17.0	52	1,400
1148	12.28	1 way across from foot of West 137th street.....	40 49 35	73 57 50	1	Flood	17.0	52	2,200
1149	12.29	1 way across from foot of West 137th street.....	40 49 35	73 57 50	20	Flood	17.0	52	1,600
1150	12.30	1 way across from foot of West 137th street.....	40 49 35	73 57 50	40	Flood	17.0	52	1,000
1151	12.40	3/4 way across from foot of West 137th street.....	40 49 40	73 58 05	1	Flood	17.0	52	1,700
1152	12.41	3/4 way across from foot of West 137th street.....	40 49 40	73 58 05	20	Flood	17.0	52	1,500
1153	12.43	3/4 way across from foot of West 137th street.....	40 49 40	73 58 05	25	Flood	17.0	52	900
1154	1.20	500 feet off Inwood.....	40 52 20	73 55 55	1	Flood	17.0	52	1,600
1155	1.21	500 feet off Inwood.....	40 52 20	73 55 55	20	Flood	17.0	52	1,300
1156	1.23	500 feet off Inwood.....	40 52 20	73 55 55	40	Flood	17.0	52	900
1157	1.33	1/3 way across from Inwood.....	40 52 25	73 56 05	1	Flood	17.0	52	1,800
1158	1.34	1/3 way across from Inwood.....	40 52 25	73 56 05	20	Flood	17.0	52	1,200
1159	1.36	1/3 way across from Inwood.....	40 52 25	73 56 05	40	Flood	17.0	52	800
1160	1.46	3/4 way across from Inwood.....	40 52 35	73 56 25	1	Flood	17.0	52	1,400
1161	1.47	3/4 way across from Inwood.....	40 52 35	73 56 25	20	Flood	17.0	52	1,600
1162	1.49	3/4 way across from Inwood.....	40 52 35	73 56 25	25	Flood	17.0	52	700

INTRODUCTION TO TABLES XVI, XVII, XVIII, XIX, XX

The numbers of bacteria found in the water in the year 1909 and shown in Table XV have been grouped together in the form of averages to show (a) the numbers in various localities; (b) surface and bottom conditions and (c) the number on ebb and flood tides, and are contained in Table XIX.

The results used in making these averages are given in Tables XVI, XVII and XVIII. Table XX includes miscellaneous analyses not grouped elsewhere.

BACTERIA IN THE WATER

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TABLE XVI

Average Number of Bacteria in the Water in the Year 1909

Averages for various parts of the harbor.

The data for this table are contained in Table XV.

Location	Number of Analyses	Bacteria per C. C.	Samples included in the Averages
Upper Bay.....	113	12,500	1-42, 303-305, 392-399, 684-685, 688-690, 696-699, 718-719, 726-731, 737-742, 749-754, 829-831, 869-873, 1052-1061, 1067-1075, 1086-1087. (694 and 695 taken at sewer outfall and 1056 liquefied, so not included.)
Hudson river, below Spuyten Duyvil.	182	6,600	43-46, 264-302, 350-391, 619-620, 629-632, 720-725, 743-748, 761-796, 798-800, 989-1000, 1136-1162. (797 liquefied.)
Hudson river, above Spuyten Duyvil.	53	5,100	229-263, 617-618, 801-808. (621-628, taken in sewage field from large Yonkers sewers, not included.)
East river, below Hell Gate.....	119	6,100	83-84, 127-166, 755-756, 759-760, 832-846, 857-868, 1062-1066, 1088-1100, 1110-1135. (757 and 758, taken at sewer outfall and 1063 liquefied, so not included.)
East river, above Hell Gate.....	37	3,100	81-82, 544-569, 847-853, 1104-1105.
Harlem river.....	58	15,600	201-228, 570-585, 674-683, 1106-1109.
Long Island Sound.....	40	310	47-80, 854-856, 1101-1103.
Kill van Kull.....	80	6,500	167-200, 691-692, 822-828, 874-883, 945-952, 969-970, 1045-1051, 1076-1085.
Newark bay.....	45	7,400	306-322, 335-349, 815-821, 939-944.
Passaic river, at Newark.....	8	92,000	327-330, 809-810, 933-934.
Arthur Kill.....	24	5,000	955-968, 971-972, 1037-1044. (963 and 964 taken at sewer outfall, so not included) (1042 liquefied.)
The Narrows.....	55	4,900	85-105, 106-126, 400-403, 686-687, 700-716, 717, 732-733, 735-736.
Gravesend Bay.....	15	4,300	633-634, 641-646. (635-640 and 647 taken in or near Coney Island creek, so not included.)
Lower bay.....	255	1,600	404-423, 428-543, 648-673, 701-705, 714-715, 884-932, 1001-1036. (921, 1020 and 1030 liquefied.)
Jamaica bay.....	39	8,400	592-598, 613, 615-616, 975-988. (599-612 and 614 taken in or near creeks, so not included.)
Rockaway inlet.....	8	2,900	586-591, 973-974.
Atlantic ocean, 10 miles off Long Branch.....	4	120	706-709

