

# MAINE STATE LEGISLATURE

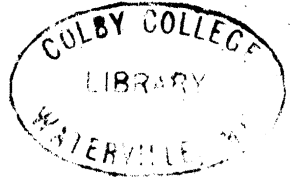
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PUBLIC DOCUMENTS OF MAINE

1911



BEING THE

ANNUAL REPORTS

OF THE VARIOUS

DEPARTMENTS AND INSTITUTIONS

For the Year 1910.

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VOLUME II.

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AUGUSTA  
KENNEBEC JOURNAL PRINT  
1911

FIFTEENTH REPORT

OF THE

STATE BOARD OF HEALTH

OF THE

STATE OF MAINE

FOR THE

Four Years Ending December 31, 1909.

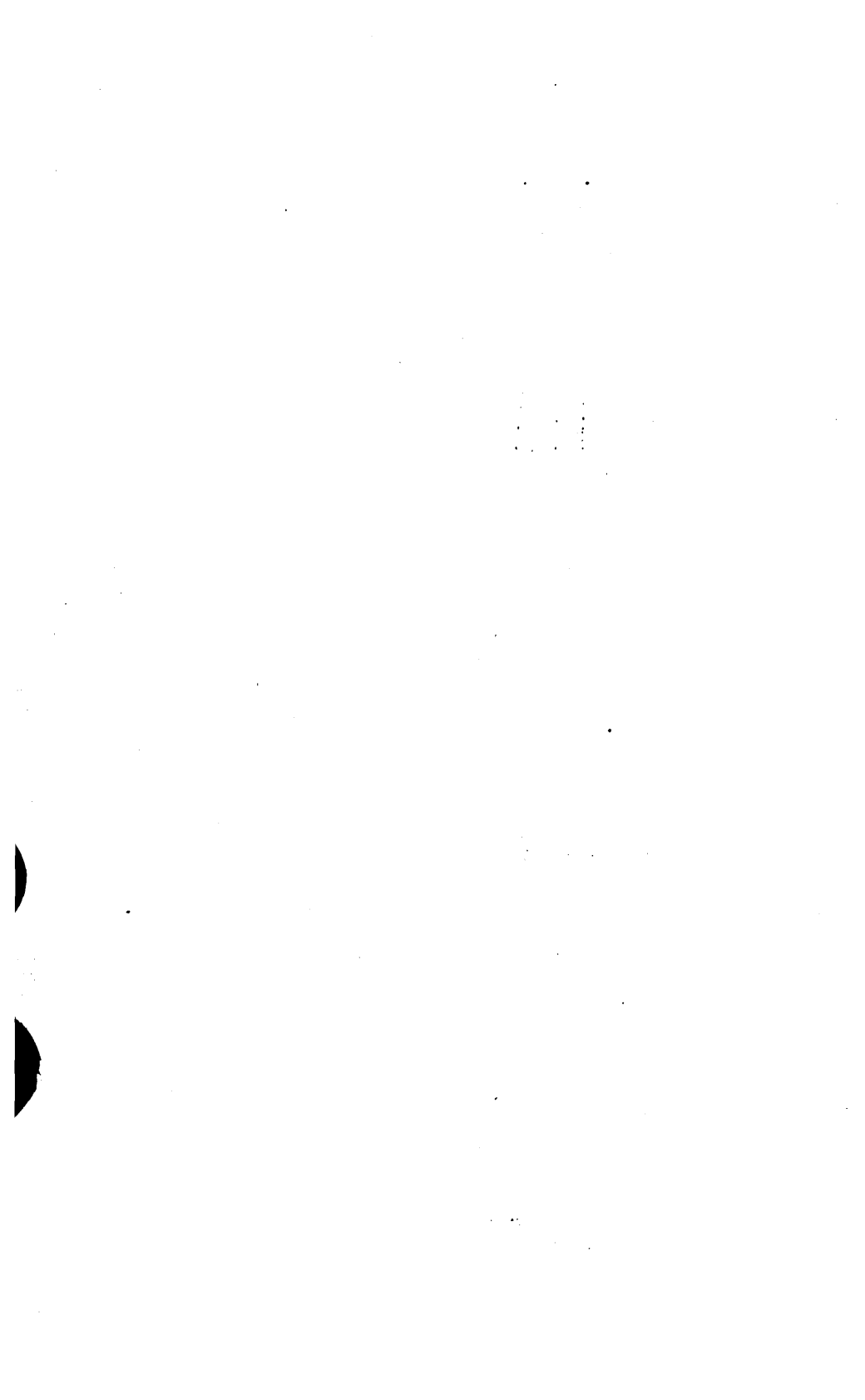
1906-1909.

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AUGUSTA

KENNEBEC JOURNAL PRINT

1910



STATE BOARD OF HEALTH OF MAINE.

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OFFICE OF THE SECRETARY,

AUGUSTA, MAINE, AUGUST 31, 1910.

*To His Excellency, Bert M. Fernald, Governor, and the Honorable Executive Council:*

GENTLEMEN:—I have the honor of submitting to you the Fifteenth Report of the State Board of Health of Maine, it being the report for the two biennial periods, 1906-1909.

Very respectfully,

A. G. YOUNG, M. D., *Secretary.*

MEMBERS OF THE BOARD—1909.

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CHARLES D. SMITH, M. D., <i>President</i> ,	Portland.
E. C. JORDAN, C. E.,	Portland.
PROF. F. C. ROBINSON,	Brunswick.
G. M. WOODCOCK, M. D.,	Bannor.
WALLACE K. OAKES, M. D.,	Auburn.
R. H. STUBBS, M. D.,	Augusta.
A. G. YOUNG, M. D., <i>Secretary</i> .	Augusta.

## CONTENTS.

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	PAGE
Title page.....	i
Note of Transmittal.....	iii
Membership of the Board.....	iv
Contents .....	v
Introductory .....	vii
The Bulletin of the Board.....	vii
Circulars of the Board.....	viii
Health of Home and School Leaflets.....	ix
Exhibition Work.....	x
Official Correspondence.....	xi
Infectious Diseases.....	xi
Tuberculosis .....	xii
Typhoid Fever.....	xiv
Infant Mortality.....	xv
Water Supplies.....	xvi
Milk Supplies.....	xvi
Laboratory Work.....	xvi
School Houses.....	xvii
Secretary's Report.....	I
Members of the Board and Standing Committees....	I
Transactions at various Meetings.....	2
Regulations Relating to Smallpox.....	16
Notes on Epidemic Work.....	25
Answers to Public Health Questions.....	39
Local Boards of Health.....	39
Nuisances .....	45
Quarantine .....	52
Disinfection .....	54
Sewers and Sewage.....	65
Tuberculosis .....	66
Smallpox .....	81
Typhoid Fever .....	86
Diphtheria .....	91
Scarlet Fever.....	100
Measles .....	102

	PAGE
Poliomyelitis .....	105
Whooping Cough.....	108
Mumps .....	111
Water Supplies.....	111
Milk Supplies.....	115
Laboratory Work.....	116
Relating to Schools.....	119
Diseased Animals.....	122
Dead Bodies .....	127
Miscellaneous .....	131
Report on the Work at the Laboratory.....	135
Chemical Work.....	136
Public Water Supplies.....	139
Miscellaneous Chemical Work.....	227
Bacteriological Work.....	227
Water Analysis—Tabulations.....	231
Diphtheria—Tabulations .....	302
Tuberculosis—Tabulations .....	305
Typhoid Fever—Tabulations.....	309
Financial Statements.....	311
Report, State Board of Embalming Examiners.....	315



## INTRODUCTORY.

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This report is for the two biennial periods ending Dec. 31, 1909. During the first two years of this period epidemic work kept the secretary from the office and from much-needed office work so much of the time that it was impossible to do anything in preparing a report. The secretary was, therefore, authorized by the board to issue this report as he has.

It was the wish of the secretary to make this report as compact as possible and to have a smaller edition than usual. This was for two reasons which, perhaps, are only one. In the first place it is out of the question to make the report a medium of general instruction in health matters. It would cost too much to print and to bind a large edition of a thick report. Again, even with as small a number and with as moderate sized a report as has hitherto been issued the cost of distributing by mail or by express is too much of a drain upon an appropriation which is so meagre that very much work which should be done, and which would be of prime importance to the state, has to remain undone or done only just fairly well. So the two reasons or motives are combined in aiming at what is expressed in the word economy. Economy in one direction so that more work may be done in other directions.

And the one direction in which the board is very anxious to do more work and more effective work is in the fulfilment of its educative duties. The law prescribes that the secretary shall collect information concerning vital statistics, knowledge respecting diseases, and useful information on the subject of hygiene, and shall disseminate such information among the people. That educative influence of a state board of health is perhaps of even greater worth than any or all of its executive functions, as indispensable at times as those are.

*The Bulletin of the State Board of Health.*—Early in its course the board began the publication of a bulletin under the title of "The Sanitary Inspector." The exigencies of epidemic work when smallpox was prevalent forced the discontinuance of

its publication just at the time when it was the most needed as a source of communication between the State Board, on the one hand, and the local boards and the people, on the other. Just because it was impossible to issue that bulletin during an exceptional stress of work the privilege of sending it through the mails at newspaper rates was lost. When reestablished and again readmitted under the pound rates it assumed its present title, "The Bulletin of the State Board of Health."

And this suggests a greater degree of liberality on the part of the government in its treatment of the publications of state boards of health. It would be but a slight concession to the cause for which state boards of health work if they were permitted to depart somewhat from the rule of strict periodicity in the issuance of their bulletins when the exigencies of their work require such latitude. It could not, as viewed by the ordinary health officer or citizen, make any difference whatever with the financial condition of the postal department if such latitude were permitted. Still better would it be if the government would confer upon state boards of health the full franking privilege for the bulletins, circulars and leaflets issued by them—publications which should go into the hands of all the people and which mean so much to their welfare and to that of the nation—and well could the general government afford to do this, postal deficit or no deficit.

*Circulars of the Board.*—From the beginning of its work the board has sought to carry its information and its helpfulness directly to the people by issuing and distributing circulars in as large editions as it could afford, some for the special help of local boards, but most of them for the diffusion of useful information among the people. Aside from the blanks and other papers for the use of local boards, the following is a list of the principal circulars which are now kept in stock by the board for use when and where they are needed:

- 21.—Practical facts about cholera
- 23.—Earth Closets.
- 27.—Does vaccination protect?
- 29.—Treatment of the drowned.
- 36.—Abstract of the Health Laws.
- 39.—Model By-Laws.
- 40.—Rules for house drainage.
- 44.—Diphtheria Circular.

- 45.—Scarlet Fever Circular.
- 46.—Typhoid Fever Circular.
- 47.—Is Diphtheria contagious?
- 48.—Isolation of the infectious sick.
- 49.—Reprint of Mr. Jordan's Paper on Sewerage, Sanitary Improvements and House Plumbing.
- 50.—Contagious diseases and contagion.
- 51.—To Teachers.
- 53.—Characteristics of the Infectious Diseases.
- 54.—Prevention of Consumption.
- 65.—On building schoolhouses.
- 67.—The Technique of vaccination.
- 69.—Diagnosis and Management of Smallpox.
- 70.—Disinfection of the Rooms and Things used by Consumptives.
- 71.—On the Management of outbreaks of Smallpox.
- 72.—Smallpox, its Prevention and Restriction.
- 73.—Infant Feeding.
- 74.—Arrangement of milk mixtures on the percentage basis.
- 75.—Formaldehyde Disinfection.
- 76.—Blank for investigation of Typhoid Fever.
- 89.—Circular for Householders in Places Where Smallpox has appeared.
- 92.—Factory and Workshop Tuberculosis.
- 93.—Tuberculosis a House Disease.
- 94.—Advice and Instruction about Using the Laboratory.
- 95.—Tuberculin and the Tuberculin Test for Tuberculosis.
- 96.—Four Encouraging Facts.
- 100.—Hygiene of Rural, Suburban and Summer Homes.
- 102.—The Danger from Flies.
- 103.—Bad-Air Poisoning.
- 105.—How to Get Well from Lung Trouble.

*Health of Home and School Leaflets.*—In this year of the publication of this report the secretary, with the approval of the board, has begun the publication and distribution of a series of "Health of Home and School Leaflets." These leaflets present in words easily understood practical facts about a great variety of topics which, in the interest of personal and public health, should become common knowledge. It is designed to have them all uniformly two-page leaflets, printed on paper of rather light weight so that it may be possible to issue them in large editions and in repeated editions as they may be needed. They are sent to the local superintendents of schools and each superintendent puts into the hands of his teachers a sufficient number of each leaflet so that a copy may be sent to each home represented by pupils in the schools.

Nearly one hundred and fifty local superintendents are thus far cordially co-operating with the State Board of Health in this work and as there are many combined districts this represents a larger number of towns. Judging by the commendatory letters which have come from the superintendents, this new co-operative movement for the distribution of needed information about health matters promises to be a very gratifying success. The leaflets which have been printed or are in preparation are the following:

- No. 1. Cold Weather Diseases.
- No. 2. The Cost and Waste of Preventable Diseases.
- No. 3. Parasites and Parasitic Diseases of the Skin.
- No. 4. The Danger of Uncleanliness.
- No. 5. The Teeth and Their Care.
- No. 6. What Everybody should know about Tuberculosis.
- No. 7. The Eyes and their Care.
- No. 8. Troublesome and Dangerous Ear Diseases.
- No. 9. Cuts and Other Wounds.
- No. 10. On Bandaging.
- No. 11. How to Stop Bleeding.
- No. 12. Infection Carriers.
- No. 13. Saving Persons from Drowning.
- No. 14. Rural Water Supplies.

*Exhibition Work.*—A fifth kind of educative influence that is yielding very gratifying results is the exhibition work of the State Board of Health. At first when this work was started the travelling exhibit related to tuberculosis alone, but it now has been extended to rural hygiene, school hygiene, and a little beginning has been made in the illustration of matters which relate to infant mortality and the methods of lessening the death-rate of infants. As fast as funds permit it is wished to increase the equipment in this direction and to do much more of this kind of work.

In making arrangements for the exhibit in most places, local boards of health and the school officers usually work together in interesting the citizens generally and in making the exhibition a success. In advertising it we have had the cordial helpfulness of the local newspapers, clergymen have announced it from their pulpits, and the State board has furnished attractive posters and hand bills. The attendance generally has been very satisfactory indeed and in many places it has been large.

A very encouraging feature of the work is that so many of

the superintendents of schools have arranged to have the schools attend, class by class, accompanied by their teachers, and the education which the pupils thereby receive is referred to very enthusiastically by some of the superintendents and teachers. The exhibit has been shown in many places for the benefit of the citizens of those places themselves and again in connection with quite a large number of meetings, conventions, etc., where a large number of people from various parts of the state have congregated. There have been urgent requests for the exhibit to go to many other places, but the want of funds has often obliged the board to say that it is impossible to comply with the wishes of the applicants.

*Official Correspondence.*—There is a sixth way in which the secretary tries to comply with that section of the law which provides that he shall distribute helpful information among the people. The correspondence of the office is exacting and covers a wide range of topics for the Department of Health and that of Vital Statistics. Some idea of the large number of questions, the asking of which is worth while, and the answers to which are in the interest of one or many persons, may be had by turning to other pages in this report on which a few of these answers are reproduced for the benefit of a wider circle of health officers and private individuals to whom the same questions will be likely to come up, judging by the frequency with which the same or similar questions are submitted to the office.

*Infectious Diseases.*—Within the period for which this report is made there has been no unusual prevalence of maladies of this kind with the exception that, in the gradual decline of the smallpox epidemic with which this state, in common with other states and the Canadian Provinces had to deal, it was necessary for the State Board of Health to take a part, at frequent intervals, in guarding against the encroachments of this disease from outside, and to prevent its spread within our borders. As an aid in determining our progress in controlling epidemic diseases it may be stated that, in the first five years during the period in which we have had a registration of the deaths in the whole state (1892-1896) the average death-rate per ten thousand of our population from these diseases—tuberculosis, typhoid fever, diphtheria, scarlet fever, measles and whooping cough—was 29.8.

For the last five years the average infectious disease death-rate has been 15.5. There has therefore been a diminution of almost one-half in the death-rate from these diseases.\* The following table shows the actual number of deaths which each of these diseases caused in each of the years since the beginning of our period of registration.

YEARS.	Tuberculosis, all kinds.	Tuberculosis, Pulmonary.	Typhoid Fever.	Diphtheria.	Scarlet Fever.	Measles.	Whooping Cough.
1892.....	1,513	1,352	286	212	36	29	54
1893.....	1,446	1,299	286	152	80	55	51
1894.....	1,443	1,262	277	139	29	21	20
1895.....	1,397	1,195	206	197	25	8	82
1896.....	1,359	1,172	204	174	33	32	111
1897.....	1,338	1,128	167	276	38	22	46
1898.....	1,239	1,021	226	240	43	41	44
1899.....	1,241	1,015	206	152	48	39	96
1900.....	1,223	1,027	196	155	35	84	99
1901.....	1,250	1,033	224	127	18	26	28
1902.....	1,165	970	162	115	13	28	51
1903.....	1,076	901	225	115	18	36	110
1904.....	1,217	1,016	242	162	10	22	54
1905.....	1,109	894	156	110	7	32	33
1906.....	1,176	915	133	119	5	105	109
1907.....	1,214	950	124	122	14	33	72
1908.....	1,145	893	151	105	17	21	80
1909.....	1,059	830	110	112	32	36	58

*Tuberculosis.*—Of the diseases which are due to the transmission of infection from person to person, tuberculosis still stands at the head of the list and will remain there until our people become still more deeply imbued with the truth that the infection, though it is slow to act in the production of this disease,

\*Based upon the new census figures which have become available since this report was prepared, the death-rates given in this report, particularly for the later years, would be somewhat lower than are herein stated.

is nevertheless the indispensable cause; that the disease is preventable; and that to aid in stamping out this terrible handicap to our state and personal welfare and prosperity should be held as a bounden duty by every citizen. The rapid lowering of the death-rate from tuberculosis is largely a matter of bringing essential truths vividly enough to the consciousness of us all, so that we may climb out of the rut into which, through the ages, the dictum of inevitableness has sunk us.

But this danger, as is the danger of lawlessness, is one against which individuals, acting alone, cannot adequately protect themselves, but it is within the power of the state, acting in unison with private endeavor, to safeguard its citizens. There is, therefore, no argument any more valid against the action of the state in this direction than there is against the protection of its citizens by the government against criminality and its results. That there are good grounds to believe that it is practicable to lessen very much more the death-rate from tuberculosis, and even to drive this disease into the ranks of the minor causes of death, is shown pretty plainly by the results which have followed efforts in certain states and cities, efforts which have been far from commensurate with the prize which is offered for adequate work in this direction. In Pennsylvania with the aid of its dispensaries which the state health department has been able to establish in various parts of the state for the early detection of cases of tuberculosis and the instruction of the infected persons, there has been a marked falling off in the tuberculosis death-rate. In Maine there has also been a notable lessening of the tuberculosis death-rate since our system of recording and tabulating the causes of death went into effect. The actual number of deaths from tuberculosis in each of the years 1892-1909 is shown in the tabulation under the preceding subhead, but what has actually been accomplished is better shown in the special death-rate for tuberculosis for all these years in the calculation of which the increase in the population of our state is taken into account.

## DEATH-RATES, 1892-1909.

Years.	Tuberculosis, all kinds.	Tuberculosis Pulmonary.
1892	22.66	20.24
1893	21.55	19.35
1894	21.40	18.71
1895	20.61	17.63
1896	19.95	17.21
1897	19.55	16.48
1898	18.01	14.84
1899	17.96	14.69
1900	17.61	14.79
1901	17.90	14.79
1902	16.58	13.81
1903	15.23	12.75
1904	17.13	14.30
1905	15.52	12.51
1906	16.36	12.73
1907	16.91	13.14
1908	15.75	12.29
1909	14.49	11.36

This table shows that in 1909 the death-rate from tuberculosis was only 56 per cent. of what it was in 1892; and that means that, if we now had the same death-rate which prevailed in 1892, the number of our people who are dying of tuberculosis would be more than 500 larger every year than it actually is. And if human lives have a cash value, and preventable illness is a hindrance to our social, industrial, and financial welfare, what has already been done with a small expenditure of money and means which have been far from adequate should suggest in all seriousness whether it is not advisable to spend judiciously larger sums of money in what appears might be a well-grounded hope of having it come back to us in ten-fold amount.

*Typhoid Fever.*—This is another disease the prevalence or the control of which has intimately to do with the prosperity of commonwealths and communities. One hundred and thirty-five deaths from typhoid fever more or less every year means ten times as many cases—ten times as many persons afflicted with a serious and often prolonged illness and all which that means



in cost to themselves and others and to the industrial and business systems of which they, when well, form a part. Typhoid fever is so serious a handicap in so many directions that more should be done to prevent it. Much of this loss is wholly needless. If there has been a considerable diminution in typhoid fever death-rate since our records of deaths began to give us data for comparisons, that should be no reason for congratulation until we have reduced the typhoid fever to the lowest possible,—until at least we are well in the front among the states which are doing effective work in the reduction of the typhoid death-rate.

One of the leading causes of high typhoid fever death-rates is water supplies which are not under effective supervision. In some of the New England and other states which have put this matter into the hands of their state departments of health and endowed those departments with funds enabling them to do effective work, water-borne epidemics of typhoid fever have become exceedingly rare. This matter is so important to the health and financial interests of the state that our board of health feels strongly that it will be its duty to urge the passage by the next legislature of the bill relating to public water supplies which was in the spring of 1909 referred to the next legislature.

*Infant mortality.*—It is a notorious fact that the infant mortality throughout the country generally, in Maine as well as elsewhere, is much higher than it should be. In the five years, 1905-1909, the average annual number of births was 16,013. During the same time the average number of deaths of children under one year of age was 1753. This means that of the children born in the state one-ninth of them die before they have reached the age of 12 months. In the year 1909 the death-rate of infants under one year of age based upon the number of births in the state in that year was 10.5; for the cities that special death-rate was 12.7; and in the state exclusive of the cities it was 9.5. In the various cities there was a marked difference in the infantile mortality rate. While there is need of earnest educative work in the state at large in the instruction of mothers and the people generally in regard to the proper feeding and other care of babies, there is an especial need of such work in the cities, and it would be very gratifying indeed to the State

Board of Health to be able to aid in carrying on effective work in this direction as it has planned by means of a travelling exhibit and the distribution plentifully, where they are especially needed, of leaflets giving such information as is needed. This is a kind of conservation work which perhaps far surpasses in importance that of many other conservation schemes which are now-a-days quite audibly exploited.

*Water supplies.*—The water supplies of Maine generally, public and private, thus far, are not so bad as they will be as the state increases in population, providing the same do-nothing policy as regards official supervision continues which has prevailed in the past. There has, however, been a striking improvement in a few of the water supplies of the cities which have changed their sources of supply from polluted river waters to lakes or ponds which, thus far, are free from gross pollution, and there has, at the same time in those cities, been a marked decline in the death-rate from typhoid fever. While the typhoid fever death-rate is a pretty accurate index of the efficiency of the supervision and the degree of purity of water supplies, we are not justified in believing that the ill results of the use of polluted water supplies is the sole cause of high typhoid fever death-rates.

*Milk Supplies.*—As the typhoid fever death-rate is an index to the degree of pollution or of purity of water supplies, the death-rate of infants may be taken as giving some indication of the care with which milk is produced and distributed since so large a proportion of the infants now-a-days are reared artificially. A high infantile death-rate in any state or city is not by any means chargeable wholly to the short-comings of the dairymen. There is need enough of instruction of the mothers themselves in the proper care of the milk after it is received within their homes.

In its work of supervising the milk supplies of the state the Department of Agriculture has had the help of the laboratory of hygiene which is under the care of the State Board of Health, in making chemical and bacteriological examinations of the samples of milk which have been collected.

*Laboratory Work.*—The work of the laboratory has very largely increased from year to year. The director of the laboratory on other pages makes a full report of his work. The

requests for work and the need of it in the interest of the public health has exceeded the present means of the laboratory to do. The pressure of the routine work has made it impossible to carry on some advance work—investigations to determine more conclusively some questions which are of interest to the public health service of other states as well as of our own. Closing it may be said that it is regrettable that provisions could not have been made, or were not made for housing the laboratory in the State House, as the laboratories of most other states are provided for, particularly in other states where recent additions or reconstructions of capitols have been made.

*Schoolhouses.*—The third report of the State Board of Health contained quite an extensive report on the condition of the schoolhouses which had been examined personally by the secretary in the different cities and villages of the state. Many of them were found to be in a condition very far from satisfactory; some of them in a condition in fact which was disgraceful to a commonwealth which has laws making compulsory the confinement of children hour after hour within the walls of school rooms which tend so strongly to undermine the health of pupils. The seventh report contained an extended illustrated paper on School Hygiene and Schoolhouses. Following its appearance the State board received from far and near many congratulatory and commendatory letters. The requests for this report have, through all the years since that time, 1892, been continuous. They have, indeed, come with such frequency from some of the colleges and normal schools outside of the state that they have suggested the probability that the heads of those educational departments have advised pupils to obtain the report if possible for use as a text book. It would seem, indeed, as though that paper had been much more highly appreciated outside of the state than it has within the state.

In compliance with a law which was passed by the last legislature the State Board of Health has co-operated with the State Educational department in the examination of plans which have been submitted for the construction of new schoolhouses. The submission of plans has shown with considerable frequency arrangements for seating, lighting and ventilation which are far from what they should be, and such plans indicate that many architects, within the state and outside of the state, who have

prepared the plans have failed to make such a study of the special requirements of buildings of this kind as they should make before undertaking to prepare plans for schoolhouse buildings. On the other hand some of the plans that have been submitted have been very excellent and were approved without hesitation.

## SECRETARY'S REPORT.

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This report is for the two biennial periods of 1906-07 and 1908-09. In the "Introductory," there is a statement of the reason why these two biennial reports are prepared as one. At the close of this period 1906-09, the names and addresses of the members of the board were as follows:

Chas. D. Smith, M. D., Portland.

Prof. F. C. Robinson, Brunswick.

G. M. Woodcock, M. D., Bangor.

R. H. Stubbs, M. D., Augusta.

W. K. Oakes, M. D., Auburn.

E. C. Jordan, C. E., Portland.

At the end of the period for which this report is made, there were the following standing committees:

On Finance.—F. C. Robinson, C. D. Smith, and Richard H. Stubbs.

On Circulars and Other Publications.—R. H. Stubbs, G. M. Woodcock, and A. G. Young.

On Sewerage and Drainage and the Disposal of Excreta.—E. C. Jordan, F. C. Robinson, Richard H. Stubbs, and G. M. Woodcock.

On Ventilation.—E. C. Jordan, W. K. Oakes, and F. C. Robinson.

On Summer Resorts.—W. K. Oakes, E. C. Jordan, and C. D. Smith.

On Water and Water Supplies.—F. C. Robinson, W. K. Oakes, A. G. Young, and E. C. Jordan.

On School Houses and School Hygiene.—F. C. Robinson, R. H. Stubbs, and A. G. Young.

On Quarantine.—C. D. Smith, W. K. Oakes, G. M. Woodcock, and A. G. Young.

On Legislation.—A. G. Young, F. C. Robinson, W. K. Oakes, and Richard H. Stubbs.

On Disinfection and Disinfectants.—F. C. Robinson, C. D. Smith, and A. G. Young.

On the Production and the Use of Vaccine Lymph, Antitoxin and Other Inoculation Material.—C. D. Smith.

On Operation of Laboratory.—A. G. Young, F. C. Robinson, G. M. Woodcock, and Richard H. Stubbs.

On Supply of Antitoxin to Local Boards of Health.—A. G. Young, C. D. Smith, and G. M. Woodcock.

The following excerpts are from the records of the various meetings of the board:

At the adjourned annual meeting of the State board of health April 2, 1906, Dr. Charles D. Smith was unanimously elected president for the ensuing year.

The secretary made a brief verbal statement in regard to the outbreaks of smallpox which have occurred since the last meeting of the board.

Dr. M. L. Young, Vanceboro, the inspector of the board at that point, gave an interesting narrative on the smallpox conditions which have prevailed in New Brunswick, and particularly in the region around Fredericton Junction and McAdam, and of his methods of carrying on the inspection service for the prevention of the importation of smallpox infection into our own state.

The revision of some of the circulars of the State board of health was thought desirable and the secretary was authorized to prepare and have printed revised additions to the circulars on the prevention of the infectious diseases, and also to prepare a new circular on disinfection. It was deemed desirable again to have a wide distribution made of Circular 54, on The Prevention of Consumption. Some time was spent in the discussion of the question of reporting all cases of pulmonary tuberculosis by physicians in accordance with the provisions of the law. It was the opinion of the board that it is desirable and important that there shall be a general compliance with this law.

Some questions relating to the Laboratory, the question of the feasibility of securing more desirable quarters, research work on disinfectants, and Mr. Quinn's salary were left in the hands of the Laboratory Committee with power to act.

Dr. C. D. Smith was chosen as the representative of the board to attend the conference between the Surgeon-General of the Public Health and Marine Hospital Service and representatives of state boards of health to be held in Washington May 23.

*Second Quarterly Meeting June 25, 1906.*—The secretary made a brief statement in regard to the epidemic work during the quarter just passed.

Dr. Smith, as the delegate of the board to the Conference of State and Provincial Boards of Health, and also to the Conference between the Surgeon-General of the Public Health and Marine Hospital Service and representatives of State Boards of Health, recently held in Washington, D. C., made a verbal report of the transactions at both conferences.

The secretary read some notes from recent literature on typhoid fever, and some little time was spent in the consideration of various questions relating to typhoid fever.

*Adjourned Third Quarterly Meeting October 20, 1906.*—Circular 46, on Typhoid Fever, which had already received the approval of the committee on publications, received by vote the approval of the board in all its recommendations.

The secretary reported on the publication of the bulletin, and that the report of the board for the past two years is in the hands of the printer and well near completion. New editions of Circulars 54, 70 and 76 were approved by the committee on publications. Professor Robinson was chosen as the representative of the board to the forthcoming meeting of the American Public Health Association.

Reference was made to the very satisfactory work which Mr. Evans, the director of the laboratory, has been doing, and the value of his work not only to our own state, but to the health officers in other states from whom letters have come expressing their appreciation of the work which has been done by the State board of health through its laboratory, in perfecting methods for the use of formaldehyde disinfection.

*Fourth Quarterly Meeting December 31, 1906.*—In regard to the inspection service which had been established, one at Vanceboro and one at Houlton, against the danger of the importation of smallpox from the infected regions in Nova Scotia and New Brunswick, the President reported what had been done in the absence of the Secretary, and the Secretary presented to the

board the reports which he had recently received from the inspector. It was decided to discontinue the inspection service at Houlton.

The secretary and the committee on legislation were instructed to apply to the legislature for an increase of \$1500 in the annual appropriation for the use of the State Laboratory of Hygiene, and to ask for a continuance of the epidemic fund—an appropriation of \$3000 for each of the two years 1907 and 1908.

The Secretary was instructed to send a letter to the General Baggage agents in regard to the reported prevalence of non-compliance with the rules of the State board of health relating to the transportation of dead bodies.

The Secretary was instructed to have large editions of Circular No. 54 of the board published, and to arrange through local boards of health and otherwise, for a general distribution of the circular, having this circular put into the possession of every family in this State as nearly as may be practicable.

The Secretary made a brief statement in regard to the expenditures of the board for the year just closing, and said that the accounts and books of the board would be made up in a few days and ready for the inspection of the finance committee.

The vacancies upon the standing committees of the board caused by the death of Dr. Wedgwood were filled by the appointment of Dr. Oakes to fill these vacancies.

Dr. Wallace K. Oakes, of Auburn, who had properly qualified as a member of the board was present for the first time at this meeting.

The following resolution was adopted:

*Resolved*, That in the death of Dr. M. C. Wedgwood the State board of health lost an agreeable colleague, and the State of Maine a most valuable servant. He became a member of the board in 1894, and thus, for more than ten years, the State had the advantage of his knowledge and judgment in public health matters. Fully as valuable as his medical knowledge was his common sense in dealing with matters which came before the board. He was an ideal committeeman, good-natured, clear in stating his own views, ready to yield to the opinion of others; a man who could bring things to pass, and did so. We shall miss him greatly in the work of the board.



*Annual Meeting March 25, 1907.*—Charles D. Smith was unanimously re-elected President. The standing committees were appointed for the ensuing year.

After some discussion of the question of the extension of the field of the Laboratory work, it was voted that the Laboratory Committee be instructed to act as its judgment dictates in the purchase of additional apparatus, in determining the work to be done in the Laboratory, and in making rules and regulations relating to the work.

The Secretary reported to the board the results of the recent work done at the Laboratory for the purpose of determining the influence of low temperatures and low degrees of humidity in disinfecting with formaldehyde.

It was voted to instruct Mr. Evans, the director of the Laboratory, to take a week for the purpose of visiting the Chemical and Bacteriological Laboratories in Concord, New Hampshire; Burlington, Vermont; Boston, Massachusetts; and Providence, Rhode Island, the necessary traveling and other expenses to be paid from the fund for the use of the Laboratory.

The Secretary reported briefly on the outbreak of Cerebrospinal meningitis at Rumford Falls and the cases of Diphtheria which have occurred in a few of the lumber camps in the Rangeley region.

Referring to letters received from the Secretary of the International Congress on Tuberculosis to be held in Washington, D. C., September twenty-first to October twelfth, 1908, the board voted that the President and Secretary constitute a special committee to take action in regard to participation in the Congress and to prepare an exhibit for the Congress if it is found practicable to do so.

The President and Dr. Oakes were authorized to consider the advisability of accepting the invitation of Dr. Nichols of the Sanatorium at Hebron, and the Ricker Brothers at Poland Springs, to hold the next meeting of the board at those places.

The Finance Committee was authorized to act as it deems right and equitable in paying Mr. Abildgaard for losses which he has incurred on account of his retention during the winter as inspector and disinfector for the board.

*Meeting of Committee on Laboratory May 11, 1907.*—A meet-

ing of the Committee of the State Board of Health on Laboratory and Laboratory work was held in the rooms of the Laboratory May 11, 1907.

All of the members of the committee were present together with Mr. Evans, the director.

After a discussion of what should be done in this special line of work, it was

Voted, that examinations for the gonococcus shall be made upon application from physicians, and that these examinations shall apply to men only.

It was voted that a special letter to the local boards of health at the summer resorts be prepared and sent to them asking their co-operation with the State Board of Health in keeping their water supplies under intelligent control for the purpose of guarding them against pollution and infection.

Mr. Evans was authorized to purchase any apparatus for milk work and for any other work which he thinks is needed in the Laboratory.

It was also voted that the Laboratory shall, for the present at least, deal with and through local boards of health in relation to the examinations of samples of milk.

*Adjourned Second Quarterly Meeting June 28, 1907.*—After considerable time spent in the discussion of the need of intelligent precautionary measures against the danger of the spread of tuberculosis in factories and workshops, the secretary was instructed to prepare a circular of information on this subject, and later seek the co-operation of the manufacturers in this State in preventing the communication of infection from person to person. The secretary was authorized to visit Providence, R. I., and such other places as he deems best, to collect information which may be helpful in this work.

Some time was spent in a discussion of the need of a more efficient law for the protection of the public against the danger from the meat from animals slaughtered while they are in a diseased condition. A letter recently received from the secretary of the local board of health of Monson re-emphasizes the need of legislation in this direction.

The President of the Board, who had recently attended the Conference of State and Provincial Boards of Health at Washington, and also the conference of the Surgeon-General of the

Public Health and Marine Hospital Service with representatives of the State boards of health, made a verbal report on the results of these two conferences. He also reported on a conference which he had with the officials of the War Department at Washington in relation to the reporting of births, marriages and deaths occurring upon the Federal reservations at Soldiers' Homes.

*Adjourned Third Quarterly Meeting November 11, 1907.*—The Secretary presented some letters and clippings which had been received from Dr. Young, of Vanceboro, which indicate the probability of the existence of some foci of smallpox infection in Nova Scotia, and perhaps in the eastern part of New Brunswick.

The Secretary presented to the board a new form of blank for the use of persons who wish to make application for a permit for the disinterment and removal of bodies. This blank, for the use of the Department of Vital Statistics and upon its return to be filed in that Department, was approved by the board.

A letter written to the municipal officers of Dixfield in regard to sewers in villages and particularly in Dixfield village, was approved by the board and thought suitable for use in other instances under similar conditions.

A letter from the secretary of the local board of health of Rockport in regard to an apprehended danger to the water supply of Rockport, Rockland and Thomaston was presented to the board, and Mr. Evans, the director of the Laboratory, and the secretary were instructed to make a personal investigation of the conditions and to report to the board at its next meeting.

*Adjourned Fourth Quarterly Meeting December 31, 1907.*—The minutes of the last meeting were read and approved. The Secretary made a brief financial statement to the board and a verbal statement in regard to the present status of smallpox outbreaks in the State. A letter from the Secretary of the Provincial Board of Health, at Montreal, to the Secretary of the State board of health in regard to diphtheria in Township 11, Range 17, was read to the board. The Secretary was authorized to send Mr. Abildgaard up into that country if he thinks it necessary or to take such action as he may deem necessary after getting further information from the Secretary of the board of health of the Province of Quebec.

The Director of the Laboratory and the Secretary of the board reported the results of their examination of Mirror Lake, which serves as the source of the water supply for Rockland, Rockport and Thomaston. The committee on water supplies was authorized to take such further action in regard to this matter as might be deemed best and advisable by that committee.

The Secretary brought up the subject of a uniformity of the records of the personal history of patients when they are first admitted into the hospitals, a matter which he deems of importance for the purpose of facilitating the records of Vital Statistics. The President appointed a special committee consisting of Dr. Woodcock, the Secretary and the President, to consider this matter and to take such action as he deems advisable in bringing it before the superintendent of various hospitals in the State.

The Secretary presented to the Board a circular letter which, under the instructions of the board at its last meeting, had been prepared by him to be sent to manufacturers in the State for the purpose of enlisting their co-operation in the work of lessening the prevalence of tuberculosis among the operatives in their mills, factories and workshops. This letter, together with the draft for a circular entitled, "Factory and Workshop Tuberculosis," was approved by the Board.

A considerable part of the time of the Board at this meeting was spent in the consideration of tuberculosis as the most serious infectious epidemic disease which devastates our State, as well as all other civilized countries. Though the Board believes that the marked results in diminishing the annual number of deaths in the State from tuberculosis has been due in a large measure to the educative work of the Board, the Board nevertheless believes that, together with the continuation of work like that which it has already been doing for the purpose of effecting still more fruitful results other work of some other kind should be done in infected families. In connection with this discussion Professor Robinson introduced the following resolution which was unanimously adopted.

*Resolved:* That in the opinion of the Board one of the most effective methods of decreasing the spread of tuberculosis is for local boards of health to take active measures to assist families

afflicted with the disease and to see that all persons who are unable to supply themselves with burnable spit-cups should have them furnished to them, and that they should have other practical help which science and administrative experience have demonstrated to be effective in curing the sick and guarding the well; and that the Board especially commends, in this connection, the work of the Portland board of health in providing and furnishing nurses to visit and instruct in such cases, and the generosity of the city in making an appropriation for carrying on this work, and that the State board hopes that this example may be followed by other local boards and municipalities."

The desirability of having the Board make an exhibit at what will be a world-event, the International Congress on Tuberculosis, which will be held in Washington next October, was expressed. It was thought that one reason why the Board should not be wholly unrepresented in this line is that it was the first State board to take up this particular kind of preventive work, and that the fruits of this work, from the statistical showing are probably as good as can thus far be shown anywhere else. It was therefore

*Voted:* That the Governor and Council be asked to set aside from the epidemic fund for 1908, \$200 to be used by the State board of health in representing the State by means of an exhibit at the International Congress on Tuberculosis.

Correspondence which the Secretary had had with persons in Waldoboro about a woman who has a chronic disease of the skin which certain persons in that town feared might be leprosy, was referred to the President of the Board, who, as Superintendent of the Maine General Hospital, had previously had her in charge as a patient. He stated positively that the disease is not leprosy, nor is it a disease which is contagious. In the opinion of the State board of health there is therefore no need whatever of action on the part of the State Board or of any local board in connection with that case.

*Annual Meeting State Board of Health, March 30, 1908.—*

At this meeting Dr. C. D. Smith was re-elected president of the Board.

Aside from the usual business of the annual meeting, the Board had arranged for a conference on bovine tuberculosis

from the public health point of view with representatives of all classes of persons and public officials who have an interest in the matter.

There were present at this conference the Commissioner of Agriculture, State Dairy Instructor, all the members of the Board of Cattle Commissioners, Drs. Russell of Orono, Murch of Bangor, Joly of Waterville, and Purcell of Biddeford, veterinarians, Mr. Alden of Winthrop, representative of the Maine Dairymen's Association, representatives of some of the local boards of health, and other persons.

The proceedings of this conference which was characterized by all in attendance as very interesting and successful, will be recorded and published in the Bulletin of the board for May.

At the close of the afternoon session Professor Robinson said: "The various papers have been enlightening. It might be that no new legislation is needed but I think the majority of opinions taken from the papers here is that it might be advisable, and I move:

"That it is the sense of this conference that a committee be appointed consisting of one member from each of the bodies here represented to consider the advisability of any new legislation bearing upon public health interests in connection with animal industry." Carried.

Hon. F. O. Beal then moved: "That the Chairman be authorized to appoint anyone on that committee that he thinks advisable." This motion was carried.

(The President subsequently appointed the following persons to constitute this committee:

Mr. Chas. S. Pope, Manchester, Me.

Mr. Leon S. Merrill, State Dairy Instructor, Solon, Maine, representing the State Agricultural Department.

Dr. F. L. Russell, Professor of Bacteriology and Veterinary Science, University of Maine, representing the Maine Veterinary Medical Association.

Mr. F. S. Adams, Bowdoinham, representing the Cattle Commission.

Mr. R. L. Bradford, Auburn, Maine, representing the Creamerymen's Association.

Hon. Rutillus Alden, Winthrop, representing the Dairymen's Association.

Dr. A. G. Young, Augusta, representing the State Board of Health.)

Professor Robinson moved further: "That it is the sense of this conference that educational methods are of the greatest importance connected with this matter we have been discussing to-day, and that it is the sense of this conference that each department represented here should carry on this campaign in every possible way, by leaflets spread broadcast, as suggested by Dr. Young, or in any way which seems advisable."

This was unanimously voted.

*Second Quarterly Meeting, June 29, 1908.* The Secretary reported that he had received a letter from Fort Fairfield which indicated that there is considerable danger to the people in some of the Aroostook towns on account of the prevalence of smallpox at Beechwood Station on the Canadian Pacific Railway on the St. John River, and that he had deemed it prudent to employ Mr. T. F. Abildgaard to make a personal investigation of the smallpox conditions in that part of New Brunswick. The reports which had been received from Mr. Abildgaard were presented to the board. He had found that the rumors of the presence of smallpox at Grand Falls at the present time are untrue.

He had learned that in Carleton County where smallpox had been present at the places visited by him, the health officers had quarantined the houses and had disinfected them in an efficient manner and had considerable work done in the way of vaccination of the inhabitants, but at the places investigated by him in Victoria County, there was evidence that there had been a lack of efficient isolation of cases, that the disinfection had not been done in an efficient manner, and that there was a possibility of the present existence in some parts of Victoria and Madawaska Counties of cases which had not been reported to the health authorities, this with a view of escaping quarantine. Officially, however, there exist only two cases of smallpox in that part of New Brunswick between Grand Falls and Bath, and that both of these are in the Canaan Settlement back of Beechwood, and that the houses in which these cases are will be disinfected next week.

In view of the information which had been furnished by Mr. Abildgaard, it was the opinion of the board that the conditions

in that part of New Brunswick are not serious enough to require an inspection or quarantine station to be established on the boundary line or to require any action by the State board of health at the present time.

One of the subjects discussed at this meeting was whether the important records of the board, and especially those relating to Vital Statistics were sufficiently protected from possible destruction by fire. After careful inspection, it was unanimously agreed that certain changes were desirable in order to minimize the danger.

The danger seemed to be that if a fire should occur in the entry to the basement, as is not unlikely considering the inflammable material always there, which would prevent the use of the basement door, it might be impossible to prevent the loss of those records because all the windows of the offices of the board of health and of the Department of Vital Statistics are barred upon the outside. Hence the board believes that changes should be made so that it would be possible in such an exigency to remove through one of the windows the boxes containing the records, and we most earnestly hope that the Governor and Council will authorize and direct that such changes be made.

It was voted that the President of the board be directed to bring this matter to the attention of the Governor and Council at their next meeting.

The Secretary showed and explained to the board his plans for an exhibit at the International Congress on Tuberculosis which is to be held in Washington next fall.

The Secretary was elected a delegate to represent the State board of health at the International Congress on Tuberculosis to be held at Washington, September 21 to October 12, and as a delegate to the Conference of State Boards of Health to be held in the same city at the same time.

It was voted to authorize Professor Robinson to attend the meeting of the American Public Health Association which will be held the latter part of August.

Some time was spent in the discussion of the question whether the State board of health should continue under its rules and regulations for the transportation of the dead to require a permit from the State board of health for the disinterment of bodies whether to be transported by private conveyance or by public



carrier. It was the sense of the board that it is unnecessary to require a permit from the State board of health for bodies which are not to be transported by railway or by other common carrier, and it was voted that Rule 8 relating to the disinterment of bodies shall be interpreted as requiring a permit from the State board of health only when the bodies are to be transported by railway or other common carrier.

*Adjourned Third Quarterly Meeting, October 30, 1908.*—The Secretary made a statement in regard to the few outbreaks of smallpox which had occurred since the last meeting and the present status of smallpox danger which threatens on account of the prevalence of smallpox in the Province of New Brunswick especially in Madawaska County. In view of the danger of the importation of smallpox from the infected districts in the Province of New Brunswick, the following special order or rules and regulations were made and adopted by the board.

*Rules and Regulations of the State Board of Health Relating to Smallpox in New Brunswick.*

Section 1. On account of outbreaks of smallpox in the northern part of the Province of New Brunswick the State board of health of Maine hereby orders that, until further notice, no person shall come from the said Province of New Brunswick into any city, town, plantation, township, lumber camp, or other place in the State of Maine unless he can prove to the satisfaction of the local board of health of the place to which he comes, or to an inspector of the State board of health, that he has been successfully vaccinated, and has not been exposed to the infection of smallpox.

Section 2. This order shall not apply to travelers by steamboat lines in Maine, or to travelers by railway who are able to show to the satisfaction of an inspector of the State board of health that they have come from counties or parts of New Brunswick which are free from smallpox.

By order of the State Board of Health.

Attest:

(Signed) E. C. JORDAN, Pres. pro tem.  
A. G. YOUNG, Secretary.

By vote of the board, Dr. H. H. Hammond of Van Buren and Mr. T. F. Abildgaard of Washburn were made duly authorized agents or inspectors of the State board of health to carry out for the board protective measures in the State, and particularly upon the northern border, against the introduction and spread of infectious diseases.

It was voted that on account of the danger of the importation of smallpox into our State by the way of Vanceboro, an inspection service be established at that point for the examination of passengers and their baggage and other effects, for the vaccination of incoming passengers or other persons who, in the judgment of the inspectors should be vaccinated, and for carrying out other measures which may be deemed necessary to prevent the ingress of infection into our state. It was voted that Dr. M. L. Young be appointed, and is hereby appointed, an agent and inspector to take charge of said inspection service at Vanceboro. It was voted that at any time during the necessary absence of Dr. Young from Vanceboro, Dr. S. Johnston of Vanceboro be and is hereby authorized to act in the place of Dr. Young.

The secretary was authorized to have Circulars 27 and 72 and also the rules and regulations relating to smallpox in New Brunswick this day adopted, printed in the French language for use and distribution where they are needed.

The secretary reported that Dr. Hammond and Mr. Abildgaard had been appointed by the Public Health and Marine Hospital Service at Washington to act as inspectors along the northern border, but in view of the fact that the compensation of Mr. Abildgaard from that source was only five dollars a day and no reimbursement for necessary traveling and other expenses, the secretary was authorized to confer with Mr. Abildgaard and to pay him from the epidemic fund such additional compensation as may seem to be equitable.

Considerable time was spent in considering the necessity of some new and advanced work which should be done in the State in the campaign against the prevalence and the spread of tuberculosis. Some work of which there is an urgent need, is that which might be done by district tuberculosis nurses, particularly in the rural districts and the many villages of Maine if the services of such nurses were available to the State board of health.

Upon motion of Professor Robinson, it was voted that some preliminary work with local boards of health and physicians be done by the State board of health by means of a circular letter, and the secretary was authorized to send out a letter of this kind for the purpose of becoming acquainted with the sentiments of people in different parts of the State in regard to this matter.

The need of adding to the exhibit of the State board of health which was shown in Washington and the better adapting it for use in this State and for arrangements for holding local exhibits and lectures or talks on tuberculosis in many places in the State was brought out forcibly as the sentiment of the board.

The need of new or amended legislation of various kinds was considered and this whole matter was left in the hands of the Committee on legislation with authority to prepare such bills as may be deemed necessary and to make arrangements to bring about their passage through the Legislature.

A subject proposed by Mr. Clason of Gardiner was suggested for consideration by the secretary, that is, the need of some additional legislation providing for the furnishing of diphtheria antitoxin without delay for families in which cases of diphtheria have appeared. The Committee on Legislation was instructed to confer with Mr. Clason in regard to this matter.

The secretary reported that he had not yet made any public announcement of the vote passed by the board at its June meeting in relation to the board's interpretation of the requirements of Section 8 of the Rules and Regulations of the State Board of Health Relative to the Disinterment and Transportation of Dead Bodies but that he had been in communication with the secretaries of other state boards of health for the purpose of learning just what the practice has been in other states in regard to this matter. After reconsidering the matter, the vote of the board at the June meeting was reaffirmed.

It was the sense of the board that there is great need of improvements in the sanitary condition of the school-houses in the State generally and that there is need of legislation providing that the plans of all school-houses to be built in the future shall be submitted for approval to the State board of health and perhaps preferably to the State Educational Department also.

Another line of work which the State board of health believes

it should be able to do is the inspection of summer resorts and the conferring and advising with the owners of such places looking to the improvement of their sanitary conditions.

*Special Meeting, November 18, 1908.*—The special business before the board was to take action in regard to making rules and regulations of the State board of health relating to the management of smallpox. The following rules and regulations were made and adopted by the board.

*Rules and Regulations of the State Board of Health Relating to the Management of Smallpox.*

By virtue of authority conferred upon the State board of health in Chapter 18, Section 8, Revised Statutes, the said board makes the following rules and regulations for guarding against the introduction of smallpox into the State; for the control and suppression thereof if within the State; and for the quarantine and disinfection of persons, localities and things infected or suspected of being infected by such disease. The word smallpox in these rules and regulations includes variola and varioloid.

Section 1. Local boards of health shall at all times be vigilant in guarding against the introduction of smallpox or smallpox infection into their towns, and especially when there are cases of this disease in this State or in an adjoining state or province. Local boards shall investigate promptly any rumors of cases of smallpox in their towns and any suspected cases; and if such cases are found to be smallpox or if there are good reasons to believe that they may be cases of smallpox, said boards shall, without the least delay, take measures for the purpose of preventing the communication of infection and the spread of the disease.

Section 2. Relating to Quarantine.

I. Every person infected with smallpox shall be quarantined promptly and absolutely until he has fully recovered, until the last trace of desquamation has disappeared, and until the whole surface of his body has received a disinfecting bath and he has received clothes which are free from infection.

II. Persons who show any symptoms of smallpox or an eruption suggestive of smallpox shall be quarantined as is provided in Paragraph I, until it is determined that their disease is not smallpox.

III. Transient persons, that is, persons who have no permanent home or residence in the town under the jurisdiction of the local board, and who have been exposed to smallpox, shall be kept under close quarantine until the danger of their having smallpox is passed.

IV. Persons who have been exposed to smallpox and who have a permanent home within the town over which the local board has jurisdiction shall be kept under quarantine, or, if the local board deem best, shall merely be kept under observation as is provided under Paragraph V.

V. Persons under Paragraph IV, who have been exposed to smallpox shall be considered under two classes, (a) and (b) :

- (a) Those who have been exposed to smallpox but once or a short time. These, if they are promptly and carefully vaccinated, may be kept under observation until it is sure that their vaccinations have taken. They may then be discharged from further surveillance.
- (b) Persons who have been exposed to smallpox and more than four days have elapsed shall be kept under observation sixteen days from their last exposure, and the wearing of infected clothing shall be deemed a continuance of exposure.

Note.—Exposed persons, those under class (a) as well as those under class (b) shall have their clothing and bodies disinfected as promptly as possible at the beginning of their period of quarantine or of observation. (See Circular 71).

### Section 3. Relating to Vaccination.

Local boards of health and health officers shall secure, if possible, the prompt vaccination of all persons who have been exposed to smallpox, and repeated vaccinations, if necessary, until there is an assurance that these persons are protected against the danger of taking smallpox. Exposed persons who refuse to be vaccinated shall be subjected to an absolute quarantine for sixteen days dating from their last exposure.

Section 4. Relating to Disinfection.

Local boards of health and health officers shall require a thorough disinfection:

- (a) Of every person who has been exposed to smallpox and of every person who has, or who has recently had, smallpox before they are released from quarantine, and this disinfection shall include all infected clothing and other things that the person may be permitted to carry away with him.
- (b) Of every house, room, piece of furniture, bedding, clothing, and of all other things before the quarantine is raised; and no article which has been exposed to smallpox infection shall be allowed to be removed from the house or the premises before it has been disinfected.

The disinfection of persons, rooms and things shall be done as is recommended by the State board of health in the latest editions of Circulars 68, 71 and 75.

Section 5. Local boards of health shall report to the State board of health promptly every outbreak and every case of smallpox and facts which relate to this disease.

(These rules and regulations of the State board of health were approved by the Governor and Council November 19, 1908, and were published in the State paper November 23.)

*Fourth Quarterly Meeting, December 30, 1908.*—All the time of this session was devoted to the consideration of the need of new legislation in the line of public health and the reading and discussion of bills which had been prepared by the Secretary of the board, and in a conference with State Superintendent Smith in regard to legislation needed for the improvement of the health conditions of the schools of the state.

The Secretary was directed to prepare the bills in accordance with the amendments which had been suggested at this session of the board under the approval of the Committee on Legislation, and said committee was authorized to appear before legislative committees for the purpose of explaining and advocating the passage of these bills.

*Adjourned Annual Meeting, April 12, 1909.*—At the annual meeting of the board for this year Dr. C. D. Smith was re-elected president. Standing committees were appointed.

Some time was spent in the discussion of the new law providing for the supply of antitoxin to towns. A special committee consisting of A. G. Young, C. D. Smith and G. M. Woodcock was appointed to make arrangements with a manufacturer of diphtheria antitoxin for the supply of the towns. The Secretary was authorized to spend one hundred dollars in making additions to the traveling exhibit of the board and to make arrangements for placing this exhibit at the Agricultural fairs and Teachers' Institutes.

Upon motion of Dr. Woodcock it was resolved:

That the danger which threatens the public from the use of common drinking cups aboard trains, and in other public places, is a serious one, and that it is very desirable that such common drinking cups be abolished and that arrangements be made for the use of individual drinking cups. Paper drinking cups of several manufacturers are very convenient and commendable.

The Secretary was authorized to make the next report of the board a combined report for the four years, 1906 to 1909, that is, two biennial reports to be issued in one.

*Second Quarterly Meeting, July 6, 1909.*—The secretary reported as chairman of the special committee chosen at the last meeting to make arrangements for the distribution of antitoxin in the state, that the committee had made a contract with the Lederle Antitoxin Laboratories for the supply of antitoxin. He read the agreement which had been made between the State Board of Health as the party of the first part and the Lederle Antitoxin Laboratories as the party of the second part, and reported the progress which had been made towards the establishment of antitoxin stations in the various cities and larger towns. He further reported that the work is temporarily delayed by the necessity of getting the opinion of the attorney-general on some questions asked by the Lederle people relating to the provisions of the new law.

The secretary further reported the work which he had done in carrying out the provisions of the new law relating to tuberculosis.

An application had been received from Mr. Amory B. Chaplin, United States immigrant inspector at Lowelltown, asking that he be allowed to occupy a small building which had been erected by the State board of health six or seven years ago. The secretary was instructed by the board to give Mr. Chaplin permission to use this building, provided that its use by him be agreeable to the owners of the land upon which the building stands, and provided also that any improvements which may be made by Mr. Chaplin shall not be an encumbrance upon the building or done at any cost to the State board of health, and provided further that the use of the building be released to the State board of health at any time the State board of health may need it or may demand it.

The committee of the board on school hygiene was authorized to confer with Hon. Payson Smith, State Superintendent of Schools, with regard to co-operative work, as is provided under Chapter 73, Section 7, and Chapter 88, Laws of 1909, and to act for the board in formulating any rules or regulations relating to the inspection of schools or relating to the approval of plans of school buildings which may be submitted to the department of education and the department of health.

A conference was held with Dr. C. D. Woods, Director of the Agricultural Experiment Station at Orono, in regard to the use of preservatives in food, and benzoate of soda in particular. After the conference was ended the following motion, made by Prof. Robinson was duly seconded and carried:

“Moved, That this board wishes to express at this time its satisfaction with the workings of the U. S. Pure Food Law, and its opposition to any action which may tend to weaken or nullify any essential feature of that law. In the opinion of the board, every precaution should be taken to make it impossible to have food products put on the market which are unfit for human consumption, whether this comes about from insufficient inspection or the improper use of preservatives or flavoring or coloring substances.”

Some time was given to a consideration of the precautionary measures that should be required by local boards of health in connection with outbreaks in cases of measles. The instruction



to local boards of health which had been given by the secretary was confirmed and approved by the board as being proper, to wit:

That as measles is a disease which for years has caused a larger number of deaths in the State of Maine than scarlet fever and has caused very nearly as many deaths as diphtheria, it is a disease which should not be lightly considered and unnecessarily be allowed to spread. The local boards of health should require that all persons with measles and all persons from homes in which there are cases of measles should strictly be excluded from the schools and from public assemblies; but that there is no need of an absolute quarantine for the whole family. The head of the family, or the bread winner may be allowed to attend his ordinary vocation, but in doing so, he should keep himself from the rooms which are occupied by the sick ones.

As the infection of measles does not retain its vitality so long as that of scarlet fever, diphtheria, and most of the other infectious diseases, the disinfection of the rooms occupied by measles patients and the clothing worn by them is hardly necessary, provided the infected rooms are occupied by the patients for two or three weeks before they are entirely released from isolation.

Some points relating to the methods of doing work by local boards of health were discussed. It was the opinion of the board that most of the work of local boards of health may, in the interest of economy to the town, be done by the secretary or other executive officer of the local board of health, and that while in some special cases in quarantining a family affected with an infectious disease, or in deciding in regard to whether a condition is or is not, such as to constitute a nuisance, it may be necessary for all of the members or at least for two of the members of the board to visit the place or to investigate the question at issue, the attendance of more than one member is not required in the great majority of cases.

*Adjourned Third Quarterly Meeting, October 5, 1909.*—For the purpose of learning whether his opinion on certain points relating to the etiology of human tuberculosis and the methods which are most advisable for the prevention of the spread of

tuberculosis among human beings have the support of the board, the secretary read extracts from a paper which had been read in Waterville, relating to the prevention of tuberculosis. The board approved the stand which the secretary had taken upon the question as to the preponderating influence of human infection, and also that the education of the general public, and local work, for the prevention of infection, and for the cure of tuberculosis appear to be of greater importance under the conditions which prevail in this state than the provision of institutions for the segregation of advanced cases.

The secretary reported as to the slow progress of the work for the approval of school-house plans, by the State board of health and the State educational department under the new law.

The secretary also reported in regard to the expenditures for making additions to the exhibit of the State board of health relating to tuberculosis, and he was authorized to make additional expenditures for exhibits relating to tuberculosis, school hygiene, rural hygiene and the hygiene of children, not to exceed \$200.00, without further authorization from the State board of health.

The secretary reported that the antitoxin law was going into effect very smoothly and well so far as he can learn.

A letter from Dr. C. F. Williams, secretary and health officer of the State board of health of South Carolina, inviting the board or secretary of the board to take action or co-operate in a conference on *pellagra* to be held under the auspices of the State board of health of South Carolina, was read by the secretary. On account of the distance of our board from the place in which the conference is to be held, it was deemed inexpedient to incur the expense of sending a representative to the conference.

A letter from Samuel G. Dixon, M. D., Commissioner of Health of Pennsylvania, was read to the board, suggesting that, for the convenience of transportation lines which pass through several states, the boards of the various states agree upon the following as a placard to be posted in the cars, to wit: "The laws of the different states forbid spitting in public places under penalty." It was voted that the board approves of this suggestion, and the secretary was asked to communicate the action of the board on this matter to Dr. Dixon.

Relating to a matter which had been presented to the State board of health by the local board of health of Rockland, and by Governor Cobb for the Trustees of the Rockland Public Library, it was voted that it was the opinion of the board that it is inexpedient to advise the complete or wholesale disinfection of public libraries unless there has been or is some very unusual local epidemic prevalence, but that it is very desirable that action be taken by local boards of health to prevent the withdrawal of books by persons who are in an infectious condition or by persons who might carry them into infected houses; and also to provide for the disinfection of books known or supposed to have been in the hands of infectious persons before they are returned to the library, and further that it is desirable to make arrangements for the disinfection, at periodic intervals, of the juvenile department of public libraries, when they are so located, in rooms by themselves, or otherwise, so that they may be disinfected without too much trouble and expense.

It was thought desirable in compliance with the request of Governor Cobb, that the secretary of the State board visit Rockland and personally confer with persons who are interested in this question in that city.

*Special Meeting, December 21, 1909.*—The secretary reported that since early in the fall there appears to have been a greater prevalence of diphtheria and scarlet fever than there was during the spring and summer seasons, but that he is not in a position to make an exact statement in regard to this matter now, since the revision committee's work on the revised statutes removed all penalties for neglect to report local conditions to the State board of health.

There has been only one outbreak of smallpox, that in Sherman Mills was imported from New Brunswick. Thus far, four cases have occurred there.

The secretary was authorized to make an expenditure for still further improving the exhibit of the State board of health, his expenditures for this purpose not to amount to more than \$100 without further authorization of the board.

The secretary was authorized to have printed a series of

tracts, to be called Health of Home and School Leaflets, for distribution through the schools with the co-operation of state and local school officers.

It was voted that an amendment should be made to the special Congressional Act under which the bulletins of the State boards of health are mailed, so that the executive officers of such boards may not be compelled to issue such bulletins with strict periodicity, but, instead, so that the period of publication may fluctuate somewhat in accordance with the needs and exigencies of such state departments. The secretary was therefore authorized to confer with some of our congressmen during the holiday recess, in regard to the matter, and, if need be, to gain the co-operation of other state boards of health in bringing about an amendment of this act.

## NOTES ON EPIDEMIC WORK.

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The following notes relate to the outbreaks of smallpox which occurred in the period, 1906-1909, and to a few outbreaks of other diseases in which it became necessary for the State Board to help or take action.

### SMALLPOX IN 1906.

During this year, smallpox was present in quite a number of towns and cities in the State. Most of the towns confined their outbreaks to a few cases, but some had extensive outbreaks. The following is a statement of the prevalence of smallpox during the year 1906.

*Ashland.*—In July, there was one case of smallpox in Ashland.

*Augusta.*—One case of smallpox occurred in Augusta in May. The patient, a young lady, had come to the City Hospital from her home in Newcastle, N. B. She apparently contracted the disease en route or just before she started from home.

*Bancroft.*—In April, information was received of a case of smallpox in Bancroft. Dr. M. L. Young, of Vanceboro, was asked to go to Bancroft and investigate. He found one case which occurred in a lumber camp in Drew Plantation. The occupants of the camp were largely from New Brunswick. Several other inmates of the camp had been sick before, and it was thought probable that they had had the disease in a mild form. The exposed persons were vaccinated and kept under observation, and no new cases occurred.

*Bangor.*—A case of smallpox was reported to the local board of health of Bangor the first of November. The man had just been discharged from the County Jail. Three more cases occurred in the Jail as the result of exposure to the first case.

*Biddeford.*—During February and March, there were seven cases of smallpox in Biddeford.

*Blaine.*—In August, two cases of smallpox were reported in Blaine. There were no other cases in that town.

*Bridgewater.*—There was one case of smallpox in this town in April.

*Caribou.*—In April, a report was received from the local board of health of cases of smallpox in two families in Caribou. The outbreak was confined to two cases.

*Cary Plantation and Hodgdon.*—January 15, a telegram was received from the secretary of the local board of health of Cary Plantation saying that they had several cases of smallpox in that Plantation and in Hodgdon, and asking that someone be sent to advise them. Dr. J. B. Thompson, of Bangor, who had done some epidemic work for the board was sent up there. Upon his arrival, he found eleven cases in Cary Plantation and Hodgdon with many exposures as the disease had at first been called Cuban itch. It was found that the disease originated from a case brought out of a lumber camp at Howe Brook at Christmas. The first of February, Mr. Abildgaard, who had previously worked as inspector for the State board of health, was sent to Cary and Hodgdon to advise the local boards of health and to help in the work of disinfection. This outbreak lasted from January to May, there being a total of twenty-nine cases in Cary and four in Hodgdon.

*Chester.*—October 12, the secretary having been informed through correspondence that suspicious cases of an eruptive disease were present in Chester, sent Mr. Abildgaard to investigate. The first cases he saw were apparently chickenpox, but he found six typical cases of smallpox. Dr. M. L. Young, of Vanceboro, went to Chester and confirmed his diagnosis. There were seventeen cases in all and the outbreak was not cleaned up until the first of December.

*Crystal.*—Two men broke quarantine from a lumber camp and came to their homes in Crystal where they came down with smallpox in a mild form. They were promptly quarantined and no other cases occurred in this town. The camp from which they came, and in which there had been one case of smallpox, was disinfected.

*E Plantation.*—There were eight cases of smallpox in E Plantation in August.

*Easton.*—In June, a case of smallpox was discovered in a hotel at Sprague's Mills. July 7, another case was reported in a family in that town.

*Eden.*—There was one case of smallpox reported in August at Indian Point, about twelve miles from Eden, the patient being a boy about twelve years old. Cases of the same disease had occurred in the same family about three years ago.

*Fort Fairfield.*—One case of smallpox occurred in a boarding-house in Fort Fairfield in May.

*Guilford.*—One case of smallpox occurred in Guilford in September and another in December, making a total of two cases in that town.

*Hammond Plantation.*—Hammond Plantation had one case of smallpox in April.

*Houlton.*—March 16, the secretary of the local board of health of Houlton reported a case of smallpox in that town. The patient came from New Brunswick where the disease had been for some time, but had been called chickenpox. There were no other cases during the year.

*Inspection Service at Houlton.*—During the fall, there was an extensive outbreak of smallpox in New Brunswick which threatened this State, and on November 12, Dr. P. M. Ward, of Houlton, was appointed inspector to watch the trains and inspect the passengers and baggage from the other side of the line. Letters were sent to all of the lumbermen in the State notifying them of the widespread prevalence of smallpox in New Brunswick and asking them to have their crews vaccinated and to keep a close watch on men coming from the infected districts. This inspection service was discontinued December 31.

*Island Falls.*—Two cases of smallpox were reported present in Island Falls in March. These cases originated from contact with a woman who came from Ashland and had apparently recently had a mild attack of smallpox. This outbreak was taken care of by the local board of health, there being a total of fifteen cases. The last houses were disinfected in June.

*Kingman.*—September 4, a letter was received from Kingman saying that there was some kind of an eruptive disease in

one part of the town. Dr. M. L. Young was sent to investigate and found several cases of smallpox in a French family. The local board of health was somewhat slow in taking efficient measures to stop the spread of the disease, and there were four cases before the outbreak was ended.

*Lambert Lake Plantation (Unorganized).*—One case of smallpox occurred in this plantation. This was under the care of Dr. M. L. Young and no other cases resulted from exposure.

*Limestone.*—An outbreak of smallpox occurred in Limestone the last of March. The schools and churches were closed for several weeks. There was a total of five cases.

*Linneus.*—During the outbreak of smallpox in Cary Plantation and Hodgdon, there was one case discovered in Linneus in the last stages of desquamation. This was the only case which occurred in this town.

*Littleton.*—Two cases of smallpox were reported in Littleton the last of July. On account of the prevalence of smallpox in New Brunswick at this time, and as the Littleton campmeeting was to begin the first of August, Dr. M. L. Young was sent up there to watch the people who came from across the line to the campmeeting. Mr. Abildgaard went across the line and distributed the following notice in the towns from which the people would be likely to come to the meeting.

“This is to warn persons from any places, or houses in New Brunswick where ‘chickenpox,’ smallpox, varioloid, or any eruptive disease resembling them have been present, not to attend the campmeeting at Littleton, Maine. All persons from such places, or themselves bearing evidences of previous eruption, will be taken in charge by the medical inspector on the ground, who is personally acquainted with the conditions on both sides of the line. They will be arrested, quarantined, or otherwise dealt with as the Laws of Maine require.

By order of State Board of Health.”

On account of the publicity given by this notice on both sides of the line regarding the smallpox conditions, the attendance at the campmeeting was small. No other cases occurred in Littleton.



*Ludlow.*—In March, there was a case of smallpox in a lumber camp in Ludlow. The first of June other cases were reported and Dr. E. T. Flint was sent to investigate and advise the local board of health. Upon investigation, it was found that the cases originated from a Frenchman who came off the drive. There were five cases in this outbreak, making a total of six cases of smallpox during the year.

*Mars Hill.*—About the middle of July, a letter was received stating that cases of an eruptive disease believed to be smallpox had appeared in Mars Hill, but the cases were so mild many of them were not seen by a physician and it was difficult to keep the houses quarantined. Dr. E. T. Flint was asked to go up and confer with the local board of health. He found several cases of smallpox, most of them being in a settlement back of Mars Hill, and as the disease had been prevalent for some time unrecognized, there had been many exposures. Mr. Abildgaard was sent to the town to help in the work of disinfection. On account of this outbreak of smallpox, it was deemed best to postpone the campmeeting which was to be held at Robinson the first of August, until the 17th. A neostyle letter was sent to all the Aroostook towns and plantations informing them of the outbreak and the danger of exposure while attending the campmeeting. There were thirty-three cases in all and the outbreak was not cleaned up until the last of August.

*Millinocket.*—There was one case of smallpox reported in this town the last of June. The infection was apparently contracted in Lewiston.

*Olamon.*—There were two cases of smallpox in Olamon in April.

*Oxbow Plantation.*—Smallpox was present in one lumber camp in Oxbow Plantation. When discovered, there was only one man sick, but there had been several cases before that. At the close of the outbreak, the camp was thoroughly disinfected by Mr. Abildgaard.

*Portland.*—One case of smallpox was present in Portland in March.

*Prentiss.*—There was an extensive outbreak of smallpox in Prentiss in April. The disease was first discovered in a lumber camp in Wytopotlock and had evidently been present since the middle of January. There had already been nine or ten cases

in the camp. The local board of health was rather slow in getting to work and Mr. Abildgaard was sent there to help and advise them. Many of the drives near Prentiss were exposed to the infection. As Mr. Abildgaard could not attend to all of the disinfection and look after the infected houses and camps, Dr. M. L. Young was sent to help him. This was the largest outbreak of smallpox which occurred during the year, there being sixty cases in Prentiss besides a number of cases in the surrounding towns. After this outbreak was apparently cleaned up, there was another case that occurred the last of June.

*Reed Plantation.*—There were two cases of smallpox in this plantation. The infection was contracted in the Prentiss outbreak.

*Richmond.*—A young lady who went from the City Hospital in Augusta came down with smallpox after she reached Richmond. There were no other cases.

*Smyrna.*—One case of smallpox was reported in this town in September. The man was a tramp and had recently come from Nova Scotia with another man. They were both quarantined. One other case occurred in a camp. The man received the infection from the first case. There were no other cases.

*Webster Plantation* had four cases of smallpox in June.

*Winn.*—There was one case of smallpox in Winn. This case contracted the infection from the cases in Chester.

#### INSPECTION SERVICE AT VANCEBORO.

An account of the inspection service which was put on at Vanceboro the first of December, 1905, and continued until February 28, 1906, was given in the last report of the State board of health. After the regular inspection was discontinued, Dr. M. L. Young was authorized to keep under observation most of the passenger trains which go through Vanceboro coming from the infected districts in New Brunswick. This partial inspection was discontinued the first of June.

Owing to the danger which seemed to threaten our State from the outbreaks of smallpox in New Brunswick, the first of November the following circular letter was sent out to all of the towns in the counties which border on New Brunswick:

"This circular letter is sent to advise you that, owing to the serious outbreaks of smallpox in New Brunswick, there is great danger that smallpox may be brought into many of our towns this winter.

"There is therefore urgent need that each local board of health be fully organized and ready to act instantly if a known or suspected case of smallpox, or exposure to smallpox, occur in its town.

"The State board would urge your local board to provide free vaccination for the inhabitants of your town, unless you feel sure that they are already sufficiently protected, and to keep under careful observation all persons who come from this infected region, and to take prompt precautions if any such persons should become ill. Any of them who have had, or may have an eruptive disease in any way resembling smallpox or chickenpox should be considered very suspicious.

"If you have a suspected case do not make the serious mistake of waiting until you are sure what it is before isolating. Quarantine at once, temporarily, at least, and decide later.

"Examine Circular 71 carefully, and if need be, act promptly as it advises.

"Report to this board any suspicions of trouble."

Dr. M. L. Young was authorized to resume the inspection service November 7. He was to inspect the trains and vaccinated all second-class passengers who were not already protected by vaccination. This inspection was taken over by the Surgeon-General of the Public Health and Marine Hospital Service at Washington, D. C., December 10, and Dr. Young was authorized to maintain it for two months. As the disease was still prevalent in that part of New Brunswick near the Maine border, on February 1, a letter was sent to the Surgeon-General asking that the inspection service be continued and it was continued two months longer.

Under the date of March 5, the following letter was received regarding the situation in New Brunswick:

"Your favor of 4th received and noted. As you say Cumberland County is practically free from the disease.

"In Yarmouth County it is under control and likewise in Digby and Pictou Counties—the few remaining cases are so that they can do no harm and the same may be said of other

localities. A case came here by steamer (died yesterday) that was quarantined and one other case broke out on board and the steamer is in the hands of the quarantine authorities."

*Diphtheria at Jackman Plantation and Long Pond.*—Diphtheria broke out in Jackman Plantation in February. The infection was brought from Lily Bay, near Greenville. The cases were taken care of by the local board of health. There were twenty-two cases in all, confined to three houses. On February 21, a telegram was received saying that a camp at Long Pond had been quarantined with one case of diphtheria. The case was taken care of in a separate camp and the rest of the crew were immunized. No other cases occurred in this camp.

*Typhoid Fever at Smyrna Mills.*—In March, there was quite an extensive outbreak of typhoid fever at Smyrna Mills caused by the water supply. There were between twenty and twenty-five cases, several being fatal. At the request of the local board of health, Dr. Woodcock, a member of the State board of health, was sent to the town to investigate. He found very unsanitary conditions throughout the whole town. The local board of health was advised to get out a circular of warning and advice, viz: Not to use ice from the stream in drinking water, and to boil all water used for dish-washing or drinking purposes during the prevalence of the disease.

This inspection was discontinued May 10, as the outbreaks on the other side of the line were nearly all cleaned up and there seemed to be no more danger from persons coming into this State from the Province.

#### SMALLPOX IN 1907.

*Bangor.*—There was one case of smallpox in Bangor in March.

*Bingham.*—One case of smallpox broke out in Bingham the last of November. The man came from a lumber camp in the woods near Bingham where they had been having cases of an eruptive disease which they had called chickenpox. The disease was brought to the camp by a man from Canada who came in by the way of Jackman. Mr. Abildgaard who was up in that region investigating the diphtheria outbreak was sent to this camp and found several cases of smallpox. The outbreak was cleaned up the first of January, 1908, there being a total of ten cases, two in Bingham and eight in the camp.

*Concord.*—One man who left the camp near Bingham went to his home in Concord and there came down with the disease. As the other members of the family were vaccinated and the house was promptly quarantined, there were no other cases in this town.

*Guilford.*—There were two cases of smallpox in this town in January.

*Moscow.*—Moscow had two cases of smallpox in December, the infection being contracted in the lumber camp near Bingham.

*Pleasant Ridge Plantation.* There were two cases of smallpox in one house in November. The men came home from the lumber camp near Bingham where they had been exposed to the disease.

*Prentiss.*—The last of November a case of smallpox appeared in Prentiss. This case came from the same camp where smallpox was present the year before. The local board of health promptly quarantined the case and no other cases occurred.

#### OTHER EPIDEMICS.

*Diphtheria in Bingham.*—There was quite an extensive outbreak of diphtheria in and around Bingham. In October, it appeared in a lumber camp in Moxie Township. As new cases kept breaking out in different camps, Mr. Abildgaard was sent up to help out the local board of health. Upon his arrival, he reported as follows:

“There are some twenty camps scattered between Bingham and Lake Moxie, a distance of about 23 miles. These camps are not more than three or four miles from the railway. There is a report of sickness in several of these camps. The quarantine at B———’s camp is not enforced—the men going out and Mr. B——— goes from the camp home where he has another camp. I learn that this disease has been here for about six weeks.”

There were between fifteen and twenty cases in this outbreak with some deaths.

*Diphtheria in Rangeley Region.*—There were nine cases of diphtheria in the camps in the Rangeley region the first of March. Mr. Abildgaard went up and assisted in the work of disinfecting and cleaning up the camps.

## SMALLPOX IN 1908.

During the month of June a letter was received from Fort Fairfield saying that smallpox of a severe type was prevalent at Beechwood, N. B., on the St. John River about twenty miles from Fort Fairfield. Upon the receipt of this letter, Mr. Abildgaard was sent across the line to investigate matters unofficially. Upon investigation, he reported as follows:

"Bath, N. B., June 24.—There are at the present time two cases under quarantine in Canaan Settlement. One house is two and a half miles from Beechwood, the other about seven miles. One case in each house. The rest of the inmates have been vaccinated. No cases, nor have there been any at Beechwood Siding. The quarantine will be raised next week. These are the only two cases of smallpox in this vicinity.

"A——— H———, 54 years old, contracted the disease at A——— K———'s. His case was very malignant and he died here in Bath about June 1. The house has been disinfected. The outbreak in Canaan Settlement can be traced directly to R——— Hotel on the Tobique River. The disease is well under control and will probably be stamped out by next week.

"Four Falls, N. B., June 25.—R——— Hotel on Tobique River has been disinfected. They had three cases of smallpox there this spring. No cases there now. P———'s Hotel at Grand Falls seems to be the breeding place for smallpox in this section. R——— Hotel got it from there.

"Grand Falls, N. B., June 26.—There have been fourteen cases of smallpox in Grand Falls and vicinity this spring, of which one case, an infant, died. Of the fourteen cases, two were at P———'s Hotel here, two on the Portage Road leading to Four Falls, and ten on the Salmon River. People here do not think that the hotel has been thoroughly disinfected. This hotel is a lumbermen's place and they put up everything that comes along.

"The health authorities in Victoria and Madawaska Counties are very slack and do not attend to their work of stamping out contagious diseases as well as the authorities in Carleton County."

After coming down to the Danish Settlement and down Salmon River, through the Gillespie Settlement and through the

California Settlement in all of which places there were cases of smallpox in the spring, Mr. Abildgaard reports that officially there are only two cases of smallpox between Grand Falls and Bath, both being in Canaan Settlement, but that on account of the lack of disinfection or of efficient disinfection, there will be some danger of the communication in the future of the infection from infected houses and clothing.

After receiving this report, it was the opinion of the State board of health that there was no need of asking the Public Health and Marine Hospital Service to put an inspection service on anywhere along the boundary line.

*Bridgewater.*—One case of smallpox was reported in Bridgewater in October. The infection was contracted in Centerville, N. B.

*Cyr Plantation.*—October 13, a telegram was received from Dr. Hammond, of Van Buren, saying that there were several cases of smallpox in Cyr Plantation. As there was no doctor in the Plantation, Dr. Hammond was asked to take charge co-operating with the local board of health. There were eight cases in this outbreak, confined to two houses.

*Fort Kent.*—In September a case of smallpox was found in a settlement back of Fort Kent. There was a total of two cases in one house.

*Frenchville.*—Frenchville had one case of smallpox in October.

*Grand Isle.*—One case of smallpox was discovered in Grand Isle October 12. The infection was brought from Van Buren. In this outbreak, there were seven cases in Upper Grand Isle and one in Lower Grand Isle. Mr. Abildgaard disinfected the last infected house in this town the last of December.

*Limestone.*—The local board of health reported one case of smallpox about two miles from Limestone Village March 30. The young man who had the disease came from Grand Falls, N. B. He apparently contracted the infection at a hotel there. As the family with whom the sick man was staying belonged in New Brunswick and as they wanted to go back home, they were allowed to move taking the young man with them. There were no other cases in Limestone.

*Madawaska.*—Two cases of smallpox were reported in St. David in November. The man and his wife contracted the disease in Edmundston, N. B.

*Mapleton.*—August 14, the secretary was asked to go up to Mapleton to diagnose a case which was apparently smallpox. Three years ago, this same man came down with an eruptive disease which at first appeared to be smallpox, but was later found to be chickenpox. He had been up in the Madawaska region three weeks before he was taken sick this time. A week after his return, he came down with typical smallpox. Mr. Abildgaard was sent up into the Madawaska region to investigate conditions on both sides of the line. He could find no cases of smallpox between Van Buren and Fort Kent on this side of the line, but he found cases in St. Ann Quisibis, N. B. The man who was sick in Mapleton had been in this place and there contracted the disease. As he refused to have his family vaccinated, his wife and eight children came down with the disease. This house was kept strictly quarantined and there were no other cases in this town.

*St. Agatha.*—St. Agatha had two cases of smallpox in October.

*Van Buren.*—September 9, six cases of smallpox were reported by Dr. Hammond. The source of infection was traced to parties living in St. Leonards, N. B., who had come across the river and visited relatives here, they having previously had the disease in St. Leonards without receiving any medical attention or being quarantined. As new cases were frequently appearing in Van Buren and the other Madawaska towns, and as the people in this region could not be trusted to take prompt and efficient measures to stamp out this disease, it was recommended by the State board of health that Dr. H. H. Hammond, of Van Buren, be appointed by the Public Health and Marine Hospital Service to have general charge of the situation, and that Mr. T. F. Abildgaard, of Washburn, be appointed an assistant. October 23, Dr. Hammond was appointed inspector and Mr. Abildgaard, assistant for two months. Special orders were made by the State board of health prohibiting persons coming from the Province of New Brunswick into any city, town or plantation in this State unless they can prove to the satisfaction of the local board of health of the place to which



they come or to an inspector of the State board of health that they have been successfully vaccinated and have not been exposed to the infection of smallpox. The continuous service of Dr. Hammond was discontinued December 10, but he was authorized to take action in cases of emergency. This outbreak was not all cleaned up until the middle of February of the following year. There were over twenty-five cases of smallpox in Van Buren.

*Inspection Service at Vanceboro.*—As for some time there had been disquieting rumors in regard to smallpox in the Madawaska region in the Province of New Brunswick, and as at Edmundston there were said to be about one hundred and twenty-five cases of the disease, it was deemed necessary by the State board of health to establish an inspection service at Vanceboro the last of October. About the middle of November, this inspection service was taken over by the Public Health and Marine Hospital Service. This inspection was discontinued the first of the following year.

#### SMALLPOX IN 1909.

*Biddeford.*—There were two mild cases of smallpox in this city in April.

*Fort Kent* had one case of smallpox during the month of April.