TABLE XVII

Average Number of Bacteria in the Water in the Year 1909

Average of samples taken near Surface and Bottom for various parts of the harbor.

The data for this table are contained in Table XV.

Location	Depths					
	Surface			Bottom		
	No. of Analyses	Bacteria per C. C.	Samples included in the Averages	No. of Analyses	Bacteria per C. C.	Samples included in the Averages
Upper bay.....	62	14,600	1, 3, 5, 7, 9, 11, 13, 15, 17, 19, 21, 23, 25, 27, 29, 31, 33, 35, 42, 303, 392, 396, 684-685, 688-690, 696-699, 718, 726, 728, 730, 737, 739, 741, 749, 751, 753, 829, 869, 872, 1052, 1055, 1057, 1060, 1067, 1069, 1072, 1074, 1086. (694, taken at sewer outlet, not included.)	42	10,300	2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24, 26, 28, 30, 32, 34, 305, 395, 399, 719, 727, 729, 731, 738, 740, 742, 750, 752, 754, 831, 871, 873, 1054, 1056, 1059, 1061, 1068, 1071, 1073, 1075, 1087. (697, taken at sewer outlet, not included.) (1056 liquefied.)
Hudson river, below Spuyten Duyvil..	71	8,400	43-46, 264, 267, 270, 273, 276, 279, 282, 285, 288, 291, 294, 297, 300, 350, 354, 358, 362, 366, 369, 373, 377, 381, 385, 388, 619, 629, 631, 720, 722, 724, 743, 745, 747, 761, 763, 765, 767, 769, 771-773, 774, 776, 779, 781, 784, 786, 789, 791, 794, 796, 799, 989, 991, 994, 996, 999, 1136, 1139, 1142, 1145, 1148, 1151, 1154, 1157, 1160.	63	4,800	266, 269, 272, 275, 278, 281, 284, 287, 290, 293, 296, 299, 302, 353, 357, 361, 365, 368, 372, 376, 380, 384, 387, 391, 620, 630, 632, 721, 723, 725, 744, 746, 748, 762, 764, 766, 768, 770, 775, 778, 780, 783, 785, 788, 790, 793, 795, 798, 800, 990, 993, 995, 998, 1000, 1138, 1141, 1144, 1147, 1150, 1153, 1156, 1159, 1162.

RESULTS OF ANALYSES

TABLE XVII—Continued

Location	Depths					
	Surface			Bottom		
	No. of Analyses	Bacteria per C. C.	Samples included in the Averages	No. of Analyses	Bacteria per C. C.	Samples included in the Averages
Hudson river above Spuyten Duyvil..	15	6,300	229, 232, 235, 239, 243, 245, 248, 251, 255, 259, 261, 617, 801, 804, 806.	15	4,400	231, 234, 238, 242, 244, 247, 250, 254, 258, 260, 263, 618, 803, 805, 808.
East river, below Hell Gate.....	41	7,700	83, 127, 131, 135, 139, 143, 147, 151, 155, 159, 163, 755, 832, 834, 837, 839, 842, 844, 857, 859, 862, 864, 867, 1062, 1065, 1088, 1091, 1093, 1096, 1098, 1110, 1113, 1115, 1117, 1120, 1123, 1125, 1128, 1130, 1133, 759. (757, taken at sewer outlet, not included.)	41	4,500	84, 130, 134, 138, 142, 146, 150, 154, 158, 162, 166, 756, 833, 836, 838, 841, 843, 846, 858, 861, 863, 866, 868, 1064, 1066, 1090, 1092, 1095, 1097, 1100, 1112, 1114, 1116, 1119, 1120, 1124, 1127, 1129, 1132, 1135, 760. (758, taken at sewer outlet, not included.)
East river, above Hell Gate.....	15	3,300	81, 544, 546, 548, 551, 554, 557, 559, 561, 564, 567, 847, 849, 852, 1104.	15	2,400	82, 545, 547, 550, 553, 556, 558, 560, 563, 566, 569, 848, 851, 853, 1105.
Harlem river.....	28	22,800	201, 203, 206, 209, 212, 215, 217, 220, 223, 226, 570, 573, 576, 578, 581, 584, 674, 683, 1106, 1108.	18	8,000	202, 205, 208, 211, 214, 216, 219, 222, 225, 228, 572, 575, 577, 580, 583, 585, 1107, 1109.
Long Island Sound..	19	410	47, 49, 51, 53, 55, 57, 59, 61, 63, 65, 67, 69, 71, 73, 75, 77, 79, 854, 1101	19	190	48, 50, 52, 54, 56, 58, 60, 62, 64, 68, 70, 72, 74, 76, 78, 80, 856, 1103.
Kill van Kull.....	30	8,100	167, 170, 174, 178, 182, 184, 187, 191, 195, 199, 691, 692, 822, 824, 827, 874, 877, 879, 882, 945, 948, 950, 969, 1045, 1047, 1050, 1076, 1079, 1081, 1084.	28	5,000	169, 173, 177, 181, 183, 186, 190, 194, 198, 200, 823, 826, 828, 876, 878, 881, 883, 947, 949, 952, 970, 1046, 1049, 1051, 1078, 1080, 1083, 1085.
Newark bay.....	19	9,000	306, 308, 311, 313, 315, 317, 320, 335, 338, 341, 343, 346, 348, 815, 817, 819, 939, 941, 943.	19	6,300	307, 310, 312, 314, 316, 319, 322, 337, 340, 342, 345, 347, 349, 816, 818, 821, 940, 942, 944.
Passaic river, at Newark.....	4	111,000	327, 329, 809, 933.	4	75,000	328, 330, 810, 934.
Arthur Kill.....	11	5,500	955, 957, 959, 961, 963, 965, 967, 971, 1037, 1039, 1041, 1043. (963, taken at sewer outlet, not included.)	10	4,400	956, 958, 960, 962, 964, 966, 968, 972, 1038, 1040, 1042, 1044. (964, taken at sewer outlet, not included.) (1042 liquefied.)
The Narrows.....	17	8,300	85, 87, 92, 97, 102, 106, 108, 113, 118, 123, 400, 686, 687, 700, 716, 732, 735.	14	2,200	86, 91, 96, 101, 105, 107, 112, 117, 122, 126, 403, 717, 733, 736.
Gravesend bay.....	8	4,300	633-634, 641-646. (635-640 and 647, taken in or near Coney Island Creek, not included.)	..	....	No deep samples. Water shallow.
Lower bay.....	110	2,100	404, 408, 412, 416, 420, 428, 431, 434, 437, 440, 443, 446, 449, 452, 456, 459, 462, 465, 468, 471, 474, 477, 480, 483, 486, 489, 492, 495, 498, 501, 504, 507, 510, 513, 515, 517, 519, 521, 523, 525, 527, 530, 533, 536, 538, 541, 648-654, 656, 658, 660-665, 667, 669, 671-673, 701-702, 704, 714, 884, 887, 889, 891, 893, 895, 897, 899, 901, 903, 905, 907, 909, 911, 913, 915, 917, 919, 921-922, 924, 926, 928-929, 931, 1001, 1003, 1005, 1007, 1009, 1011, 1013, 1015, 1017, 1019, 1021, 1023, 1025, 1027, 1029, 1031, 1033, 1035. (921 liquefied.)	94	1,100	407, 411, 415, 419, 423, 430, 433, 436, 439, 442, 445, 448, 451, 455, 458, 461, 464, 467, 470, 473, 476, 479, 482, 485, 488, 491, 494, 497, 500, 503, 506, 509, 512, 514, 516, 518, 520, 522, 524, 526, 529, 532, 535, 537, 540, 543, 655, 657, 659, 666, 668, 670, 703, 705, 715, 886, 888, 890, 892, 894, 896, 898, 900, 902, 904, 906, 908, 910, 912, 914, 916, 918, 920, 923, 925, 927, 930, 932, 1002, 1004, 1006, 1008, 1010, 1012, 1014, 1016, 1018, 1020, 1022, 1024, 1026, 1028, 1030, 1032, 1034, 1036. (1020 and 1030 liquefied.)
Jamaica bay.....	19	9,900	592-598, 613, 615-616, 975, 977, 979, 981, 983, 985-988. (599-612 and 614, taken in or near creeks, which empty into bay, not included.)	..	....	Only 5 deep samples taken. Water shallow. (976, 978, 980, 982, 984 not enough for fair average.)
Rockaway inlet.....	7	2,300	586-591, 973.	..		Only 1 deep sample taken (974).
Atlantic ocean, 10 miles off Long Branch.....	2	200	706, 708.	2	35	707, 709.