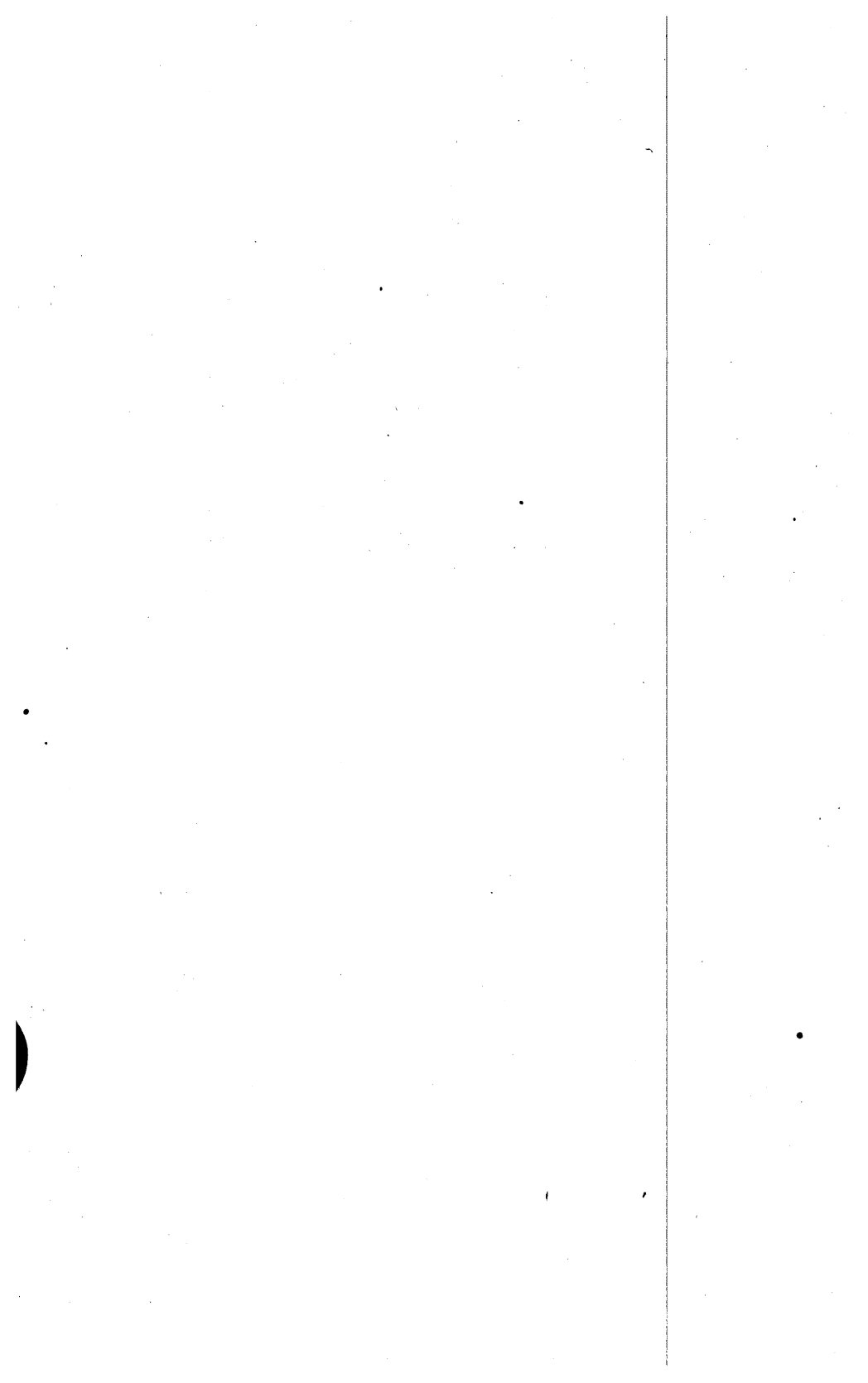
*Lewiston.*—One case of smallpox was quarantined in Lewiston in March. No other cases occurred.

*Madawaska.*—May 10, a telegram was received from Dr. Hammond of Van Buren that a case of smallpox had appeared in St. David. Subsequently two other cases occurred in the same house.

*Sherman.*—A small outbreak of smallpox occurred in Sherman in November. There were four cases, all confined to one house.

*Van Buren.*—This outbreak extended from 1908 and is reported under that year.

*Waterville.*—Waterville had two cases of smallpox the last of the year.



ANSWERS TO  
PUBLIC HEALTH QUESTIONS.

Questions relating to a great variety of public health topics are continually arriving in the office of the Secretary of the State board of health. The answers to a few of such questions which have been received are given in the following with the idea of making them readily available to local boards of health and to citizens in whose work and in whose mind such questions may again present themselves.

LOCAL BOARDS OF HEALTH.

**Powers and Duties.**

To W. H. M.—One member of the local board of health cannot take any official action alone and without the approval of the other members of the local board, or at least the approval of one of the members so that the majority of the board may be acting together, but it is not by any means necessary for all of the members of the local board of health to go together or even two members to go in examining conditions which have been reported as nuisances.

The secretary of the local board of health is supposed to be the executive member and to do most of the work, but in some of the towns the local board of health has an understanding so that each member of the board looks after matters in his own part of the town, particularly, when the members live a considerable distance from each other, but whether this arrangement is in effect in a given town or the secretary is the man who does most of the work, there must be harmonious action so that the secretary or other member attending to a given matter must feel assured that his action may receive the approval of the other members.

To G. B. T.—Local boards of health have no authority to take action or to do anything about cows which are supposed to have tuberculosis, excepting to report such cases to the Cattle Commissioners. Hon. F. O. Beal, of Bangor, is the nearest member of the Cattle Commissioners to you. It would be well for you or the owner of the cow to write to him asking him to send a veterinary to examine her.

To L. A. J.—There is no question as to the authority of the local board of health to quarantine or to control the movements of persons who are infected with infectious diseases, or to quarantine houses or other places when there is reason to believe that they have been infected so as to be a source of danger to the public. But there is nothing in the statutory provisions which would authorize a local board of health to close places of business unless there are good reasons for believing that those places have become infected and are a source of danger to the public.

To S. T. W.—The game warden had no authority to *order* the local board of health to bury the moose. If, however, a member of the local board of health or anybody else buried the moose upon the order of the game warden, it appears to me that that person should look to the game warden or the Fish and Game Commission for his pay. If, however, the board of health were acting in their official capacity as a board of health and buried the moose or ordered it buried in the interest of the public health, a reasonable bill for the work would be a legal charge against the town.

To S. M. P.—I doubt whether your local board of health has authority to order the property owner to abolish an earth closet and connect with the sewer unless your city has an ordinance or your local board of health has made and had approved by one of the judges of the supreme court, a by-law requiring that all premises to which a sewer is accessible shall be connected with the sewer.

An earth closet may be so constructed and managed that it may be quite inoffensive, but of course slops should not be poured into it, it should be kept dry by sufficient absorbent material, and it should be screened or otherwise so constructed that flies do not have access to it.

**Appointment, Etc.**

To W. E. R.—Referring to your letter just received I would say first that the law does not provide that the members of local boards of health shall qualify by oath of office, so to do so is unnecessary. The transactions of the local board of health which is not thus qualified are just as legal as though they had taken the oath of office.

In all cases the appointment of the members of the local board of health must be made by your selectmen. Their election at town meeting is not compliance with the provisions of the law, and is therefore not legal.

From what I have already written you will see that you are incorrect in supposing that there was no local board last year because the members did not qualify. If the board was appointed legally there was a board, and if they organized they apparently constitute the board of health now.

To Selectmen.—The law does not leave the matter of appointing a local board of health optional with your board. It says that you shall appoint a board. It is true that in a town like yours there is not much work for a local board of health to do, but you are at any time liable to have an emergency which would require prompt action and action by officers who may legally take action.

**Methods of Procedure.**

To C. H. S.—The opinion of the State board of health as recorded in the records is that most of the work of local boards of health may and should, in the interest of economy to the town, be done by the secretary or other executive officer of the local board of health and that, while in some special cases in quarantining a family affected with an infectious disease, or in deciding in regard to whether a condition is or is not such as to constitute a nuisance, it may be necessary for all of the members, or at least for two of the members of the board to visit the place or to investigate the question at issue, the attendance of more than one member is not required in the great majority of cases.

To L. W. H.—The secretary of the local board of health, as the executive officer of the board is supposed to do most of the work, but it is quite necessary for the secretary to feel

sure that what he does will have the approval of the board or at least of the majority of the board. For instance, in dealing with the nuisance the secretary can notify the person who is responsible for the nuisance to abate it, but if the owner of the premises does not abate the nuisance, and it looks as though he might hold out and that the case might go to court, the thing to do then would be to give a second notice requiring the abatement of the nuisance, having that second notice signed by at least two of the members of the board. Blank Form 10 can be used by the secretary for the first notice, but Form 10A should be used when it is found necessary to give a second notice.

**Records.—**

To W. D. H.—There is no special book for the use of local boards of health in keeping the records. The records may be kept in any ordinary record book but it is very important that the records of all meetings and of all the important actions and doings of your board be recorded. If, possibly, some matter should go to the courts in regard to which your local board of health had taken action, your board would be nowhere without your records.

**Reports from Physicians.—**

To T. W. H.—The better plan, when a physician reports a case of infectious disease to your board, is to accept his diagnosis. If you do otherwise, take the advice of another physician, you are sure to get into trouble and get up bad feeling between the physicians. The attending physician who reports the case to you is the one whose diagnosis you should accept. If, on the other hand, the attending physician reports that the disease is not an infectious disease and you have good reason to believe that it may be, you might be justified in having an investigation made in the interest of the public safety to clear up that doubt, but such action should be very exceptional.

To Health Officer.— You say that you did not report the case as you could not (as health officer) agree with the diagnosis. If you take such a stand as that you are bound to make a muddle and to make much trouble. The local board

of health should accept the diagnosis of the attending physician when he reports an infectious disease. If, on the other hand, the physician reports a case not infectious and your local board of health has good reason to believe that it may be, you will, in the interest of the public safety, be justified in making an investigation.

To. M. C. H.—When a physician reports a case to your board of health as scarlet fever the only proper way for you to do is to accept his diagnosis and his report as having been made in good faith and quarantine and otherwise to act accordingly.

#### **Unsanitary Tenements.**

To W. A. V.—If in the opinion of your local board of health the house of which you write is in an unsanitary condition; that is, in such a condition as to be a cause of sickness to persons who might be tenants of it, your local board of health has ample authority, under Section 45 on page 7 of Abstract of the Health Laws to require the putting of the building into the proper condition. I am not sure, however, whether the fact that the woodwork of the house is rotting would be sufficient grounds to justify your local board of health in taking action in the matter. If, however, there is a filthy condition of the premises in addition to the rotting of the woodwork that would probably make the case a suitable one for the action of your board.

To Local Board.—In this case it seems to me, if you have the opinion of the attending physician that the filth is the cause of the sickness of these men, or endangers persons who go there to take care of the two sick men, that you may, under the provisions of Section 64 on page 10 of Abstract of Health Laws, give a notice to the father to clean up his premises, or to have them cleaned up within such time as you deem best. For that purpose you can use Form 10A.

To C. M. D.—I am somewhat doubtful whether it would be best for a local board of health to inspect every household in a country town. The cost would be considerable, and perhaps after making the expense for that work, the town would be less willing to pay for work that is really more important, or which might be necessary in a case of emergency.

I think that we must depend largely upon the education of the public in regard to cleanliness, and our board hopes in the future to do much more than it has thus far been able to do in putting into the hands of the local boards and the people generally, literature giving trustworthy information on these subjects.

To Local Board.—I would advise you to use your influence so far as you have a chance in aiding the people to keep their houses and the surroundings of the houses in a sanitary condition, but as a general thing the local boards of health take action against those conditions only which constitute a public nuisance or which are detrimental to the health of neighbors. But it is a question whether a man's own wife and children are not as much entitled to protection from bad influences as their neighbor's wife and children.

To Local Board.—Ordinarily in such cases as that which you write of, it is best to let them alone and let the parties live in a filthy condition so long as their filth does not constitute a nuisance which affects or endangers other persons.

#### **Destroying Infectious Things.**

To Secretary.—In reply to yours of the 9th I would say that Section 42 of Chapter 18 of the Revised Statutes says: "Any local board of health may direct the destruction of any bedding, clothing or other articles, which have been exposed to infection." That gives you the authority for the destruction of infected books or other articles if there is really need of doing so; but the State board of health has always advised local boards to destroy just as little property as possible, although it is better to burn school books when it is known that they have been used by infectious pupils. The rest of the books can be disinfected with formaldehyde.

In your case as you are not sure about infection, I should think it would be well for you to disinfect the room and all the books in that school. As the books need a larger quantity of the disinfectant than the room, it would be best to arrange them on shelves in a tight closet. Stand the books on end, opening and spreading the leaves as much as possible. Do not crowd them too much. Then proceed with formaldehyde disinfection as is recommended in Circular 75, only it is best



to use three or four times as much formaldehyde and potassium permanganate as is advised in ordinary disinfection. After closing the door, paste up all cracks around the door as quickly as possible with strips of paper which have been made ready beforehand.

What I have already written would, of course, apply to books and magazines in private families. When the books and papers are of little value, and have been used by infectious persons, it is always better to persuade the family to have them burned.

The vitality of the infection of scarlet fever is quite resistant and lasts much longer than that of some other infectious diseases, so it is very important that the disinfection be very thoroughly done.

To H. T. W.—There is no provision in the law for reimbursement where articles are destroyed by local boards. The State board of health advises local boards to destroy just as little property of that kind as possible. Most of it can be disinfected by formaldehyde or otherwise, but in this case, it was probably the wisest course to burn those two mattresses.

#### NUISANCES.

To Local Board.—If the natural drainage of the land has been from A's land upon what is now B's estate, B has no right to object to what has hitherto been the natural drainage from A's land. He may, however, object and very properly, to pollution by sewage or otherwise of the drainage which tends from A's land to his own; and if the drainage from A's land injures B in his comfort, property, or the enjoyment of his estate, B may maintain an action against A for damages. It makes no difference whether A was an occupant of what is now his estate before B built his house. This matter has more than once been decided in the courts, and it has been to the effect that in the case of a tannery, we will say, which has been built and has been in operation for many years, perhaps in the suburbs, after the land around the tannery has become occupied by dwellings so that the tannery has become a nuisance to the householders in the neighborhood, the tannery must pull out or otherwise cease to be a nuisance.

Now in regard to the powers and duties of a local board of health in a case like this: if in the opinion of your local board of health the condition which is maintained on or near B's house and water supply constitutes a nuisance which is detrimental to health, or in other words, if the drainage from A's house upon the land owned by B is a source of filth or other cause of sickness, the local board of health may notify A to abate the nuisance and force him to abate it. It has been the opinion of the courts that a local board of health may not require a man to abate a nuisance constituted by him in some one particular way, but if there is more than one way in which it is practicable to abate the nuisance, the perpetrator of the nuisance may abate it in any way which he may find practicable to do. It is, of course, proper for the local board of health, if it chooses to do so, to advise how the nuisance may be abated.

#### Authority of Board.

To Secretary.—I have always understood that the work of investigating nuisances is done at the expense of the town for which the local board of health is working, and when, under the provisions of Section 64, page 10 of Abstract of Health Laws, the local board of health finds it necessary to abate the nuisance personally or through the agents of the board, it is done at the expense of the town, but, as you will see, it is provided that such expenses shall be paid to the town by such owners or occupants, etc. Generally, I think it is best for the local board of health to give the necessary orders in legal form, and then if the householder or owner of the premises fails to abate the nuisance in accordance with the orders of the board, action should be taken against him for the purpose of applying the penalty to him.

To Local Board.—I would say in this connection, however, that a local board of health does not have the authority to order the abatement of a nuisance before the nuisance actually exists; that is, a man may be doing something which may later cause a nuisance. In such a case as that the local board of health should insist that in their opinion what he is doing will constitute a nuisance and if it does action will be taken against him by the board

To D. M. A.—It has been decided in the courts more than once that in the case of a nuisance, where there is more than one way in which it may be abated by the owners of perpetrators of the nuisance, the owners may have their choice of either of the several ways in which it is possible to abate the nuisance, provided that the nuisance is abated. It would therefore be inexpedient for your local board of health to order the abatement of this nuisance in any particular way. Simply order its abatement, and it will be up to the creamery company to abate it in any way which they can.

It is, however, entirely proper for you to confer with the company and advise them on this matter, or I shall be very glad to do that so far as I can.

Not a great while ago, the Agricultural Experiment Station of Kansas issued a bulletin in which they recommended a septic tank for the disposal of the waste from creameries and dairy farms. In that bulletin they gave plans which are similar to the plans shown in the Circular No. 100, lately issued by our State board of health, that is plans of septic tanks. I am sending you two copies of that circular of our board, so that you can put one of them into the hands of the creamery company.

To O. A. P.—If after the local board of health has made an investigation of the nuisance and found that it is such a one as comes within the line of work of the local board of health, it is the duty of the local board to abate it. If, however, the local board decides that it is not a nuisance such as they have jurisdiction over, or if for any reason they fail to secure the abatement of the nuisance, the only course for you would be to take action under Section 13 of Chapter 22, Revised Statutes.

To Local Board.—Of course you understand that your local board of health has no jurisdiction over nuisances other than those which are or may be causes of disease or in other words are detrimental to life and health. Nuisances of the character which are offensive only in that they are unpleasant to the sight or sense of hearing would not be such as come within the field of work of local boards. Whether the conditions are such as to be detrimental to life and health is a matter which must be decided by your local board of health.

To G. H. S.—Aside from any city ordinances which ———— may have relating to the keeping of animals within the city limits, the laws of the State of Maine confer upon local boards of health ample authority to order the abatement and to force the abatement of any nuisances which are detrimental to life and health. I would refer you to the sections of the law which I have marked on pages 5 and 10 of Abstract of the Health Laws, a copy of which I am sending you.

It makes no difference whatever whether the condition which is detrimental to health or a cause of sickness is caused by pigs, cows, pigeons or other poultry, it is the duty of the local board of health to order its abatement if, after investigating the condition, it is in their opinion a nuisance such as is defined in these two sections to which I have referred.

I would add that matters of this kind are entirely within the field of duty of the local board of health. The State board of health has no authority to take action.

To J. A. O.—Answering your letter I am obliged to say that the State board of health has no authority whatever to take action for the abatement of local nuisances. That is a matter which lies wholly with the local board of health, or, sometimes, when a nuisance cannot be abated without constructive work, like that, for instance, required in building sewers, the local board of health is powerless to act. In that case the only resource is for the citizens to use their influence, again and again, with the city government, until the required improvement is brought about.

#### **Sink Drainage.**

To F. E. H.—If that sink drain of which you write is in the opinion of your local board of health a nuisance which is detrimental to life and health you are entirely within your line of duty in ordering its abatement. Meanwhile it might be well for you to consider whether any of the methods suggested in Circular No. 100 might be useful to him. Of course, you are not bound to instruct him just how he can abate the nuisance, though local boards of health can be helpful in that direction sometimes with teachable persons.

**Filthy Premises.**

To Local Boards.—In taking care of filthy houses and their occupants, you can proceed under Section 64, but it would hardly be advisable for your board to take action in a case of that kind unless the filthy condition of the houses and their occupants constitutes a nuisance which is dangerous to other people. You probably understand that a local board of health has authority to take action against only those nuisances which are dangerous to life and health as is defined in Paragraph IV of Section 30, or those which are a cause of sickness as is defined in Section 64. I do not understand, however, that a local board of health need necessarily wait before taking action until sickness is actually caused.

**Dead Animals.**

To Local Board.—I am sending you a copy of Abstract of the Health Laws. Please turn to Section 65 on page 6. If the man who has left dead animals where they may cause a nuisance does not remove them upon receiving a notice from your local board of health, you can put his case into the hands of the County Attorney for criminal prosecution, and if he is a man with no property and cannot pay a fine, he can be committed. In giving notice to the man, it would be best to have a written notice signed by at least two of the members of your local board of health, and you will want to keep an accurate copy of the notice also signed so that this notice may be used in evidence if it is found necessary to prosecute the man.

To Secretary of Local Board.—I have received a letter from a cottager in your town in which he writes the following:

“On Thursday of last week \_\_\_\_\_ at \_\_\_\_\_ had a cow at pasture near the shore and its rope became encircled about its neck at the time it fell off the ledge with the result that it became so injured that he was obliged to put it to death. He immediately removed the skin, and I am told that he informed the local board of health that the animal was there awaiting removal by them, which to me seems a very strange proceeding.”

He further writes that "the local board of health were notified on Friday, Saturday and Monday to my certain knowledge."

If the facts are correctly stated I would say that I should not advise your board to be imposed upon by \_\_\_\_\_ in this way, but instead of removing the carcass yourselves I should advise your board to insist on his very prompt removal of the nuisance, and the State board of health asks you to take action quickly in the matter and to report to this board what you have done.

Perhaps you have overlooked the provision under Section 65 on page 10 of the Abstract of the Health Laws. Under the provisions of this section you should be able to make \_\_\_\_\_ remove the nuisance, or bury it, or dispose of it in such manner as may be satisfactory to your board, and, if he does not remove it quickly, I should advise your board very promptly to have the penalty part of this section applied to him. You could order it removed under Section 64, but the penalty under Section 65 is fine or imprisonment, and this section would probably be the best for you to take action under. The local boards of health generally have found it a very effective section of the law under which to effect abatement of nuisances of this kind. The one of which my correspondent writes is apparently an outrageous sort of nuisance, and should be removed at once.

**Pig-Pen.**

To M. H.—Referring to your letter, I will say that a man has no right to have three large pigs and six or seven small ones within thirty feet of where you live. The State board of health, however, has no authority to take action in this matter. That is a matter which should be attended to by your local board of health.

To S. R. A.—Anyone can maintain a manure shed and pig-pen anywhere upon his own premises so long as the conditions which are produced do not constitute a nuisance. There is no limitation of distance. If the manure and pig-pen constitute a nuisance detrimental to health or dangerous to health the local board of health has power to order its abatement.

To Local Board.—Mrs. \_\_\_\_\_ writes that there is a nuisance caused by a hog-pen which is so near their house that she cannot let her little children play in the yard. If she

is correct in what she writes, the nuisance must be one which comes well within the line of duty of your local board of health and should be abated.

**Glue Factory.**

To Secretary Local Board.—I have spent most of the forenoon in looking up legal decisions bearing upon cases similar to that of yours, and while I am sending some of them along to you and am expressing my opinion in regard to the matter of which you wrote, you must understand that you would need an attorney to determine the bearing of these decisions upon your particular case and to advise you otherwise.

From what you write and from what ———— told me over the telephone, I should judge that the owners of the glue factory are committing a nuisance which is detrimental to health, but it is questionable whether the court, if the case should go to trial, would be of the opinion that this nuisance is detrimental to health.

I should think that the persons in the village who are injured in their comfort, property, or the enjoyment of their estates (see Chapter 22, Sec. 13) by the nuisance, should enter action against the offenders. My opinion is that that would be the better method of procedure than to have the local board of health undertake to deal with the matter.

Examining the copy of the license which the company received from the selectmen, it appears to me to be merely a license to erect stationary steam engines and boilers and to have been given under the provisions of Section 18 of Chapter 22 of the Revised Statutes, instead of under Section 8, which is apparently erroneously cited in the last lines of the license.

Even if the license had been granted under the provisions of Section 7, of said chapter, I do not understand that the selectmen have any authority to make assignments for carrying on any trades, employments, or manufactures in places where the business shall constitute a nuisance detrimental to health, or which injures the property of others, or makes life miserable while seeking to enjoy their estates, and if the municipal officers should do so I do not understand that any such permit or license debars any person from the remedy which the law provides.

## QUARANTINE.

To J. S.—When you quarantine persons or houses, make such quarantine rules and regulations, and give such orders, as you think are really needed for the protection of the public; and then if the orders of your board are disobeyed I should advise you to apply this penalty Section 50 pretty promptly. Various local boards of health have had to do this, and after they have done it once it has served a very wholesome lesson so that there has been but little trouble in the future. For instance, away up in the plantation of ———, a man who was quarantined persisted in running around. The local board of health had him arrested, and the trial justice before whom he was brought imposed a fine of \$13 and costs, which he had to pay. I am sending you a copy of Circular 48, which gives some advice in a general way regarding quarantine. When the head of the family is willing to do what is right, and is trustworthy, the local board of health can sometimes give him considerable liberty, letting him attend to his daily work if his work does not bring him into intimate contact with other people, or particularly with children.

In the case of the man in your plantation who refuses to have his house disinfected, you can quarantine him until the house is disinfected. Simply shut him up and put a guard over him, if necessary. And I should advise you to do that if he refuses to comply with the reasonable request which you have made to have his house disinfected.

To M. K. L.—About the difficulty of maintaining quarantine, I would say that the laws are so stringent in regard to that matter that I should think there should not be much difficulty in maintaining quarantine. In many towns where the character of the infection is dangerous and quarantine cannot be maintained in any other way, the local board of health places guards over the house. The duties of these persons are to supervise the quarantine and at the same time administer to the wants of the household, that is, going on errands for them. Way up in the Northern part of the state the local board of health has often had considerable trouble, but in many of these places where they have made an example of the persons who have been ordered under quarantine by bringing them before



a justice of the peace and fining them, there has been no further trouble.

To F. F. C.—Answering the inquiry on your postal card I would say that there is no law whereby the family quarantined by order of the local board of health can collect from the town remuneration equalling their wages or remuneration in any amount. That is simply their misfortune, but the local board of health should mitigate it so far as it can by aiding them or attending to their wants when such help is needed.

#### **Expenses.**

To Local Board.—As regards the expense of quarantining, those expenses which are incurred by the secretary of the local board of health, or by any agent of the local board in quarantining houses or in guarding houses quarantined when that is deemed necessary, cannot be charged to the householder.

When, in the opinion of the local board of health, a family which is quarantined is indigent or in a needy condition the local board of health may order, at the expense of the town, such supplies of food, medicine, etc., as may be deemed necessary by the local board. Unless the supplies have been furnished by the order of the local board the bills for them are not collectable from the town. Local boards of health should not, of course, furnish supplies or medical attendance or treatment to persons who are able to pay their own bills. See Chapter 25 on page 14 of Abstract of the Health Laws.

The local board of health may also furnish antitoxin free at the expense of the town to persons who are not able to obtain it promptly for themselves. See Chapter 55 on page 13, as well as Chapter 25 on page 14.

I am informed by competent legal authority that local boards of health may, under the provision of Chapter 25, which I have already cited on page 14, when in their opinion the householder is unable to pay for disinfection, have the disinfection of the house done at the expense of the town. I would refer you also in regard to disinfection to Sections 31 and 32 on pages 5 and 6. I am sending you a copy of Abstract of the Health Laws.

To E. L.—All bills incurred by local boards of health for quarantined families are payable by the town in whose interest the services are performed. The state pays no bills except in

the case of families who have no legal settlement in any town in the state, then if the proper course is taken, the Governor and Council will have a warrant drawn in favor of the town which has made the expenditures. The state cannot properly, and will not, pay that man's bill unless he is a state pauper.

#### DISINFECTIION.

To E. M.—Solidified formaldehyde would be all right for disinfection on a small scale, that is, for the disinfection of a book or a garment if you could have it enclosed in a small, tight closet or tight box, but for ordinary disinfection of rooms or houses, it is altogether untrustworthy; for one reason because it would cost too much to use as much as would be necessary to secure efficient disinfection. The quantities recommended by the manufacturers of these preparations are altogether too small.

There is still another objection to solidified formaldehyde as compared with the use of formaldehyde solution, it does not carry enough moisture into the air to do the best work. The permanganate process as it is recommended by the State board of health is far and away a better method than disinfection with the solidified formaldehyde and is much cheaper, supposing enough of the solidified were used; but enough never is used.

#### Authority of Local Board.

To I. E. M.—Referring you to Section 31, on page 5 of Abstract of Health Laws, I would say that if your local board of health thinks it has good reason to believe that scarlet fever has been present in that other house, there would then be grounds for an opinion that the cleansing and disinfecting of that house is necessary and you would be authorized under this Section 31, to order or arrange for the disinfection of the house.

To E. M.—A week ago I wrote to you advising you about that house in which you suspected scarlet fever has been present. Your second letter makes it appear that you have ample evidence to warrant you in ordering the \_\_\_\_\_ house disinfected. Give him an order on Form 11, prescribing that the disinfection shall be done under the supervision of your local board of health, or some agent of the board who shall do the work or shall see that it is done to the satisfaction of the board.

Have this order signed by at least two of the members of your board, then let Mr. \_\_\_\_\_ take his choice with complying with the order or paying the fine which is provided for just such men as he, as provided in Section 32 for refusal to comply with orders of this kind.

Give him to understand also that if he fails to carry out the orders of your board, that is, fails to have his house disinfected in such way as you prescribe action will be taken against him under Section 33, for failing to notify your local board that he had scarlet fever in his house. The penalty for that he will find in Section 50. It would appear from what you now write that you would have no difficulty in getting evidence to convict him under this Section 33, and I would advise you to enter action against him promptly if you have any further trouble with him, making two counts against him, one (if he fails to have his house disinfected) under Sections 31 and 32, and the other under Section 33. Please give him this copy of Abstract of the Health Laws, which I have marked so that he may understand what the law is.

To V. J. R.—Referring to your question I would say that I have been instructed that under Chapter 25 of the laws of 1909 a house which has been quarantined on account of the presence of infectious diseases may be disinfected by the local board of health at the expense of the town when in the judgment of the board it may be deemed a legitimate expenditure for the protection of the public health; that is, provided the family in the opinion of the board is indigent or in a needy condition.

Under Section 28 on page 4 of Abstract of the Health Laws you will notice that it is provided that the municipal officers shall regulate and audit all fees and charges of persons employed by the board of health. I understand that under the provisions of this section the municipal officers are not authorized to refuse to pay for work which the law provides shall be done by the local board of health, but that they are merely authorized to audit the bills and to guard against exorbitant or unreasonable charges for such work. I should think there would be no doubt that you could collect reasonable bills for work of that kind.

To L. F. M.—The law provides that the disinfection shall be done to the satisfaction of your local board of health. Unless

it is done by an agent of your board or done under the strict supervision of your board, there is no way in which you can satisfy yourself that the work has been properly done. It would not by any means be economical for your town to take any chances of having the work done not right and as a result having recurrence of cases in the future. You should satisfy yourself that every article that has been exposed to the infection, every piece of clothing, bed clothing, the playthings of children, books, etc., have been thoroughly disinfected. From a business point of view it is a bad time to have an infectious disease present, and I hope that you may succeed in stamping out all of the sources of infection in all of the homes speedily and in such a manner that you may not have future cases springing up in the same houses.

#### **Burning Things.**

To I. L. F.—Noting what you say in regard to burning of clothing and bedding under certain conditions in the work of disinfection, I would advise that you order just as little clothing burned as is possible. It is very rarely indeed that it is necessary to burn any clothing. It can all be disinfected so that it will be just as safe as though it had never been used, by boiling or by soaking in disinfecting solutions. Of course, the ordinary processes of washing, when the water is brought to the boiling point, entirely suffice to disinfect in a trustworthy manner all articles of clothing which can be put through this process. Once in a while, it is advisable to burn an old, cheap mattress which is worth less than it would cost to disinfect it. I make these suggestions because if you order clothing burned the owners feel sore about it unless they are reimbursed, and there is no provision in the law for reimbursing them for such loss.

#### **Who to Disinfect.**

To S. B. R.—Answering your inquiries I would say that it is decidedly in the interest of your town not to trust the families themselves to do the disinfection. If in the opinion of your local board of health you can safely leave it to the owner of the household to do the disinfection you can do so. But you will observe that the law provides that the cleansing and disinfection

tion shall be done to the satisfaction of the board of health. But there is really no way in which the local board of health can be satisfied that the work is properly done unless it is either done by the local board or is done under the supervision of the local board or by some agent of the board. When it is deemed necessary a house which has been quarantined on account of the presence of any dangerous or contagious disease may be disinfected by the local board of health at the expense of the town. Under the provisions of Chapter 25 of the laws of 1909, which you will find at the top of page 14 of Abstract of the Health Laws, you are authorized to do this if in the opinion of your board the family is indigent or in a needy condition.

**Formaldehyde Disinfection.**

To H. S. S.—You will find explicit directions in regard to the use of the permanganate process for formaldehyde disinfection in Circular 75, which I enclose.

There are two precautions which I would give you, one is to use a pail or other vessel large enough so that there will be no danger of the boiling over of the mixture, after you have poured the formaldehyde upon the permanganate. After a few seconds a very vigorous ebullition takes place, which, in a case reported to me, slopped the mixture over and spoiled a carpet.

The other caution is to have the room to be disinfected warmed up before you start the disinfection process going. More efficient results are obtained when this is done.

To Dr. ———.—I am quite surprised at your report of the results which you get with formaldehyde fumigation, and yet there is no reason to be surprised that it slopped over if you failed to use a large enough vessel, a common tin ten-quart pail for an ordinary room, and several of them for a very large room. I am sorry for the unpleasant results which you had.

But, Doctor, this process is in successful and satisfactory use in hundreds and perhaps thousands of municipalities in this country, and I have lately read with much pleasure the report in one of our German journals of the testing of this method by an Austria Military Commission, which did its work in Vienna. Of the various processes which have thus far been recommended for the disengagement of formaldehyde gas they give the "Maine Process" the credit of being the simplest and most

efficient. They recommend it particularly for use in country places.

Please try it again on the cat, and if you follow our directions, I will warrant she will wake up mighty quick, unless she is dead.

To A. T. B.—For the method which is recommended by the State board of health, I would say that it has been investigated by various authorities, here and abroad, by the United States Public Health and Marine Hospital Service, and the various state and municipal boards of health, and the fact that a permanganate process of formaldehyde disinfection such as is recommended by the State board of health of Maine is in use from the Atlantic to the Pacific coast, and from the Canadian provinces down into Mexico, I think may be taken as a sufficient indication that it is trustworthy. It is poor policy to use anything you are not quite sure of in this kind of work.

To W. B. O.—I should not advise a smaller quantity of formaldehyde than one pint per 1000 cubic feet of space, whether the room is sealed or unsealed.

The State board of health recommends one pint of formaldehyde and seven and one-half ounces of potassium permanganate, with an exposure for at least four hours. The larger quantity of formaldehyde is much more important than a prolongation of the time of exposure. The rooms should, of course, be sufficiently sealed, or made as tight as it is convenient to make them. The sheet method was brought into use by the department of health of Chicago. I do not know, however, whether the present commissioner of health of that city still adheres to that method. But almost every city in the country, and I think all of the state boards of health, are recommending and making use of the permanganate process as has been recommended by our State board of health. Furthermore, a military commission which was appointed in Vienna, Austria, about a year ago, made quite an exhaustive investigation of the various methods which have been proposed for formaldehyde fumigation and pronounced emphatically in favor of what the Public Health and Marine Hospital Service termed "The Maine Process."

**Disinfection of Mail Matter.**

To Postmaster.—Make a gas-tight box 2 feet 6 inches long, 1 foot 6 inches wide and 1 foot deep; or of such size as the quantity of mail matter requires. Have a tightly closing cover. Two inches from the bottom of the box have a rack, or false bottom, for the support of the mail matter. Cover the rack with cheese cloth, burlap or other open fabric.

Open the box. Remove the false bottom. Upon a cloth in the bottom of the box pour, for each cubic foot capacity of the box, one ounce of formalin, the forty per cent. solution of formaldehyde. Replace the false bottom. Pour in the mail matter to be disinfected. Close tightly and leave four hours or longer. Punching the envelopes of letters will admit the gas more readily, and render the disinfection more efficient.

If the box were made of galvanized iron, the formalin could be poured directly into the box, and after loading in the material to be disinfected and closing the box a kerosene burner could be placed beneath to volatilize the formalin more rapidly. The required period of disinfection could thereby be shortened considerably.

**Disinfecting Telephone.**

To W. E. C.—Answering your inquiry I would say that I am afraid it would be hard to find an efficient germicide that would be suitable for the disinfection of the telephone, and which is not to be used in liquid form, nor to have an offensive odor.

I ordered an attachment for our telephone transmitter. It was accompanied by some kind of aromatic liquid advertised as a germicide, but I deemed it altogether unlikely that it had any value in that direction. The attachment is handy with a pledget of cotton placed behind it in the receiver, when any of the office force happens to have a bad cold or the grip, but we have not used it much. When we have used it I have always dropped a few drops of formaldehyde solution upon the cotton keeping it in the transmitter over night especially. Formaldehyde would be the most efficient thing that you could use. Of course it would leave a pungent odor for a little while after the pledget of cotton is removed. Altogether the most convenient arrangement, I should think, would be to have a small somewhat

elongated rubber bag into the bottom of which could be thrust the pledget of absorbent material upon which formaldehyde could be dropped. It could be quickly slipped over the receiver at night, or slipped on and off during the daytime. I think, however, that simply washing out the interior of the transmitter with a dampened pledget of cotton or a soft rag every evening or every morning would suffice.

#### **Disinfecting Books.**

To R. A. B.—It seems to me that in burning the books which were in the hands of infectious pupils, you have done right, and, at the same time, have gone as far as it is necessary in destroying the property of the school. It is true that it is more difficult to disinfect books in a trustworthy manner than it is to disinfect most other things. It is also true that formaldehyde gas used as a disinfectant, in the ordinary ways, and in the ordinary quantities employed in room disinfection, does not penetrate very deeply, but the experiments in our Laboratory show that in concentrated quantities it does have considerable power of penetration. My judgment is that the remaining school-books can be made perfectly safe for the continued use of the pupils in your school, by disinfecting them as follows:

When the schoolroom is disinfected in accordance with the directions given in Circular 75, to wit, one pint of formaldehyde for each 1000 cubic feet of space, have the books standing upon end on the tops of the desks, taking care to have the leaves loosened up as much as possible. Perhaps with many of the books it might be well for you to fasten the covers back to back with clothes-pins, or otherwise keep them apart.

After you have thus subjected the books to the action of formaldehyde while disinfecting the room, I would advise you to give them a second disinfection with the formaldehyde in more concentrated doses in a small tight closet, or a closet extemporized by using a large tight dry-goods box, pasting up all cracks and making it as nearly air-tight as possible, and also pasting up the door after the closet or box is closed. In this second disinfection I should advise you to use a quantity of formaldehyde three or four times as large as that which is prescribed under the figure "1" on page 2 of Circular 75. The chemical reaction which results in the evolution of the gas, will



release considerable heat in the closet, or box, and you will thus get the auxiliary action of the heat, together with the action of the formaldehyde. I think that Circular 75 will make the process of procedure fully understood.

**Disinfecting Public Library.**

To J. S.—Answering your inquiry in regard to the disinfection of the library, I would say that it seems to me that it be rather inexpedient for you to insist upon its disinfection. It would be a very difficult matter to disinfect the library as a whole and to do it so that the disinfection would be efficient, that is, so that the fumes of the formaldehyde would penetrate to the interior of the books. The disinfection of a few books can be done with a considerable assurance that the disinfection has been done so as to be trustworthy; but to do that it would be necessary to put them into a small tight closet where one could use relatively a very large dose of the formaldehyde, that is, to be sure that the fumes are very concentrated, and then it would be necessary to have the books placed on edge so that the leaves might be as loose as is practicable. You local boards of health have hard enough work to accomplish that for which there is the greatest need of doing, and I am inclined to think that it would not be best for you to insist upon this.

It is an excellent idea to have some arrangement which might serve as a substitute for this disinfection of the library in toto, that is, an arrangement so that the books which are known to have been in the hands of infectious persons or in which there is reason to suspect that they have been infected, may be disinfected a few at a time. You could probably instruct the librarian so that this work might be done under your direction.

**Infectious Disease Rig.**

To Dr. —————.—There is so much danger of transporting the infection of scarlet fever by the attending physician when he takes no special precautionary measures against such danger that the omission of such precautions should be considered a serious lapse of duty.

The rig which I use in visiting all cases of the kind, and the one which inspectors and medical attendants in the employ of the State board of health use consists of a long gown, made of

heavy twilled white cotton cloth, buttoned closely around the neck, coming very nearly to the feet. It buttons up closely in the front and has a belt attached to the back. It has elastics in the end of the sleeves so that it clasps the wrists closely. A silk skull cap may be worn on the head. This outfit is kept in a small bag together with a towel, corrosive sublimate tablets, a two ounce vial of formaldehyde solution, full strength, and a brush, preferably a common bristle clothes brush of pretty good size although a surgeon's large hand brush may be used.

Before going into the room a wash bowl with a quart of hot or very warm water should be called for. Nothing else should be received from the infected house. One or two of the corrosive sublimate tablets are dropped into the water in the bowl before the patient is visited. Upon leaving the sick-room the hands are first washed in the bichloride solution, the gown is then removed, carefully folded and placed in the bag, the other things having previously been removed. The hands are then dipped into the bichloride solution again. With the brush dipped into the bichloride solution and shaken out, the face, the head, the beard, the neck, the wrists, and the surface of the clothing, particularly up and down the front where the gown buttons up, the lower part of the trousers, the stockings and the boots are brushed off. This can all be done in a very few moments, and the physician taking these precautions, if he has done the work somewhat carefully, can feel assured that he has removed the danger of transporting the infection. All the things are now placed in the bag except the small bottle of formaldehyde, the towel being folded on top. Upon this towel pour about one ounce of the strong formaldehyde solution and close the bag up tightly.

When there is need of making somewhat frequent visits two of these protective gowns should be had, one to use while the one which is heavily charged with formaldehyde is being aired out.

To remove the formaldehyde from the gown last used, I am in the habit of putting it into a steam cooker under the false bottom of which there is a small quantity of water. I then put it on the stove and steam it for a half or three-quarters of an hour. The one which I use has an arrangement so that the steam containing the formaldehyde passes down into the stove,

and therefore does not inconvenience the occupants of the kitchen by filling the air full of formaldehyde gas.

I much prefer the gown which buttons up and down the front because the person who is disinfecting himself can brush down the front of his clothes much better than he can brush up and down his back. Of course the surgeon's gown or a rubber coat could be used as a protective but it would require a more careful brushing with the disinfecting solution.

#### **Stables.**

To F. D. N.—The best way for you to disinfect a manger is to scrub out very thoroughly the manger and all of the adjacent woodwork which the heads of animals could come in contact with, with a solution of corrosive sublimate (bichloride of mercury) made by dissolving one dram of the corrosive sublimate in one gallon of water.

You should soak the solution into the woodwork until the dust and the dirt in all of the cracks and on all of the surface of the woodwork has been wet thoroughly. An animal would not be likely to lick enough of the corrosive sublimate off from the woodwork to endanger it, but if you wish to do so, to make doubly sure, you can mop over the woodwork later with soap and water.

Disinfection by means of fumigation with formaldehyde or anything else would be altogether untrustworthy in an ordinary stable or barn. You could not close it up tightly enough so that it would do any good.

#### **Sulphur Fumigation.**

To S. P. I.—Sulphur fumigation is entirely untrustworthy. I am enclosing a copy of Circular 75 which will give you quite explicit instructions in regard to the disinfection of rooms in which there have been cases of infectious diseases, or in which, for any reason, you believe infection to be present.

If you do not find it convenient to use formaldehyde disinfection, you can usually disinfect a schoolroom by having it thoroughly scrubbed down with one of the disinfecting solutions—Solution 6 or Solution 7, having the floors scrubbed up so thoroughly that the infectious dust in the cracks may be thoroughly dampened.

**Unfinished Rooms.**

To M. A. P.—In answer to your question, "How do you disinfect an unfinished house?" I would say that I presume you have in mind a house which is not tight against the leakage of gases. If that is the case, I should do a large part of the work of disinfection by spraying the whole interior of the rooms with formaldehyde solution, so as to wet down the walls and floor pretty completely. So far as the floors are concerned one of the best ways would be to scrub them up by hand, or with a long handled mop, using a disinfecting solution. The same process could be applied to the wall instead of spraying, but every part of the surface should be thoroughly wet in one of these ways.

It would be necessary to move the clothing and bedding out of the room and disinfect them otherwise, as is described in the disinfection part of the infectious disease circular. Boil everything that can be subjected to that process. Clothing could be disinfected by formaldehyde gas if you could have the use of a tight closet, but formaldehyde would not have sufficient power of penetration to reach the inside of mattresses and other bedding.

The proper disinfecting solution to use for spraying or for washing the surface is Solution 6 or Solution 7. Solution 6 would injure the metallic connections of spraying apparatus or force-pumps, and would in turn be destroyed or weakened by contact with metals.

To Inspector.—In addition to the use of the gaseous disinfection with formaldehyde in the usual way, I would advise you to spray the floor of the camp, the walls, and the bedding as thoroughly as you can before using the formaldehyde gas, using for that purpose a solution made by mixing about eight ounces (one-half pint) of formaldehyde with one gallon of water. You will, as I presume you fully understand, get more trustworthy results if you have the camp warmed up before you begin the work of disinfection.

If you do not have room to spread out and expose the spreads, you may find it necessary to sprinkle the blankets with the formaldehyde and then roll them up.

To C. J. Y.—Some years ago we had a very extensive prevalence of smallpox in the northern and northwestern, the forested

portions of our State. The lumbermen in many of the lumber camps of this region became infected with smallpox. Generally these camps are not built tightly enough so that we could feel sure that they had been disinfected in a trustworthy manner if we disinfected them by any gaseous method or by any process of liberating formaldehyde gas. The general method of disinfection was by spraying very plentifully the whole interior of the camp with a solution made by dissolving 6 or 8 ounces of the strong (40 per cent.) solution of formaldehyde in one gallon of water. The floors particularly were well soaked.

Most of these camps were occupied by lumbermen the winter following but not a case of smallpox appeared that winter in any of the camps thus disinfected the preceding winter.

#### SEWERS AND SEWAGE.

To M. O. N.—The question of the building of a sewer must be left to the judgment of the municipal officers of the city, and I would advise you to confer with the local board of health to see if it may not help in bringing about sufficient influence to lead to the construction of the sewer. But the local board of health has no authority to build public sewers or drains, as you undoubtedly understand.

To S. M. R.—The State board of health has no authority to take action to compel the town to build a public drain or sewer. All the way you can get it will be to keep agitating the matter until you secure what is wanted. It would be well to get the cooperation of your local board of health in this work, but you undoubtedly understand that the local board of health has no authority to undertake a work of this kind. It rests wholly with the municipal officers.

To J. S. A.—As I do not know whether the local board of health of \_\_\_\_\_ has made and adopted a by-law covering the subject, I cannot tell you whether you can be obliged to enter the sewer, I think there is nothing in the law which would cover the matter; but the local board of health can take action against owners of premises which dispose of their household drainage in ways which are productive of a nuisance.

To H. M. B.—A septic tank properly built and properly managed would, undoubtedly, take care of the sewage from your

schoolhouse all right. You would need not only the septic tank, but a little ground on a lower level on which the effluent from the septic tank could be purified by oxidation and nitrification.

To H. R. L.—The man who entered that public drain or sewer had no right to do so without the permission of the municipal officers. I think that under the circumstances, as the discharge at the outlet of the drain is now offensive, and as I understand is productive of a nuisance which is undoubtedly detrimental to health, your local board of health would have authority to take action under Section 64, page 10 of Abstract of Health Laws, requiring the owner of the premises containing the water-closet to abate the nuisance if it is plain enough that the source of the filth is at his premises.

To E. L. K.—There is nothing in the law which would enable you to force any abutter to enter that sewer, but if you could make a suitable by-law and have it approved by one of the justices of the supreme court you would be all right. Some of the cities have a by-law of that kind.

To G. O. H.—I am not aware that there is any way in which a man can put in his private drain or sewer across the land owned by another person without that person's permission. In case of public sewers, the municipal officers can, under due process of law, take or use the land required for such sewers.

#### TUBERCULOSIS.

To E. H. S.—A little while ago I had a letter from Mr. \_\_\_\_\_, chairman of the board of selectmen of your town, telling of four children who had all been pupils in one school or schoolroom, and all of whom had died of tubercular meningitis. I asked him for some further information on certain points and particularly the names and ages of the children and date of the death of each, the name of the physician who attended the children, and whether the cases had, in the schoolroom or in their own home, or elsewhere, been exposed to the danger of infection from persons sick with tuberculosis in any form, and particularly whether they had been exposed to any person who was coughing and raising.

I would say that these four successive deaths occurring in children attending school in one particular schoolroom, is a

remarkable coincidence, if it cannot be determined to be anything more than a coincidence. It reminds me of another prevalence of tuberculosis in a schoolroom in this state in which four young ladies, attendants at the High School, successively died of consumption. An inquiry led to the fact that the assistant to the principal of the High School, a very estimable lady, had for years been subject to a cough. She thought much of her pupils and upon meeting them showed her affection for them by kissing them upon the lips. Though I did not make a personal investigation of the matter which was not reported to me until the deaths of all of the young ladies had occurred, I have no hesitation in believing that the infection of tuberculosis was transmitted to these young ladies by their teacher.

It seems to me that there is a fair chance, by making a careful inquiry of all of the facts in connection with these cases, to learn that there has been some source of infection to which they all had been exposed. It may be that they did not all contract the infection from the same source. The mother of one of the boys, —————, died of consumption. It happens that this ————— boy was the first of the four who died of the disease. I would suggest the possibility that he might have had a localized tuberculosis for some time before the meningitis occurred, and that from this localized tuberculosis he might have communicated the infection to the other three children. Some of the recent literature in connection with tuberculosis brings out very clearly the fact that tuberculosis of the tonsils may remain for some time the only pathogenic lesion in the case. Later, the infection may become generalized and this generalization of the infection is much more likely to occur in children than in older persons. In the tuberculosis of children, as these newer investigations have shown, the tubercle bacillus is quite frequently found in the general circulation of the blood. It thus happens that the tubercular process may be transferred to the cerebral or spinal meninges, and in fact is transferred to these parts.

**Work of State Board.**

To —————, Esq., St. Louis, Mo.—I take pleasure in giving you such information as I can which you ask for in your letter.

While the State board of health has used its influence with the local boards of health to institute effective measures for the prevention of the spread of tuberculosis in their several towns by providing spit-cups, by properly instructing the sick, and by providing for disinfection of infected rooms and things, the State board of health believes that the most effective plan for the prevention of tuberculosis in this State is to educate, educate, educate.

To aid the local boards of health, physicians, nurses, householders, and the public generally, the State board of health has published several circulars for general distribution. Circular 54, copies of which I am sending to you, was first published in 1889 as the first circular of the kind which was ever prepared and distributed by any state board of health. Last year we began the distribution of the circular on a larger scale than hitherto, having over 100,000 copies of it printed, and we have been trying to have a copy put into every home in the state. I am also sending copies of other circulars and reprints of papers which have been published by our board.

Aside from this educative work, the State board of health took the initiatory action for the establishment of a sanatorium for the treatment of cases of incipient tuberculosis in this State. The result was the incorporation of the Maine State Sanatorium Association which opened its Sanatorium on a small scale in the fall of 1904. The Sanatorium has since been enlarged so that its present capacity is for the accommodation of 55 patients.

I doubt whether we have any special plan or anything different from what they have in other states save that we began earlier the educative crusade against the disease and have kept it up pretty persistently.

#### Circulars.

To a doctor.—I have lately issued a new circular, 96, which was suggested by a letter which I received from a physician who said that after he tells patients that they have tuberculosis, there is much difficulty in making them believe that anything better than death awaits them. He said that he had two or three patients on hand when he wrote the letter and some of them are gaining; nevertheless, he couldn't make them believe other than that they have to die.



**Reporting Cases.**

To Physician.—I do not understand that the penalty as provided in Section 9 could be applied to any physician who honestly reports a case as a case of tuberculosis, even though there may be some doubt as to the nature of the disease. Rather it seems to me that the intent of this section was aimed at false statements concerning the name, age, color, occupation, etc., or to the precautionary measures taken to prevent the spread of infection.

If you honestly report a case as tuberculosis and subsequent examination should indicate that it is probably not tuberculosis, I do not understand that you will lay yourself liable to action.

The law requires the reporting of all cases by you, even if advanced cases and if they have recently been under the care of some other physician. So far as precautionary measures against the diffusion of infection are concerned, these are the most important cases to report.

To Dr. ———.—You will see you are not obliged to report all cases of tuberculosis to the local health officers. Instead of that, you are to report them to this office. Under certain conditions, however, you are required to report certain facts to local health officers, or to call upon them for their help in work which you cannot do or which does not come really within your sphere of duty to do.

**Management of Cases.**

To G. W. D.—I am sending you a few copies of Circular No. 54. It would be well for you to have the directions which are given in that circular pretty strictly followed out, so as to avoid infection of the other members of the family in which Mr. ——— is now staying. It would be well for you to instruct the persons who take care of him to see that he spits into something which can be burned. Do not have him sleep with any other person. Have him instructed to hold a piece of paper or cheese cloth or something of that kind before his mouth when he coughs and not cough into the face or directly towards other persons.

To Dr. ———.—My advice in the specific case of which you write I am afraid would be worth but little to you. I would say that for the carrying out of the most effective treatment for

lung troubles, that is, the sanatorium treatment, there is, I believe, no climate in which better results and more rapidly favorable results may be obtained than here in Maine. But if the patient is not to be sent to a sanatorium and is to take her chances against the many mistakes which patients make when sent away, homesickness and everything else, there are some other climates in which the outdoor life may be carried out somewhat more conveniently than it can in Maine. But I have no hesitation in saying that persons sent to distant states without ample means and, in the case of young women, without being accompanied by friends and without being under constant expert medical supervision, do not have nearly so good a chance for recovering as they would have in the sanatorium which the Maine State Sanatorium Association has built at Hebron. Every place in the sanatorium is now filled, but the Doctor has been making room in tents outside for some additional patients.

**Spit-Cups.**

To L. E. H.—The State does not furnish spit-cups for the use of consumptives. The law provides that local boards of health may furnish burnable spit-cups or other supplies needed to prevent the spread of the infection, and that such part thereof as the board shall determine shall be deemed a legitimate expense for the public health and shall be charged to the account of incidental expenses of the town, but not to any pauper account.

To L. M. O.—I should think it would be advisable for you to get your local druggist to keep a small stock of burnable sputum cups on hand for the use of physicians and their patients in your town, and for the use of needy persons when, under the provisions of the new law against tuberculosis, sputum cups should be furnished to such people. I have advised Dr. \_\_\_\_\_ to ask your druggists to put in a supply of them.

**Infected Houses.**

To Local Board.—I write to inquire whether your local board of health is complying with the requirements of Sections 3, 4 and 5 of the tuberculosis law. Is there not an infected house over near the \_\_\_\_\_ line where several persons have died in that same house from tuberculosis? Has that house been disinfected?

To Local Board.—I have just received a notification of a case of tuberculosis, \_\_\_\_\_, aged 28, and I am at the same time notified that her death has lately occurred. The death occurred in the household of \_\_\_\_\_ whose post office address is \_\_\_\_\_. I hope that your local board of health can make arrangements for an effectual disinfection of the house in which the death occurred, paying particular attention in the way of disinfection to the room in which she spent her last days.

#### **Dangerous Cases.**

To Secretary.—I would inquire whether it is not advisable for your local board of health to provide some receptacle for the sputum of \_\_\_\_\_ other than the pan of ashes, something so that the flies may not gain access to the infection and distribute it to the food of the other inmates of the house.

To Local Board.—I have a report that \_\_\_\_\_, a carpenter who is about forty years of age, has tuberculosis in an advanced form, and that he has moved from \_\_\_\_\_ to a farm in \_\_\_\_\_. I am afraid from what I can learn about the case that the precautionary measures observed by the patient are not satisfactory. I am therefore writing to you to see what you can do to prevent the danger of the spread of the infection to other members of his family and possibly to other persons.

To Secretary.—In regard to the tuberculous patient, there would, of course, not be so much danger in the case of tuberculosis of the intestinal tract if he does not at the same time have tuberculosis of the lungs or larynx, but I should certainly deem it necessary for the patient to be under a pretty strict supervision to guard against danger of spreading disease to other persons at the poor farm if he goes there. It is not a very good place anyway, as you seem to think, for a tuberculous patient.

To Local Board.—I have had a letter from Dr. \_\_\_\_\_ of \_\_\_\_\_ about the family of \_\_\_\_\_ of your town in which, as I understand, there has been one death from consumption and another one is likely to occur soon. He says that there are several children in the family who are apparently well now, but judging from what he wrote of conditions, a two-

room house in which all of the members of the family live and sleep, the infection of other members of the family will be a certainty unless changes are made. I understand that the family is quite destitute. There certainly should be enough of humane sentiment in your town to make some arrangements so that the danger of the contraction of the disease by the other members of the family will not be so great. The one who is now sick with consumption should be removed from the house. Another room could cheaply be built adjoining the house, or close to it, in which the sick one could be placed. If it could be warmed by some kind of a fireplace built in one end, it would be all the better. Such a fireplace would cost but little in a low one-room and one-story shanty. Either that could be done or the children who are now well could be removed from those two rooms.

#### **Tuberculosis and the Schools.**

To C. H. R.—The people are nervous about having children go to school from houses in which there are cases of tuberculosis; but so long as the children remain well and have no symptoms indicative of tuberculosis, particularly cough and expectoration, there is no objection whatever to their attending the school, so far as danger to other scholars is concerned.

To Mr. ———.—Answering your inquiry I would say that I do not believe that there is any danger to the children simply because the man who drives the team has tuberculosis. There is certainly no danger because some other members of his family have tuberculosis. There would be no danger whatever of his carrying the infection in his clothing so as to give it to the children.

I do not believe that, while they are all in the open air, that man's wife who has tuberculosis would endanger the children, but I certainly should not advise that the children be allowed to go into that man's house. But, even outdoors, I do not know that I should want a child of mine to sit on the same seat with that tuberculous woman if her habits are as careless as they usually are with that class of people, that is, if she is coughing and spitting around while she is on the road with the children.

If your child was exposed in any way or in any degree to the infection from the sister whom you lost, you do well to look forward to averting danger in the future. I should say that it is very desirable for you to have him sleep out of doors all the time, or sleep at least in a room with the window wide open.

To Secretary.—There will be no danger to the school by having the teacher board in that place where the advanced case of tuberculosis is, but there will be a danger and a serious danger to the teacher herself unless more efficient precautions are carried out in the family than is usual. You would better put copies of Circular 54 and Circular 93 into the hands of the teacher and then let her do as she pleases about the matter. Circular 54 should also be put into the hands of the family where the case of consumption is.

To Dr. ———.—I would, however, urge the parents of the child to take the child from the school and keep her out of school, this in the interest of the child herself. A child with any form of tuberculosis should have a free run in the open air and not be confined within the walls of a schoolroom any of the hours of the day. The most important thing for the child, if there is a trace of tuberculosis left, is to build up her general health. Too many children carry their education with them into their graves prematurely.

To Dr. ———.—I have learned that in some other places the people are nervous about having children go to school from houses in which there are cases of tuberculosis; but so long as the children remain well and have no symptoms indicative of tuberculosis, particularly cough and expectoration, there is no objection whatever to their attending school, so far as danger to the other scholars is concerned.

#### **Spitting in Streets.**

To F. G. M.—I did not have time to acknowledge the receipt of your letter of October 26 earlier and to express surprise that my well-intentioned letter should have run me through the slicing machine. But really there seems to be an indictment against me on several accounts, but before conviction, I beg to plead as follows:

You were not specific enough when in your first letter you sought by intervention or influence against spitting in the

"streets." I do not in fact yet know whether you think consumptives should be denied the privilege of spitting out into the middle of the streets as well as prohibited from spitting upon the sidewalks. If you wish the prohibition to be all-inclusive, let us for a moment put ourselves into the place of the tuberculous patient.

She is on the sidewalk. She coughs. Decency and danger of transmitting infection to the intestinal canal demand the ejection of the material which is coughed up. Shall she spit upon the sidewalk? Positively no, whether there are miles or only rods of sidewalk. Shall she draw from pocket, handbag, or elsewhere a sputum flask or other device for the reception of the sputum? She naturally shrinks from attracting attention thus. Shall she spit out into the street. I say emphatically, grant that concession. To forbid spitting into the *streets* is going altogether too far.

But now seriously, our communities need very much the work of just such women as I believe you are—women who have some care whether the thousands of our young men and young women who are started downward to consumptives' graves are saved, and whether their carelessness with their sputum keeps their ranks perpetually recruited and filled. There is ample work for all of us in this direction, and a noble sort of work it is.

But let us make as few mistakes as may be. Let us approach the consumptive in the sympathetic spirit, not merely set the local boards of health after her, for she of all persons needs our sympathy. (*She* it is statistically, if not grammatically.) In thinking what is best for her own safety and that of others, let us gain first that which is the most essential. Tuberculosis is a house disease. As compared with the danger of infection within our homes and workshops and offices, the chances of infection out-of-doors are almost a negligible quantity. To the home where infection has come, it would be a blessing indeed if tactful, sympathetic women would go and give just the instruction and aid which is so sorely needed; for just here is the focus of infection which unheeded and unaided may be the starting point of many other cases.

I wish very sincerely that it were possible, to have trained nurses to send into such families to instruct and to aid. I do

wish you could start some such work as this in your town or towns. Just this kind of work has been undertaken in some of the cities where the health departments have more ample means than do ours, and the work of the district nurses is generally very highly appreciated by the poor to whom it is extended.

Now, this is a letter of very "commonplace ideas," calling for only ordinary intelligence to understand them; but if we move the world just a little toward what we believe is better and more healthful, we must make use of what, to us, are very commonplace arguments, and use them again and again insistently.

To R. E. T.—There is no objection to that man spitting around out doors all he pleases. The great danger from tuberculous patients is of spitting around indoors. I am sending some circulars of the board to you. I am also sending you a copy of the law relating to tuberculosis.

#### **Disinfection.**

To Dr. ———.—I thank you for reporting the death of Mrs. ———; but you need not trouble to report the deaths in the future. The deaths are reported monthly by the town clerk and we make a note of every death from tuberculosis. As regards disinfection of the rooms which have been occupied by tuberculous patients before their death, I would refer you to Sections 3, 4 and 5 on page 15 of Abstract of the Health Laws, a copy of which I am sending. I understand from the latter part of Section 4 that the disinfection is to be done at the expense of your town unless the owner prefers that it be done by him at his own expense. If so, he has the privilege of doing it, but it must be to the satisfaction of the health authorities.

I would advise you to have the disinfection done as is recommended in Circular 75, and particularly in accordance with the advice given in section numbered "2" on the lower part of the second page.

To Local Board.—In connection with the moving of that family in which there was a case of tuberculosis, you will need have nothing to do with the moving, but after the house is vacated, you should insist upon its being disinfected before

another family moves in. If a mere neighborly talk with the owner of the house does not suffice, that is, if you find that he is not willing to have the house disinfected, it would be necessary to serve a notice upon him requiring the disinfection of the house, using Form 11 for that purpose and having the notice signed by at least two of the members of your local board of health. I am sending you a few copies of Circulars 54, 70, 75 and of Form 10A and 11.

To A. L. F.—I am enclosing to you Circulars 70 and 75. These two circulars will give you more complete information in regard to the disinfection than I can give by means of a letter. If formaldehyde disinfection is not available, you can, by means of boiling and washing with a disinfectant solution do the work just about as effectually as though formaldehyde disinfection was used. The formaldehyde, if you had it, would save some time.

The unfinished chamber could not very well be disinfected by formaldehyde fumigation. It is probably not tight enough for that. The keeping of the doors and windows open was a good move as a prevention of infection to others, but it would not be advisable to let that make any difference in regard to the thoroughness of disinfection.

Boiling anything for half an hour will be an entirely trustworthy method of disinfecting anything that can be boiled, and for washing up floors or other woodwork or furniture, it would be the most convenient for you to get from a drug store some tablets of corrosive sublimate of the usual kind which contain 7 and a fraction grains of the corrosive sublimate to each tablet. Eight of the tablets would contain one dram of corrosive sublimate, so that in making up the solution, you can dissolve eight tablets in one gallon of water. The corrosive sublimate would spoil metals, and on the other hand, metals would destroy the action of the corrosive sublimate. You must therefore mix the solution in wooden, glass or earthenware dishes. And remember always that these tablets are a dangerous poison to have around. Keep them away from children or persons who might take them for something else by mistake. The solution No. 6 will be entirely safe for you to use as is directed in Circular No. 70. There will be no danger in putting the hands into it or in using the wash-cloth



dipped into it in wiping off the walls or washing floors.

The sulphur candles are good for nothing for such disinfection.

To L. G. B.—If you follow out the directions which are given in Circular 70, and in Circular 75, if you deem it best to use the formaldehyde disinfection, you can disinfect the house so that there will be no danger. But, if I understand that the patient was in the habit of spitting upon the carpet, I would advise you to destroy the carpet as you would not have facilities for disinfecting it in such a way that you might feel sure that it had been made entirely safe.

Again, if I should understand that the question relates only to the disinfection of the organ, I would say that it should be an easy matter to disinfect that by wiping off all of its surfaces with a cloth well dampened in a disinfecting solution. Corrosive sublimate solution would be injurious to metals. The formaldehyde solution, Solution 7, on the last page of Circular 70, would be preferable for you to use for this purpose, going over the surfaces several times carefully.

To B. A. E.—I am sending you a copy of Circular No. 70 which will give you directions in regard to the disinfection of the things which were in use by the relative of yours who has just died with tuberculosis. I am sending you also a copy of Circular No. 75 which gives advice about disinfecting with formaldehyde. On the second page of Circular 75, you will see that the use of an extra quantity of formaldehyde is emphasized for the infection of tuberculosis. The best way of using the formaldehyde when the gas is liberated by the means of potassium would be to put the mattress into a small, tight closet, like a clothes-press, and disinfect it there with the formaldehyde fumigation. It would be best to paste up cracks around the doors with strips of paper, and, of course, it is understood that the closet or clothes-press is to be made as nearly absolutely tight as is possible. Or a good way to disinfect it would be, as Dr. ——— suggested, making a specially tight case of boards in which it can be enclosed. Supposing it were made just large enough to take in the mattress, I would do it, if I were doing the job, by laying the mattress out flat and sprinkling it with a solution of formaldehyde made by mixing one part of formaldehyde solution with four

or five parts of water, and using a common watering pot for sprinkling it, giving it enough of the solution to wet completely the covering of the mattress and to let it penetrate into the interior to some extent. I would then put the cover on, as quickly as possible, and close it up tightly, leaving it 24 hours.

If there is any furniture to be disinfected, it can be done as is prescribed under D and E in Circular No. 70, washing the surface of the woodwork of the furniture very thoroughly; and, if there is upholstered furniture, it should be sprinkled very thoroughly, as I have advised for the mattress, sprinkling it enough so that the surface is thoroughly wet, and so that all dust which may be enclosed in the meshes of the covering may be well dampened. After disinfecting the things as I have advised, I think that it would be safe to consider them entirely free from danger. But if you wish to make assurance doubly or trebly sure, you could set the lounge or other upholstered article out into the direct sunshine several days. The direct sunshine has really quite a powerful effect in destroying the infection of tuberculosis.

#### **Instruction to Families.**

To Dr. ———.—I thank you for your notification of the case of tuberculosis and for the letter which accompanied it. I am sending the circulars to you. Kindly put them into the hands of the family if it is convenient for you to do so. The State board of health prefers to have the attending physician do this when it is practicable and when he is willing. Probably that is the better policy all round.

To Dr. ———.—I thank you for your notification and also for your suggestion that it would not be out of place to send literature. I am sending copies of Circular 54 and of Circular 96 to Mr. ———, the householder.

To Dr. ———.—I do not make a general practice of sending circulars to, or communicating in any way with tuberculous patients whose names are reported to this office. It is better, I think, to leave that matter to the attending physician, when a physician is in attendance, and that is the general policy of our board. Occasionally, I receive from the attending physician information which indicates the need of doing otherwise, and in those cases, this office takes such action

as seems to be required through the local board of health or otherwise.

To Local Board.—Dr. ——— has, I believe, reported to your board that ——— has tuberculosis, and he suggests that I send you some of the circulars relating to the disease so that through those circulars, you can give Mr. ——— or the family where he is, the proper instructions in regard to guarding against danger of infection to other persons. It would be well for you to put into his hands a copy of Circular No. 54 and Circular No. 96, copies of which I am sending you.

#### Advice to Patients.

To Invalid.—I am asking Mr. Evans, the director of the laboratory, to send you three of the outfits which may be used for mailing to him samples of sputum. Please remember that the samples when returned to the laboratory must have letter postage. I would caution you, when you receive the reports from the laboratory, if the reports are negative, that is, if it is reported that the bacillus of tuberculosis was not found, that you must not receive that as any evidence whatever that tuberculosis is not present. It simply means that the bacilli were not coming up in the sputum when that sample was taken. You may be coughing them up the next day. I would urge you further, not to make the very serious mistake of wasting time before you come under proper treatment. Begin right off now whether you are or are not planning to go to a sanatorium; to live and sleep in the free open air all the time, day and night, to be careful not to take much exercise, not enough to hasten your pulse, or to tire you; and to eat a great abundance of the most nutritious foods, particularly meat, milk, eggs, with bread and fresh vegetables.

To Mr. ———.—If your case is not in the very earliest stages there is no reason to feel that you cannot be cured. There is a great advantage in going to a sanatorium if the patient can afford to do that, but I know of a considerable number of patients whose cases were too far advanced to be admitted to any sanatorium, who by making a courageous fight for their lives, that is, carrying out their treatment as nearly as possible in the ways in which patients are treated at the sanatorium, have made good recoveries. I am sending you

several circulars which please read carefully. They will give you a fairly good idea of what to do.

To Mrs. ———, Miss.—The clerks have acknowledged the receipt of your letter and have sent you some printed matter in relation to tuberculosis. You have undoubtedly had time to look it over carefully. I think that I can give you no further advice than is found in that literature, with the exception of emphasizing the necessity of the boys living outdoors practically all of the time. They should be in the open air all of the time during the day, and some arrangement should be made so that they can sleep in a shack or camp which is fully open at least upon one side.

The thing next in importance to the breathing of pure fresh air constantly is an abundance of good nutritious food. What that should consist of is found in the printed matter which has been sent to you.

Another very important thing is for patients who have any feverishness at all, or shortness of breath, to guard very carefully against excessive exercise. In many of the cases any exercise at all is excessive.

And now in regard to the question of the advisability of sending the boys to Silver City, New Mexico, I would say that my opinion is that it would be unwise to send them there unless they can go with sufficient means to pay their board, have good nutritious food (and the kind of food which is required is the most costly of foods), and take only such exercise as they may take with entire safety to them. Thousands of patients go to Colorado, New Mexico and Arizona every year who would do much better if they stayed at home, and arranged their conditions of life at home as favorably as it might be possible for them to do.

I do not know just what the climatic conditions are where you live, but I should judge that the altitude above sea level is not great. The seeking of high altitudes, I think, has in the past been overdone; at the same time, I believe that many patients in warmer climates like that of yours would do better in climates which are somewhat cooler and a little more bracing. A moderate altitude helps to secure this climatic advantage. There are places in the northeastern part of Georgia which have lately been opened by railroads, and which are

much nearer to your home than New Mexico in which the climatic conditions are somewhat better than they are in central Mississippi. But with proper arrangements of the mode of living a large percentage of cases of consumption can be cured in any climate.

If I can help you with advice on any points in connection with the case of your boys, I shall be glad to do so.

#### SMALLPOX.

To. Dr. ———.—I take pleasure in answering your questions. Your town will have to pay for the guard which you station. The State pays no bills for any work unless it is work done by its own agent, or is distinctly authorized by the State board. The policy of the State board of health is to require, as the law requires, that each town shall do its own work. The State board of health has been obliged to do considerable work in unorganized plantations and occasionally in the smaller towns when there has been an unusual emergency which they are unable to cope with. I send you circulars and other papers which will help you in the diagnosis of smallpox. In the mild cases of smallpox there are usually distinct prodromal symptoms for about three days, then with the appearance of the eruption a sharp drop in the temperature. The temperature begins to fall sometimes even before the papular eruption is out. The eruption is usually first on the forehead. In a few cases in which persons have been vaccinated some time ago, the eruption may abort in the papular stage, or in the vesicular or pustular stage.

I think that the one thing which has led physicians to a wrong diagnosis of the mild cases is that they have been looking for the secondary fever, but as the secondary fever is dependent upon the process of suppuration going on in the pustules, there is absolutely no secondary rise of temperature in the mild cases.

#### Management.

To H. S.—The persons in those camps who have been exposed to infection, and all who have possibly been exposed, should be vaccinated immediately, just as quick as you can arrange to have it done—all persons who were not vaccinated

last year, and all persons vaccinated then who did not have a good "take." Arrange for the quarantine of the camp so as to have nobody leave the infected camp until it can be disinfected and until we know that the persons therein have been protected by vaccination so that they may not have the disease.

There is a good chance now for prompt work in connection with your little outbreak so as to prevent much trouble and expense in the immediate future.

**Prompt Action Must Be Taken.**

To Secretary.—I am enclosing a copy of the Rules and Regulations of the State board of health relating to the management of smallpox. A copy of this had already been sent to you.

I have today received information that you have a case or cases of smallpox within your town and at the same time I am informed that you are not taking any steps to stop the spread of the disease. I trust that this may be an error, but I must warn you to carry out strictly the requirements of these Rules and Regulations.

To D. E. H.—I thank you for your telegram. I have written to your local board of health and have sent them a copy of the Rules and Regulations of the State board of health relating to the management of smallpox. Copies of that document have already been in the hands of your local board. I shall take no further action in the matter at present. Your town is large enough and intelligent enough to protect itself through your local board of health, and if protection is not afforded by your local board, I shall be glad to receive specific information which may enable the State board to make a case against them.

To Secretary, Local Board.—I have just received the report of Dr. ——— on the results of his investigation in your town. I have just telegraphed to you as follows:

"To the Local Board of Health, ———: Prompt and efficient action only will avert a quick quarantine of your village by the State board of health. Signed, A. G. Young, Secretary."

I sent this telegram because I have a bare suspicion that prompt and trustworthy action may not be taken. If there is no reason for such suspicion, please accept my apology for

sending the telegram. At the same time I must say that there must be no fooling or loss of time. I hope that your local board of health may give no occasion to the State board to take such action, for it would be very untasteful for the State board, and very undesirable in its results for your village and its citizens.

If you need further help and there is any way in which I can aid you, I shall be very glad to do it so far as can be done by me or the State board.

#### **In Public Buildings.**

To B. G. F.—Writing now and not waiting to receive your letter I will say that sometimes in cases of hotels, it may not be deemed necessary to quarantine the hotel and all of the persons found in it for any great length of time. A great deal depends upon the character of the persons who have been exposed. My advice to you by telephone was to have everybody who has been exposed vaccinated as promptly as possible. Then have the hotel and all persons who have been in the hotel and who have probably been exposed to infection; that is, have each of these exposed persons take a disinfecting bath, a 1-3000 corrosive sublimate scrub, particularly washing the head, the face, the beard, and the hands very thoroughly, and disinfecting their clothing. How thoroughly this work should be done for each individual person will depend upon the probability as to whether he had been much exposed or not. If a given person had come pretty intimately into association with the case of smallpox, the personal disinfection and the disinfection of the clothing should be thorough; for instance, if the person under consideration had occupied the same room which had been occupied by the case of smallpox or had been in the office or the dining room with him.

In the case of the runners, it would probably suffice to disinfect them, simply disinfecting their hands, heads, and faces with the bichloride solution, and disinfect their outer garments with formaldehyde and release them from quarantine, provided they will be vaccinated, and provided also that you are satisfied that you are able to get from them their correct place of residence including street and number and the places to which they are going in the next two weeks. You should

be able to obtain their correct itinerary for that length of time so that I can notify the health officers of the towns to which they are going. In the cases of these drummers, the thoroughness of the disinfection should depend upon the intimacy of their exposure.

Of the other exposed persons, simply vaccinate them and disinfect them so far as you think disinfection is required and make arrangements so that you may keep them under observation for about sixteen days. Any arrangement so that you may feel sure that you can round them up every day, particularly when the end of the period of incubation is approaching and thus know that they remain well.

I think the better way would be to treat these exposed persons frankly and to give them to understand that they will not be quarantined unless they come down with the disease, that if they are vaccinated they probably will not have the disease, and that if they leave the town without your permission, they will be hunted up, arrested, and imprisoned no matter in what town they may be found, and that the State board of health will make it a point to round them up and apply the penalty whether they are found in the immediate future or a year or two hence.

To L. H. W.—The law provides that when smallpox occurs in the same building in which the post-office is located, the postmaster shall notify his sureties and turn the office over to them to take charge of until he can again safely do so. Whether it may be necessary in this instance for the postmaster to do this will depend upon circumstances about which I have insufficient information to advise explicitly. If the postmaster lives in the same building, we will assume upstairs, and the post-office is on the lower floor, the local board of health and you may perhaps decide that it would be entirely safe to arrange to have the postmaster kept from the room occupied by his family, receive a thorough disinfection of his person and clothing, disinfect the room occupied as a post-office if deemed necessary, and then allow him to continue his duties as postmaster. This assumes that he himself is not affected with the disease. I presume every postmaster has a copy of the law so that the postmaster of \_\_\_\_\_ can verify the correctness of my advice.



**Discharge from Quarantine.**

To Health Officer.—I understand there are two other cases in that same little house where the first case of smallpox appeared. The only way that I can suggest for you to get him out and cleanse and disinfect him would be to put up a small shelter tent or a little shack close to the other house in which you can give him his disinfecting bath. After he has had his disinfecting bath and left his infected clothes in one corner of the little shack, or has thrown them outside, he could step over in the other corner, or even step outside in the fresh air, if it happens to be a warm day, and quickly get his clean clothes on and go on his way. I would not, however, take any chances in letting him go too soon—until the skin is perfectly smoothed off and the exfoliation at the sites of the pock marks is completed. The last place for it will be completed, of course, in the palms of the hands and the soles of the feet. Sometimes the scaling process upon these palmer and planter surfaces may be hastened by digging out the hard purple plaques.

To Secretary, Local Board.—I would caution you not to have the camp disinfected until that man's skin everywhere has entirely smoothed off. In cases of smallpox the scabs fall off and afterwards new and thin ones form, and sometimes this thin desquamating or peeling from the pock marks occurs several times. Just as long as there is any of this process going on he and the other men in the camp where he is should be kept under quarantine. When the proper time comes, have him take a disinfecting bath. The bichloride or corrosive sublimate solution, about 1 part to 2000 or 3000 is the best. You can make the solution of the right strength by dissolving one of the ordinary size corrosive sublimate tablets in three pints of water. The solution should be made in a glass, earthenware or wooden vessel, not in a metallic dish.

**Vaccination.**

Secretary, Local Board.—I write this letter to urge upon your local board of health the necessity for offering free vaccination to the people of your town and doing it as promptly as you can arrange for it, and have the people generally avail themselves of the advantage of vaccination.

The quickest way is the cheapest way when it comes to stamping out smallpox outbreaks, and vaccination is one of

the most important methods of dealing with outbreaks of smallpox—I should say altogether the most important. Persons who are successfully vaccinated are effectually protected against taking the disease. In fact, I should much rather trust to the protection offered by efficient vaccination in choosing a nurse for smallpox patients. Persons who have had smallpox in this mild form sometimes have second attacks. So much for the protective power of vaccination.

As regards dangers or inconvenience resulting from vaccination, all of the vaccine virus which is now upon the market is produced in establishments which are under the control and the continued supervision and inspection of the United States Public Health & Marine Hospital Service at Washington, and no firms can produce and sell vaccine unless their methods are entirely satisfactory to the Surgeon-General, and they have received a license from him. That, in a large measure, should assure us all that the vaccine which is now in use is as nearly what it should be as it is possible to have produced.

Your local board of health is fully authorized by the law to offer free vaccination at the expense of your town. Of course, it is advisable for you to have it done as economically for your town as you can, as well as to have it done right. From the point of view of right or wrong, it is the duty of every person to have himself vaccinated, not only for his own protection, but for the protection of his family and his neighbors; and it is the duty of the local board of health to offer free vaccination not only for the protection of their own townspeople, but for the protection of the surrounding towns. If your local board of health or your town should fail to do its full duty under the circumstances, it is a question of responsibility for results to other towns.

#### TYPHOID FEVER.

##### **Investigation.**

To E. H. B.—Referring to your letter I would say that it would be entirely useless to make an examination of the water from your well for the purpose of determining whether the bacillus of typhoid fever was present in the water and was the cause of the case of typhoid fever in your home. If it was present two or three weeks before the beginning of the disease, it would not be likely to retain its vitality there until

this time. It is very rarely that the bacillus of typhoid fever has been found in suspected waters. All a chemical examination would tell you would be something of the degree of chemical purity of the water, but the most badly polluted water will not cause typhoid fever unless at the same time, it is infected with the bacillus of typhoid fever.

To B. C. J.—The isolation of the typhoid bacillus from water suspected of being infected by that bacillus has occasionally been accomplished, but it is a difficult thing to do and something which cannot be taken up in laboratories with any confidence of success. We have to content ourselves in such suspected cases with showing the chemical pollution of the water and of determining the presence of the colon bacillus, which is taken as indicative of the pollution of the water with fecal matter.

#### **How Spread.**

To J. P.—There are a good many other ways of spreading it besides through infected water. A milk supply coming from houses in which there are cases of typhoid fever, or which has been handled by persons who have lately had the disease, or been where it is, is dangerous. It is spread very often by dirty or undisinfected hands carrying the infection directly to the mouth of the person who owns the hands or carrying it to food to be used by other persons. I would suggest for your local board to make a careful investigation and try to get at the cause of the outbreak. I am sending you a few blanks to use in investigating cases and making records of them.

#### **Milk-Borne Infection.**

To Health Officer.—I thank you very much for writing to me about that case of typhoid fever, and I urge you to make your rules just as strict as it may appear necessary to obviate entirely the danger of the transmission of typhoid infection through the milk. The arrangements which you have already made are excellent so far as they go, and possibly they go far enough, but please bear in mind that no person who has anything to do with the milking or the care of the milk is to go near the sickroom where the patient is or to have anything to do with taking care of the discharges from the patient, or

the washing of the bed-clothes or his personal clothing, and that the patient after his recovery, until he is permitted to do so, shall have nothing to do with the milking or the care of the milk.

Please see that the disinfection of the excreta and everything from the sickroom is most thorough and that plenty of time is given for the thorough action of the disinfecting solutions after the discharges from the patient have been exposed to the disinfecting solutions. Time is a very important element in the disinfection of typhoid excreta. Two or three chamber vessels should be in use, so that after the disinfectant is added it can act a long while before there is a need of pouring it out, then have it poured out where there will be no possibility of infecting the local or any other water supply.

It would be a greater assurance of safety if the persons who do the milking and have the care of the milk do not live in the same house where the case of typhoid fever is.

#### **Recurring Outbreaks.**

To Secretary, Local Board.—The recurrence of typhoid fever in that same house for a series of years indicates the probability of some local cause which the people should try to remove. It is quite likely that the cause is due to the pollution of the well water, or it may be due to the infection of the privy vault or of the surroundings of the house by the discharges from the first patient. Sometimes the infection of typhoid fever lives for quite a while in the ground when the ground is filthy or even in clothing in the house. The infection of typhoid fever is more likely to remain long in a dangerous condition than is that of diphtheria and some other diseases.

#### **Management.**

To Health Officer.—Referring to the note appended to your annual report in which you speak of the eleven cases of typhoid fever as a good many for your town, I would say that it is, and I would further say that I think there is great room for improvement in the measures which are applied in the management of cases and of outbreaks of typhoid fever, and this I would apply to the State board of health as well as to the local boards. You will note that the new edition of our circular on typhoid fever is something of a new departure from

the point of view from which we look at typhoid fever. It is, I may also say, a step somewhat in advance from what has been taken by the other State boards of health, but sanitarians are rapidly coming into line all over the country. We hope to be in a position before long to make the Laboratory more helpful than it hitherto has been in connection with outbreaks of typhoid fever. There are more things to be investigated than we have hitherto believed. I would refer you to the paper of mine beginning on page 98 of the last report of the State board of health, "How Typhoid Fever is Spread." That report was sent to you and I hope you received it.

#### **Isolation.**

To Health Officer.—Answering your questions about typhoid fever I would say that the requirement of reports of cases of typhoid fever by the attending physician and by householders is just as absolute as that for reporting diphtheria or small-pox. As to quarantine, thus far the State board has never prepared any placards for that disease although it may do so before long. The edition of 1906, of the typhoid fever circular, indicates the belief of the State board of health in the contagiousness and infectiousness of typhoid fever. The State board believes that, though it may be unnecessary to impose an absolute quarantine, the attending physician and the local board of health should arrange to have all unnecessary persons excluded from the sickroom, and should discourage all unnecessary visits to houses in which cases of typhoid fever are present. No, it is not obligatory upon local boards of health to quarantine cases of typhoid fever, although local boards undoubtedly have ample authority to do that in cases in which their judgment indicates the necessity of it.