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TABLE XVIII

Average Number of Bacteria in the Water in the Year 1909

Averages of samples taken on Ebb and Flood Currents for various parts of the harbor.

The data for this table are contained in Table XV.

Location	Currents					
	Ebb Currents			Flood Currents		
	No. of Analyses	Bacteria per C. C.	Samples included in the Averages	No. of Analyses	Bacteria per C. C.	Samples included in the Averages
Upper bay.....	79	13,800	1-12, 23-42, 303-305, 392-399, 684-685, 696-699, 718-719, 737-742, 749-754, 829-831, 869-873, 1067-1075. (694-695, taken at sewer outlet, not included.)	31	9,300	13-22, 688-690, 726-731, 1052-1061, 1086-1087. (1056 liquefied.)
Hudson river, below Spuyten Duyvil..	94	8,100	43-46, 264-302, 350-368, 388-391, 629-632, 743-748, 761-773, 784-788.	87	5,100	369-387, 619-620, 720-725, 774-783, 789-796, 798-800, 989-1000, 1136-1162. (797 liquefied).
Hudson river, above Spuyten Duyvil..	35	5,200	229-244, 261-263. (625-628, taken in Yonkers sewage field, not included.)	10	4,700	245-260, 617-618, 801-808. (621-624, taken in Yonkers sewage field, not included.)
East river, below Hell Gate.....	55	6,700	83-84, 147-166, 755-756, 832-838, 857-868, 1110-1119, 759-760. (757-758, taken at sewer outlet, not included.)	61	5,600	127-146, 839-846, 1062-1066, 1088-1100, 1120-1135. (1063 liquefied.)
East river, above Hell Gate.....	17	1,800	81-82, 544-556, 1104-1105.	20	4,200	557-569, 847-853.
Harlem river.....	31	16,200	215-228, 578-585, 674-678, 1106-1109.	27	15,000	201-214, 570-577, 679-683.
Long Island sound..	17	390	47-56, 77-80, 1101-1103.	23	250	57-76, 854-856.
Kill van Kull.....	49	6,900	184-200, 691-692, 874-883, 945-952, 969-970, 1076-1085.	31	6,000	167-183, 822-828, 1045-1051.
Newark bay.....	21	9,000	335-349, 939-944.	24	6,000	306-322, 815-821.
Passaic river, at Newark.....	4	121,000	329-330, 933-934.	4	65,000	327-328, 808-810.
Arthur Kill.....	14	7,300	955-962, 965-968, 971-972. (963-964, taken at sewer outlet, not included.)	7	350	1037-1041, 1043-1044. (1042 liquefied).
The Narrows.....	31	6,700	85-105, 400-403, 686, 700, 716-717, 735-736.	24	2,700	106-126, 687, 732-733.
Gravesend bay.....	..	....	(636-640, taken in or near Coney Island creek and outlet from disposal plant, not included.)	8	4,300	633-634, 641-646. (635 and 647, taken in Coney Island creek, not included.)
Lower bay.....	134	1,600	404-411, 428-433, 452-482, 510-537, 660-668, 701, 714-715, 884-896, 911-932, 1009-1024. (921 and 1020 liquefied.)	117	1,500	412-423, 434-451, 483-509, 538-543, 648-659, 669-673, 702-705, 897-910, 1001-1008, 1025-1036. (1030 liquefied.)
Jamaica bay.....	14	9,800	597-598, 975-988. (599-612, taken in creeks or near large sewer outlets, not included.)	10	6,400	592-596, 613, 615-616. (614, taken in creek, not included.)
Rockaway inlet.....	5	4,000	586-588, 973-974.	3	1,200	589-591.
Atlantic ocean, 10 miles off Long Branch.....	..	....	No samples taken on the ebb.	4	120	706-709.