#### **Disinfection.**

To Inspector.—I wish you would advise the local board to insist upon a thorough disinfection of all rooms, bedding and other things in the hotel that have possibly been infected by persons who have had typhoid fever, either in a typical form or in a mild form—possibly so-called "walking typhoid fever." The privies should be disinfected by pouring every barrel full of milk of lime, or at least enough to thoroughly saturate the contents of the vault. It should then be thoroughly stirred,

then carted away to a safe place, and then the ground surrounding the privy vault should be very thoroughly saturated with the milk of lime.

To G. H. F.—Houses in which cases of typhoid fever have occurred should be disinfected and they should be disinfected to the satisfaction of the local board of health as the law provides. It is hardly possible for the local board of health to be in a position to know whether the work is properly done unless they do it themselves or have it done by their agent who knows how to do it. In some towns all disinfection is done at the expense of the town, but if your town thinks it best, you can require those householders to pay for the disinfection who are amply able to pay; but the local board of health can have the work done at the expense of the town for those families whom they think are not able to have it done, or done properly. I am sending you copies of the typhoid circular. You will find quite explicit directions in that for disinfection.

To Secretary.—The disinfection of the two rooms and the articles used about the sick person would probably be all that is needed, if the family is one that has been very careful throughout the illness; but if infected clothing or other articles have been carried from the sick-room without being at once disinfected, and perhaps left for some time to infect other rooms or articles, it would be better to disinfect the whole house.

The greatest danger is from the privy. The two pailfuls of milk of lime is not enough. There should be a large quantity used, sufficient to completely soak the contents of the vault and the ground beneath. The contents should be stirred or turned over so as to allow the lime to saturate it thoroughly. After a few days' soaking, the privy should be well cleaned out, the contents deposited where it cannot reach any well or other water supply. Then the vault should be again thoroughly saturated with fresh milk of lime. You understand, of course, that *air-slaked lime* is utterly worthless as a disinfectant.

## DIPHTHERIA.

To L. R. Y.—I would advise you to permit the transportation of the remains of that boy (dead of diphtheria) only under such conditions as your local board of health and Dr. \_\_\_\_\_ may deem safe. I would suggest that you withhold the permission to transport the remains by rail, and require the space between the box and the casket to be filled with some absorbent material like sawdust and to be saturated with formaldehyde, the strong solution just as you buy it. The whole of the space need not necessarily be filled with sawdust, but enough so that you can pour in at least a pint of the strong formaldehyde. Then close it up tightly and make arrangements for the transportation by team so that a trustworthy person may accompany the remains and see that the burial is made without opening the casket. The outside of the box should, of course, be washed with a disinfecting solution, our Solution 7, only you would better put in a double quantity of formaldehyde. It may also be advisable for you to have the receiving tomb disinfected with formaldehyde gas.

**Causes.**

To F. J. E.—It has never been shown that faulty sewers or polluted drinking water have anything to do with producing or increasing the prevalence of diphtheria. The source of the infection should be looked for in preceding cases of the disease, sometimes recognized as such, and sometimes unrecognized on account of their mild or atypical form. Your local board of health perhaps needs the help of the laboratory of the board in tracing out or detecting these mild cases.

**Infection Carriers.**

To C. E. A.—It seems to us that it is altogether likely that the disease has been spread largely in the city from infected throats and that one of the best pieces of work which you can do will be to make particular exertion to discover what pupils are running about with their throats in an infectious condition—children who may have had diphtheria and have since fully recovered or in which it may not be known that they have had diphtheria or even sore throat, but who may nevertheless be sources of infection. In carrying out that particular investigation we shall be very glad to have our Laboratory help you

in every way it can in examining the swabs which you may send from sore throats or from throats which you may suspect are the carriers of infection.

#### **Atypical Forms.**

To H. F. W.—What appears to be a sore throat of a very mild variety may be diphtheria with an abundance of malignant bacilli. Nothing but the Laboratory will enable the attending physician or a local board of health to make a positive diagnosis in such cases. When there is any good reason to suspect the presence of diphtheria it is best to give the public the benefit of the doubt.

To W. B. H.—I am unable to make any very definite statement in regard to the probable cause of the diphtheria from which your family has suffered. It is, however, entirely safe to say that it is a matter of infection. The infection was received from some person who at the time had, or previously had diphtheria, or from some infected rooms or articles. It happens quite frequently that diphtheria in a severe form is contracted from persons who have a slight sore throat that does not in the least look like diphtheria, and it does sometimes happen that persons who have had diphtheria retain the infection in the throat for quite a long while after they have apparently fully recovered. Those facts are set forth in Circular 44, a copy of which I am sending to you. I hope that you may not have any further trouble from this disease.

To L. H. W.—In the copy of the new edition of the diphtheria circular you will note that the State board of health recognizes types of diphtheria which are extremely mild, and recognizes the fact that throats may be infected with the pathogenic germs when no reaction or disease process follows which we can designate as a real diphtheria. Nevertheless these persons are infectious and dangerous to the public.

On the other hand, after very severe septic forms of diphtheria the bacilli may disappear from their throats so early that the period of quarantine may safely be much shorter than was recognized by the State board of health before it was able to place a bacteriological laboratory at the disposal of local boards of health and physicians. For instance, a quarantine was raised from a house in this city a few days ago before the patient was able to leave her bed permanently. Two negative



cultures taken after eight or ten days from the disappearance of the false membrane justified the local board of health in raising the quarantine. In this case the false membrane had disappeared very rapidly under the influence of antitoxin, but it is not by any means true that in all cases in which antitoxin is used the disappearance of the bacilli is hastened much if any.

#### **Membranous Croup.**

To B. R.—I understand that there is a case of membranous croup in your town, and what I hear indicates that your local board of health is in doubt as to its duty in the case. Spasmodic croup cannot be classified as diphtheria, but membranous croup is one and the same with diphtheria, and cases of membranous croup should be quarantined and the other precautionary measures taken which are taken for diphtheria. I hope that you will make no mistake in this matter but will take adequate steps for the protection of other persons from the infection of this case which Dr. ——— has reported as membranous croup.

#### **Period of Isolation.**

To W. E. T.—Answering your question in regard to the release of patients after two reports of negative results from the laboratory I will say that this is what is recommended by the State board of health. That is, release not to follow until after negative results are obtained in the examination of two swabs taken from the patient's throat, the first not earlier than the eighth day after the false membrane has left the throat, and the second not sooner than 24 hours after the first was taken.

To F. B. F.—I would advise you to make the period of quarantine of individual patients, or of individual families, depend upon the length of time during which the infection remains in the throat, using the Laboratory of the State board of health freely for the determination of this point.

This is much better than a fixed and fast rule applying to all patients. If released after two negative results the great majority of patients could have the quarantine raised earlier than your four or six weeks, and many of them very much earlier, while but very few would need to remain in quarantine

as long as that. The release upon negative findings will make it much easier for your local board and also for the attending physician. You can throw the whole responsibility upon the Laboratory.

To A. W. H.—I understand that you had a case of diphtheria, but I received no report from your board. I had a letter from Dr. ————— about a case which he had reported to you. He says that the quarantine was raised within eight days. That is much too short a period of quarantine. The only way in which you can know when the case may be discharged from quarantine is to make use of the State Laboratory of Hygiene sending the first swab from the patient's throat about eight days after the patient begins to improve, and not discharging the patient from quarantine until two consecutive examinations of swabs from the throat have shown the absence of the bacillus of diphtheria in both examinations.

To L. W.—After a death from diphtheria has occurred in a family, and there are no other cases of the disease, or no cases of sore or inflamed throat which might be diphtheria in a mild form, the family can be discharged from quarantine as soon as a thorough disinfection has been done—that may be the practice, but persons who have been exposed to diphtheria, particularly adults may carry the infection in their throats for some time, and in such cases it is quite desirable to maintain a modified quarantine, that is, not to grant full release from quarantine. The only way that you can avoid possible mishaps of a too early release of such persons from quarantine is to make free use of the laboratory of the State board of health, by sending swabs from the throats of the remaining members of the family, to determine whether, or how long, the infection remains in their throats.

To H. L.—I learn that you are having quite a serious outbreak of diphtheria, and that some deaths have occurred. It would seem, from what I can learn, that your local board of health and the people in ————— are not so careful as they should be with this very dangerous disease, and I am therefore writing to you to request you to take promptly every precaution which you can to stamp out the disease at once. Please bear in mind the serious outbreak which occurred a few years ago, when, out of the first seventy-five cases of diphtheria in the

town of ————— and the surrounding towns twenty-five died. I am sending you a supply of Circular 44, which please put into the hands of the people in the neighborhood where cases of diphtheria have been. Bear in mind that this disease is spread by infection, that it is very infectious, and that it is very often spread by persons who have what appears to be only a common sore throat. So, in times when diphtheria is around, every case of sore throat, even if it does not have the membrane and otherwise appear like diphtheria, should be considered suspicious. I understand that persons from some of the houses in which there has been diphtheria have already been attending church. Be sure to keep all persons away from infectious houses except the attending physicians, the priest, and other persons who must necessarily take care of the sick. There is not nearly so much danger of older persons taking the disease as there is of children taking it; but prevent unnecessary visiting on the part of grown-up people, because when they don't take the disease they very often carry the infection in their throats, and there is, of course danger of carrying it in their clothes.

I close by asking you to read carefully, several times, the diphtheria circular No. 44, so that you will understand clearly how the disease should be managed.

#### Laboratory Help.

To Secretary, Local Board.—I have received a letter from Dr. ————— of your village about a case which he had which, upon the second visit, had proved in his judgment to be a case of diphtheria. From what he writes I should say that if it was possible to make a positive diagnosis of diphtheria in any case without the aid of the Laboratory, his case was such a one. The rapidity with which prostration came on and the prompt recovery after the administration of antitoxin are two things which to my mind stamp the case as having been diphtheria. I have no hesitation in saying that the rapid amelioration of the symptoms which followed the administration of the antitoxin was very nearly, if not quite as trustworthy evidence that the disease was diphtheria as there would have been if the report from the Laboratory had been that the bacillus of diphtheria had been found.

In this connection I am calling your attention by means of blue pencil, to paragraphs in both Circular 44 and Circular 94, in which the State Board of Health says "negative reports from the Laboratory should have no weight against the judgment of the physician, as to the nature of the case." The finding of the bacillus furnishes positive proof, but the absence of the bacillus proves nothing at all.

I would say therefore that raising the quarantine immediately after receiving a negative report from the Laboratory was extremely unwise and dangerous for your community.

It appears to me to be entirely within the sphere of duty of the Health Officer or of the local board of health, to arrange for the taking of swabs from the throats of diphtheritic patients for the purpose of determining the termination of the period of quarantine. Of course, if the family physician is still in attendance it would be better ordinarily to entrust that to him.

To F. T. A.—One thing must be borne in mind in sending diphtheria swabs to the Laboratory: the longer the time which expires after the swab is taken before it reaches the Laboratory, the smaller the chance of getting positive results. Have the swabs applied thoroughly with a wiping motion so that all sides of the swab may be coated with the secretions of the throat and sweep it over a considerable part of the affected area of the throat and then have it forwarded as promptly and speedily as possible to the Laboratory.

To Local Board.—The advice of the State Board of Health to physicians is that negative reports from the laboratory should have no weight against the judgment of the physician as to the nature of the case or against other evidence which indicates the probability of a diphtheritic infection. See what we have to say on this subject in Circular No. 94.

I understood you over the telephone that two deaths had occurred. This to my mind, pretty clearly establishes the fact that you have to deal with diphtheria, and if, after using anti-toxin, you have a marked amelioration of the symptoms in the cases which you may hereafter be called upon to attend, you may accept the fact as just about as good evidence that the cases are diphtheria as though you had received a report from the laboratory of positive results.

There are various reasons why negative results may be obtained in samples from the throat of cases of diphtheria and for the purpose of establishing in the minds of the people the fact that the cases are diphtheria, I should say that it would be advisable for you to send several swabs from the throat of each patient until we get some positive reports.

If, in the opinion of your local board of health, the cases are diphtheria, and, through the action of the local board, houses of persons are quarantined, it makes no difference whether the cases are or are not diphtheria, the persons who receive orders from your board are bound to obey those orders. Make what you consider reasonable requirements and give the households to understand that the orders of the board must be complied with. If they are not, promptly put their cases into the hands of the county attorney for prosecution. I am sending you a few of the diphtheria circulars and I enclose in this a copy of Circular 48.

#### **Diphtheria Antitoxin.**

To N. E. F.—The person who takes charge of the antitoxin for your town will not be obliged to put out a cent of money in advance. It will simply be consigned to him and the local agent will not be required to make collections for that which is sold for the use of local boards of health, whether in your town or in your surrounding towns, but he will be required to remit for antitoxin which he sells to physicians or for the use of persons other than indigent persons only after sales have been made.

To S. C. P.—The law provides that the State board of health shall arrange the towns into groups for the distribution of antitoxin. I sent a letter to all of your surrounding towns in regard to that matter. I heard from some of them, and from some of them I did not, as to what place would be the most convenient center from which they might obtain antitoxin in time of need. That grouping seems to be rather a perfunctory performance, and I should judge from the advice which I have received from the attorney general that it does not amount to much. He is of the opinion that the local boards of health of any towns may obtain antitoxin in time of need from any place which is most convenient for them. You may then sell antitoxin to any phy-

sician in any other town for use of indigent patients. That appears to be the correct interpretation of the law.

To G. R. C.—As you had my letter of instruction in regard to ordering antitoxin, you are, of course, at liberty to order it at any time. Of course you or any other physician is at liberty to use any make of antitoxin you prefer, but I am unable to answer the legal questions which may possibly be involved if you put in for the use of indigent persons other than the antitoxin which has been arranged for by the State board of health.

To A. T. R.—No, it will not be necessary for you to keep diphtheria antitoxin. The State board of health is obliged to make the number of stations for the supply of antitoxin for the whole State rather a small number, a number which is less than one-fifth of the total number of cities, towns and plantations in the State. Your local board of health or the physicians who are attending cases in your town, if you should happen to have cases of diphtheria, may obtain the antitoxin from the nearest station or the one which is the most convenient for them.

To E. D. S.—I am afraid I am unable to give you any definite information in the direction indicated in your letter. All the law we have relating to antitoxin you will find on pages 13 and 14 of "Abstract of the Health Laws." The law on page 13 simply authorizes the State board of health to make an arrangement with some trustworthy manufacturer to furnish the antitoxin to local boards of health. After making such an arrangement, our Maine State board of health has left the matter between the producer of the antitoxin, on the one hand, and with the local board of health and their agents on the other. You will see, however, that section 4 of the antitoxin law provides that antitoxin shall be furnished to any physician at the same rates as it is furnished "by the State board of health and to their patients on prescription." That section of the law was not included in the bill which was presented to the legislature, and it is not very clear excepting that there appears to be no doubt that physicians have the right to receive it at the rates which have been arranged between the State board of health and the producer. The State board of health, however, does not furnish antitoxin, as this section has led some persons to believe.

To J. W. S.—You will see that, in the last section of the law relating to antitoxin, at the foot of page 13, it is provided that

"The local board of health in any town furnishing an indigent residing in another town antitoxin upon application, as above provided, shall be reimbursed by the town where the patient resides. The state shall reimburse cities and towns furnishing antitoxin to any person having no legal residence in any city or town within the state."

I should understand from this that if the man of whom you speak has a legal settlement in the city of \_\_\_\_\_, the bill for the antitoxin used in his behalf should be sent to \_\_\_\_\_.

To R. C. L.—If the antitoxin which you furnished was for the use of an indigent person, (not necessarily a pauper), the collection will be made by the company or by \_\_\_\_\_ Co., their distributing agents. They get their pay from the town in which the person lives, who received the benefit of the antitoxin.

To M. N. O.—I am afraid that I cannot answer your questions explicitly or with satisfaction to you because the law leaves a good chance for doubt on quite a number of points until they may happen to be decided in the courts. I do not think that a correct interpretation of the law would be to restrict the aid which this law provides for indigent persons to persons who are actually paupers, and while I believe that local boards of health should interpret the law somewhat liberally, they should, at the same time, be careful not to approve bills to be paid by the town for antitoxin which has been used in families which are well able to pay for the antitoxin at the reduced rates which may be obtained for them by the attending physicians. You will notice that the antitoxin may be furnished to any physician at the same rates as is furnished by the State board of health, or more correctly, at the rates for which arrangements have been made by the State board of health. The correct interpretation of this law is not by any means that persons who are able to pay shall have antitoxin furnished to them at the expense of the town.

To H. F. A.—I would answer your questions as follows:

1. The state pays for none of the antitoxin.
2. No persons are entitled to receive antitoxin free unless in the opinion of the local board of health they are needy or indigent and cannot well pay for the antitoxin in an emergency or just when it is needed. To be needy or indigent does not necessarily mean that they are paupers or are to be pauperized. The law provides that they shall not be pauperized for the rea-

son that they have received free antitoxin from the local board of health.

3. If they are able to pay and have not, from the local antitoxin station, received antitoxin upon an order from the local board of health they should be made to pay.

### SCARLET FEVER.

#### Incubation.

To B. C. P.—I am sending you scarlet fever placards and circulars and several copies of 53. The incubation period of scarlet fever is quite short; that is, the time from exposure to the date of coming down with the disease. This Circular 53 you will note states that it is from two to five days.

To S. B.—Answering your letter which came today I would say that the length of time after children are exposed to the infection of scarlet fever before they are taken sick varies from two to seven days, rarely more, if ever, than seven days. Scarlet fever may be communicated to others at any time after the sickness begins until the period of desquamation, or peeling, is entirely through.

#### Sources of Infection.

To Dr. ———.—One very frequent source of infection for new cases is that which comes from cases which have not been kept under control until the period of desquamation has entirely ceased, and undoubtedly cases sometimes spread by pupils who during convalescence and perhaps until complete recovery has apparently occurred are suffering from some local sequel, scarlatinal otorrhea, etc.

#### Infection by Mail.

To D. H.—I have just received a communication from the postmaster of Cumberland, Maine, saying that parties quarantined for scarlet fever in ——— send letters through the mail and that some come to his office. I would inquire whether you are disinfecting the letters thus sent out or otherwise guarding against the carrying of infection through the mails.

#### Milk-Borne Infection.

To H. J.—I should apprehend but little danger to Mr. ——— (the milkman) in meeting the girl as he does at the door-step,



that is, danger to him or danger of carrying the infection on his clothing to others so long as he does not step within the door. But there is another aspect of the question. Milk is very easily infected and undoubtedly he would not wish to risk taking the least chance of conveying the infection in his cans or otherwise to his milk supply. There is another reason why the little ——— girl should have nothing to do with the domestic milk supply for her family. There is danger of her seeding it down, and therefore adding just so much to the chance of the other members of the family taking the disease. I shall write to the local board of health about this matter as well as about other matters.

The State board of health cannot, from what you write, assume that there is need of closing the school which you think should be closed. It was only yesterday that I wrote that "the State board of health has set its face against the frequent or indiscriminate closing of schools because a case or a few cases of infectious disease have appeared." We find that local boards of health close schools much more frequently than we think necessary. We believe that the proper way is to strictly quarantine infectious cases and infectious houses so as to keep infectious persons from attending school or going to the school-rooms.

#### **Desquamation.**

To A. R. M.—I would say that in some cases of scarlet fever the beginning of the period of desquamation is considerably delayed,—sometimes for a week, or even in rare cases perhaps for two weeks after the fading of the eruption. I should think that it would be necessary to keep the patient under quarantine, or at least upon his own premises and not come in contact with other persons, until the process of desquamation is entirely done, and if there is a delay in the appearance of the desquamation he should be kept in isolation one or two weeks pending the appearance of desquamation, and after two weeks would be early to discharge any patient whom you are convinced had scarlet fever, whether the eruption appears or does not appear. Probably the secretions from the mouth, nose and throat have as much to do with spreading infection as the scales that are shed in the process of desquamation.

**Release from Quarantine.**

To F. K.—It is altogether unsafe to release any child from quarantine two weeks after the illness. Almost invariably the period of desquamation lasts longer than that and very often it is not through in four and sometimes not in six weeks. Even in the rare cases in which there is no desquamation observed the throat may remain infectious for a much longer period than two weeks.

To E. S. F.—After there has been one case of scarlet fever in a house, if there are any other persons, particularly children, who have never had the disease they would be likely to come down with it within a week or possibly slightly more, after they had been exposed to the person who is already sick. Still it happens somewhat frequently that one child has the disease and other children do not take it, although they have been exposed to the first case and have never had it before.

So after the first case in a house, if no others have come down with it, the first case can be disinfected and the house disinfected and the house released from quarantine as soon as the first case is in a safe condition to be released; that is as soon as he is done peeling and his nose and throat are all well. Sometimes children who have had scarlet fever have a discharge from the nose which lasts some time and which may be infectious.

**MEASLES.****A Dangerous Disease.**

To Health Officer.—As measles is a disease which for years has caused a larger number of deaths in the State of Maine than scarlet fever and has caused very nearly as many deaths as diphtheria, it is one which should not be lightly considered and unnecessarily be allowed to spread. Local boards of health should require that all persons with measles and all persons from houses in which there are cases of measles strictly be excluded from the schools and from other public assemblies; but it is rarely necessary to keep the head of the family, the breadwinner, in quarantine. Circumstances might, however, make it desirable to quarantine the head of the family; for instance, if the head of the family were a teacher or other occupation brought him into close association with young people or carried him into the homes of other people. In all cases the

head of the family, if he is to have some liberty, should be required to keep away from the sick room and not come into association with members of his family who are sick. There is some danger of carrying infection in the clothing, but it is not nearly so great for measles as it is for most of the other infectious diseases.

To S. R. R.—The death-rate from measles and the deleterious influence of measles and its sequels is serious enough to stamp this disease as a not insignificant one. The number of deaths from measles in the New England states in the ten years 1896 to 1905, inclusive, was 4,493. The number of deaths from scarlet fever within the same states during the same years, was 4,629; from typhoid fever, 12,700; from diphtheria, 18,801. Thus measles causes almost as many deaths as scarlet fever, more than one-third as many as typhoid fever, and nearly one-fourth as many as diphtheria. In some states, in Maine and California at the two extremes east and west, for example, the mortality from measles is greater than from scarlet fever.

In Maine, local boards of health are advised to isolate cases of measles, particularly the initial cases when it is practicable to get at them so as to prevent the general diffusion of the infection. When measles has become extended, the effort to control the disease has generally been an uphill business. The two special reasons for this, as we all know, are the high degree of infectivity, and the long prodromal period during and from the first of which the sick person is infectious.

While our State board has set its face against the frequent or indiscriminate closure of schools because a case or a few cases of infectious disease have appeared, I am personally of the opinion that a good reason for the closure of schools is present more frequently in connection with outbreaks of measles than in outbreaks of the other infectious diseases generally. That is also the conclusion to which some of the English medical officers of health have come. When diphtheria, scarlet fever, or smallpox is discovered in a community, the closure of the schools for a brief time, until the local health officers can put their finger on and count up the infected points, is sometimes justified; but a more prolonged closure of the schools on account of measles is sometimes a distinct advantage—closure for a

period of time somewhat greater than that of the period of incubation.

Clinical and epidemiologic observation seem to indicate that the period of personal infectivity in measles is somewhat brief and that the vitality of the infective agent is not long lasting. These apparent truths have a bearing upon the length of quarantine and the question of disinfection.

#### Isolation.

To Health Officer.—It would be better to keep them isolated, that is, from school and other public assemblies and upon their own premises for two or three weeks after the eruption has come out, three weeks preferably. By that time, the infection in infected rooms has probably lost its vitality so that there is hardly need of disinfecting. I would refer you to Section 50 for the penalty for tearing down placards or otherwise interfering with the work of your local board.

One great trouble in stopping the spread of measles is that the disease is infectious for about four days before the eruption appears and while the patient is apparently suffering with a severe cold in the head.

To Secretary.—Measles and mumps are both contagious and infectious diseases. I am sending you a copy of the Abstract of the Health Laws. Please notice Paragraph III on page 5. In Section 30, at the foot of the preceding page, you will notice that the law provides that the local board of health *shall* do certain things. It is not that they may do it, but they shall do it. One of these things is that your local board shall require the isolation of all persons and things that are infected with or have been exposed to infectious or contagious diseases. Another thing is that the local board shall prohibit and prevent all intercourse or communication with, the use of infected places, premises or things.

I would refer you also to Section 33 of the law, on page 6 of the Abstract of the Health Laws. You will notice that the householder is required under penalty to notify the local board of health of the presence in his family or household of quite a long list of infectious diseases, including measles.

## POLIOMYELITIS.

To H. W. G.—Yes, infantile paralysis is an infectious disease. Your local board of health has authority to quarantine cases. I would advise you to establish a strict quarantine for all such cases and for the houses in which they occur, but at the same time, under proper precautions, letting the head of the family attend to his usual work. Keep the members of each household upon his own premises. It would be safer to extend the quarantine as long as three or four weeks.

To R. C. W.—I thank you for notifying me of the presence of a case of infantile paralysis in your village. You have done the right thing to quarantine the family. Local boards of health have authority under the general provisions of the law to do that, and the later investigations of this disease indicate that quarantine is called for.

How long cases of infantile paralysis remain infective is not known, but the histories of some cases and of some outbreaks indicate the possibility that persons who have the disease remain infectious for a longer time than is comforting to the local health officer.

To M. H. R.—When cases are reported to a local board of health or their existence is known to the local board of health, the board has, I should understand, under the general definition of the powers and duties of local boards of health, ample authority to quarantine cases of poliomyelitis and to require families to observe such precautionary measures as in the judgment of the local boards may be required. I would refer you to Paragraph III on page 5 of Abstract of the Health Laws. I would also, in this connection, call your attention to Chapter 25 of the Laws of 1909 on page 14.

To F. H. E.—There is nothing in the literature except that which is of quite recent date which gives any indication that poliomyelitis is an infectious disease, but the investigations which have been made within the last few years do show pretty conclusively that it is infectious. I think the precautionary measures which you have observed are necessary and reasonable, and I think that, in the light of the recent work, it would be safe for us to call acute infantile paralysis a dangerous and infectious disease. We probably would be compelled to admit that it is only mildly infectious, though in-

fection is probably answerable for all cases. If you have any additional cases I wish you would watch for any equivocal or masked intermediate forms of the disease which might enable you to trace the infections from one case to another.

To W. F. A.—Dr. \_\_\_\_\_ of \_\_\_\_\_ told me over the telephone about the death of the young man who died in that town of acute poliomyelitis. I advised that precautionary measures against the spread of infection be taken. I did not know, however, that the remains were to be transported to your town for burial. I have had a letter from \_\_\_\_\_ which tells me that the body was carried to that place for interment and was found to be in a bad condition when it arrived so that the undertaker of \_\_\_\_\_ re-embalmed the body. There is a question whether that was necessary and whether it might not have been much better to have arranged for the speedy and private burial. Late work which has been done in investigating this disease indicates very clearly that poliomyelitis is in some degree infectious. I would therefore suggest that you confer with the physicians in your town about the matter and suggest to them to keep watch of any possible subsequent cases, some of which may be in a masked or atypical form.

To Dr. \_\_\_\_\_—I thank you very much for your letter of February 26. You have given me some facts which are very interesting, particularly what you say about other members of the same family who had similar symptoms but were not paralyzed. The general opinion of the medical profession has not been that acute poliomyelitis is infectious, but some observations that have been made recently indicate that it undoubtedly is, and some of the English writers have referred to outbreaks in which the missing link between one case and another has been like these of which you speak, persons who have had a slight febrile reaction for a few days, which however, has not been followed by paralysis unless of a very slight and transitory form.

#### CEREBROSPINAL MENINGITIS.

To S. S. T.—Referring to your letter in regard to cerebrospinal meningitis, I would say that in the opinion of our State Board of Health, the disease is communicable, although the

degree of infectivity is not so great as that of many of the other infectious diseases. If, possibly, you should have cases of the disease in your town, it would be advisable to make reasonable rules and regulations in regard to the isolation of the sick and excluding unnecessary persons from the sick-room.

I should think it is doubtful whether it would be necessary to establish any quarantine against ——— or the people of that town, or to prohibit persons going back and forth to their work. If you should have any cases of the disease in your town, kindly let me know at once. I should also feel under obligations to you if you can learn something more definite about the cause of the death of the man in ——— and let me know. I am writing to the local board of health of that town about the matter.

To R. G.—A man from ——— came to my house last evening to see me about the danger which he apprehended to his children who had, he said, been exposed to the infection of cerebrospinal meningitis in your town. I probably reassured him considerably by giving him my opinion that there was practically no danger to his children who had apparently been exposed lightly or not at all to the infection. He told me, however, that the child died, I think he said Sunday, the 16th, and was to be buried today, the 19th, that there was to be a public funeral and the fellow pupils of the deceased child were to attend in a body. As I understand, death occurred near where Dr. ——— is, and I tried to get the Doctor over the telephone this morning to talk with him about the matter. While cerebrospinal meningitis can be considered only slightly or moderately infectious it seemed to me that it is desirable to discourage public funerals of persons and particularly of children who have died of cerebrospinal meningitis. Epidemics of that disease have been rare in this state and it is not likely that you will have such in your town, but if there should be additional cases I think it would be well for you to advise a reasonable degree of isolation of the patients, that is, not to have unnecessary persons present in the sick-room, nor to have public funerals.

To F. H. M.—At the request of Dr. C. D. Smith I am sending you by mail a copy of the last bulletin of the Board which has a short article on cerebrospinal meningitis. This

was submitted to the board at the last meeting and the recommendations in regard to preventive measures therein given were unanimously approved by the board as being what is proper and expedient to put in force in cases of cerebrospinal meningitis.

The following paragraphs are quoted from that bulletin:

The precautionary measures which health officers should arrange for and which have been in force in many places where outbreaks of cerebrospinal meningitis have occurred in the last few years are as follows:

(a) Reports of cases to local boards. This requirement of the law is absolute, and local boards should insist upon compliance with it.

(b) A reasonable degree of isolation of the patient and also of other members of the family, particularly of the younger members who otherwise might attend school or associate intimately with children. Persons not needed in the care of the patient should be excluded from the sick room.

(c) After death, and after recovery, particularly if convalescence has come quickly, the sick room and its contents should be disinfected at least with a good fumigation with formaldehyde.

(d) Public funerals should be discouraged.

#### WHOOPING-COUGH.

##### **Management.**

To W. P. J.—I would further say that whooping-cough should be considered a dangerous disease for young children, and local boards of health and school officers should do what they can to guard against the introduction of the infection of that disease into families, particularly in which there are very young children. Of course, if the disease spreads in your town extensively, that probably could not be done without closing the schools, but it is much better and more economical simply to exclude infectious persons where there are only a few families or a moderate number affected.

To R. F. C.—Answering your inquiry about whooping-cough I would say that the State board has never prepared any placards for that disease. Under the general provisions of Section 30, Paragraph III, local boards of health undoubtedly



have authority to institute such restrictive measures as may be necessary to avoid the spread of the infection of whooping-cough. The State board would urge local boards at least to exclude from the schools strictly all children who have the disease and all persons from families in which it exists, and at the same time requiring the parents to keep the children from going to public places or any other places where children congregate. If you can arrange for the fumigation with formaldehyde of the building before the children return to school, it would be desirable to do so. It is the duty of physicians to notify the local board of health of all cases of whooping-cough.

Whooping-cough is a much more serious and dangerous disease than the general public appreciates. It causes a larger number of deaths than scarlet fever and has for a long series of years.

To R. J. P.—The death-rate from whooping-cough or from measles is greater than that from scarlet fever in this State. It has been for the past ten or a dozen years at least, and personally I believe more should be done for the restriction of whooping-cough and measles than has been done in the past.

#### Transmission.

To H. F. W.—I am unable to answer your question. There is, I think, ample evidence in favor of the fact that the infection of whooping-cough may be conveyed from person to person indirectly by means of third persons or fomites. I should believe that it would be possible for the infection to come in the milk or upon the milk cans that may come from infectious houses. Looking up the matter a little for you, I find in Nothnagel's Encyclopedia of Practical Medicine, the following:

“The indirect transmission of whooping-cough by physicians seems to be anything but rare, according to Josef Franck, and the following from Rosen von Rosenstein: ‘I know an instance where whooping-cough was carried by a messenger from one who had the disease to two children in another house. Moreover, I recollect another case where I myself unintentionally carried it from one house to another.’”

In the monthly bulletin of the Indiana State Board of Health, an instance is given in which an old lady carried the infection

of whooping-cough in her clothing for seventy-five miles, and infected the children in the new place to which she had gone. Other sources of infection seem to be excluded.

In an article by Dr. John Lovett Morse of Boston, in the *Boston Medical and Surgical Journal*, he notes several instances in which the infection of whooping-cough was carried by third persons or by clothing. In one instance the disease appeared to have been communicated by an infant's little quilted hood that had been packed away several months. In another instance, infection was communicated by a book which had been loaned to children who had whooping-cough. After the book was returned to its owner, his son, twenty-four years old, who had never had whooping-cough, desiring to ascertain which of the copies had been used by the children with whooping-cough and knowing that a cresolene lamp had been used in the treatment, picked up one of the volumes which happened to be the one loaned to the children and smelt of it. In twelve days he developed whooping-cough.

I have some other instances of a similar kind indexed, but I have not time to cite any more of them at present. I should say that if the milk comes from a house in which there is whooping-cough and the can, or the bottle containing the milk, is not brought into your house and milk is pasteurized or heated before it is used, all possible danger of infection would be eliminated.

#### **Chickenpox.**

To R. E.—Answering your inquiry I would say that it is not customary to quarantine houses or persons on account of chickenpox; but when it is deemed necessary to do so, local boards of health would undoubtedly have authority to require that children who have that disease be excluded from the schools. It seems to me that that is only an act of justice to parents of children who do not want them to have the diseases. I am always afraid when I hear of chickenpox that it may be smallpox in a mild form for the reason that smallpox in its present mild form has very often been called chickenpox. Is this disease in your town confined exclusively to children, or are adults as well as children having it?

## MUMPS.

To T. W. B.—Local boards of health have authority when they deem it necessary, to quarantine any infectious and contagious disease as is provided in the third paragraph of Section 30, Chapter 18, R. S. With the minor contagious diseases there is often the question of expediency. The State board of health has not insisted upon the invariable quarantine of cases of mumps, whooping-cough and measles. But such cases should be excluded from the schools if nothing further is done. Your board should give strict orders for the exclusion from the schools of all persons infected with mumps if you take no further measures.

## WATER SUPPLIES.

To E. F. D.—The law does not define the minimum distance at which a cesspool must be placed from a well furnishing drinking water. The construction of the cesspool would make a great difference and much would depend upon the character of the soil intervening between the cesspool and the well. I am sending you a copy of Circular 100 which will give you some information in regard to these points. The person who maintains a cesspool which becomes a nuisance would be liable under the provisions of the sections which I have marked on Pages 10 and 17 in Abstract of the Health Laws, no matter what the distance of the cesspool from the well is.

To M. C. D.—I presume that under the common law persons who run sewage into that brook of which you write may have an action brought against them by the land abutters farther down who may wish the water of the brook to come to them in its natural unpolluted condition, or the owners of the mills may bring action against them for polluting the brook. In the laws of the State of Maine, there is no definition as to what extent a brook may be utilized for the discharge of sewage.

**Lead-Polluted Water.**

To L. W. J.—I am sorry that it is impossible for me to give you any information in regard to the cause of the disease which has affected your horses. I did not see how the water supply could have anything to do with it unless the water flows through lead pipe so that it is possibly contaminated with lead. If

you are using lead pipe, or the water in any way comes in contact with lead, the presence or absence of lead in the water can be determined in the laboratory.

To C. T. L.—My advice to your neighbor would be not to use the lead pipe for bringing the water. Some waters are not so liable to dissolve the lead as others, but there is no absolute safety with any water. Chemical changes occur in waters which are not considered very liable to dissolve the lead, so that at times they dissolve the lead pipe readily and poisoning occurs. If I were putting in a line of pipe of considerable length I, personally, should use good galvanized iron pipe. Water conducted through new galvanized iron pipe will dissolve the zinc for some months so that the water will have rather an unpleasant metallic taste, but it is not dangerous, as lead polluted water is, and after a shorter or longer time the objectionable taste to the water will disappear. For very short runs other material much more costly than galvanized iron pipe might be used.

To ———, Michigan.—Answering your letter of October 16, I would say that there are no provisions in this State for the state control of waterways, lakes and streams, and with the exception of the law prohibiting the turning of sawdust and other sawmill refuse into streams, thereby destroying the fish and the navigability of streams, and a brief law in regard to the pollution of water supplies, we have nothing. I am having a typewritten copy of the latter law made to send to you.

To Health Officer.—As regards the reservoirs not having been cleansed I told him that it had been found that the bacillus of typhoid fever has been shown to live in the sediment or the sludge in the bottom of water reservoirs or cisterns quite a long while, much longer in fact than it does in the water itself; but that while this is true, the sediment in the bottom of a reservoir is not very often disturbed by pumping in or drawing water from the reservoir. I think it is doubtful whether it is customary to empty or cleanse the interior of reservoirs very often.

To H. L. T.—You will see that our laws are very defective in regard to the matter of the discharge of sewage into rivers. That section which I have marked on page 17 is practically

worthless. A bill was, however, presented to the last legislature providing that the public water supplies of the state shall be under the control of the State board of health. That bill was not passed, but was referred to the next legislature.

To A. N. B.—I am obliged to report that we have no special laws touching the matter of ice supplies and that for the lack of authority to do so the State board of health has made no rules and regulations relating to the matter save that which I am enclosing upon a separate sheet.

#### **Cisterns.**

To E. L. S.—My personal opinion is that a properly constructed cistern in the cellar beneath a dwelling house need not make the rooms above it damp, or in any way affect the healthfulness of the rooms. Ordinarily the whole cavity of the cellar including the floors and the earth back of the walls is giving off a quantity of moisture through evaporation, compared with which, the small surface of the water in a cistern is very small indeed.

Cellar floors and walls may of course be cemented, but that does not by any means prevent the evaporation of moisture through such floors and walls. They may of course be asphalted, and that would reduce the transpiration of watery vapor to a minimum.

I should consider the water collected in a cistern in ——— much safer than water from the ordinary well in your town or village, particularly if you had an arrangement so that the first of the water in a shower or rainstorm is turned outside of the cistern, and the water is not admitted to the cistern until the roof has been washed of its dust.

#### **Water Pipe.**

To V. L. S.—The question whether the water in which zinc is dissolved is poisonous or dangerous to the users of the water has been answered differently by different persons who perhaps should be considered authorities on the question. The Massachusetts State board of health has not considered the zinc dissolved from galvanized iron pipes dangerous to health unless the board has changed its mind recently. Personally I should prefer water without zinc.

Galvanized iron will communicate zinc to the water for a longer or shorter time depending upon the character of the water (its solvent power), and upon the rate of flow through the pipe.

To J. R. M.—Personally, I should never use lead pipe for the conduction of household water supply or for pumping water through it, on account of the great danger of lead poisoning. For general use I would recommend galvanized iron pipe. It is true that the zinc is gradually dissolved by the water so that almost none of the galvanization is left. Nevertheless, after that occurs the galvanized iron pipe does not appear to rust so badly as the plain iron pipe.

Of course if a person can afford it, block tin or tin lined or porcelain pipe would be very nice, but it is very costly.

#### **Pollution of Wells.**

To W. J. E.—I should judge from what you write that your well will be very likely to be speedily and badly polluted from the cesspool which you state that your neighbor is digging.

You have a personal remedy in Chapter 22, Section 13 of the Revised Statutes, which reads as follows:

“Any person injured in his comfort, property or the enjoyment of his estate by a common and public, or a private nuisance, may maintain against the offender an action on the case for his damages, unless otherwise specially provided.”

I am sending you upon a separate sheet a copy of Chapter 104 of the Laws of 1907. I am inclined to think that this chapter would apply to the case of your neighbor who is planning to pollute the water of your well. I would suggest whether you may not wish to have an analysis of the water made to determine its present condition and subsequent analyses made so that you can keep track of the effect upon the water.

#### **Pollution of Lake.**

To Health Officer.—Referring to the matter of the sewage from the hotel which is discharged into the lake, I would say that I think it would be well for you to order the abatement of the condition thus caused, and if the necessary change is not made within the time stated in your notice, or within a reasonable time, I think it would be well for your board and

persons endangered to enter action against the hotel owner under Chapter 97, Laws of 1905.

“Section 1. Whoever knowingly and willfully poisons, defiles, or in any way corrupts, the waters of any well, spring, brook, lake, pond, river or reservoir used for domestic purposes, for man or beast, or knowingly corrupts the sources of the water supply of any water company, or of any city, town, or municipal corporation supplying its inhabitants with water, or the tributaries of said sources of supply, in such manner as to affect the purity of the water so supplied, or knowingly defiles such water in any manner, whether the same be frozen or not, or puts the carcass of any dead animal, or other offensive material, into said waters or upon the ice thereof, shall be punished by a fine not exceeding one thousand dollars, or by imprisonment not exceeding one year.”

I was hoping to consult our engineer member on some points, but your board would better give the order and let the hotel men get their own engineering counsel on how they may otherwise dispose of their sewage.

#### MILK SUPPLIES.

To D. E. M.—I am enclosing a copy of Abstract of the Health Laws, on page 22 of which you will find the law relating to the registration of milk dealers.

To D. M.—There is nothing in our laws which provides for any action of the local boards of health in the matter of which you write (diseases of animals) excepting Section 89 of Chapter 18, R. S. which you will find on page 13 of Abstract of Health Laws.

Local boards of health may, under paragraph V, on page 5 of Abstract of Health Laws, make by-laws relating to the milk supplies and dairy cows and may, if they choose, take action under those by-laws after they have been approved by a justice of the supreme judicial court.

The general matter of the control of the milk supplies is in the hands of the agricultural department, as you will see by referring to the Acts on pages 20 to 23.

To R. D.—Tell him (milk inspector) to get Fraser's milk testing set from Eimer & Amend, 205 Third Ave., New York City, and send iced samples of such specimens as show less

than 3.5 per cent fat, to the laboratory for confirmatory tests. He can do nothing with color or preservative tests outside of formaldehyde. If he wants other information than that sent with the set, communicate with Mr. Evans, Director of the laboratory.

To F. D.—I am enclosing a copy of Circular 94 of the State Board of Health relating to the use of the Laboratory. There is so much difficulty in detecting the germ of tuberculosis in a sample of milk that such a method of determining whether a cow has tuberculosis is rarely made use of. It takes too much time and is altogether too uncertain. For that reason we do not examine samples of milk in the laboratory to determine whether a cow has tuberculosis.

The best method of determining that is by means of the tuberculin test. I do not know whether you could get the Cattle Commissioners to send a veterinary surgeon up to your place for the purpose of testing your cow. It is doubtful whether they would consent to incur the expense of testing one cow so far away.

To F. P. E.—Mr. Evans, the director of our laboratory, was just telling me that he had an appeal from your city to examine samples of milk with reference to the presence or absence of the germs of typhoid fever. It will be altogether impracticable to do that. If there is reason to believe that the milk from any of the dairies supplying milk to your city is infected with the bacillus of typhoid fever the only way of getting at information which will enable you to locate the source of infection in the dairy from which the infected milk comes is to make a personal inspection and inquiry at all of the farms which supply milk.

#### LABORATORY WORK.

##### **Water Analysis.**

To R. W. H.—Answering your inquiry I would say that the State board of health through its laboratory makes examinations of samples of water although there is a limit to the capacity of the laboratory for making examinations for individual persons. The examination is not made for the purpose of determining the medicinal or mineral qualities of the water. The work is done merely for determining whether water is



suitable for domestic use. If you want an analysis done please write to Mr. H. D. Evans, Director of the State Laboratory of Hygiene, Augusta, Maine, asking him to send you a bottle with directions and stating why you want the examination made. You will be required to pay the expressage both ways. In all cases the bottles must be sent from the laboratory.

To G. F. D.—The sample of water which you sent is altogether insufficient to permit of an analysis. One gallon is the quantity which must be had, and the bottles in the packing boxes must invariably be sent from the laboratory; but we never make a search for the typhoid germ. (Notice the paragraph marked in copy of Circular No. 94 which I send). All the good the analysis of a sample of water from your well would do, would merely be the determination of whether the water is a clean water or whether it is polluted. If the water is polluted, it might or might not be infected with disease germs. Please read the circular on typhoid fever which I am sending you.

To L. B. Y.—I am sorry we can do nothing with the sample of water which you sent. One gallon of water is required for analysis and it is necessary for us to make an invariable rule that the bottles in their shipping cases shall be sent from the laboratory accompanied by directions for taking and shipping the sample. No charge is made in the laboratory for the work done, but applicants are required to pay the express charges both ways. If under these conditions you would like to have the bottles sent to you, please write direct to State Laboratory of Hygiene, Augusta, Maine, and Mr. Evans, the director, will attend to the matter.

To R. F. W.—You apparently wish an analysis for the purpose of determining the mineral contents of the water from your spring; that is, the mineral or medicinal qualities of the water. I have to reply that work of that kind is not done in our laboratory. The analysis we make is simply for the purpose of determining whether waters are good and suitable for drinking purposes. If there is really any reason to apprehend that the water is polluted, Mr. Evans, the director of the laboratory, will do the work for you if you will make application to him asking that a bottle be sent to you.

**Analysis of Foods and Drugs.**

To S. C. W.—We have so much work in the laboratory that the analysis of samples of water from private drinking supplies cannot all be attended to promptly, but, in cases of suspected lead poisoning, the work on such samples must be done as early as possible. Possibly a slight delay may be unavoidable. It might be well for you to advise the family to suspend, meanwhile, the use of the water.

To R. D. F.—The laboratory, which is under the direction of the State board of health, has nothing to do with the examination of food products with the exception of milk. The line of work which you want done, if I understand correctly, is that which is done by the Director of the Agricultural Experiment Station at Orono. It may, therefore, be well for you to write to that station and get their instructions.

**Laboratory Outfit Stations.**

To C. B. H.—The State board of health is obliged to make it a rule to have just one station for the mailing outfits of the Laboratory in each city and large town or village.

To J. W. L.—You can obtain a mailing outfit from \_\_\_\_\_ so that you can, in accordance with the directions which are given with the outfit, send a sample of sputum to the Laboratory. I would urge you to send subsequent samples if the report from the Laboratory should be negative, that is, to the effect that the bacillus of tuberculosis is not found. No charges will be made for the work in the laboratory, but you must follow carefully the instructions in regard to shipping or mailing the sample.

To H. C. R.—It is not customary for the laboratory to have its outfits kept in the hands of physicians if there is a druggist in the place. I would ask you to get your local board of health to arrange with some druggist in your village to keep the outfits and report to the Laboratory, and I will have some of the outfits sent from the laboratory to the druggist with whom you make arrangements. To the druggist, it will be only a matter of a little trouble in keeping the outfits and passing them out to physicians when they need them. Of course, the expressage on supplies sent to the keeper of the outfits is paid by the State board.

**Transmission of Samples.**

To W. J. B.—The sample of sputum has come to hand and I am sending it to the laboratory, but I would caution you against sending samples of that kind through the mails without using the regulation outfit which is supplied by the laboratory. You can get them at ————. The United States postal laws and regulations are pretty strict and I had a letter from a physician the other day who had been “called down” by the postal authorities, as he expressed it.

To H. L. M.—It is against the Postal rules and regulations to send through the mails anything of that kind unless it is sent to laboratories in mailing cases which have been approved by the Postal authorities in Washington. Before we could do anything of that kind, it was necessary for us to submit to the Postal Department samples of the mailing cases which we proposed to use and receive their special permit. Possible unpleasant responsibilities might be incurred by physicians in sending samples of sputum or diphtheritic swabs through the mails in other than the approved mailing cases. And again, our workers in the Laboratory refuse to examine most of the specimens that come in any other kind of outfits for reasons pertaining to their own safety in continually handling such stuff. We have a laboratory outfit station in your village where you may, at any time, obtain the regulation outfits. I sent your sample to the Laboratory, but I am not sure whether you will receive a report on it or not. If you do not, it would be well for you to get an outfit from ———— and we shall be glad to examine it for you.

**RELATING TO SCHOOLS.****Dirty or Contagious Children.**

To B. L.—I am sending you a copy of the revised edition of Abstract of the Health Laws. I would call your attention to the law at the bottom of page 18, relating to dirty and contagious school children. You will see that when a teacher discovers that children are in such condition as that which you speak of, it is the duty of the teacher to notify the superintendent of schools. It is then the duty of the superintendent of schools to take the action which the first section of this law provides, and if the parents do not clean the children up

and put them in the proper condition and furnish them such medical treatment as may be required, the parents are guilty of a misdemeanor. This is a matter for the superintendent of schools, rather than for the local board of health; that is, to look after the diseases and the conditions which are mentioned in this new Act.

If, for instance, the infectious skin disease of which you write is scabies or impetigo contagiosa, it is the duty of the superintendent of schools to take action under Chapter 31 of the Laws of 1909, which you will find on page 18 of the Abstract of the Health Laws. It would of course, be well for your local board of health to confer with the school officers, but you do not have the distinct authority which they, under the new law, have.

**Drinking Cups.**

To W. B. G.—We have no statutory enactments in this state relating to common drinking cups in schools and our State board of health is not authorized to make any rules or regulations in that direction. At a meeting of our State board of health in April, 1909, the board passed the following resolution:

“That the danger which threatens the public from the use of common drinking cups aboard trains and in other public places, is a serious one, and that it is very desirable that such common drinking cups be abolished and that arrangements be made for the use of individual drinking cups. Paper drinking cups of several manufacturers are very convenient and commendable.”

**Closure of Schools.**

To W. S. G.—I have just had a letter from your superintendent of schools who fears the extension of diphtheria in the schools and fears the necessity of closing the schools. I would say that the State board of health has always taken a very decided stand against the routine or the frequent closure of schools on account of the presence of outbreaks of infectious diseases, teaching that the proper way is to quarantine infected houses and infected persons strictly and thus to prevent the necessity for the closure of the schools. As I am writing to Mr. ———, it occurs somewhat infrequently that there

is need of closing the schools for a few days or until the local board of health may be able to count up and quarantine infected houses and infected persons and, if need be, disinfect infected schoolrooms.

To H. M. S.—If your schools are keeping now it would be well for your local board of health to arrange for cooperative work with your local superintendent of schools, having him, through the medium of the teachers, make an inquiry as to the cause of the absence of pupils. That would very often help in learning about houses in which there are cases of infectious diseases.

To Local Board.—My opinion is that unless such school-houses, churches, Sabbath-schools, or places of business, are known to be infected, or there is good reason to believe that they have been infected, the local board of health has no authority to close them.

#### **Leaflets.**

To Teacher.—Some months ago, I began the preparation of a series of leaflets to be published exclusively for the use of local superintendents of schools and teachers.

My communications in regard to the subject have been with the local superintendents of schools. Instead of sending the leaflets to a teacher for distribution I should much rather have arrangements made with the superintendent so that they may be sent to him, the required number for all the schools, so that he could distribute them to the teachers, and they in turn to the pupils, so that a copy may go to each home which is represented by pupils in the schools.

I wonder whether you could not arrange with your local superintendent to have the leaflets distributed. If you can, I shall be glad to send the leaflets, but some of the earlier ones are not available just now, and will not be until new editions are printed. If you cannot make such arrangements, I shall be glad to send you a sufficient number so that you could put a copy into the hands of each of the teachers in your high school.

To F. L.—The method of distribution which I have suggested is that each superintendent receive a sufficient number of each one of the leaflets so that through the hands of the teachers he can put a copy into the hands of each family

which is represented by pupils in the schools. If you will let me know how many families there probably are which have children in the schools of the two towns, \_\_\_\_\_ and \_\_\_\_\_, I shall be glad to send you a large enough number of copies to go around. It is much better, I think, to put into the hands of the pupils or the parents only one leaflet at a time. The general public, as well as the children, are more likely to learn short lessons than they are longer ones.

#### DISEASED ANIMALS.

##### **Mange.**

To W. D. B.—Answering your inquiry in regard to the horse reported to have the mange, I will say that your local board of health would have no authority to destroy the horse, and I do not understand that it would have authority to take any action in the case. If it were a case of glanders the Cattle Commission could take action, but I think they would do nothing in connection with a disease of horses like that of which you write. You could find out, however, by writing to the secretary, Mr. John M. Deering, Saco, Maine.

To F. H. J.—The State board of health does not wish to impose any unnecessary duties upon local boards of health or to advise them to undertake anything which is not really necessary in the interests of the public health. I would, however, say that the mange with which the dog is afflicted is a disease which may be transmitted to children. It might be well therefore for you, if it comes in your way, to advise the complainant to keep his children away from the dog or to caution them not to play with him. There is, however, no danger of that skin disease causing the dog to become mad. He can have hydrophobia only by having it inoculated into his system through the bites of other animals which have the same disease.

It looks to me as though it would be a good case for the Society for the Prevention of Cruelty to Animals to take up. The owner should be required to kill the dog to relieve him of his sufferings or to cure him promptly. I would advise you to have nothing to do with this case as secretary of your local board of health. As a citizen you can, of course, do what you deem best.

**Glanders.**

To O. H. B.—I agree with you that the drinking fountain for horses is one which is well calculated to distribute glanders or any other infectious disease which horses drinking from the fountain may happen to have, but as it is not used for human beings as a drinking fountain your local board of health would have no jurisdiction in the matter.

To E. S.—I knew that glanders is communicable to many kinds of animals. When I received your letter, I did not know whether dogs belonged in the list. I could not take the time to look the matter up until now, and I find that one authority says that "the only domestic animal which seems to be exempt is the ox. Sheep are especially susceptible to glanders. Goats, dogs, cats, prairie dogs, polar bears, lions, rabbits, guinea pigs, mice and swine have been known to be infected with the disease."

Another author mentions aside from man, horses and mules, the following animals as being subject to the disease: "rabbits, guinea pigs, mice, cats, goats and sheep."

To G. M. O.—The State board of health has no authority to take action in the matter. It is the duty, however, of local boards of health, when they have good reason to suspect that a case of glanders in a horse exists in its town, to notify the Cattle Commission of the fact. The Cattle Commission will then probably send a veterinary surgeon to examine the animal. It would be well for you and your neighbors to make an application to the local board of health to make a preliminary investigation, for the purpose of satisfying themselves whether there is good reason to believe that the animal has glanders. If there should be any hitch upon the part of the local board of health it would be well for you to send a petition direct to the Cattle Commission—Hon. F. O. Beal, Bangor, Maine, Chairman of that Board.

**Rabies.**

To Dr. ———.—I am sorry to learn of the accident to you, but I should apprehend no hydrophobic danger to you if you receive somewhat promptly the proper anti-rabic treatment. As you undoubtedly understand, bites through clothing are not so dangerous as bites upon the unprotected parts of the body, and lesions which do not penetrate further than

the skin or the subcutaneous tissue are not so dangerous as those which go deeper. Nevertheless, I should certainly advise you to subject yourself to the Pasteur treatment. I think there is no institution nearer than that in New York. I will, however, get Dr. Harrington, Secretary of the State board of health of Massachusetts, over the telephone in the morning near the opening hour of his office and ask his advice as to whether his board has been doing anything in preparing the anti-rabic serum and whether there is any place in Boston where trustworthy treatment could be carried out for you.

It may be of interest for me to say that in your case only a short treatment would probably be deemed necessary. I think that a cauterization as late as thirty-two hours after the infliction of the wound would have no effect in destroying the infection or arresting the disease. I have been looking up some trustworthy authorities here in the office just now and it is stated that the chances for arresting the disease by cauterization disappear entirely within twenty-four hours. On the other hand, it is encouraging to know that the very lowest rate of mortality is found in persons who have bites like that which I understand yours is—very superficial bite and probably through clothing. The shortest period of incubation which I can find any record of, is that of a case under the care of Prof. Penzoldt of Germany, which was eleven days. That was altogether exceptional for brevity.

Of persons who have received the anti-rabic treatment, those who are put under treatment within the first week after the bite, have shown a much lower mortality rate than those who began treatment during the second or third week. I should, therefore, advise you to be making arrangements to go away to receive the treatment at an early date.

Secretary, Local Board.—I have received information from your town that a dog which came from Massachusetts went mad and bit hens, cows, and other dogs. This introduction from Massachusetts of the infection of rabies or hydrophobia is a very serious matter, not only on account of the danger to the life of the people on your island, but it will be a serious blow to the summer business of your town and to surrounding towns unless very prompt and efficient measures are taken to prevent anything further in the way of a mad dog scare.



My advice to you is to get the cooperation of your municipal officers and of your people generally in preventing any further development of this disease. You should trace out as fully as possible every instance in which there is any probability, or it would perhaps be better to say any possibility of any dog or cat having been bitten by that dog from Massachusetts. All such animals should be kept under observation in such a way that if they manifest any symptoms they may not get away. It would be better to kill all cats which may possibly have been bitten. I would advise that all dogs which may possibly have been bitten be muzzled, and further, that they be very securely chained up until it is known whether they will become mad. Either that, or kept shut up constantly so that there may be no possibility of their getting away.

The whole territory upon your island which that dog coursed over after he became mad should be traced out. Kindly report to me any further information in regard to the matter which you may be able to learn.

**Tuberculosis.**

To V. D. A. Of course, it is impossible for anyone to make a diagnosis as to the nature of the disease which your cow has from what you write, but there seems to be good reason to believe that it may be tuberculosis. I would advise you to communicate with the Secretary of the Board of Cattle Commissioners, John M. Deering, Saco, Maine. He will undoubtedly send a veterinarian to examine the cow and if the veterinarian's diagnosis is tuberculosis, he will slaughter her.

Meanwhile if you are using the milk from the cow, I should advise you to bring it to the point of simmering or at least to a temperature so that the steam is given off freely and keep it at about that temperature for ten or twenty minutes stirring it occasionally to prevent a scum forming on the top.

A. H. B.—The State board of health has nothing at all to do with the matter of testing tuberculous animals. You should report to the Cattle Commissioners. Mr. John M. Deering, of Saco, is secretary of the Cattle Commissioners.

W. H. L.—Answering your letter, I would say that if you suspect that you have tuberculosis among your cattle, you should make an application to the Board of Cattle Commission-

ers to send a veterinarian to your place for the purpose of examining the animals and testing them with tuberculin. Hon. F. O. Beal of Bangor, Maine, is president of the Board of Cattle Commissioners.

The legislation which was passed last winter provides that the Cattle Commissioners may make tuberculin tests at the expense of the State. I should think it would be well for you to apply to the Cattle Commissioners soon, for if your cattle have tuberculosis, you want to get rid of it soon as possible. I am sending you a circular of the State board of health in regard to the tuberculin test. I am also sending you a copy of one of the bulletins of the board which has the proceedings at a conference of the State board of health with various other authorities.

To E. O. L.—It is impossible, of course, for me to give you any information as to what the trouble is with your cow. The cough is of course suspicious and suggestive of tuberculosis. Many animals remain in good condition for some time after tuberculosis begins. If you will heat the milk so that it will almost simmer, that is, so that the steam will be given off freely and stirring it a few times so as not to let the scum form on top of it, you may rest assured that any possible infection of tuberculosis which may be present will be destroyed. I would advise you to do that until the question has been settled whether the animal has tuberculosis or not.

It would be well for you to notify the Cattle Commissioners. Mr. F. S. Adams, Bowdoinham, Maine, is the nearest member of the Commission to you. If the Cattle Commission deems it probable from your description that the cow has tuberculosis they will probably send a veterinary surgeon to examine her.

#### **Tuberculin Test.**

To A. V. D.—Your letter of July 11 was interesting to me but I am unable to answer your questions. I do not understand that the fees or charges of veterinary surgeons are in any way fixed by law or any rule or regulation of the Cattle Commission unless the veterinarians are employed by the Commission; if so, I presume that they regulate their charges or have an understanding with them about that. Perhaps veterinarians themselves or their society have a fixed schedule of fees, but I do not

know whether that is so or not. I presume it is a matter to be arranged between the veterinarians and their employers. If a veterinary surgeon went to a dairy where there was a large number of animals he could well afford to charge only one dollar, but if he went out to examine a very few there would not be much in it for him if he charged only one dollar per animal and put in the time which he should put in in waiting to see whether there may or may not be a reaction.

If the Cattle Commissioners sent the doctor to examine your cows, I presume Mr. John M. Deering, Secretary of the Commission, Saco, Maine, would be able to tell you whether the charges are the customary charges under circumstances like those in attending your animals.

#### DEAD BODIES.

##### **Disinterments.**

To D. C. E.—The danger from the infection of tuberculosis in disinterring the bodies of persons who have died of that disease is very slight indeed. No special precautions need be required.

The bodies of persons who have died of diphtheria, scarlet fever or smallpox should not be disinterred unless precautions are taken against the spread of the infection. After a few years it is not likely that there would be any danger in moving such bodies; but I am not sure of that. The infection of scarlet fever and of smallpox has been preserved in an active form for several years in clothing or other articles which have been packed away where they would not be subject to the influence of the air and light.

A permit from the town clerk of the town in which the bodies lie buried is required for all bodies to be disinterred. A permit from the State Board of Health is required only when the disinterred bodies are to be shipped by railway or other common carrier.

To P. W. M.—You will find the rules of the State Board of Health governing the disinterment of bodies upon the backs of the enclosed blanks. When these blanks were printed, a permit from the State Board of Health was required for every disinterment; but about two years ago the Board voted that thereafter a permit from this office would be required only when the

body was to be transported by railroad or other public carrier. The permit from the town clerk of the town where the body lies buried must be obtained for every disinterment and that one is sufficient when the body is to be moved by private conveyance or simply from one grave to another. Of course, when the death has been caused by an infectious disease it is better to consult with the local board of health about the removal.

To E. I.—Nobody among the local authorities in a town is authorized to issue disinterment permits except the town clerk, and when the disinterred bodies are to be removed just from one grave or from one lot to another, or transported by private conveyance, that is all the permit that is required; but when they are to be shipped by rail or other common carrier, a permit for disinterment from the State Board of Health must be obtained in addition to the permit from the town clerk. In that case, the railway rules and regulations also require a permit from the local board of health and the attending physician. I am enclosing one of the transit permits, the yellow ones, which must be used by licensed embalmers for the transportation of dead bodies by rail.

To B. H.—The disinterment and transportation of the remains in the case of which you write would have to come under Rule 8. I presume your personal opinion and my personal opinion might be in agreement as to whether that Rule 8 should apply to such cases as that. We adopted those rules and regulations because they are in existence in other states. It is quite likely that some of those rules can be modified in a conference between the State board of health and the National Undertaker's Association, before long; but I have no right to waive any of the requirements as they now stand in the rules. I must leave it to you to do what you think is required by the law under the rules and regulations, and by a due regard for the public safety.

To C. T.—When bodies are to be removed from a receiving tomb, and also when bodies are to be disinterred and transported to other towns nothing in the way of a permit is required except that of the town clerk of the town in which the bodies are buried, provided they are to be transported by private conveyance. The law relating to this matter is only a regulation of the State Board of Health which, after having had the approval of

the Governor and Council as it did, has the force of statute law. I am sending you samples of the transit permits used when bodies are to be shipped by railway. The white ones are for the use of registered undertakers and the yellow ones for those who have appeared for examination and have received certificates as licensed embalmers and undertakers.

To J. L.—In your application for a disinterment permit, you did not give the cause of death of ————. Unless there is a statement of the cause of death, the transportation companies would not, or should not accept the body, and I should not wish to issue a permit, when the cause of death is not stated, unless the indications were that the death occurred a long while ago.

To Town Clerk.—I am unable to tell whether it will be expedient and best for you to issue the permit. Do as your best judgment dictates. I do not understand that you would incur any personal responsibility in issuing the permit. There is, however, a question whether the persons who disinter the body and make the removal may not.

To M. H. L.—Referring to what you write about forms for the disinterment of bodies, I would say that this Department does not furnish any special forms for that purpose, but has frequently advised town clerks that they can use the ordinary burial permit blank by making a slight change with the pen.

#### **Smallpox.**

To J. F. I.—Sometime ago there came to this office an application for a permit from Mr. ———— for the removal of the remains of his father, the late ————, who died of smallpox in the town of ———— in 1876. In the seventies, smallpox was quite prevalent and the type of smallpox which then prevailed was very malignant. It is not likely that infection would remain in the ground so great a length of time, but we are not sure about that. The infection of smallpox, when packed away in clothing or in other places where it is not subject to the action of the air and sunshine, has been known to retain its vitality and its full malignancy for years. I should, therefore, deem it advisable for the local board of health to insist that the work of disinterment and removal be done by some person who is known to be well protected against smallpox by vaccination. A recent and successful vaccination would be a better protection against

possible infection than an attack of smallpox which occurred years ago. Aside from the precaution of having the disinterment done by some person who is protected by vaccination, I would make the following recommendation.

Have the remains, after their removal from the burial place, placed in a perfectly tight box, coffin or casket. After the remains are put in the box or casket have a sheet dipped in a solution of formaldehyde and placed within the box or casket and over the remains. For this purpose have at least half a pint of the strong 40% solution of formaldehyde as it is obtained from the druggist. After moistening the sheet, pour one ounce, one-eighth of the contents of the bottle, into a quart of water. Saturate the sheet in this dilute solution before spreading it over the remains, and then when the sheet is in place pour over it at least half of the remaining quantity of strong formaldehyde. Advise the person who is doing the work not to get the strong formaldehyde upon his hands. After the formaldehyde is poured into the box or casket put the cover on immediately and close it down tightly, the enclosing box or casket not to be reopened. Before the box is transported wash the outside of it thoroughly with some of the dilute solution.

Before the person who has done the disinterment and is to accompany the remains to its final burial place leaves the place of disinterment he should take off the suit which he has had on while making the disinterment, disinfect himself by washing his hands, arms, face, head and beard thoroughly in a disinfecting solution made by dissolving two of the ordinary tablets of bichloride of mercury (corrosive sublimate) in one quart of water, being careful not to get the solution into his eyes or mouth. Having disinfected himself thus he should put on a suit of clothes which he is to wear while accompanying the remains to the town of ————. On the journey to and from ———— it would be better to arrange for the man who accompanies the remains not to go into any houses. He can, of course, at this season of the year sleep comfortably enough upon a haymow or most anywhere. If the disinfection and change of clothing have been made there would hardly be need of prohibiting the going into places to take his meals, but I think, upon the whole, it might be better for him not to do so.

## MISCELLANEOUS.

**Barber's Shops.**

To C. P. S.—I know of no way in which you can legally control barber shops so that the work therein done will be reasonably free from the danger of communicating infection from person to person except by the adoption of by-laws relating to the subject. I herewith submit for the consideration of your board a set of by-laws. If your board thinks it is what you need, have them signed by all of the members of your board and then if you will return them to me, I will see whether I can get the approval of one of the justices of the Supreme Court for you if you wish me to do so.

Kindly get as much definite information as you can in regard to the cases of barber's itch which emanate from the barber shop to which you refer, the names of the persons affected (of course, not to be made public), the length of time required to cure the trouble, etc.

**Destruction of Property.**

To P. E. S.—I would caution your local board against burning the two houses, or camps, or shacks, or whatever they are, or authorizing any person to do it unless you have the matter fixed in writing so that the members of your board may not be held responsible and made to pay for the buildings thus destroyed. It has happened in a few instances that local boards of health have thus put themselves in an unpleasant position. The value of the shack which might have been worth \$20, suddenly went up in value when the building went up in smoke.

Perhaps the persons who are clamoring for you to burn the buildings may be willing to contribute enough to satisfy the owners of these camps. Then, with the written consent of the owners, it would be safe for you to burn them.

Any kind of a house or camp can be disinfected efficiently. If it isn't tight enough to hold the fumes of formaldehyde liberated in accordance with the directions in Circular 75, you could spray the whole interior of the camps including the floors with a plentiful quantity of the weak solution of formaldehyde, Solution 7, as you will find it in the scarlet fever circular. In addition to that, the clothing and bedding should be disinfected by boiling or by soaking in a disinfecting solution, Solution 6 or

Solution 7. Solution 6, however, should not be left where careless or ignorant persons may get hold of it.

To C. W. G.—Referring to your letter just received I would advise you, under no condition, to apply the torch to that old house, even if it is practically worth nothing. If it should be burned, as the only method of cleansing it, have the burning done by the owner or through his orders—through his written order if your board of health has anything to do with burning it. Where this precaution has not been observed, even where the old shack is worth practically nothing at all, local boards of health, in a few instances, have made trouble for themselves.

There is a question whether, if this family were moved into better quarters, would not the better quarters be just as filthy in a short time? Perhaps some missionary work needs to be done with this family, and is the only possible solution for the filthy question.

Really if the condition of the family affects only themselves, I should hardly wish to advise your local board of health to take any action as a board, but as citizens, you can of course do your part in anything to better their condition.

To R. F.—There is no provision in the law for reimbursement where articles are destroyed by local boards. The State board of health advises local boards to destroy just as little property of that kind as possible. Most of it can be disinfected by formaldehyde or otherwise, but in this case, it was probably the wisest course to burn those two mattresses.

#### **Respirators.**

To A. K. C.—I heard from Mr. ——— to the effect that they have what is called the Anti-Dust Respirator, which they sell for \$1.25.

In one of our French journals an article refers to the efficiency of respirators for the purpose of excluding harmful varieties of dust from the respiratory organs, and cites an example which was to the effect that a man 45 years of age who had been employed for 15 years in the grinding of colors used in the coloring of porcelain, and working in an atmosphere saturated more or less with lead in a finely powdered condition was suffering with lead paralysis, and other symptoms accompanying lead poison. He had been reduced in weight very much, but



after beginning to wear constantly a mask-like respirator there was a very rapid improvement in his general condition, and increase in his weight. This case is mentioned as an example of the beneficial use of a respirator.

I regret that I cannot give you more trustworthy information, but I would suggest, if this respirator which Mr. ——— has is not efficient, that you use your own judgment in making a change in the fabric which covers it, using ordinary surgical gauze, or cheese-cloth of various degrees of fineness of texture, and changing the number of thicknesses until you or your patient finds what will furnish the most complete protection.



## REPORT ON THE WORK AT THE LABORATORY OF HYGIENE.

Sept. 1, 1906, to Dec. 31, 1909.

H. D. EVANS, Director.

During the past three and a third years, covered by this report, there has been but one change in the personnel of the laboratory force. On Oct. 1st, 1907, the resignation of Mr. H. F. Quinn took effect, and his place was filled by Mr. C. S. Kingsley, who still holds it. During the year 1909 another assistant was added to the working force, as will be noted later. No change in the laboratory location has been made in the period covered by this report. No provision was made by the Building Commission for laboratory quarters in the remodelled State House, so that, with the short lease which we hold on the present quarters and the rapidly increasing amount of work, the question of new and larger quarters will have to be met in the near future.

Since the establishment of the laboratory two lines of work have been carried on, i. e., chemical and bacterial. The scope of the work along both lines has been extended during the past three and a third years. In addition there has been a very great increase in the amount of all kinds of work coming to us. This increase has been so great that it has necessitated giving up all research work, although the need of much along these lines has been called to our attention. Even with our increased force another man is needed to give attention to clerical and routine work, thus permitting investigation of the many questions that are calling for research attention in vain.

At the close of this report tabulations will be given which will show the amount of work during the period covered by this report, and the saving to the State through the work of the laboratory.

## CHEMICAL WORK.

I. During the summer of 1907 the laboratory was equipped for milk work on a moderate scale, and the State Board of Health notified the local boards of health that its services were open to them in the investigation of their local supplies. Practically no advantage of this offer was taken by the local boards, as is shown by the fact that but 5 samples of milk came to us during that year.

The Department of Agriculture, wishing to make extended investigations of the milk supplies of the State, was permitted to send to the laboratory as many samples as we could attend to with our regular routine work. In order to take care of this extra work considerable increase in our equipment along this line has resulted. An inspector was engaged by the Department of Agriculture to collect the samples and to see to the enforcement of the milk laws in cases of adulteration. The work on the milk supplies was started in the month of October, 1908, and has continued to the present time.

The added amount of work thus brought to the laboratory quickly exceeded its capacity, and at the 1909 session of the legislature the Department of Agriculture obtained an increase in their dairy appropriation, which enabled them to pay the salary of the needed assistant. As a result, in July, 1909, Mr. E. W. Johnson entered the employ of the laboratory, and still remains.

Since the cooperative work with the Department of Agriculture has been under way 613 milk samples have been examined for adulteration and for their general purity. Out of these 23 have been found adulterated, a percentage of 3.7. All of these cases were prosecuted and convictions obtained.

In the beginning of 1909 the examination of butter was also undertaken by the Department of Agriculture, and the samples were turned over to the laboratory for examination. The milk inspector of the Department took these samples. During the year 1909 we have examined 109 samples reputed to be butter, and have found 26 of these to be composed wholly or in part of foreign fat, and 6 to be renovated butter. This represents a total adulteration of 29.3%. Out of these 32 cases of adulteration there have been 15 prosecutions, with 12 convictions. Two of the defendants were discharged owing to faulty collection of the samples, and one case was nolle prossed.

As the full reports on the milk and butter work are published by the Department of Agriculture in their bulletins and reports the above summary only is included in this report. It is interesting to note that the increase in the dairy work for 1909 over that for 1908 is 56%, and the indications are for a much greater ratio of increase for 1910 over 1909. In all cases of dairy adulteration the Director of the laboratory has been called by the court as the expert on whose testimony convictions were obtained.

All milk samples have been subjected to a routine examination, which has included the determinations of total solids, solids not fat, fat, specific gravity, coloring agents and preservatives. In all cases where the above analysis has pointed to watering or skimming of the milk refractometer and proteid determinations have been made for the sake of their confirmatory evidence.

All butter samples are examined by the refractometer and foam tests, and all that show the slightest evidence of not being pure butter are examined for the volatile acid content. The methods of analysis in all dairy products have been those of the Association of Official Agricultural Chemists.

In addition to the above dairy work three samples of cheese have been examined at the request of physicians. The samples were all suspected of causing ptomain poisoning. In all three cases the very poisonous ptomain "tyrotoxin" was found to be present.

II. *Water Analyses.* The regular work of analysis of such samples of water as may be sent to us by physicians, or by persons on their recommendation, has been continued as in previous years. In addition to this an attempt has been made to obtain quarterly samples from all the public water supplies of the State. In the absence of any law compelling the same we have had to get the samples from those water companies who were willing to send them, and from the secretaries of the local boards of health in those places where the water companies would not furnish them. As a result, the task of obtaining these samples has been a time-consuming one, but at the end of 1909 we have arrangements completed by which all but three of the water supplies of the State will be coming to us at quarterly intervals in the future.

This work was started in July, 1907, when letters were sent to the Superintendents of the various water companies in the State, asking their cooperation in the work of collecting and forwarding the samples to us. A very general response to this letter was made by the different companies. When several letters had failed to obtain any response from this quarter the secretaries of the local boards of health in these towns were applied to, and very generally gave us their aid. By the aid of these health and water company officials we are now in the way of obtaining a mass of valuable information in regard to the condition of the water supplies of the State. It is the hope of the laboratory that within a short period it will be possible to make a sanitary inspection of the sources of all of these supplies, after which a full analytical and sanitary report can be made on the public water supplies of the State.

The methods of analysis employed with all these water samples are, in the main, those of the American Public Health Association; and in the following tabulations all results are expressed in parts per 100,000.

During the time covered by this report there have been examined 2249 samples of water. This represents a steadily growing rate of increase in the water work of the laboratory. The rate of increase of 1907 over 1906 was 14%; that of 1908 over 1907 was 65%; and that of 1909 over 1908 was 53%.

These samples have come to us from every section of the State, as the appended list of analyses shows. Even many plantations in the extreme northern and eastern sections of the State are represented in this list. The samples have come from every possible source; dug, drilled and driven wells, springs, ponds, streams and rivers, and cisterns all being represented. There have also been several ice samples examined from ice supplies in the Kennebec valley. Of the 2249 samples examined 1000 have come from wells; 510 from springs; 398 from ponds; 318 from rivers and streams; 10 from cisterns, and 13 have been ice samples. In this list is included 787 samples from the public water supplies of the State, which are taken up in detail below.

In 397 of the above samples lead has been found, the lead being in all cases derived from lead pipes which were used to convey the water. Lead is tested for in all waters that are drawn through lead pipes, and our records showed that the

use of such pipe was quite prevalent in certain sections of the State. As a result of this the State Board of Health sent to the physicians of the State a bulletin on lead poisoning, and during the past year and a half the above samples have come to us.

The waters of this State, save in the northern section, are very soft, and contain quite an amount of dissolved carbon dioxide. As a result they are ideal lead solvent waters. If we except the hard waters of the northern section, which are derived from a region underlaid by calcareous slate, 95% of the waters sent to us, which have been drawn through lead pipes, show the presence of lead in excess of 0.04 parts per 100,000. No fuller report of this matter is here made as the State Board of Health is collecting the case histories connected with these samples for a special report.

It is worthy of note that over 90% of the samples, outside of the samples from the public water supplies, have come to us either from physicians, or have been sent on the advice of a physician who has suspected the water of causing sickness. As a result the large number of polluted samples shown in the tabulations should not be taken to represent the general condition of the well waters of the State, for we have been able to practically eliminate the applicant who simply wishes an analysis for motives of curiosity, and to confine our work to those waters whose purity is open to question.

#### PUBLIC WATER SUPPLIES.

Between the time of our last report and the inauguration of the system of quarterly analyses of the public water supplies in October 1907 there were several water companies who sent us samples at fairly regular intervals. These samples have been included in the tabulations with the quarterly analyses since the above date.

The laboratory appropriation not permitting of visiting the plants of the various water companies for an inspection of the watershed, the information given below in regard to each supply has been gathered through correspondence with the Superintendents of the companies, and from the local health officers. In a few cases where particular complaint about existing conditions has arisen the Director has visited the sources of

supply for purposes of inspection, and in these cases the reports of conditions at the source of supply are fuller than in the majority of cases. It is essential that means be provided for a thorough inspection of the sources of the supply of all our towns, so as to obtain information as to their present condition which will enable any future pollution of the watershed to be at once detected.

At the close of 1909, 88 public supplies were on our list. The chemical condition of these supplies, together with such information as could be gathered in regard to them is appended below.

#### AUBURN.

The city of Auburn takes its supply from Lake Auburn, a body of water about three miles long by two miles wide, and located about three miles from the city limits. The lake is spring fed, but two or three small brooks entering it. The water flows by gravity to the city, and is there pumped into the reservoir. The shores of Lake Auburn are largely used for summer homes by the people of Lewiston and Auburn, while there is an electric railway park on the shores. To prevent pollution of the water stringent rules both for building and for the care of privy and drainage refuse are in force. No refuse of any kind is allowed within 200 feet of the shore of either the lake or its tributary brooks, and a patrol of its shores is constantly maintained during the season of open water, to see that there are no violations of the law. Sanitary regulations are also in effect governing the disposal of all waste from boats, which use the lake for either fishing or pleasure. It is stated that it is a matter of pride among the cottagers at this lake to have everything conform to the most exacting regulations. As a result no sickness has ever been traced to this water, while the chemical and bacterial analyses have always showed it to be in the best possible condition.

The Water Works, while originally a private corporation, are now in the hands of the City, and are operated by a board of three members. The samples from this supply have been sent by the Board of Water Commissioners.



AUBURN.

Number.	Date of Collection.	APPEARANCE.				RESIDUE ON EVAPORATION.			AMMONIA	NITROGEN AS		Chlorine.	Hardness.	Lead.
		Turbidity.	Sediment.	Odor.	Color.	Total.	Fixed.	Free.	Albuminoid.	Nitrates.	Nitrites.			
1202	Oct. 22, 1907	0	0	Slight	0.5	3.0	1.4	.0006	.0090	Trace	0	.20	2.3	0
1325	Jan. 13, 1908	0	0	Slight	0.6	3.3	1.6	.0014	.0088	0	0	.17	2.0	0
1431	Apr. 11, 1908	0	0	Slight	0.7	3.5	1.6	.0012	.0105	0	0	.19	2.0	0
1599	July 13, 1908	0	0	Slight	0.5	3.0	2.0	.0006	.0074	0	0	.21	2.3	0
1814	Oct. 17, 1908	0	0	Veg.	0.6	3.2	1.8	.0014	.0076	0	0	.22	1.9	0
2000	Jan. 12, 1909	0	0	Slight	0.3	3.6	1.8	.0012	.0116	0	0	.20	2.3	0
2279	Apr. 20, 1909	0	0	Veg.	0.6	3.0	1.6	.0014	.0078	0	0	.20	2.3	0
2551	July 20, 1909	0	0	Veg.	0	4.0	2.3	.0008	.0146	0	0	.20	2.1	0
2892	Nov. 3, 1909	0	0	Veg.	0.2	3.4	2.1	.0009	.0111	0	0	.175	2.4	0

AUGUSTA.

The Maine Water Company formerly supplied this city with drinking water from the Kennebec River. This river is very badly polluted by sewage from Madison to Augusta, and as a result disastrous typhoid epidemics were the rule in this city. This condition led to the formation of the Augusta Water District, and to the changing of the source of supply, in 1905, to Carleton Pond. The water flows by gravity from Carleton Pond to the reservoir, while in addition auxiliary pumps were installed to Cobbosseecontee Lake, to be used in case low water should render Carleton Pond unavailable at any time. This arrangement furnishes a Carleton Pond supply as long as it will meet the demand, while it guarantees the city an abundant supply of pure water under all conditions. But little use has ever been made of the pumps at Cobbosseecontee Lake, as the Carleton Pond supply has met all the demands upon the system. The use of this water has rendered typhoid fever a thing of the past in the city.

Carleton Pond is situated entirely in woodland, with no houses near, and no chance of pollution by either human or animal sewage. The Water District owns the shore rights about the entire pond, and the shores have been carefully cleaned of all vegetable material to a point well above high water mark.

Some slight inconvenience was experienced during the summer of 1908, due to a slight growth of *Uroglena*. The trouble was, however, of very short duration and was not such as would render the water at all objectionable. In fact it was not to be noticed in the higher sections of the city. The trouble did not reoccur in 1909.

## AUGUSTA.

Number.	Date of Collection.	APPEARANCE.						RESIDUE ON EVAPORATION.		AMMONIA.		NITROGEN AS		Chlorine.	Hardness.	Lead.
		Turbidity.	Sediment.	Odor.	Color.	Total.	Fixed.	Free.	Albuminoid.	Nitrates.	Nitrites.					
773	Sept. 12, 1906	0	0	Veg.	2.1	3.1	1.6	.0016	.0142	0	0	.14	1.7	0		
856	Nov. 14, 1906	0	0	Veg.	2.2	3.3	1.7	.0014	.0154	0	0	.14	2.1	0		
880	Jan. 9, 1907	0	0	Veg.	2.6	3.2	1.9	.0022	.0142	0	0	.16	2.1	0		
912	Mar. 1, 1907	0	0	Veg.	2.2	4.5	2.4	.0028	.0174	0	0	.15	1.8	0		
931	Mar. 19, 1907	0	0	Veg.	2.3	4.2	2.1	.0010	.0136	.01	0	.15	2.0	0		
956	Apr. 16, 1907	0	0	Veg.	2.2	3.6	1.4	.0020	.0150	0	0	.15	2.0	0		
978	May 15, 1907	0	0	Veg.	2.3	3.5	1.6	.0014	.0134	0	0	.15	1.7	0		
1015	June 20, 1907	0	0	Fishy	2.2	3.2	1.6	.0022	.0146	0	0	.15	1.7	0		
1063	July 16, 1907	0	0	Veg.	2.4	3.7	1.8	.0008	.0124	0	0	.15	2.0	0		
1110	Aug. 14, 1907	0	0	Veg.	2.1	3.3	1.9	.0014	.0114	0	0	.14	1.7	0		
1182	Oct. 17, 1907	0	0	Veg.	2.2	3.3	1.9	.0012	.0122	0	0	.16	2.1	0		
1272	Dec. 12, 1907	0	0	Veg.	2.1	3.8	2.2	.0008	.0122	0	0	.15	2.1	0		
1312	Jan. 7, 1908	0	0	Grassy	2.3	3.8	2.1	.0004	.0134	0	0	.18	2.9	0		
1412	Apr. 6, 1908	0	0	Veg.	2.3	4.2	2.3	.0022	.0148	0	0	.17	2.0	0		
1549	June 26, 1908	0	0	Veg.	2.1	3.3	1.5	.0012	.0102	0	0	.15	2.2	0		
1742	Sept. 25, 1908	0	0	Veg.	1.6	4.1	1.7	.0020	.0132	0	0	.17	2.7	0		
2015	Jan. 16, 1909	0	0	Veg.	2.1	3.1	1.9	.0018	.0112	0	0	.17	2.2	0		
2241	Apr. 8, 1909	0	0	Veg.	1.5	3.9	1.6	.0006	.0130	0	0	.17	2.6	0		
2499	July 8, 1909	0	0	Veg.	2.2	3.3	1.4	.0008	.0108	0	0	.18	2.3	0		
2816	Oct. 16, 1909	0	0	Veg.	1.8	3.5	1.7	.0010	.0144	0	0	.22	2.4	0		

## BANGOR.

The city of Bangor takes its water from the Penobscot River about a mile above the railroad bridge. Within ten miles above the intake is the city of Oldtown and the towns of Orono and Veazie, with a combined population of about 14,000, all of which sewer into the river. In addition, in the same distance, a great amount of pulp waste liquors are poured into the river by the mills that line the shores, and much sawdust is disposed of in the same cheap way. The entire distance from Oldtown to the water-works dam is very quick water, thus giving no time for sedimentation or purification.