RESULTS OF ANALYSES

TABLE XIX

Average Number of Bacteria in the Water in the Year 1909

Summary of Tables XVI, XVII and XVIII.

The data for this table are contained in Table XV.

Location	All Depths and Currents		Depths				Currents			
			Surface		Bottom		Ebb		Flood	
	No. of Analyses	Bacteria per C. C.	No. of Analyses	Bacteria per C. C.	No. of Analyses	Bacteria per C. C.	No. of Analyses	Bacteria per C. C.	No. of Analyses	Bacteria per C. C.
Upper bay.....	113	12,500	62	14,600	42	10,300	79	13,800	31	9,300
Hudson river, below Spuyten Duyvil.....	182	6,600	71	8,400	63	4,800	94	8,100	87	5,100
Hudson river, above Spuyten Duyvil.....	53	5,100	15	6,300	15	4,400	35	5,200	10	4,700
East river, below Hell Gate....	119	6,100	14	7,700	41	4,500	55	6,700	61	5,600
East river, above Hell Gate....	37	3,100	15	3,300	15	2,400	17	1,800	20	4,200
Harlem river.....	58	15,600	28	22,800	18	8,000	31	16,200	27	15,000
Long Island Sound.....	40	310	19	410	19	190	17	390	23	250
Kill van Kull.....	80	6,500	30	8,100	28	5,000	49	6,900	31	6,000
Newark bay.....	45	7,400	19	9,000	19	6,300	21	9,000	24	6,000
Passaic river, at Newark.....	8	92,000	4	111,000	4	75,000	4	121,000	4	65,000
Arthur Kill.....	24	5,000	11	5,500	10	4,400	14	7,300	7	350
The Narrows.....	55	4,900	17	8,300	14	2,200	31	6,700	24	2,700
Gravesend bay.....	15	4,300	8	4,300	....	....	....	....	8	4,300
Lower bay.....	255	1,600	110	2,100	94	1,100	134	1,600	117	1,600
Jamaica bay.....	39	8,400	19	9,900	....	....	14	9,800	10	6,400
Rockaway inlet.....	8	2,900	7	2,300	....	....	5	4,000	3	1,200
Atlantic ocean, 10 miles off Long Branch.....	4	120	2	200	2	35	....	....	4	120