As was noted in previous reports, this city has had more than its share of typhoid epidemics, due to the use of this water which, up to 1904, was used without any attempt at purification. After the great epidemic of that year a mechanical filtration plant, using alum and either lime or soda, was installed. As was shown in the report made on this plant two years ago this equipment has failed signally to do what it was both expected and guaranteed to do. So evident did this become that a sedimentation basin was installed to relieve the overworked filters. This was put into operation in June 1908. The first sample obtained after this basin was put into use was a first-class one, and represented a first-class water. At that time I reported that it was an open question whether this basin would continue to maintain its then efficiency in view of the difficult character of the water treated, its great variations in organic content, and especially in view of the fact that the present filter units seemed insufficient to take care of the amount of water the city needs, without working under too great a head to give them their full efficiency.

Subsequent samples during 1909 have borne out this supposition, as in practically every subsequent analysis the filters have been working under such a head as to force some of the coagulant through the sand and into the clear water well. In some cases also there has not been thorough coagulation. At the time of this report the water is in far from a satisfactory condition, and at the present time there is an agitation in the city for the installation of more filter units and thus give the sedimentation basin only its proper work to do.

Up to Nov. 26, 1907, monthly analyses of both the raw and the filtered water were made. Since that time a chemist has been employed at the filter plant, and only the quarterly analyses of the filtered water have been made.

As the results published in my previous report showed, so these present figures prove that the water during the time covered by this report is not a fit or safe one for domestic use. The plant has not only failed to fulfill its guarantee in the matter of bacterial and color removal, but the high rates of filtration forced on the plant have resulted in the presence of considerable amounts of suspended hydrate of aluminum in the "filtered water." It seems hardly likely that this water will be satisfactorily treated until a modern plant is built designed

to handle a water of the complex character that this river water offers.

During the past three years the recognition of the above facts has led the city to sink numerous so-called "artesian wells" in its school-house grounds. These have varied in depth from 72 feet to 287 feet, and have been drilled through the slate formation that underlies the city. This slate contains much calcareous cementing material, and as a result the waters are all very hard, but, aside from this one economic factor, they have been of good quality. These wells have been used by nearly all of the people living near who do not use spring water for this purpose.

## BANGOR—(RAW RIVER.)

Number.	Date of Collection.	APPEARANCE.				RESIDUE ON EVAPORATION.		AMMONIA		NITROGEN AS		Chlorine.	Hardness.	Lead.	
		Turbidity.	Sediment.	Odor.	Color	Total.	Fixed.	Free.	Albuminoid.	Nitrates.	Nitrites.				
788	Sept. 18, 1906	0.1				3.8	5.7	2.2	.0020	.0164	Trace	Trace	.08	2.3	0
818	Oct. 8, 1906	0.2	Slight	Veg.		4.2	5.7	2.6	.0034	.0208	Trace	0	.08	2.3	0
838	Oct. 30, 1906	0.3	Veg.	Veg.		9.1	6.8	2.5	.0044	.0288	Trace	.0008	.12	2.2	0
873	Dec. 26, 1906	0.2	Veg.	Veg.		5.0	5.0	2.4	.0032	.0154	Trace	0	.10	2.4	0
890	Jan. 21, 1907	0.2	Veg.	Veg.		5.7	5.2	2.3	.0036	.0172	Trace	0	.13	2.4	0
903	Feb. 19, 1907	0.3	Veg.	Veg.		5.0	6.0	2.5	.0024	.0172	Trace	0	.14	2.6	0
932	Mar. 25, 1907	0.2	Veg.	Veg.		5.2	6.6	3.0	.0022	.0176	Trace	Trace	.13	2.8	0
958	Apr. 15, 1907	0.7	Veg.	Veg.		5.1	5.0	2.0	.0028	.0190	0	.0006	.13	2.0	0
976	May 14, 1907	0.6	Veg.	Veg.		5.9	3.8	1.6	.0022	.0168	Trace	Trace	.07	1.9	0
1009	June 17, 1907	0.1	Veg.	Veg.		5.9	4.6	1.9	.0020	.0210	Trace	Trace	.08	1.9	0
1057	July 16, 1907	0.3	Veg.	Veg.		7.0	5.4	1.9	.0022	.0194	0	0	.25	2.0	0
1104	Aug. 12, 1907	0.2	Veg.	Veg.		7.7	6.2	2.7	.0020	.0222	Trace	Trace	.06	1.9	0
1123	Sept. 24, 1907	0.7	Veg.	Veg.		6.0	7.7	3.5	.0026	.0188	Trace	0	.09	2.5	0
1226	Oct. 30, 1907	0.9	Veg.	Veg.		7.0	6.0	2.7	.0020	.0182	Trace	0	.10	3.2	0
1258	Nov. 26, 1907	0.3	Veg.	Veg.		5.5	4.9	2.0	.0026	.0154	Trace	Trace	.11	2.4	0

BANGOR—(FILTERED.)

Number.	Date of Collection.		APPEARANCE.			RESIDUE ON EVAPORATION.			AMMONIA		NITROGEN AS		Chlorine.	Hardness.	Lead.
			Turbidity.	Sediment.	Odor.	Color.	Total.	Fixed.	Free.	Albuminoid.	Nitrates.	Nitrites.			
784	Sept.	18, 1906	0.2	Slight	Veg.	2.9	6.1	3.3	.0016	.0138	Trace	0	.08	2.5	0
817	Oct.	8, 1906	0.4	Slight	Veg.	2.6	6.0	2.9	.0016	.0142	Trace	0	.10	2.6	0
837	Oct.	30, 1906	1.1	Al (OH) <sub>3</sub>	Veg.	1.5	6.8	3.3	.0086	.0150	.009	Trace	.14	3.2	0
872	Dec.	26, 1906	0.6	Al (OH) <sub>3</sub>	Veg.	1.1	4.8	3.2	.0018	.0102	Trace	0	.10	2.4	0
891	Jan.	21, 1907	0.7	Al (OH) <sub>3</sub>	Veg.	0.8	5.7	3.6	.0024	.0084	Trace	0	.14	2.9	0
904	Feb.	19, 1907	0.7	Slight	Veg.	1.7	6.3	4.6	.0016	.0130	Trace	0	.13	2.7	0
933	Mar.	25, 1907	0.5	0	Veg.	5.0	9.6	5.8	.0020	.0156	Trace	Trace	.13	4.3	0
957	Apr.	15, 1907	0.6	0	Veg.	1.7	4.9	2.7	.0022	.0094	Trace	0	.12	2.5	0
977	May	14, 1907	0.4	Al (OH) <sub>3</sub>	Veg.	1.0	4.5	3.6	.0018	.0106	0	Trace	.08	2.2	0
1010	June	17, 1907	0.1	Al (OH) <sub>3</sub>	Veg.	1.6	5.0	3.3	.0010	.0094	Trace	Trace	.07	2.4	0
1058	July	16, 1907	1.0	Al (OH) <sub>3</sub>	Veg.	1.2	6.6	3.5	.0016	.0112	0	0	.06	2.5	0
1105	Aug.	12, 1907	0.6	Al (OH) <sub>3</sub>	Veg.	3.8	6.7	4.3	.0018	.0158	0	0	.06	2.8	0
1124	Sept.	24, 1907	0.9	Al (OH) <sub>3</sub>	Veg.	4.2	7.4	3.4	.0020	.0136	Trace	0	.10	3.1	0
1225	Oct.	30, 1907	0.5	0	Veg.	6.0	7.2	3.5	.0018	.0172	Trace	0	.12	2.7	0
1259	Nov.	26, 1907	1.0	Al (OH) <sub>3</sub>	Veg.	1.7	6.8	4.4	.0018	.0128	Trace	Trace	.12	3.4	0
1343	Jan.	20, 1908	0.6	Al (OH) <sub>3</sub>	Slight	1.7	6.6	4.6	.0014	.0096	Trace	Trace	.15	2.2	0
1475	Apr.	22, 1908	0.3	0	Veg.	2.0	6.8	4.5	.0006	.0066	Trace	Trace	.10	3.2	0
1572	July	6, 1908	0	0	Slight	0.2	5.0	3.9	.0010	.0088	0	0	.09	2.2	0
1800	Oct.	13, 1908	0.2	Al <sub>2</sub> (OH) <sub>3</sub>	Veg.	0.6	5.3	3.7	.0014	.0082	0	0	.08	3.7	0
2010	Jan.	12, 1909	0.4	Al <sub>2</sub> (OH) <sub>3</sub>	Veg.	2.7	7.0	4.0	.0018	.0124	Trace	0	.10	2.2	0
2246	Apr.	12, 1909	0.5	0	Veg.	2.7	5.0	2.7	.0014	.0094	0	0	.10	2.7	0
2486	July	6, 1909	0	0	Veg.	0.7	5.1	3.4	.0014	.0080	0	0	.08	3.0	0
2825	Oct.	18, 1909	0.6	0	Veg.	1.3	5.8	3.3	.0016	.0124	0	0	.125	2.9	0

BAR HARBOR.

The supply for this town comes from Eagle Lake. This body of water is about two miles long and a mile wide, and stands at an elevation of about 200 feet above mean high tide. Owing to the elevation of the lake the system depends on the gravity head for the distribution of the water to the consumers.

Within the last three years there has been a slight tendency to build about this lake, and, as far as can be learned, no regulations have so far been established prescribing the sanitary conditions that must be observed by the cottagers. Owing to the steep and rocky shores of the lake this is a matter of great importance, as unsanitary building about this lake will result in dangerous pollution of the water. Such a condition is the last thing to be desired in a locality that is chiefly dependent upon its summer reputation as a resort.

In 1905 trouble was experienced with this water, owing to a large growth of Asterionella. At that time a small filter was

installed for use at such times as the presence of this, or any other allied organism, might cause the water to carry a disagreeable odor and taste. No subsequent trouble was had from this organism until the first of the winter of 1909, when another large growth appeared. Owing to freedom from the trouble during the past four years little attention had been paid to keeping the filter in order, and at the time the growth occurred it was frozen deep beneath the ice, and so could not be used. After about a month the trouble subsided. It was at no time as bad as during the summer of 1905.

None of the analyses have shown evidence of pollution of the water either chemically or bacterially. It cannot be too strongly urged, however, that the water company acquire shore rights at this lake, and that the local board of health obtain authority for such rules and regulations as will prevent possibility of trouble from the cottages already built, or in the process of building.

## BAR HARBOR.

Number.	Date of Collection.	APPEARANCE.				RESIDUE ON EVAPORATION.		AMMONIA.		NITROGEN AS		Chlorine.	Hardness.	Lead.
		Turbidity.	Sediment.	Odor.	Color.	Total.	Fixed.	Free.	Albuminoid.	Nitrates.	Nitrites.			
1165	Oct. 8, 1907	0	0	Slight	0.7	2.7	1.5	.0008	.0066	0	0	.50	1.3	0
1357	Jan. 20, 1908	0	0	Grassy	0.9	2.8	1.3	.0004	.0064	0	0	.50	1.7	0
1505	May 5, 1908	0	0	Slight	0.9	3.0	1.9	.0028	.0046	0	0	.57	1.5	0
1658	July 29, 1908	0	0	Slight	0.9	3.0	1.9	.0002	.0070	0	0	.60	1.4	0
1801	Oct. 5, 1908	0	0	Slight	0.7	3.0	2.6	.0006	.0052	0	0	.60	2.3	0
2052	Jan. 26, 1909	0	0	Slight	0.4	2.6	1.7	.0008	.0082	0	0	.60	1.6	0
2165	Mar. 15, 1909	0	0	Fishy	0.6	3.1	1.8	.0122	.0134	0	0	.62	1.3	0
2166	Mar. 15, 1909	0	0	Fishy	0.6	3.0	1.7	.0008	.0080	0	0	.62	1.4	0
2369	May 12, 1909	0	0	0	0.6	2.8	1.4	.0008	.0089	0	0	.55	1.2	0
2512	July 12, 1909	0	0	Veg.	0.7	3.3	2.5	.0012	.0074	0	0	.57	2.2	0
2841	Oct. 18, 1909	0	0	Veg.	0.3	2.6	1.0	.0004	.0116	0	0	.575	2.0	0

## BATH.

This city takes its water supply at present from Nequasset Lake, about four miles distant from the city, and on the opposite side of the Kennebec River. A description of this lake and its surroundings was given in the last report of this office.

The old source of supply of this city was from Thompson Brook in the town of Brunswick. The brook, which runs through woodland, was dammed and the water taken either direct from the small pond thus formed, or is taken from a pump well into which it enters after passing through a bed of sand. The water is pumped directly into the distribution system. This plant is still maintained as an emergency supply. Naturally this water is very highly colored and is liable to wide fluctuations in its organic content after rains. This water has always been found free from evidences of sewage pollution, but it in no way compares with the Nequasset supply in its general fitness for drinking purposes.

This latter supply is brought under the Kennebec River through two lines of pipes, either of which will meet the demands of consumption in the city, and the supply from Thompson Brook is only used in those rare cases where both of the pipes from Nequasset Lake are broken.

During the winter of 1905-1906 a disagreeable fishy odor and taste developed in this water, caused by the growth of large numbers of *Asterionella* and *Dinobryon* and *Uroglena*, the latter two being particularly prominent. During the time covered by the present report nothing of this kind has occurred. In the last of April, 1908, at the request of the Water Company a visit was paid to the lake and an examination of conditions made. Everything was found to be in first-class sanitary condition.

During the last three years the majority of the deadends of this system have been connected up, so that there is now a practically constant circulation throughout the entire system. This has considerably improved the quality of the water in these particular localities. The water is now in first-class condition, and has been so during the entire period covered by this report.

## BATH.

Number.	Date of Collection.	APPEARANCE.				RESIDUE ON EVAPORATION.		AMMONIA		NITROGEN AS		Chlorine.	Hardness.	Lead.
		Turbidity.	Sediment.	Odor.	Color.	Total.	Fixed.	Free.	Albuminoid.	Nitrates.	Nitrites.			
806*	Oct. 2, 1906	0.1	0	Veg.	2.6	3.3	1.5	.0026	.0162	0	0	.25	1.4	0
807	Oct. 2, 1906	0.1	0	Veg.	2.5	3.0	1.4	.0026	.0160	0	0	.24	1.2	0
865	Dec. 17, 1906	0	0	Veg.	2.3	3.3	2.1	.0036	.0134	Trace	0	.30	1.6	0
866*	Dec. 17, 1906	0.1	Slight	Veg.	2.7	3.3	2.1	.0030	.0140	Trace	0	.30	1.6	6
901*	Feb. 19, 1907	0	0	Veg.	2.6	3.0	1.6	.0044	.0134	0	0	.31	1.4	0
902	Feb. 19, 1907	0	0	Veg.	2.6	4.6	2.7	.0032	.0146	0	0	.32	1.3	0
995*	June 2, 1907	0	0	Veg.	2.7	3.4	1.6	.0018	.0128	Trace	0	.25	1.0	0
996	June 3, 1907	0	0	Veg.	2.5	3.5	1.6	.0020	.0110	Trace	0	.25	1.0	0
1198	Oct. 22, 1907	0	0	Veg.	3.2	3.4	1.6	.0020	.0120	Trace	0	.32	1.2	0
1199†	Oct. 22, 1907	0.2	0	Veg.	6.8	4.8	2.0	.0030	.0178	Trace	0	.47	1.7	0
1329	Jan. 12, 1908	0.3	0	Veg.	3.4	3.6	1.3	.0018	.0130	0	0	.32	1.9	0
1330†	Jan. 13, 1908	0.9	Sand	Grassy	1.4	3.6	1.8	.0002	.0098	0	0	.32	2.3	0
1416	Apr. 6, 1908	0.7	0	Grassy	2.8	4.5	2.70	.0024	.0118	Trace	0	.34	1.8	0
1417	Apr. 6, 1908	0.9	0	Grassy	3.0	4.8	3.0	.0020	.0108	Trace	0	.34	1.4	0
1418	Apr. 6, 1908	1.0	0	Grassy	2.8	4.6	2.9	.0018	.0124	Trace	0	.34	1.4	0
1419	Apr. 6, 1908	0.7	0	Grassy	3.0	4.4	2.6	.0020	.0114	Trace	0	.34	1.5	0
1420	Apr. 6, 1908	0.7	0	Grassy	2.9	4.5	2.7	.0022	.0110	Trace	0	.34	1.5	0
1436†	Apr. 13, 1908	0.1	Slight	0	0.3	3.0	1.8	.0012	.0016	0	0	.35	1.1	0
1603	July 14, 1908	0	0	Veg.	2.2	3.2	1.7	.0006	.0104	0	0	.35	1.4	0
1604*	July 14, 1908	0	0	Veg.	2.2	3.1	1.8	.0014	.0120	0	0	.35	1.3	0
1847*	Oct. 27, 1908	0	0	Veg.	1.7	3.7	1.6	.0018	.0116	0	0	.35	1.6	0
1848†	Oct. 27, 1908	0	0	Veg.	1.9	4.1	1.5	.0022	.0184	0	0	.42	1.3	0
1996†	Jan. 12, 1909	0	0	Veg.	8.0	5.1	2.0	.0014	.0218	0	0	.47	2.2	0
1997*	Jan. 12, 1909	1.0	Clay	Veg.	2.5	3.8	1.8	.0020	.0136	0	0	.42	1.3	0
2295†	Apr. 27, 1909	0	0	Veg.	7.0	4.2	2.0	.0010	.0126	0	0	.35	2.1	0
2296*	Apr. 27, 1909	0.5	0	Veg.	2.3	3.6	2.0	.0008	.0116	0	0	.35	2.2	0
2510*	July 12, 1909	0	0	Veg.	2.1	2.8	2.0	.0018	.0110	0	0	.37	2.0	0
2511†	July 12, 1909	0	0	Veg.	0.8	2.5	2.1	.0014	.0058	.02	0	.27	1.6	0
2971†	Dec. 7, 1909	0	0	Veg.	5.7	4.4	2.2	.0016	.0218	0	0	.55	2.4	0
2972*	Dec. 8, 1909	0	0	Veg.	2.3	3.3	2.0	.0014	.0160	0	0	.425	1.5	0

\* Lake Sample.

† Thompson Brook.

## BERWICK.

The supply of this town is derived from a system of wells, which are located about 500 feet back from the Salmon Falls River. The water is pumped directly from the wells into the distribution mains with no filtration. After heavy rains the water from these wells contains much surface water, and has a decidedly objectionable appearance. At such times the water contains much iron and vegetable material, and is somewhat turbid. No B. Coli have been found in this water, nor has there been evidence of chemical pollution, although at times the water has been largely composed of surface wash. The varying character of this water does not render it a very satisfactory one for general use.



BERWICK.

Number.	Date of Collection.	APPEARANCE.				RESIDUE ON EVAPORATION.			AMMONIA		NITROGEN AS		Chlorine.	Hardness.	Lead.
		Turbidity.	Sediment.	Odor.	Color.	Total.	Fixed.	Free.	Albuminoid.	Nitrates.	Nitrites.				
1398	Mar. 1908	0.4	0	Veg.	1.1	6.5	4.3	.0006	.0050	0.03	Trace	0.60	2.52	0	
1406	Mar. 25, 1908	0.5	0	Veg.	3.1	5.1	2.9	.0068	.0272	Trace	Trace	0.37	1.89	0	
1406	Apr. 26, 1908	0	0	Slight.	0.8	5.3	4.1	.0010	.0058	0.01	0	0.57	2.6	0	
1681	Aug. 4, 1908	0.5	Iron	Veg.	1.9	6.1	4.5	.0014	.0154	0	0	0.40	2.7	0	
1874	Nov. 4, 1908	0	0	Veg.	2.2	7.2	5.3	.0014	.0086	0.03	Trace	0.60	4.3	0	
2078	Feb. 1, 1909	0	0	Veg.	0.3	6.8	5.2	.0014	.0042	.04	0	0.68	2.6	0	
2323	May 4, 1909	0.3	0	Veg.	1.5	4.5	2.3	.0006	.0048	0	0	0.30	3.9	0	
2607	Aug. 3, 1909	0	0	Veg.	2.1	5.1	3.9	.0010	.0122	0	0	0.25	3.8	0	
2902	Nov. 9, 1909	0	0	Slight.	0.8	7.0	5.3	.0016	.0098	0	0	0.50	3.21	0	

BETHEL.

This town is supplied with water from Chapman Brook, which is fed by springs in the mountains. It is located on the opposite side of the river from the town. No houses or cultivated lands lay near the springs or the brook above the point where the water is taken from it. The flow is by gravity to a reservoir on the hills across the Androscoggin River from the town, whence the town is supplied by gravity pressure. After the spring and fall rains this water is somewhat colored by the surface water from the forest floor, but at all other times it has the general characteristics of a spring fed lake water.

The series of analyses here reported has shown but little variation in organic content, while the water has, at all times, been exceptionally low in the number of bacteria which have been present.

## BETHEL.

Number.	Date of Collection.	APPEARANCE.			RESIDUE OF EVAPORATION.			AMMONIA		NITROGEN AS		Chlorine.	Hardness.	Lead.
		Turbidity.	Sediment.	Odor.	Color.	Total.	Fixed.	Free.	Albuminoid.	Nitrates.	Nitrites.			
1171	Oct. 14, 1907	0	0	Veg.	2.7	2.4	0.9	.0014	.0074	0	0	0.07	1.5	0
1311	Jan. 6, 1908	0	0	Slight	1.5	2.7	2.0	.0008	.0036	Trace	0	0.07	2.0	0
1410	Apr. 3, 1908	0	0	Veg.	1.7	3.2	2.1	.0012	.0066	0	0	0.08	1.0	0
1664	Aug. 1, 1908	0	0	Veg.	1.9	3.3	2.2	.0010	.0064	0	0	0.05	1.0	0
1845	Oct. 26, 1908	0	0	Veg.	1.4	4.1	2.4	.0008	.0044	0	0	0.10	1.4	0
1999	Jan. 13, 1909	0	0	Veg.	1.2	2.6	1.3	.0018	.0042	0	0	0.10	1.0	0
2259	Apr. 12, 1909	0	0	0	1.5	2.0	0.9	.0006	.0052	0	0	0.06	1.7	0
2614	Aug. 3, 1909	0	0	Veg.	0.9	2.8	1.8	.0004	.0090	0	0	0.05	1.1	0
2680	Nov. 1, 1909	0	0	Veg.	2.4	3.1	1.8	.0002	.0062	0	0	0.075	1.46	0

## BIDDEFORD.

The water supply for this city, as well as for Saco and Old Orchard is taken from the Saco river about two miles above the center of distribution. The land about this river is largely cultivated, and the watershed is considerably populated from its source in the White Mountains to tide water. The supply was formerly taken from the river without any attempt at purification, and pumped direct to the reservoir. The natural result of the use of this water was the prevalence of intestinal disorders among the users, so that some change was demanded.

The present supply is taken from the same source as formerly, but the water is filtered before entering the system. For the purpose of purification a filter plant, composed of Warren mechanical filter units, is employed. The coagulant used is alum without the addition of any alkali, the alkalinity of the water being enough to cause the formation of the hydrate of aluminum. From the filters the water is pumped into the reservoir and two standpipes, having a combined capacity of 10,000,000 gallons, and from these it flows into the mains by gravity.

The filters are operated at a fairly high rate, about  $2\frac{1}{2}$  gallons per square foot per minute passing through them.

Like all the river waters of this State the Saco river is highly colored by the presence of dissolved vegetable material, but

it is not turbid. As a result the filtration is mainly for improvement in color and bacterial content. The tables appended below show the good results obtained at this plant. The bacterial counts have been very low, rarely running above 10 bacteria per cubic centimeter, and no hydrate of aluminum has ever appeared in the filtered water, the water always appearing as clear and soft as a spring water.

BIDDEFORD.

Number.	Date of Collection.		APPEARANCE.			RESIDUE ON EVAPORATION.			AMMONIA		NITROGEN AS		Chlorine.	Hardness.	Lead.
			Turbidity.	Sediment.	Odor.	Color.	Total.	Fixed.	Free.	Albuminoid.	Nitrates.	Nitrites.			
1151	Oct.	7, 1907	0.1	0	Woody	0.7	3.7	2.5	.0012	.0060	0	0	0.38	2.6	0
1321	Jan.	7, 1908	0	0	Slight	0.4	3.4	2.2	.0006	.0038	0	0	0.09	1.3	0
1466	Apr.	21, 1908	0	0	Slight	0.3	3.0	2.1	.0010	.0046	Trace	0	0.14	1.9	0
1578	June	6, 1908	0	0	Woody	0.5	3.8	2.8	.0010	.0050	0	0	0.10	2.0	0
1789	Oct.	12, 1908	0	0	Slight	0.2	3.3	2.1	.0006	.0034	0	0	0.12	1.4	0
1985	Jan.	5, 1909	0	0	Slight	0.1	3.4	2.6	.0010	.0034	0	0	0.20	3.0	0
2257	Apr.	13, 1909	0	0	Slight	0.2	3.6	2.6	.0018	.0040	0	Trace	0.12	1.9	0
2496	July	6, 1909	0	0	Slight	0	3.5	2.5	.0002	.0044	0.04	0	0.40	2.1	0
2908	Nov.	9, 1909	0	0	Slight	0.2	3.7	2.8	.0002	.0046	0	0	0.20	2.33	0

BOOTHBAY HARBOR.

The supply for this town, and the summer resorts of Squirrel Island and Ocean Point, is obtained from a small natural pond at Boothbay Center. The pond is nearly circular with a diameter of about a third of a mile, and is of no great depth. On three sides the pond is surrounded by grass land, and on the fourth side by a heavy forest growth. As a natural result much of the water comes from the surface of the surrounding fields and the water in the pond thus contains a very considerable amount of dissolved vegetable material. It is also always slightly turbid from a small amount of clay in suspension. This is probably caused by faulty location of the intake, and could be easily remedied. No drainage aside from the grass fields enters the pond, and there is no chance for sewage pollution of the water. If algae or infusoria ever enter this water

trouble may be expected from odors and tastes, as this water will furnish a good medium for their growth.

The supply is a gravity supply, with a standpipe near Boothbay Harbor.

## BOOTHBAY HARBOR.

Number.	Date of Collection.	APPEARANCE.				RESIDUE ON EVAPORATION.		AMMONIA.		NITROGEN AS		Chlorine.	Hardness.	Lead.
		Turbidity.	Sediment.	Odor.	Color.	Total.	Fixed.	Free.	Albuminoid.	Nitrates.	Nitrites.			
1218	Oct. 23, 1907	0.3	0	Veg.	1.6	4.2	2.2	.0008	.0162	0	0	0.47	2.2	0
1332	Jan. 14, 1908	0.1	0	Veg.	2.4	4.7	3.2	.0018	.0180	0	0	0.60	1.6	0
1446	Apr. 14, 1908	0.3	Clay	Veg.	2.5	4.1	2.5	.0030	.0168	0	0	0.62	1.3	0
1601	July 13, 1908	0.4	0	Grassy	1.2	4.4	2.7	.0014	.0150	0	0	0.68	2.0	0
1832	Oct. 21, 1908	0.1	0	Veg.	1.0	4.4	0.6	.0014	.0146	0	0	0.70	2.3	0
1998	Jan. 11, 1909	0	0	Veg.	1.5	4.7	2.9	.0014	.0168	0	0	0.81	2.2	0
2308	Apr. 27, 1909	0.3	Earthy	Veg.	1.5	4.3	2.6	.0014	.0116	0	0	0.67	1.8	0
2528	July 13, 1909	0.4	Veg.	Veg.	1.7	3.1	2.1	.0006	.0156	0	0	0.78	2.8	0
2886	Nov. 2, 1909	0.2	Veg.	Veg.	1.7	4.0	2.1	.0026	.0208	0	0	0.75	1.89	0

## BREWER.

The city of Brewer obtains its water supply from the Penobscot River at Veazie. The water is taken from the river into the mains without filtration, although the intake is only three miles below Orono and eight miles below Oldtown, with a swift current in the river for the entire distance separating the towns. From the intake the water is carried in iron pipes to the city, a distance of four miles and distributed by the pressure of the pumps.

As has been noted in the case of the Bangor water supply, the large amounts of domestic and industrial sewage which enter the river between the intake and Oldtown have their natural effect on the water, rendering it high in its vegetable and animal content, and in the numbers of intestinal bacteria of the B. Coli type that are present. These latter are constantly present in 1c. c. quantities of the water. As a result Brewer has shared with Bangor the reputation of being a typhoid town, but in spite of this the water is still taken from the river without filtration.

It is reported that this water is but little used in the city for drinking purposes, the people depending on spring water and water from their own wells. These latter have the usual character of wells in thickly settled communities, and have little to boast of over the river water aside from physical appearance.

During the session of the 1909 legislature a charter for the formation of a Water District was obtained. Thus far nothing definite has been done with this charter, although we have made a number of analyses of water samples from several proposed sources of supply.

The analyses of the present water supply of this city shows it to be in every way unfit for domestic use. A new source of supply is an imperative necessity for this city.

## BREWER.

Number.	Date of Collection.	APPEARANCE.			RESIDUE ON EVAPORATION.			AMMONIA		NITROGEN AS		Chlorine.	Hardness.	Lead.
		Turbidity.	Sediment.	Odor.	Color.	Total.	Fixed.	Free.	Albuminoid.	Nitrates.	Nitrites.			
1183	Oct. 15, 1907	0	0	Veg.	9.0	6.6	2.4	.0022	.0214	Trace	0	0.15	2.8	0
1322	Jan. 7, 1908	0	0	Veg.	6.5	5.8	2.0	.0022	.0182	0	0	0.15	2.1	0
1409	Apr. 3, 1908	0.1	0	Veg.	4.3	4.6	1.8	.0022	.0110	Trace	0	0.16	2.6	0
1577	July 7, 1908	0.1	0	Veg.	5.4	4.5	1.9	.0034	.0150	Trace	0	0.14	2.5	0
1806	Oct. 14, 1908	0	0	Veg.	5.0	5.5	2.6	.0038	.0118	0	Trace	0.17	2.7	0
1942	Dec. 14, 1908	0.3	0	Veg.	6.9	6.7	3.0	.0026	.0174	.005	0	0.22	3.1	0
1943	Dec. 14, 1908	0.3	0	Veg.	6.9	6.8	3.2	.0036	.0180	.005	0	0.22	3.2	0
1984	Jan. 5, 1909	0.1	0	Veg.	5.0	6.7	3.5	.0022	.0122	Trace	0	0.17	2.4	0
2013	Jan. 13, 1909	0.2	0	Veg.	6.7	5.1	3.8	.0024	.0196	Trace	0	0.12	2.2	0
2255	Apr. 12, 1909	0	0	Veg.	5.3	4.6	2.2	.0012	.0182	0	Trace	0.11	2.1	0
2494	July 6, 1909	0	Veg.	Veg.	5.7	4.8	1.9	.0040	.0180	0	0	0.07	2.3	0
2824	Oct. 18, 1909	0	0	Veg.	6.8	5.5	1.7	.0032	.0196	Trace	0	0.075	3.2	0

## BRIDGTON.

The source of supply of this town is Highland Lake in the town of Bridgton. This lake is four miles long and about a mile wide. The land slopes to the lake on all sides, and it is largely fed by surface water. There is considerable cultivated and settled land about the lake, so that a set of sanitary regulations are needed for the protection of the water from future chances of pollution. All of the analyses have thus far shown the water to be in first-class chemical and bacterial condition.

## BRIDGTON.

Number.	Date of Collection.		APPEARANCE.			RESIDUE ON EVAPORATION.			AMMONIA		NITROGEN AS		Chlorine.	Hardness.	Lead.
			Turbidity.	Sediment.	Odor.	Color.	Total.	Fixed.	Free.	Albuminoid.	Nitrates.	Nitrites.			
1461	April	20, 1908	0	0	Veg.	2.4	3.2	1.9	.0085	.0106	0	0	0.15	1.8	0
1598	July	13, 1908	0	0	Veg.	1.7	2.2	1.7	.0022	.0084	0	0	0.10	1.6	0
1839	Oct.	26, 1908	0	0	Veg.	1.6	2.8	1.3	.0024	.0102	0	0	0.12	1.6	0
2019	Jan.	18, 1909	0	0	Veg.	1.6	2.0	1.1	.0024	.0182	0	0	0.17	1.9	0
2288	Apr.	26, 1909	0	0	Veg.	2.3	2.6	1.0	.0014	.0102	0	0	0.13	1.8	0
2541	July	19, 1909	0	0	Veg.	1.8	2.6	1.3	.0004	.0126	0	0	0.15	1.3	0
2889	Nov.	2, 1909	0	0	Veg.	0.9	2.5	1.5	.0016	.0134	0	0	0.15	1.4	0

## BROOKS.

This town is supplied by the Consolidated Water Company of New Hampshire. The source of the supply is from a large spring, situated on the side of a hill on the farm of J. W. Ginn. The spring is surrounded by pasture land, which is quite heavily wooded with fir and spruce, while the spring itself is protected from the access of all cattle that may be pastured near, and from all surface wash that may contain contamination from these cattle. The water from this supply has been in good condition during the period covered by these analyses.

## BROOKS.

Number.	Date of Collection.		APPEARANCE.			RESIDUE ON EVAPORATION.			AMMONIA		NITROGEN AS		Chlorine.	Hardness.
			Turbidity.	Sediment.	Odor.	Color.	Total.	Fixed.	Free.	Albuminoid.	Nitrates.	Nitrites.		
1777	Oct.	10, 1908	0	0	Slight	.5	6.0	4.7	.0016	.0018	.03	0	.24	2.9
2057	Jan.	27, 1909	0	0	Slight	0	4.6	3.1	.0002	.0018	.03	0	.22	2.2
2313	May	3, 1909	0	0	Slight	0	4.7	3.6	0	.0022	.04	0	.25	3.6
2591	July	27, 1909	0	0	0	0	6.7	4.9	.0004	.0010	.04	Trace	.20	4.0
2869	Oct.	27, 1909	0	0	0	0	5.7	3.9	0	.0044	.01	0	.55	2.8

## BROWNVILLE.

This town has four water supplies, i.e. the Briggs Water Company, the Brown Spring Water Company, the Brownville Maine Water Company, and the Church Street Water Company. Samples from these supplies have been received at the laboratory since May 1909 from the secretary of the local board of health. All of these supplies are situated on the east side of the Pleasant River, and are derived from springs in the gravels on the steep hillsides. These waters are all located from 30 to 60 rods from all houses, and have been free from all chemical and bacterial evidence of pollution. These supplies all use galvanized iron mains, and zinc has been found in considerable amounts in all of these waters after new pipe has been laid, but it has soon disappeared with use.

Another water company has been installed at Henderson, in this town, during the last summer, but as only one sample has yet been received from this supply it is not included in the tables below. This is also a spring supply, and located far from all sources of pollution.

BROWNVILLE—BRIGGS WATER COMPANY.

Number.	Date of Collection.	APPEARANCE.						RESIDUE ON EVAPORATION.		AMMONIA		NITROGEN AS		Chlorine.	Hardness.
		Turbidity.	Sediment.	Odor.	Color.	Total.	Fixed.	Free.	Albuminoid.	Nitrates.	Nitrites.				
2358	May 11, 1909	0	0	Slight	0.6	4.1	3.1	.0006	.0086	0.03	0	.12	4.2		
2650	Aug. 10, 1909	0	0	0	0	5.3	4.3	0	.0016	0.03	0	.23	4.2		
2935	Nov. 16, 1909	0	0	0	0	4.8	3.9	0	.0040	0.02	0	.25	4.3		

## BROWNVILLE—BROWN SPRING WATER COMPANY.

Number.	Date of Collection.	APPEARANCE.				RESIDUE ON EVAPORATION.		AMMONIA		NITROGEN AS		Chlorine.	Hardness.
		Turbidity.	Sediment.	Odor.	Color.	Total.	Fixed.	Free.	Albuminoid.	Nitrates.	Nitrites.		
2359	May 11, 1909	0.2	Rust	0	0	2.8	2.1	.0014	.0018	0.03	0	.06	2.5
2648	Aug. 10, 1909	0	0	0	0	4.5	3.6	.0002	.0014	0.01	0	.07	2.8
2933	Nov. 16, 1909	0	0	0	0	3.4	2.6	.0014	.0080	0.04	0	.075	2.04

## BROWNVILLE—BROWNVILLE WATER COMPANY.

Number.	Date of Collection.	APPEARANCE.				RESIDUE ON EVAPORATION.		AMMONIA		NITROGEN AS		Chlorine.	Hardness.
		Turbidity.	Sediment.	Odor.	Color.	Total.	Fixed.	Free.	Albuminoid.	Nitrates.	Nitrites.		
2357	May 11, 1909	0	0	0	0	3.5	2.6	.0008	.0020	0	0	.12	3.5
2647	Aug. 10, 1909	0	0	0	0	5.9	4.7	.0012	.0024	.02	.0006	.15	3.5
2932	Nov. 16, 1909	0	0	0	0	4.8	3.0	.0009	.0089	Trace	0	.125	3.79

## BROWNVILLE—CHURCH STREET WATER COMPANY.

Number.	Date of Collection.	APPEARANCE.				RESIDUE ON EVAPORATION.		AMMONIA		NITROGEN AS		Chlorine.	Hardness.
		Turbidity.	Sediment.	Odor.	Color.	Total.	Fixed.	Free.	Albuminoid.	Nitrates.	Nitrites.		
2380	May 11, 1909	0	0	0	0.1	3.3	2.5	.0008	.0018	0.03	0	.09	4.7
2649	Aug. 10, 1909	0	0	0	0	4.7	3.8	0	.0026	Trace	0	.22	3.1
2930	Nov. 16, 1909	0	0	0	0	4.3	3.3	0	.0022	0.02	0	.125	3.3



## BRUNSWICK.

This town has had two former supplies, when it was supplied by the Maine Water Company. The first supply was from the Androscoggin River, and the second from Nequasset Lake, when the Brunswick pipes were connected with the Bath supply. The Androscoggin supply was taken from a river polluted by the sewage of Lewiston, Auburn, Lisbon Falls and Pejepscot, as well as by large amounts of manufacturing wastes from cotton and paper and pulp mills. As a result the use of this water has caused a very large amount of intestinal trouble for many years, and the final result was the formation of the Brunswick and Topsham Water District in 1904, for the purpose of obtaining a new and unpolluted supply.

To obtain the needed water a series of driven wells was sunk in the sandy plain about 700 feet from the river bank, from which an abundant supply of water has been obtained. Back of this plain on which the wells are situated is a bluff, bordering a higher country, from the base of which flows several fine springs of local reputation. The wells are far from all houses and other sources of pollution, and the water that is drawn from them is subjected to a thorough filtration by the surrounding sand. As the analyses show this water is a ground water moving toward the river from the higher land and not a filtered river water.

Unlike several of the other driven well supplies of the State this water contains but very little dissolved carbon dioxide, and so there has been no trouble from the action of the water on the pipes of the system. It would be hard to imagine a better water for drinking purposes than is the one furnished to this town.

## BRUNSWICK.

Number.	Date of Collection.	APPEARANCE.				RESIDUE ON EVAPORATION.		AMMONIA		NITROGEN AS		Chlorine.	Hardness.	Lead.
		Turbidity.	Sediment.	Odor.	Color.	Total.	Fixed.	Free.	Albuminoid.	Nitrates.	Nitrites.			
1211	Oct. 23, 1907	0	0	0	0.2	6.0	4.7	0	.0012	0.01	0	.47	3.5	0
1341	Jan. 20, 1908	0	0	0	0	6.8	5.6	0	.0022	0.01	0	.47	3.1	0
1464	Apr. 21, 1908	0	0	0	0	5.9	4.7	.0002	.0016	Trace	0	.50	3.0	0
1617	July 20, 1908	0	0	0	0	5.5	5.1	.0008	.0016	Trace	0	.40	2.6	0
1702	Aug. 17, 1908	0	0	0	0	5.1	3.5	0	.0014	0	0	.45	2.4	0
1816	Oct. 19, 1908	0	0	0	0	5.0	4.5	.0008	.0006	0	0	.45	3.6	0
2020	Jan. 19, 1909	0	0	0	0	5.4	4.0	.0003	.0024	0.01	0	.47	3.1	0
2254	Apr. 13, 1909	0	0	0	0	6.8	5.6	.0008	.0022	0.02	0	.45	4.0	0
2558	July 21, 1909	0	0	0	0	5.4	4.5	.0002	.0016	0.02	0	.47	3.0	0
2862	Oct. 26, 1909	0	0	0	0	9.1	7.4	.0005	.0025	0.01	0	.50	2.92	0

## BUCKFIELD.

Buckfield obtains its water supply from North Pond, a pond of about 300 acres which is located about three miles from the village. The shores of this pond are surrounded by woodland. There are no houses near, nor is there any cultivated land in the drainage basin of the pond. In the spring of 1906 this water developed a fishy odor, due to a short period of algae growth, but there has been no return of this trouble, and the water has been in first-class condition.

## BUCKFIELD.

Number.	Date of Collection.	APPEARANCE.				RESIDUE ON EVAPORATION.		AMMONIA		NITROGEN AS		Chlorine.	Hardness.	Lead.
		Turbidity.	Sediment.	Odor.	Color.	Total.	Fixed.	Free.	Albuminoid.	Nitrates.	Nitrites.			
1084	July 27, 1907	0.1	0	Slight	1.0	2.6	1.5	.0008	.0082	0	0	.13	1.4	
1085	July 27, 1907	0	0	Slight	0.6	2.1	1.1	.0004	.0096	0	0	.12	1.4	
1157	Oct. 8, 1907	0	0	Woody	0.7	2.9	1.2	.0006	.0098	0	0	.10	1.8	0
1315	Jan. 8, 1908	0	0	Veg.	0.9	2.5	1.5	.0008	.0110	0	0	.15	2.0	0
1445	Apr. 14, 1908	0	0	Slight	1.0	2.2	1.0	.0012	.0082	0	0	.12	1.5	0
1582	July 6, 1908	0	0	0	0.5	2.4	1.0	.0004	.0068	0	0	.10	2.3	0
1764	Oct. 3, 1908	0	0	Grassy	0.7	2.4	0.6	.0020	.0128	0	0	.14	2.9	0
1958	Dec. 28, 1908	0	0	Veg.	0.7	2.5	2.1	.0016	.0152	0	0	.12	1.5	0
2285	Apr. 5, 1909	0	0	Slight	0.7	2.5	1.3	.0086	.0106	0	0	.13	2.2	0
2582	July 14, 1909	0	0	Slight	0.6	2.5	2.0	.0008	.0180	0	0	.15	2.0	0
2894	Nov. 3, 1909	0	0	Slight	0	3.0	1.6	.0008	.0180	0	0	.175	1.7	0

## BUCKSPORT.

The supply for this town is taken from Silver Lake, located in the same town. This lake is a small one, being about a mile long and a third of a mile wide. The only stream entering the lake is small and flows through a large swamp, while the shores of the lake are all low and bordered by swamps and meadow land. The lake is of no great depth in any part and is mainly dependent for its water supply upon surface water from the surrounding low lands. As a result the water contains a very large amount of dissolved vegetable material and is very highly colored. On a high hill bordering the lake at one place is a large cemetery.

This lake would seem to offer a good ground for the growth of algae and infusoria; but no odors and tastes due to these organisms have been noticed in the samples received, although one sample of this water was sent when a fishy odor was reported in certain sections of the pipe line. Contrary to expectations the bacterial content of this water has always been low, and no sewage bacteria have ever been found in the samples.

Due to the large amount of surface wash entering this water after rains the water usually carries a slight degree of turbidity, caused by suspended clay and vegetable material. The large amount of organic material, the high color and the surface wash entering this water does not make it a particularly desirable one for drinking. It is probable that there will be a demand in the future for a change in the source of the supply for this town.

## BUCKSPORT.

Number.	Date of Collection.	APPEARANCE.						RESIDUE ON EVAPORATION.		AMMONIA.		NITROGEN AS		Chlorine.	Hardness.	Lead.
		Turbidity.	Sediment.	Odor.	Color.	Total.	Fixed.	Free.	Albuminoid.	Nitrates.	Nitrites.					
1210	Oct. 23, 1907	0	0	Veg.	11.5	6.8	2.6	.0024	.0362	0	0	.37	2.9	0	0	
1282	Nov. 4, 1907	0	0	Veg.	13.0	6.8	2.9	.0034	.0310	Trace	0	.40	2.3	0	0	
1854	Jan. 22, 1908	0	0	Veg.	6.0	6.1	3.6	.0024	.0188	0	0	.47	1.3	0	0	
1468	Apr. 21, 1908	0.2	0	Veg.	4.6	5.3	2.7	.0028	.0166	0	0	.40	2.4	0	0	
1625	July 21, 1908	0.2	0	Grassy	4.5	5.3	2.9	.0030	.0382	Trace	0	.32	1.5	0	0	
1880	Oct. 21, 1908	0.2	Veg.	Veg.	15.0	5.6	2.7	.0044	.0285	0	0	.35	2.2	0	0	
2011	Jan. 13, 1909	0.3	0	Veg.	3.0	6.0	2.3	.0046	.0300	0	0	.40	3.0	0	0	
2324	May 4, 1909	0.1	0	Veg.	4.4	3.2	1.9	.0016	.0146	0	0	.30	3.0	0	0	
2552	July 20, 1909	0.2	Veg.	Veg.	6.7	6.3	3.0	.0020	.0398	0	0	.27	2.9	0	0	
2831	Oct. 18, 1909	0.3	Veg.	Veg.	11.7	7.6	3.8	.0050	.0360	0	0	.45	2.66	0	0	

## CALAIS.

During the past three years the water supply for this city has been derived from two sources. Up to November 1907 the water was taken from the St. Croix River, the old source of the supply; and since then from the springs which furnish the supply of St. Stephen, N. B., whose water system is controlled by the same company as is the Calais system. Owing to the fact that there are times when these springs cannot meet the combined demand upon them, in which case the St. Stephen system has the first call upon them, the old connection with the St. Croix River has been maintained and, in times of drought, this water is used, either alone or mixed with the spring water, for the Calais supply.

The growth of the town of Woodland on the river above Calais has resulted in a very considerable pollution of the river, both by domestic sewage and by the manufacturing wastes from the large pulp and paper mills of the St. Croix Paper Company, there located. With the building of this town *B. Coli* appeared at the intake of the Calais supply, and the same condition was naturally present in the water in the mains. A sand filter, which was tried, was rendered useless by the accumulation of pulp upon it, which quickly blocked it. It was owing to this condition that the source of supply was changed. The river water is now so polluted that it is not a safe one to use for drinking.

With the many fine lakes in the wild lands back of this city there would seem no reason why there should be any such condition as the present existing.

The water from the springs is used whenever possible, and is of entirely different character from that of the river, while it is free from all evidences of pollution. The difference in the character of the two waters is well shown in the appended tables, covering over three years, the samples having been sent both by the Water Company and by the local health officers. Since September 1908 no river water has been used.

## CALAIS.

Number.	Date of Collection.	APPEARANCE.						RESIDUE ON EVAPORATION.		AMMONIA		NITROGEN AS		Chlorine.	Hardness.	Lead.
		Turbidity.	Sediment.	Odor.	Color.	Total.	Fixed.	Free.	Albuminoid.	Nitrates.	Nitrites.					
765	Sept. 10, 1906	0	0	Veg.	3.4	3.0	1.2	.0018	.0182	.007	0	.09	1.8	0		
816	Oct. 8, 1906	0	0	Veg.	3.1	4.2	1.7	.0026	.0164	Trace	0	.10	2.3	0		
845	Nov. 5, 1906	0.3	0	Veg.	6.5	6.1	2.5	.0044	.0242	.01	Trace	.15	2.3	0		
852	Nov. 12, 1906	0.3	0	Veg.	8.0	5.9	2.5	.0046	.0252	0	Trace	.18	2.1	0		
876	Dec. 26, 1906	0.2	0	Veg.	5.0	4.0	2.0	.0032	.0186	Trace	0	.19	1.9	0		
893	Jan. 28, 1907	0.4	0	Veg.	5.5	4.0	2.2	.0026	.0214	Trace	0	.13	1.9	0		
918	Mar. 5, 1907	0.5	0	Veg.	4.5	5.0	2.0	.0034	.0206	.01	0	.14	2.1	0		
934	Mar. 26, 1907	0.1	0	Veg.	4.5	4.9	1.9	.0022	.0148	Trace	0	.13	2.1	0		
952	Apr. 8, 1907	0.3	0	Veg.	5.3	4.3	1.9	.0028	.0214	Trace	0	.15	1.6	0		
981	May 20, 1907	0.2	0	Veg.	7.2	4.0	1.3	.0034	.0196	0	Trace	.11	1.7	0		
1066	July 18, 1907	0.2	0	Veg.	5.0	4.0	1.20	.0024	.0166	0	0	.10	1.4	0		
1114	Aug. 20, 1907	0.3	0	Wood fibre	Veg.	5.5	4.5	1.6	.0016	.0192	Trace	0	.09	1.5	0	
1247	Nov. 19, 1907	0.3	0	Veg.	8.5	5.7	1.7	.0026	.0262	Trace	0	.20	3.0	0		
1248	Nov. 19, 1907	0	0	0	0.2	3.5	2.5	.0004	.0032	0.03	0	.20	3.0	0		
1355	Jan. 22, 1908	0	0	0	0.6	5.3	3.9	.0004	.0034	0	0	.20	2.1	0		
1448	Apr. 15, 1908	0	0	Veg.	2.3	3.4	1.9	.0014	.0146	0	0	.20	2.0	0		
1636	July 22, 1908	0	0	0	0.2	3.7	2.5	.0002	.0030	Trace	0	.22	2.0	0		
1715	Sept. 19, 1908	0	0	0	0.1	3.6	2.2	.0008	.0038	.01	0	.21	1.9	0		
1757	Sept. 30, 1908	0	0	Veg.	3.1	4.8	1.2	.0020	.0118	Trace	0	.13	2.1	0		
1949	Dec. 24, 1908	0	0	Slight	1.0	4.9	3.3	.0012	.0060	.02	0	.22	2.2	0		
2326	May 4, 1909	0	0	0	0.9	3.7	2.5	.0002	.0052	.02	0	.20	3.3	0		
2338	May 19, 1909	0	0	Grassy	0.8	3.1	1.5	.0004	.0106	0	0	.20	2.8	0		
2527	July 13, 1909	0	0	Grassy	0.8	3.7	2.9	.0004	.0042	0	0	.27	3.2	0		
2832	Oct. 19, 1909	0	0	0	1.1	4.6	3.1	.0008	.0088	0.015	Trace	.20	2.9	0		

## CAMDEN &amp; ROCKLAND WATER COMPANY.

This company supplies the towns of Camden, Rockport and Thomaston, and the city of Rockland. The source of the supply is Mirror Lake in the town of Rockport. This lake is fed entirely by springs, but one small mountain brook entering it. This brook is little more than a gully on the steep side of the mountain, and, save in wet weather, carries practically no water. One side of the lake, the northern, is formed by a mountain which rises from the water, and high land closely borders the other three sides of the lake, leaving but narrow strips of flat land near to the water on all save the northern side. The southern shore is followed for most of its course by the main highway from Rockland to Union. In places this is separated from the water by only a rail.

Within the past few years several cottages have been built about this lake, and necessarily close to the water. The rocky

character of the soil and the steep slope of the shores makes the drainage from these run of necessity into the lake with little chance for purification by the soil. No complaint has ever risen from the users of this water on account of the quality of the water, but complaint did arise in 1907 over the growing number of these cottages. The towns which are supplied by this water are mainly dependent on their summer business, and so were willing to take no chances with any possibility of water borne disease which would injure this business. At the request of the Water Company and the board of health of Rockport an inspection of the shores of this lake was made in the winter of 1907 and again in the summer of 1908, after the cottages had opened.

These inspections showed that there were 5 cottages about the lake; two at the foot, standing on very high, rocky ground near the water, and three on the south shore bordering the road, while there was a partially finished cottage on the west shore. None of these cottages were over 100 feet from the shore, and one was not 15 feet from it.. This latter one had no privy accommodations so far as could be seen, the cottage being closed at the time of both inspections. The other cottages used earth closets. The sink drainage was either allowed to flow upon the ground, or in one case to run into a ditch which drained directly into the lake. At the time of the 1908 inspection bacterial samples were taken about the entire circuit of the lake. The colon bacillus was not found in any of the samples, nor was any gas forming bacteria present. In no case did the bacterial count rise above 27 bacteria per cubic centimeter, while the chlorine content was normal in all cases.

The inspections did show that there were great possibilities of pollution of this water from these cottages, while their drainage facilities were in their present condition. As the lake was situated in the town of Rockport the board of health of that town, with the assistance of the State Board of Health, drew up a set of sanitary rules and regulations for the disposal of all waste material about this lake, which were approved by the Judge presiding at the spring term of court at Rockland. These, if strictly enforced, will protect this supply from all danger, and the enforcement of them is in the hands of those people most interested in the maintaining of the purity

of the supply. The necessity of this protection is appreciated by the people of the towns supplied by this system, as they are fast growing into large summer resorts.

The ideal condition would be for the Water Company to acquire the shore rights about this lake, but this they claim they are unable to do, although it would involve the purchase of but comparatively little property.

## CAMDEN.

Number.	Date of Collection.		APPEARANCE.				RESIDUE ON EVAPORATION.		AMMONIA		NITROGEN AS		Chlorine.	Hardness.	Lead.
			Turbidity.	Sediment.	Odor.	Color.	Total.	Fixed.	Free.	Albuminoid.	Nitrates.	Nitrites.			
1197	Oct.	21, 1907	0	0	0	0.4	2.3	1.3	.0008	.0060	0	0	.35	1.3	0
1920	Jan.	6, 1908	0	0	0	1.0	2.7	1.6	.0008	.0064	0	0	.32	1.8	0
1438	Apr.	13, 1908	0	0	0	0.6	3.4	1.1	.0008	.0050	0	0	.37	1.8	0
1569	July	6, 1908	0	0	0	0.2	3.6	2.8	.0010	.0052	0	0	.40	1.2	0
1770	Oct.	6, 1908	0	0	0	0.4	2.8	1.8	.0014	.0048	0	0	.33	2.0	0
1968	Dec.	29, 1908	0	0	Slight	0.8	3.0	1.5	.0008	.0102	0	0	.57	1.9	0
2256	Apr.	13, 1909	0.9	Earthy	Earthy	2.7	3.5	2.5	.0014	.0062	0	0	.42	2.2	0
2550	July	20, 1909	0	0	0	0	2.8	1.8	.0004	.0068	0	0	.42	2.0	0
2868	Oct.	26, 1909	0	0	Slight	0.1	2.3	1.8	.0015	.0071	0	0	.40	1.6	0

## CARIBOU.

The water supply for this town comes from the Aroostook River, the water being taken from the river without any filtration. The watershed of this river is but thinly settled above Presque Isle, which is 14 miles above Caribou. Presque Isle, with a population of about 5500, sewers directly into the river. There are no towns between Presque Isle and Caribou with sewer systems, nor do any of the small mill towns above the former place have such systems.

During the period covered by this report intestinal bacteria have not been found in this water system, but it is only a question of time when the growth of population on the river above Caribou will either compel filtration of this supply, or the selection of another source of supply. Even now any typhoid outbreak at Presque Isle would duplicate itself at Caribou.



## CARIBOU.

Number.	Date of Collection.	APPEARANCE.						RESIDUE ON EVAPO- RATION.			AMMONIA		NITROGEN AS		Chlorine.	Hardness.	Lead.
		Turbidity.	Sediment.	Odor.	Color.	Total.	Fixed.	Free.	Albuminoid.	Nitrates.	Nitrites.						
1478	Apr. 20, 1903	0.2	0	Veg.	2.8	6.9	3.9	.0008	.0096	0	0	.10	3.3	0			
1631	July 21, 1903	0	0	Veg.	3.5	7.0	3.5	.0020	.0118	0	0	.04	5.0	0			
1841	Oct. 1908	0	0	Veg.	3.4	6.3	3.5	.0026	.0104	0	0	.10	3.1	0			
2056	Jan. 25, 1909	0	0	Veg.	4.6	6.7	5.0	.0020	.0144	Trace	0	.12	4.4	0			
2314	May 3, 1909	0	0	Veg.	5.0	5.0	2.4	.0018	.0142	0	0	.05	3.3	0			
2601	Aug. 2, 1909	0	0	Veg.	5.0	6.2	3.0	.0014	.0174	0	0	.05	2.8	0			
2910	Nov. 8, 1909	0	0	Veg.	7.9	6.8	2.6	.0034	.0158	0	0	.15	4.8	0			

## CASTINE.

The water supply for this town is collected from three sources, i.e., from a system of driven wells, from a watershed where the water is collected in underground conducts, and from a series of brooks. These several sources of supply are scattered over a wide area, but are all collected into one reservoir for distribution. Thus the water in the mains is a mixture of open surface water, of filtered surface water and of ground water of considerable depth. The driven wells are four in number, ranging from 70 to 675 feet in depth. The watershed and surface water comes from grassy fields and from some wooded area. At times the surface water entering this system is somewhat turbid from clay in suspension, but this condition has never been such as to interfere with the use of the water for drinking.

At some times vegetable growths have appeared in the open reservoir, but never in such amount as to give the water an odor or taste. No intestinal bacteria have ever been found in this water.

There is also an Aqueduct Company supplying some water in this town. One sample was obtained from this supply, and the results of the analysis of this sample will be found in the tabulations at the end of this report under sample No. 1164.

## CASTINE.

Number.	Date of Collection.		APPEARANCE.				RESIDUE ON EVAPO- RATION.		AMMONIA		NITROGEN AS		Chlorine.	Hardness.	Lead.
			Turbidity.	Sediment.	Odor.	Color	Total.	Fixed.	Free.	Albuminoid.	Nitrates.	Nitrites.			
1153	Oct.	7, 1907	0.7	Clay	0	0.7	9.5	7.8	.0004	.0034	0.03	0	.57	7.2	0
1318	Jan.	6, 1908	0	0	0	0.4	8.2	6.0	0	.0018	0.11	Trace	.47	4.3	0
1450	Apr.	15, 1908	0.3	0	Slight	0.3	7.1	4.7	.0010	.0056	0.06	0	.50	3.4	0
1591	July	12, 1908	0	0	0	0.1	8.3	6.9	.0002	.0014	0.09	0	.47	5.5	0
1879	Nov.	8, 1908	0	0	Slight	0.2	11.1	9.1	.0004	.0040	0.05	0	.52	6.0	0
2009	Jan.	13, 1909	2.5	Clay	Earthy	0.8	11.0	7.9	.0064	.0046	0.05	0	.75	5.0	0
2118	Feb.	23, 1909	0.2	0	Slight	0.2	6.1	3.7	.0038	.0042	0.06	0	.62	4.9	0
2258	Apr.	13, 1909	1.0	0	Earthy	0.7	5.2	3.4	.0012	.0096	0	Trace	.65	3.1	0
2514	July	12, 1909	1.0	0	Slight	0.8	7.2	5.7	.0002	.0050	0.06	0	.52	2.6	0
2818	Oct.	18, 1909	0.5	0	Slight	0.8	12.5	8.3	.0003	.0089	0.15	Trace	.575	5.74	0

## DAMARISCOTTA &amp; NEWCASTLE.

These towns are supplied by the "Twin Village Water Company." The source of the supply is Little Pond, about three miles from the villages. This pond is three quarters of a mile long and from a quarter to a half mile wide, with considerable depth. The pond is fed entirely by springs, the only two brooks entering it coming from two large springs. The pond is surrounded by woods and pasture land, with no houses near. The water is pumped to a standpipe, and from there distributed by gravity to the two villages. The water has always been found of good quality. The samples are supplied by the water company at their own expense.

DAMARISCOTTA.

Number.	Date of Collection.		APPEARANCE.						RESIDUE ON EVAPORATION.		AMMONIA		NITROGEN AS		Chlorine.	Hardness.	Lead.
			Turbidity.	Sediment.	Odor.	Color.	Total.	Fixed.	Free.	Albuminoid.	Nitrates.	Nitrites.					
1180	Oct.	15, 1907	0	0	Veg.	2.4	2.7	1.1	.0008	.0158	0	0	.32	1.5	0		
1808	Jan.	6, 1908	0	0	Veg.	2.2	3.3	2.0	.0016	.0254	0	0	.45	1.5	0		
1451	Apr.	17, 1908	0	0	Veg.	2.2	3.0	1.1	.0028	.0114	0	0	.41	1.4	0		
1642	July	27, 1908	0	0	Veg.	2.2	3.6	1.4	.0008	.0134	0	0	.42	1.9	0		
1812	Oct.	16, 1908	0	0	Veg.	1.0	3.6	1.8	.0012	.0120	0	0	.40	1.4	0		
2012	Jan.	13, 1909	0	0	Veg.	1.7	3.1	1.8	.0008	.0120	0	0	.40	1.2	0		
2285	Apr.	23, 1909	0	0	Veg.	1.9	2.9	1.1	.0014	.0102	0	0	.40	1.5	0		
2522	July	13, 1909	0	0	Veg.	1.1	2.6	1.3	.0002	.0120	0	0	.42	1.3	0		
2851	Oct.	25, 1909	0	0	Veg.	0.9	3.4	2.0	.0022	.0164	0	Trace	.475	1.27	0		

DANFORTH.

The water for this town comes from a large deep well, which is situated on high ground and away from all sources of pollution. The water is pumped to a reservoir a half mile from the well, and then distributed by gravity. The above is all the information that could be obtained in regard to this supply.

DANFORTH.

Number.	Date of Collection.		APPEARANCE.						RESIDUE ON EVAPORATION.		AMMONIA		NITROGEN AS		Chlorine.	Hardness.
			Turbidity.	Sediment.	Odor.	Color.	Total.	Fixed.	Free.	Albuminoid.	Nitrates.	Nitrites.				
2125	Feb.	22, 1909	0	0	Veg.	1.3	11.7	9.0	.0002	.0062	0.14	0	.43	8.8		
2355	May	1, 1909	0	0	Moldy	0.8	8.4	6.7	.0004	.0058	0.11	0	.27	7.0		
2611	Aug.	3, 1909	0	0	0	0.4	13.4	10.2	.0004	.0064	0.17	0	.55	13.0		
2888	Nov.	3, 1909	0	0	Slight	0	8.4	7.2	.0003	.0079	0.10	0	.428	8.3		

## DIXFIELD.

The source of this supply is "Hannah Brook." This brook is formed by the union of a number of other brooks which arise from springs far up on the side of Sugarloaf Mountain. The brook flows entirely through wild land on which there is no habitation, and which is but little used for pasturage. A short distance above the headworks the brook flows by the side of a marsh for a half mile or more, but the bottom is sandy throughout this distance.

The headworks are about three miles from the village and 210 feet above the Androscoggin River. The water flows from the intake by gravity into a 500,000 gallon reservoir above the town, whence it is distributed by gravity to the consumers.

This water is essentially a surface water, and as a result it responds quickly to all surface changes, the color and vegetable content varying considerable during the different seasons. The water has been, at all seasons, free from evidences of pollution and has been a good drinking water at all times. Even in the years of very low water there has been no complaint of this supply.

## DIXFIELD.

Number.	Date of Collection.	APPEARANCE.			RESIDUE ON EVAPO- RATION.			AMMONIA		NITROGEN AS		Chlorine.	Hardness.
		Turbidity.	Sediment.	Odor.	Color.	Total.	Fixed.	Free.	Albuminoid.	Nitrates.	Nitrites.		
1755	Sept. 29, 1908	0	0	Veg.	4.2	6.1	4.5	.0018	.0134	0	0	.13	4.9
1955	Dec. 28, 1903	0	0	Veg.	2.6	5.9	4.1	.0314	.0064	0	0	.15	3.3
2297	Apr. 27, 1909	0	0	Veg.	3.7	3.5	2.1	.0306	.0084	0	0	.05	1.7
2548	July 20, 1909	0	0	Veg.	3.7	5.1	3.2	.0038	.0096	0	0	.12	3.0
2883	Nov. 2, 1909	0	0	Veg.	4.5	4.0	2.3	.0018	.0134	0	0	.10	2.6

## DOVER &amp; FOXCROFT.

These two towns were formerly supplied by the Maine Water Company but have now united as a Water District and take their water from the Piscataquis River a little distance above Dover. Seven miles above the intake the sewage from Sangerville enters the river, and one mile above this point the sewage of the town of Guilford enters the river. Both of these towns have large woolen mills, whose waste liquors, both from wool washings and the dye houses, are spilled into the river without any treatment. Also there are large saw mills at Guilford which depend on the river to carry away their refuse material. Even in flood this makes the river unsightly to behold and dangerous to drink. In the summer, when the river is low, the banks are foul with the above refuse.

As would be expected this water has always showed the presence of sewage pollution, and during the past two years the colon bacillus has been constantly present in 1 cubic centimeter of the water, and usually in 0.1 cubic centimeter. This water is absolutely unfit to use for any domestic purpose, and is one of the few unsatisfactory supplies now remaining in the State.

The character of the water is fully appreciated both by the Water District and by the local health officers of the two towns, who have constantly advised boiling all of the water used for drinking. The Water District officials have during the past year, been looking out for another source of supply, and have been investigating the possibilities of using several lakes as well as water from deep wells in the underlying slate. These latter waters have proved pure but hard, as the cementing material in these slates is of calcareous nature just as at Bangor. It is to be hoped that a new source of supply is decided upon in the near future for these two towns.

## DOVER AND FOXCROFT.

Number.	Date of Collection.		APPEARANCE.				RESIDUE ON EVAPORATION.		AMMONIA		NITROGEN AS		Chlorine.	Hardness.
			Turbidity.	Sediment.	Odor.	Color.	Total.	Fixed.	Free.	Albuminoid.	Nitrates.	Nitrites.		
1488	Apr.	28, 1908	0	0	Veg.	2.7	3.0	1.9	.0008	.0058	0	0	.07	1.9
1643	July	27, 1908	0	0	Veg.	4.4	4.7	2.0	.0016	.0158	0	0	.11	2.7
1866	Nov.	3, 1908	0	0	Veg.	5.2	5.0	1.8	.0020	.0226	0	0	.14	1.6
2055	Jan.	26, 1909	0	0	Veg.	4.3	4.0	2.8	.0014	.0120	Trace	0	.15	2.8
2191	Mar.	22, 1909	0	0	Veg.	3.5	5.5	2.6	.0014	.0108	Trace	0	.10	3.6
2263	Apr.	14, 1909	0	0	Veg.	3.1	3.9	2.1	.0022	.0120	Trace	0	.09	2.8
2371	May	18, 1909	0	0	Veg.	3.7	3.3	1.5	.0012	.0196	0	0	.04	1.5
2456	June	22, 1909	0	Veg.	Veg.	6.5	4.7	2.1	.0026	.0186	0	0	.07	2.8
2587	July	27, 1909	0	Veg.	Veg.	5.5	4.4	2.2	.0014	.0158	Trace	Trace	.07	2.8
2887	Nov.	2, 1909	0	0	Veg.	5.2	4.5	1.9	.0026	.0160	0	0	.20	2.2
2973	Dec.	8, 1909	0	0	Veg.	3.9	4.3	2.2	.0014	.0102	0	0	.10	3.1

## EAST MILLINOCKET.

This town is supplied from a series of drilled wells, about 300 feet in depth, which are owned and operated by the Great Northern Paper Company. The water is supplied to the distribution system by electrically driven pumps. The system is comparatively new, the plant being opened for use in the spring of 1908.

The water is somewhat harder than the other public supplies of the State. This is owing to the calcareous slate through which the wells are sunk, but the hardness is such that there is no trouble from the use of this water for boiler purposes. The water is in first-class condition for domestic use, being free from both sewage and surface drainage.

## EAST MILLINOCKET.

Number.	Date of Collection.		APPEARANCE.				RESIDUE ON EVAPORATION.		AMMONIA		NITROGEN AS		Chlorine.	Hardness.
			Turbidity.	Sediment.	Odor.	Color.	Total.	Fixed.	Free.	Albuminoid.	Nitrates.	Nitrites.		
1802	Oct.	11, 1908	0	0	Slight	0.3	11.9	10.6	.0004	.0004	0	Trace	.10	5.0
2355	May	11, 1909	0	0	0	0	10.5	10.2	.0004	.0014	0	0	.14	10.2
2612	Aug.	3, 1909	0	0	Slight	0	10.6	8.7	.0002	.0014	0	0	.17	10.8
2937	Nov.	15, 1909	0	0	0	0.2	11.0	9.8	0	.0042	0	0	.175	8.08

EASTPORT.

This city derives its supply from Boyden Lake, a large lake distant about 8 miles from the city, and located in the town of Perry. The lake is mostly surrounded by wild land, with but few cultivated fields. It is reported that there is no house drainage of any kind entering the lake. The water always carries a considerable amount of vegetable material, and from some data of the analyses it seems probable that the intake is located in too shallow water to obtain the best results. The water has always been free from pollution and in good condition.

EASTPORT.

Number.	Date of Collection.	APPEARANCE.				RESIDUE ON EVAPORATION.		AMMONIA		NITROGEN AS		Chlorine.	Hardness.	Lead.
		Turbidity.	Sediment.	Odor.	Color.	Total.	Fixed.	Free.	Albuminoid.	Nitrates.	Nitrites.			
1260	Dec. 3, 1907	0.3	0	Veg.	2.9	4.2	2.2	.0018	.0180	Trace	0	.30	2.2	0
1358	Jan. 15, 1908	0	0	Veg.	2.9	4.0	2.1	.0022	.0144	0	0	.50	1.9	0
1517	May 12, 1908	0	0	Veg.	2.7	3.7	1.8	.0028	.0128	0	0	.42	2.1	0
1635	July 22, 1908	0	0	Veg.	2.7	3.4	1.4	.0022	.0178	0	0	.47	1.6	0
1919	Dec. 2, 1908	0.5	0	Veg.	2.4	4.8	3.0	.0020	.0174	.008	0	.62	1.9	0
2063	Jan. 29, 1909	0	0	Veg.	1.5	4.0	2.2	.0024	.0144	0	0	.50	2.6	0
2235	Apr. 13, 1909	0	0	Veg.	2.8	3.7	1.7	.0014	.0134	0	0	.42	2.2	0
2525	July 13, 1909	0	0	Veg.	1.8	3.7	2.2	.0012	.0162	0	0	.40	2.2	0
2827	Oct. 18, 1909	1.0	0	Veg.	4.9	5.1	2.6	.0042	.0252	0	0	.425	2.33	0

ELLSWORTH.

The city of Ellsworth is supplied with water from Branch Pond Stream. The watershed of this stream above the intake is free from pollution, being wild land covered with a second growth of hardwoods. The water from this supply has always been a first-class one.

## ELLSWORTH.

Number.	Date of Collection.	APPEARANCE.				RESIDUE ON EVAPORATION.		AMMONIA		NITROGEN AS		Chlorine.	Hardness.	Lead.
		Turbidity.	Sediment.	Odor.	Color.	Total.	Fixed.	Free.	Albuminoid.	Nitrates.	Nitrites.			
1200	Oct. 22, 1907	0	0	Veg.	2.6	3.4	2.2	.0094	.0108	0	0	.27	1.5	0
1327	Jan. 23, 1908	0	0	Veg.	3.1	3.2	1.3	.0312	.0124	0	0	.30	1.5	0
1445	Apr. 14, 1908	0	0	Veg.	2.7	3.4	1.6	.0312	.0095	0	0	.27	1.6	0
1606	July 17, 1908	0.1	0	Veg.	2.2	3.0	1.8	.0305	.0392	0	0	.23	1.8	0
1813	Oct. 17, 1908	0	0	Veg.	1.5	2.9	1.6	.0314	.0074	0	0	.29	1.9	0
2024	Jan. 19, 1909	0.2	Veg.	Veg.	3.6	3.7	1.0	.0314	.0038	0	0	.23	2.0	0
2277	Apr. 20, 1909	0	0	Veg.	3.4	3.4	1.3	.0312	.0102	0	0	.25	1.9	0
2512	July 12, 1909	0	0	Veg.	1.8	2.7	2.0	.0314	.0094	0	0	.25	1.9	0
2895	Nov. 3, 1909	0	0	Veg.	3.5	3.6	1.8	.0312	.0138	0	0	.275	1.6	0

## FARMINGTON.

This town derives its water supply from Varnum Pond in the town of Temple. This pond is surrounded by a forest growth for the greater part; but there are about ten cottages now located about one part of its shores. These cottages pay special attention to their sanitary arrangements, and it is reported that there is no drainage of any kind discharged from them near the shore of the pond. It cannot be learned that there are any sanitary laws governing the construction of cottages or the disposal of their wastes about this lake. As it seems likely that this lake will be increasingly used for a summer resort in the future strict regulations should be at once drawn up governing the use of its shores.

The water is piped about five miles to the distribution center in Farmington. The samples, whose analyses are appended below, have come from both the water company and the local board of health.



FARMINGTON.

Number.	Date of Collection.	APPEARANCE.						RESIDUE ON EVAPO- RATION.	AMMONIA		NITROGEN AS		Chlorine.	Hardness.	Lead.
		Turbidity.	Sediment.	Odor.	Color.	Total.	Fixed.		Free.	Albuminoid.	Nitrates.	Nitrites.			
834	Oct. 2, 1906	0	0	Veg.	3.1	4.6	2.8	.0014	.0108	Trace	0	.10	2.3	0	
1220	Oct. 29, 1907	0.2	Iron	Grassy	1.1	4.2	2.5	.0010	.0098	Trace	0	.09	3.8	0	
1363	Jan. 28, 1908	0	0	Veg.	0.8	3.9	2.3	.0014	.0070	0	0	.13	2.8	0	
1364	Jan. 28, 1908	0	0	Veg.	0.8	3.6	2.2	.0006	.0070	0	0	.13	2.6	0	
1457	Apr. 20, 1908	0	0	Veg.	1.3	4.8	3.4	.0008	.0094	0	0	.12	3.1	0	
1647	July 28, 1908	0	0	0	0.2	3.5	2.6	.0014	.0074	0	0	.10	2.0	0	
1825	Oct. 20, 1908	0	0	Veg.	0.6	4.4	2.0	.0006	.0086	0	0	.11	2.5	0	
1963	Dec. 1908	0	0	Veg.	0.5	3.4	2.1	.0020	.0096	0	0	.12	1.5	0	
2018	Jan. 18, 1909	0	0	Slight	0.6	3.5	1.4	.0018	.0096	0	0	.10	1.0	0	
2091	Feb. 9, 1909	0	0	Slight	0.2	4.1	2.5	.0014	.0076	0	0	.12	2.5	0	
2301	Apr. 27, 1909	0	0	Slight	0.3	3.5	1.8	.0004	.0072	0	0	.08	3.0	0	
2519	July 12, 1909	0	0	Slight	0.2	2.9	1.3	.0003	.0092	0	0	.08	2.5	0	
2521	July 12, 1909	0	0	Slight	0.2	2.7	1.3	.0008	.0086	0	0	.09	2.4	0	
2528	July 13, 1909	0	0	0	0.2	3.1	2.5	.0002	.0076	0	0	.10	2.5	0	
2639	Aug. 9, 1909	0	0	Veg.	0.5	3.7	2.3	.0003	.0078	0	0	.15	1.7	0	
2882	Nov. 2, 1909	0	0	Veg.	0.3	2.5	1.5	.0010	.0094	0	0	.075	2.4	0	

FARMINGTON FALLS.

This village has had a small private supply for many years, but during the past summer has installed a public supply from springs in the hills back of the town. The springs are far removed and are above all sources of pollution. The distribution of the water is by gravity with a 237-foot head. The old system was piped through lead, but the water acts considerable on it, so that the new system has been piped through iron with satisfactory results. Up to this time but one sample has come to us from this supply.

FARMINGTON FALLS.

Number.	Date of Collection.	APPEARANCE.						RESIDUE ON EVAPO- RATION.	AMMONIA		NITROGEN AS		Chlorine.	Hardness.
		Turbidity.	Sediment.	Odor.	Color.	Total.	Fixed.		Free.	Albuminoid.	Nitrates.	Nitrites.		
2433	June 14, 1909	0	0	0	0	2.6	2.2	.0006	.0012	0	0	.125	2.65	

## FORT FAIRFIELD.

The water supply of this town comes from springs on the land of Geo. Grass, located near to the New Brunswick line, and far removed from sources of pollution. This supply is not always sufficient, and at such times as the water from this source runs low use is made of water taken from Patten Brook. This brook is dammed to form a millpond and the water is taken from the flume at the dam. The brook flows through woodland and through some cultivated fields, with a starch factory some two miles above the millpond. The water from this source has been free of intestinal bacteria, but is not as good a one as the spring supply. All drainage from the fields and houses about this brook is into it, and no special attention is paid to maintaining a cleanly condition about these places. This source is only used when the spring supply runs low, but some use of it is made each year as a rule.

## FORT FAIRFIELD.

Number.	Date of Collection.		APPEARANCE.				RESIDUE ON EVAPORATION.		AMMONIA		NITROGEN AS		Chlorine.	Hardness.	Lead.
			Turbidity.	Sediment.	Odor.	Color.	Total.	Fixed.	Free.	Albuminoid.	Nitrates.	Nitrites.			
827	Oct.	15, 1906	0.1	0	Slight	.7	15.3	14.4	.0008	.0046	0.04	0	.12	14.5	0
1458	Apr.	20, 1908	0.3	0	Slight	.6	12.5	9.5	.0006	.0082	0.05	Trace	.012	11.8	0
1654	July	28, 1908	0	0	Veg.	.7	16.6	14.5	.0036	.0070	0.01	0	.12	14.1	0
1861	Nov.	1, 1908	0	0	Veg.	1.4	12.5	10.1	.0016	.0070	0	0	.20	8.8	0
2099	Feb.	11, 1909	0	0	Veg.	.6	14.9	13.7	.0002	.0026	0.05	0	.98	13.1	0
2312	May	3, 1909	0	0	Veg.	.3	12.6	11.6	.0002	.0026	0.04	0	.12	12.3	0
2678	Aug.	17, 1909	0	0	Veg.	0	16.3	14.4	.0002	.0040	0.018	0	.175	14.0	0
2909	Nov.	9, 1909	0	0	Veg.	.1	16.3	14.7	.0008	.0032	0.05	0	.20	14.06	0

## FREEPORT.

The source of the supply of this town is a brook, which is reported to be fed by springs, and which runs through woods and pasture land. After rains much dirty surface water appears in this supply, and the clay soil gives to the water at such times some turbidity.

After three analyses the superintendent of the water company refused to supply further samples, and no response could be

obtained from letters to the local health officers. As a result no analyses have been made from this supply since April, 1908.

During the summer of 1909, complaint was made to the State Board of Health in regard to this water. It was claimed that the cattle pastured near this brook had free access to it, and that cattle dung was to be found both on the banks and in the stream. At the request of the State Board of Health, Mr. Johnson of the laboratory was delegated to make an inspection of the surroundings of this supply. The inspection disclosed the following facts.

The brook heads in a spring about a mile above the upper limits of the pasture about which complaint was made. From the source to the upper pasture limits no fault was to be found with the surroundings. Entering the pasture the brook crosses it for a distance of some 500 yards. The pasture itself is naturally of a boggy nature. It is quite heavily wooded, and contains many springs from which the brook derives the greater part of its water. The banks of the brook are fairly steep and high, and it is crossed in one place by an old woods road. The pasture is much used for cattle pasturage and the many springs are in no way protected from their access. In the bed of the brook cow dung was found both on the shore near the water, into which it would be washed by the first rain, and on rocks in the brook itself. All the springs and streams draining them into the brook are equally open to like pollution.

Leaving the pasture the brook flows about 300 yards to the intake through land owned by the water company, and kept in good condition. At the intake is a so-called charcoal filter, which is nothing more than a strainer of poor quality. After passing through this "filter" the water is pumped into the mains and reservoir. Along the course of the brook through the land owned by the water company there is little or no current, caused by the dam at the pumping station, and there is a considerable amount of vegetable matter in all parts of the brook save in the immediate vicinity of the pumping station. There is but one house on the watershed draining toward the brook, and this is located a quarter of a mile from the water. It is apparent that there is great chance for pollution of this water in the course of the brook through the pasture. This land should be owned by the water company for their own protection.

The above findings were reported to the State Board of Health for action. Since that time we have been unable to obtain samples from this supply, although efforts are still being made to find some person who will supply them.

## FREEPORT.

Number.	Date of Collection.		APPEARANCE.				RESIDUE ON EVAPORATION.		AMMONIA		NITROGEN AS		Chlorine.	Hardness.	Lead.
			Turbidity.	Sediment.	Odor.	Color.	Total.	Fixed.	Free.	Albuminoid.	Nitrates.	Nitrites.			
1208	Oct.	21, 1907	0	0	Veg.	2.5	6.1	4.3	.0004	.0076	0.02	0	.42	3.2	0
1300	Jan.	4, 1908	0	0	Veg.	2.7	5.6	3.4	.0008	.0072	0.02	0	.42	3.4	0
1427	Apr.	7, 1908	0.9	0	Veg.	4.5	6.0	4.6	.0020	.0062	0	0	.50	3.8	0

## FRIENDSHIP.

The water supply of this town is furnished by a number of boiling springs, whose water is stored in an artificial reservoir for use. The springs are located near to a swamp, which has been drained to prevent its water entering the public supply. Houses are, however, located near to the springs, rendering pollution possible, although up to this time no B. Coli have been found in the water. At times there has been a considerable fluctuation in the free ammonia and chlorine content of this water, indicating organic pollution. An investigation by the secretary of the local board of health showed that these times of increased free ammonia and chlorine coincided with the periods of occupancy of a house having a closet located 100 feet from one of the springs. This house should be bought by the water company and demolished if the lay of the land prevents the carrying away of the wastes in the opposite direction from the spring.

FRIENDSHIP.

Number.	Date of Collection.		APPEARANCE.				RESIDUE ON EVAPORATION.		AMMONIA		NITROGEN AS		Chlorine.	Hardness.	Lead.
			Turbidity.	Sediment.	Odor.	Color.	Total.	Fixed.	Free.	Albuminoid.	Nitrates.	Nitrites.			
788	Sept.	20, 1906	0.5	Iron	Clammy	0.4	6.9	5.3	.0072	.0082	.08	0	1.07	3.0	0
1496	Apr.	29, 1908	0	0	Slight	0.8	9.1	6.8	.0058	.0016	.17	.0005	1.95	3.3	0
1656	July	28, 1908	0.2	0	Moldy	1.4	7.6	5.1	.0060	.0066	.05	Trace	1.40	1.9	0
2030	Jan.	19, 1909	0.2	0	Moldy	1.2	9.2	6.5	.0074	.0024	0.29	0	1.73	4.1	0
2327	May	4, 1909	0	0	Moldy	0	6.2	4.9	.0026	.0054	0.15	0	1.20	3.4	0
2613	Aug.	2, 1909	0.1	0	Slight	0.1	6.2	4.8	.0016	.0340	0.11	0	1.17	2.9	0
2866	Oct.	26, 1909	0	0	Moldy	0.9	9.0	7.4	.0156	.0056	0.25	0.0015	1.625	3.65	0

FRYEURG.