TABLE XX

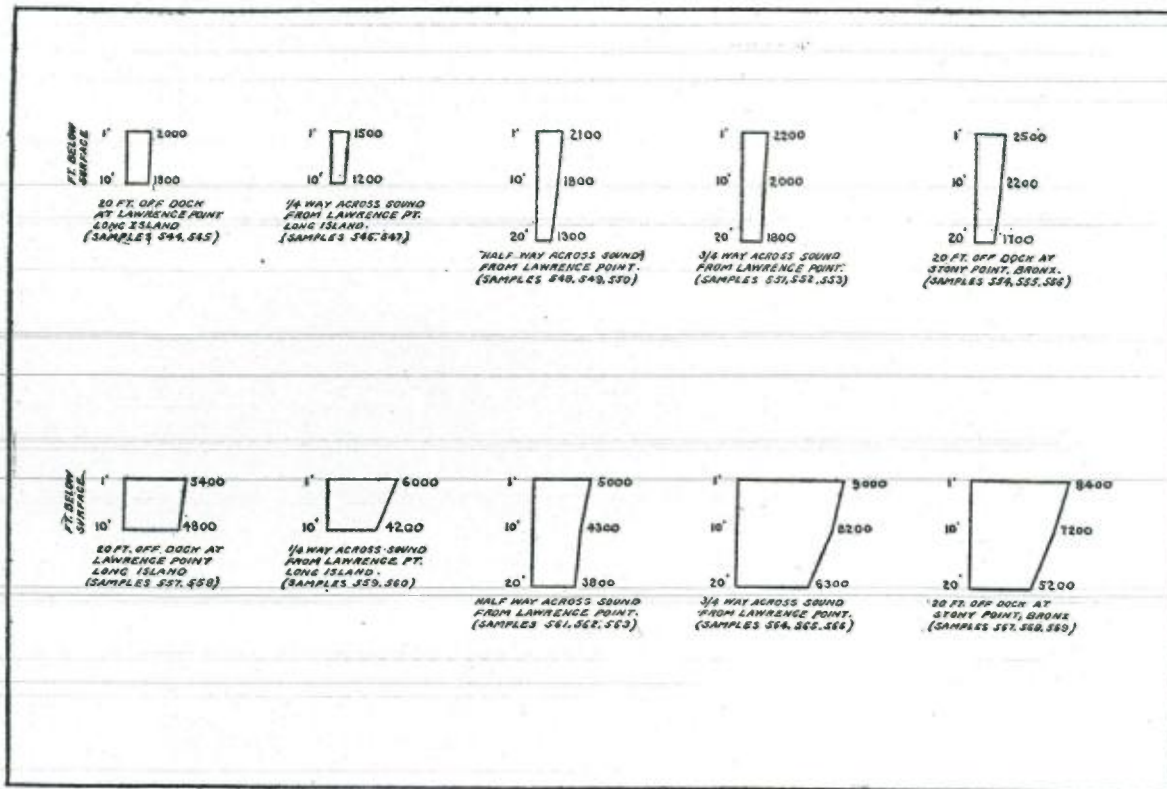
Average Number of Bacteria in the Water in the Year 1909

Averages of samples taken at miscellaneous locations in the harbor.

The data for this table are contained in Table XV.

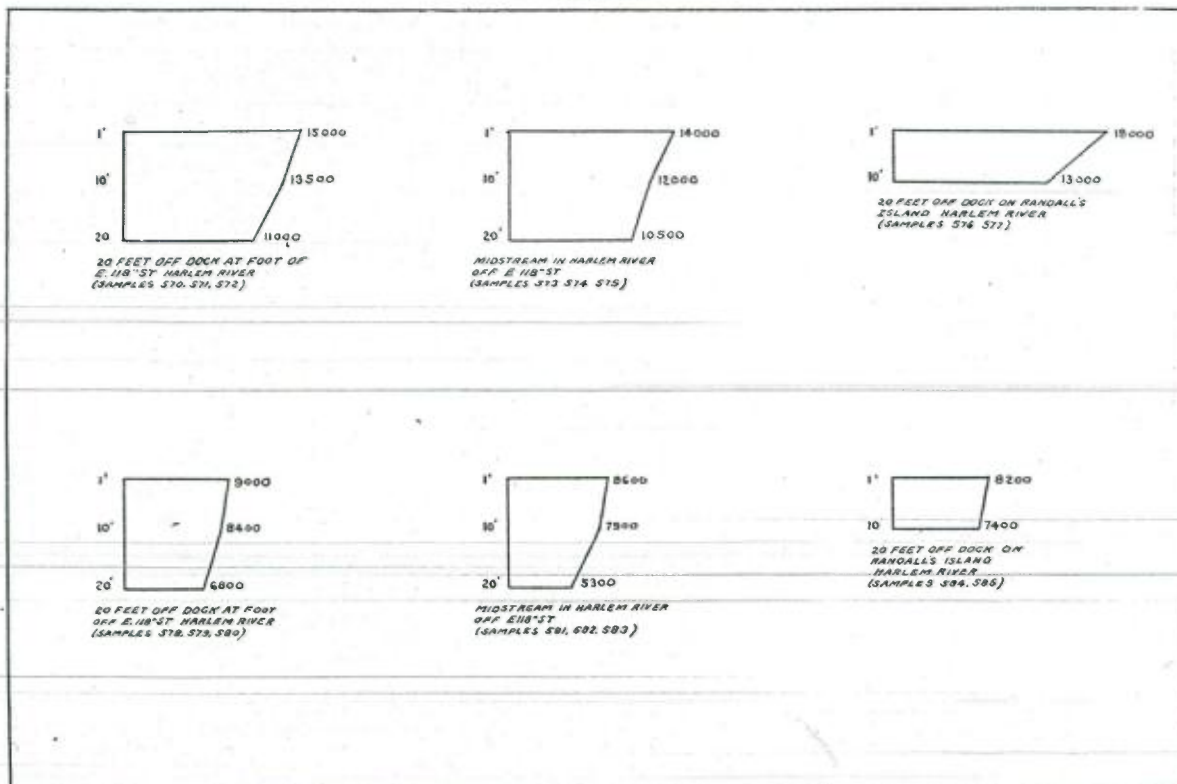
Location	Number of Analyses	Bacteria per C. C.	Samples included in the Averages.
Atlantic ocean, near Lower bay....	8	560	424-427, 710-713.
Passaic river, below Newark.....	16	43,000	323-326, 331-334, 811-814, 935-938.
Rahway river.....	2	34,000	953-954.
Bodine creek.....	1	6,400	693.
Total.....	27		Note.—All samples collected in these regions are included in averages.
Used in Table V.....	1,100		
Total used in averages.....	1,127		
Samples not used in averages.....	35		
Total number of analyses.....	1,162		