This town derives its supply from a reservoir in the hills, which is fed by two mountain streams rising in the mountains near Conway, N. H. The streams are far from all houses or cleared land, and the reservoir is two miles from any highway or dwelling in a thick growth of hard wood. In the summer of 1908 the trees about the reservoir were stripped of their leaves by caterpillars, and many of the latter fell into the water. Several analyses were made during this period, but no evidence of any organic pollution from the caterpillars was found. The analyses have always showed this water to be a fine one in every respect.

FRYEURG.

Number.	Date of Collection.		APPEARANCE.				RESIDUE ON EVAPORATION.		AMMONIA		NITROGEN AS		Chlorine.	Hardness.	Lead.
			Turbidity.	Sediment.	Odor.	Color.	Total.	Fixed.	Free.	Albuminoid.	Nitrates.	Nitrites.			
1265	Dec.	9, 1907	0	0	0	0.6	2.3	1.6	.0006	.0034	0	0	.09	2.2	0
1486	Apr.	28, 1908	0	0	Veg.	2.3	2.5	0.8	.0010	.0068	0	0	.07	1.4	0
1637	July	25, 1908	0	0	Slight	1.1	3.5	2.5	.0008	.0050	0	0	.10	1.9	0
1641	July	27, 1908	0	0	0	1.1	3.5	2.5	.0016	.0044	0	0	.10	1.9	0
1862	Nov.	3, 1908	0	0	Slight	0.4	3.0	1.7	.0002	.0044	0	0	.14	1.4	0
2008	Jan.	13, 1909	0	0	Slight	0.3	2.9	1.9	.0002	.0028	0	0	.11	1.5	0
2300	Apr.	27, 1909	0	0	Slight	0.5	2.2	1.3	.0008	.0052	0.04	0	.08	1.5	0
2562	July	20, 1909	0	0	Slight	0.3	3.0	1.8	.0002	.0034	0	0	.12	1.5	0
2876	Nov.	2, 1909	0	0	Slight	0	3.1	2.0	.0008	.0042	0.03	0	.12	2.2	0

## GARDINER.

The supply of this city, as also of the towns of Randolph and Farmingdale, is drawn from Cobbosseecontee Stream. This stream drains a chain of large lakes in the towns of Readfield, Winthrop, Manchester and Litchfield. With the exception of Pleasant Pond these are all large bodies of water, with many cottages about their shores. Cobbosseecontee Lake, the nearest of these large lakes, is 20 miles distant from the intake. The great size of these lakes and their lack of current renders pollution of the stream from them unlikely, either now or in the future.

The stream from Cobbosseecontee Lake is bordered partly by wild land, but for the most part by cultivated fields, with a small group of houses at one mill dam. About midway between the lake and the intake at Gardiner is Pleasant Pond. As the stream simply flows through one end of this lake there is not much chance for sedimentation here if the water were polluted higher up. About this pond are many cottages, and from this point to the intake the stream is bordered by many cottages and farm houses. It is also much used for motor boating during the open season from the dam at the intake to a point well above Pleasant Pond.

Above the dam, from which the water is taken into the system, are located many houses close to the side of the stream, whose banks are here composed of clay. Here is also located the public boat landing and many private boat houses. Unless care is here taken there are great possibilities of pollution of this water right at the intake, as all of these houses are beyond the limits of the city sewers.

During the summer of 1908 the Water District has carefully inspected the watershed of the stream, and also the cottages and shores about Pleasant Pond. All privies and cesspools have been removed far enough from the water to render pollution of this latter practically impossible. Several houses close to the intake, where it was impossible to make satisfactory disposal of the wastes from the privy, have been bought by the Water District and moved away. In fact all possible has been done by the Superintendent to put this supply in its best possible condition and to maintain it in that condition.

From the conditions on and about the stream itself this is a necessity if the purity of the supply is to be maintained. Especially is this true of the first mile of the stream above the intake. The great and increasing use of motor boats on the stream is also an added difficulty with which it is almost impossible to contend. With the growing use of this stream for summer purposes, resulting in increased travel on it and increased numbers of cottages on its banks, the problem of keeping this water supply pure will increase in difficulty, and it can be but a question of time when this source of supply will have to be abandoned or the water filtered.

During the period covered by this report the water has been free from sewage pollution. The clay shores near to the intake have caused the water to be slightly turbid after heavy rains, but even then no sewage bacteria have been found in the water.

GARDINER.

Number.	Date of Collection.	APPEARANCE.						RESIDUE ON EVAPORATION.			AMMONIA		NITROGEN AS		Chlorine.	Hardness.	Lead.
		Turbidity.	Sediment.	Odor.	Color.	Total.	Fixed.	Free.	Albuminoid.	Nitrates.	Nitrites.						
1188	Oct. 17, 1907	0	0	Veg.	2.2	4.7	2.6	.0022	.0164	0	0	.19	2.8	0			
1342	Jan. 20, 1908	0	0	Veg.	1.8	4.5	3.1	.0012	.0134	0	0	.27	3.0	0			
1481	Apr. 27, 1908	0.5	Clay	Veg.	2.1	3.5	1.9	.0038	.0164	0	0	.37	3.7	0			
1553	June 29, 1908	1.0	Clay	Veg.	3.1	4.2	1.3	.0016	.0180	0	0	.22	3.3	0			
1761	Oct. 5, 1908	0.2	0	Veg.	1.2	4.0	2.3	.0028	.0156	0	0	.27	3.7	0			
1950	Dec. 26, 1908	0	0	Veg.	1.5	4.6	3.2	.0040	.0126	0	0	.27	3.0	0			
2228	Apr. 3, 1909	0.4	0	Veg.	2.4	4.1	1.9	.0026	.0102	0	0	.20	3.5	0			
2477	July 3, 1909	0	Veg.	Veg.	2.2	3.9	2.4	.0012	.0164	0	0	.20	3.4	0			
2799	Oct. 11, 1909	0.2	0	Veg.	2.3	5.0	2.9	.0012	.0152	Trace	0	.30	3.7	0			

GORHAM.

This town derives its water supply from Sebago Lake, the source of the Portland supply. As conditions about the lake and the care taken to preserve the purity of the water are there taken up, such description is omitted here, simply noting that the quality of the water has been excellent. The samples from this town are sent by the local board of health.

## GORHAM.

Number.	Date of Collection.	APPEARANCE.						RESIDUE ON EVAPO- RATION.	AMMONIA		NITROGEN AS		Chlorine.	Hardness.
		Turbidity.	Sediment.	Odor.	Color.	Total.	Fixed.		Free.	Albuminoid.	Nitrates.	Nitrites.		
1893	Nov. 12, 1908	0	0	Veg.	0.7	2.6	1.7	.0004	.0092	0	0	.20	1.5	
2053	Jan. 26, 1909	0	0	Veg.	0.8	1.8	1.5	.0006	.0082	Trace	0	.15	1.5	
2289	Apr. 26, 1909	0	0	Veg.	1.1	2.4	1.0	.0010	.0072	Trace	0	.15	1.5	
2589	July 27, 1909	0	0	Veg.	0.9	2.3	1.8	.0006	.0078	0	0	.17	1.8	
2853	Oct. 25, 1909	0	0	Veg.	0.2	2.8	1.7	.0002	.0116	0	0	.175	1.6	

## HALLOWELL.

This city is supplied by a number of springs, which are collected into an open reservoir on the city farm. The analyses show that this water contains considerable surface water mixed with the water from the springs. The springs are not open to pollution of any kind and, as far as the analyses can show, the surface water entering the reservoir is also free from polluting material. This should be so, as the land about the reservoir is kept clean from all waste materials. On account of its softness this water is preferable to the spring waters, of which there are many in this city.

## HALLOWELL.

Number.	Date of Collection.	APPEARANCE.						RESIDUE ON EVAPO- RATION.	AMMONIA		NITROGEN AS		Chlorine.	Hardness.	Lead.
		Turbidity.	Sediment.	Odor.	Color.	Total.	Fixed.		Free.	Albuminoid.	Nitrates.	Nitrites.			
1212	Oct. 23, 1907	0.3	0	Veg.	3.4	6.0	3.0	.0038	.0206	0.01	0	.95	3.0	0	
1340	Jan. 20, 1908	0.1	0	Veg.	2.4	4.6	2.3	.0008	.0182	0	0	.37	2.4	0	
1495	Apr. 30, 1908	0.3	0	Veg.	1.7	4.6	2.3	.0024	.0162	0	0	.95	2.4	0	
1560	June 29, 1908	0	0	Veg.	2.9	4.6	2.5	.0020	.0190	0	0	.27	2.7	0	
1619	July 20, 1908	0	0	Grassy	2.2	5.0	2.8	.0062	.0364	0	0	.80	1.9	0	
1766	Oct. 5, 1908	0	0	Veg.	2.2	5.3	2.8	.0022	.0176	0	0	.37	3.5	0	
1956	Dec. 28, 1908	0.2	0	Veg.	2.8	6.2	3.9	.0034	.0134	0.03	0	.95	2.9	0	
2229	Apr. 5, 1909	0	0	Veg.	1.6	4.0	2.2	.0008	.0078	Trace	0	.22	2.3	0	
2505	July 7, 1909	0	0	Veg.	2.3	4.5	2.4	.0014	.0196	0	0	.25	3.4	0	
2792	Oct. 12, 1909	0	0	Veg.	4.2	4.9	2.2	.0026	.0292	Trace	0	.27	3.3	0	



HOULTON.

This town derives its water supply from brooks and springs, located in wild lands. The intake is on a large brook formed by the union of the above mentioned springs and brooks. There is no sewage pollution possible, as there are no houses within long distances, and there is no pasture land about. Like all surface waters which are collected so largely from the forest floors, this one contains much vegetable material and is highly colored. Naturally it also responds quickly to all seasonal changes, and quick alternations of high and low color are to be noted after rainy periods. Otherwise the water has been always in fine condition.

HOULTON.

Number.	Date of Collection.		APPEARANCE.			RESIDUE ON EVAPORATION.			AMMONIA		NITROGEN AS		Chlorine.	Hardness.	Lead.
			Turbidity.	Sediment.	Odor.	Color.	Total.	Fixed.	Free.	Albuminoid.	Nitrates.	Nitrites.			
1216	Oct.	23, 1907	0	0	Veg.	3.7	9.6	6.0	.0008	.0094	Trace	0	.20	8.3	0
1337	Jan.	15, 1908	0.3	Iron	Veg.	2.9	7.8	4.1	.0014	.0086	0	0	.15	5.2	0
1455	Apr.	18, 1908	0.2	Veg.	Veg.	2.6	7.3	4.4	.0010	.0084	0	0	.15	4.2	0
1629	July	21, 1908	0	0	Veg.	5.8	9.8	4.8	.0020	.0214	0	0	.11	6.6	0
1840	Oct.	26, 1908	0	0	Veg.	2.1	11.0	8.6	.0020	.0084	0	0	.20	7.6	0
2047	Jan.	25, 1909	0	0	Veg.	2.7	7.8	3.9	.0012	.0090	Trace	Trace	.15	3.6	0
2292	Apr.	26, 1909	0.2	Earthy	Veg.	4.4	5.6	2.7	.0018	.0100	0	0	.07	3.6	0
2632	Aug.	6, 1909	0	0	Veg.	1.9	9.6	7.9	.0008	.0090	0.01	Trace	.25	10.7	0
2912	Nov.	8, 1909	0	0	Veg.	6.1	6.9	3.6	.0034	.0132	0	0	.15	4.6	0

KENNEBUNK.

This town is supplied by the Mousam Water Company, which also supplies Kennebunkport, Wells Beach, Ogunquit and Cape Porpoise. The water is taken from Branch Brook in the same town. This brook flows through meadows for most of its length, and is surrounded by a hard wood growth. It is reported to be fed by springs entirely at its source but naturally receives considerable surface water in its course, which, from the nature of the country from which it is derived, contains considerable vegetable material in solution. It is also liable to quick variation in its organic content after rains, while its

fluctuation in color at such times is marked. No evidence of sewage pollution has ever appeared in the samples from this supply, which would be considered a fine one in every way.

## KENNEBUNK.

Number.	Date of Collection.	APPEARANCE.						RESIDUE ON EVAPORATION.		AMMONIA		NITROGEN AS		Chlorine.	Hardness.	Lead.
		Turbidity.	Sediment.	Odor.	Color.	Total.	Fixed.	Free.	Albuminoid.	Nitrates.	Nitrites.					
1113	Aug. 15, 1907	0.1	0	Veg.	3.5	4.2	2.6	.0008	.0074	0	0	.34	1.2	0		
1167	Oct. 13, 1907	0	0	Veg.	11.0	6.6	3.0	.0028	.0148	Trace	0	.38	1.5	0		
1296	Jan. 6, 1908	0	0	Veg.	6.7	3.8	1.6	.0014	.0080	0	0	.37	1.3	0		
1413	Apr. 4, 1908	0	0	Veg.	5.5	3.9	2.3	.0020	.0124	Trace	0	.32	1.3	0		
1579	July 6, 1908	0	0	Veg.	3.0	3.4	2.1	.0002	.0066	0	0	.32	1.5	0		
1760	Oct. 5, 1908	0	0	Veg.	3.8	4.1	2.8	.0012	.0076	0	0	.40	2.7	0		
1989	Dec. 27, 1908	0	0	Veg.	2.8	4.6	3.4	.0014	.0054	Trace	0	.42	2.6	0		
2236	Apr. 6, 1909	0	0	Veg.	7.9	4.8	1.8	.0014	.0106	0	0	.37	1.5	0		
2508	July 10, 1909	0	0	Veg.	3.6	3.7	2.8	.0008	.0074	0	0	.35	1.6	0		
2900	Nov. 8, 1909	0	0	Veg.	4.6	4.8	2.7	.0016	.0114	0	0	.475	1.75	0		

## KINGFIELD.

Previous to 1898 this town used shallow dug wells and typhoid fever was prevalent. Since then there has been a public water supply, the water being taken from a brook which is the outlet of Tufts Pond, and typhoid has become a thing of the past. The water is taken about 300 feet below the outlet of the pond, during which distance the water flows over a bed of rocks and coarse gravel. There is no house, barn or cleared land draining into the stream during this flow from the pond. Tufts Pond itself is located about three miles from Kingfield village, and is surrounded by forest lands, with no source of pollution near it. It is a pond of fairly large size and almost entirely spring fed, so that the water changes little from season to season.

KINGFIELD.

Number.	Date of Collection.	APPEARANCE.						RESIDUE ON EVAPORATION.		AMMONIA		NITROGEN AS		Chlorine.	Hardness.	Lead.
		Turbidity.	Sediment.	Odor.	Color.	Total.	Fixed.	Free.	Albuminoid.	Nitrates.	Nitrites.					
792	Sept. 22, 1906	0	0	Slight	0.8	3.7	2.2	.0008	.0088	Trace	0	.05	1.7	0	0	
1178	Oct. 14, 1907	0	0	Veg.	2.9	3.2	1.2	.0012	.0086	0	0	.04	1.7	0	0	
1316	Jan. 6, 1908	0	0	0	2.2	2.9	1.7	.0004	.0064	0	0	.07	3.1	0	0	
1430	Apr. 7, 1908	0	0	Veg.	1.6	3.4	2.2	.0008	.0058	Trace	0	.12	1.9	0	0	
1570	July 6, 1908	0	0	Woody	1.8	3.5	2.7	.0008	.0046	Trace	0	.08	1.8	0	0	
1774	Oct. 6, 1908	0	0	Veg.	2.6	3.6	2.2	.0014	.0088	0	0	.06	1.7	0	0	
1948	Dec. 26, 1908	0	0	Veg.	1.0	3.6	2.3	.0010	.0060	0	0	.06	2.5	0	0	
2251	Apr. 20, 1909	0	0	Veg.	2.2	3.0	1.5	.0004	.0076	0	0	.06	1.6	0	0	
2565	July 24, 1909	0	0	Veg.	1.4	2.8	1.0	.0008	.0066	0	0	.05	2.2	0	0	
2808	Oct. 12, 1909	0	0	Veg.	2.5	4.1	2.4	0	.0108	0	0	.075	2.0	0	0	

KITTERY.

The villages of Kittery and Kittery Point are supplied with water from Foily Pond. Outside of the fact that the pond is small, with low meadow shores, no information was gained about this source of supply. The analyses show it to be mainly fed by surface sources, and so it is liable to the color and organic fluctuations of such a water. No evidence of pollution has been found in the analyses. The samples have been sent only during the past year, coming from the local health officer.

KITTERY.

Number.	Date of Collection.	APPEARANCE.						RESIDUE ON EVAPORATION.		AMMONIA		NITROGEN AS		Chlorine.	Hardness.	Lead.
		Turbidity.	Sediment.	Odor.	Color.	Total.	Fixed.	Free.	Albuminoid.	Nitrates.	Nitrites.					
2333	May 1909	0	0	Veg.	3.9	3.0	1.5	.0008	.0154	0	0	.55	2.4	0	0	
2634	Aug. 9, 1909	0	Iron	Veg.	4.5	3.7	2.2	.0006	.0164	0	0	.60	1.7	0	0	
2926	Nov. 15, 1909	0.9	Iron & Iron	Veg.	6.7	4.0	2.3	.0056	.0194	0	0	.60	1.6	0	0	

## LEWISTON.

The city of Lewiston took its supply from the Androscoggin River up to 1900, when the source of supply was changed to Lake Auburn. Before the change typhoid was prevalent in this city, but it has now disappeared. A few lead services have been installed in this system, but their use is to be discouraged, as a trace of lead has been found in the water that has been drawn through such pipes.

The location and surroundings of this lake are described in the section on the Auburn public supply, that city also taking its water from this same source.

## LEWISTON.

Number.	Date of Collection.		APPEARANCE.						RESIDUE ON EVAPORATION.		AMMONIA		NITROGEN AS		Chlorine.	Hardness.	Lead.
			Turbidity.	Sediment.	Odor.	Color	Total.	Fixed.	Free.	Albuminoid.	Nitrates.	Nitrites.					
1201	Oct.	22, 1907	0	0	Slight	0.6	3.2	1.9	.0010	.0132	0	0	.20	2.4	0		
1339	Jan.	15, 1908	0	0	Grassy	0.6	3.3	2.6	.0010	.0104	0	0	.17	2.0	0		
1435	Apr.	13, 1908	0	0	Slight	1.3	2.9	1.8	.0004	.0056	0	0	.19	2.6	0		
1627	July	21, 1908	0	0	0	0.4	3.1	1.6	.0002	.0070	0	0	.20	1.4	0		
1817	Oct.	19, 1908	0	0	Veg.	0.5	3.4	1.7	.0014	.0090	0	0	.22	3.0	0		
2007	Jan.	12, 1909	0	0	Slight	0.2	2.9	1.6	.0006	.0090	0	0	.22	3.0	0		
2278	Apr.	20, 1909	0	0	Veg.	0.6	2.9	1.5	.0018	.0078	0	0	.20	2.7	0		
2594	July	29, 1909	0.2	0	Veg.	0.7	3.1	2.2	.0010	.0072	0	0	.22	2.5	0		
2890	Nov.	3, 1909	0	0	Veg.	0.3	3.3	2.2	.0016	.0094	0	Trace	.15	2.4	0		

## LISBON FALLS.

During the past year the town of Lisbon has installed a water system. The supply is derived from a series of 8 driven wells, located just outside the village in low land which was, in parts, inclined to be swampy. This land has been cleared, drained and laid down to grass since the installation of the water system. The wells vary from 48 to 84 feet in depth. The upper two or three feet is a black muck; then follows about 40 feet of blue clay, and then a gray sand and gravel to the bottom of the wells on the top of ledge. The wells yield about 200 gallons per minute. The water is pumped by steam, distributed through wrought iron mains, with a concrete standpipe for storage.

LISBON FALLS.

Number.	Date of Collection.	APPEARANCE.				RESIDUE ON EVAPORATION.		AMMONIA		NITROGEN AS		Chlorine.	Hardness.	Lead.
		Turbidity.	Sediment.	Odor.	Color.	Total.	Fixed.	Free.	Albuminoid.	Nitrates.	Nitrites.			
2429	June 8, 1909	0	0	0	0	9.4	7.9	.0002	.0024	0.05	0	.50	6.9	0

LIVERMORE FALLS.

The water supply of this town comes from Moose Hill Pond, which is located about three miles from the village, and far above it. This pond is fed entirely by springs. There are no houses within a quarter of a mile of it, and no brooks passing near these houses to bring any kind of drainage into the pond. In the winter of 1905-1906 a very large growth of Asterionella occurred in this pond, but no trouble has been experienced from this cause since that time.

At the beginning of 1908 the plant of the Livermore Falls Water Company was taken over by the Livermore Falls Water District, and the samples since that date have come from the latter. During the past three years this water has been in first-class condition.

LIVERMORE FALLS.

Number.	Date of Collection.	APPEARANCE.				RESIDUE ON EVAPORATION.		AMMONIA		NITROGEN AS		Chlorine.	Hardness.	Lead.
		Turbidity.	Sediment.	Odor.	Color.	Total.	Fixed.	Free.	Albuminoid.	Nitrates.	Nitrites.			
1209	Oct. 22, 1907	0	0	Slight	0.7	3.3	1.3	.0003	.0134	0	0	.15	2.3	0
1362	Jan. 23, 1908	0	0	Slight	0.9	3.5	2.3	.0223	.0130	0	0	.19	1.9	0
1491	Apr. 28, 1908	0	0	Veg.	1.1	2.9	1.4	.0020	.0201	0	0	.17	1.5	0
1547	June 25, 1908	0	0	Grassy	0.9	2.4	1.6	.0006	.0034	0	0	.15	1.6	0
1657	July 28, 1908	0	0	Slight	0.6	3.4	1.9	.0012	.0128	0	0	.19	2.0	0
1887	Nov. 5, 1908	0	0	Veg.	0.8	2.6	1.7	.0012	.0144	0	0	.15	1.9	0
2033	Jan. 20, 1909	0	0	Veg.	0.4	3.4	1.8	.0030	.0148	0	0	.15	1.2	0
2322	May 4, 1909	0	0	Veg.	0.6	2.7	1.6	.0010	.0090	0	0	.15	1.9	0
2653	Aug. 12, 1909	0	0	Slight	0.6	3.1	1.5	.0008	.0124	0	0	.15	2.6	0
2893	Nov. 2, 1909	0	0	Veg.	0	3.2	1.8	.0012	.0138	0	0	.20	1.89	0

## LUBEC.

The water supply of this town is owned by the town itself, the same being bought from a private corporation in 1904. The water comes from a spring located in drift deposits about 2 miles west of the town. The surface of the ground behind the spring is composed of boulder clay and the ground is covered by large boulders, while the rock is said to lie but a few feet below the surface. No houses are located within a thousand yards of the upper side of the spring, so that there is no chance of its being contaminated by surface drainage.

The flow from the spring is about 100 gallons per minute. From the spring the water flows by gravity to a 500,000 gallon reservoir, dug in boulder clay, a few hundred feet distant. From here it is pumped to the village under a pressure varying from 25 to 45 pounds.

The analyses show this water to be a fine one in every respect.

## LUBEC.

Number.	Date of Collection.	APPEARANCE.				RESIDUE ON EVAPORATION.		AMMONIA		NITROGEN AS		Chlorine.	Hardness.	Lead.
		Turbidity.	Sediment.	Odor.	Color.	Total.	Fixed.	Free.	Albuminoid.	Nitrates.	Nitrites.			
1480	Apr. 27, 1908	0	0	0	0	11.1	8.4	.0004	.0014	0.14	Trace	1.32	6.9	0
1621	July 20, 1908	0	0	Slight	0	12.7	10.4	0	.0016	0.13	0	1.23	5.5	0
1843	Oct. 26, 1908	0	0	0	0	11.7	8.0	.0002	.0026	0.11	0	1.25	7.5	0
2046	Jan. 25, 1909	0.6	0	Slight	0	11.1	6.8	.0004	.0028	0.10	Trace	1.25	5.5	0
2291	Apr. 26, 1909	0.5	0	Slight	0.2	11.0	8.8	.0002	.0024	0.13	0	1.25	7.5	0
2526	July 13, 1909	0	0	Slight	0	10.8	9.7	.0002	.0020	0.18	0	1.40	7.5	0
2833	Oct. 19, 1909	0.1	0	Slight	0	12.0	10.4	.0006	.0038	0.15	Trace	1.35	8.16	0

## MACHIAS.

This town takes its supply from the Machias River. Four miles above the town is the village of Whitneyville. This latter town has no sewage system, while its population of about 450 is scattered over the township.

Above Whitneyville the river runs through wild land to its source, the country throughout this distance being heavily wood-

ed, with many swampy reaches, but with no houses or cleared land near to it. Naturally the organic content of this water, which is mostly of vegetable origin, is always high and varies greatly during the different seasons.

With increasing population at Whitneyville the necessity of either filtering this water or finding a new source of supply will arise. At the present time the situation lends itself to developing serious trouble if typhoid should appear at Whitneyville village.

MACHIAS.

Number.	Date of Collection.			APPEARANCE.						RENDUE ON EVAPORATION.		AMMONIA		NITROGEN AS		Chlorine.	Hardness.	Lead.
				Turbidity.	Sediment.	Odor.	Color.	Total.	Fixed.	Free.	Albuminoid.	Nitrates.	Nitrites.					
1215	Oct.	24,	1907	0.1	0	Veg.	13.0	5.9	2.5	.0022	0202	Trace	0	.22	2.2			
1334	Jan.	14,	1908	0	0	Veg.	6.3	3.6	1.4	.0020	0124	0	0	.25	1.6	0		
1447	Apr.	14,	1908	0.3	0	Veg.	5.0	3.3	1.7	.0012	0092	0	0	.20	1.4	0		
1610	July	15,	1908	0	0	Veg.	5.3	3.6	2.0	.0014	0102	0	0	.20	2.0	0		
1795	Oct.	12,	1908	0	0	Veg.	9.5	6.0	2.5	.0028	0186	0	0	.32	2.4	0		
1990	Jan.	5,	1909	0	0	Veg.	6.4	4.1	2.0	.0014	0102	0	0	.35	2.3	0		
2282	Apr.	20,	1909	0	0	Veg.	10.0	3.9	1.5	.0014	0096	0	0	.20	1.5	0		
2498	July	6,	1909	0	0	Veg.	6.5	3.8	1.7	.0014	0124	0	0	.20	1.9	0		
2834	Oct.	19,	1909	0	0	Veg.	11.5	5.1	2.0	.0018	0216	0	0	.35	1.6	0		

MADISON.

The water supply of this town comes from the Kennebec River. On the river above Madison there are no towns which have sewage systems, while Solon and Bingham are the only towns near to the river. About four miles above Madison Carrabasset Stream enters the river. This stream receives a little sewage at Kingfield, about 20 miles above its mouth. Its course is, however, broken by very many stretches of dead-water; while the amount of sewage entering it at this place is very small, it coming from private sewage and not from town systems.

During the winter of 1908-1909 there was a very great increase in intestinal troubles in this town, which were generally accepted to be typhoid cases. No blood samples were sent to

the laboratory for confirmatory tests, and there was some little question as to the disease being true typhoid on account of the exceeding mildness of all cases and the comparatively short duration of the majority. Popular opinion held the water to be the cause of the trouble. As a result the Madison Water Company requested me to attend a meeting of the Board of Trade where the matter was to be discussed, and later inspect the surroundings of the plant of the Company.

The Water Company has two intakes in the Kennebec River, one opposite the town and in deep water, and the other about a half mile above in water so shallow that some degree of turbidity is always present when the water is taken from this intake. As a result the lower intake is used practically all the time, the upper one only being used when there is a break in the lower pipes. An eighth of a mile below the lower intake is the upper dam. Across the river is the village of North Anson. The houses near the river bank drain directly into the river above the dam, and some sewage also enters the river from a brook on the Anson side just above the bridge. On the Madison side of the river a woolen mill extends up the river from the dam for a short distance, and the rest of the shore is used by the Great Northern Paper Company for piling their winter supply of logs. The sewage of the woolen mill, as also its technical wastes, goes into the river below the dam. All the sewers of the town of Madison also empty below the dam.

Almost over the lower, and generally used intake, is the sorting gap in the booms where the Great Northern logs are taken from the drive. About 300 feet farther up stream a small brook, which runs down the hill above the river, empties into the river through a swamp. A large number of houses, many of which were not connected with the sewers, drained into this brook. This carries but little water except after rains, when it is in flood for a short time. Above this point there is nothing on the river until Solon is reached.

Under ordinary conditions the wheels at the mills cause a constant current in the river. It is claimed, however, that on Sundays, especially when the flash boards are on the dam, when the mills are shut down the water will back up the river almost to the upper intake, and that then the Anson sewage might be carried over the Madison intake. This seemed fairly probable from the shape of the shores, but requires float evidence for its



proof, which could not be obtained in the winter with the river frozen. With water running over the crest of the dam at its normal height there is no danger to be feared from this Anson sewage, which is small in amount at the best.

The investigations by the local physicians, later confirmed by a very careful house to house canvass by the Water Company, pointed to the water by a process of elimination, as all of the patients had used the water, while their milk and food supply had practically nothing in common. Investigation also showed that during the past summer, fall and up to the time of the investigation in the winter there had been no case of typhoid on the river above Madison.

The situation was, then, this:—With no intestinal disease on the river above Madison there was a sudden flare-up of intestinal trouble at this place, first in the late fall and, second, in the middle of the winter. Both of these flare-ups occurred about ten days after heavy rains and the cases continued to be reported for a month after that time in decreasing numbers. All of the cases had used river water before the outbreak of disease.

With the entire absence of intestinal trouble on the watershed of the river above this town the trouble must have arisen from some imported case either in Madison or Anson. Investigation showed that but two cases of the disease had occurred in Anson, both being in men who worked on the Madison side of the river, and had used the Madison water. Also these cases had occurred late in the outbreak. Anson used water from wells, and not from the river. This seems to eliminate Anson as the starting point of the outbreak.

If the trouble came from Madison, and the town was infecting its own water supply, the trouble must come from the unsewered portion of the town, as the sewage from the sewers is emptied into the river below the dams. There is an unsewered portion of the town lying at the head of the brook already mentioned, and cases of the disease had occurred in houses whose drainage could reach this brook. This, coupled with the fact that the two outbreaks, if they can be called such, occurred after heavy rains, suggested that the drainage of this brook might be the cause of the trouble. The Water Company was therefore advised to stop using water from the lower intake, over which the water from the brook might possibly pass, and

use the upper one, which was above all chance of pollution from the brook. This was done and the cases gradually died out and disappeared. There has been no further trouble with this water since the first of March, 1909.

Several samples of the water were examined at the time of the inspection, but nothing out of the way could be found in any of them. The bacterial count was in all cases low and no gas formers were present.

The starting point of the trouble could not be located, but it seems to have been carried by the water, and it seems probable that the town of Madison was, after the first case, infecting its own water supply by the means of the brook above mentioned. The fact that over two months had elapsed since the outbreak of the first cases and the time our attention was called to it made the investigation particularly unsatisfactory. It is a pleasure to state that the Water Company seemed not only willing but anxious to do whatever it could to prevent any future trouble, even to filtering the water if it should prove necessary.

## MADISON.

Number.	Date of Collection.	APPEARANCE.			RESIDUE ON EVAPORATION.			AMMONIA		NITROGEN AS		Chlorine.	Hardness.	Lead.
		Turbidity.	Sediment.	Odor.	Color.	Total.	Fixed.	Free.	Albuminoid.	Nitrates.	Nitrites.			
1239	Nov. 11, 1907	0.2	Veg.	Veg.	7.0	5.0	2.2	.0022	.0166	Trace	0	.07	2.0	0
1326	Jan. 13, 1908	0	0	Veg.	3.1	4.1	1.3	.0014	.0086	0	0	.07	1.9	0
1424	Apr. 6, 1908	0.1	0	Veg.	3.5	4.4	2.7	.0014	.0122	0	0	.05	1.9	0
1558	June 29, 1908	0	0	Veg.	3.3	3.2	1.6	.0014	.0104	0	0	.02	3.3	0
1758	Oct. 5, 1908	0	0	Veg.	2.6	3.0	1.6	.0018	.0090	0	0	.04	2.0	0
1918	Dec. 2, 1908	0.1	0	Veg.	2.7	4.0	2.4	.0014	.0095	0.01	0	.09	2.1	0
1983	Jan. 4, 1909	0	0	Veg.	2.2	3.7	2.2	.0014	.0088	Trace	0	.07	2.1	0
2073	Feb. 2, 1909	0	0	Veg.	2.4	3.9	2.0	.0020	.0114	0	0	.07	2.2	0
2293	Apr. 6, 1909	0.4	0	Veg.	3.1	4.0	2.0	.0012	.0084	0	0	.07	2.0	0
2482	July 6, 1909	0	0	Veg.	2.7	3.5	1.6	.0020	.0110	0	0	.07	2.3	0
2801	Oct. 11, 1909	0	0	Veg.	6.5	4.3	1.6	.0032	.0210	0	0	.10	2.1	0

## MECHANIC FALLS.

This town takes its supply from Waterhouse Brook, a stream which drains a chain of ponds in the town of Poland. The brook passes through marshy ground for most of the distance

from its source to the intake. Passing through Poland Corner the railroad skirts this brook for some distance, and farther down a public highway follows the stream, while a number of houses stand back from it. As the stream enters the village a set of buildings are located near to it on high ground.

The Water Company filter the water through Warren filters. The analyses indicate that it is passed through the sand without treatment with any coagulant and that the filtration is little more than a straining of the heavier suspended matters, together with some of the bacteria, from the water. The analyses of both raw and filtered water is appended.

MECHANIC FALLS.

Number.	Date of Collection.	APPEARANCE.					RESIDUE ON EVAPO- RATION.		AMMONIA		NITROGEN AS		Chlorine.	Hardness.	Lead.
		Turbidity.	Sediment.	Odor.	Color.	Total.	Fixed.	Free.	Albuminoid.	Nitrates.	Nitrites.				
1205†	Oct. 21, 1907	0	0	Veg.	1.6	3.6	1.9	.0004	.0110	Trace	0	.24	2.6	0	
1206*	Oct. 21, 1907	0	0	Veg.	1.6	3.8	2.0	.0008	.0118	Trace	0	.23	2.2	0	
1346*	Jan. 20, 1908	0	0	Grassy	1.7	5.3	3.5	.0008	.0088	0	0	.32	2.3	0	
1347†	Jan. 20, 1908	0	0	Grassy	1.7	5.5	3.5	.0010	.0084	0	0	.32	2.9	0	
1493*	Apr. 28, 1908	0	0	Veg.	2.7	3.9	1.9	.0014	.0182	0	0	.27	2.0	0	
1494†	Apr. 28, 1908	0.1	0	Veg.	2.9	3.9	2.0	.0018	.0114	0	0	.26	2.1	0	
1607†	July 14, 1908	0	0	Veg.	1.4	3.7	2.4	.0014	.0094	0	0	.28	2.6	0	
1608*	July 14, 1908	0	0	Veg.	1.8	3.5	2.0	.0018	.0112	0	0	.20	2.3	0	
1853*	Oct. 28, 1908	0	0	Veg.	2.4	4.9	2.7	.0018	.0104	0	0	.23	2.7	0	
1854†	Oct. 28, 1908	0	0	Veg.	2.4	4.8	2.7	.0008	.0130	0	0	.27	2.6	0	
2050†	Jan. 26, 1909	0	0	Veg.	2.4	5.1	3.8	.0048	.0090	Trace	Trace	.27	2.5	0	
2051†	Jan. 26, 1909	0	0	Veg.	2.4	5.2	4.0	.0046	.0086	Trace	Trace	.27	2.9	0	
2164*	Mar. 15, 1909	0	0	Veg.	1.6	4.9	3.1	.0016	.0086	Trace	0	.27	2.9	0	
2330*	May 4, 1909	0	0	Veg.	1.6	3.6	1.9	.0022	.0100	Trace	0	.22	2.4	0	
2331†	May 4, 1909	0	0	Veg.	1.6	3.4	1.7	.0012	.0086	Trace	0	.22	2.7	0	
2623*	Aug. 4, 1909	0	0	Veg.	0.9	4.2	2.7	.0010	.0122	0	Trace	.35	2.5	0	
2624*	Aug. 4, 1909	0	0	Veg.	0.9	4.6	2.9	.0010	.0106	0	Trace	.35	2.3	0	
2879†	Nov. 2, 1909	0	0	Veg.	2.4	6.2	4.6	.0013	.0105	0	0	.875	4.23	0	

\* Raw. † Filtered.

MEXICO.

This town has several small spring supplies, each one serving a few houses, and one larger surface supply. This latter is the property of the Mexico Water Company. The water is taken from a brook from the hills, which has been dammed in a narrow spot, thus forming a reservoir. Near this brook are

two farms, which ultimately drain into it, and it receives the water from another small brook, running from the buildings of a Mr. Frazier. A barn stands but ten feet from this latter brook and a pig pen about 25 feet away, both draining into it. The amount of water carried by this brook is small, it being reported as less than a two-inch stream. As the barn and pig pen above mentioned both drain into this brook there are great possibilities of pollution of this supply from this source, and means should be adopted to divert the drainage from these buildings from the brook.

No sewage bacteria or other evidence of pollution has as yet been detected in the water from this supply.

## MEXICO.

Number.	Date of Collection.	APPEARANCE.			RESIDUE ON EVAPORATION.			AMMONIA		NITROGEN AS		Chlorine.	Hardness.
		Turbidity.	Sediment.	Odor.	Color.	Total.	Fixed.	Free.	Albuminoid.	Nitrates.	Nitrites.		
2473	June 30, 1909	0	0	Veg.	2.6	4.5	2.6	.0008	.0084	0	0	.12	2.5
2645	Aug. 9, 1909	0.1	0	Veg.	3.3	4.8	2.7	.0014	.0184	0	0	.12	2.2

## MILLINOCKET.

The water supply of this town is taken from the West Branch of the Penobscot River. The watershed of this branch of the river above the Millinocket intake is practically uninhabited, there being but a few sporting camps on the large lakes above, and no settlement except that at the head of Chesuncook Lake. As a result this river, throughout the 160 miles of its flow above Millinocket, is free from pollution both of stream and watershed. Like all waters collected from densely forested areas this water is subject to considerable variation in its vegetable content, and always carries a high color.

## MILLINOCKET.

Number.	Date of Collection.	APPEARANCE.					RESIDUE ON EVAPO- RATION.	AMMONIA		NITROGEN AS		Chlorine.	Hardness.	Lead.
		Turbidity.	Sediment.	Odor.	Color.	Total.		Fixed.	Free.	Albuminoid.	Nitrates.			
1456	Apr. 20, 1908	0.3	Iron	Veg.	5.5	5.0	2.8	.0022	.0144	0	0	.08	2.7	0
1583	July 7, 1908	0.3	Woody	Veg.	5.4	3.7	1.5	.0018	.0106	0	0	.03	1.9	0
1838	Oct. 26, 1908	0	0	Veg.	5.0	3.5	1.7	.0033	.0134	0	0	.04	2.0	0
1989	Jan. 5, 1909	0	0	Veg.	4.8	3.8	2.1	.0016	.0112	0	0	.08	3.8	0
2260	Apr. 13, 1909	0	0	Veg.	4.5	3.5	1.4	.0006	.0110	0	0	.03	2.9	0
2487	July 6, 1909	0	0	Veg.	4.6	3.6	1.6	.0020	.0126	0	0	.05	2.0	0
2829	Oct. 19, 1909	0	0	Veg.	3.8	4.0	2.0	.0007	.0141	0	0	.025	1.60	0

## MILO.

The water supply for this town is taken from Sebec Stream. This stream is the outlet of Sebec Lake, a lake twelve miles long and of a width varying from a half to three miles. About the lake are many cottages and several small groups of houses. The great size of the lake and the lack of current in it renders pollution of the stream by the sewage of these cottages impossible. In the nine miles between the lake and the intake no sewage enters the stream. The country through which the stream flows is of a gravelly loam nature, with some large areas of swamp land draining into the stream, so that the water in the stream is more highly colored and contains more vegetable matter than does the lake water. The country is heavily wooded, and there is soft lumber in the stream the year round, while much lumber is driven on the stream. Apparently about the only chance of pollution of this water at this time by sewage is by the sewage of the river drivers' camps in the spring. The single sample here reported came from the Water Company, and arrangements have been made with the health officers of Milo to send quarterly samples.

## MILO.

Number.	Date of Collection.	APPEARANCE.						RESIDUE ON EVAPORATION.		AMMONIA		NITROGEN AS		Chlorine.	Hardness.	Lead.
		Turbidity.	Sediment.	Odor.	Color.	Total.	Fixed.	Free.	Albuminoid.	Nitrates.	Nitrites.					
1885	Oct. 24, 1906	0	0	Veg.	2.4	3.2	1.4	.0042	.0128	0	0	.07	1.4	0		

## NEWPORT.

This town derives its water supply from Pillsbury Pond. The pond is surrounded by high and wooded land. No stream empties into the pond. There is a small bog at the head of the pond from which some little highly colored water enters the lake. No houses drain into the lake. The water flows through a pipe line for three-fourths of a mile to a reservoir dug in the ground. The land about the reservoir is used for a pasture and drains into the reservoir. From this point the water is distributed to the consumers. There has been some complaint of the water being a little dirty after rains, although the analyses of the samples we have received do not show this. This condition is probably due to the surface water entering the earth reservoir. The water has always been in good condition when examined.

## NEWPORT.

Number.	Date of Collection.	APPEARANCE.						RESIDUE ON EVAPORATION.		AMMONIA		NITROGEN AS		Chlorine.	Hardness.
		Turbidity.	Sediment.	Odor.	Color.	Total.	Fixed.	Free.	Albuminoid.	Nitrates.	Nitrites.				
1900*	Nov. 19, 1908	0	0	Veg.	1.1	3.3	1.5	.0014	.0150	0	0	.15	2.0		
1901†	Nov. 19, 1908	0.2	0	Veg.	1.5	6.0	3.3	.0026	.0194	0.009	Trace	.22	2.0		
1902†	Nov. 19, 1908	0.4	Earthy	Veg.	1.5	5.6	2.7	.0006	.0152	Trace	0	.20	2.3		
2338†	May 11, 1909	0	0	Veg.	3.7	6.8	4.0	.0016	.0123	0	0	.14	4.6		
2566†	July 25, 1909	0	0	Veg.	1.8	4.0	1.9	.0016	.0134	0	0	.37	2.9		
2800†	Oct. 10, 1909	0	0	Veg.	2.7	7.0	3.9	.0018	.0192	0	0	.225	3.13		

\* Lake.

† Reservoir.

‡ Tap.

NORRIDGEWOCK.

This town has no general water supply, but the Vaughn Aqueduct Company supplies about 40 families in the village. The source of this supply is a group of 5 or 6 springs whose water is united to form a small pond. Houses are located about the vicinity of the pond, one being about 100 feet away from it. It is reported that the ground about the pond is kept clean of all refuse.

NORRIDGEWOCK.

Number.	Date of Collection.	APPEARANCE.				RESIDUE ON EVAPORATION.		AMMONIA		NITROGEN AS		Chlorine.	Hardness.	Lead.
		Turbidity.	Sediment.	Odor.	Color.	Total.	Fixed.	Free.	Albuminoid.	Nitrates.	Nitrites.			
1477	Apr. 26, 1908	0	0	Slight	0.3	7.8	5.3	.0068	.0096	0.25	.0008	.80	2.5	0
1574	July 6, 1908	0.3	0	Veg.	0.9	7.8	5.5	.0174	.0216	0.23	.0012	.67	3.0	0
1889	Nov. 11, 1908	0.4	0	Slight	2.4	6.9	5.1	.0118	.0074	0.02	.005	.77	4.6	0
2352	May 10, 1909	0	0	Musty	0.6	4.5	3.4	.0044	.0048	0.05	.0003	.37	3.2	0
2489	July 6, 1909	1.1	Iron	Veg.	5.5	5.4	3.6	.0014	.0086	0	0	.37	3.1	0
2806	Oct. 12, 1909	0.2	Veg.	Veg.	2.5	5.5	4.1	.0006	.0102	0	0	.70	3.06	0

NORTH BERWICK.

The supply of this town comes from a combination of springs and a brook; these being located in the towns of North Berwick and Wells. The brook is situated in swampy land about a half mile from the village, and is surrounded by a pine growth. A part of the course of the brook is through clay soil, and considerable turbidity at times results from this circumstance. The large amount of vegetable material which the water receives in its passage through the low and swampy land results in a high color, and in considerable fluctuation of the color and vegetable content of the water, according as the sample is collected at a wet or dry season of the year.

## NORTH BERWICK.

Number.	Date of Collection.	APPEARANCE.				RESIDUE ON EVAPORATION.		AMMONIA		NITROGEN AS		Chlorine.	Hardness.
		Turbidity.	Sediment.	Odor.	Color.	Total.	Fixed.	Free.	Albuminoid.	Nitrates.	Nitrites.		
1823	Oct. 15, 1906	1.6	Slight	Veg.	1.4	13.4	11.5	.0034	.0046	0.01	0	.87	5.8
1487	Apr. 27, 1908	0.2	Slight	Veg.	4.8	4.4	2.5	.0012	.0140	0	0	.27	2.5
1797	Oct. 12, 1908	0.1	0	Muddy	3.1	5.5	3.8	.0012	.0060	Trace	0	.32	1.9
1980	Jan. 14, 1909	0	0	Veg.	1.2	4.6	3.9	.0010	.0036	0	0	.27	2.6
2368	May 12, 1909	0	0	Veg.	3.1	5.0	2.7	.0014	.0088	0	0	.20	2.3
2630	Aug. 5, 1909	0.1	0	Veg.	1.5	4.4	3.6	.0006	.0022	0	0	.35	2.7
2964	Dec. 7, 1909	0	0	Veg.	2.5	4.5	3.2	.0005	.0095	0	0	.30	2.25

## NORTHEAST HARBOR.

This town takes its water from Hodlock's Lower Pond, a pond which is located in the mountains with no houses or possibilities of pollution near to it. It is entirely surrounded by wild forest lands, and is spring fed.

## NORTHEAST HARBOR.

Number.	Date of Collection.	APPEARANCE.				RESIDUE ON EVAPORATION.		AMMONIA		NITROGEN AS		Chlorine.	Hardness.	Lead.
		Turbidity.	Sediment.	Odor.	Color.	Total.	Fixed.	Free.	Albuminoid.	Nitrates.	Nitrites.			
1474	Apr. 21, 1908	0	0	Veg.	1.7	4.0	2.2	.0013	.0074	0	0	.74	1.5	0
1624	July 21, 1908	0	0	Veg.	1.4	3.7	2.8	.0018	.0124	0	0	.80	1.9	0
1869	Nov. 3, 1908	0	0	Veg.	1.7	3.4	1.6	.0012	.0148	0	0	.75	1.5	0
2080	Feb. 2, 1909	0	0	Veg.	2.2	3.7	2.0	.0022	.0134	0	0	.83	2.2	0
2362	May 10, 1909	0	0	Veg.	1.7	3.1	1.6	.0014	.0092	0	0	.65	1.5	0
2689	July 27, 1909	0	0	Veg.	1.4	3.5	2.0	.0026	.0114	0	0	.62	2.1	0
2857	Oct. 21, 1909	0	0	Veg.	4.0	6.5	4.7	.0050	.0224	0	0	.45	2.5	0



NORWAY.

The Norway Water Company takes its water from Pennesseewassee Lake. This lake is about four miles long, and the intake is located about a mile above the upper village limits. A mile above the intake is a settlement of about seven houses, while several cottages are located about the shores of the lake. The shores of this lake above the village of Norway are all high and rocky and are almost entirely wooded. There are no swamps near the shores of the lake. There are two small ponds that naturally drain into the lake, but both are now closed with dams, and the water is drawn into the larger lake only when there is need of it. One pond contains quite a growth of lilies in their season and is shallow and highly colored, while the other pond is as clear and as low in color as the large lake itself.

During the summer of 1906 the Water Company had notices posted about the shores of the pond and at all the cottages, warning against pollution of the shores and of the water. In 1907 some alarm was caused by the presence of a large flock of ducks, which took up their residence about over the intake. Analyses of the water at that time failed to show any evidence of pollution from this source.

NORWAY.

Number.	Date of Collection.		APPEARANCE.					RESIDUE ON EVAPORATION.		AMMONIA		NITROGEN AS		Chlorine.	Hardness.	Lead.
			Turbidity.	Sediment.	Odor.	Color.	Total.	Fixed.	Free.	Albuminoid.	Nitrates.	Nitrites.				
1194	Oct.	22, 1907	0	0	0	1.7	3.7	1.7	.0008	.0154	0	0	.15	2.1	0	
1344	Jan.	20, 1903	0	0	Veg.	1.7	4.2	3.0	.0016	.0126	0	0	.20	2.3	0	
1462	Apr.	20, 1908	1.0	Clay	Veg.	2.0	4.1	2.5	.0020	.0170	0	0	.17	2.2	0	
1592	July	11, 1908	0.2	Veg.	Mouldy	1.7	4.3	2.2	.0022	.0168	0	0	.15	2.0	0	
1824	Oct.	19, 1908	0	0	Veg.	1.7	4.5	2.1	.0014	.0120	0	0	.18	2.2	0	
2023	Jan.	19, 1909	0	0	Veg.	1.1	3.5	1.2	.0032	.0134	0	0	.15	2.0	0	
2230	Apr.	26, 1909	0	0	Veg.	1.5	3.2	1.5	.0020	.0112	0	0	.11	2.6	0	
2546	July	19, 1909	0	0	Veg.	1.3	3.0	1.9	.0036	.0112	0	0	.12	2.5	0	
2871	Nov.	1, 1909	0	0	Veg.	0.9	3.6	2.4	.0014	.0124	0	0	.175	2.18	0	

## OAKLAND.

The Oakland Water Company takes its water supply from Snow Pond. This is one of the Belgrade chain of lakes, and is about 9 miles long. There is some marshy land about the head of the lake, but the water is taken from the foot. The pond is surrounded by woods, pasture and tillage lands; while there are about 25 cottages about its shores. So far as can be learned no special precautions are taken to prevent the sewage of these cottages entering the lake, nor are there any rules for the care of sewage wastes applying to the farms about the shores which drain into the lake. No cottages are reported as being near to the intake, but the present conditions offer an inviting chance for this water to cause trouble in the future.

## OAKLAND.

Number.	Date of Collection.		APPEARANCE.						RESIDUE ON EVAPORATION.	AMMONIA		NITROGEN AS		Chlorine.	Hardness.	Lead.
			Turbidity.	Sediment.	Odor.	Color.	Total.	Fixed.	Free.	Albuminoid.	Nitrates.	Nitrites.				
921	Mar.	5, 1907	0	0	Veg.	2.6	3.4	1.2	.0022	.0116	Trace	0	.05	1.9	0	
1207	Oct.	22, 1907	0	0	Veg.	2.2	3.7	1.5	.0010	.0152	0	0	.14	3.0	0	
1333	Jan.	14, 1908	0	0	Veg.	2.5	3.2	1.9	.0014	.0152	0	0	.20	2.0	0	
1432	Apr.	11, 1908	0	0	Veg.	2.2	3.7	1.8	.0024	.0106	0	0	.17	2.5	0	
1559	June	30, 1908	0	0	Veg.	2.3	3.1	1.7	.0006	.0166	0	0	.15	2.2	0	
1769	Oct.	6, 1908	0	0	Grassy	2.2	3.5	1.5	.0024	.0116	0	0	.17	2.4	0	
1962	Dec.	29, 1908	0	0	Veg.	1.5	3.0	1.3	.0018	.0120	0	0	.20	2.0	0	
2261	Apr.	13, 1909	0	0	Veg.	1.8	3.2	1.6	.0014	.0174	0	0	.17	3.1	0	
2438	June	15, 1909	0	0	Veg.	2.0	3.0	1.3	.0010	.0118	0	0	.17	2.7	0	
2439	June	15, 1909	0	0	Veg.	2.0	2.8	1.3	.0014	.0114	0	0	.17	2.4	0	
2502	July	5, 1909	0	0	0	0.8	3.0	1.0	.0014	.0128	0	0	.15	2.3	0	
2805	Oct.	12, 1909	0	0	Veg.	1.5	3.2	1.8	.0034	.0120	0	Trace	.15	2.3	0	

## OLD TOWN.

This city is supplied by the Bangor Railway & Electric Company. The source of supply is the Penobscot River, and the water is taken above the Bodwell Waterpower Company dam. While the intake is above the sewage of Old Town itself, yet the water is open to considerable indirect pollution from the many small towns above this city. These are all without sewage systems emptying into the river, but all drain into the river

through the natural lay of the land, and their effect when typhoid appears on the watershed is noted in the increase in typhoid in Old Town.

The river is full of logs during the summer, and large crews of men are constantly on the water, engaged in driving and sorting these logs. The large sorting booms are above the intake. The river is used by the men of these crews as a natural sewer, and their presence on the river constitutes a serious menace to the users of the river water in its present condition.

The water in the river at the intake is very greatly discolored by large amounts of vegetable material, so that its appearance is not better than that of the Brewer and Bangor waters. It is but a question of time when this water supply will have to be abandoned or a filter system installed to treat the river water. This should be done at once, for the pollution of the river above the intake is growing. When these analyses were first started *B. coli* were absent from 10c.c. of the water, since that time they have appeared in greater and greater frequency, so that they are now almost always present in 10c.c. portions of the water.

OLD TOWN.

Number.	Date of Collection.			APPEARANCE.				RESIDUE ON EVAPORATION.			AMMONIA		NITROGEN AS		Chlorine.	Hardness.	Lead.
				Turbidity.	Sediment.	Odor.	Color.	Total.	Fixed.	Free.	Albuminoid.	Nitrates.	Nitrites.				
1087	July	17,	1907	0.9	Veg.	Veg.	7.5	4.9	2.5	.0012	.0186	Trace	.0004	.10	1.8	0	
1088	July	17,	1907	0.5	Veg.	Veg.	7.9	5.5	2.4	.0018	.0182	0	.0004	.07	1.9	0	
1186	Oct.	15,	1907	0	0	Veg.	8.5	6.0	1.5	.0228	.0240	Trace	0	.13	2.9	0	
1306	Jan.	5,	1908	0.3	0	Veg.	6.5	5.1	1.5	.0316	.0146	0	0	.12	2.1	0	
1428	Apr.	5,	1908	0	0	Veg.	4.3	3.4	2.8	.0022	.0152	0	.0003	.11	2.5	0	
1530	July	6,	1908	0	0	Veg.	4.4	4.2	1.7	.0016	.0154	0	0	.05	1.9	0	
1799	Oct.	12,	1908	0	0	Veg.	5.1	5.2	2.3	.0020	.0183	0	Trace	.12	2.4	0	
1982	Jan.	3,	1909	0	0	Veg.	5.0	6.0	3.6	.0020	.0186	0	0	.12	2.5	0	
2062	Feb.	1,	1909	0.2	0	Veg.	5.0	5.8	3.0	.0016	.0168	.008	0	.15	3.0	0	
2247	April	11,	1909	0	0	Veg.	5.2	4.3	1.8	.0012	.0148	0	0	.10	2.5	0	
2491	July	6,	1909	0	Veg.	Veg.	5.5	4.8	2.0	.0022	.0158	0	0	.10	2.5	0	
2820	Oct.	17,	1909	0	0	Veg.	7.2	6.2	1.8	.0044	.0184	0	0	.10	2.4	0	

## ORONO.

The water supply of this town comes from Chemo Stream, the outlet of Chemo Lake, in the town of Bradley. The stream runs through several cranberry bogs, but most of its course is through woodland. At one point a pasture runs down to the shore of the stream, and cows have access to the water to drink. There are no houses on the stream or draining into it. The water, while very highly colored and containing a large amount of vegetable material, has been free from all evidence of pollution.

## ORONO.

Number.	Date of Collection.	APPEARANCE.				RESIDUE ON EVAPORATION.		AMMONIA		NITROGEN AS		Chlorine.	Hardness.
		Turbidity.	Sediment.	Odor.	Color.	Total.	Fixed.	Free.	Albuminoid.	Nitrates.	Nitrites.		
1964	Dec. 29, 1908	0	0	Veg.	4.7	4.7	2.0	.0042	.0174	0	0	.30	1.2
2379	May 16, 1909	0	0	Veg.	5.4	3.5	1.3	.0020	.0150	0	0	.12	2.0
2476	July 5, 1909	0	0	Veg.	3.6	2.7	1.1	.0020	.0166	0	0	.17	2.0
2339	Oct. 19, 1909	0	0	Veg.	6.5	3.8	1.3	.0098	.0306	0	0	.25	2.2

## PATTEN.

The Patten Water Company take their supply from a system of natural springs, whose water is led into a concrete reservoir. This latter stands at an elevation of 1500 feet, and so the distribution is by gravity. The springs are surrounded by cultivated and grass lands, while drainage from all possible sources of pollution is led away from the springs. The springs are located about a half mile from the village of Patten, and away from all houses.

This company supplies about 40 families, and during the 20 years this supply has been in use no case of sickness has occurred that can be traced to the water. At times after heavy rains the water had an earthy and grassy taste, and to avoid this condition the new concrete reservoir was built, so as to exclude all surface water. New pipes have also been laid during the past year. The water is free from all evidence of pollution of either sewage or surface origin.

PATTEN.

Number.	Date of Collection.		APPEARANCE.			RESIDUE ON EVAPORATION.			AMMONIA.		NITROGEN AS		Chlorine.	Hardness.
			Turbidity.	Sediment.	Odor.	Color	Total.	Fixed.	Free.	Albuminoid.	Nitrates.	Nitrites.		
1998	Jan.	11, 1909	0	0	0	0.1	8.6	6.5	.0018	.0036	0.09	.0003	.25	6.6
2307	May	1, 1909	0	0	Slight	0.3	7.5	5.6	.0008	.0048	0.08	Trace	.22	6.2
2617	Aug.	2, 1909	0	0	Slight	0.4	12.1	9.4	.0002	.0026	0.13	Trace	.30	8.1
2870	Nov.	1, 1909	0	0	Slight	0.3	10.7	8.8	.0004	.0060	0.12	0	.40	6.6

PEAKS ISLAND.

The water supply for this island is furnished by the Peaks Island Water & Light Company. The supply comes from three drilled wells, which are situated near together at the southern end of the island, and near to the village. These wells are sunk in the solid rock and are about 200 feet deep. Two of these wells are connected underground by a fissure. The water from these two wells is quite hard, while that from the third well is soft. These wells will yield about 100 gallons per minute when pumped day and night. The water from all three wells is mixed so as to reduce the hardness of the water from the two connected wells.

This company has water mains about 7 miles in length, of which 2 miles are underground, and so can be used in winter. These pipes supply the water takers in the village and the immediate vicinity. The cottages and summer hotels are supplied by the "above frost" pipes, which are disconnected and emptied in the fall. At this time the well yielding the softer water is also shut down.

The system has about 285 takers and carries a pressure of about 60 pounds on the main street. Its sanitary quality is satisfactory.

## PEAKS ISLAND.

Number.	Date of Collection.		APPEARANCE.				RESIDUE ON EVAPORATION.		AMMONIA		NITROGEN AS		Chlorine.	Hardness.
			Turbidity.	Sediment.	Odor.	Color.	Total.	Fixed.	Free.	Albuminoid.	Nitrates.	Nitrites.		
2094	Feb.	1909	0.5	Iron	Slight	0	12.7	10.2	.0018	.0034	0.12	.004	1.60	2.3
2095	Feb.	1909	0.3	Iron	Slight	0.3	25.0	22.7	.0002	.0023	0.06	.001	2.30	16.0
2096	Feb.	1909	0	0	Slight	0.3	25.0	22.6	.0002	.0030	0.11	.001	3.45	16.6

## PHILLIPS.

This town takes its supply from Mt. Blue Pond in the town of Avon. The north, south and west shores of this pond are used for farming land, while the east shore is timber land. The supply is taken from the west shore and carried about three and a half miles to its distribution center, the distribution being by gravity. The water has been free from pollution.

## PHILLIPS.

Number.	Date of Collection.		APPEARANCE.				RESIDUE ON EVAPORATION.		AMMONIA		NITROGEN AS		Chlorine.	Hardness.	Lead.
			Turbidity.	Sediment.	Odor.	Color.	Total.	Fixed.	Free.	Albuminoid.	Nitrates.	Nitrites.			
844	Nov.	6, 1906	0	0	Veg.	2.4	3.4	2.0	.0012	.0150	0	0	.05	1.8	0
1175	Oct.	14, 1907	0	0	Veg.	2.8	4.1	1.7	.0014	.0124	0	0	.04	1.9	0
1317	Jan.	7, 1908	0	0	Veg.	5.0	3.5	1.6	.0022	.0106	0	0	.09	1.5	0
1429	Apr.	8, 1908	0	0	Veg.	3.1	3.6	2.2	.0012	.0086	Trace	0	.10	1.5	0
1593	July	13, 1908	0	0	Veg.	2.4	3.2	1.9	.0010	.0092	0	0	.05	1.5	0
1768	Oct.	6, 1908	0	0	Veg.	2.8	3.2	1.5	.0024	.0150	0	0	.05	1.7	0
1997	Dec.	29, 1908	0	0	Veg.	1.7	2.5	1.1	.0032	.0052	0	0	.06	2.8	0
2253	Apr.	13, 1909	0	0	Veg.	2.7	4.1	2.5	.0008	.0096	0	0	.06	2.9	0
2518	July	13, 1909	0	0	Veg.	2.6	3.0	1.1	.0014	.0096	0	0	.12	2.9	0
2872	Nov.	1, 1909	0	0	Veg.	2.9	3.5	1.9	.0030	.0138	0	0	.075	1.75	0

PITTSFIELD.

The Pittsfield Water Company takes its water from the Sebasticook River. This river flows through a low farming country with several small villages on its banks. Above the intake about 8 miles is the village of Hartland, where some sewage material enters the river. The country from Hartland to the intake is mostly cultivated land. About a mile above the intake is a large deadwater or shallow pond, where the river loses its current, and which the Water Company think serves as a sort of settling basin in which the suspended matters may settle out. It is reported that this water is but little used for drinking purposes in the town.

The water is very highly colored by vegetable material, and it sometimes carries a little sediment of a flaky nature. No B. coli have been found in the water up to this time, but it is far from a satisfactory water. The surroundings of this supply are such, and the appearance of the water is such that it will have to be filtered at an early date if any use of it is made for drinking purposes.

PITTSFIELD.

Number.	Date of Collection.	APPEARANCE.						RESIDUE ON EVAPORATION.		AMMONIA		NITROGEN AS		Chlorine.	Hardness.	Lead.
		Turbidity.	Sediment.	Odor.	Color.	Total.	Fixed.	Free.	Albuminoid.	Nitrates.	Nitrites.					
1152	Oct. 7, 1907	0	0	Veg.	5.0	4.8	1.8	.0022	.0182	0	0	.09	3.0	0		
1323	Jan. 8, 1908	0	0	Veg.	6.0	5.3	2.2	.0032	.0156	0	0	.15	3.0	0		
1437	Apr. 11, 1908	0	0	Veg.	3.1	4.2	1.8	.0016	.0118	0	0	.15	2.2	0		
1562	June 30, 1908	0	0	Veg.	5.2	4.7	2.4	.0012	.0202	0	0	.10	1.9	0		
1767	Oct. 6, 1908	0	0	Veg.	3.2	4.8	1.9	.0040	.0154	Trace	0	.15	2.7	0		
1959	Dec. 28, 1908	0	0	Veg.	3.1	5.5	3.1	.0040	.0176	0	0	.15	2.1	0		
2264	Apr. 13, 1909	0	0	Veg.	4.0	4.2	1.9	.0020	.0132	0	0	.10	4.0	0		
2497	July 3, 1909	0	0	Veg.	3.7	6.2	3.2	.0008	.0178	0	0	.09	3.4	0		
2794	Oct. 11, 1909	0	0	Veg.	4.3	4.4	1.8	.0028	.0270	0	0	.15	2.9	0		

## PRESQUE ISLE.

The water supply from this town comes from a spring brook, which is dammed to form a reservoir of about three and three-fourths acres. The land immediately about the reservoir is now used as farm land, from which considerable surface wash can enter the water. The brook heads in, and flows mostly through forest lands. In times of drought this supply will not meet the demands of the town, which has grown greatly since the time of the installation of the water works, and at such times water from a mill-pond has been used to help out the supply from the regular source. This water is not up to the quality of the regular supply, and B. coli have been found in it. Up to the present time no typhoid has followed its use with the regular water, but it should not be so used. The use of this latter water constitutes a real danger to the users of the regular supply, as its entire safety is thus made to depend on the absence of typhoid from the sewage reaching the mill stream. It is probable that with the further growth of the town a new source of supply will have to be sought out, and this may make the water company slow to introduce any improvements that must be of but a temporary nature.

## PRESQUE ISLE.

Number.	Date of Collection.		APPEARANCE.				RESIDUE ON EVAPORATION.		AMMONIA		NITROGEN AS		Chlorine.	Hardness.	Lead.
			Turbidity.	Sediment.	Odor.	Color.	Total.	Fixed.	Free.	Albuminoid.	Nitrates.	Nitrites.			
1179	Oct.	14, 1907	0	0	Veg.	2.4	17.4	13.1	.0010	.0108	0.04	0	.30	13.5	0
1328	Jan.	13, 1908	0	0	Veg.	0.7	18.1	15.0	.0006	.0050	0.17	Trace	.40	15.1	0
1439	Apr.	13, 1908	0	0	Slight	1.0	15.9	12.6	.0032	.0050	0.13	0	.37	13.4	0
1633	July	21, 1908	0.1	Iron	Slight	0.9	10.5	5.7	.0030	.0284	Trace	.0005	.35	7.2	0
1827	*Oct.	17, 1908	0.3	Earthy	Veg.	3.1	10.1	5.2	.0120	.0148	Trace	Trace	.20	6.6	0
2068	Feb.	1, 1909	0	0	Veg.	0	18.0	15.7	.0014	.0042	0.01	Trace	.30	16.2	0
2304	Apr.	27, 1909	1.5	Earthy	Veg.	2.3	11.4	7.5	.0012	.0094	0.04	Trace	.20	7.4	0
2629	Aug.	3, 1909	0	Veg.	Veg.	3.4	16.1	12.3	.0008	.0108	0.05	0	.37	15.2	0
2904	Nov.	8, 1909	0.6	0	Veg.	2.8	16.7	12.8	.0022	.0134	0.075	0	.525	11.65	0

\* Mill-pond.



RICHMOND.

The public water supply for this town comes from the Kennebec River. The supply is one of the most dangerous in the State. The intake is in the channel between the town and Swan's Island, about 100 feet from the Richmond shore. The town has no regular sewage system, but the gullies which run down the steep river bank serve as open sewers for the town, and all empty into this channel in which the intake is located. One such sewer empties into the river within 60 feet of the intake, and all are within 1000 feet of it. In this channel there is a rise and fall of the tides of about 5 feet, and these rising and falling tides carry the sewage of the town up and down over the intake.

In addition to the above, the cities of Augusta, Hallowell and Gardiner all sewer into the river above Richmond, the most remote of these cities being but 17 miles away. As would be expected the water shows the constant presence of the coli group of intestinal bacteria, and causes this supply to rank high among the few polluted supplies of the State. Only the absence of typhoid in the towns and cities on the river above this town, caused by their stopping the use of the river water, has saved this town from a continuous epidemic of this disease.

A full description of the local conditions at Richmond is given in my last report, the result of an inspection made at the request of the Board of Health.

RICHMOND.

Number.	Date of Collection.		APPEARANCE.				RESIDUE ON EVAPORATION.		AMMONIA		NITROGEN AS		Chlorine.	Hardness.	Lead.
			Turbidity.	Sediment.	Odor.	Color.	Total.	Fixed.	Free.	Albuminoid.	Nitrates.	Nitrites.			
1485	Apr.	28, 1908	0.2	0	Veg.	2.6	3.9	1.8	.0026	.0098	0	Trace	.12	2.0	0
1568	July	1, 1908	0.1	0	Veg.	3.7	4.6	2.2	.0024	.0150	0	0	.10	1.9	0
1828	Oct.	21, 1908	0	0	Veg.	2.7	8.0	5.6	.0020	.0102	Trace	0	2.5	4.6	0
1975	Jan.	2, 1909	0.4	Veg.	Veg.	3.1	12.6	8.4	.0018	.0170	Trace	Trace	2.9	4.4	0
2238	Apr.	7, 1909	0.3	0	Veg.	2.8	5.0	2.6	.0038	.0114	0	0	.25	2.6	0
2517	July	13, 1909	0	0	Veg.	2.6	4.1	1.0	.0036	.0144	0	0	.12	2.9	0
2814	Oct.	13, 1909	0	0	Veg.	4.2	6.7	3.2	.0032	.0170	0	0	.675	2.84	0

## RUMFORD FALLS.

The water supply for this town, up to 1906, came from the Androscoggin River, but the increasing pollution of the river by domestic and manufacturing wastes from the towns above rendered a change of supply necessary. In the latter year a ground water supply was sought and obtained. After the installation of this supply large amounts of iron began to appear in the water, causing much complaint. In July, 1909, at the request of the Rumford Falls Light & Water Company, the owners of the water system, I visited the plant and made a thorough inspection of it. The following facts were then learned.

The present water supply comes from a system of 65 driven wells. The wells are located on an alluvial plain, situated between the Androscoggin River on the south, and a high range of hills on the north. The flat ground between the river and the hills is about 1800 feet in width. About midway in this plain is a depression, running from the upper part of the well field to the river at the head of the falls. During periods of high water in the spring this is filled by the backed-up river water. Midway between this low tract and the river are located the wells, which are  $2\frac{1}{2}$  inches in diameter and located about 30 feet apart.

The alluvial plain, in which the wells are situated, marks the site of the old bed of the river, and has been formed by the deposition of the sand, gravel and clay carried by the river when it filled the entire valley. This sand, mixed with clay, is deposited over a deep layer of gravel, in which the water occurs. The water bearing gravels are from 18 to 25 feet beneath the surface. The soil over the water gravels is very hard and compact, and should be quite impervious to the passage of water; a conclusion borne out by the analyses of the water from the wells at times when the upper part of the well field is submerged by the overflow of the river. At such times there is no river water in the wells, the water giving the same analysis as when the river is normal. The fact that the water stands in the wells at a higher level than in the river shows that the wells are not drawing on the river water. As the alluvial plain rises into the hills, which bound it on the north, the thickness of this layer of river deposit is found to rapidly thin out, so that the springs on the sides of the hills are found quite low down and flow from the gravels.

Along the base of the range of hills runs a public road, along which are the houses of the village of Virginia. The natural slope is toward the river and the wells, but it seems likely that the layer of sand and clay over the gravels will exclude all waste water from the latter. Still it cannot be too strongly urged that sanitary conditions about these houses be kept the best possible.

Soon after the introduction of the present water supply it was found that the water, which was drawn from the taps in the town, became very turbid, and, on standing, deposited a very considerable amount of iron; although the water from the wells themselves was clear, and gave no such deposit. This trouble soon became so great that it practically rendered the water unfit for domestic use. An investigation showed that the trouble was caused by the presence of a large amount of carbon dioxide, which was present in the water as it came from the wells.

This gas, as is well known, has a great solvent action on iron. As a result the water containing this gas acted on the iron pipes of the distribution system, and dissolved a large amount of iron in the form of ferrous carbonate or bicarbonate. When the water was exposed to the air the oxygen of the air oxidized this soluble ferrous carbonate to the insoluble ferric form which, in precipitating from the water, gave first the turbid appearance to the water, and later the deposit of iron.

To do away with this trouble a nine pan aerator was installed, which later had its capacity increased to twenty pans. In brief this aerator consists of a series of perforated wooden trays placed one above the other, and about five inches apart. The water is introduced into the top through a hopper shaped opening, and falls in thin streams, sheets and spray from tray to tray. Being thus broken up and exposed to the air the water gives up practically all of its carbon dioxide. From the last tray the water runs into a tank, which forms the suction for the pumps. From this tank the water is pumped into the mains under the necessary pressure, which is about 70 pounds on the main street. A 500,000 gallon standpipe acts to equalize the pressure and furnish some storage of water.

The removal of the carbon dioxide from the water should stop all action of the water on the pipes and, after the material which was deposited before the installation of the aerator has been removed from the pipes, should give a water free from all

turbidity. This cleaning of the pipes of the large amount of material deposited in them would naturally take some time, and any sudden demand on the system for a large amount of water, as for fire purposes, would result in stirring up the deposit in the section of pipe so used. It was thought at first that this fire use of the water would hasten the cleaning of the pipes, but it soon developed that the aerator could not supply enough water at such times, and so the unaerated water was bypassed direct into the system. This naturally set up renewed action on the pipes.

The investigation took place when the aerator had been in uninterrupted use for over a month, and so was typical of what it could do under the best conditions. The investigation was undertaken to see (a) if the water ought to act on the pipes through the presence of the solvent gas; (b) if the water was acting on the pipes; (c) if it was derived from the river or from the ground water in the hills, and (d) if it showed evidence of pollution by sewage. The determinations of the gaseous constituents were of course made on the spot, and the bacteria also plated as the samples were collected.

The investigation in brief showed the following facts:—

(a). With the aerator working properly, and as it always does when working at all, there should be no action on the pipes which carry the aerated water. The water as it comes from the wells contains 48 parts per million of carbon dioxide; as it comes from the aerator it contains but 1.5 parts per million. This latter amount is less than that usually contained in such surface waters as ponds and rivers, which are given a natural process of aeration through their exposure to the air. This amount of carbon dioxide will not cause corrosion of the pipes.

(b). There is actually not action of the water on the pipes with the aerator working properly. The water as it came from the pumps contained 0.5 parts of iron per million. Determinations of the iron content of the water, made at nine widely separated points in the distribution system, showed no increase in the iron content.

(c). The water is a ground water, and not river water. This is shown by the hardness determinations made on this water, on the river water, and on the water from five springs on the hills above the pumping station. The hardness of the

well and spring waters was the same with the river water not half as hard.

(d). The sanitary inspection of the watershed, and the bacterial examination of the samples at the time of the investigation confirmed the many previous analyses of this water, and showed it to be free from all evidence of sewage pollution.

The water, then, from this system is a first-class one to use for drinking purposes if it is aerated before entering the distribution system. The entire question of its fitness for domestic use depends on it always being so treated, and on allowing no water that has not been so treated to enter the mains. To always accomplish this purpose larger storage capacity is needed than is provided by the 500,000 gallon standpipe, for this will not meet the demand at times of fires. It was recommended that a large reservoir be built in the hills above the town both for storage purposes and to provide a natural process of aeration if through carelessness any unaerated water came to the pumps. It was also recommended for sanitary reasons that the depression back of the pumping station be filled to the surrounding level.

RUMFORD FALLS.

Number.	Date of Collection.	APPEARANCE.						RESIDUE ON EVAPORATION.		AMMONIA		NITROGEN AS		Chlorine.	Hardness.	Lead.
		Turbidity.	Sediment.	Odor.	Color.	Total.	Fixed.	Free.	Albuminoid.	Nitrates.	Nitrites.					
1204	Oct. 22, 1907	3.1	Iron	Slight	3.0	8.3	6.6	.0004	.0058	0	.0002	.30	9.9	0		
1237	Nov. 5, 1907	0	0	Slight	2.1	6.1	4.5	.0044	.0036	Trace	Trace	.30	5.0	0		
1349*	Jan. 21, 1909	0.2	Iron	0	1.9	6.8	4.8	.0002	.0044	0.07	.0003	.25	4.1	0		
1350*	Jan. 21, 1909	0.1	0	0	0.8	6.4	4.1	.0001	.0043	0.07	.0003	.25	3.3	0		
1471*	Apr. 21, 1909	0	0	0	0.7	5.9	4.3	.0014	.0028	0.05	0	.34	3.7	0		
1472*	Apr. 21, 1909	0	0	Slight	0.8	5.7	3.8	.0005	.0038	0.05	0	.34	2.9	0		
1651*	July 23, 1909	0	0	0	0.3	5.2	4.2	.0072	.0040	0.05	Trace	.25	4.0	0		
1652*	July 29, 1909	0	0	0	2.6	6.6	5.4	.0044	.0048	0.05	0	.25	2.7	0		
1653†	July 29, 1909	0	0	0	2.7	6.5	4.8	.0062	.0026	0.05	0	.25	4.2	0		
1849*	Oct. 27, 1908	0.3	Iron	Slight	1.9	6.9	4.3	.0062	.0070	0.05	0	.27	4.2	0		
2025*	Jan. 19, 1909	0.3	Rust	Slight	2.7	6.6	4.6	.0050	.0058	0.05	0	.35	1.9	0		
2298*	Apr. 27, 1909	0	0	0	4.8	7.4	4.8	.0060	.0054	0.05	.0003	.32	4.7	0		
2615*	Aug. 3, 1909	0.1	0	Slight	2.0	5.6	4.2	.0018	.0050	0.05	Trace	.32	4.6	0		
2878*	Nov. 2, 1909	1.2	Iron	Slight	4.3	7.7	5.3	.0044	.0082	0.05	.0003	.32	5.8	0		

\* Tap.

† At pumps.

‡ At aerator.

## SANFORD.

The Sanford Water Company takes its water supply from a system of driven wells and a dug well. Of the former there are 16, ranging from 20 to 30 feet in depth. The driven wells are located in the flood plain of the Mousam River, and the water is found in a bed of gravel, which is overlain by a bed of fine sand and silt. These wells were driven in 1905, up to which time the dug well had been able to supply the demand.

This water has usually been turbid when drawn from the taps, and it deposits considerable iron on standing. This condition is not to be noticed at the wells, nor does the water there contain any such amount of iron as does the tap water, thus showing that the iron comes from the pipes. As in the case of the Rumford Falls supply this condition is caused by the presence of large amounts of carbon dioxide in the well water, which acts on the iron pipes, dissolving large amounts of iron from them. The resulting dirty appearance, and the general unfitness of the water for domestic use led to the installation of an aerator as at Rumford Falls. The result of this has been to give a water free from carbon dioxide and one that is clear and colorless. The only difference in the resulting water at this town and Rumford Falls is one of color, due to the presence of some iron in the water as it comes from the wells at the latter place. This condition does not exist at Sanford and the resulting water is colorless.

The water, after aeration, is pumped into a 500,000 gallon reservoir, and the working pressure of 90 pounds is derived in part from this and in part from the pumps at the pumping station. This plant has been of large enough capacity to meet all fire demands without bypassing the aerator, and so there has been no recurrence of the original trouble since the installation of the aerator.

SANFORD.

Number.	Date of Collection.		APPEARANCE.				RESIDUE ON EVAPORATION.		AMMONIA		NITROGEN AS		Chlorine.	Hardness.	Lead.
			Turbidity.	Sediment.	Odor.	Color.	Total.	Fixed.	Free.	Albuminoid.	Nitrates.	Nitrites.			
766	Sept. 8, 1906	1.2	Iron	Slight	1.2	4.5	3.6	.0002	.0042	.005	0	.17	2.2	0	
767	Sept. 8, 1906	1.0	Iron	Slight	1.6	4.0	3.1	.0004	.0040	0	0	.17	2.1	0	
839	Oct. 1, 1906	0	0	0	0	4.3	2.8	.0003	.0034	0	0	.17	1.6	0	
1319	Jan. 7, 1907	0	0	0	0.3	3.2	2.1	.0002	.0018	Trace	0	.22	2.5	0	
1440	Apr. 13, 1908	0	0	0	0.3	3.4	2.4	0	.0014	0.01	0	.22	2.2	0	
1536	July 8, 1908	0	0	0	0	3.2	1.8	0	.0022	0	0	.20	2.2	0	
1792	Oct. 12, 1908	0	0	0	0	3.2	2.3	.0004	.0023	0	0	.17	2.6	0	
1978	Jan. 4, 1909	0	0	0	0	3.3	2.4	.0018	.0016	Trace	0	.25	2.2	0	
2248	Apr. 10, 1909	0	0	0	0	3.5	2.4	.0018	.0021	0.02	0	.25	3.0	0	
2509	July 12, 1909	0	0	0	0	3.4	2.8	.0014	.0014	0	0	.19	1.9	0	
2898	Nov. 8(?), 1909	0	0	0	0	3.2	2.0	.0003	.0059	Trace	0	.175	1.94	0	

SANGERVILLE.

The Sangerville Water Company takes its supply from a large spring on the side of a hill about 2 miles from the village. The spring is located on the edge of a mowing field, and is a half mile distant from any source of pollution. The bottom of the spring is covered with granite chippings, and the top is raised above the surrounding ground and covered. The water is distributed by gravity through riveted iron pipes.

SANGERVILLE.

Number.	Date of Collection.		APPEARANCE.				RESIDUE ON EVAPORATION.		AMMONIA		NITROGEN AS		Chlorine.	Hardness.	Lead.
			Turbidity.	Sediment.	Odor.	Color.	Total.	Fixed.	Free.	Albuminoid.	Nitrates.	Nitrites.			
1208	Oct. 22, 1907	0	0	0	0.3	6.3	4.3	.0004	.0012	0	0	.08	5.6	0	
1336	Jan. 14, 1908	0	0	0	0	5.2	4.1	0	.0080	Trace	0	.10	4.9	0	
1465	Apr. 21, 1908	0	0	0	0.2	4.6	3.5	.0002	.0014	Trace	0	.12	2.7	0	
1632	July 21, 1908	0	0	0	0	7.0	4.9	.0014	.0016	0.02	0	.12	5.3	0	
1870	Nov. 3, 1908	0	0	0	0	7.2	5.2	0	.0042	0.04	0	.14	5.2	0	
2027	Jan. 19, 1909	0	0	0	0	5.6	4.1	.0002	.0038	Trace	0	.15	3.2	0	
2335	May 5, 1909	0	0	Slight	0.4	3.4	2.0	.0036	.0022	0	0	.07	4.6	0	
2638	Aug. 9, 1909	0	0	0	0.2	7.1	6.0	.0004	.0022	0.05	0	.12	5.6	0	
2923	Nov. 15, 1909	0	0	0	0.1	5.3	4.1	.0008	.0058	0.02	0	.15	4.5	0	

## SEAL HARBOR.

This town is supplied with water from Jordan Pond. The pond is located in wild lands, and far removed from all possible sources of pollution. It is located between granite mountains, which rise from the shores to a height of from a thousand to twelve hundred feet. The shores are rocky, and are covered with a mixed growth of hard and soft woods. The pond is fed entirely by springs, no brooks of any size entering it. The water has always been first-class.