FIG. 45



LONG ISLAND SOUND FROM LAWRENCE PT. L.I. TO STONY PT. BRONX
BACTERIA PER C.C. IN WATER AT DIFFERENT DEPTHS BELOW SURFACE
SAMPLES COLLECTED MAY 26TH 1909

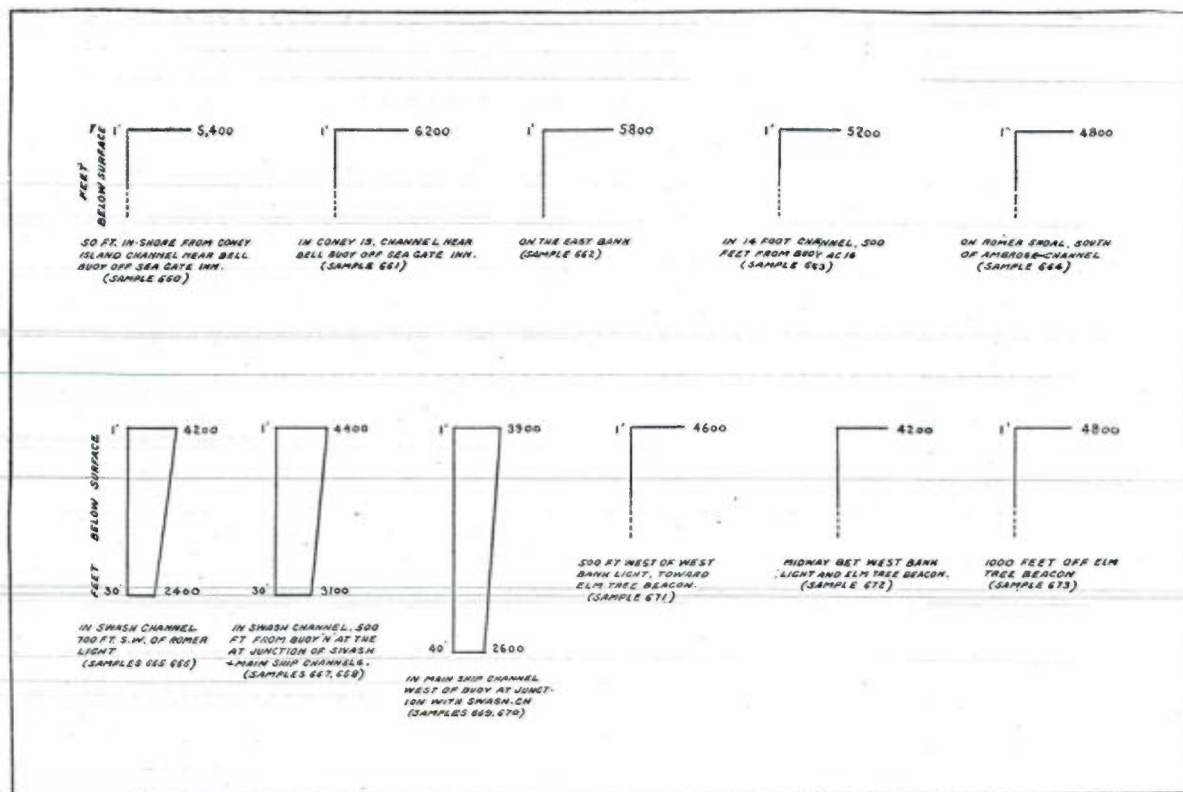
FIG. 46



HARLEM RIVER FROM FOOT OF E. 110th ST. TO RANDALL'S I
BACTERIA PER C.C. IN WATER AT DIFFERENT DEPTHS BELOW SURFACE
SAMPLES COLLECTED MAY 26TH 1909