## SEAL HARBOR.

Number.	Date of Collection.	APPEARANCE.						RESIDUE ON EVAPORATION.		AMMONIA		NITROGEN AS		Chlorine.	Hardness.	Lead.
		Turbidity.	Sediment.	Odor.	Color.	Total.	Fixed.	Free.	Albuminoid.	Nitrates.	Nitrites.					
1184	Oct. 16, 1907	0	0	0	0.6	3.5	1.9	.0008	.0054	0	0	.58	1.8	0		
1835	Jan. 14, 1908	0	0	Slight	0.5	3.1	1.7	.0016	.0054	0	0	.57	1.5	0		
1434	Apr. 13, 1908	0	0	Slight	0.8	3.1	2.0	.0310	.0065	0	0	.52	1.5	0		
1596	July 13, 1908	0	0	Slight	0.3	3.5	2.0	.0312	.0040	0	0	.60	1.5	0		
1829	Oct. 21, 1908	0	0	Slight	0	2.5	2.0	.0006	.0060	0	Trace	.65	2.0	0		
2082	Jan. 19, 1909	0	0	Slight	0.4	3.2	2.0	.0112	.0074	0	0	.67	1.9	0		
2305	Apr. 23, 1909	0	0	Slight	0.5	3.1	2.2	.0012	.0090	0	0	.65	2.1	0		
2426	June 7, 1909	0	0	Muddy	0.5	2.5	1.7	.0014	.0070	0	0	.65	1.5	0		
2553	July 19, 1909	0	0	Veg.	0.6	3.0	1.8	.0010	.0050	0	0	.65	1.4	0		
2819	Oct. 16, 1909	0	0	Veg.	0.9	3.6	1.8	.0018	.0092	0	0	.625	1.6	0		

## SEARSPORT.

The source of supply for this town, and also for the town of Stockton Springs, comes from Half Moon Pond in the town of Prospect. Formerly Searsport was supplied by two springs situated on a hillside, about 2 miles west of the village, but when the Stockton Springs supply from the above pond was installed the Searsport system was connected with it. Half Moon Pond is 328 feet above sea level, so that the distribution is entirely by gravity. The pond is two and a half miles long and from a mile to a mile and a half wide. It is supplied mainly by springs, some of which are reported to be as much as 90 feet deep. About a third of the shores of the pond



is covered by a mixed hard and soft wood growth, while the remainder of the shores is bordered by pasture land and mowing fields. No houses or barns are located within a quarter of a mile of the pond.

SEARSPORT AND STOCKTON SPRINGS.

Number.	Date of Collection.		APPEARANCE.				RESIDUE ON EVAPORATION.		AMMONIA		NITROGEN AS		Chlorine.	Hardness.
			Turbidity.	Sediment.	Odor.	Color.	Total.	Fixed.	Free.	Albuminoid.	Nitrates.	Nitrites.		
781	Sept.	17, 1906	0	0	Slight	0.7	2.7	1.4	.0024	.0120	0	0	.22	1.6
782	Sept.	17, 1906	0	0	Slight	0.7	2.9	1.5	.0022	.0144	0	0	.22	1.6
1217	Oct.	25, 1907	0	0	Veg.	1.0	3.3	1.8	.0010	.0108	0	0	.18	2.4
1343	Jan.	20, 1903	0	0	Grassy	1.1	3.4	2.0	.0010	.0126	0	0	.22	2.0
1454	Apr.	20, 1903	0	0	Slight	1.0	3.1	2.0	.0024	.0104	0	0	.25	2.0
1626	July	20, 1903	0	0	Slight	0.4	3.0	1.5	.0003	.0084	0	0	.20	1.4
1815	Oct.	17, 1903	0	0	Veg.	0.5	3.4	1.5	.0022	.0092	0	0	.24	1.6
2177	Mar.	16, 1904	0	0	Veg.	0.5	2.9	1.1	.0016	.0093	0	0	.27	2.2
2325	May	4, 1909	0	0	Veg.	0.7	2.6	1.4	.0008	.0082	0	0	.22	2.1
2542	July	19, 1909	0	0	Veg.	0.6	2.5	1.3	.0006	.0104	0	0	.27	2.0
2860	Oct.	25, 1909	0	0	Veg.	0.8	6.3	4.7	.0007	.0127	5	0	.20	1.75

SKOWHEGAN.

This town is supplied with water from the Skowhegan Water Company, and also by four Aqueduct companies, the Coburn, the West, the Skowhegan and the Neil Aqueduct Companies. Samples have been furnished us from the supplies of the Skowhegan Water Company and the Coburn and West Aqueduct Companies.

(A) *The Skowhegan Water Company.*

This company has two possible sources of supply. One source is the Kennebec River, the intake being located within the limits of the village, and it is reported to be in such a position that considerable local pollution is possible. The other source is from a ponded brook, about a half acre in extent. The bottom and sides of the pond are clay, and the water always carries some degree of turbidity, which reaches such a figure after heavy rains as to practically unfit the water for drinking purposes for a short time. The shores about the pond are all cleared and kept clean.

The examination of the pond water has failed at all times to show the presence of sewage bacteria. The turbidity has been such that the water, although a safe one as far as bacterial pollution is in question, has been far from an acceptable water for domestic use.

The water from the Kennebec River is one that is open to pollution by both manufacturing and sewage wastes at Madison, which is about ten miles above it, and from sewage at Norridgewock about five miles distant. It is also open to Skowhegan sewage above the point of location of the intake. This water is only used when the supply in the ponded reservoir is unable to meet the demand on the system. There is a very considerable use of the river water during the summer, and often during short periods of the winter. This river water always shows evidence of the sewage of the towns above, and is not a safe water to use for drinking. Owing to the chance that this water would be introduced without warning into the system the river connection should be discontinued, and another source of supply, which will both meet the demand for water and at the same time be a potable water should be at once sought.

During the winter of 1908-1909, while the typhoid epidemic was in progress at Madison, the water company had to resort to the use of the river water. Samples sent to the laboratory were reported to them as unfit to use for drinking, but no warning was given by them to their consumers to boil the water or that the river water was being used. A considerable epidemic resulted in the town, and during the last session of the legislature a number of the citizens applied for a charter for a Water District. Owing to the fact that no provision had been made to take up the bonds of the old company, and that it was admitted that the charter was wished more as a club to hold over the Water Company than as an actual business proposition the charter was refused, and the same conditions now exist as then did.

With a ponded supply of but fair quality and an alternate supply of unquestioned pollution the necessity of a source of supply needs no comment.

SKOWHEGAN.

Number.	Date of Collection.	APPEARANCE.					RESIDUE ON EVAPO-RATION.		AMMONIA		NITROGEN AS		Chlorine.	Hardness.	Lead.
		Turbidity.	Sediment.	Odor.	Color.	Total.	Fixed.	Free.	Albuminoid.	Nitrates.	Nitrites.				
1155	Oct. 8, 1907	1.0	Earthy	Veg.	4.2	6.1	3.3	.0020	.0158	0	Trace	.30	2.3	0	
1235	Nov. 5, 1907	1.2	Clay	Veg.	5.5	5.4	3.5	.0012	.0152	Trace	0	.32	2.2	0	
1311	Jan. 7, 1908	1.0	Earthy	Veg.	2.4	5.7	3.7	.0016	.0068	Trace	Trace	.32	2.1	0	
1441	Apr. 14, 1908	3.0	Clay	Veg.	2.7	5.2	3.4	.0036	.0118	Trace	Trace	.22	1.9	0	
1563	June 30, 1908	2.0	Clay	Veg.	4.5	5.6	3.8	.0066	.0102	Trace	Trace	.27	3.0	0	
1884*	Nov. 10, 1908	0.3	0	Veg.	2.7	4.2	2.7	.0018	.0094	0.05	Trace	.32	1.7	0	
1886†	Nov. 10, 1908	0.4	Veg.	Veg.	2.4	3.4	1.5	.0012	.0090	Trace	0	.10	1.4	0	
1894*	Nov. 16, 1908	0.5	Veg.	Veg.	2.2	4.9	3.6	.0012	.0094	0.05	0	.32	2.0	0	
1897†	Nov. 18, 1908	0.4	Veg.	Veg.	2.2	4.8	3.4	.0014	.0062	0.05	0	.32	1.7	0	
2001*	Jan. 12, 1909	1.2	Clay	Veg.	2.0	6.2	4.0	.0022	.0094	0.06	Trace	.22	2.0	0	
2067	Feb. 1, 1909	0.4	0	Veg.	1.7	4.4	3.0	.0026	.0062	0.05	0	.22	1.9	0	
2154	Mar. 9, 1909	0.1	0	Veg.	2.2	4.0	2.4	.0016	.0042	0.05	0	.22	2.3	0	
2596	July 9, 1909	2.6	Earthy	Veg.	2.4	8.5	6.3	.0014	.0162	0.03	Trace	.32	3.0	0	
2917†	Oct. 14, 1909	0.3	0	Veg.	3.9	5.6	3.5	.0030	.0146	0.02	0	.40	2.8	0	

\* Reservoir. † Reservoir and River.

(B) Coburn Aqueduct Company. (Skowhegan)

The water for this system comes from a large spring about 10 feet deep, which is located on the side of a valley bordering the edge of the sandy plain near to North Street. The Aqueduct Company owns about four acres of land about the spring, which are kept in the highest degree of cleanliness. No buildings are located near to the spring. This system supplies about 100 families. The mains are of iron and the service pipes are of lead.

SKOWHEGAN—COBURN AQUEDUCT.

Number.	Date of Collection.	APPEARANCE.					RESIDUE ON EVAPO-RATION.		AMMONIA		NITROGEN AS		Chlorine.	Hardness.	Lead.
		Turbidity.	Sediment.	Odor.	Color.	Total.	Fixed.	Free.	Albuminoid.	Nitrates.	Nitrites.				
1150	Oct. 7, 1907	0	0	0	0.4	14.0	9.2	.0026	.0054	0.61	Trace	1.71	4.2	0	
1301	Jan. 6, 1908	0	0	0	0.2	12.3	8.2	.0003	.0040	0.70	Trace	1.57	3.0	0	
1421	Apr. 6, 1908	0	0	0	0	12.6	10.0	.0003	.0022	0.70	0	1.42	4.8	0	
1554	June 29, 1908	0	0	0	0	12.4	8.5	.0006	.0028	0.55	Trace	1.22	3.0	0	

(C) *West Aqueduct Company. (Skowhegan).*

The water for this supply is furnished by two springs, which issue from the base of a sand and gravel plain on the north and western edges of the town. The plain is underlain by clay. One spring is located near the center of a five acre plot which is kept clean and free from all pollution. This spring is about 300 feet from the nearest house. The water from the other spring, which is near the lower edge of the plain and about 75 feet from a small stable, has been separately examined and found free from pollution. The stable is seldom used, but its location renders it a menace to the purity of the supply, and it should be removed.

The water is collected in tanks built over the springs and runs by gravity to the houses where it is used. Most of West Skowhegan is supplied by this system, which has about 200 users. The mains are of iron and the services are of lead.

SKOWHEGAN—WEST AQUEDUCT.

Number.	Date of Collection.		APPEARANCE.						RESIDUE ON EVAPORATION.		AMMONIA		NITROGEN AS		Chlorine.	Hardness.	Lead.
			Turbidity.	Sediment.	Odor.	Color.	Total.	Fixed.	Free.	Albuminoid.	Nitrates.	Nitrites.					
1145	Oct.	7. 1907	0	0	0	0.4	7.9	4.7	0	.0020	0.23	0	.92	2.7	0		
1156	Oct.	8. 1907	0	0	0	0.3	7.6	4.8	.0004	.0014	0.22	0	.92	3.2	0		
1309	an.	6. 1908	0	0	0	0.3	6.6	4.1	.0006	.0018	0.24	0	.77	3.1	0		
1422	Apr.	6. 1908	0	0	0	0	6.8	5.0	.0014	.0028	0.23	0	.70	2.5	0		
1556	June	30, 1908	0	0	0	0	7.0	4.3	0	.0006	0.21	0	.75	2.9	0		

## SOUTH BERWICK.

No information has been furnished with the samples from this supply, which have been sent by the local board of health. It is otherwise reported that the water comes from the impounding of two brooks, which run through low and swampy ground. The water analyses would indicate this condition, as the water is highly charged with vegetable material, and is liable to both quick and great fluctuations in appearance and character.

SOUTH BERWICK.

Number.	Date of Collection.	APPEARANCE.			RESIDUE ON EVAPORATION.			AMMONIA		NITROGEN AS		Chlorine.	Hardness.	Lead.
		Turbidity.	Sediment.	Odor.	Color.	Total.	Fixed.	Free.	Albuminoid.	Nitrates.	Nitrites.			
1356	Jan. 27, 1906	1.0	Earthy	Earthy	4.6	6.9	5.0	.0018	.0109	0	0	.97	2.5	0
1454	Apr. 20, 1906	0	0	veg.	5.5	6.1	13.5	.0050	.0204	0	0	.95	3.0	0
1644	July 27, 1906	3.1	Earthy	Veg.	13.0	10.3	6.0	.0066	.0300	Trace	0	.27	3.3	0
1836	Oct. 26, 1906	0.1	0	Veg.	4.2	7.6	5.5	.0026	.0134	0	0	.47	5.3	0
2021	Jan. 18, 1909	0.6	0	Veg.	7.7	6.4	13.3	.0033	.0202	0.01	Trace	.29	3.3	0
2321	May 4, 1901	0	0	Veg.	6.0	5.0	2.8	.0014	.0194	0	0	.25	3.0	0
2621	Aug. 3, 1901	0.1	0	Veg.	3.7	6.4	4.2	.0008	.0190	0	0	.40	2.8	0
2905	Nov. 9, 1909	0	0	Veg.	7.0	8.6	5.2	.0046	.0324	0	0	.425	4.08	0

SPRINGVALE.

This village is supplied by the Springvale Aqueduct Company, which take their supply from Littlefields Pond. This pond is located about a mile from the village, and is at such height above the town that the distribution of the water is by gravity. The pond is about 30 acres in extent, and is surrounded in part by farm lands and in part by pastures. It is almost entirely fed by springs, the only inlet to the pond being from a bog at the north end. No return to the acid condition of the winter of 1906 has been noticed, although the ammonia in the water has remained high.

SPRINGVALE.

Number.	Date of Collection.	APPEARANCE.			RESIDUE ON EVAPORATION.			AMMONIA		NITROGEN AS		Chlorine.	Hardness.	Lead.
		Turbidity.	Sediment.	Odor.	Color.	Total.	Fixed.	Free.	Albuminoid.	Nitrates.	Nitrites.			
1196	Oct. 22, 1907	0	0	Veg.	2.4	3.6	1.8	.0014	.0112	0	0	.29	2.3	0
1352	Jan. 22, 1903	0	0	Grassy	1.7	5.0	3.4	.0034	.0096	Trace	0	.27	2.4	0
1467	Apr. 14, 1903	0.2	0	0	0.6	5.4	4.1	.0036	.0114	0	0	.17	2.6	0
1620	July 20, 1903	0	0	Grassy	0.9	4.9	4.6	.0291	.0340	Trace	0	.29	1.4	0
1820	Oct. 20, 1903	0	0	Veg.	1.6	5.0	3.1	.0514	.0142	Trace	Trace	.25	2.3	0
2040	Jan. 19, 1909	0	0	Slight	0.6	4.0	3.0	.0792	.0062	0	0	.23	2.3	0
2291	Apr. 27, 1909	0	0	Veg.	1.6	3.7	2.5	.0442	.0024	0	0	.23	1.5	0
2557	July 21, 1909	0	0	Slight	0.3	3.7	2.6	.0246	.0090	0	0	.25	2.1	0
2917	Nov. 10, 1909	0	0	Slight	0.5	4.8	3.3	.0034	.0140	0.015	Trace	.30	3.45	0

## STRATTON.

The water supply for this village comes from springs situated far up on the side of Mt. Bigelow. The water is distributed by gravity in iron pipes. No houses or cultivated land is within a mile of the springs, which are in the woods and above all possible sources of pollution. No sickness in the village has ever been attributed to the use of this water.

## STRATTON.

Number.	Date of Collection.	APPEARANCE.						RESIDUE ON EVAPORATION.	AMMONIA	NITROGEN AS		Chlorine.	Hardness.
		Turbidity.	Sediment.	Odor.	Color.	Total.	Fixed.			Nitrates.	Nitrites.		
2690	Aug. 23, 1909	0	0	Veg.	0	5.3	3.6	0	.0031	0	0	.05	5.23

## STRONG.

The water supply for this town comes from Mt. Day Pond, a pond situated between the two peaks of Mt. Day, at an elevation of 850 feet above the village of Strong. The pond is about 10 acres in extent, and is situated entirely among wild lands. The shores are all heavily wooded and all houses and sources of pollution lie below the watershed of this pond. The supply is distributed by gravity. The high elevation gave at first a pressure of 200 pounds, but this has now been regulated to 80 pounds, which is sufficient to meet all demands at present. Nearly all of the people of the village use this water, which is of excellent quality.

STRONG.

Number.	Date of Collection.	APPEARANCE.				RESIDUE ON EVAPO-RATION.		AMMONIA		NITROGEN AS		Chlorine.	Hardness.	Lead.
		Turbidity.	Sediment.	Odor.	Color.	Total.	Fixed.	Free.	Albuminoid.	Nitrates.	Nitrites.			
1459	Apr. 19, 1908	0	0	Veg.	3.0	4.5	2.6	.0006	.0070	0	0	.06	2.2	0
1687	Aug. 11, 1908	0	0	Veg.	4.4	4.9	2.2	.0020	.0134	0	0	.03	2.9	0
1856	Nov. 2, 1908	0.2	Rust	Veg.	2.3	6.1	3.6	.0026	.0196	0	0	.09	2.9	0
2065	Feb. 1, 1909	0	0	Veg.	4.5	5.1	2.5	.0020	.0162	0	0	.07	3.0	0
2536	May 6, 1909	0	0	Veg.	3.8	3.1	1.8	.0012	.0084	0	0	.04	3.5	0
2567	July 24, 1909	0	0	Veg.	3.4	4.9	1.9	.0010	.0118	0	0	.10	4.3	0
2891	Nov. 2, 1909	0	0	Veg.	5.8	6.0	2.9	.0036	.0198	0	0	.10	4.0	0

UNION.

This town is supplied by the Union Water Company, which takes its supply from a series of springs about a mile from the village. The springs are situated on a hillside and the water distributed by gravity. No houses or sources of pollution are reported near the springs. The land about is for the most part boulder clay with a soft wood growth. At times a considerable amount of surface water, containing some clay in suspension, enters the springs, and gives a slight degree of turbidity to the water. This turbidity is always great when work is being done about the springs.

UNION.

Number.	Date of Collection.	APPEARANCE.				RESIDUE ON EVAPO-RATION.		AMMONIA		NITROGEN AS		Chlorine.	Hardness.	Lead.
		Turbidity.	Sediment.	Odor.	Color.	Total.	Fixed.	Free.	Albuminoid.	Nitrates.	Nitrites.			
1211	Oct. 23, 1907	0	0	Veg.	0.8	7.1	5.3	.0005	.0116	0.01	0	.52	4.3	0
132	Jan. 7, 1908	0.2	0	Grassy	0.9	7.1	4.8	.0010	.0072	0.02	0	.57	3.8	0
1469	Apr. 21, 1908	0.3	0	Veg.	1.5	6.1	4.4	.0041	.0353	0	Trace	.57	2.9	0
1537	July 8, 1908	0.7	0	Grassy	1.2	7.1	4.3	.0050	.0180	0	0	.60	3.0	0
1341	Oct. 21, 1908	0	0	Slight	0.3	5.3	4.8	.0005	.0014	0.01	0	.42	4.2	0
2075	Jan. 12, 1909	3.5	Clay	Earthy	1.0	3.9	7.0	.0014	.0003	0	0	.50	2.8	0
2363	May 12, 1909	1.0	0	Veg.	0.7	5.1	3.6	.0035	.0092	0	0	.42	3.3	0
2579	Aug. 3, 1909	0.3	0	Veg.	0.3	5.5	4.1	.0004	.0133	0	0	.47	4.1	0
2861	Oct. 25, 1909	0.8	0	Grassy	0.3	14.1	12.3	.0033	.0180	0	0	.475	2.62	0

## VAN BUREN.

The Van Buren Water District supplies this town with water. The source of the supply is a brook, called Duperre Brook, and the intake is situated about two miles from the village. The brook from its source to the intake flows entirely through the virgin forest. It has a rocky bottom and is quick throughout its entire course. A dam at the intake diverts the water into the mains, in which it flows by gravity to the consumers. No houses or sources of pollution are located within two miles of the brook, and there are no sources of pollution above the intake level.

## VAN BUREN.

Number.	Date of Collection.	APPEARANCE.						RESIDUE ON EVAPORATION.		AMMONIA		NITROGEN AS		Chlorine.	Hardness.	Lead.
		Turbidity.	Sediment.	Odor.	Color.	Total.	Fixed.	Free.	Albuminoid.	Nitrates.	Nitrites.					
1197	Oct. 15, 1907	0	0	Veg.	4.0	1.8	3.7	.0098	.0096	0	0	.05	4.5	0		
1353	Jan. 21, 1908	0	0	0	1.0	1.0	6.0	.0032	.0026	0.02	0	.07	5.8	0		
1476	Apr. 20, 1908	0	0	Veg.	1.7	3.5	4.3	.0034	.0044	0	0	.07	4.7	0		
1637	July 21, 1908	0	0	0	0.8	3.0	5.3	.0032	.0046	0	0	.05	5.4	0		
1807	Oct. 14, 1908	0	0	0	1.0	9.6	7.3	.0025	.0024	0	0	.09	6.8	0		
2055	Jan. 28, 1909	0	0	Slight	0.8	7.3	5.5	.0006	.0032	0.01	0	.12	5.2	0		
2402	May 25, 1909	0	0	Veg.	3.4	5.7	1.0	.0014	.0030	0	0	.04	3.6	0		
2610	Aug. 2, 1909	0	0	Veg.	2.3	7.6	5.3	.0004	.0032	0	0	.07	6.1	0		
2915	Nov. 9, 1909	0	0	Veg.	3.1	6.4	3.1	.0034	.0078	Trace	0	.15	4.8	0		

## WARREN.

The Warren Water Company takes its supply from a drilled well on a hillside a half mile east of the village. This well is reported to flow 5 feet above the surface without pumping, and to give a volume of 12 to 15 gallons per minute. It is, however, fitted with a windmill and a gas engine for emergency use. When tested for five days and five nights it gave a flow of 100 gallons per minute. The hill on which the well is located is about 100 feet above the village.

The well is 196 feet deep and 6 inches in diameter, the flow of water being struck at 165 feet. The water from the well is led to a reservoir in a pasture, and from this is distributed



through 8 inch mains at a pressure of 85 pounds. The reservoir is surrounded by a barb-wire fence at a distance of 10 feet from the water edge to keep cattle away from it. The analyses have shown the water to be of excellent quality.

WARREN.

Number.	Date of Collection.	APPEARANCE.						RESIDUE ON EVAPORATION.	AMMONIA		NITROGEN AS		Chlorine.	Hardness.
		Turbidity.	Sediment.	Odor.	Color.	Total.	Fixed.		Free.	Albuminoid.	Nitrates.	Nitrites.		
1863	Nov. 3, 1908	0	0	Slight	1.2	8.6	6.6	0	.0024	0	0	.45	5.7	
2049	Jan. 25, 1909	0	0	0	1.6	7.9	7.2	.0002	.0044	0.01	Trace	.50	5.8	
2293	Apr. 27, 1909	0	0	Veg.	2.2	4.1	2.4	.0006	.0102	0	0	.44	2.2	
2570	July 26, 1909	0	0	0	0.6	7.1	5.9	.0008	.0100	0	0	.52	3.7	
2856	Oct. 26, 1909	0	0	Veg.	2.9	8.6	6.5	.0038	.0176	0	0	.475	1.5	

WATERVILLE.

The water supply of this city was formerly taken from Messalonskee Stream, which was badly polluted and caused much typhoid fever in the city. The source of supply is now China Lake, and the water is supplied by the Kennebec Water District, the same pipe-line from China lake also supplying the towns of Benton, North Vassalboro and Winslow. China lake is a large lake in the eastern part of the county. There are many farms on the watershed and many cottages about the shores of the lake. The Water District keep close watch on both the farms and cottages, and see that everything is kept in the best of order. It is reported that they have no great trouble in doing this as the cottagers lend every aid in keeping the shores clean. The supply at this time is a first-class one, and ample for all needs, both present and future. Since the installation of this water typhoid has practically vanished from this city.

## WATERVILLE.

Number.	Date of Collection.		APPEARANCE.						RESIDUE ON EVAPORATION.		AMMONIA		NITROGEN AS		Chlorine.	Hardness.	Lead.
			Turbidity.	Sediment.	Odor.	Color.	Total.	Fixed.	Free.	Albuminoid.	Nitrates.	Nitrites.					
955	Apr.	16, 1907	0	0	Slight	1.1	3.8	1.7	.0020	.0142	0	0	.17	2.1	0		
971	May	14, 1907	0	0	Woody	1.2	4.0	1.7	.0009	.0122	Trace	0	.17	2.3	0		
1014	June	18, 1907	0	0	Veg.	1.0	3.4	1.6	.0014	.0106	0	0	.18	2.1	0		
1052	July	16, 1907	0	0	Gras y	0.8	4.6	2.2	.0009	.0106	0	0	.17	2.1	0		
1107	Aug.	13, 1907	0	0	Woody	1.1	4.7	3.0	.0012	.0154	0	0	.16	2.2	0		
1123	Sept.	21, 1907	0	0	Grassy	0.7	5.1	2.1	.0014	.0126	0	0	.17	2.5	0		
1221	Oct.	29, 1907	0	0	Grassy	1.1	4.0	1.9	.0009	.0118	Trace	0	.15	2.9	0		
1257	Nov.	26, 1907	0	0	Grassy	0.7	3.5	1.9	.0014	.0142	Trace	0	.15	3.2	0		
1331	Jan.	14, 1908	0	0	Grassy	1.0	4.0	2.0	.0012	.0110	0	0	.22	2.9	0		
1433	Apr.	13, 1908	0	0	Veg.	1.2	4.0	2.1	.0022	.0118	Trace	Trace	.17	2.5	0		
1565	June	30, 1908	0	0	Veg.	1.4	4.3	2.4	.0009	.0086	0	0	.29	1.6	0		
1771	Oct.	7, 1908	0	0	Grassy	0.8	4.1	2.3	.0014	.0118	0	0	.22	2.9	0		
1973	Dec.	31, 1908	0	0	Grassy	0.9	3.4	1.5	.0036	.0100	0	0	.22	3.0	0		
2243	Apr.	7, 1909	0	0	Grassy	0.7	3.9	2.0	.0014	.0116	0	Trace	.22	3.2	0		
2433	July	6, 1909	0	0	Veg.	1.0	3.7	1.9	.0012	.0128	0	0	.22	2.5	0		
2793	Oct.	11, 1909	0	0	Veg.	0.7	4.1	2.3	.0004	.0134	0	0	.22	3.0	0		

## WEST SUMNER.

At West Sumner in this town are two small public supplies from springs which are piped through lead. The sources of both supplies are reported to be high above all sources of pollution, and to flow from the gravels on the hillsides. The systems are gravity systems. We have thus far had but one sample from the Ryerson Aqueduct, which showed a trace of lead. The character of the water would lead one to expect considerable solvent action on lead pipes, and arrangements are being made for examination of all of the supplies of this town, as they are reported to come through lead pipe.

## WEST SUMNER.

Number.	Date of Collection.		APPEARANCE.						RESIDUE ON EVAPORATION.		AMMONIA		NITROGEN AS		Chlorine.	Hardness.
			Turbidity.	Sediment.	Odor.	Color.	Total.	Fixed.	Free.	Albuminoid.	Nitrates.	Nitrites.				
2576	July	27, 1909	0	0	0	0	7.7	6.2	.0002	.0006	0.03	0	.15	6.1		

WILTON.

The water supply for this town comes from Varnums Pond, a large pond situated in the towns of Wilton and Temple. The pond is surrounded by farms and by some forest land, which is covered with a second growth of hard woods. The water is now in first-class condition, and it is reported that care is taken to prevent all drainage from the surrounding farms from reaching the lake.

WILTON.

Number.	Date of Collection.		APPEARANCE.						RESIDUE ON EVAPORATION.		AMMONIA		NITROGEN AS		Chlorine.	Hardness.	Lead.
			Turbidity.	Sediment.	Odor.	Color.	Total.	Fixed.	Free.	Albuminoid.	Nitrates.	Nitrites.					
1249	Nov.	18, 1907	0	0	Woody	0.8	3.1	2.1	.0004	.0098	0	0	.10	3.4	0		
1463	Apr.	20, 1903	0	0	Slight	0.8	3.8	2.4	.0004	.0100	0	0	.10	2.0	0		
1645	July	23, 1908	0	0	0	0	3.7	3.0	.0006	.0084	0	0	.09	2.2	0		
1855	Oct.	28, 1903	0	0	Slight	9.5	3.7	2.3	.0014	.0076	0	0	.07	2.9	0		
1931	Jan.	4, 1909	0	0	Slight	0.7	3.8	2.6	.0019	.0084	0	0	.12	3.0	0		
2318	May	10, 1909	0	0	Slight	0.2	3.3	2.5	.0010	.0061	0.02	0	.08	3.3	0		
2590	July	27, 1909	0	0	Slight	0.5	3.0	1.9	.0008	.0092	0	0	.10	2.8	0		
2821	Oct.	18, 1909	0	0	Veg.	0.5	3.5	1.7	.0030	.0108	0	Trace	.20	2.6	0		

WINTER HARBOR.

This town is supplied by the Grindstone Neck Water Company, which takes its supply from Birch Harbor Pond. This pond is surrounded by farms and by some forest land, which beyond the village. There are no inhabitants on the entire watershed of this pond, nor is the land used for pasture purposes. There is one inlet to the pond, which comes through a large bog. This fact, coupled with the rather low and marshy shores which border the pond in places, results in a water which is quite highly colored and which contains a considerable amount of dissolved vegetable material. No complaint has ever been caused by these conditions, and no algae growth has appeared in this supply up to the present time. Not the slightest evidence of sewage pollution has been detected in this water.

## WINTER HARBOR.

Number.	Date of Collection.		APPEARANCE.						RESIDUE ON EVAPO- RATION.		AMMONIA		NITROGEN AS		Chlorine.	Hardness.	Lead.
			Turbidity.	Sediment.	Odor.	Color.	Total.	Fixed.	Free.	Albuminoid.	Nitrates.	Nitrites.					
1185	Oct.	15, 1907	0	0	Veg.	5.5	4.7	1.2	.0019	.0216	0	0	.65	1.8	0		
1307	Jan.	5, 1903	0.4	0	Veg.	7.2	5.0	2.5	.0058	.0202	0	0	.72	1.3	0		
1425	Apr.	6, 1903	0.1	0	Veg.	5.3	5.5	3.5	.0042	.0162	Trace	0	.92	1.4	0		
1581	July	6, 1903	0	0	Mouldy	2.2	4.3	2.1	.0367	.0663	0	0	.97	2.0	0		
1776	Oct.	5, 1908	0	0	Veg.	1.6	3.4	1.4	.0386	.0370	0	0	1.02	1.6	0		
1997	Dec.	28, 1903	0	0	Veg.	4.5	4.6	2.1	.0364	.0156	0	0	1.10	1.6	0		
2237	Apr.	5, 1909	0.2	0	Veg.	3.9	4.1	2.0	.0222	.0102	0	0	.90	1.6	0		
2524	July	12, 1909	0	0	Veg.	3.4	3.4	1.5	.0223	.0126	0	0	.80	1.3	0		
2897	Nov.	5, 1909	0	0	Veg.	6.5	4.4	1.7	.0083	.0262	0	0	.70	1.31	0		

## WINTERPORT.

The Winterport Water Company takes its water supply from the West Branch of Lowes Brook. This brook is reported to be about a mile long above the intake, and to flow, for the greater part of its course, through woodland. Two pastures are passed through, but no houses or barns are located near to it, and it is reported that all cattle in these pastures are prevented from reaching the water. The soil is mostly a gravelly loam, so that after heavy rains the water is likely to be slightly turbid for a short time. No evidence of pollution of this water has been detected up to this time.

## WINTERPORT.

Number.	Date of Collection.		APPEARANCE.						RESIDUE ON EVAPO- RATION.		AMMONIA		NITROGEN AS		Chlorine.	Hardness.	Lead.
			Turbidity.	Sediment.	Odor.	Color.	Total.	Fixed.	Free.	Albuminoid.	Nitrates.	Nitrites.					
1811	Oct.	15, 1907	0	0	Veg.	1.0	6.5	4.7	.0004	.0066	Trace	0	.27	4.4	0		
1804	Jan.	5, 1908	0	0	0	0.8	6.8	4.8	.0004	.0038	.02	0	.30	4.9	0		
1411	Apr.	5, 1908	0.3	0	Veg.	1.1	6.1	4.4	.0010	.0390	0	0	.27	3.8	0		
1571	June	6, 1908	0	0	Mouldy	0.7	9.4	7.1	.0020	.0086	.03	0	.35	5.8	0		
1798	Oct.	12, 1908	0	0	Veg.	0.5	9.3	6.7	.0020	.0050	Trace	0	.30	6.3	0		
2014	Jan.	6, 1909	0.5	Clay	Veg.	0.6	7.0	4.9	.0018	.0050	0	0	.32	4.4	0		
2249	Apr.	6, 1909	0.1	0	Slight	0.8	4.2	2.8	.0020	.0058	.01	Trace	.24	3.2	0		
2515	July	12, 1909	0	0	Slight	0.3	3.9	7.3	.0020	.0076	.03	Trace	.31	7.1	0		
2884	Nov.	1, 1909	0	0	Veg.	0.8	5.6	4.2	.0010	.0080	.015	0	.35	4.3	0		

WOODLAND.

This town has a semi-public supply, owned by the St. Croix Paper Company, and taken from the St. Croix River above their dams. The river above this point is entirely enclosed by wild land to its source in the large lakes about Vanceboro. There is no chance of pollution of this water until either the increasing size of the town brings it up near to the present intake, or until settlement occurs on the wild lands on the river above. The former case is the more likely to happen. Naturally this water is very highly colored by vegetable material, but it is otherwise satisfactory at the present time, and this color has never caused complaint among the users.

WOODLAND, WASHINGTON COUNTY.

Number.	Date of Collection.	APPEARANCE.						RESIDUE ON EVAPORATION.	AMMONIA		NITROGEN AS		Chlorine.	Hardness.	Lead.
		Turbidity.	Sediment.	Odor.	Color.	Total.	Fixed.		Free.	Albuminoid.	Nitrates.	Nitrites.			
859	Dec. 16, 1906	0	0	Veg.	6.7	4.7	2.3	.0048	.0182	Trace	0	.12	2.1	0	
989	May 21, 1907	0	0	Veg.	6.7	4.0	1.5	.0026	.0150	0	0	.07	1.4	0	
1156	Oct. 8, 1907	0.1	0	Veg.	8.8	4.8	1.6	.0030	.0288	0	0	.10	2.4	0	
1356	Jan. 21, 1908	0	0	Veg.	5.0	3.8	1.7	.0020	.0164	0	0	.17	2.1	0	
1489	Apr. 28, 1908	0	0	Veg.	4.7	3.5	1.5	.0020	.0112	0	0	.15	1.9	0	
1688	Aug. 12, 1908	0	0	Veg.	3.6	3.3	1.2	.0024	.0136	0	0	.11	1.5	0	
1851	Oct. 27, 1908	0	0	Veg.	3.2	3.3	1.5	.0028	.0186	0	0	.10	1.9	0	
2045	Jan. 23, 1909	0	0	Veg.	5.5	5.3	1.7	.0042	.0138	Trace	0	.12	1.5	0	
2306	May 1, 1909	0	0	Veg.	5.9	4.0	1.8	.0016	.0152	0	0	.10	2.1	0	
2478	July 8, 1909	0	0	Veg.	5.2	3.0	1.4	.0028	.0208	0	0	.10	2.2	0	
2753	Sept. 25, 1909	0	0	Veg.	2.7	4.1	1.8	.0064	.0094	0	0	.175	2.0	0	

YARMOUTH.

This town is supplied from springs on the land of the Forest Paper Company, but the system is owned by the town. The springs are removed from all sources of pollution, either from surface or sewage drainage, and no buildings are located within a half mile of the springs. These latter issue from sand at the base of a rocky hill. The rate of flow is about 100 gallons per minute, which is ample for all demands at the present time. The water is led from the springs into a stand-pipe of a capacity of 265,000 gallons, and is distributed from

this at a pressure of about 65 pounds. About 2000 people use this water, which has been in first-class condition since these analyses have been in progress.

An emergency supply is furnished from Royal River with connections at the plant of the Paper Company.

## YARMOUTH.

Number.	Date of Collection.		APPEARANCE.				RESI- DUE ON EVAPO- RATION.		AMMONIA		NITROGEN AS		Chlorine.	Hardness.	Lead.
			Turbidity.	Sediment.	Odor.	Color.	Total.	Fixed.	Free.	Albuminoid.	Nitrates.	Nitrites.			
1470	Apr.	21, 1908	0.7	0	Slight	0.7	7.0	5.1	.0002	.0036	0.08	0	.37	3.5	0
1623	July	21, 1908	0	0	Slight	0.1	7.1	4.9	.0004	.0048	0.08	0	.37	3.1	0
1864	Nov.	3, 1908	0	0	Slight	0.2	6.6	4.2	.0002	.0026	0.07	0	.37	2.7	0
1991	Jan.	1909	0.1	0	Slight	0.4	6.0	4.4	.0003	.0030	0.09	Trace	.38	3.9	0
2287	Apr.	26, 1909	0	0	Slight	0	5.8	4.2	.0002	.0042	0.10	0	.34	3.4	0
2582	July	27, 1909	0	0	0	0	6.6	5.7	.0002	.0022	0.09	0	.40	3.8	0
2863	Oct.	1909	0	0	Slight	0.1	6.5	5.0	.0002	.0040	0.10	0	.40	3.2	0

## YORK.

This town, together with York Harbor and York Beach, is supplied by the York Shore Water Company from Chase Pond. This pond is reported to be surrounded by a heavily wooded country, with no houses or pasture lands near it. At certain times of the year it is considerably discolored by the presence of vegetable material, but has never shown evidence of sewage pollution.

## YORK.

Number.	Date of Collection.		APPEARANCE.				RESI- DUE ON EVAPO- RATION.		AMMONIA		NITROGEN AS		Chlorine.	Hardness.	Lead.
			Turbidity.	Sediment.	Odor.	Color.	Total.	Fixed.	Free.	Albuminoid.	Nitrates.	Nitrites.			
1479	Apr.	25, 1908	0	0	Veg.	2.5	2.8	1.9	.0020	.0096	0	0	.60	2.0	0
1646	July	27, 1908	0.4	Iron	Veg.	3.0	3.0	2.7	.0016	.0112	0	0	.46	1.2	0
1877	Nov.	5, 1908	0	0	Veg.	3.2	3.2	2.8	.0020	.0126	0	Trace	.50	1.4	0
2081	Jan.	28, 1909	0	0	Veg.	3.2	3.2	2.6	.0042	.0152	Trace	0	.70	2.0	0
2337	May	6, 1909	0	0	Veg.	1.5	3.0	1.6	.0014	.0082	Trace	0	.52	2.4	0
2829	Aug.	2, 1909	0	0	Veg.	1.4	3.1	1.4	.0008	.0106	0	0	.62	1.4	0
2943	Nov.	19, 1909	0	0	Veg.	0.8	2.7	1.0	.0032	.0080	Trace	0	.60	1.7	0

## MISCELLANEOUS CHEMICAL WORK.

This work has not been very extended, owing to the demands of the routine analyses. There have, however, been 24 such examinations for special purposes; 21 samples of water have been examined specially for lead; 2 have been examined for zinc, and one sample of wall paper has been examined for arsenic.

The chemical examinations for the past forty months have thus been 2998 in number divided as follows; 2249 water analyses; 613 milk analyses; 109 butter analyses; 3 cheese examinations for ptomain poisoning; 21 water analyses for lead; 2 water analyses for zinc, and 1 analysis of wall paper for arsenic.

## BACTERIOLOGICAL WORK.

Outside of the tabular report this side of our work can be summarized very briefly. During the past three and a third years there has been a great increase in this side of our work. This increase has come about both through an increased use of the laboratory by those physicians who have used it before, and also through the use of it by physicians where laboratory stations have been established during this period. The number of laboratory stations has been increased over a third during this period, and only the lack of funds for the purchase of the necessary outfits prevents an extension that should cover every town in the State. This object is being attained more and more nearly each year.

A very great improvement has been made in the ease and rapidity of transmitting specimens to the laboratory through the adoption of new containers, which comply with the requirements of the Postal Regulations, and so can be sent by mail. This has both reduced the cost of shipment and has cut down the time of transit of the package; but the expense to us has been greatly increased for the outfits. The very large increase in the number of specimens would indicate this change has been appreciated by the physicians.

The bacteriological work has included, besides the routine work on water which is not here included in the bacteriological summaries, the examination of throat specimens for the diphtheria bacillus; of sputum for the tubercle bacillus, and of blood for the Widal reaction. To this list, which had been

unchanged since the opening of the laboratory, has been added the examination of pus for the gonococcus of Neisser. This latter examination, like all of our work along bacteriological lines, has been entirely microscopical, no inoculation work being done. These specimens have been sent to us in the regular typhoid outfits, thus doing away with the need of introducing a new outfit.

The total number of bacteriological specimens examined during the past forty months has been 8420, divided as follows: diphtheria, 3349; tuberculosis, 4106; typhoid 941; pus for gonococcus, 20; malaria, 4.

The table herewith appended shows the increase in the bacteriological work for each two-year period since the establishment of the laboratory, the numbers for the last year being calculated on the basis of the same amount of increase as in the first four months of it.

Specimens.	Period 1902-3.	Period 1904-5.	Increase %	Period 1906-7.	Increase %	Period 1908-9.	Increase %
Diphtheria.....	694	981	58%	1,658	68%	2,520	52%
Tuberculosis .....	427	1,195	179%	2,029	69%	3,120	53%
Typhoid .....	187	390	108%	482	24%	696	44%
Gonococcus.....				15		20	33%

The saving to the State through the laboratory is well shown in the following table, the value of the work being estimated in accordance with the average price of such work in a commercial laboratory.



3,349	examinations of diphtheria cultures	@	\$2.00	\$6,698
4,106	“ “ tubercular sputum	@	\$2.00	8,212
941	“ “ blood for typhoid	@	\$2.00	1,882
20	“ “ pus for gonococci	@	\$2.00	40
4	“ “ blood for malaria	@	\$2.00	8
2,249	sanitary examinations of water	@	\$10.00	22,490
613	samples of milk	@	\$5.00	3,065
109	“ “ butter	@	\$5.00	545
3	“ “ cheese for ptomain	@	\$25.00	75
21	“ “ water for lead	@	\$5.00	105
2	“ “ “ “ zinc	@	\$5.00	10
1	sample of wall paper for arsenic	@	\$10.00	10
Total,				\$43,140
Appropriation for laboratory and \$500 from Department of Agriculture				\$15,500
Saving over commercial cost of this work				\$27,640

It is thus seen that the laboratory during the forty months from September 1st, 1906, to December 31st, 1909, made 11,418 examinations of various material for sanitary purposes at a saving to the people of the State of \$27,640, the saving alone being almost double the entire expense of maintaining the laboratory during this period.



# WATER ANALYSIS.

ANALYSES OF SAMPLES OF WATER—EXPRESSED IN PARTS PER 100,000.

Number.	Town or City.	Source.	Hardness.	Alkalinity.	Color.	Oxygen consumed.	Chlorine.	Nitrite.	Nitrate.	AMMONIA.	
										Free.	Albuminoid.
765	Calais	Public supply	1.8	0.8	3.4	.70	.09	0	.007	.0018	.0182
766	Sanford	Public supply	2.2	1.1	1.2	.05	.17	0	.005	.0002	.0044
767	Sanford	Public supply	2.1	1.4	1.6	.22	.17	0	0	.0004	.0040
768	Newcastle	Well	2.0	1.6	0.8	.05	.30	0	0	.0048	.0052
769	Castine	Well	13.1	5.6	0	.06	3.45	.05	.48	.0020	.0048
770	Topsham	Well	7.6	4.8	0.3	.07	2.65	.0008	.30	.0002	.0106
771	St. Sebago	Spring	1.5	0.4	0	0	0.17	0	0	.0002	.0014
772	Islesford	Well	4.3	1.0	0.4	.13	3.00	.001	.26	.0004	.0076
773	Augusta	Public supply	1.7	1.0	2.1	.34	0.14	0	0	.0016	.0142
774	Scarboro	Spring	5.6	5.1	1.2	.02	0.68	.0007	.06	.0080	.0034
775	Mexico	Well	2.1	1.3	2.7	.36	0.12	Trace	Trace	.0024	.0114
776	Warren	Pond	1.6	0.7	6.0	1.74	0.22	0	0	.0052	.0340
777	Warren	Pond	0.9	0.2	1.9	.54	0.28	0	0	.0022	.0254
778	Waldoboro	River	1.6	1.1	5.2	0.22	0	0	0	.0036	.0234
779	Portland	Well	8.9	6.0	0.5	0	2.00	0	.07	.0018	.0022
780	Portland	Well	6.9	5.4	0	.05	0.92	0	Trace	.0006	.0052
781	Stockton Springs	Public supply	1.6	0.7	0.7	.17	0.22	0	0	.0024	.0120
782	Stockton Springs	Public supply	1.6	0.7	0.7	.18	0.22	0	0	.0022	.0144
783	Bangor	Raw river	2.2	1.0	3.8	1.85	0.08	Trace	Trace	.0120	.0164
784	Bangor	Filtered river	2.5	0.4	2.9	1.29	0.07	0	Trace	.0016	.0138
785	Limerick	Well	1.8	0.8	0.6	.03	0.14	.0003	0	.0008	.0068
786	Scarboro	Well	1.7	0.9	0.2	.03	0.80	0	.01	.0238	.0080
787	Mattawamkeag	Well	2.9	1.1	0.4	.03	1.45	.001	.36	.0078	.0082
788	Friendship	Public supply	3.0	1.8	0.4	.03	1.07	0	.03	.0072	.0082
789	Friendship	Well	2.9	1.3	0.4	.03	2.00	.0003	.33	.0058	.0062

790	Auburn	Spring	6.0	4.9	0	.02	0.17	0	0	.0024	.0022
791	Springvale	Well	15.8	13.5	1.9	.32	0.70	.008	.005	.0276	.0182
792	Kingfield	Public supply	1.7	1.0	0.8	.14	0.06	0	Trace	.0008	.0038
793	Kingfield	Well	4.5	4.0	0.3	.63	0.30	.0008	.03	.0014	.0120
794	Stockton Springs	Well	14.6	8.8	1.1	0	2.90	0	Trace	.0006	.0034
795	Bangor	Well	14.6	10.1	0	0	2.42	.001	.42	.0042	.0320
796	Bangor	Drilled well	24.8	22.9	0	0	5.27	Trace	.30	.0018	.0010
797	Bangor	Drilled well	24.1	17.0	0	.05	4.50	.0003	.30	.0016	.0036
798	Bangor	Drilled well	15.2	13.4	0.4	.02	2.38	Trace	.15	.0006	.0022
799	Bangor	Drilled well	15.8	15.3	0	.02	0.90	0	Trace	.0114	.0012
800	Pemaquid	Well	4.4	2.9	0	.12	3.35	Trace	Trace	.0006	.0340
801	No. Fryeburg	Well	5.8	2.8	0.4	.15	6.38	.003	.46	.0078	.0120
802	Steep Falls	Well	2.1	0.9	0.3	.01	0.38	.005	.04	.0014	.0044
803	Newcastle	Well	2.9	2.6	1.2	.03	0.82	Trace	Trace	.0200	.0048
804	Eliot	Well	6.7	3.4	0.1	.04	1.15	0	.21	.0008	.0034
805	Islesford	Drilled well	3.0	0.6	2.7	.05	4.17	Trace	.005	.0006	.0024
806	Bath	Public supply	1.4	0.6	2.6	.52	0.25	0	0	.0026	.0162
807	Bath	Public supply	1.2	0.6	2.5	.50	0.24	0	0	.0026	.0160
808	Portland	Well	22.1	12.8	1.4	.01	11.50	.0004	.04	.0020	.0112
809	Sanford	Public supply	1.6	1.2	0	.05	0.17	0	0	.0008	.0034
810	Pittsfield	Well	10.9	5.8	0.1	.13	3.30	.0003	1.37	.0016	.0114
811	Pittsfield	River	4.3	2.5	2.6	.58	0.57	Trace	.07	.0028	.0176
812	Pittsfield	Well	37.2	9.1	0.2	.07	5.93	.0035	2.12	.0014	.0046
813	Pittsfield	Well	15.3	4.7	0.2	.24	8.90	.0003	1.62	.0042	.0192
814	Greenville	Well	8.5	5.2	0	.06	1.97	Trace	.12	.0020	.0026
815	Sanford	Driven well	2.2	1.1	0.1	.05	0.17	0	Trace	.0004	.0050
816	Calais	Public supply	2.2	1.0	3.1	1.24	0.10	0	Trace	.0026	.0164
817	Bangor	Filtered river	2.6	0.4	2.6	1.34	0.10	0	Trace	.0016	.0142
818	Bangor	Raw river	2.3	1.2	4.2	1.64	0.08	0	Trace	.0034	.0208
819	Vanceboro	Well	33.8	2.2	0.6	.60	121.5	.05	.20	.1376	.2786
820	Monmouth	Well	2.3	1.1	0	.03	0.70	0	.03	.0024	.0052
821	Brooksville	Spring	2.5	1.8	0	.11	0.50	0	.01	.0016	.0126
822	Berwick	Well	7.2	1.4	0.7	.05	5.78	Trace	.94	.0004	.0042
823	Berwick	Public supply	5.8	0.2	1.4	.10	0.87	0	.01	.0034	.0046
824	Stonington	Spring	3.6	2.6	0.5	.21	1.15	.0004	.05	.0012	.0040
825	Stonington	Spring	3.6	2.8	0.6	.21	3.30	Trace	.11	.0056	.0114
826	Garland	Spring	3.7	2.9	0.2	.06	0.12	0	.05	.0004	.0042
827	Ft. Fairfield	Public supply	14.5	11.4	0.7	.22	0.12	0	.04	.0008	.0046
828	Hiram	Spring	1.9	1.7	0	.02	0.12	0	0	.0004	.0010
829	W. Baldwin	Well	1.4	0.9	0	.03	0.12	0	.01	.0002	.0010

ANALYSES OF SAMPLES OF WATER—Continued

Number.	Town or City.	Source.	Hardness.	Alkalinity.	Color.	Oxygen consumed.	Chlorine.	Nitrite.	Nitrate.	AMMONIA.	
										Free.	Albuminoid.
830	Farmington	Spring	8.3	0.07	0.2	.09	1.90	Trace	1.73	.0024	.0126
831	Bangor	Spring	26.3	14.1	0.9	.31	5.27	.05	1.88	.0038	.0150
832	Bangor	Well	24.1	15.6	0.3	.17	8.60	.04	2.45	.1058	.1702
833	Livermore	Well	1.9	1.3	0.4	.06	0.67	.0008	.20	.0216	0
834	Farmington	Public supply	2.3	1.1	3.1	.53	0.10	0	Trace	.0014	.0108
835	Topsham	Spring	7.2	7.2	0.1	.11	2.15	.001	.13	.0058	.0162
836	Standish	Well	2.6	0.6	0.3	.07	0.72	.0006	.02	.0022	.0090
837	Bangor	Filtered	2.2	0.1	1.5	1.30	0.14	Trace	.01	.0036	.0150
838	Bangor	Raw river	2.2	0.7	9.1	2.02	0.12	.0003	Trace	.0044	.0288
839	York	Well	5.6	5.6	0.1	.06	0.45	Trace	.03	.0044	.0082
840	Harmony	Well	2.7	2.9	0.2	.10	0.40	Trace	.03	.0018	.0064
841	Harmony	Well	2.9	3.2	0	.02	0.15	Trace	.03	.0006	.0026
842	Harmony	Well	8.1	6.2	0.6	.09	0.75	0	.13	.0002	.0046
843	Lincoln	Well	11.6	1.4	3.0	.57	28.2	.02	.55	.2084	.0040
844	Phillips	Public supply	1.3	0.9	2.4	.55	0.05	0	0	.0012	.0150
845	Calais	Public supply	2.3	0.5	6.5	2.19	0.15	Trace	.01	.0044	.0242
846	Lincoln	Well	11.0	4.6	3.6	.41	0.92	.008	.85	.0066	.0224
847	Lincoln	Driven well	13.1	8.4	0.4	0	0.80	0	.13	.0002	.0016
848	Buxton	Spring	2.5	1.5	0	.10	0.45	0	0	.0020	.0052
849	Buxton	Spring	2.6	1.5	0	.12	0.45	0	0	.0004	.0070
850	Madison	Well	2.3	0.6	0.1	.14	1.75	.0009	1.63	.0010	.0066
851	Old Town	Well	19.3	17.0	0.4	.11	0.28	0	0	.0048	.0053
852	Calais	Public supply	2.1	0.4	8.0	2.06	0.18	Trace	0	.0046	.0252
853	Millinocket	Well	4.4	2.0	1.3	.08	0.55	0	.15	.0005	.0048
854	Calais	Well	17.9	10.7	0.1	.16	4.05	Trace	.52	.0024	.0088

855	Calais.....	Well.....	8.8	5.9	2.8	.19	1.10	.001	.10	.0554	.0123
856	Augusta.....	Public supply	2.1	1.2	2.2	.43	0.14	0	0	.0014	.0154
857	Woodland.....	Well.....	2.3	0.8	0.5	.08	0.82	0	.03	.0006	.0060
858	Woodland.....	Well.....	7.8	6.1	2.7	.05	0.30	Trace	.03	.0002	.0042
859	Woodland.....	Public supply	2.1	0.8	6.7	1.40	0.12	0	Trace	.0048	.0182
860	Woodland.....	Spring.....	3.8	3.6	0	0	0.22	0	0	.0002	.0044
861	Woodland.....	Well.....	8.1	5.8	1.2	.07	0.37	0	Trace	.0066	.0096
862	Woodland.....	Well.....	3.5	1.6	0.1	0	0.75	Trace	.03	.0002	.0018
863	Woodland.....	Well.....	7.3	4.3	0.8	0	0.35	0	.01	.0002	.0006
864	Woodland.....	Well.....	20.0	12.6	0.4	.06	3.60	Trace	.55	.0012	.0046
865	Bath.....	Public supply	1.6	0.3	2.3	.44	0.30	0	Trace	.0036	.0134
866	Bath.....	Public supply	1.6	0.4	2.7	.44	0.30	0	Trace	.0030	.0140
867	Bangor.....	Well.....	7.9	5.4	0.6	.06	0.52	Trace	.05	.0004	.0056
868	Bristol.....	Well.....	8.1	3.6	2.1	.51	9.77	.0005	.60	.0032	.0210
869	E. Millinocket.....	Well.....	8.5	8.5	0.2	.02	0.10	Trace	0	.0014	.0140
870	No. Anson.....	Well.....	3.9	2.2	0.2	.03	0.90	0	.25	.0004	.0036
871	Pittsfield.....	Well.....	20.7	16.1	2.1	.24	3.62	.008	.57	.0198	.0218
872	Bangor.....	Filtered.....	2.4	0.05	1.1	.63	0.10	0	Trace	.0018	.0102
873	Bangor.....	Raw river.....	2.4	1.1	5.0	1.17	0.10	0	Trace	.0032	.0154
874	Oxford.....	Well.....	3.9	2.5	0.1	0	0.90	Trace	.34	.0002	.0024
875	Cornish.....	Spring.....	3.9	2.3	0.4	.07	0.67	0	.20	.0010	.0046
876	Calais.....	Public supply	1.9	0.6	5.0	.93	0.19	0	Trace	.0032	.0186
877	Rumford Falls.....	Spring.....	3.2	2.0	0	.06	0.06	0	0	.0001	.0007
878	E. Millinocket.....	Spring.....	7.6	2.2	0.1	.04	0.19	0	.008	.0098	.0062
879	Bristol.....	Well.....	7.6	2.2	0.9	.33	5.20	0	.07	.0054	.0178
880	Augusta.....	Public supply	2.1	1.1	2.6	.47	0.16	0	0	.0022	.0142
881	Mt. Vernon.....	Well.....	3.6	1.7	0.1	.01	0.82	0	0	.0002	.0018
882	Lowell.....	Well.....	9.0	2.6	0.3	.01	1.60	0	1.43	.0006	.0042
883	Cornish.....	Spring.....	3.4	1.7	0	.04	0.98	0	.14	.0006	.0032
884	Bangor.....	Well.....	22.1	10.9	0	0	2.05	0	.87	.0004	.0078
885	Bangor.....	Bored well.....	14.5	9.8	0.2	0	0.80	.0005	.14	.0002	.0038
886	Woodland.....	Well.....	4.7	2.6	1.0	.04	1.10	0	.27	.0004	.0100
887	York.....	Well.....	4.1	2.2	1.3	.08	1.85	0	.08	.0016	.0098
888	York.....	Spring.....	17.8	5.4	0.5	.01	6.43	.0004	.30	.0072	.0068
889	Scarborough.....	Well.....	2.9	1.3	0.4	.04	1.02	Trace	.27	.0094	.0002
890	Bangor.....	Raw river.....	2.5	1.0	5.7	1.76	0.13	0	Trace	.0036	.0172
891	Bangor.....	Filtered.....	2.9	0.1	0.8	.90	0.14	0	Trace	.0024	.0084
892	Deer Isle.....	Pond.....	2.8	1.7	0.8	.39	0.85	0	.01	.0050	.0174
893	Calais.....	Public supply	1.9	0.6	5.5	1.23	0.13	0	Trace	.0026	.0214
894	Mt. Vernon.....	Well.....	6.6	5.1	0.1	.08	0.70	0	.15	.0004	.0084

## ANALYSES OF SAMPLES OF WATER—Continued.

Number.	Town or City.	Source.	Hardness.	Alkalinity.	Color.	Oxygen consumed.	Chlorine.	Nitrite.	Nitrate.	AMMONIA.	
										Free.	Albuminoid.
895	Waterville	Ice	0.2	0.2	0	.06	0.05	Trace	Trace	.0038	.0086
896	Cornish	Well	1.1	0.4	0	.08	0.15	0	0	.0006	.0044
897	Presque Isle	Well	26.6	19.8	0.6	.19	1.27	.0005	.27	.0020	.0044
898	Bangor	Drilled well	25.4	18.6	1.2	.53	3.60	.01	.47	.0380	.0106
899	Bangor	Drilled well	19.7	13.6	0.3	.03	2.05	0	.22	.0002	.0050
900	Machias	Well	13.3	5.1	0.6	.22	4.36	.0003	1.10	.0056	.0122
901	Bath	Public supply	1.4	0.4	2.6	.83	0.31	0	0	.0044	.0134
902	Bath	Public supply	1.3	0.4	2.6	.53	0.32	0	0	.0032	.0146
903	Bangor	Raw river	2.6	1.2	5.0	1.66	0.14	0	Trace	.0024	.0172
904	Bangor	Filtered	2.7	0.3	1.7	.86	0.13	0	Trace	.0016	.0130
905	Springvale	Well	5.3	1.7	0.5	.44	2.63	.002	.75	.0066	.0206
906	Waterville	Ice	0.5	0	0	.15	0.03	Trace	0	.0048	.0070
907	Waterville	Ice	0.6	0	0	.03	0.01	.0003	0	.0038	.0023
908	Waterville	Ice	0.7	0	0.2	.34	0.05	.0004	0	.0120	.0150
909	Waterville	Ice	0.6	0	0	.03	0.01	.0003	0	.0024	.0038
910	Old Town	Bored well	10.1	7.1	0.6	.09	1.00	.01	.03	.0173	.0006
911	Old Town	Bored well	10.1	7.1	0.6	.09	1.00	.01	.03	.0178	.0006
912	Augusta	Public supply	1.8	1.1	2.2	.50	0.15	0	0	.0023	.0174
913	Cornish	Well	9.6	3.3	0.2	.13	2.20	0	1.40	.0018	.0062
914	Cornish	Well	1.8	1.0	0	.05	0.17	0	0	.0002	.0022
915	Old Town	Drilled well	8.6	5.0	0.3	.03	5.60	0	0	.0040	.0038
916	Old Town	Drilled well	8.4	4.9	0.3	.07	5.50	0	0	.0040	.0038
917	Cornish	Well	2.6	2.3	0.3	.06	0.25	0	.06	.0004	.0024
918	Calais	Public supply	2.1	0.6	4.5	1.58	0.14	0	.01	.0034	.0206
919	Monmouth	Well	12.7	10.4	0.4	.15	1.35	0	.03	.0010	.0060



920	Monmouth.....	Well.....	12.6	10.5	0.4	.09	1.85	0	.03	.0002	.0138
921	Oakland.....	Public supply.....	1.9	1.0	2.6	.45	0.05	0	Trace	.0022	.0116
922	Oakland.....	Ice.....	0.7	0	0	.10	0.01	0	0	.0148	.0120
923	Dark Harbor.....	Well.....	18.4	14.0	0.6	.07	1.70	.005	.10	.0740	0
924	Calais.....	Spring.....	2.1	1.5	0.3	.05	0.19	0	.02	.0020	.0042
925	Augusta.....	Spring.....	26.0	11.7	0.4	.05	2.08	0	.48	.0014	.0054
926	Rumford Falls.....	Spring.....	1.5	1.1	0.5	.07	0.06	Trace	0	.0008	.0034
927	Oakland.....	Ice.....	0.5	0	0.1	.05	0.01	0	0	.0046	.0070
928	Oakland.....	Ice.....	0.2	0	0	.10	0	Trace	Trace	.0032	.0082
929	Oakland.....	Ice.....	0.2	0	0	.06	0	0	0	.0044	.0056
930	Oakland.....	Ice.....	0.2	0	0	.08	0.01	0	0	.0024	.0060
931	Augusta.....	Public supply.....	2.0	1.1	2.3	.48	0.15	0	.01	.0010	.0136
932	Bangor.....	Raw river.....	2.8	1.3	5.2	2.09	0.13	Trace	Trace	.0022	.0176
933	Bangor.....	Filtered.....	4.3	1.3	5.0	2.15	0.13	Trace	Trace	.0020	.0156
934	Calais.....	Public supply.....	2.1	0.6	4.5	1.59	0.13	0	Trace	.0022	.0148
935	Presque Isle.....	Well.....	28.6	19.1	0.9	.20	3.95	.004	.35	.0034	.0182
936	Bowdoinham.....	Well.....	16.5	7.6	1.4	.22	7.85	.0007	.14	.0028	.0126
937	Bowdoinham.....	Well.....	3.1	1.1	0.5	.07	1.25	.0005	.28	.0010	.0056
938	Bowdoinham.....	Well.....	3.0	6.0	1.8	.23	2.15	.001	.14	.0142	.0208
939	Bowdoinham.....	Well.....	11.4	8.8	2.6	.20	1.37	.0004	.01	.0032	.0222
940	Bowdoinham.....	Well.....	18.4	12.5	1.5	.30	1.15	.002	.08	.0040	.0216
941	Bowdoinham.....	Well.....	9.5	5.0	2.9	.47	0.80	.001	.09	.0162	.0322
942	Bowdoinham.....	Well.....	6.5	4.0	3.5	.17	2.17	.0006	.12	.0022	.0142
943	Bowdoinham.....	Well.....	10.7	6.2	1.0	.11	1.05	.0008	.11	.0014	.0362
944	Bowdoinham.....	Well.....	17.1	11.2	0.5	.07	3.40	.001	.04	.0012	.0666
945	Bowdoinham.....	Well.....	11.7	4.6	1.4	.11	15.4	.008	.60	.0130	.0114
946	Bowdoinham.....	Well.....	32.4	23.9	0.8	.15	13.2	Trace	.15	.0016	.0666
947	Bowdoinham.....	Well.....	20.3	10.9	2.2	.30	8.35	.001	1.22	.0078	.0176
948	Old Town.....	Spring.....	3.0	1.2	0.3	.02	0.43	0	.27	.0012	.0034
949	Brownfield.....	Spring.....	1.2	0.4	0.2	.01	0.09	0	.01	.0006	.0034
950	Milltown.....	Spring.....	2.4	1.0	0.1	.02	0.16	0	.01	.0002	.0042
951	Calais.....	Well.....	6.0	2.1	0.9	.39	8.67	.05	.42	.0456	.0280
952	Calais.....	Public supply.....	1.6	0.6	5.3	1.09	0.15	0	Trace	.0028	.0214
953	Kowhegan.....	Well.....	2.0	2.0	0.4	.28	1.65	.001	.18	.0428	.0050
954	Fryeburg.....	Well.....	1.5	0.6	0.4	.11	0.10	0	0	.0010	.0016
955	Waterville.....	Public supply.....	2.1	1.4	1.1	.32	0.17	0	0	.0020	.0142
956	Augusta.....	Public supply.....	2.0	1.0	2.2	.57	0.15	0	0	.0020	.0150
957	Bangor.....	Filtered.....	2.5	0.1	1.7	.70	0.12	0	Trace	.0022	.0094
958	Bangor.....	Raw river.....	2.0	0.8	5.1	1.39	0.13	.0006	0	.0028	.0190
959	Farmington.....	Well.....	9.3	6.5	2.2	1.17	5.65	.0007	.01	.0636	.0448

ANALYSES OF SAMPLES OF WATER—Continued.

Number.	Town or city.	Source.	Hardness.	Alkalinity.	Color.	Oxygen consumed.	Chlorine.	Nitrite.	Nitrate.	AMMONIA.		
										Free.	Albuminoid.	
960	Robbinston	Well	10.8	6.8	0.2	0	0.40	.0007	.01	.0006	.0050	
961	Henderson	Well	7.2	1.3	0.4	.09	2.78	Trace	.85	.0004	.0052	
962	Brownfield	Spring	2.1	0.4	0.2	.05	0.10	0	.08	.0003	.0041	
963	Bridgton	Well	5.6	5.3	0	.11	1.15	0	.05	.0004	.0074	
964	Calais	Well	7.7	4.7	0.3	.14	1.65	0	.23	.0006	.0058	
965	Calais	Spring	13.9	9.4	0.5	.05	1.07	.0003	.15	.0004	.0040	
966	Old Town	Drilled well	38.8	13.8	0.3	.08	10.85	.009	4.65	.0230	.0134	
967	Old Town	Drilled well	11.0	8.2	0.3	.03	1.32	.004	.20	.0506	.0116	
968	Vienna	Well	3.6	2.6	0.4	.10	0.17	0	.19	.0002	.0086	
969	Sprague's Mills.	Spring	7.1	4.6	0.1	0	0.10	0	.15	.0010	.0042	
970	Pittsfield	Well	9.3	7.2	0.3	.06	0.21	Trace	.05	.0002	.0034	
971	Waterville	Public supply	2.3	1.4	1.2	.33	0.17	0	Trace	.0008	.0122	
972	Brownfield	Spring	1.1	0.6	0.1	.03	0.08	0	Trace	.0002	.0014	
973	Brownfield	Spring	1.9	1.1	0.1	0	0.06	0	Trace	.0002	.0022	
974	Skowhegan	Spring	1.7	1.1	0.3	.03	0.20	Trace	.01	.0008	.0036	
975	Skowhegan	Cistern	1.9	1.4	0	0	0.15	0	.02	.0002	.0020	
976	Bangor	Raw river	1.9	0.7	5.9	1.15	0.07	Trace	Trace	.0022	.0188	
977	Bangor	Filtered	2.2	0.1	1.0	0.42	0.08	Trace	0	.0018	.0106	
978	Augusta	Public supply	1.7	1.0	2.3	0.42	0.15	0	0	.0014	.0134	
979	Brownfield	Spring	1.5	0.8	0	.01	0.15	0	0	.0012	.0016	
980	Shirley	Well	1.2	0.6	0	.15	0.20	0	.08	.0002	.0036	
981	Calais	Public supply	1.7	0.5	7.2	1.40	0.11	.0002	0	.0034	.0196	
982	Woodland	Well	2.9	1.5	0.2	.16	1.10	.0004	.04	0	.0038	
983	Woodland	Well	3.0	1.1	0	.01	0.65	0	.04	.0002	.0024	
984	Woodland	Spring	4.3	3.7	0	.02	0.25	0	Trace	0	.0038	

985	Woodland	Well	3.5	0.4	0.6	.11	1.58	.0006	.21	.0054	.0072
986	Woodland	Well	4.7	3.4	0.3	.15	0.85	.0020	Trace	.0162	.0086
987	Woodland	Well	18.6	8.4	0.3	.21	6.76	0	1.98	.0016	.0128
988	Woodland	Public supply	1.4	0.3	6.7	1.20	0.07	0	0	.0036	.0150
989	Sidney	Well	11.6	7.0	4.8	1.07	0.07	.02	.30	.1832	.0866
990	Washburn	Well	22.6	18.1	0	.05	0.77	0	.37	.0002	.0028
991	Washburn	Well	29.5	21.4	0.2	.05	2.52	.0008	.80	.0014	.0036
992	Woodland	Well	8.7	5.0	x	.44	0.45	Trace	.16	.0010	.0166
993	Woodland	Well	2.2	1.5	1.1	.14	0.66	.0003	.07	.0156	.0074
994	Milo	Well	3.2	2.6	0.3	.17	0.55	.0007	.11	.0328	.0044
995	Bath	Public supply	1.0	0.9	2.7	.55	0.25	0	Trace	.0018	.0128
996	Bath	Public supply	1.0	0.5	2.5	.54	0.25	0	Trace	.0020	.0110
997	Mt. Vernon	Well	3.4	1.3	5.4	1.06	0.27	.0007	.03	.0254	.0398
998	Portland	Spring	3.1	2.3	1.6	.17	0.57	0	0	.0008	.0050
999	Portland	Well	5.7	4.1	0.4	.11	0.45	Trace	.05	.0002	.0048
1000	Sebago	Well	1.8	1.0	0.3	.10	0.50	0	.11	.0002	.0038
1001	Kineo	Well	11.6	12.4	0.1	.05	0.07	0	0	.0002	.0018
1002	Kineo	Well	3.2	1.5	0	.04	0.57	0	.23	.0002	.0034
1003	Princeton	Well	4.5	2.9	1.1	.28	1.77	Trace	.09	.0012	.0180
1004	Augusta	Spring	14.5	8.2	0	.39	0.85	.05	.45	.0382	.0070
1005	Kittery	Well	2.0	0.8	0.3	.36	0.60	0	.02	.0004	.0048
1006	Kittery	Well	24.9	24.6	1.9	.28	0.80	0	.03	.0004	.0100
1007	Kittery	Spring	14.5	9.9	0	.02	1.45	0	.15	.0002	.0020
1008	Port Clyde	Drilled well	22.0	4.8	0.3	.28	43.1	.03	.65	.0564	.0240
1009	Bangor	Raw river	1.9	1.1	5.9	1.57	0.08	Trace	Trace	.0020	.0210
1010	Bangor	Filtered	2.4	0.2	1.6	.68	0.07	Trace	Trace	.0010	.0094
1011	Brownfield	Spring	1.2	0.9	0	.04	0.09	0	0	.0004	.0010
1012	Sargentville	Well	4.9	1.0	0	.08	1.35	.0007	1.00	.0006	.0046
1013	Winthrop Center	Well	12.7	10.1	0.6	.05	1.50	0	.08	.0002	.0026
1014	Waterville	Public supply	2.1	1.4	1.0	.31	0.18	0	0	.0014	.0106
1015	Augusta	Public supply	1.7	1.0	2.2	.46	0.15	0	0	.0022	.0146
1016	Sidney	Well	7.4	7.5	0	.05	0.55	0	.18	.0006	.0048
1017	Lewiston	Well	5.0	3.0	0.1	.01	2.00	0	.06	.0012	.0036
1018	Gullford	Well	17.4	11.0	0.1	.04	1.55	.0005	.53	.0038	.0036
1019	Gardiner	Spring	6.4	5.7	1.2	.08	0.23	0	0	.0002	.0020
1020	Old Town	Well	37.1	13.2	0	.08	10.27	.0050	3.80	.0140	.0048
1021	Old Town	Well	15.1	8.3	0.2	.04	2.17	.0010	0.63	.0028	.0050
1022	Old Town	Well	7.5	7.0	0	0	0.65	.0010	0.10	.0026	.0084
1023	Old Town	Well	5.9	4.1	0.3	.13	0.62	0	0.58	.0006	.0020
1024	Portland	Spring	3.2	2.1	0.1	.03	0.90	0	0.03	.0002	.0028

ANALYSES OF SAMPLES OF WATER—Continued.

Number.	Town or City.	Source.	Hardness.	Alkalinity.	Color.	Oxygen consumed.	Chlorine.	Nitrite.	Nitrate.	AMMONIA.	
										Free.	Albuminoid.
1025	Skowbegan	Spring	2.1	2.5	6.0	.90	3.02	.0020	0.17	.0300	.0280
1026	Westbrook	Well	3.9	3.4	0.2	.05	1.07	0	0.10	.0004	.0046
1027	Westbrook	Well	3.2	2.0	0.3	.04	0.37	0	0.12	.0004	.0034
1028	Westbrook	Well	14.5	12.1	0.2	.06	0.67	Trace	0.23	.0036	.0040
1029	Lisbon Falls	Well	3.9	2.8	0	0	0.65	0	0.18	0	.0012
1030	Port Clyde	Well	4.4	3.0	3.0	.17	2.45	0	0	.0038	.0060
1031	Stonington	Well	5.0	1.3	0.2	.07	3.37	.0005	0.73	.0012	.0050
1032	Stonington	Spring	2.1	0.9	0	.03	0.98	0	0.07	.0002	.0036
1033	Deer Isle	Pond	1.9	1.4	0.3	.36	0.80	0	0	.0008	.0206
1034	Greenville	Well	17.4	14.5	0.1	.05	2.47	.0008	0.07	.0014	.0038
1035	Greenville	Well	1.1	0.3	0	.06	0.22	0	0.15	.0002	.0042
1036	Ocean Point	Spring	2.4	0.7	1.1	.37	2.95	0	0	.0016	.0086
1037	Ocean Point	Spring	2.8	1.5	0.7	.04	1.60	.0004	0.03	.0098	.0088
1038	Ocean Point	Cistern	1.6	0.5	2.6	.95	0.47	0	0.01	.0068	.0182
1039	Ocean Point	Well	2.7	1.7	0.9	.11	1.13	0	0	.0168	.0082
1040	Sidney	Well	9.8	4.4	0.4	.07	2.47	Trace	1.50	.0018	.0050
1041	Presque Isle	Well	21.4	14.2	0.6	.10	1.77	.0008	0.90	.0004	.0048
1042	Presque Isle	Well	19.1	15.2	0.5	.06	0.88	Trace	0.50	.0024	.0016
1043	Hope Island	Well	2.1	1.3	0.3	.03	1.20	0	0.03	.0004	.0028
1044	Freeport	Spring	3.3	3.3	0	.14	0.27	0	Trace	.0014	.0036
1045	Hallowell	Spring	6.7	4.6	0.1	.01	0.27	0	Trace	.0002	.0016
1046	York	Ice	0.4	0.1	0.1	.06	0.04	Trace	0	.0034	.0074
1047	York	Ice	0.5	0.1	0.1	.04	0.03	Trace	0	.0046	.0066
1048	Cornish	Spring	1.8	1.1	0	0	0.09	0	0.01	0	.0020
1049	Bangor	Drilled well	19.1	12.1	0	0	4.05	.0020	0.33	.0138	.0012

WORK IN THE LABORATORY OF HYGIENE.

1050	Bangor	Drilled well	2.4	16.3	0.3	0	4.22	0	Trace	0	.0006
1051	Kineo	Well	2.2	1.1	0.1	0	0.37	0	0	0.01	.0008
1052	Presque Isle	Well	21.1	17.4	0	0	1.00	.0003	0	0.37	.0008
1053	Vanceboro	Well	11.6	9.4	0.7	.70	6.22	.0800	0.08	.1138	.0182
1054	Winthrop Center	Well	21.0	17.3	0.4	.17	0.42	0	0	.0006	.0126
1055	Washington	Well	4.2	3.4	0.4	.13	0.65	0	0.10	.0024	.0080
1056	Dark Harbor	Drilled well	16.8	14.1	0.4	.08	1.67	.0002	0.15	.0002	.0018
1057	Bangor	Raw river	2.0	0.9	7.0	1.72	0.25	0	0	.0022	.0194
1058	Bangor	Filtered	2.5	0.1	1.2	.92	0.06	0	0	.0016	.0112
1059	Washburn	Well	22.8	18.2	0.3	.05	1.05	0	0.42	.0012	.0040
1060	Washburn	Well	33.1	23.7	0.7	.07	4.55	.0008	1.75	.0018	.0068
1061	York	Well	8.1	5.6	2.2	.31	2.45	.0050	0.75	.0334	.0074
1062	Waterville	Public supply	2.1	1.4	0.8	.24	0.17	0	0	.0008	.0106
1063	Augusta	Public supply	2.0	1.1	2.4	.38	0.15	0	0	.0008	.0124
1064	West Lebanon	Well	1.4	0.9	0.1	0	0.35	0	0.04	.0014	.0006
1065	York	Well	1.4	0.6	0.8	.06	0.90	0	0.04	.0014	.0052
1066	Calais	Public supply	1.4	0.6	5.0	1.37	0.10	0	0	.0024	.0166
1067	Augusta	Spring	2.1	1.5	0	.02	0.11	0	0	.0032	.0036
1068	Livermore	Spring	4.7	3.0	1.1	.28	0.17	0	0.06	.0038	.0064
1069	Machias	Well	2.5	0.5	0.8	.61	0.44	0	0.06	.0010	.0128
1070	Machias	Spring	1.7	1.1	0.2	.35	0.92	0	0.03	.0002	.0028
1071	Martinsville	Spring	1.7	0.7	0	.05	1.15	0	0.03	.0002	.0036
1072	Martinsville	Well	2.4	0.8	0.2	.13	1.77	0	0.06	.0010	.0072
1073	Brownfield	Spring	1.4	0.6	0	.08	0.11	0	0.10	.0002	.0034
1074	Brownfield	Spring	2.3	2.0	0.2	.22	0.11	0	0.05	.0002	.0022
1075	Curtis Corner	Spring	5.4	4.7	0	.04	0.17	0	0	.0002	.0008
1076	Curtis Corner	Well	3.1	2.5	0	.04	0.17	0	0.02	0	0
1077	Port Clyde	Spring	1.4	0.6	0.4	.19	1.00	0	0.01	.0016	.0108
1078	York	Spring	3.4	3.0	0.1	.06	0.40	0	0.04	.0022	.0028
1079	Rumford Falls	Well	53.3	6.6	0.6	.40	1.60	.0050	0.40	.0220	.0078
1080	Rumford Falls	Spring	1.6	1.3	0	.02	0.15	0	0	.0004	0
1081	Northport	Spring	6.2	2.0	0.2	.05	3.37	Trace	0.48	.0006	.0018
1082	Bradford	Well	6.9	4.1	0.1	.13	0.42	0	0.08	.0004	.0036
1083	Buckfield	Well	2.8	1.7	0	.07	0.32	0	0.14	.0002	.0026
1084	Buckfield	Public supply	1.4	0.8	1.0	.19	0.13	0	0	.0008	.0032
1085	Buckfield	Public supply	1.4	0.8	0.6	.26	0.12	0	0	.0004	.0036
1086	Cornville	Well	4.7	1.8	1.4	.53	0.37	.0003	0.65	.0022	.0160
1087	Old Town	Public supply	1.8	1.0	7.5	1.28	0.10	.0004	Trace	.0012	.0136
1088	Old Town	Public supply	1.9	0.9	7.0	1.54	0.07	.0004	0	.0018	.0132
1089	Old Town	Penobscot river	1.9	0.9	7.5	1.48	0.10	.0004	Trace	.0026	.0244

## ANALYSES OF SAMPLES OF WATER—Continued.

Number.	Town or city.	Source.	Hardness.	Alkalinity.	Color.	Oxygen consumed.	Chlorine.	Nitrite.	Nitrate.	AMMONIA.	
										Free.	Albuminoid.
1090	North Dexter	Well	69.6	34.5	0.8	.35	14.00	.0050	5.70	.0044	.0286
1091	Brighton	Spring	3.4	2.6	0	.04	0.20	0	0.05	.0028	.0026
1092	Port Clyde	Well	4.5	2.1	0.8	.57	4.85	.0040	0.55	.0138	.0169
1093	Port Clyde	Well	6.0	3.5	0.4	.25	4.42	.0004	0.20	.0018	.0132
1094	Port Clyde	Well	2.0	1.4	0.2	.09	3.23	.0003	0.16	.0022	.0045
1095	Port Clyde	Well	2.5	0.4	0.4	.16	3.27	0	Trace	.0006	.0082
1096	New Vineyard	Well	3.5	3.5	0	.08	0.07	0	Trace	.0004	.0012
1097	Roque Bluffs	Well	2.8	2.8	0.1	.13	2.87	Trace	0.61	.0004	.0033
1098	Roque Bluffs	Well	16.3	7.6	1.0	.39	2.90	.0020	0.40	.0656	.0892
1099	Parkman	Well	4.4	2.6	0.1	.08	0.95	.0003	0.60	.0084	.0066
1100	Dark Harbor	Well	15.1	12.2	0.3	.06	3.92	.0004	0.19	.0003	.0015
1101	Greenville	Well	6.2	0.4	0.1	.15	2.43	.0001	0.78	.0006	.0056
1102	Greenville	Well	7.4	2.2	0.2	.08	1.36	.0006	0.45	.0016	.0034
1103	Old Town	Spring	9.8	9.0	0.3	.12	0.56	0	0	.0002	.0046
1104	Bangor	Raw river	1.9	0.8	7.7	1.73	0.06	Trace	Trace	.0020	.0222
1105	Bangor	Filtered	2.3	0.1	3.8	1.54	0.06	0	0	.0018	.0158
1106	Small Point Beach	Public supply	2.3	1.2	9.0	1.79	1.47	0	Trace	.0058	.0368
1107	Waterville	Public supply	2.2	1.3	1.1	.28	0.16	0	0	.0012	.0154
1108	East Waterford	Well	1.7	0.9	0.1	.04	0.12	0	Trace	.0014	.0012
1109	Calais	Well	8.7	2.8	0.6	.15	3.18	.0050	1.16	.0388	.0046
1110	Augusta	Public supply	1.7	1.0	2.1	.41	0.14	0	0	.0014	.0114
1111	Washburn	Drilled well	24.9	19.6	0.1	.10	1.25	0	0.47	.0006	.0032
1112	Washburn	Well	32.5	23.6	0.1	.08	3.23	.0004	1.15	.0004	.0050
1113	Kennebunk	Public supply	1.2	0.9	3.5	.48	0.34	0	0	.0008	.0072
1114	Calais	Public supply	1.5	0.6	5.5	1.24	0.90	0	Trace	.0016	.0192

WORK IN THE LABORATORY OF HYGIENE.