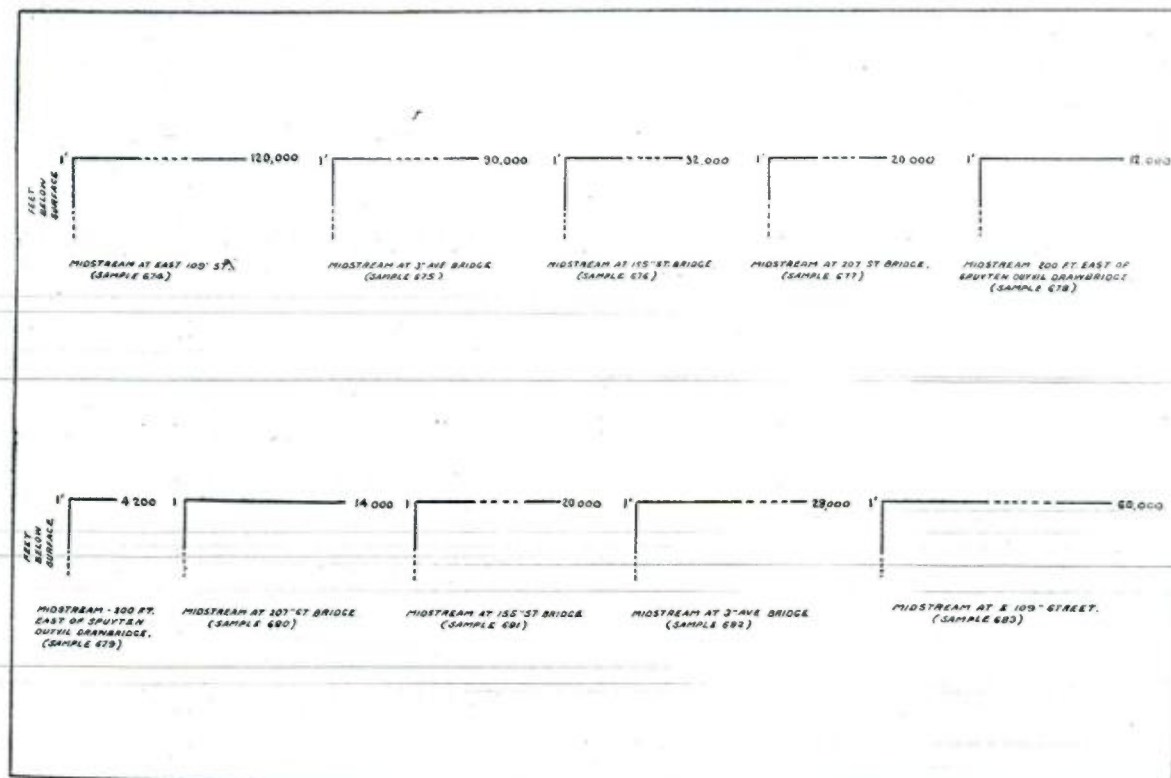
RESULTS OF ANALYSES

FIG. 55



ACROSS LOWER N.Y. BAY - CONEY IS. TO ELM TREE BEACON
BACTERIA PER C.C. IN WATER AT DIFFERENT DEPTHS BELOW SURFACE
SAMPLES COLLECTED JULY 14TH 1909

FIG. 56



HARLEM RIVER - FROM HELL GATE TO SPUYTEN DUYVIL
BACTERIA PER C.C. IN WATER AT DIFFERENT DEPTHS BELOW SURFACE