1115	Naples	Spring	1.4	1.1	0	.06	0.14	0	0.02	0	.0020
1116	Christmas Cove	Well	40.9	4.5	0.6	.22	44.30	.0005	0.03	.0010	.0066
1117	Kezar Falls	Well	1.8	1.4	0	.26	0.07	0	0.03	0	.0024
1118	Henderson	Well	1.7	0.8	0.2	.17	0.27	0	Trace	0	.0042
1119	Rumford Falls	Spring	1.7	1.2	0.1	.06	0.07	0	Trace	.0004	.0032
1120	Waterville	Public supply	2.5	1.5	0.7	.34	0.17	0	0	.0014	.0126
1121	Milbridge	Spring	5.2	3.4	0.1	.07	0.55	0	Trace	0	.0026
1122	Skowhegan	Well	5.5	5.5	2.1	.49	5.58	.0008	0.95	.0066	.0252
1123	Bangor	Raw river	2.5	1.1	6.0	1.82	0.09	0	Trace	.0026	.0188
1124	Bangor	Filtered	3.1	0.5	4.2	1.45	0.10	0	Trace	.0020	.0136
1125	Tenants Harbor	Cistern	5.7	4.4	6.1	1.13	0.27	.0030	Trace	.0320	.0350
1126	South Paris	Well	5.8	5.3	0.8	.09	0.22	.0008	0.01	.0042	.0038
1127	Freeport	Well	3.9	1.3	0.1	.09	0.70	.0004	0.57	.0008	.0030
1128	Woodland	Well	7.7	2.5	3.1	.45	1.05	.0003	0.29	.0052	.0198
1129	Freeport	Well	6.8	2.4	0.8	.17	1.25	Trace	0.85	.0026	.0100
1130	Greenville	Well	3.4	1.7	0.2	.05	0.63	Trace	0.20	.0008	.0036
1131	Woodland	Well	3.6	2.2	2.0	.44	0.55	.0005	0	.0014	.0140
1132	Woodland	Spring	4.3	4.1	0.3	.03	0.32	0	0.01	0	.0016
1133	Greenville	Drilled well	8.5	7.1	0	0.03	0.08	0	0	.0002	.0012
1134	Greenville	Well	10.9	7.0	1.6	.12	2.85	0	0.06	.0004	.0030
1135	Greenville	Drilled well	5.0	5.0	0	.01	0.10	0	0.02	0	.0010
1136	Greenville	Drilled well	2.8	2.8	0	.01	0.12	0	0.03	0	.0004
1137	Greenville	Drilled well	7.5	7.4	0	0	0.10	0	0.02	0	.0012
1138	Greenville	Reservoir	2.9	2.7	0	.03	0.10	0	0.03	.0002	.0012
1139	Lisbon Falls	Well	8.5	2.2	0.2	.08	2.87	0	0.80	.0004	.0034
1140	Rumford Falls	Well	2.4	1.8	0.2	.05	0.09	Trace	0.10	0	.0024
1141	North Haven	Well	16.5	10.4	0.2	.04	1.25	0	0.20	0	.0022
1142	North Haven	Well	14.5	13.4	0.2	.08	3.60	0	0.52	0	.0036
1143	North Haven	Well	21.9	8.2	0.8	.28	6.32	.0010	2.38	.0034	.0238
1144	North Haven	Well	19.5	17.7	0.6	.26	2.25	0	0.12	.0012	.0070
1145	North Haven	Spring	4.3	3.9	0	.10	1.27	0	0.04	.0006	.0026
1146	Friendship	Spring	2.9	2.0	0.7	.25	0.90	0	0.02	.0006	.0046
1147	Winthrop Center	Well	17.7	10.7	0.5	.17	0.47	.0010	0.17	.0116	.0076
1148	Skowhegan	West aqueduct	2.7	1.1	0.4	.01	0.92	0	0.23	0	.0020
1149	Skowhegan	Aqueduct well	3.2	1.0	0.3	.01	1.52	0	0.38	.0110	.0022
1150	Skowhegan	Coburn aqueduct	4.2	0.9	0.4	0	1.71	Trace	0.61	.0026	.054
1151	Biddeford	Public supply	2.6	0.1	0.7	.21	0.38	0	0	.0012	.0060
1152	Pittsfield	Public supply	3.0	1.9	5.0	.85	0.09	0	0	.0022	.0132
1153	Castine	Public supply	7.2	5.0	0.7	.06	0.57	0	0.03	.0004	.0034
1154	Skowhegan	Kennebec river	1.9	0.9	6.7	1.35	0.06	0	0	.0022	.0134

## ANALYSES OF SAMPLES OF WATER—Continued.

Number.	Town or City.	Source.	Hardness.	Alkalinity.	Color.	Oxygen consumed.	Chlorine.	Nitrite.	Nitrate.	AMMONIA.	
										Free.	Albuminoid.
1155	Skowhegan	Public supply	2.3	1.2	4.2	.60	0.30	Trace	0	.0020	.0158
1156	Skowhegan	West aqueduct	3.2	1.1	0.3	.01	0.92	0	0.22	.0004	.0014
1157	Buckfield	Public supply	1.6	0.9	0.7	.16	0.10	0	0	.0006	.0086
1158	Oxford	Well	8.6	4.5	0.4	.18	2.87	.0010	1.13	.0046	.0158
1159	Woodland	Public supply	2.4	0.7	8.8	1.66	0.10	0	0	.0030	.0288
1160	Bangor	Well	13.5	7.9	0.4	.10	0.45	.0003	0.08	.0022	.0050
1161	Bangor	Well	8.9	4.2	0.8	.13	2.32	0	0.95	.0008	.0084
1162	Bangor	Well	15.5	6.2	0.8	.36	2.20	.0010	1.80	.0072	.0258
1163	Sebago	Well	5.8	1.9	0.1	.02	1.85	.0015	1.12	.0010	.0334
1164	Castine	Arcadia aqueduct	2.7	0.9	0	0	0.55	0	0.08	.0008	.0032
1165	Bar Harbor	Public supply	1.3	0.4	0.7	.20	0.50	0	0	.0008	.0066
1166	Woodland	Well	14.6	10.0	0.5	.23	5.35	Trace	0.92	.0008	.0112
1167	Kennebunk	Public supply	1.8	0.4	11.0	1.53	0.38	0	Trace	.0028	.0148
1168	Bangor	Artesian well	12.0	0	.15	0.25	0	Trace	Trace	0	.0020
1169	Bangor	Artesian well	12.0	7.0	0	.08	1.55	.0008	0.27	.0014	.0016
1170	Bangor	Artesian well	17.0	9.3	0	.06	1.82	.0018	0.40	.0006	.0016
1171	Bethel	Public supply	1.5	0.3	2.7	.57	0.07	0	0	.0014	.0074
1172	Brownfield	Well	5.5	0.8	0.1	.10	1.10	.0004	0.75	.0008	.0090
1173	Brownfield	Well	2.5	1.1	1.8	.34	0.17	0	0.17	.0018	.0158
1174	Winthrop Ctr.	Well	5.1	4.2	0.4	.06	0.22	0	Trace	.0010	.0046
1175	Phillips	Public supply	1.9	1.0	2.8	.55	0.04	0	0	.0014	.0124
1176	No. Bridgton	Well	2.7	1.2	0	.11	0.32	.0006	0.04	.0030	.0030
1177	No. Bridgton	Well	13.3	1.3	0.1	.12	22.80	.0020	0.33	.0018	.0030
1178	Kingfield	Public supply	1.7	0.3	2.9	.48	0.04	0	0	.0012	.0086
1179	Presque Isle	Public supply	13.5	11.8	2.4	.55	0.30	0	0.04	.0010	.0108



WORK IN THE LABORATORY OF HYGIENE.

1180	Damariscotta	Public supply	1.5	0.7	2.4	.82	0.32	0	0	.0008	.0158
1181	Winterport	Public supply	4.4	3.5	1.0	.19	0.27	0	Trace	.0004	.0066
1182	Augusta	Public supply	2.1	0.8	2.2	.38	0.16	0	0	.0012	.0122
1183	Brewer	Public supply	2.8	0.7	9.0	1.41	0.15	0	Trace	.0022	.0214
1184	Seal Harbor	Public supply	1.8	0.5	0.6	.19	0.58	0	0	.0008	.0054
1185	Winter Harbor	Public supply	1.8	0.4	5.5	.97	0.65	0	0	.0018	.0216
1186	Old Town	Public supply	2.9	0.8	8.5	1.93	0.13	0	Trace	.0028	.0240
1187	Van Buren	Public supply	4.5	3.2	4.0	1.01	0.05	0	0	.0008	.0096
1188	Gardiner	Public supply	2.8	1.0	2.2	.46	0.19	0	0	.0022	.0164
1189	Cornish	Spring	3.0	0.5	0	.03	0.95	0	0.27	.0008	.0022
1190	Cornish	Well	5.0	2.4	0	.08	0.75	0	0.19	.0006	.0086
1191	Carroll	Well	14.0	9.6	0.8	.21	0.16	0	Trace	.0002	.0064
1192	Franklin	Well	3.3	0.3	0.7	.16	2.12	Trace	0.35	.0028	.0052
1193	Leeds Junct.	Spring	2.3	0.7	0	.18	0.12	0	0.04	.0004	.0020
1194	Norway	Public supply	2.1	1.2	1.7	.49	0.15	0	0	.0009	.0154
1195	Brownfield	Spring	2.4	1.4	0	.06	0.11	0	0	.0002	.0008
1196	Springvale	Public supply	2.3	0.8	2.4	.48	0.20	0	0	.0014	.0112
1197	Camden	Public supply	1.3	1.1	0.4	.17	0.35	0	0	.0008	.0060
1198	Bath	Public supply	1.2	0.5	3.2	.49	0.32	0	Trace	.0020	.0120
1199	Bath	Public supply	1.7	0.6	6.8	1.04	0.47	0	Trace	.0030	.0178
1200	Ellsworth	Public supply	1.5	0.5	2.6	.49	0.27	0	0	.0004	.0108
1201	Lewiston	Public supply	2.4	1.0	0.6	.14	0.20	0	Trace	.0010	.0132
1202	Auburn	Public supply	2.3	0.9	0.5	.13	0.20	0	Trace	.0006	.0090
1203	Freeport	Public supply	3.2	1.9	2.5	.30	0.42	0	0.02	.0004	.0076
1204	Rumford Falls	Public supply	9.8	4.7	3.0	.25	0.30	.0002	0.03	.0004	.0058
1205	Mechanic Falls	Public supply	2.6	1.2	1.6	.32	0.24	0	Trace	.0004	.0110
1206	Mechanic Falls	Public supply	2.2	1.3	1.6	.29	0.23	0	Trace	.0008	.0118
1207	Oakland	Public supply	3.0	2.0	2.2	.34	0.14	0	0	.0010	.0126
1208	Sangerville	Public supply	5.6	3.6	0.3	.03	0.08	0	0	.0004	.0018
1209	Livemore Falls	Public supply	2.3	0.7	0.7	.14	0.15	0	0	.0006	.0134
1210	Bucksport	Public supply	2.9	1.0	11.5	1.58	0.37	0	0	.0024	.0362
1211	Brunswick	Public supply	3.5	2.0	0.2	.03	0.47	0	0.01	0	.0012
1212	Hallowell	Public supply	3.0	1.4	3.4	.72	0.35	0	0.01	.0038	.0206
1213	Roothbay Harbor	Public supply	2.2	0.9	1.6	.35	0.47	0	0	.0008	.0162
1214	Union	Public supply	4.3	2.0	0.8	.08	0.52	0	0.01	.0006	.0116
1215	Machias	Public supply	2.2	0.7	13.0	2.00	0.22	0	Trace	.0022	.0202
1216	Houlton	Public supply	8.3	4.2	3.7	.65	0.20	0	Trace	.0008	.0094
1217	Searsport	Public supply	2.4	0.9	1.0	.25	0.18	0	0	.0010	.0108
1218	So. China	Well	6.6	3.0	0.1	.04	0.70	0	0.23	.0024	.0048
1219	Brownfield	Well	2.4	1.0	0	.01	0.14	0	0.02	.0004	.0012

## ANALYSES OF SAMPLES OF WATER—Continued.

Number.	Town or City.	Source.	Hardness.	Alkalinity.	Color.	Oxygen consumed.	Chlorine.	Nitrite.	Nitrate.	AMMONIA.	
										Free.	Albuminoid..
1220	Farmington	Public supply	3.8	1.7	1.1	.22	0.09	0	Trace	.0010	.0098
1221	Waterville	Public supply	2.9	1.4	1.1	.24	0.15	0	Trace	.0008	.0118
1222	Bangor	Artesian well	2.3	15.9	0.1	0.1	4.12	0	0	.0010	.0004
1223	Ellsworth	Spring	6.0	3.6	0	0.2	0.47	0	0.05	.0002	.0022
1224	Ellsworth	Spring	5.1	1.9	0	.09	1.82	0	0.34	.0004	.0002
1225	Bangor	Public supply	2.7	0.4	6.0	1.57	0.12	0	Trace	.0018	.0172
1226	Bangor	Raw river	3.2	0.7	7.0	1.65	0.12	0	Trace	.0020	.0182
1227	Welchville	Well	4.3	5.0	0.3	.12	3.07	.0006	0	.0034	.0100
1228	Livermore Falls	Well	4.3	1.7	0.3	.01	0.70	0	0.20	0	.0018
1229	Brownfield	Well	1.4	0.5	1.0	.11	0.47	.0010	0.10	.0352	.0018
1230	Brownfield	Spring	3.4	1.1	1.0	.22	0.15	0	0.02	.0002	.0040
1231	Cornish	Fountain	2.9	1.0	0.2	0.4	0.12	0	0.02	.0004	.0018
1232	Bucksport	Public supply	2.3	0.8	13.0	1.70	0.40	0	Trace	.0034	.0310
1233	Bangor	Artesian well	18.0	11.8	0	0	0.60	0	0.19	0	.0018
1234	Southwest Harbor	Public supply	1.3	0.6	1.9	.23	0.60	0	Trace	.0002	.0068
1235	Skowhegan	Public supply	2.2	0.5	5.5	.65	0.32	0	Trace	.0012	.0152
1236	Prouts Neck	Spring	4.1	1.7	0.4	.15	1.25	0	0.06	.0006	.0084
1237	Rumford Falls	Public supply	5.0	1.9	2.1	.15	0.30	Trace	Trace	.0044	.0036
1238	Stonington	Cistern	6.0	4.0	6.5	1.23	0.80	.0004	Trace	.0068	.0106
1239	Madison	Public supply	2.0	0.5	7.0	1.35	0.07	0	Trace	.0022	.0166
1240	Bucksport	Well	4.0	1.9	0.1	0	0.90	0	0.23	0	.0020
1241	Bucksport	Aqueduct	3.8	1.8	0.4	.02	0.22	0	0.02	.0016	.0026
1242	Bucksport	Spring	5.5	2.2	0.1	.05	1.20	0	0.12	.0004	.0030
1243	Winthrop	Spring	2.9	2.0	0.1	.08	0.14	0	Trace	.0004	.0044
1244	Winthrop	Lake	2.6	1.1	2.8	.26	0.17	Trace	0	.0022	.0036

1245	Henderson	Well	11.1	6.7	1.0	.37	2.15	.0060	1.50	.0018	.0178
1246	Sidney	Well	6.1	1.9	0	0	0.98	0	0.02	.0008	.0086
1247	Calais	Old Public supply	3.0	0.6	8.5	1.94	0.20	0	Trace	.0026	.0262
1248	Calais	Public supply	3.0	1.0	0.2	.10	0.20	0	0.03	.0004	.0082
1249	Wilton	Public supply	3.4	1.4	0.8	.22	0.10	0	0	.0004	.0098
1250	Skowhegan	Spring	6.9	0.8	0.2	.02	1.10	0	1.10	.0014	.0028
1251	Browfield	Well	3.0	1.6	0.2	.04	0.50	0	0.25	.0002	.0050
1252	Cornish	Spring	2.7	0.7	0	0	0.10	0	0.01	0	.0012
1253	Cornish	Spring	3.2	1.1	0	0	0.10	0	0.02	0	.0012
1254	Mattawamkeag	Well	12.2	Acid	0.2	.13	6.30	Trace	2.50	.1388	.0070
1255	Mattawamkeag	Spring	14.8	3.0	0	.05	1.05	0	0.45	.0002	.0018
1256	Mattawamkeag	Well	11.5	3.9	1.8	.60	3.25	.0080	1.30	.0400	.0404
1257	Waterville	Public supply	3.2	1.0	0.7	.24	0.15	0	Trace	.0014	.0142
1258	Bangor	Raw river	2.4	0.6	5.5	1.25	0.11	Trace	Trace	.0026	.0154
1259	Bangor	Public supply	3.4	1.3	1.7	.63	0.12	Trace	Trace	.0018	.0128
1260	Eastport	Public supply	2.2	0.2	2.9	.70	0.30	0	Trace	.0018	.0180
1261	Mattawamkeag	Well	2.1	0.3	0.1	.05	0.32	0	0.35	.0008	.0014
1262	Mattawamkeag	Well	3.7	0.7	0.1	.06	1.68	0	0.65	.0006	.0042
1263	Mattawamkeag	Well	6.2	0.6	0.1	.04	4.02	0	0.72	.0002	.0036
1264	Mattawamkeag	Well	4.4	0.7	0.3	.08	1.97	Trace	0.70	0	.0126
1265	Fryeburg	Public supply	2.4	1.0	0.6	.14	0.09	0	0	.0006	.0034
1265	Oakland	Well	8.3	4.5	0	.03	3.30	0	0.55	0	.0042
1267	Island Falls	Well	10.1	5.1	0.4	.10	0.42	.0030	0.26	.0040	.0030
1268	Island Falls	Well	5.0	2.9	0	.03	1.20	0	0.60	0	.0014
1269	Kezar Falls	Well	2.1	0.8	0	.04	1.07	Trace	0.65	.0066	.0024
1270	Augusta	Well	8.6	3.8	3.6	.90	3.82	.0010	0.55	.0106	.0510
1271	Hallowell	Well	3.2	0.9	0	0.06	1.92	.0030	0.95	.0912	.0108
1272	Augusta	Public supply	2.1	1.1	2.1	.45	0.15	0	0	.0008	.0122
1273	Mattawamkeag	Driven well	11.6	0.4	0.1	.06	4.15	.0004	2.75	.0010	.0052
1274	Augusta	Well	2.8	1.0	0.2	.07	0.45	0	0.07	.0004	.0062
1275	Pittsfield	Spring	3.1	2.0	0.2	.10	0.70	.0001	0.10	.0016	.0048
1276	Mattawamkeag	Spring	4.5	0.7	0	.05	2.50	Trace	0.75	.0006	.0046
1277	Mattawamkeag	Spring	3.0	0.6	0.4	.17	1.15	0	0.28	.0060	.0048
1278	Mattawamkeag	Well	3.8	1.2	0	.10	1.25	.0010	0.33	.0004	.0024
1279	Mattawamkeag	Well	4.5	1.5	0.1	.04	1.00	.0015	0.28	.0024	.0018
1280	Mattawamkeag	Well	4.7	2.1	0.5	.03	1.52	.0020	0.55	.0080	.0028
1281	Mattawamkeag	Well	3.2	1.7	0.1	.05	0.92	.0008	0.33	.0014	.0034
1282	Mattawamkeag	Well	3.3	1.8	1.8	.34	0.13	0	0.11	.0010	.0156
1283	Bangor	Spring	7.6	4.1	0	.04	0.35	0	0.06	.0004	.0028
1284	Mattawamkeag	Well	6.1	3.0	0.4	.06	2.05	.0004	0.20	.0008	.0036

## ANALYSES OF SAMPLES OF WATER—Continued.

Number.	Town or City.	Source.	Hardness.	Alkalinity.	Color.	Oxygen consumed.	Chlorine.	Nitrite.	Nitrate.	AMMONIA.	
										Free.	Albuminoid.
1285	Augusta.....	Well.....	2.5	1.2	0	.06	0.45	0	0.07	.0004	.0042
1286	Mattawamkeag.....	Well.....	3.0	1.9	-	.14	0.57	.0020	0.16	.0008	.0026
1287	Hallowell.....	Spring.....	3.1	1.0	0	.02	0.85	0	0.27	.0004	.0060
1288	Kezar Falls.....	Well.....	2.1	0.7	0.2	.02	0.08	Trace	0	.0002	.0034
1289	Mattawamkeag.....	Well.....	4.1	1.5	0.2	.14	1.10	Trace	0.11	.0022	.0052
1290	Mattawamkeag.....	Well.....	7.7	3.8	2.3	.72	2.57	.0038	0.94	.0052	.0294
1291	Mattawamkeag.....	Spring.....	3.5	1.2	0	.04	1.27	0	0.24	.0006	.0058
1292	Mattawamkeag.....	Well.....	13.8	1.1	0	.01	4.82	.0040	2.25	.0026	.0078
1293	Mattawamkeag.....	Spring.....	2.9	2.0	0.3	.02	0.14	Trace	0.02	.0004	.0040
1294	Mattawamkeag.....	Well.....	8.4	3.9	0.1	.07	1.25	Trace	0.01	.0002	.0030
1295	Mattawamkeag.....	Well.....	3.3	1.0	0	0	1.15	.0003	0.60	.0006	.0020
1296	Mattawamkeag.....	Well.....	3.1	1.1	0	.05	0.35	.0003	0.12	.0006	.0068
1297	Mattawamkeag.....	Well.....	2.6	1.6	0.8	.18	2.07	.0004	0.52	.0024	.0080
1298	Mattawamkeag.....	Spring.....	4.7	3.6	1.8	.25	0.15	Trace	0.06	.0004	.0074
1299	Kennebunk.....	Public supply.....	1.3	0.8	6.7	.86	0.37	0	0	.0014	.0080
1300	Freeport.....	Public supply.....	3.4	1.3	2.7	.38	0.42	0	0.02	.0003	.0072
1301	Kowhegan.....	Coburn aqueduct.....	3.0	0.5	0.2	.10	1.57	Trace	0.70	.0006	.0040
1302	Kowhegan.....	Aqueduct well.....	2.1	0.8	0	.07	1.40	0	0.60	0.61	.0026
1303	Kowhegan.....	West aqueduct.....	3.1	1.0	0.3	.04	0.77	0	0.24	.0006	.0018
1304	Winterport.....	Public supply.....	4.9	3.2	0.8	.16	0.30	0	0.02	.0004	.0038
1305	E. Brownfield.....	Spring.....	2.3	0.6	0.6	.11	0.12	0	0	.0002	.0042
1306	Old Town.....	Public supply.....	2.1	0.7	6.5	1.35	0.12	0	0	.0016	.0146
1307	Winter Harbor.....	Public supply.....	1.3	0.2	7.2	1.08	0.72	0	0	.0058	.0205
1308	Damariscotta.....	Public supply.....	1.5	0.4	2.2	.38	0.45	0	0	.0016	.0254
1309	Rumford Falls.....	Spring.....	1.6	0.8	1.4	.11	0.09	0	0	.0004	.0014

WORK IN THE LABORATORY OF HYGIENE.

1310	Rumford Falls.....	Well.....	2.9	2.0	0.8	0	0.75	0	0.02	.0008	.0018
1311	Bethel.....	Public supply.....	2.0	0.9	1.5	.27	0.07	0	Trace	.0008	.0036
1312	Augusta.....	Public supply.....	2.9	1.0	2.3	.41	0.18	0	0	.0004	.0134
1313	Skowhegan.....	Kennebec river.....	2.3	1.0	3.4	.87	0.07	0	0	.0012	.0130
1314	Skowhegan.....	Public supply.....	2.1	0.9	2.4	.25	0.32	Trace	Trace	.0016	.0068
1315	Buckfield.....	Public supply.....	2.0	0.7	0.9	.18	0.15	0	0	.0006	.0110
1316	Kingfield.....	Public supply.....	3.1	1.1	2.2	.32	0.07	0	0	.0004	.0064
1317	Philips.....	Public supply.....	1.9	0.5	5.0	.74	0.09	0	0	.0022	.0106
1318	Castine.....	Public supply.....	4.3	3.5	0.4	.01	0.47	Trace	0.11	0	.0018
1319	Sanford.....	Public supply.....	2.5	1.1	0.3	.01	0.22	0	Trace	.0002	.0018
1320	Camden.....	Public supply.....	1.3	0.8	1.0	.13	0.32	0	0	.0008	.0064
1321	Biddeford.....	Public supply.....	1.3	0.1	0.4	.13	0.09	0	0	.0006	.0036
1322	Brewer.....	Public supply.....	2.1	0.7	6.5	1.81	0.15	0	0	.0022	.0132
1323	Hitsfield.....	Public supply.....	3.0	1.2	6.0	1.01	0.15	0	0	.0006	.0155
1324	Union.....	Public supply.....	3.3	2.0	0.9	.05	0.57	0	0.02	.0010	.0732
1325	Auburn.....	Public supply.....	2.6	0.6	0.6	.27	0.17	0	0	.0014	.0083
1326	Madison.....	Public supply.....	1.9	0.7	3.1	.66	0.07	0	0	.0014	.0086
1327	Ellsworth.....	Public supply.....	1.5	0.3	3.1	.57	0.30	0	0	.0012	.0124
1328	Presque Isle.....	Public supply.....	15.1	11.9	0.7	.17	0.40	Trace	.17	.0006	.0050
1329	Bath (a).....	Public supply.....	1.9	0.4	3.4	.59	0.32	0	0	.0018	.0130
1330	Bath (b).....	Public supply.....	2.2	1.0	1.4	.13	0.32	0	0	.0002	.0088
1331	Waterville.....	Public supply.....	2.3	1.2	1.0	.26	0.22	0	0	.0012	.0110
1332	Boothbay Harbor.....	Public supply.....	1.6	0.9	2.4	.37	0.60	0	0	.0018	.0130
1333	Oakland.....	Public supply.....	2.0	1.1	2.5	.41	0.20	0	0	.0014	.0152
1334	Machias.....	Public supply.....	1.6	0.7	6.3	.84	0.25	0	0	.0020	.0124
1335	Seal Harbor.....	Public supply.....	1.5	0.8	0.5	.13	0.57	0	0	.0016	.0054
1336	Sangerville.....	Public supply.....	4.9	3.0	0	.02	0.10	0	0	0	.0030
1337	Houlton.....	Public supply.....	5.2	1.3	2.9	.50	0.15	0	0	.0014	.0086
1338	Eastport.....	Public supply.....	1.9	0.7	2.9	.54	0.50	0	0	.0022	.0144
1339	Lewiston.....	Public supply.....	2.0	1.1	0.6	.10	0.17	0	0	.0010	.0104
1340	Hallowell.....	Public supply.....	2.4	0.8	2.4	.42	0.37	0	0	.0008	.0132
1341	Brunswick.....	Public supply.....	3.1	2.0	0	.08	0.47	0	0.01	0	.0022
1342	Gardiner.....	Public supply.....	3.0	1.1	1.8	.64	0.27	0	0	.0012	.0134
1343	Bangor.....	Public supply.....	2.2	0.4	1.7	1.12	0.15	Trace	Trace	.0014	.0096
1344	Norway.....	Public supply.....	2.3	1.2	1.7	.47	0.20	0	0	.0016	.0126
1345	Gorham.....	Spring.....	1.8	0.9	0	.04	0.24	0	0.04	.0004	.0022
1346	Mechanic Falls.....	Public supply.....	2.8	1.5	1.7	.30	0.32	0	0	.0008	.0088
1347	Mechanic Falls.....	Public supply.....	2.9	1.4	1.7	.29	0.32	0	0	.0010	.0084
1348	Searsport.....	Public supply.....	2.0	0.6	1.1	.32	0.22	0	0	.0010	.0126
1349	Rumford Falls.....	Public supply.....	4.1	2.0	1.9	.18	0.25	.0003	0.07	.0002	.0044

ANALYSES OF SAMPLES OF WATER—Continued.

Number.	Town or City.	Source.	Hardness.	Alkalinity.	Color.	Oxygen consumed.	Chlorine.	Nitrite.	Nitrate.	AMMONIA.	
										Free.	Albuminoid.
1350	Rumford Falls.....	Public supply.....	3.3	1.7	0.8	.15	0.25	.0006	0.07	.0004	.0048
1351	Sidney.....	Well.....	14.4	7.7	3.0	.24	0.42	0	Trace	.0270	.0024
1352	Springvale.....	Public supply.....	2.4	0	1.7	.25	0.27	0	Trace	.0084	.0096
1353	Van Buren.....	Public supply.....	5.8	4.2	1.0	.26	0.07	0	0.02	.0002	.0028
1354	Bucksport.....	Public supply.....	1.9	0.7	6.0	1.09	0.47	0	0	.0024	.0198
1355	Calais.....	Public supply.....	2.1	1.2	0.6	.18	0.20	0	0	.0004	.0034
1356	Woodland.....	Public supply.....	2.1	0.5	5.0	1.10	0.17	0	0	.0020	.0164
1357	Bar Harbor.....	Public supply.....	1.8	0.3	0.9	.23	0.50	0	0	.0004	.0064
1358	So. Berwick.....	Public supply.....	2.5	1.0	4.6	.66	0.37	0	0	.0018	.0106
1359	Old Town.....	Drilled well.....	10.4	4.2	0.4	.11	7.02	.0050	0.02	.0024	.0042
1360	Old Town.....	Drilled well.....	10.3	4.2	0.4	.10	7.07	.0080	0.02	.0028	.0048
1361	Gorham.....	Well.....	9.0	1.3	12.5	2.00	8.92	.0030	0.94	.0108	.0996
1362	Livermore Falls.....	Public supply.....	1.9	0.4	0.9	.34	0.19	0	0	.0028	.0130
1363	Farmington.....	Public supply.....	2.8	1.4	0.8	.20	0.13	0	0	.0014	.0070
1364	Farmington.....	Public supply.....	2.6	1.3	0.8	.19	0.13	0	0	.0006	.0070
1365	Woodland.....	Well.....	7.1	3.2	0.5	.02	0.30	0	0	0	.0008
1366	Woodland.....	Tank.....	2.4	0.5	5.0	.86	0.22	0	0	.0018	.0150
1367	Woodland.....	Well.....	2.4	0.6	0	.02	1.09	0	0.22	.0002	.0014
1368	Woodland.....	Well.....	2.9	0.6	0	.03	1.00	Trace	0.11	.0009	.0060
1369	Troy.....	Well.....	6.0	3.6	0.4	.20	0.21	.0300	0.02	.0336	.0018
1370	Bucksport.....	Well.....	7.2	4.0	0.3	.11	2.15	0	0.50	.0004	.0080
1371	Cushing.....	Well.....	5.1	3.7	2.0	.17	0.55	.0020	0.05	.0058	.0038
1372	Harmony.....	Well.....	5.3	4.1	0.3	.07	1.25	0	0.18	.0004	.0050
1373	South Waterford.....	Spring.....	3.1	1.5	0	.04	0.17	0	0.01	.0004	.0024
1374	South Waterford.....	Spring.....	2.5	1.2	0.6	.10	0.17	0	0.01	.0004	.0080

1375	South Paris.....	Spring.....	6.3	2.2	0	.22	0.20	0	0.06	.0006	.0092
1376	South Paris.....	Spring.....	4.4	2.0	0.4	.12	0.20	0	0.02	.0004	.0046
1377	South Paris.....	Public supply.....	2.6	1.0	1.4	.50	0.13	0	0	.0018	.0114
1378	Springvale.....	Well.....	1.8	0.5	0	.01	0.37	0	0.06	.0002	.0032
1379	Greenville Junction.....	Well.....	3.0	1.1	0.2	.20	0.55	.0005	0.02	.0254	.0068
1380	Mattawamkeag.....	Spring.....	2.5	0.4	0	.20	0.50	.0002	0.60	.0040	.0030
1381	Mattawamkeag.....	Well.....	2.1	0.2	0	0	2.30	0	0.70	.0004	.0016
1382	South Waterford.....	Spring.....	1.5	0.5	0	0	0.10	0	0	.0002	.0016
1383	South Waterford.....	Spring.....	2.8	0.4	0.6	.07	0.09	0	0.03	.0010	.0044
1384	Mattawamkeag.....	Well.....	3.8	0.9	0.4	.08	1.50	Trace	0.25	.0010	.0056
1385	Hiram.....	Spring.....	3.0	1.2	1.4	.04	0.10	.0006	0	.0018	.0034
1386	Hiram.....	Well.....	3.6	1.3	1.2	.13	0.82	.0030	0.10	.0538	0
1387	Mattawamkeag.....	Well.....	4.3	1.6	0.5	.03	0.32	Trace	0.35	.0010	.0022
1388	Mattawamkeag.....	Well.....	2.5	1.2	0.5	.09	0.35	0	0.08	.0004	.0052
1389	Mattawamkeag.....	Well.....	1.6	0.5	1.7	.43	0.12	Trace	0.02	.0674	.0148
1390	Buxton.....	Well.....	5.8	2.4	1.7	.26	0.87	.0010	0.02	.0146	.0280
1391	Baring.....	Well.....	15.1	11.0	2.0	.03	2.25	Trace	0.02	.0016	.0068
1392	Acton.....	Well.....	4.5	1.2	0	.10	1.97	.0008	0.65	.0006	.0044
1393	Berwick.....	Public supply.....	2.5	0.8	1.1	.15	0.60	Trace	0.03	.0006	.0050
1394	North Berwick.....	Well.....	2.5	0.6	0.1	.11	1.90	Trace	0.65	.0008	.0034
1395	Hartland.....	Well.....	6.3	1.0	0.8	.27	1.27	Trace	0.008	.0178	.0082
1396	Smyrna Mills.....	Well.....	12.6	2.9	0	0	1.35	Trace	0.29	.0002	.0040
1397	Brunswick.....	Spring.....	4.0	0.4	0	0	0.77	0	0.35	.0008	.0026
1398	Brunswick.....	Pond.....	1.9	0.2	2.2	.40	0.27	0	0	.0068	.0178
1399	Hallowell.....	Well.....	3.8	1.0	0	.01	0.50	0	0.60	0	.0038
1400	Norridgewock.....	Spring.....	3.5	0.4	0.7	.15	0.07	0	0	.0042	.0110
1401	Lebanon.....	Well.....	16.3	0.2	0	.12	12.00	.0010	6.00	.0680	.0012
1402	Milo Junction.....	River.....	3.2	0.3	2.7	.42	0.10	0	0	.0012	.0080
1403	Milo Junction.....	Well.....	3.5	1.8	0	.08	0.35	0	0.05	.0003	.0018
1404	Mt. Vernon.....	Well.....	7.0	4.3	0	0	1.50	0	0.06	.0014	.0056
1405	Mt. Vernon.....	Well.....	3.3	2.0	0	0	0.27	.0005	0.03	.0004	.0026
1406	Berwick.....	Public supply.....	1.9	0.3	3.1	.46	0.37	Trace	Trace	.0068	.0272
1407	Solon.....	Spring.....	3.5	0.8	0.4	.05	1.47	0	0.22	.0024	.0080
1408	Lucolnville.....	Well.....	3.8	1.5	0.1	0	0.75	0	0.05	.0004	.0028
1409	Brewer.....	Public supply.....	3.8	1.5	4.3	1.00	0.16	0	Trace	.0022	.0110
1410	Bethel.....	Public supply.....	1.0	0.8	1.7	.36	0.08	0	0	.0012	.0066
1411	Winterport.....	Public supply.....	3.8	3.0	1.1	.81	0.27	0	0	.0010	.0090
1412	Augusta.....	Public supply.....	2.0	0.9	2.3	.52	0.17	0	0	.0022	.0148
1413	Kennebunk.....	Public supply.....	1.8	0.5	5.5	.72	0.32	0	Trace	.0020	.0124
1414	Augusta.....	Paper company.....	1.9	0.9	2.4	.51	0.17	0	0	.0024	.0150

## ANALYSES OF SAMPLES OF WATER—Continued.

Number.	Town or City.	Source.	Hardness.	Alkalinity.	Color.	Oxygen consumed.	Chlorine.	Nitrite.	Nitrate.	AMMONIA.	
										Free.	Albuminoid.
1415	Augusta.....	Kennebec river.....	2.2	1.0	3.3	.82	0.11	0	Trace	.0032	.0154
1416	Bath.....	Public supply.....	1.8	0.6	2.8	.40	0.34	0	Trace	.0024	.0118
1417	Bath.....	Public supply.....	1.4	0.8	3.0	.39	0.34	0	Trace	.0020	.0108
1418	Bath.....	Public supply.....	1.4	0.6	2.8	.42	0.34	0	Trace	.0018	.0124
1419	Bath.....	Public supply.....	1.5	0.5	3.0	.38	0.34	0	Trace	.0020	.0114
1420	Bath.....	Public supply.....	1.5	0.5	2.9	.43	0.34	0	Trace	.0022	.0110
1421	Skowhegan.....	Coburn aqueduct.....	4.8	0.9	0	.01	1.42	0	0.70	.0008	.0022
1422	Skowhegan.....	North spring.....	2.5	1.1	0	.01	0.70	0	0.23	.0014	.0023
1423	Skowhegan.....	West aqueduct.....	2.5	1.2	0	0	1.05	0	0.39	.0006	.0026
1424	Madison.....	Public supply.....	1.9	1.0	3.5	.70	0.05	0	0	.0014	.0122
1425	Winter Harbor.....	Public supply.....	1.4	0.5	5.2	.80	0.11	0	Trace	.0042	.0162
1426	Old town.....	Public supply.....	2.5	1.0	4.3	.94	0.11	Trace	Trace	.0022	.0132
1427	Freeport.....	Public supply.....	2.8	1.6	4.5	.34	0.50	0	0	.0020	.0082
1428	Mexico.....	Well.....	3.9	1.5	0.8	.10	0.30	Trace	0.25	.0040	.0082
1429	Phillips.....	Public supply.....	1.9	0.7	3.1	.53	0.19	0	0	.0012	.0036
1430	Kingfield.....	Public supply.....	2.9	1.7	1.6	.25	0.12	0	Trace	.0008	.0038
1431	Auburn.....	Public supply.....	4.5	0.7	0.7	.28	0.19	0	0	.0012	.0106
1432	Oakland.....	Public supply.....	2.5	1.0	2.4	.47	0.17	0	0	.0024	.0108
1433	Waterville.....	Public supply.....	2.5	1.5	1.2	.28	0.17	Trace	0	.0022	.0118
1434	Seal Harbor.....	Public supply.....	1.5	0.8	0.8	.17	0.62	0	0	.0010	.0066
1435	Lewiston.....	Public supply.....	2.6	1.3	1.3	.17	0.19	0	0	.0004	.0056
1436	Bath.....	Public supply.....	1.1	0.7	0.3	.11	0.35	0	0	.0012	.0016
1437	Pittsfield.....	Public supply.....	2.2	1.5	3.1	.57	0.15	0	0	.0016	.0118
1438	Maden.....	Public supply.....	1.8	0.5	0.6	.20	0.37	0	0	.0008	.0050
1439	Presque Isle.....	Public supply.....	13.4	10.1	1.0	.26	0.37	0	0.13	.0002	.0050



WORK IN THE LABORATORY OF HYGIENE.

1440	Sanford	Public supply	2.2	1.2	0.3	.08	0.22	0	0.01	0	.0014
1441	Skowhegan	Public supply	1.9	0.9	2.7	.35	0.22	Trace	Trace	.0036	.0118
1442	Skowhegan	Kennebec river	2.0	0.8	2.7	.62	0.10	0	0	.0014	.0106
1443	Buckfield	Public supply	1.5	0.7	1.0	.23	0.12	0	0	.0012	.0082
1444	Sebago	Spring	1.5	1.0	0	.04	0.12	0	0	.0004	.0010
1445	Ellsworth	Public supply	1.6	1.3	2.7	.45	0.27	0	0	.0012	.0098
1446	Boothbay Harbor	Public supply	1.8	0.8	2.6	.42	0.62	0	0	.0030	.0168
1447	Machias	Public supply	1.4	0.6	5.0	.70	0.20	0	0	.0012	.0092
1448	Calais	Public supply	2.0	1.0	2.3	.53	0.20	0	0	.0014	.0146
1449	Ellsworth	Spring	1.9	1.4	0	.02	0.30	0	Trace	.0010	.0010
1450	Castine	Public supply	3.4	2.4	0.3	.07	0.50	0	0.06	.0010	.0056
1451	Damariscotta	Public supply	1.4	1.0	2.2	.40	0.41	0	0	.0028	.0114
1452	Stonington	Well	13.4	0.8	1.7	.72	7.90	.0030	0.60	.0536	.0278
1453	So. Berwick	Public supply	3.0	1.0	5.5	1.12	0.35	0	0	.0050	.0204
1454	Searsport	Public supply	2.0	0.6	1.0	.34	0.25	0	0	.0024	.0104
1455	Houlton	Public supply	4.2	3.0	2.6	.52	0.15	0	0	.0010	.0084
1456	Millinocket	Public supply	2.7	0.5	5.5	1.47	0.08	0	0	.0022	.0144
1457	Farmington	Public supply	3.1	1.4	1.3	.31	0.12	0	0	.0008	.0094
1458	Ft. Fairfield	Public supply	11.8	8.5	0.6	.11	0.12	Trace	0.05	.0006	.0082
1459	Strong	Public supply	2.2	1.1	3.0	.50	0.06	0	0	.0006	.0070
1460	Bangor	Well	18.9	6.6	1.7	.39	2.00	Trace	1.20	.0046	.0156
1461	Brighton	Public supply	1.8	0.6	2.4	.33	0.15	0	0	.0036	.0106
1462	Norway	Public supply	2.2	1.2	2.0	.39	0.17	0	0	.0020	.0170
1463	Wilton	Public supply	2.0	1.3	0.8	.23	0.10	0	0	.0003	.0100
1464	Brunswick	Public supply	3.0	1.7	0	.05	0.50	0	Trace	.0002	.0016
1465	Sangerville	Public supply	2.7	2.0	0.2	.11	0.12	Trace	Trace	.0002	.0014
1466	Biddeford	Public supply	1.9	0.8	0.3	.12	0.14	Trace	Trace	.0010	.0046
1467	Springvale	Public supply	2.6	0	0.6	.14	0.17	0	0	.0006	.0114
1468	Bucksport	Public supply	2.4	1.2	4.6	.69	0.40	0	0	.0028	.0166
1469	Union	Public supply	2.9	1.6	1.5	.11	0.57	Trace	0	.0044	.0058
1470	Yarmouth	Public supply	3.5	2.0	0.7	.05	0.37	0	0.08	.0002	.0036
1471	Rumford Falls	Public supply	3.7	2.0	0.7	.12	0.34	0	0.05	.0014	.0028
1472	Rumford Falls	Public supply	2.9	1.9	0.8	.11	0.34	0	0.05	.0006	.0036
1473	Caribou	Public supply	3.3	2.9	2.8	.53	0.10	0	0	.0008	.0096
1474	N. E. Harbor	Public supply	1.5	0.5	1.7	.37	0.74	0	0	.0018	.0074
1475	Bangor	Public supply	3.2	1.9	2.0	.57	0.10	Trace	Trace	.0006	.0066
1476	Van Buren	Public supply	4.7	4.0	1.7	.33	0.07	0	0	.0004	.0044
1477	Norridgewock	Public supply	2.5	0.4	0.3	.12	0.80	.0008	0.25	.0063	.0096
1478	Berwick	Public supply	2.6	0.6	0.8	.25	0.57	0	0.01	.0010	.0058
1479	York	Public supply	2.0	0.2	2.5	.45	0.60	0	0	.0020	.0096

## ANALYSES OF SAMPLES OF WATER—Continued.

Number.	Town or city.	Source.	Hardness.	Alkalinity.	Color.	Oxygen consumed.	Chlorine.	Nitrite.	Nitrate.	AMMONIA.	
										Free.	Albuminoid.
1480	Lubec.....	Public supply.....	6.9	4.6	0	.08	1.32	Trace	0.14	.0004	.0014
1481	Gardiner.....	Public supply.....	2.7	1.1	2.1	.56	0.37	0	0	.0038	.0164
1482	Augusta.....	Drilled well.....	3.1	6.2	0.6	.13	0.65	.0025	Trace	.0002	.0012
1483	Dover.....	Public supply.....	1.9	0.8	2.7	.50	0.07	0	0	.0008	.0058
1484	Dover.....	Spring.....	12.4	10.5	0.6	.18	0.45	Trace	0.12	.0002	.0082
1485	Richmond.....	Public supply.....	2.0	0.9	2.6	.60	0.12	Trace	0	.0026	.0098
1486	Fryeburg.....	Public supply.....	1.4	0.8	2.3	.44	0.07	0	0	.0010	.0068
1487	No. Berwick.....	Public supply.....	2.5	1.0	4.8	.65	0.27	0	0	.0012	.0140
1488	Woodland.....	Spring.....	4.9	3.2	0.2	.08	0.25	0	0	.0006	.0006
1489	Woodland.....	Public supply.....	1.9	0.7	4.7	.75	0.15	0	0	.0022	.0112
1490	Oakland.....	Well.....	18.3	14.7	0	.06	0.55	0	0.18	0	.0026
1491	Livermore Falls.....	Public supply.....	1.5	0.5	1.1	.30	0.17	0	0	.0020	.0204
1492	Waldoboro.....	Spring.....	6.7	4.2	0.2	.05	3.05	.0005	0.37	.0006	.0056
1493	Mechanic Falls.....	Public supply.....	2.0	0.9	2.7	.51	0.27	0	0	.0014	.0132
1494	Mechanic Falls.....	Public supply.....	2.1	0.9	2.9	.35	0.26	0	0	.0018	.0114
1495	Hallowell.....	Public supply.....	2.4	1.0	1.7	.39	0.35	0	0	.0024	.0162
1496	Friendship.....	Public supply.....	3.3	1.0	0.8	.05	1.95	.0005	0.17	.0058	.0016
1497	Hampden.....	Spring.....	3.2	1.4	0	.02	0.30	.0001	0.01	.0002	.0038
1498	Lincoln.....	Well.....	7.8	6.4	0.2	.06	1.27	Trace	0.21	.0008	.0016
1499	Limington.....	Well.....	1.3	1.0	0	.06	0.22	0	0	.0006	.0022
1500	Lincoln.....	Well.....	5.1	3.4	0.3	.04	1.62	.0005	0.23	.0006	.0032
1501	Bangor.....	Drilled well.....	10.8	8.9	0	.04	0.25	Trace	Trace	0	.0008
1502	Bangor.....	Drilled well.....	13.7	9.9	0.3	.03	2.27	.0020	0.60	.0038	.0004
1503	Bangor.....	Drilled well.....	19.2	15.8	0.8	.15	1.13	0	0	.0014	.0020
1504	Bangor.....	Drilled well.....	29.1	23.6	0.4	.02	5.52	Trace	0.24	.0004	.0020

1505	Bar Harbor	Public supply	1.5	0.4	0.9	.20	0.57	0	0	.0028	.0046
1506	Bangor	Drilled well	16.0	9.2	0	.01	1.62	Trace	0.38	.0010	.0004
1507	Bangor	Drilled well	32.2	16.7	0.2	.09	4.57	.0100	0.90	.0100	.0024
1508	Bangor	Drilled well	9.7	7.8	0	.02	1.25	.0010	0.20	.0010	.0004
1509	Bangor	Drilled well	20.1	10.5	0	.04	3.35	.0005	0.47	.0002	.0012
1510	Bangor	Drilled well	10.7	7.6	0.1	.04	1.92	.0010	0.60	0	.0010
1511	Bangor	Drilled well	18.8	12.5	0	.01	2.20	0	0.17	.0004	.0010
1512	Bangor	Drilled well	16.0	15.4	0.1	.02	3.70	0	0	.0002	.0042
1513	Bangor	Drilled well	15.4	13.5	0.1	.11	2.93	.0090	0.71	.0062	.0062
1514	Stetson	Spring	5.8	3.8	0	.01	0.10	0	0.01	.0004	.0008
1515	So. Paris	Well	2.6	0.6	1.0	.26	0.35	Trace	0	.0236	.0152
1516	Presque Isle	Well	24.8	14.2	0.5	.16	6.27	.0008	1.63	.0008	.0074
1517	Eastport	Public supply	2.1	0.7	2.7	.56	0.42	0	0	.0028	.0128
1518	Farmington	Well	2.4	2.0	0	.02	0.65	0	0.12	.0004	.0010
1519	Woodland	Spring	2.4	1.0	0	.10	0.16	0	0	.0006	.0034
1520	Harmony	Well	5.1	2.6	0.7	.22	0.06	.0005	Trace	.0184	.0070
1521	Harmony	Spring	8.1	6.0	0	.01	0.09	0	0	.0002	.0042
1522	Old Town	Well	8.1	5.2	0.8	.25	0.45	.0005	0.14	.0064	.0150
1523	Old Town	Well	7.9	5.1	0.7	.23	0.39	.0008	0.13	.0030	.0078
1524	New Gloucester	Spring	2.0	1.0	0	.08	0.13	0	Trace	.0006	.0050
1525	Augusta	Well	8.9	6.2	0	.06	0.92	.0010	0.08	.0002	.0003
1526	Mexico	Spring	3.8	2.2	0	.08	0.10	0	0	.0004	.0006
1527	Mexico	Brook	2.8	1.3	2.3	.36	0.08	0	0	.0012	.0090
1528	Warren	Spring	5.9	2.6	0.4	.08	0.62	0	0	.0004	.0020
1529	Bath	Well	21.4	16.2	1.6	.45	1.25	.0005	0.14	.0014	.0182
1530	Augusta	Well	19.2	16.0	0	.13	1.12	.0005	0.08	.0008	.0070
1531	Hebron	Well	16.9	14.0	2.3	.87	0.29	.0009	0.19	.0048	.0396
1532	Harrison	Spring	1.9	0.1	0	.04	0.15	0	0	.0012	.0026
1533	Whitefield	Well	3.2	1.6	0	.01	0.40	.0010	0.16	.0022	.0028
1534	Greenville	Well	4.1	2.2	0	.04	0.35	0	Trace	.0004	.0028
1535	Bangor	Well	10.2	7.6	0.2	.12	0.92	0	0.12	.0006	.0024
1536	Bangor	Well	14.3	11.2	0	0	1.35	0	0.20	0	.0008
1537	Harrison	Spring	3.1	2.0	0	.10	0.25	0	0	.0006	.0030
1538	Lisbon Falls	Spring	3.1	0.9	0	.01	0.78	0	0.20	.0014	.0060
1539	Lisbon Falls	Well	3.6	1.7	0	.05	0.37	Trace	0.15	.0004	.0046
1540	No. Fryeburg	Well	1.6	0.4	1.0	.30	0.10	.0010	0.05	.0408	.0238
1541	Lisbon Falls	Spring	4.2	2.5	1.0	.07	0.95	.0040	0.13	.0448	.0060
1542	Yarmouth	Well	4.1	1.7	0.2	.09	2.20	0	Trace	.0008	.0040
1543	Belfast	Well	1.6	0.6	0	0	0.28	0	Trace	.0006	.0016
1544	Greenville	Well	4.5	0.8	0.8	.32	1.85	.0009	1.00	.0006	.0076

## ANALYSES OF SAMPLES OF WATER—Continued.

Number.	Town or City.	Source.	Hardness.	Alkalinity.	Color.	Oxygen consumed.	Chlorine.	Nitrite.	Nitrate.	AMMONIA.	
										Free.	Albuminoid.
1545	Livermore Falls.	Public supply.	1.6	0.8	0.9	.17	0.15	0	0	.0006	.0084
1546	Greenville.	Well.	1.5	0.7	0	.01	0.23	0	0.07	.0002	.0022
1547	Ellot.	Spring.	6.3	4.5	0	.01	2.50	.0004	0.23	.0032	.0052
1548	Winter Harbor.	Spring.	5.1	3.0	0	.01	1.15	0	0.02	.0006	.0024
1549	Augusta.	Public supply.	2.2	0.9	2.1	.39	0.15	0	0	.0012	.0102
1550	Canton.	Well.	3.0	0.8	0.5	.18	0.80	0	0.03	.0014	.0084
1551	Hallowell.	Spring.	10.1	9.5	0	0	0.42	0	0	0	.0024
1552	Canton.	Well.	2.7	0.9	0	.07	0.87	Trace	0.28	.0004	.0044
1553	Gardiner.	Public supply.	2.3	1.5	3.1	.51	0.22	0	0	.0016	.0180
1554	Skowhegan.	Coburn aqueduct.	5.0	0.6	0	0	1.22	Trace	0.55	.0306	.0228
1555	Skowhegan.	Well.	5.0	1.4	0	0	1.10	0	0.32	.0014	.0024
1556	Skowhegan.	West aqueduct.	2.2	1.1	0	0	0.75	0	0.21	0	.0006
1557	Bluehill.	Well.	2.6	2.1	0.1	0	0.97	.0005	0.10	.0036	.0014
1558	Madison.	Public supply.	3.3	1.0	3.3	.65	0.02	0	0	.0014	.0104
1559	Oakland.	Public supply.	2.2	1.1	2.3	.45	0.15	0	0	.0006	.0166
1560	Hallowell.	Public supply.	2.7	1.5	2.9	.48	0.27	0	0	.0020	.0190
1561	South Paris.	Well.	4.1	2.7	0.3	.10	0.20	.0008	0.05	.0102	.0058
1562	Pittsfield.	Public supply.	1.9	1.1	5.2	.65	0.10	0	0	.0012	.0202
1563	Skowhegan.	Public supply.	3.0	2.0	4.5	.48	0.27	Trace	Trace	.0066	.0102
1564	Skowhegan.	Public supply.	1.5	1.1	3.6	.71	0.04	0	0	.0016	.0110
1565	Waterville.	Kennebec river.	1.5	1.2	1.4	.35	0.20	0	0	.0008	.0086
1566	Jefferson.	Well.	5.5	2.9	0.7	.05	0.87	Trace	0.65	.0004	.0086
1567	Richmond.	Public supply.	1.9	1.2	3.7	.71	0.10	0	0	.0024	.0150
1568	Portland.	Spring.	3.1	1.4	0	.13	0.98	Trace	0.04	.0040	.0020
1569	Rockport.	Public supply.	1.2	0.7	0.2	.22	0.40	0	0	.0010	.0052

1570	Kingfield	Public supply	1.8	1.2	1.8	.44	0.08	0	Trace	.0008	.0046
1571	Winterport	Public supply	5.8	5.3	0.7	.27	0.35	0	0.08	.0020	.0086
1572	Bangor	Public supply	2.2	0.3	0.2	.35	0.09	0	0	.0010	.0068
1573	Biddeford	Public supply	2.0	0.9	0.5	.23	0.10	0	0	.0008	.0050
1574	Norridgewock	Public supply	3.0	1.9	0.9	.21	0.67	.0012	0.23	.0174	.0216
1575	Hinckley	Well	10.0	6.8	0	.05	0.30	.0009	0.05	.0003	.0020
1576	Cornish	Spring	1.8	0.6	0	.14	0.13	0	0	.0014	.0016
1577	Brewer	Public supply	2.5	1.3	5.4	1.24	0.14	0	Trace	.0084	.0150
1578	Fairfield	Well	24.7	21.2	0	.05	2.95	Trace	0.27	.0002	.0040
1579	Kennebunk	Public supply	1.5	1.0	3.0	.37	0.32	0	0	.0002	.0066
1580	Old Town	Public supply	1.9	0.8	4.4	1.14	0.05	0	0	.0016	.0154
1581	Winter Harbor	Public supply	2.0	0.9	2.2	.42	0.97	0	0	.0060	.0063
1582	Buckfield	Public supply	2.3	0.6	0.5	.20	0.10	0	0	.0004	.0766
1583	Millinocket	Public supply	1.9	0.5	5.4	1.00	0.33	0	0	.0018	.0106
1584	Castine	Spring	1.9	0.5	0	.09	0.85	0	0	0	.0018
1585	Garland	Well	7.9	5.0	0	.69	1.40	.0005	1.00	.0004	.0020
1586	Sanford	Public supply	2.2	1.2	0	.06	0.20	0	0	0	.0022
1587	Union	Public supply	3.0	1.6	1.2	.26	0.60	0	0	.0050	.0180
1588	Washington	Well	5.1	4.0	0.2	.18	0.47	0	0.07	.0018	.0078
1589	Small Point Beach	Pond	2.9	1.3	8.8	1.38	2.20	0	0	.0098	.0276
1590	North Anson	Spring	2.9	1.7	0	.10	0.45	0	0	.0150	.0040
1591	Castine	Public supply	5.5	4.0	0.1	.08	0.47	0	0.09	.0032	.0014
1592	Norway	Public supply	3.0	1.9	1.7	.46	0.15	0	0	.0022	.0163
1593	Phillips	Public supply	1.5	0.5	2.4	.49	0.05	0	0	.0010	.0092
1594	Gardiner	Spring	5.0	3.8	0	.07	0.15	0	Trace	.0002	.0016
1595	Portland	Well	3.4	2.5	0.6	.11	1.10	Trace	0.06	.0034	.0084
1596	Seal Harbor	Public supply	1.5	0.6	0.3	.15	0.60	0	0	.0012	.0040
1597	Hiram	Fountain	3.6	2.9	0.3	.05	0.62	0	Trace	.0002	.0016
1598	Bridgton	Public supply	1.6	0.8	1.7	.34	0.10	0	0	.0022	.0084
1599	Auburn	Public supply	2.0	1.2	0.5	.19	0.17	0	0	.0036	.0074
1600	Vassaboro	Well	23.1	20.3	0.2	.09	4.10	.001	0.40	.0066	.0054
1601	Boothbay Harbor	Public supply	2.0	0.7	1.2	.37	0.68	0	0	.0014	.0150
1602	Portland	Ice	1.0	0.4	0.1	.02	0.01	0	0	.0052	.0084
1603	Bath	Public supply	1.4	0.3	2.2	.41	0.35	0	0	.0006	.0104
1604	Bath	Public supply	1.3	0.5	2.2	.41	0.35	0	0	.0014	.0120
1605	Buxton	Well	9.6	8.1	0.2	.17	4.33	.0080	0.30	.0020	.0072
1606	Ellsworth	Public supply	1.8	0.8	2.2	.41	0.23	0	0	.0008	.0092
1607	Mechanic Falls	Public supply	2.6	1.8	1.4	.31	0.28	0	0	.0014	.0094
1608	Mechanic Falls	Public supply	2.3	1.1	1.8	.38	0.20	0	0	.0018	.0112
1609	York Harbor	Well	4.5	2.2	0.2	.10	2.23	.002	0.25	.0022	.0088

ANALYSES OF SAMPLES OF WATER—Continued.

Number.	Town or City.	Source.	Hardness.	Alkalinity.	Color.	Oxygen consumed.	Chlorine.	Nitrite.	Nitrate.	AMMONIA.	
										Free.	Albuminoid..
1610	Machias.....	Public supply.....	2.0	1.0	5.3	.70	0.20	0	0	.0014	.0102
1611	Rockport.....	Brook.....	2.7	1.7	2.1	.29	0.80	0	0.008	.0032	.0086
1612	Old town.....	Well.....	6.3	4.1	0.2	.17	1.25	Trace	0.09	.0010	.0052
1613	Cumberland.....	Spring.....	3.8	2.0	0.1	.26	0.65	.0005	0.10	.061	.0360
1614	Cumberland.....	Well.....	4.8	1.5	0.6	.15	0.98	.0060	1.35	.0142	.0032
1615	Cumberland.....	Well.....	13.8	5.0	0.3	.33	2.08	Trace	0.48	.0010	.0116
1616	Milo.....	Well.....	18.8	9.1	0.1	.15	6.87	.0008	1.52	.0272	.0104
1617	Brunswick.....	Public supply.....	2.6	1.8	0	.09	0.40	0	Trace	.0008	.0016
1918	Hallowell.....	Cascade Pd.....	3.6	2.1	2.4	.56	0.25	0	0	.0014	.0210
1619	Hallowell.....	Public supply.....	1.9	1.2	2.2	.65	0.30	0	0	.0064	.0364
1620	Springvale.....	Public supply.....	1.4	0.6	0.9	.05	0.20	0	Trace	.0294	.0340
1621	Lubec.....	Public supply.....	5.5	4.5	0	.02	1.23	0	0.13	0	.0316
1622	Sabattus.....	Spring.....	12.6	6.0	0	.04	2.55	.0005	0.23	0	.0038
1623	Yarmouth.....	Public supply.....	3.1	1.6	0.1	.03	0.37	0	0.03	.0004	.0048
1624	North East Harbor.....	Public supply.....	1.9	0.6	1.4	.27	0.80	0	0	.0018	.0124
1625	Bucksport.....	Public supply.....	1.9	1.4	4.5	1.19	0.32	0	Trace	.0030	.0382
1626	Searsport.....	Public supply.....	1.4	1.0	0.4	.20	0.20	0	0	.0003	.0094
1627	Lewiston.....	Public supply.....	1.4	1.1	0.4	.12	0.20	0	0	.0002	.0070
1628	Hartland.....	Well.....	3.0	2.0	0.7	.04	0.27	0	0	0	.0022
1629	Houlton.....	Public supply.....	6.6	5.0	5.8	.95	0.11	0	0	.0020	.0214
1630	Van Buren.....	Public supply.....	5.4	4.0	0.8	.22	0.05	0	0	.0002	.0046
1631	Caribou.....	Public supply.....	5.0	3.0	3.5	.73	0.04	0	0	.0020	.0118
1632	Sangerville.....	Public supply.....	5.3	4.1	0	.05	0.12	0	0.02	.0014	.0016
1633	Presque Isle.....	Public supply.....	7.2	6.3	0.9	.32	0.35	.0005	Trace	.0030	.0294
1634	Alton.....	Well.....	1.5	1.0	0	.05	0.15	Trace	0.17	.0012	.0064

1635	Eastport	Public supply	1.6	1.0	2.7	.40	0.47	0	0	.0022	.0178
1636	Calais	Public supply	2.0	1.7	0.2	.15	0.22	0	Trace	.0402	.0690
1637	Fryeburg	Public supply	1.9	1.1	1.1	.23	0.10	0	0	.0008	.0350
1638	North Anson	Spring	3.2	2.4	0	.15	0.20	0	Trace	.0005	.0014
1639	Freeport	Spring	2.7	2.3	0	.10	0.38	0	0.03	.0005	.0558
1640	Augusta	Well	4.1	2.8	0	.18	0.42	0	0.05	.0005	.0012
1641	Fryeburg	Public supply	1.9	1.0	1.1	.22	0.10	0	0	.0016	.0044
1642	Damariscotta	Public supply	1.9	1.0	2.2	.35	0.42	0	0	.0003	.0114
1643	Dover	Public supply	2.7	1.8	4.4	.80	0.11	0	0	.0016	.0153
1644	South Berwick	Public supply	3.3	2.1	13.0	1.39	0.27	0	Trace	.0066	.0300
1645	Wilton	Public supply	2.2	1.5	0	.23	0.09	0	0	.0006	.0094
1646	York	Public supply	1.2	0.8	2.4	.35	0.46	0	0	.0016	.0112
1647	Farmington	Public supply	2.0	1.7	0.2	.19	0.10	0	0	.0014	.0074
1648	York	Well	3.8	2.0	0.3	.13	1.17	0	0	.0004	.0082
1649	Old Town	Well	10.3	4.2	0.6	.23	4.17	.0080	0.65	.0203	.0092
1650	Argyle	Well	2.5	0.7	0.2	.04	1.37	0	0	.0076	.0048
1651	Rumford	Public supply	4.0	2.2	0.3	.12	0.25	Trace	0.05	.0072	.0010
1652	Rumford	Public supply	2.4	1.7	2.6	.15	0.25	0	0.05	.0044	.0048
1653	Rumford	Public supply	4.2	2.3	2.7	.17	0.25	0	0.05	.0062	.0086
1654	Fort Fairfield	Public supply	14.1	12.0	0.7	.20	0.12	0	0.01	.0086	.0070
1655	Mars Hill	Spring	19.7	17.0	0.3	.01	1.27	0	0.21	0	.0022
1656	Friendship	Public supply	1.9	1.0	1.4	.12	1.40	Trace	0.05	.0060	.0106
1657	Livermore Falls	Public supply	2.0	0.8	0.6	.23	0.19	0	0	.0012	.0128
1658	Bar Harbor	Public supply	1.4	0.6	0.9	.23	0.60	0	0	.0002	.0070
1659	Limestone	Well	17.8	14.4	0.2	.03	0.96	0	0.23	.0002	.0020
1660	Augusta	Well	2.3	1.7	0.4	.10	0.20	0	0.01	.0008	.0023
1661	Woodland	Well	4.2	3.5	0	.06	0.42	0	0	.0002	.0022
1662	Woodland	Well	5.7	3.5	0.3	.04	1.42	0	0.29	.0006	.0012
1663	Woodland	Spring	3.6	1.5	0.1	.08	1.10	Trace	0.08	0	.0038
1664	Bethel	Public supply	1.0	0.5	1.9	.38	0.05	0	0	.0010	.0064
1665	Brownfield	Well	6.5	2.9	0	.10	3.17	.0009	0.69	.0034	.0070
1666	South Bristol	Well	5.0	8.0	0.2	.11	1.12	0	Trace	.0002	.0009
1667	Waldoboro	Well	8.6	9.3	2.3	.52	1.72	0	0	.0130	.0188
1668	Saco	Well	2.2	0.2	12.0	1.21	1.75	0	Trace	.0046	.0146
1669	Cumberland	Well	9.6	2.5	0.4	.05	4.70	Trace	1.00	.0006	.0042
1670	Cumberland	Spring	1.9	1.2	1.0	.04	0.35	0	0	.0002	.0016
1671	Cumberland	Well	2.7	1.5	0.5	.08	1.55	0.001	0.11	.0040	.0058
1672	Cumberland	Spring	1.8	1.5	0.1	.09	0.35	0	0	.0030	.0098
1673	Cumberland	Well	3.4	1.7	0	.04	0.77	0	0.17	.0006	.0022
1674	New Harbor	Spring	2.2	1.1	0.3	.09	6.05	0	0.06	.0006	.0042

## ANALYSES OF SAMPLES OF WATER—Continued.

260

STATE BOARD OF HEALTH.

Number.	Town or City.	Source.	Hardness.	Alkalinity.	Color.	Oxygen consumed.	Chlorine.	Nitrite..	Nitrate.	AMMONIA.	
										Free.	Albuminoid.
1675	New Harbor	Well.	15.1	11.3	0.2	.10	14.27	.0005	0.08	.0032	.0030
1676	New Harbor	Well.	1.7	0.9	0.1	.06	4.63	0	0.12	.0004	.0032
1677	New Harbor	Well.	14.4	9.0	0.7	.18	23.13	.0005	0.04	.0054	.0030
1677	Winthrop	Well.	6.0	4.8	0.3	.04	0.47	0	0.13	.0025	.0023
1679	Winthrop	Cistern	2.4	1.2	7.0	2.16	0.07	.0015	0.01	.0420	.0423
1690	Madison	Well.	11.5	8.3	4.1	.45	0.65	0	0.01	.0004	.0058
1681	Berwick	Public supply.	2.7	1.0	1.9	.50	0.40	0	0	.0014	.0154
1682	Waterville	Spring.	13.0	2.5	0	.10	10.20	0	2.50	.0030	.0082
1683	Belfast	Spring.	2.4	1.3	0	.09	0.32	0	0	.0008	.0354
1684	Waterville	Spring.	12.2	3.2	0	.10	9.20	0	2.40	.0014	.0064
1685	Sabattus	Spring.	13.7	9.2	0.3	.15	1.87	.0008	0.89	.0024	.0044
1686	Old Town	Spring.	5.6	3.4	0.3	.08	1.00	0	0.34	.0014	.0042
1687	Strong	Public supply.	2.9	1.8	4.4	.72	0.03	0	0	.0020	.0134
1688	Woodland	Public supply.	1.5	0.8	3.6	.68	0.11	0	0	.0024	.0136
1689	Greenville	Well.	2.5	0.9	0.4	.14	0.37	0	0.19	.0010	.0016
1690	Greenville	Lake	1.4	0.6	2.7	.68	0.03	0	0	.0020	.0134
1691	Baldwin	Well.	1.4	0.8	0	.06	0.09	0	0.01	.0014	.0022
1692	Bar Harbor	Well.	5.3	2.1	0.2	.12	3.80	.0010	0.45	.0026	.0016
1693	Islesford	Well.	5.8	4.0	2.5	.12	3.25	.0010	Trace	.0066	.0014
1694	Auburn	Bog	93.6	34.5	3.5	16.80	15.45	0	0.01	15.25	0
1695	Winthrop	Well.	11.5	7.9	0	.11	0.44	0	0.16	.0022	.0048
1696	Freeport	Well.	2.9	0.8	0	.06	0.42	0	Trace	.0044	.0016
1697	York Harbor	Well.	8.6	6.6	0.3	.10	3.02	0	0.06	.0004	.0044
1698	Brownville	Well.	8.9	1.4	0.3	.11	3.60	.0010	1.74	.0372	.0950
1699	South Berwick	Spring.	11.8	11.6	1.2	.06	0.33	0	0	.0008	.0018



1700	Mt. Vernon	Well	18.3	12.1	0.5	.81	7.20	.0050	2.73	.0760	.0808
1701	Madison	Spring	8.0	6.2	1.9	.18	0.18	0	0	.0056	.0628
1702	Brunswick	Public supply	2.4	1.9	0	.05	0.45	0	0	0	.0014
1703	Hallowell	Well	15.8	13.7	0.1	.05	8.52	.0005	1.12	.0006	.0054
1704	Parsonsfield	Spring	2.0	1.3	0	.04	0.10	0	0	.0002	.0040
1705	Parsonsfield	Spring	2.2	1.4	0	.04	0.10	0	Trace	.0002	.0020
1706	Bailey Island	Well	6.5	2.2	7.2	1.12	7.57	.0010	Trace	.0268	.0324
1707	Parsonsfield	Spring	3.2	1.5	0.3	.23	0.12	0	0	.0006	.0056
1708	Foxcroft	Well	8.7	7.2	0	.02	0.40	0	0.05	0	.0008
1709	Parsonsfield	Spring	1.7	0.9	0.2	.04	0.10	0	Trace	.0004	.0046
1710	Parsonsfield	Spring	1.4	0.6	0.3	.04	0.10	0	Trace	.0004	.0026
1711	Wiscasset	Well	4.3	2.1	0.5	.17	4.55	.0010	0.68	.0118	.0066
1712	Hallowell	Well	11.4	7.0	0	.08	1.25	Trace	0.10	.0032	.0020
1713	Cornish	Well	2.2	0.6	2.6	.17	0.50	.0008	.03	.0458	.0212
1714	Bangor	Spring	16.3	2.4	0.6	.23	3.40	.0050	0.17	.0252	.0108
1715	Calais	Public supply	1.9	0.9	0.1	.09	0.21	0	0.01	.0008	.0038
1716	Belgrade	Well	1.6	1.0	0.1	.05	0.20	0	0.03	.0006	.0080
1717	Hallowell	Well	16.0	8.1	0.1	.03	3.40	.0005	0.11	.0044	.0054
1718	Hiram	Well	2.6	0.2	2.6	.31	0.29	0	0	.0214	.0048
1719	Holden	Well	3.0	0.6	0	.06	0.15	0	0.02	.0024	.0026
1720	Brunswick	Spring	11.9	9.0	0	.01	0.60	0	0	0	.0028
1721	Stonington	Pond	2.6	0	5.6	1.01	1.50	0	0	.0040	.0298
1722	Lebanon	Well	2.9	1.1	0	.05	0.27	Trace	0.12	.0008	.0086
1723	Bluehill	Well	8.9	0.3	0.2	.03	2.38	0	0.22	.0008	.0052
1724	Cornish	Well	4.0	2.0	0	.07	0.25	0	0.03	.0004	.0024
1725	Yarmouth	Well	3.2	0.6	0	.02	0.32	0	0.03	.0012	.0014
1726	Waldoboro	Well	12.5	6.2	0.2	.07	4.57	Trace	0.31	.0304	.0340
1727	Farmington	Well	10.7	5.5	0	.03	2.25	Trace	0.16	.014	.0058
1728	Skowhegan	Spring	3.7	2.0	0.7	.10	0.22	0	0	.0006	.0036
1729	Baldwin	Well	3.4	1.1	0	.11	1.15	.0006	0.11	.0038	.0034
1730	West Paris	Spring	8.0	5.0	0	.12	0.15	0	0.02	.0002	.0044
1731	West Paris	Spring	2.0	0.7	0	.02	0.15	0	0	.0003	.0034
1732	West Paris	Spring	7.6	7.2	0.1	.06	0.20	0	Trace	.0063	.0034
1733	Brownville	Well	6.9	3.4	0	.06	0.95	.0060	0.43	.0150	.0074
1734	West Paris	Spring	3.0	2.1	0	.04	0.17	Trace	Trace	.0006	.0042
1735	West Paris	Spring	1.9	1.6	0.1	.03	0.22	0	0.02	0	.0034
1736	Brownville	Well	3.9	1.6	0	.03	0.44	Trace	0.13	.0006	.0018
1737	West Paris	Spring	2.4	1.4	0	.02	0.23	0	0.02	0	.0024
1738	Elliot	Well	14.4	4.1	4.7	.80	1.35	.0010	0.03	.0092	.0190
1739	North Berwick	Well	5.7	5.3	0	.13	0.27	0	0	.0016	.0008

## ANALYSES OF SAMPLES OF WATER—Continued.

Number.	Town or City.	Source.	Hardness.	Alkalinity.	Color.	Oxygen consumed.	Chlorine.	Nitrite.	Nitrate.	AMMONIA.	
										Free.	Albuminoid.
1740	Bar Mills.....	Well.....	16.5	2.1	0.9	.12	0.85	.0010	0.06	.0026	.0040
1741	North Wayne.....	Spring.....	5.7	2.3	0.1	.07	0.80	Trace	0.20	.0002	.0040
1742	Augusta.....	Public supply.....	2.7	0.7	1.6	.41	0.17	0	0	.0020	.0132
1743	North Wayne.....	Spring.....	4.9	3.8	0.5	.12	0.80	.0005	0.20	.0060	.0120
1744	Foxcroft.....	Well.....	15.6	9.3	0.4	.04	3.17	.0009	0.13	.0010	.0032
1745	Lisbon.....	Well.....	7.2	4.0	0.3	.06	1.05	0	0.01	.0012	.0032
1746	Cornish.....	Well.....	7.5	1.9	0	.03	2.12	Trace	0.47	.0018	.0030
1747	Searsmont.....	Well.....	2.3	2.1	Pink	.20	0.65	.0070	0.22	.0276	.0163
1748	East Vassalboro.....	Spring.....	9.3	3.3	0.7	.13	0.40	.0009	0.05	.0380	.0166
1749	Gardiner.....	Spring.....	8.8	5.5	0.7	.02	0.25	0	0	.0312	.0072
1750	North Wayne.....	Spring.....	5.0	2.0	0.2	.12	9.75	0	0.20	.0024	.038
1751	East Vassalboro.....	Well.....	8.9	6.2	0.6	.15	2.22	.003	0.21	.0162	.0142
1752	Van Buren.....	Spring.....	3.7	5.4	0	.01	0.06	0	0	0	.0014
1753	Canton.....	Spring.....	3.7	5.4	0.6	0	0.09	0	0	.0008	.0016
1754	North Anson.....	Spring.....	3.0	0.7	0.2	.05	0.13	0	0	.0012	.0090
1755	Dixfield.....	Public supply.....	4.9	2.1	4.2	.54	0.13	0	0	.0018	.0134
1756	Grand Lake.....	Well.....	7.2	3.5	0.7	.15	3.28	0	0.51	.0008	.0062
1757	Calais.....	Public supply.....	2.1	0.4	3.1	1.15	0.13	0	Trace	.0020	.0118
1758	Madison.....	Public supply.....	2.0	0.3	2.6	.64	0.04	0	0	.0018	.0090
1759	Solon.....	Spring.....	3.5	2.1	0.4	.06	0.14	0	0.05	.0004	.0040
1760	Kennebunk.....	Public supply.....	2.7	0.8	3.8	.57	0.40	0	0	.0012	.0076
1761	Gardiner.....	Public supply.....	2.7	1.6	1.2	.34	0.27	0	0	.0028	.0156
1762	Buckfield.....	Public supply.....	2.9	0.7	0.7	.29	0.14	0	0	.0020	.0106
1763	Farmington.....	Spring.....	3.1	0.9	1.2	.17	0.12	Trace	0.04	.0028	.0042
1764	Gardiner.....	Well.....	8.1	4.0	0.3	.10	2.53	.003	0.50	.0062	.0042

1765	Pittston	Spring	7.5	2.2	4.5	.05	1.00	0	0	.0004	.0022
1766	Hallowell	Public supply	3.5	1.8	2.2	.40	0.87	0	0	.0029	.0176
1767	Pittsfield	Public supply	2.7	0.7	3.2	.67	0.15	0	Trace	.0040	.0154
1768	Phillips	Public supply	1.7	0.6	2.8	.50	0.05	0	0	.0021	.0150
1769	Oakland	Public supply	2.4	1.1	2.2	.37	0.17	0	0	.0024	.0116
1770	Camden	Public supply	2.0	0.7	0.4	.14	0.33	0	0	.0011	.0046
1771	Waterville	Public supply	2.9	1.2	0.8	.29	0.22	0	0	.0014	.0118
1772	Gardiner	Spring	3.1	2.6	0.6	.07	0.17	0	0	.0006	.0056
1773	Corinnia	Well	12.9	11.8	2.2	.23	0.81	.0003	0.33	.0032	.0078
1774	Kingfield	Public supply	1.7	0.8	2.6	.40	0.06	0	0	.0017	.0088
1775	Madison	Well	2.5	1.0	0	.09	1.60	.001	1.00	.0014	.0046
1776	Winter Harbor	Public supply	1.6	0.3	1.6	.38	1.02	0	0	.0036	.0070
1777	Brooks	Public supply	2.9	1.2	0.5	.17	0.24	0	0.03	.0016	.0018
1778	Brooks	Well	6.3	4.0	0.3	.13	2.45	Trace	0.16	.0006	.0.50
1779	Bangor	Well	11.1	8.3	0	.10	0.22	0	0.01	.0022	.0030
1780	Bangor	Well	10.8	8.1	0.2	.08	0.35	.0004	0.01	.0034	.0044
1781	Oakland	Well	5.8	0.7	4.5	.45	7.67	.0009	0	.3020	.0078
1782	Norridgewock	Well	6.2	3.5	1.2	.27	1.05	.0008	0.06	.0054	.0074
1783	Augusta	Spring	3.9	1.1	4.5	.14	0.20	Trace	0	.0028	.0004
1784	Lisbon Falls	Well	12.8	4.1	0.8	.14	2.55	.0090	0.12	.0522	.0098
1785	Brownville	Well	7.6	1.8	0	.10	2.90	Trace	0.95	.0048	.0032
1786	Bowdoinham	Well	8.4	0.8	0.7	.12	3.10	.0005	0.43	.0008	.0076
1787	Sebago Lake	Lake	1.3	0.3	1.2	.28	0.17	0	0	.0014	.0124
1788	Bowdoinham	Well	4.9	2.0	0.5	.12	2.65	Trace	0.35	.0030	.0062
1789	Biddeford	Public supply	1.4	0.3	0.2	.11	0.12	0	0	.0006	.0034
1790	Bowdoinham	Spring	1.5	0.6	1.4	.35	0.70	0	0.12	.0022	.0152
1791	Sebago Lake	Well	6.3	2.0	0.5	.17	0.65	.0005	Trace	.0005	.0123
1792	Sanford	Public supply	2.6	1.2	0	.03	0.17	0	0	.0004	.0028
1793	Bowdoinham	Well	7.3	1.5	0.5	.08	2.82	.0020	0.47	.0078	.0062
1794	Sebago Lake	Well	3.5	1.1	0	.07	0.28	0	0.01	.0002	.0008
1795	Machias	Public supply	2.4	0.5	9.5	1.78	0.32	0	0	.0028	.0186
1796	Bangor	Well	12.4	0.9	1.1	.14	3.55	.0008	1.25	.0006	.0050
1797	North Berwick	Public supply	1.9	0.7	3.1	.40	0.32	0	Trace	.0012	.0060
1798	Winterport	Public supply	6.3	1.2	0.5	.18	0.30	0	Trace	.0020	.0050
1799	Old Town	Public supply	2.4	0.4	5.1	1.26	0.12	Trace	0	.0020	.0188
1800	Bangor	Public supply	3.7	acid	0.6	.48	0.03	0	0	.0014	.0082
1801	Bar Harbor	Public supply	2.3	0.6	0.7	.18	0.60	0	0	.0006	.0052
1802	East Millinocket	Public supply	5.0	1.3	0.3	.10	0.10	Trace	0	.0004	.0004
1803	Rumford	Spring	2.6	0.9	0	.03	0.12	0	0	.0024	.0008
1804	Rumford	Spring	2.7	0.8	0.5	.10	0.12	Trace	0	.0004	.0018

ANALYSES OF SAMPLES OF WATER—Continued.

Number.	Town or City.	Source.	Hardness.	Alkalinity.	Color.	Oxygen consumed.	Chlorine.	Nitrite.	Nitrate.	AMMONIA.	
										Free.	Albuminoid.
1805	Friendship	Well	2.9	2.8	0.7	.02	1.07	.0010	0.01	.0014	.0006
1806	Brewer	Public supply	2.7	0.7	5.0	1.42	0.17	Trace	0	.0038	.0118
1807	Van Buren	Public supply	6.8	1.3	1.0	.27	0.09	0	0	.0026	.0024
1808	Bowdoinham	Well	15.7	9.5	0	.16	3.23	0	0.08	.0014	.0036
1809	Bowdoinham	Well	16.1	10.3	0	.17	4.35	0	0.01	.0022	.0018
1810	Bowdoinham	Well	22.7	20.7	0.8	.22	0.85	.0001	0	.0298	.0134
1811	Bowdoinham	Well	14.4	11.5	0.5	.13	1.98	0	0	.0218	.0046
1812	Damariscotta	Public supply	1.4	1.1	1.0	.29	0.40	0	0	.0012	.0120
1813	Ellsworth	Public supply	1.9	0.9	1.5	.40	0.29	0	0	.0014	.0074
1814	Auburn	Public supply	2.3	2.0	0.6	.17	0.21	0	0	.0014	.0076
1815	Searsport	Public supply	1.6	1.1	0.5	.43	0.24	0	0	.0022	.0092
1816	Brunswick	Public supply	3.6	2.0	0	.08	0.45	0	0	.0005	.0006
1817	Lewiston	Public supply	2.7	1.2	0.5	.22	0.20	0	0	.0014	.0090
1818	Bangor	Well	26.5	24.0	0	.26	1.70	.0050	0.90	.0098	.0038
1819	Bridgton	Well	7.6	5.1	0.9	.13	1.37	.0002	0.10	.0034	.0112
1820	Tenant's Harbor	Well	1.9	1.6	0.5	.26	7.25	Trace	0.12	.0046	.0052
1821	Bangor	Well	18.7	17.4	0	.08	3.80	.0010	0.19	.0014	.0012
1822	Gardiner	Well	9.2	7.2	0.6	.10	0.27	Trace	0.13	.0.66	.0026
1823	North Bridgton	Well	8.1	6.4	0.8	.21	0.10	Trace	Trace	.0118	.0063
1824	Norway	Public supply	3.2	1.9	1.7	.40	0.18	0	0	.0014	.0120
1825	Farmington	Public supply	2.5	1.5	0.6	.18	0.11	0	0	.0006	.0036
1826	Springvale	Public supply	2.3	1.2	1.6	.15	0.25	Trace	Trace	.0514	.0142
1827	Presque Isle	Public supply	6.6	5.5	3.1	.67	0.20	Trace	Trace	.0120	.0148
1828	Richmond	Public supply	4.6	1.6	2.7	.90	2.50	0	Trace	.0020	.0102
1829	Seal Harbor	Public supply	2.0	0.8	0	.25	0.65	Trace	0	.0006	.0060

1830	Bucksport.....	Public supply.....	8.2	1.2	15.0	.99	0.33	0	0	.0044	.0286
1831	Union.....	Public supply.....	4.2	1.1	0.3	.05	0.42	0	0.01	.0006	.0014
1832	Boothbay Harbor.....	Public supply.....	2.3	0.7	1.0	.32	0.70	0	0	.0014	.0146
1833	Chase's Mills.....	Well.....	4.0	2.5	4.2	.17	0.07	.0006	0	.0034	.0128
1834	Mapleton.....	Well.....	13.0	11.2	0.6	.11	0.53	.0010	0.09	.0322	.0138
1835	Milo.....	Public supply.....	1.4	0.5	2.4	.58	0.07	0	0	.0042	.0128
1836	So. Berwick.....	Public supply.....	5.3	2.0	4.2	.57	0.47	0	0	.0026	.0134
1837	Greenville.....	Well.....	1.9	1.0	0.2	.09	0.07	0	0.03	.0008	.0022
1838	Millinocket.....	Public supply.....	2.0	0.4	5.0	.86	0.04	0	0	.0036	.0134
1839	Bridgton.....	Public supply.....	1.6	0.8	1.6	.35	0.12	0	0	.0024	.0102
1840	Houiton.....	Public supply.....	7.6	6.0	2.1	.58	0.20	0	0	.0020	.0084
1841	Caribou.....	Public supply.....	3.10	3.0	3.4	.87	0.10	0	0	.0026	.0104
1842	Greenville.....	Well.....	5.0	2.4	0	.08	0.75	0	0.23	.0004	.0016
1843	Lubec.....	Public supply.....	7.5	4.9	0	.03	1.25	0	0.11	.0032	.0026
1844	Vanceboro.....	Well.....	8.7	3.4	0.2	.08	1.72	.0005	0.30	.0026	.0970
1845	Bethel.....	Public supply.....	1.4	1.4	1.4	.28	0.10	0	0	.0008	.0044
1846	York.....	Well.....	10.5	8.3	3.8	.24	2.38	.0015	0.01	.0660	.1024
1847	Bath.....	Public supply.....	1.6	0.3	1.7	.38	0.35	0	0	.0018	.0116
1848	Bath.....	Thompson Brook.....	1.3	0.7	1.9	.44	0.42	0	0	.0022	.0184
1849	Rumford.....	Public supply.....	4.2	2.1	1.9	.21	0.27	0	0.05	.0062	.0070
1850	Woodland.....	Well.....	3.6	0.6	1.7	.14	1.05	.0002	0.09	.0016	.0110
1851	Woodland.....	Public supply.....	1.9	1.0	3.2	.59	0.10	0	0	.0023	.0186
1852	Woodland.....	Spring.....	4.9	3.1	0.1	.01	0.30	0	Trace	.0010	.0010
1853	Mechanic Falls.....	Public supply.....	2.7	1.6	2.4	.42	0.23	0	0	.0018	.0104
1854	Mechanic Falls.....	Public supply.....	2.6	1.2	2.4	.43	0.27	0	0	.0008	.0130
1855	Wilton.....	Public supply.....	2.9	0.8	0.5	.21	0.07	0	0	.0014	.0076
1856	Strong.....	Public supply.....	2.9	2.6	2.8	.69	0.09	0	0	.0026	.0192
1857	Bangor.....	Well.....	15.8	2.1	0.5	.29	6.10	.0010	3.00	.0056	.0148
1858	Bangor.....	Spring.....	12.4	1.6	0	.08	2.68	.0006	1.25	.0006	.0028
1859	Sebago.....	Well.....	1.7	1.5	0.1	.06	0.20	0	0.03	.0006	.0034
1860	Sebago.....	Spring.....	2.0	1.4	0.1	.12	0.23	0	0.02	.0006	.0048
1861	Fort Fairfield.....	Public supply.....	8.8	8.0	1.4	.50	0.20	0	0	.0016	.0070
1862	Eryeburg.....	Public supply.....	1.4	0.7	0.4	.21	0.14	0	0	.0002	.0042
1863	Warren.....	Public supply.....	5.7	3.0	0.2	.03	0.45	0	0	0	.0024
1864	Yarmouth.....	Public supply.....	2.7	2.1	0.2	.02	0.37	0	0.07	.0002	.0026
1865	Brownville.....	Well.....	5.0	3.1	1.6	.06	0.90	.001	0.05	.0022	.0020
1866	Dover.....	Public supply.....	1.6	1.3	5.2	1.17	0.14	0	0	.0020	.0226
1867	No. Berwick.....	Well.....	5.3	2.8	2.3	.19	0.52	0	0	.0002	.0042
1868	No. Berwick.....	Stream.....	6.7	2.0	2.2	.30	1.10	.0015	0.05	.0790	.0098
1869	N. E. Harbor.....	Public supply.....	1.5	0.9	1.7	.50	0.75	0	0	.0012	.0148

## ANALYSES OF SAMPLES OF WATER—Continued.

Number.	Town or city.	Source.	Hardness.	Alkalinity.	Color.	Oxygen consumed.	Chlorine.	Nitrite.	Nitrate.	AMMONIA.	
										Free.	Albuminoid.
1870	Sangerville	Public supply	5.2	4.1	0	.05	0.14	0	0.04	0	.0042
1871	Wilton	Well	2.0	0.7	0	.03	0.35	0	0.10	.0002	.0030
1872	Kittery	Well	12.6	5.9	0.4	.39	3.77	.0007	1.63	.0010	.0126
1873	Lisbon Falls	Well	10.8	6.9	0.8	.45	14.50	.0950	2.48	.2706	.3680
1874	Berwick	Public supply	4.3	1.2	2.2	.34	0.60	Trace	0.03	.0014	.0086
1875	Lisbon Falls	Well	10.3	7.2	0.8	.51	14.50	.0900	2.38	3.858	.9622
1876	Swan's Island	Spring	5.8	5.1	4.8	.40	1.70	0	0	.0012	.0086
1877	York	Public supply	1.4	0.2	2.2	.40	0.50	Trace	0	.0020	.0126
1878	Livermore Falls	Public supply	1.9	0.8	0.8	.27	0.15	0	0	.0012	.0114
1879	Castine	Public supply	6.0	3.0	0.2	.15	0.52	0	0.05	.0004	.0040
1880	York	Well	9.2	7.0	0.4	.17	0.95	Trace	0.09	.0022	.0064
1881	Gardiner	Well	10.3	3.1	0.3	.17	2.33	Trace	0.30	.0008	.0114
1882	Castine	Well	23.0	9.6	0.2	.08	4.23	Trace	0.41	.0006	.0044
1883	Ellsworth	Spring	2.6	0.9	0.6	.19	0.77	0	0.02	.0018	.0102
1884	Skowhegan	Public supply	1.7	0.7	2.7	.49	0.32	Trace	0.05	.0018	.0094
1885	Skowhegan	Public supply	1.4	1.1	2.4	.52	0.10	Trace	0	.0012	.0090
1886	Lisbon	Well	15.3	6.5	0.3	.22	4.30	.0030	1.00	.0018	.0052
1887	Lisbon	Well	13.8	6.3	0	.04	3.25	.0370	0.52	.0068	.0046
1888	Ft. Fairfield	Arroostook R.	3.6	3.0	4.5	1.02	0.17	0	0	.0020	.0168
1889	Norridgewock	Public supply	4.6	1.7	2.4	.12	0.77	.0050	0.02	.0118	.0074
1890	No. Sullivan	Well	10.1	0.6	0.2	.10	2.88	.0010	0.55	.0066	.0066
1891	Lisbon Falls	Well	3.4	0.4	0	.12	1.23	0	0.10	.0004	.0018
1892	Gardiner	Well	5.7	3.5	0.1	.06	0.85	0	0.37	.0006	.0024
1893	Gorham	Public supply	1.5	0.3	0.7	.27	0.20	0	0	.0004	.0092
1894	Skowhegan	Public supply	2.0	1.1	2.2	.50	0.32	0	0.05	.0012	.0084

1895	Dexter.....	Well.....	15.0	12.3	0	.15	1.52	.0010	0.22	.0040	.0074
1896	Rumford.....	Spring.....	3.7	1.6	0	.12	0.45	0	0.09	.0008	.0026
1897	Skowhegan.....	Public supply.....	1.7	0.8	2.2	.50	0.82	0	0.05	.0014	.0062
1898	Skowhegan.....	River.....	1.9	0.6	2.3	1.33	0.12	0	0	.0014	.0106
1899	Woodland.....	Well.....	7.3	3.5	0.1	.06	0.98	.0003	0.30	.0006	.0060
1900	Newport.....	Public supply.....	2.0	1.2	1.1	.47	0.15	0	0	.0014	.0150
1901	Newport.....	Public supply.....	2.9	2.1	1.5	.38	0.22	Trace	0.009	.0026	.0194
1902	Newport.....	Public supply.....	2.8	2.0	1.5	.37	0.20	0	Trace	.0006	.0152
1903	Portage Lake.....	Well.....	11.3	8.6	0.1	.04	0.67	Trace	0.16	.0002	.0016
1904	Portland.....	Springs.....	15.1	1.4	2.0	.60	6.82	.0090	0.45	.0880	.1160
1905	Brownville.....	Well.....	8.1	4.0	0.1	.14	2.33	0	0.65	.0008	.0080
1906	Farmington.....	Well.....	3.9	1.4	0	.02	0.10	0	0.01	0	.0020
1907	York.....	Well.....	6.5	3.8	0.9	.14	0.70	0	Trace	.0038	.0068
1903	Presque Isle.....	Well.....	13.2	10.8	0.2	.06	0.78	Trace	0.35	.0046	.0014
1909	Presque Isle.....	Well.....	19.0	16.6	0.9	.07	2.05	.0040	0.30	.0108	.0054
1910	Sidney.....	Well.....	8.6	6.3	0	.03	0.22	0	0.02	0	.0024
1911	Lisbon Falls.....	Well.....	11.2	4.1	0	.12	2.67	0	0.33	.0002	.0030
1912	Lisbon.....	Well.....	7.5	5.0	0	.02	0.30	0	0.01	.0002	.0016
1913	Lisbon.....	Cistern.....	2.1	1.4	0.9	.24	0.12	0	0.06	.0006	.0082
1914	Blaine.....	Well.....	24.7	23.0	0.6	.10	1.47	0	0.16	.0002	.0062
1915	Lisbon Falls.....	Well.....	9.5	0.5	0	.11	2.82	.0004	1.20	.0018	.0072
1916	Frenchville.....	Well.....	6.5	5.0	1.7	.31	0.40	.0004	0.04	.0650	.0176
1917	Farmington.....	Well.....	1.5	1.1	0	.05	0.17	0	0.01	0	.0022
1918	Madison.....	Public supply.....	2.10	0.9	2.7	.60	0.09	0	0.01	.0014	.0096
1919	Eastport.....	Public supply.....	1.9	0.5	2.4	.58	0.62	0	Trace	.0320	.0174
1920	Portland.....	Well.....	24.4	22.0	0.8	1.41	21.10	.0020	0.02	.0274	.0524
1921	Woodstock.....	Spring.....	1.6	0.7	0.2	.20	0.12	0	0	.0006	.0046
1922	W. Paris.....	Well.....	2.4	1.1	0.2	.03	0.12	0	0	.0004	.0088
1923	W. Paris.....	Well.....	3.0	0.9	0.2	.12	0.17	0	0	.0006	.0038
1924	Dexter.....	Spring.....	7.6	4.8	0.4	.10	0.74	0	0.07	.0002	.0048
1925	Dexter.....	Well.....	15.1	13.0	0.1	.10	1.40	.0002	0.50	.0018	.0036
1926	Rumford.....	Springs.....	2.1	1.3	2.3	.40	0.20	Trace	0.03	.0026	.0082
1927	Brownfield.....	Spring.....	1.3	1.2	0	.03	0.09	0	0	.0006	.0052
1928	Rumford.....	Springs.....	1.4	0.7	2.2	.31	0.20	0	0.03	.0016	.0078
1929	Rumford.....	Springs.....	3.2	1.6	2.3	.31	0.20	.0005	0.03	.0018	.0078
1930	Greenville.....	Well.....	1.9	0.9	0	.03	0.15	0	0.03	.0004	.0020
1931	Greenville.....	Well.....	7.0	6.0	0	.01	0.08	0	0	0	.0010
1932	Farmington.....	Spring.....	2.5	1.5	0.2	.06	0.09	0	0.04	.0004	.0030
1933	Bridgewater.....	Well.....	16.4	14.4	0.2	.10	1.87	.0005	0.50	.0016	.0056
1934	Waterville.....	Well.....	6.5	3.8	0.2	.03	1.25	.0008	0.25	.0002	.0044

ANALYSES OF SAMPLES OF WATER—Continued.

Number.	Town or City.	Source.	Hardness.	Alkalinity.	Color.	Oxygen consumed.	Chlorine.	Nitrite.	Nitrate.	AMMONIA.	
										Free.	Albuminoid.
1935	Wayne	Spring	4.8	2.4	0	.01	0.29	0	0.06	.0004	.0018
1936	Dexter	Spring	4.9	1.1	0.3	.21	0.63	.0004	0.25	.0012	.0098
1937	Readfield	Well	14.4	4.1	0	.37	2.00	.0070	1.20	.0066	.0136
1938	South Berwick	Well	14.4	2.5	2.6	.52	2.10	.0020	0.30	.0034	.0262
1939	Bangor	Drilled well	24.2	2.1	0	.28	2.12	.0150	0.65	.0132	.0068
1940	Hallowell	Spring	16.2	14.0	0	.14	1.02	0	0	.0002	.0086
1941	Farmington	Spring	6.5	3.0	0	.05	0.52	0	0.20	.0008	.0074
1942	Brewer	Public supply	2.3	0.3	6.9	2.00	0.22	0	Trace	.0226	.0174
1943	Brewer	Public supply	2.3	0.3	6.9	1.89	0.22	0	Trace	.0326	.0180
1944	Hallowell	Spring	6.3	3.0	0	.02	0.45	0	0.07	.0004	.0016
1945	Greenville	Well	6.9	5.1	0.4	.04	0.65	.0010	0.14	.0434	.0022
1946	Greenville	Well	1.9	0.8	0	.05	0.22	0	0.09	.0018	.0010
1947	Farmington	Well	1.9	0.3	0	.26	0.37	0	Trace	.0006	.0018
1948	Kingfield	Public supply	2.5	0.3	1.0	.40	0.06	0	0	.0010	.0060
1949	Calais	Public supply	2.2	0.6	1.0	.44	0.22	0	0.02	.0012	.0066
1950	Gardiner	Public supply	3.0	0.5	1.5	.42	0.27	0	0	.0040	.0126
1951	Farmington	Well	2.9	1.9	0	.30	0.17	0	0.02	.0002	.0016
1952	Bridgton	Well	2.2	2.3	0.1	.21	0.20	Trace	0.05	.0054	.0056
1953	Farmington	Spring	1.5	0.6	0	.07	0.12	0	0.02	.0020	.0010
1954	Vinalhaven	Pond	2.9	0.8	0.9	.41	1.60	0	0	.0052	.0166
1955	Dixfield	Public supply	3.3	0.9	2.6	.50	0.15	0	0	.0014	.0064
1956	Hallowell	Public supply	2.9	0.7	2.8	.51	0.35	0	0.03	.0034	.0134
1957	Vinalhaven	Pond	2.1	acid	11.0	2.10	1.65	0	Trace	.0032	.0242
1958	Buckfield	Public supply	1.5	1.0	0.7	.45	0.12	0	0	.0016	.0152
1959	Pittsfield	Public supply	2.1	1.5	3.1	.68	0.15	0	0	.0040	.0176



1960	Kennebunk	Public supply	2.6	0.5	2.8	.45	0.42	0	Trace	.0014	.0054
1961	Corinna	Well	33.8	26.0	0	.15	12.63	.0005	0.25	.0014	.0096
1962	Damariscotta	Well	4.8	1.6	0	.05	0.44	Trace	0.40	.0008	.0056
1963	Farmington	Public supply	1.5	1.0	0.5	.40	1.12	0	0	.0020	.0096
1961	Orono	Public supply	1.2	0.2	4.7	.90	0.30	0	0	.0042	.0174
1965	Pownal	Well	2.8	1.4	0.8	.15	1.57	0	0.12	.0064	.0016
1966	Winter Harbor	Publi supply	1.6	0.1	4.5	.82	1.10	0	0	.0064	.0156
1967	Phillips	Public supply	2.5	0.4	1.7	.52	0.06	0	0	.0032	.0052
1968	Camden	Public supply	1.9	0.5	0.8	.22	0.57	0	0	.0008	.0102
1969	Oakland	Public supply	2.0	0.5	1.5	.39	0.20	0	0	.0018	.0120
1970	Waterville	Public supply	3.0	1.4	0.9	.29	0.22	0	0	.0036	.0100
1971	Oakland	Well	17.3	15.5	0	.15	1.00	0	0.45	.0006	.0036
1972	Oakland	Well	18.7	16.0	0.3	.20	0.90	0	0.40	0	.0046
1973	Cornish	Well	3.2	0.2	1.5	.40	0.24	0	0	.0062	.0112
1974	Plutfield	Spring	5.9	3.0	0.1	.06	0.22	0	0.05	.0002	.0020
1975	Richmond	Public supply	4.4	0.3	3.1	1.53	2.90	Trace	Trace	.0018	.0170
1976	Foxcroft	Well	9.0	6.1	0	.14	1.42	0	0.10	.0038	.0028
1977	Foxcroft	Well	10.3	9.0	0	.02	0.22	0	0.05	.0002	.0022
1978	Sanford	Public supply	2.2	0.8	0	.03	0.25	0	Trace	.0018	.0006
1979	Brownville Junction	Well	4.9	1.5	0.1	.01	1.22	0	0.32	.0012	.0010
1980	North Berwick	Public supply	2.6	0.4	1.2	.16	0.27	0	0	.0010	.0036
1981	Wilton	Public supply	3.0	1.1	0.7	.35	0.12	0	0	.0018	.0094
1982	Old Town	Public supply	2.9	0.2	5.0	1.76	0.12	0	0	.0020	.0136
1983	Madison	Public supply	2.1	0.5	2.2	.51	0.07	0	Trace	.0014	.0098
1984	Brewer	Public supply	2.4	0.2	5.0	2.02	0.17	0	Trace	.0022	.0122
1985	Biddeford	Public supply	3.0	0.2	0.1	.14	0.20	0	0	.0010	.0034
1986	Dexter	Well	7.0	3.0	0	.05	0.16	0	0.03	.0010	.0010
1987	Lisbon Falls	Well	10.0	3.8	0.3	.07	2.67	.002	0.52	.0004	.0050
1988	Norway	Well	8.6	5.7	0	.07	0.92	.001	0.30	.0002	.0042
1989	Millinocket	Public supply	3.8	0.3	4.8	.87	0.08	0	0	.0016	.0112
1990	Machias	Public supply	2.3	0.05	6.4	1.00	0.35	0	0	.0014	.0102
1991	Yarmouth	Public supply	3.9	1.4	0.4	.17	0.38	0	0.09	.0002	.0030
1992	Sullivan	Spring	2.9	0.3	0	.18	0.47	0	Trace	.0006	.0036
1993	Patten	Public supply	6.6	3.0	0.1	.18	0.25	.0003	0.03	.0018	.0036
1994	Fryeburg	Spring	2.0	0.3	0.1	.26	0.10	0	0.04	.0022	.0054
1995	Fryeburg	Well	1.1	0.4	0.2	.26	0.17	0	0.02	.0016	.0100
1996	Bath	Public supply	2.2	0.05	8.0	1.43	0.47	0	0	.0014	.0218
1997	Bath	Public supply	1.3	0.2	2.5	.59	0.42	0	0	.0020	.0136
1998	Boothbay Harbor	Public supply	2.2	0.3	1.6	.40	0.81	0	0	.0014	.0168
1999	Bethel	Public supply	1.0	0.1	1.2	.46	0.10	0	0	.0018	.0042

## ANALYSES OF SAMPLES OF WATER—Continued.

Number.	Town or City.	Source.	Hardness.	Alkalinity.	Color.	Oxygen consumed.	Chlorine.	Nitrite.	Nitrate.	AMMONIA.	
										Free.	Albuminoid.
2000	Auburn	Public supply	1.9	0.6	0.3	.15	0.22	0	0	.0012	.0116
2001	Kowhegan	Public supply	2.0	0.3	2.0	.35	0.22	Trace	0.06	.0322	.0094
2002	Bristol	Well	5.5	3.3	0.4	.17	2.07	.0036	0.09	.0372	.0086
2033	Kowhegan	Kennebec R.	2.6	0.5	3.7	1.31	0.13	0	Trace	.0326	.0150
2034	Dexter	Well	13.8	10.0	0	.05	1.09	0	0.35	.0302	.0030
2035	Ellsworth	Spring	3.1	0.7	0.4	.15	0.32	0	0.13	.0314	.0100
2036	Union	Public supply	3.8	0.2	1.0	.15	0.50	0	0	.0314	.0088
2037	Lewiston	Public supply	3.0	0.2	0.2	.16	0.32	0	0	.0306	.0090
2033	Fryeburg	Public supply	1.5	0.4	0.3	.15	0.11	0	0	.0302	.0293
2039	Castine	Public supply	5.0	1.1	0.8	.13	0.75	0	0.05	.0361	.0046
2010	Bangor	Public supply	2.2	acid	2.7	1.06	0.10	0	Trace	.0018	.0124
2011	Bucksport	Public supply	3.0	0.2	8.0	1.1	0.40	0	0	.0346	.0300
2012	Damariscotta	Public supply	1.3	0.3	1.7	.30	0.40	0	0	.0303	.0120
2013	Brewer	Public supply	2.2	0.05	6.7	1.88	0.12	0	Trace	.0024	.0196
2014	Winterport	Public supply	4.4	0.7	0.6	.20	0.32	0	0	.0018	.0050
2015	Augusta	Public supply	2.2	0.5	2.1	.43	0.17	0	0	.0018	.0112
2016	Dexter	Well	17.6	7.0	0	.20	6.65	.0093	1.00	.0378	.0094
2017	Hollis	Pond	1.5	0.2	2.4	.62	0.25	Trace	0	.0022	.0426
2019	Farmington	Public supply	2.0	0.5	0.6	.29	0.10	0	0	.0018	.0096
2019	Bridgton	Public supply	1.9	0.3	1.6	.39	0.17	0	0	.0024	.0132
2020	Brunswick	Public supply	3.1	1.1	0	.07	0.47	0	0.01	.0008	.0324
2021	South Berwick	Public supply	2.8	0.1	7.7	1.32	0.29	Trace	0.01	.0038	.0202
2022	Milford	Spring	9.3	3.1	0.2	.16	4.55	.0030	1.90	.0108	.0030
2023	Norway	Public supply	2.0	0.2	1.1	.34	0.15	0	0	.0032	.0134
2024	Ellsworth	Public supply	2.0	0.2	3.6	.54	0.28	0	0	.0014	.0088

2025	Rumford	Public supply	1.9	0.7	2.7	.80	0.35	.0003	0.05	.0050	.0058
2026	Auburn	Spring	4.4	1.5	0	.01	0.17	.0005	0.04	.0003	.0018
2027	Saugerville	Public supply	3.2	1.3	0	.10	0.15	0	Trace	.0002	.0038
2028	Stonington	Well	8.7	0.1	1.3	.84	4.17	Trace	0.90	.0022	.0144
2029	Farmington	Spring	1.5	0.3	0	.05	0.14	0	0	.0002	.0036
2030	Friendship	Public supply	4.1	0.4	1.2	.04	1.73	0	0.29	.0074	.0024
2031	Friendship	Springs	2.2	Acid	15.0	2.64	1.25	0	Trace	.0106	.0498
2032	Seal Harbor	Public supply	1.9	0.3	0.4	.26	0.67	0	0	.0012	.0074
2033	Livermore Falls	Public supply	1.2	0.4	0.4	.22	0.15	0	0	.0030	.0143
2034	North Bridgton	Well	4.5	1.8	0	.07	0.12	Trace	0.04	.0020	.0034
2035	Brewer	Well	1.9	1.1	0	.06	0.36	0	0	.0010	.0022
2036	North Bridgton	Well	4.4	0.2	0.2	.13	0.47	0	0.29	.0020	.0076
2037	Vassalboro	Well	14.4	7.5	0	.04	0.25	0	0.06	.0010	.0032
2038	Hiram	Fountain	1.4	0.2	0	.05	1.72	Trace	0.50	.0046	.0038
2039	Hiram	Spring	1.6	0.3	0	.01	0.13	0	0	.0006	.0018
2040	Springvale	Public supply	2.3	0.2	0.6	.11	0.23	0	0	.0792	.0062
2041	Lisbon Falls	Spring	1.8	0.4	0	.01	0.30	0	0	.0002	.0036
2042	Augusta	Spring	9.7	5.2	0	.04	2.02	Trace	0.17	.0424	.0044
2043	Hollis	Brook	1.6	1.0	0	.12	0.20	0	0	.0002	.0024
2044	Dayton	Spring	2.7	1.5	0.1	.27	0.22	0	0	.0006	.0032
2045	Woodland	Public supply	1.5	0.3	5.5	1.35	0.12	0	Trace	.0042	.0138
2046	Lubec	Public supply	5.5	4.5	0	.02	1.25	Trace	0.10	.0004	.0028
2047	Houlton	Public supply	3.6	2.8	2.7	.37	0.15	Trace	Trace	.0012	.0094
2048	Farmington	Well	3.0	1.2	0	.19	0.35	Trace	0	.0004	.0046
2049	Warren	Public supply	5.8	5.3	0.6	.13	0.50	Trace	0.01	.0002	.0044
2050	Mechanic Falls	Public supply	2.5	1.2	2.4	.47	0.27	Trace	Trace	.0048	.0090
2051	Mechanic Falls	Public supply	2.9	1.1	2.4	.47	0.27	Trace	Trace	.0046	.0096
2052	Bar Harbor	Public supply	1.6	0.5	0.4	.18	0.60	0	0	.0003	.0084
2053	Gorham	Public supply	1.5	0.3	0.8	.23	0.15	0	Trace	.0006	.0032
2054	Dover	Public supply	2.3	1.0	4.3	.31	0.15	0	Trace	.0014	.0120
2055	Van Buren	Public supply	5.2	4.0	0.8	.22	0.12	0	0.01	.0006	.0032
2056	Caribou	Public supply	4.4	2.5	4.6	.32	0.12	0	Trace	.0020	.0144
2057	Brooks	Public supply	2.2	1.4	0	.02	0.22	0	0.03	.0002	.0018
2058	St. George	Spring	2.3	0.3	0.3	.13	1.33	0	0.09	.0008	.0072
2059	St. George	Well	1.5	0.2	0	.09	1.55	0	0	.0002	.0046
2060	South Paris	Well	32.9	27.0	0.2	.18	0.73	.0020	0.55	.0006	.0074
2061	Fort Fairfield	Well	40.6	29.2	0.4	.10	1.23	.0030	0.70	.0040	.0060
2062	Brewer	Public supply	3.0	0.4	5.0	2.00	0.15	0	Trace	.0016	.0163
2063	Eastport	Public supply	2.6	0.7	1.5	.51	0.50	0	0	.0024	.0144
2064	Baldwin	Well	8.6	0.3	0	.17	3.67	.0005	2.50	.0038	.0102

## ANALYSES OF SAMPLES OF WATER—Continued.

Number.	Town or city.	Source.	Hardness.	Alkalinity.	Color.	Oxygen consumed.	Chlorine.	Nitrite.	Nitrate.	AMMONIA.	
										Free.	Albuminoid.
2065	Strong	Public supply	3.0	1.2	4.5	.71	0.07	0	0	.0020	.0162
2066	Skowhegan	Kennebec river	2.9	1.1	2.5	1.02	0.07	0	Trace	.0022	.0184
2067	Skowhegan	Public supply	1.9	1.0	1.7	.85	0.22	0	0.05	.0026	.062
2068	Presque Isle	Public supply	16.2	12.5	0	.17	0.30	.0003	0.01	.0014	.0042
2069	Brownfield	Spring	1.6	0.9	0	.22	0.07	.0006	0	.0012	.0078
2070	Brownville	Well	9.1	4.0	0	.02	2.71	.0020	0	.0164	.0022
2071	Monson	Spring	5.9	3.5	0	.01	0.17	0	0.05	0	.0024
2072	Bangor	Well	12.2	8.5	0.2	.02	2.22	.0010	0.37	.0036	.0008
2073	Madison	Public supply	2.2	1.3	2.4	.57	0.07	0	0	.0020	.0114
2074	Biddeford	Well	3.5	1.1	0	.01	2.82	0	0.07	.0010	.0012
2075	Madison	Spring	4.5	2.6	0	.02	0.30	0	0.02	.0010	.0012
2076	Cumberland	Spring	1.5	0.6	0	.06	0.31	0	0	.0006	.0052
2077	Berwick	Well	3.6	1.2	0	.03	0.42	0	0.07	.0004	.0052
2078	Berwick	Public supply	2.6	0.9	0.3	.05	0.68	0	0.04	.0014	.0042
2079	Cumberland	Spring	1.6	0.9	0	.04	0.31	0	0	.0004	.0028
2080	Northeast Harbor	Public supply	2.2	0.5	2.2	.49	0.83	0	0	.0022	.0134
2081	York	Public supply	2.0	0.6	3.2	.52	0.70	0	Trace	.0042	.0152
2082	Brownfield	Well	1.9	0.7	0	.10	0.20	0	0.05	.0004	.0038
2083	Rumford	Well	1.7	0.8	0	.06	0.06	0	0	.0002	.0018
2084	Bar Mills	Well	16.2	12.0	0	.07	0.63	.0010	0.31	.0008	.0044
2085	Farmington	Well	2.5	0.7	0	.06	0.12	0	0	.0002	.0036
2086	Farmington	Well	5.3	3.3	0	.03	0.14	0	0	0	.0036
2087	Dixfield	Spring	3.2	1.5	0.2	.03	0.90	0	0.26	0	.0010
2088	Brownville	Well	7.12	5.1	0.2	.04	0.85	.0020	0.30	.0010	.0080
2089	Canton	Well	3.7	2.3	0.6	.08	0.30	0	0.01	0	.0042

2090	Dexter	Well	13.0	8.0	0.2	.02	1.30	.0004	0.50	.0030	.0016
2091	Farmington	Public supply	2.5	2.1	0.2	.17	0.12	0	0	.0014	.0076
2092	Denmark	Spring	1.4	1.0	0	.08	0.10	0	0	.0004	.0024
2093	Harpswell	Well	1.9	0.6	0	.07	0.40	0	0.05	.0002	.0024
2094	Peaks Island	Public supply	2.3	1.8	0	.17	1.60	.0040	0.12	.0018	.0084
2095	Peaks Island	Public supply	16.0	10.0	0.3	.08	2.30	.0010	0.06	.0002	.0028
2096	Peaks Island	Public supply	16.6	9.9	0.3	.05	3.45	.0010	0.11	.0002	.0030
2097	Vinalhaven	Pond	14.1	0.4	6.6	1.07	31.50	0	0	.0016	.0388
2098	Vinalhaven	Pond	26.8	7.8	4.8	2.35	1430.0	0	0	.0152	.0542
2099	Fort Fairfield	Public supply	13.1	10.1	0.6	.17	0.98	0	0.05	.0002	.0026
2100	Augusta	Spring	6.8	2.9	0	.06	1.92	0	0.33	.0008	.0030
2101	Augusta	Spring	7.3	3.2	0	.10	1.40	Trace	0.27	.0028	.0048
2102	Augusta	Spring	3.5	2.8	0	.10	0.50	Trace	Trace	.0018	.0038
2103	Old Town	Well	6.9	2.1	0.5	.16	1.60	.0050	1.00	.1518	.0148
2104	West Fryeburg	Well	2.6	0.2	0	.17	0.05	0	0.03	0	.0030
2105	Kezar Falls	Spring	3.0	1.1	0	.08	0.09	0	0	0	.0018
2106	Vanceboro	Well	24.2	21.0	0.1	.22	7.55	.0100	2.00	.0310	.0100
2107	West Harpswell	Spring	1.8	6.4	0.1	.13	1.27	0	0.03	.0024	.0074
2108	North Gorham	Spring	3.4	1.5	0	.02	0.20	0	0.01	.0012	.0004
2109	Portland	Well	1.9	0.6	0.9	.27	0.15	0	0	.0010	.0070
2110	North Windham	Well	4.0	1.8	0	.04	0.60	.0003	0.15	.0002	.0036
2111	North Windham	Spring	2.8	1.3	0	.01	0.17	0	0	.0006	.0010
2112	Farmington	Spring	4.5	2.4	0	.04	0.20	0	0	.0012	.0136
2113	Edgecomb	Well	5.1	0.8	0.1	.10	1.50	0	0.45	.0002	.0052
2114	Hallowell	Spring	14.0	8.2	1.0	.28	2.45	.0015	0.10	.0030	.0052
2115	Farmington	Spring	4.3	1.9	0	0	0.32	0	0.01	0	.0014
2116	Farmington	Well	6.2	2.0	0	.05	0.82	.0003	0.55	0	.0022
2117	Naples	Well	3.2	1.5	0	.08	0.52	0	0.02	.0002	.0032
2118	Castine	Public supply	4.9	2.1	0.2	.09	0.62	0	0.06	.0038	.0042
2119	Henderson	Well	5.7	1.6	0.1	.22	1.57	Trace	0.52	.0010	.0034
2120	Cornish	Well	20.6	0.3	0	.19	15.30	.0010	7.50	0	.1644
2121	Cornish	Well	2.9	0.2	3.3	.78	0.38	0	0	.0020	.0114
2122	Cornish	Well	6.1	1.4	0	.15	1.87	0	0.60	.0006	.0048
2123	Skowhegan	Well	5.9	0.7	0	.02	3.30	0	1.50	0	.0024
2124	Searsmont	Spring	2.5	1.2	0	0	0.75	0	0.12	0	.0016
2125	Danforth	Public supply	8.8	5.1	1.3	.30	0.43	0	0.14	.0002	.0062
2126	North Dexter	Spring	5.7	4.0	0	.02	0.20	0	0.10	.0004	.0034
2127	South Waterboro	Well	2.0	0.4	0.1	.07	0.40	0	0.06	.0018	.0030
2128	Bryant's Pond	Spring	2.2	1.0	0	.08	0.12	0	0.01	.0006	.0042
2129	Bryant's Pond	Well	7.2	1.3	0	.16	9.15	.0003	0.55	.0008	.0062

## ANALYSES OF SAMPLES OF WATER—Continued.

Number.	Town or City.	Source.	Hardness.	Alkalinity.	Color.	Oxygen consumed.	Chlorine.	Nitrite.	Nitrate.	AMMONIA.	
										Free.	Albuminoid.
2130	Bryant's Pond.....	Well.....	3.0	1.1	0.1	.06	0.06	0	0.01	.0004	.0040
2131	Bryant's Pond.....	Well.....	11.2	2.0	0.1	.27	6.20	.0090	1.13	.0086	.0106
2132	Kezar Falls.....	Well.....	12.5	3.1	0.1	.07	3.35	.0007	2.13	.0014	.0036
2133	Kezar Falls.....	Well.....	5.4	0.4	0.1	.11	3.90	Trace	1.40	.0050	.0064
2134	Kezar Falls.....	Well.....	5.9	0.6	0	.06	1.75	.0020	0.75	.0028	.0024
2135	Hallowell.....	Spring.....	6.8	2.0	0.5	.14	2.20	Trace	0.18	.0002	.0036
2136	Dixfield.....	Spring.....	5.2	3.0	0	.03	0.10	0	0.01	0	.0008
2137	Jay.....	Well.....	4.3	1.3	0.7	.02	0.70	.0004	0.20	.0048	.0010
2138	Hallowell.....	Cistern.....	2.1	1.2	0.3	.05	0.15	.0004	0.03	.0138	.0036
2139	Shawmut.....	Well.....	4.3	3.4	0	.09	0.09	0	0.01	.0008	.0012
2140	E. Lamoine.....	Well.....	5.3	2.1	2.7	.09	2.67	0	0.02	.0058	.0022
2141	St. George.....	Cistern.....	3.5	1.2	2.8	.71	0.70	0	0	.0022	.0122
2142	Houlton.....	Spring.....	10.1	6.5	0	.03	0.09	0	0.10	0	.0006
2143	Skowhegan.....	Kennebec R.....	2.9	1.1	3.5	1.07	0.07	.0003	0.003	.0016	.0112
2144	Milbridge.....	Well.....	4.3	3.2	1.0	.27	0.90	Trace	0.02	.0014	.0046
2145	Skowhegan.....	Spring.....	4.5	0.3	0	.05	1.90	Trace	0.75	0	.0016
2146	Frankfort.....	Spring.....	2.0	1.2	0	.03	0.22	Trace	0	0	.0012
2147	Bridgton.....	Spring.....	3.0	1.0	0.1	.15	0.15	0	0	0	.0025
2148	Harmony.....	Well.....	5.4	2.9	0.7	.36	1.62	.0004	0.50	.0022	.0090
2149	Lewiston.....	Spring.....	3.1	1.5	0	.05	0.15	0	0.03	0	.0050
2150	Lewiston.....	Well.....	7.2	4.2	5.2	1.03	1.90	.0007	0.35	.0062	.0372
2151	Auburn.....	Spring.....	5.9	3.1	0	.07	0.35	0	0.04	0	.0020
2152	Wayne.....	Well.....	2.2	1.2	0	.03	0.24	0	0.03	.0002	.0006
2153	Rangeley.....	Well.....	6.8	2.8	0.1	.09	2.73	Trace	0.33	.0002	.0032
2154	Skowhegan.....	Public supply.....	2.3	0.6	2.2	.33	0.22	0	0.05	.0016	.0042

2155	W. Paris	Spring	2.2	1.1	0	.05	0.10	0	0	.0002	.0022
2156	No. Yarmouth	Spring	3.2	1.0	0	.11	0.50	Trace	0.02	.0030	.0038
2157	No. Yarmouth	Spring	2.5	0.3	0	.07	0.43	Trace	0	.0012	.0036
2158	No. Yarmouth	Spring	3.7	2.0	0	0	0.27	Trace	0.02	0	.0022
2159	Falmouth	Well	8.1	2.4	0.2	.21	2.45	Trace	0.34	.0008	.0092
2160	Waldoboro	Well	2.9	1.0	0.8	.27	0.57	.0002	0.20	.0076	.0184
2161	Vassalboro	Well	6.3	4.1	0	.10	1.77	0	0.53	0	.0044
2162	Wiscasset	Well	8.8	1.2	0.3	.15	5.35	.0010	1.70	.0044	.0072
2163	Stonington	Pond	1.8	acid	4.9	.95	1.03	0	0	.0026	.0352
2164	Mechanic Falls	Public supply	2.9	1.1	1.6	.37	0.27	0	Trace	.0016	.0086
2165	Bar Harbor	Public supply	1.3	0.3	0.6	.17	0.62	0	0	.0122	.0134
2166	Bar Harbor	Public supply	1.4	0.2	0.6	.22	0.62	0	0	.0008	.0080
2167	Vassalboro	Well	9.8	8.8	0	.12	0.36	0	0.03	.0018	.0032
2168	Dixfield	Spring	2.2	1.3	0	.07	0.03	0	0.02	.0002	.0030
2169	Dixfield	Spring	3.0	1.5	0	.05	0.12	0	Trace	.0004	.0014
2170	Jay	Spring	12.4	7.10	0	.03	0.22	0	0.04	.0002	.0032
2171	Kezar Falls	Well	3.3	0.2	0	.02	1.20	.0003	0.87	.0002	.0026
2172	Acton	Well	5.2	1.0	0.1	.09	1.25	0	0.53	.0010	.0044
2173	Lisbon Falls	Well	4.4	1.6	0	.05	0.57	0	0.20	.0006	.0014
2174	Lisbon Falls	Well	5.9	1.2	0.5	.10	1.57	.0008	0.68	.0036	.0084
2175	Bryant's Pond	Spring	2.5	0.8	0	.03	0.07	0	0	.0004	.0014
2176	Bar Harbor	Spring	4.7	2.9	0	.01	1.20	0	0	0	.0016
2177	Searsport	Public supply	2.2	0.6	0.5	.21	0.27	0	0	.0016	.0098
2178	No. Yarmouth	Spring	4.5	1.1	0	.11	0.40	0	0.08	0	.0024
2179	Cumberland	Spring	1.9	acid	0	.10	0.40	0	0.01	.0008	.0034
2180	No. Yarmouth	Spring	1.3	0.2	0	.03	0.25	0	0.02	0	.0024
2181	No. Yarmouth	Well	2.9	0.5	0	.05	0.53	0	0.02	0	.0026
2182	Yarmouthville	Spring	4.5	1.8	0	.01	0.32	0	0.08	0	.0020
2483	No. Yarmouth	Well	2.3	0.6	0	.02	1.17	.0005	0.14	.0010	.0022
2184	Dixfield	Spring	2.0	0.3	0	0	0.37	0	0.22	0	.0014
2185	Brewer	Well	26.6	6.0	0	.08	6.83	.0003	1.75	.0012	.0032
2186	Brewer	Well	8.8	0.2	4.1	.48	5.53	.0015	Trace	.1292	.0964
2187	Norridgewock	Spring	1.5	0.4	0	.02	0.10	0	0.04	.0004	.0020
2188	Norridgewock	Spring	3.1	1.2	0	.01	0.50	0	0.17	0	.0048
2189	Augusta	Spring	9.8	7.3	0	.08	1.10	.0200	0.48	.0026	.0026
2190	Foxcroft	Well	20.5	5.2	0.1	.05	0.52	0	0.01	0	.0036
2191	Foxcroft	Public supply	3.6	0.2	3.5	.67	0.10	0	Trace	.0014	.0108
2192	Skowhegan	Well	4.2	0.8	0.6	.34	1.30	.0010	0.98	.0032	.0134
2193	Bryant's Pond	Well	3.2	0.2	4.5	1.58	0.43	0	0.10	.0046	.0154
2194	Bryant's Pond	Well	3.0	0.4	0	.09	1.47	0	0.30	0	.0042

ANALYSES OF SAMPLES OF WATER—Continued.

Number.	Town or City.	Source.	Hardness.	Alkalinity.	Color.	Oxygen consumed.	Chlorine.	Nitrite.	Nitrate.	AMMONIA.	
										Free.	Albuminoid..
2195	Bryant's Pond.....	Spring.....	3.0	1.0	0	.01	0.12	0	0	0	.0014
2196	Bryant's Pond.....	Well.....	5.9	1.3	0	.05	0.12	.0020	0.03	.0034	.0032
2197	Rumford.....	Well.....	8.2	1.1	0	.05	1.45	0	0.55	0	.0042
2198	Bryant's Pond.....	Well.....	5.6	2.2	0	.15	1.30	0	0.34	.0004	.0070
2199	Bryant's Pond.....	Well.....	4.4	1.0	0	.04	1.50	0	0.68	.0012	.0032
2200	Bryant's Pond.....	Well.....	2.5	0.4	1.0	.34	1.57	.0002	0.65	.0002	.0094
2201	Bryant's Pond.....	Well.....	4.6	2.0	2.0	.55	1.50	0	0.03	.0020	.0146
2202	Dixfield.....	Spring.....	5.0	2.0	0	.07	0.12	0	Trace	0	.0016
2203	Peru.....	Well.....	4.4	2.2	0	.09	0.10	0	0	0	.0080
2204	Fryeburg.....	Well.....	5.3	0.2	0	.11	0.40	.0002	0.21	.0014	.0032
2205	Cornish.....	Spring.....	1.3	1.1	0	.02	0.17	0	0.01	.0002	.0028
2206	Farmington.....	Well.....	6.9	1.0	0	.08	0.72	.0035	0.98	.0012	.0034
2207	Farmington.....	Well.....	4.9	1.3	0	.02	0.15	0	0.01	0	.0020
2208	Minot Ctr.....	Spring.....	5.9	3.5	0	.02	0.12	0	0	.0002	.0032
2209	Minot Ctr.....	Well.....	8.8	4.1	0	.04	0.35	0	0.20	0	.0040
2210	Lisbon Falls.....	Well.....	7.8	1.5	0	.21	3.00	.0003	2.75	.0006	.0076
2211	Lisbon Falls.....	Well.....	6.5	1.7	0.9	.20	23.45	.0015	20.00	.0014	.0206
2212	Kezar Falls.....	Well.....	5.3	0.7	0	.12	0.29	0	0.05	.0008	.0056
2213	Bucksport.....	Well.....	10.9	1.1	0.1	.28	1.88	0	0.29	.0008	.0098
2214	So. Paris.....	Spring.....	4.8	0.3	0.4	.19	0.17	0	0.01	.0002	.0028
2215	Cornish.....	Spring.....	2.6	0.7	0	.16	0.14	0	0.03	.0002	.0036
2216	Searsmont.....	Spring.....	3.8	1.1	0	.02	0.72	0	0.13	.0002	.0022
2217	Bingham.....	Spring.....	6.2	3.5	0	.02	0.40	0	0.18	.0012	.0054
2218	N. Windham.....	Spring.....	3.4	1.9	0	.04	0.12	Trace	0	.0002	.0030
2219	Falmouth.....	Spring.....	1.6	0.3	1.5	.27	0.32	0	0	.0006	.0040



WORK IN THE LABORATORY OF HYGIENE.

2220	Cumberland	Well	8.4	0.2	2.9	1.10	10.70	.0200	3.65	.5440	.0756
2221	Acton	Spring	5.2	0.2	0	.06	0.50	.0008	0.55	.0020	.0070
2222	Dixfield	Well	2.1	0.6	0	.04	0.80	0	0.06	.0006	.0086
2223	Peru	Well	2.2	0.3	0	.06	0.17	0	0	.0012	.0022
2224	Peru	Well	1.7	0.5	0.4	.20	0.12	0	0	.0006	.0044
2225	Farmington	Well	3.7	1.7	0	.04	0.27	0	0.04	.0002	.0026
2226	Kezar Falls	Spring	3.8	0.5	0	.03	0.40	0	0.06	.0012	.0038
2227	Farmington	Spring	8.0	0.7	0	.01	0.18	0	0.03	0	.0018
2228	Gardiner	Public supply	3.5	1.0	2.4	.44	0.20	0	0	.0026	.0102
2229	Hallowell	Public supply	2.8	2.7	1.6	.32	0.22	0	Trace	.0008	.0078
2230	West Paris	Spring	1.6	1.2	0	.01	0.10	0	Trace	0	.0014
2231	Skowhegan	Well	5.7	1.7	0	.13	0.57	0	0.02	.0006	.0100
2232	Strong	Well	3.1	1.3	0	.04	0.06	0	0.05	.0002	.0022
2233	Brewer	Well	15.8	1.8	0	.08	3.20	0	0.39	.0016	.0024
2234	Brewer	Well	26.2	1.6	0.1	.05	5.00	.0010	2.05	.0064	.0082
2235	Buckfield	Public supply	2.2	1.3	0.7	.18	0.13	0	0	.0036	.0106
2236	Kennebunk	Public supply	1.5	0.9	7.9	1.05	0.37	0	0	.0014	.0106
2237	Winter Harbor	Public supply	1.6	0.6	3.9	.67	0.90	0	0	.0022	.0102
2238	Richmond	Public supply	2.6	1.8	2.8	.77	0.25	0	0	.0038	.0114
2239	Madison	Public supply	2.0	1.6	3.1	.61	0.07	0	0	.0012	.0084
2240	Waterville	Public supply	3.2	1.5	0.7	.27	0.22	Trace	0	.0014	.0116
2241	Augusta	Public supply	2.6	1.1	1.5	.42	0.17	0	0	.0006	.0130
2242	Dixfield	Well	2.9	0.8	0	.09	0.22	0	0	.0014	.0050
2243	Dixfield	Well	3.0	0.7	0	.06	0.12	0	0	.0008	.0048
2244	Kezar Falls	Well	6.8	1.2	0	.09	2.92	0	1.88	.0010	.0078
2245	Raymond	Spring	3.2	1.8	0	.05	0.15	.0008	0.12	.0014	.0024
2246	Bangor	Public supply	2.7	0.6	2.7	.80	0.10	0	0	.0014	.0084
2247	Old Town	Public supply	3.0	1.4	5.2	1.11	0.10	0	0	.0012	.0148
2248	Sanford	Public supply	3.0	1.5	0	.04	0.25	0	0.02	.0008	.0024
2249	Winterport	Public supply	3.2	2.1	0.8	.17	0.34	Trace	0.01	.0020	.0058
2250	Popsham	Spring	2.4	2.0	0.3	.13	0.96	0	0.07	.0004	.0042
2251	Waldoboro	Spring	4.9	1.2	1.2	.26	2.40	0	0.01	.0028	.0088
2252	Waldoboro	Well	4.6	1.3	0	.13	2.27	0	0.08	.0012	.0070
2253	Phillips	Public supply	3.0	0.7	2.8	.50	0.06	0	0	.0008	.0096
2254	Brunswick	Public supply	4.0	3.0	0	.16	0.45	0	0.02	.0008	.0022
2255	Brewer	Public supply	2.1	1.2	5.3	1.08	0.11	Trace	0	.0012	.0132
2256	Camden	Public supply	2.2	1.8	2.7	.23	0.42	0	0	.0014	.0062
2257	Biddeford	Public supply	1.9	1.5	0.2	.30	0.12	Trace	0	.0018	.0040
2258	Castine	Public supply	3.1	1.6	0.7	.09	0.65	Trace	0	.0012	.0096
2259	Bethel	Public supply	1.7	1.0	1.5	.35	0.06	0	0	.0006	.0052

ANALYSES OF SAMPLES OF WATER—Continued.

Number.	Town or City.	Source.	Hardness.	Alkalinity.	Color.	Oxygen consumed.	Chlorine.	Nitrite.	Nitrate.	AMMONIA.	
										Free.	Albuminoid.
2260	Millinocket.....	Public supply.....	2.9	2.0	4.5	.78	0.03	0	0	.0006	.0110
2261	Oakland.....	Public supply.....	3.1	1.2	1.8	.40	0.17	0	0	.0014	.0104
2262	Northport.....	Well.....	1.9	1.4	1.0	.06	0.67	0	0	.0002	.0052
2263	Dover.....	Public supply.....	2.8	1.2	3.1	.52	0.09	0	Trace	.0022	.0120
2264	Pittsfield.....	Public supply.....	4.0	1.1	4.0	.72	0.10	0	0	.0020	.0132
2265	Eastport.....	Public supply.....	2.8	0.9	2.8	.51	0.40	0	0	.0014	.0124
2266	Guilford.....	Pond.....	4.5	2.4	0.7	.31	0.10	0	0	.0062	.0144
2267	Acton.....	Spring.....	2.2	1.0	12.0	1.40	0.07	0	0	.0014	.0132
2268	Acton.....	Well.....	3.0	1.5	0.2	0	0.07	0	0.03	.0006	.0022
2269	Peru.....	Well.....	2.1	1.0	0.9	.42	0.10	0	Trace	.0023	.0106
2270	Peru.....	Well.....	2.4	2.2	0	.10	0.08	0	0.01	.0016	.0110
2271	Oakland.....	Well.....	7.9	6.1	6.6	1.23	2.43	.0100	0.22	.0090	.0468
2272	Bryant's Pond.....	Spring.....	1.9	1.4	0.3	.16	0.08	0	0.01	.0018	.0088
2273	Newfield.....	Well.....	3.4	1.8	0	.05	0.17	0	0.01	.0004	.0012
2274	Waldoboro.....	Well.....	3.6	2.2	0.7	.23	0.95	0	0.01	.0010	.0076
2275	Greenville.....	Well.....	4.8	0.9	0	.11	1.35	.0060	0.33	.0008	.0030
2276	Lisbon Falls.....	Spring.....	12.5	1.9	0.2	1.1	3.80	.0020	1.25	.0054	.0036
2277	Ellsworth.....	Public supply.....	1.9	0.7	3.4	.56	0.25	0	0	.0012	.0102
2278	Lewiston.....	Public supply.....	2.7	0.8	0.6	.18	0.20	0	0	.0018	.0078
2279	Auburn.....	Public supply.....	2.8	1.2	0.6	.19	0.20	0	0	.0014	.0078
2280	North Bridgton.....	Well.....	2.1	1.5	0	.09	0.45	0	0.01	.0008	.0054
2281	Kingfield.....	Public supply.....	1.6	1.3	2.2	.44	0.06	0	0	.0004	.0076
2282	Machata.....	Public supply.....	1.5	0.6	10.0	.38	0.20	0	0	.0014	.0096
2283	Lisbon Falls.....	Well.....	1.7	1.2	0	.01	0.39	0	0.05	.0006	.0020
2284	Lisbon Falls.....	Well.....	3.3	1.6	0.9	.22	6.20	.0050	1.13	.2826	.0850

WORK IN THE LABORATORY OF HYGIENE.

2285	Damariscotta	Public supply	1.5	1.0	1.3	.46	0.40	0	0	.0014	.0102
2286	Bridgton	Public supply	1.8	0.9	2.6	.78	0.13	0	0	.0014	.0102
2287	Yarmouth	Public supply	3.4	2.6	0	.10	0.34	0	0.10	.0002	.0042
2288	West Peru	Well	2.6	1.4	0	.08	0.13	0	0.02	.0012	.0024
2289	Gorham	Public supply	1.5	0.6	1.1	.29	0.15	0	Trace	.0010	.0072
2290	Norway	Public supply	3.6	1.0	1.5	.36	0.11	0	0	.0020	.0112
2291	Lubec	Public supply	7.5	4.9	0.2	.05	1.25	0	0.13	.0002	.0024
2292	Houlton	Public supply	3.6	2.5	4.4	.69	0.07	0	0	.0018	.0100
2293	Warren	Public supply	2.2	1.0	2.2	.38	0.44	0	0	.0006	.0102
2294	Springvale	Public supply	1.6	0.6	1.6	.23	0.23	0	0	.0442	.0024
2295	Bath	Public supply	2.1	0.5	7.0	.94	0.35	0	0	.0010	.0126
2296	Bath	Public supply	2.2	1.1	2.3	.44	0.35	0	0	.0008	.0116
2297	Dixfield	Public supply	1.7	0.7	3.7	.62	0.05	0	0	.0006	.0084
2298	Rumford	Public supply	4.7	2.5	4.8	.38	0.32	.0003	0.05	.0060	.0054
2299	West Peru	Public supply	2.3	1.8	0	.10	0.17	0	0.04	.0008	.0046
2300	Fryeburg	Public supply	1.5	0.6	0.5	.15	0.08	0	0.04	.0008	.0052
2301	Farmington	Public supply	3.0	1.7	0.3	.17	0.08	0	0	.0004	.0072
2302	Fryeburg	Well	3.0	1.5	0	.02	0.17	0	0.02	.0002	.0038
2303	Boothbay Harbor	Public supply	1.8	1.3	1.5	.33	0.67	0	0	.0014	.0116
2304	Presque Isle	Public supply	7.4	6.0	2.3	.50	0.20	Trace	0.04	.0012	.0094
2305	Seal Harbor	Public supply	2.1	1.3	0.5	.18	0.65	0	0	.0012	.0080
2306	Woodland	Public supply	2.1	0.6	5.9	1.03	0.10	0	0	.0016	.0152
2307	Patten	Public supply	6.2	3.0	0.3	.13	0.22	Trace	0.08	.0008	.0048
2308	Farmington	Spring	2.3	1.2	0	.11	0.12	0	0	0	.0060
2309	Dixfield	Well	1.9	0.7	0.9	.23	0.15	0	0	.0022	.0046
2310	West Peru	Spring	1.8	1.7	0	.07	0.10	0	0	.0008	.0046
2311	Turner Center	Well	3.0	1.2	0.9	.25	0.10	0	Trace	0	.0054
2312	Fort Fairfield	Public supply	12.3	9.2	0.3	.23	0.12	0	0.04	.0002	.0026
2313	Brooks	Public supply	3.6	1.6	0	.08	0.25	0	0.04	0	.0022
2314	Caribou	Public supply	3.3	1.2	5.0	1.06	0.05	0	0	.0018	.0142
2315	Skowhegan	Spring	7.4	3.6	12.0	2.23	1.60	0	1.58	.0024	.0320
2316	West Peru	Well	1.3	1.3	0	.01	0.12	0	Trace	.0002	.0014
2317	West Peru	Well	3.3	1.8	0	.03	0.11	0	0.05	0	.0024
2318	West Peru	Well	3.3	3.2	0	.11	1.23	0	0.19	.0004	.0058
2319	West Peru	Well	1.9	0.7	0	.05	0.15	0	0	0	.0014
2320	Woodfords	River	3.1	1.5	3.6	.74	0.35	0	0	.0012	.0178
2321	South Berwick	Public supply	3.0	1.0	6.0	.89	0.25	0	0	.0014	.0194
2322	Livermore Falls	Public supply	1.9	0.7	0.6	.16	0.15	0	0	.0010	.0090
2323	Berwick	Public supply	3.9	1.2	1.5	.20	0.30	0	0	.0006	.0048
2324	Bucksport	Public supply	3.0	0.9	4.4	.69	0.30	0	0	.0016	.0146

ANALYSES OF SAMPLES OF WATER—Continued.

Number.	Town or city.	Source.	Hardness.	Alkalinity.	Color.	Oxygen consumed.	Chlorine.	Nitrite.	Nitrate.	AMMONIA.	
										Free.	Albuminoid.
2325	Searsport.....	Public supply.....	2.1	0.8	0.7	.25	0.22	0	0	.0008	.0082
2326	Calais.....	Public supply.....	3.3	1.0	0.9	.26	0.20	0	0.02	.0002	.0054
2327	Friendship.....	Public supply.....	3.4	1.2	0	.11	1.20	0	0.15	.0026	.0054
2328	Belgrade.....	Well.....	5.7	3.0	0	.09	0.10	0	0.03	.0006	.0040
2329	Belgrade.....	Well.....	6.0	1.5	0	.01	1.45	Trace	0.78	.0004	.0020
2330	Mechanic Falls.....	Public supply.....	2.4	1.1	1.6	.36	0.22	0	Trace	.0022	.0100
2331	Mechanic Falls.....	Public supply.....	2.7	1.2	1.6	.34	0.22	0	Trace	.0012	.0086
2332	Wells Beach.....	Well.....	2.4	1.0	0	.01	0.43	0	0.24	0	.0020
2333	Kittery.....	Public supply.....	2.4	1.1	3.9	.49	0.55	0	0	.0008	.0154
2334	Bangor.....	Well.....	6.5	3.1	0.6	.50	1.00	.0010	Trace	.0196	.0174
2335	Bangerville.....	Public supply.....	4.6	3.0	0.4	.23	0.07	0	0	.0006	.0022
2336	Strong.....	Public supply.....	3.5	2.0	3.8	.63	0.04	0	0	.0012	.0080
2337	York.....	Public supply.....	2.4	2.1	1.9	.38	0.52	0	Trace	.0014	.0092
2338	Newport.....	Public supply.....	4.6	1.1	3.7	.58	0.14	0	0	.0016	.0128
2339	Bridgton.....	Well.....	3.3	3.0	0.3	.14	0.60	.0040	0.24	.0096	.0034
2340	Monmouth.....	Well.....	53.3	11.00	0.7	.30	14.80	.0080	0.67	.0828	.0132
2341	Guilford.....	Well.....	13.0	9.8	0	.07	0.35	0	0.19	.0004	.0020
2342	Bryant's Pond.....	Spring.....	2.9	0.7	0	.07	0.17	0	0	.0020	.0042
2343	Bryant's Pond.....	Well.....	6.5	4.5	0.7	.40	1.25	0	0.10	.0008	.0086
2344	Bryant's Pond.....	Spring.....	2.9	1.0	0	.02	0.17	0	0	.0020	.0026
2345	Guilford.....	Well.....	12.8	10.1	0	.08	0.35	0	0.19	.0004	.0022
2346	Guilford.....	Spring.....	6.5	2.1	0	.06	0.08	0	0.02	.0002	.0032
2347	Bryant's Pond.....	Well.....	3.9	2.2	0	.06	0.12	0	0.03	.0002	.0026
2348	Wilton.....	Public supply.....	3.3	1.3	0.2	.17	0.08	0	0	.0010	.0064
2349	Guilford.....	Pond.....	5.7	2.2	0.8	.29	0.06	0	0	.0122	.0212

2350	Presque Isle	Well	18.3	17.2	0.3	.09	1.45	.0010	0.41	.0148	.0150
2351	Madison	Spring	2.3	2.0	0.1	.04	0.17	0	0.08	.0020	.0034
2352	Norridgewock	Public supply	3.2	2.1	0.6	.21	0.37	.0003	0.05	.0044	.0043
2353	E. Millinocket	Public supply	10.2	9.2	0	.02	0.14	0	0	.0004	.0014
2354	Farmington	Well	11.9	2.6	0	.03	7.35	0	0.79	.0014	.0032
2355	Fanforth	Public supply	7.0	5.0	0.8	.13	0.27	0	0.11	.0004	.0055
2356	Farmington	Well	12.8	1.1	0.9	.37	4.37	.0003	1.80	.0020	.0132
2357	Brownville	Public supply	3.5	2.0	0	.11	0.12	0	0	.0003	.0030
2358	Brownville	Public supply	4.2	2.6	0.6	.11	0.12	0	0.03	.0003	.0036
2359	Brownville	Public supply	2.5	2.1	0	.04	0.06	0	0.03	.0014	.0013
2360	Brownville	Public supply	4.7	3.7	0.1	.05	0.09	0	0.03	.0003	.0018
2361	Lisbon Falls	Pond	2.7	1.6	2.3	.53	0.23	0	0	.0014	.0272
2362	Northeast Harbor	Public supply	1.5	0.6	1.7	.58	0.65	0	0	.0014	.0092
2363	Union	Public supply	3.3	2.1	0.7	.21	0.42	0	0	.0006	.0092
2364	E. Hiram	Spring	2.5	2.0	0	.11	0.15	0	0	.0004	.0050
2365	So. Brewer	Well	17.0	14.0	0	0	0.37	0	0.02	.0002	.0012
2366	Brewer	Well	27.0	16.5	0	.01	0.27	.0003	0.01	.0064	.0076
2367	E. Hiram	Well	4.1	2.3	0	0	0.10	0	0	0	.0026
2368	No. Berwick	Public supply	2.3	0.8	3.1	.56	0.20	0	0	.0014	.0088
2369	Bar Harbor	Public supply	1.2	0.2	0.6	.24	0.55	0	0	.0008	.0080
2370	No. Windham	Spring	4.6	1.2	0.1	.02	0.30	0	0.02	.0002	.0014
2371	Dover	Public supply	1.5	0.4	3.7	.86	0.64	0	0	.0012	.0106
2372	Bingham	Well	5.3	1.0	0	.16	1.87	0	1.62	.0010	.0108
2373	Dixfield	Spring	1.9	0.7	0.8	.24	0.04	0	0.03	.0008	.0058
2374	Bingham	Spring	4.0	2.0	0	.09	0.23	0	0.10	.0010	.0074
2375	Dixfield	Spring	1.5	0.5	1.4	.26	0.05	0	0.02	.0006	.0040
2376	Oakland	Well	8.8	3.1	0.2	.12	14.07	Trace	0.65	.0003	.0032
2377	Oakland	Well	17.4	8.0	0	.11	4.70	.0040	0.59	.0034	.0034
2378	New Gloucester	Spring	3.0	1.1	0.2	.15	0.52	0	0.07	.0014	.0074
2379	Orono	Public supply	2.0	0.9	5.4	.80	0.12	0	0	.0020	.0150
2380	Bingham	Well	7.4	4.3	0	.05	2.60	.0010	0.55	.0018	.0058
2381	Kittery	Well	11.9	5.6	0	.14	3.07	Trace	1.05	.0002	.0092
2382	Kennebunkport	Spring	7.6	4.2	0	.07	2.60	Trace	0	.0086	.0020
2383	Calais	Public supply	2.2	1.2	0.8	.32	0.20	0	0	.0004	.0106
2384	Belgrade	Cistern	4.5	1.1	3.9	1.06	0.20	.0050	0.09	.0052	.0206
2385	Camden	Spring	1.6	1.5	0	.05	0.40	0	0	.0004	.0020
2386	W. Peru	Spring	2.2	1.7	0.1	.09	0.25	Trace	0.06	.0002	.0162
2387	Newfield	Spring	4.0	2.5	0	.04	0.17	0	0.01	.0002	.0012
2388	W. Peru	Spring	2.7	1.1	0	.03	0.20	0	0.05	.0002	.0036
2389	W. Peru	Spring	2.7	2.0	0.1	.03	0.15	0	0.03	.0003	.0018

## ANALYSES OF SAMPLES OF WATER—Continued.

Number.	Town or city.	Source.	Hardness.	Alkalinity.	Color.	Oxygen consumed.	Chlorine.	Nitrite.	Nitrate.	AMMONIA.	
										Free.	Albuminoid.
2390	W. Peru	Spring	3.0	1.9	0	.03	0.12	0	0.04	.0002	.0026
2391	Cape Neddick	Well	4.5	2.5	0	.08	2.35	0	0.05	.0124	.0022
2392	Cape Neddick	Well	4.0	1.6	0	.06	2.75	0	0.05	.0002	.0042
2393	W. Peru	Spring	2.0	1.8	0	.03	0.14	0	Trace	.0010	.0022
2394	W. Peru	Well	1.6	0.9	0	.06	0.08	0	0	.0008	.0044
2395	W. Peru	Well	3.2	1.6	0.1	.09	0.07	0	0.01	.0006	.0042
2396	Mexico	Spring	6.5	3.1	0	.02	0.41	0	0.23	.0006	.0022
2397	W. Peru	Well	5.0	2.2	0	.01	3.13	0	0.28	0	.0044
2398	W. Peru	Well	3.0	1.4	0	.03	0.10	0	0.01	.0006	.0020
2399	No. Windham	Spring	7.4	4.7	0	.02	0.23	0	0	.0002	.0008
2400	Lisbon Falls	Well	6.4	5.6	0.6	.05	0.70	Trace	0	.0002	.0018
2401	Lisbon Falls	Well	6.3	4.3	0.2	.01	0.70	.0010	0.08	0	.0014
2402	Van Buren	Public supply	3.6	1.6	3.4	.67	0.04	0	0	.0014	.0080
2403	Bridgton	Well	3.0	1.3	0.1	.01	0.17	0	0.01	0	.0022
2404	Brownville	Spring	3.0	1.3	0	.04	0.17	0	0.05	.0010	.0022
2405	Vassalboro	Well	14.9	9.2	0.2	.17	2.38	.0050	2.40	.0084	.0106
2406	Kennebunkport	Spring	5.6	3.6	0	.04	2.60	0	0	.0046	.0030
2407	Dixfield	Well	2.8	1.2	0	.04	0.48	.0002	0.20	.0008	.0010
2408	Brownville	Well	3.0	2.1	0	.07	1.25	0	0.39	.0008	.0028
2409	Rumford	Well	1.6	0.3	0	.06	0.15	.0005	0.13	.0004	.0025
2410	Farmington	Well	4.1	2.0	0	.02	0.10	0	0.02	.0020	.0002
2411	Jay	Spring	2.5	2.2	0.8	.03	0.45	.0004	0.05	.0008	.0030
2412	Farmington	Well	9.7	6.0	0	.02	1.80	0	0.12	.0008	.0018
2413	Berry Mills	Well	5.2	1.7	0	.14	0.95	Trace	0	.0008	.0070
2414	Sanford	Well	3.3	0.3	21.0	.47	0.25	0	0	.1370	.0255

2415	Brunswick	Spring	8.9	4.2	0	.09	3.20	Trace	0.15	.0010	.0072
2416	Lisbon Falls	Spring	5.1	4.3	0.7	.04	0.35	0	0	.0006	.0012
2417	Lisbon Falls	Well	4.0	2.7	0	.01	0.67	0	0.04	0	.0032
2418	Sidney	Spring	10.9	3.0	9.0	.80	1.05	.0008	0.04	.0576	.0354
2419	Skowhegan	Well	52.9	0.3	0.8	.56	55.20	.0500	18.95	.0008	.3542
2420	Washington	Well	3.6	2.9	0.1	.31	0.32	0	0.10	.0020	.0072
2421	Auburn	Well	4.5	1.6	0.1	.07	0.47	.0015	0.44	.0066	.0036
2422	Hallowell	Well	14.9	7.0	0.1	.15	4.42	.0100	1.32	.0246	.0064
2423	Augusta	Well	3.2	1.2	0.1	.06	0.40	0	0.01	.0078	.0058
2424	Solon	Spring	6.0	1.6	0.4	.21	0.80	0	0.50	.0010	.0050
2425	Shiloh	Spring	2.8	0.9	0	.01	0.30	0	0.18	.0004	.0010
2426	Seal Harbor	Public supply	1.5	1.3	0.5	.20	0.65	0	0	.0014	.0070
2427	North Yarmouth	Spring	3.7	2.2	0.1	.02	0.45	0	0	.0016	.0018
2428	Solon	Well	16.4	9.6	1.2	.41	6.14	.0080	1.25	.1690	.0450
2429	Lisbon Falls	Public supply	6.9	4.2	0	0	0.50	0	0.05	.0002	.0024
2430	Searsport	Well	30.4	12.0	0.7	.22	6.90	.0040	1.38	.0008	.0114
2431	Norridgewock	Well	29.8	11.0	0.2	.05	6.00	.0010	2.22	.0022	.0048
2432	Wiscasset	Well	6.1	2.1	0.3	.11	2.35	.0005	0.34	.0040	.0070
2433	Farmington Falls	Spring	2.6	0.6	0	.04	0.12	0	0	.0006	.0012
2434	Belgrade Lake	Well	7.4	4.1	0.8	.18	0.60	.0003	0.24	.0024	.0064
2435	Belgrade Lake	Stream	2.8	1.1	1.0	.29	0.17	0	0	.0008	.0114
2436	West Newfield	Well	2.3	0.6	0	.06	0.17	0	0.02	.0002	.0020
2437	Dixfield	Spring	2.2	1.4	0	.06	0.03	Trace	0	0	.0018
2438	Oakland	Public supply	2.9	0.9	2.0	.43	0.17	0	0	.0010	.0118
2439	Oakland	Public supply	2.7	1.2	2.0	.46	0.17	0	0	.0014	.0114
2440	Milford	Spring	4.3	2.3	0	0	0.27	0	0.03	.014	.0004
2441	Milford	Well	17.9	1.7	0	.13	26.28	.0006	0.75	.0014	.0064
2442	Milford	Well	8.8	3.5	0	.10	7.00	0	0.58	.0014	.0040
2443	Milford	Well	11.9	5.6	0.2	.04	2.20	.0012	0.32	.0008	.0032
2444	Bryant Pond	Well	3.6	0.5	0	.05	0.52	.0006	0.18	.0074	.0042
2445	Bryant Pond	Well	7.2	1.7	0	.08	1.52	0	0.75	.0002	.0024
2446	Rockland	Well	4.4	2.5	0	.03	0.22	Trace	0.01	.0066	.0020
2447	Cooper's Mills	Well	6.4	2.2	0	.13	1.23	Trace	0.63	.0008	.0036
2448	Woodland	Spring	5.2	1.2	0.1	.04	1.30	.0004	0.38	.0010	.0020
2449	Woodland	Spring	4.3	2.5	0	.03	0.35	0	0	.0002	.0018
2450	Mt. Vernon	Well	4.1	2.7	0	.01	0.07	0	0	.0002	.0010
2451	Rumford	Spring	3.0	1.2	0.8	.13	0.12	0	0.01	.0004	.0014
2452	Rumford	Well	2.0	0.6	0	.05	0.25	Trace	0.11	.0004	.0006
2453	Searsport	Well	6.8	0.2	1.5	.65	10.50	0	0.03	.1870	.0054
2454	Sanford	Well	12.4	3.2	0	.05	2.43	Trace	0.62	.0008	.0054

ANALYSES OF SAMPLES OF WATER—Continued.

Number.	Town or City.	Source.	Hardness.	Alkalinity.	Color.	Oxygen consumed.	Chlorine.	Nitrite.	Nitrate.	AMMONIA.	
										Free.	Albuminoid.
2455	Turner	Spring	8.0	1.1	0.7	.10	0.30	Trace	0.18	.0006	.0068
2456	Dover	Public supply	2.8	0.6	6.5	1.06	0.07	0	0	.0026	.0186
2457	Skowhegan	Public supply	2.9	0.3	3.1	.94	0.07	Trace	0	.0020	.0146
2458	Rumford		6.0	1.7	0.2	.08	4.05	.0030	0.38	.0004	.0080
2459	Bailey Island	Well	8.9	0.7	2.3	.21	5.07	.0030	0.02	.0106	.0112
2460	Scarboro	Stream	4.4	0.6	5.0	.65	0.50	Trace	0.01	.0080	.0200
2461	Farmington	Well	2.1	0.9	0	.10	0.10	0	0	.0004	.0060
2462	Woodfords	Spring	6.0	2.3	0.4	.10	1.82	.0010	0.60	.0244	.0138
2463	Castine	Spring	6.0	4.0	0.4	.06	1.27	.0003	0.10	.0008	.0054
2464	Farmington	Spring	2.3	2.0	0	.03	0.11	0	0	.0010	.0028
2465	Augusta	Well	5.3	4.6	0	.02	0.12	0	0	.0206	.0088
2466	Rangleey	Well	3.8	3.6	0.2	.04	0.03	0	0.02	.0002	.0022
2467	Bowdoin	Well	4.4	2.7	0	.01	0.23	0	0	.0004	.0028
2468	Bridgton	Well	9.5	8.0	0.2	.07	1.27	Trace	0.10	.0090	.0024
2469	Farmington	Spring	2.2	0.6	0	.03	0.12	0	0	.0006	.0026
2470	Strong	Spring	3.0	1.8	0	.05	0.06	Trace	0.03	.0004	.0034
2471	Cumberland	Well	3.0	2.0	0.7	.04	0.35	.0005	0	.0002	.0018
2472	Cumberland	Spring	6.0	5.0	0.5	.06	0.60	0	0.08	.0060	.0072
2473	Mexico	Public supply	2.5	1.7	2.6	.39	0.12	0	0	.0008	.0084
2474	Mexico	Spring	4.4	2.7	0	0	0.45	0	0.12	.0004	.0010
2475	East Hiram	Well	28.0	2.0	0.2	.13	10.05	.0009	2.75	.0022	.0094
2476	Orono	Public supply	2.0	1.1	3.6	.54	0.17	0	0	.0020	.0166
2477	Gardiner	Public supply	2.4	1.6	2.2	.47	0.20	0	0	.0012	.0164
2478	Woodland	Public supply	2.2	0.5	5.2	.88	0.10	0	0	.0028	.0208
2479	Nobleboro	Well	3.0	1.1	2.0	.24	0.32	.0009	0.27	.0104	.0154



2480	Mt. Vernon	Spring	4.2	1.5	0	.16	0.10	Trace	0.03	.0004	.0022
2481	Skowhegan	Well	4.4	2.3	0	.06	0.82	0	0.03	.0002	.0048
2482	Madison	Public supply	2.3	1.0	2.7	.50	0.07	0	0	.0020	.0110
2483	Waterville	Public supply	2.5	1.2	1.0	.21	0.22	0	0	.0012	.0128
2484	York	Well	5.1	2.7	0	.02	1.30	0	0	0	.0082
2485	Orono	Well	10.9	9.6	0.5	.05	0.70	Trace	0.13	.0008	.0074
2486	Bangor	Public supply	3.0	1.1	0.7	.49	0.38	0	0	.0014	.0080
2487	Millinocket	Public supply	2.0	1.0	4.6	.76	0.05	0	0	.0020	.0126
2488	St. George	Spring	4.0	1.5	0	.13	1.52	0	0.06	.0010	.0086
2489	Norridgewock	Public supply	3.1	2.2	5.5	.22	0.37	0	0	.0014	.0086
2490	St. George	Well	5.9	2.0	0.4	.16	1.20	0	Trace	.0008	.0080
2491	Old Town	Public supply	2.5	0.8	5.5	1.03	0.10	0	0	.0022	.0158
2492	St. George	Well	8.5	6.2	3.7	.64	1.42	.0050	0	.0140	.0348
2493	St. George	Spring	1.9	1.3	2.8	.22	0.85	0	0	.0036	.0208
2494	Brewer	Public supply	2.3	0.9	5.7	1.04	0.07	Trace	0	.0040	.0180
2495	St. George	Well	3.2	2.0	0	.11	1.27	0	0.34	.0008	.0086
2496	Biddeford	Public supply	2.1	1.1	0	.09	0.40	0	0.04	.0002	.0044
2497	Pittsfield	Public supply	3.4	1.9	3.7	.56	0.09	0	0	.0008	.0178
2498	Machias	Public supply	1.9	1.0	6.5	.77	0.20	0	0	.0014	.0124
2499	Augusta	Public supply	2.3	1.2	2.2	.30	0.18	0	0	.0008	.0108
2500	Canton	Well	4.2	1.3	2.2	.35	1.45	Trace	0.05	.0004	.0114
2501	Bethel	Well	2.2	1.1	1.2	.05	0.09	Trace	0	.0084	.0070
2502	Oakland	Public supply	2.4	1.0	0.8	.30	0.15	0	0	.0014	.0123
2503	Bethel	Well	3.0	0.9	1.9	.04	0.32	Trace	0.35	.0012	.0040
2504	Stonington	Pond	1.3	0.3	8.8	1.18	1.30	0	0	.0020	.0346
2505	Hallowell	Public supply	3.4	1.1	2.3	.42	0.25	0	0	.0014	.0196
2506	Skowhegan	Public supply	3.0	1.5	2.4	.52	0.32	Trace	0.03	.0014	.0162
2507	Hallowell	Spring	3.0	0.8	0	.06	0.67	0	0.15	.0002	.0052
2508	Kennebunk	Public supply	1.6	0.5	3.6	.50	0.35	0	0	.0008	.0074
2509	Sanford	Public supply	1.9	1.1	0	.05	0.19	0	0	.0004	.0014
2510	Bath	Public supply	2.0	1.0	2.1	.36	0.37	0	0	.0018	.0110
2511	Bath	Public supply	1.6	1.4	0.8	.09	0.27	Trace	0.02	.0014	.0056
2512	Ellsworth	Public supply	1.9	1.1	1.8	.36	0.25	0	0	.0014	.0094
2513	Biddeford Pool	Well	46.9	1.7	0.2	.15	66.00	.0005	0.10	.0014	.0076
2514	Castine	Public supply	2.6	2.3	0.8	.06	0.52	0	0.06	.0002	.0050
2515	Winterport	Public supply	7.1	6.0	0.3	.06	0.31	0	0.03	.0020	.0076
2516	Bar Harbor	Public supply	2.2	0.9	0.7	.11	0.57	0	0	.0012	.0074
2517	Richmond	Public supply	2.9	1.2	2.6	.79	0.12	Trace	0	.0036	.0144
2518	Phillips	Public supply	2.9	0.8	2.6	.50	0.12	0	0	.0014	.0096
2519	Farmington	Public supply	2.5	1.8	0.2	.13	0.08	0	0	.0008	.0092

## ANALYSES OF SAMPLES OF WATER—Continued.

Number.	Town or City.	Source.	Hardness.	Alkalinity.	Color.	Oxygen consumed.	Chlorine.	Nitrite.	Nitrate.	AMMONIA.	
										Free.	Albuminoid.
2520	York	Well	14.3	8.1	4.2	.30	2.30	0	0	.0550	.0186
2521	Farmington	Public supply	2.4	2.0	0.2	.11	0.09	0	0	.0008	.0086
2522	Damariscotta	Public supply	1.5	0.6	1.1	.21	0.42	0	0	.0002	.0120
2523	Boothbay Harbor	Public supply	2.8	1.5	1.5	.26	0.78	0	0	.0006	.0154
2524	Winter Harbor	Public supply	1.3	1.1	3.4	.52	0.80	0	0	.0026	.0126
2525	Eastport	Public supply	2.2	1.0	1.8	.37	0.42	0	0	.0012	.0162
2526	Lubec	Public supply	2.4	5.8	0	.03	1.40	0	0.18	.0002	.0020
2527	Calais	Public supply	2.2	2.5	0.8	.13	0.27	0	0	.0004	.0042
2528	Farmington	Public supply	1.5	2.0	0.2	.12	0.16	0	0	.0002	.0076
2529	Brownfield	Spring	1.1	1.1	0	.04	0.16	0	0	0	.0014
2530	Farmington	Spring	2.3	1.9	0	.02	0.06	0	0	.0002	.0008
2531	Acton	Spring	2.3	1.9	0	.02	0.52	0	0.04	.0002	.0038
2532	Buckfield	Public supply	1.0	1.0	0.6	.16	0.15	0	0	.0008	.0130
2533	Bethel	Well	2.2	3.0	0.3	.11	1.06	0	0.70	.0012	.0062
2534	South Waterford	Well	1.1	1.1	0	.06	0.25	0	0	0	.0026
2535	Bowdoinham	Well	2.2	2.2	0.6	.16	3.35	.0080	0.78	.0244	.0074
2536	Rumford	Well	6.6	1.7	0.3	.22	3.45	0	0.30	0	.0024
2537	Greene	Well	4.9	3.5	0.8	.13	0.25	Trace	0.02	.0184	.0116
2538	Kezar Falls	Spring	2.7	1.2	0	0	0.15	0	Trace	0	.0020
2539	Greene	Well	11.3	9.0	0	.04	0.40	Trace	0.03	.0016	.0056
2540	Parsonsfield	Spring	1.6	1.1	0	.06	0.12	0	0.02	.0004	.0004
2541	Bridgton	Public supply	1.3	1.1	1.8	.34	0.15	0	0	.0004	.0126
2542	Searsport	Public supply	2.0	0.8	0.6	.13	0.27	0	0	.0006	.0104
2543	Topsham	Public supply	12.4	7.0	0.8	.10	2.62	0	0	.0022	.0074
2544	York	Spring	6.2	3.0	0	.02	2.42	.0005	0.61	.0006	.0018

2545	Dead River.....	Spring.....	2.3	1.3	0	.03	0.12	0	0	.0002	.0054
2546	Norway.....	Public supply.....	2.5	1.4	1.3	.31	0.12	0	0	.0006	.0112
2547	Steuben.....	Well.....	6.8	0.7	0.3	.04	2.70	.0010	0.26	.0084	.0026
2548	Dixfield.....	Public supply.....	3.0	2.0	3.7	.53	0.12	0	0	.0008	.0096
2549	Washington.....	Well.....	4.6	4.0	0.8	.10	0.17	0	0.06	.0034	.0106
2550	Camden.....	Public supply.....	2.0	1.5	0	.10	0.42	0	0	.0004	.0069
2551	Auburn.....	Public supply.....	2.1	1.6	0	.13	0.20	0	0	.0008	.0146
2552	Bucksport.....	Public supply.....	2.9	1.1	6.7	1.02	0.27	0	0	.0020	.0398
2553	Seal Harbor.....	Public supply.....	1.4	0.9	0.6	.14	0.65	0	0	.0010	.0050
2554	Rumford.....	Spring.....	2.1	1.6	0	.05	0.20	0	0	.0002	.0002
2555	Strong.....	Well.....	3.8	1.7	0	.14	0.62	Trace	0.53	.0002	.0016
2556	Phillips.....	Well.....	5.6	2.5	0	.20	0.17	0	0.09	.0006	.0020
2557	Springvale.....	Public supply.....	2.1	0.3	0.8	.07	0.25	0	0.02	.0246	.0080
2558	Brunswick.....	Public supply.....	3.0	1.8	0	.02	0.47	0	0.02	.0002	.0016
2559	Ridlonville.....	Spring.....	5.8	3.1	0	.02	0.57	0	0	.0020	.0018
2560	Mexico.....	Spring.....	3.0	1.6	0	0	0.17	0	0.10	0	.0004
2561	Mexico.....	Spring.....	4.0	2.0	0	.05	0.25	0	0.02	.0002	.0018
2562	Fryeburg.....	Public supply.....	1.5	1.5	0.3	.10	0.12	0	0	.0002	.0034
2563	Bangor.....	Spring.....	6.9	5.5	0	.08	0.50	0	0.09	0	.0016
2564	Damariscotta.....	Pond.....	2.1	1.1	1.8	.83	0.27	0	0	.0008	.0146
2565	Kingfield.....	Public supply.....	2.2	0.4	1.4	.30	0.05	0	0	.0008	.0066
2566	Newport.....	Public supply.....	2.9	1.4	1.8	.52	0.37	0	0	.0016	.0134
2567	Strong.....	Public supply.....	4.3	1.6	3.4	.61	0.10	0	0	.0010	.0118
2568	Small Point Beach.....	Well.....	2.6	0.3	0.2	.02	2.10	0	0	.0008	.0044
2569	Sargentville.....	Well.....	4.7	1.7	0	.02	3.95	0	0.06	.0008	.0038
2570	Warren.....	Public supply.....	3.7	2.9	0.6	.07	0.52	0	0	.0008	.0100
2571	Sargentville.....	Well.....	5.0	2.5	0	.05	0.62	0	0.01	.0004	.0012
2572	Shirley.....	Well.....	2.6	1.9	0.7	.14	0.82	.0010	0.17	.0294	.0134
2573	Farlington.....	Well.....	9.2	7.0	0	.01	0.27	0	0.03	.0002	.0016
2574	Greenville.....	Well.....	2.2	1.0	0	.01	0.20	0	0.06	.0002	.0012
2575	Shapleigh.....	Spring.....	2.0	0.9	0.1	.15	0.22	0	0.01	.0002	.0006
2576	West Sumner.....	Public supply.....	6.1	5.0	0	.03	0.15	0	0.03	.0002	.0006
2577	Mt. Vernon.....	Spring.....	3.3	1.5	0	.07	0.27	0	0	.0002	.0012
2578	Durham.....	Well.....	4.5	2.1	0	.02	1.22	.0008	0.11	.0020	.0036
2579	Mt. Vernon.....	Spring.....	3.2	1.6	0	.02	0.20	0	Trace	.0008	.0018
2580	Gorham.....	Public supply.....	1.8	1.2	0.9	.17	0.17	0	0	.0006	.0078
2581	Mt. Vernon.....	Well.....	8.2	1.5	0	.04	1.62	0	1.38	.0002	.0042
2582	Yarmouth.....	Public supply.....	3.3	2.2	0	.01	0.40	0	0.09	.0002	.0022
2583	Topsham.....	Spring.....	16.2	8.0	4.5	.10	4.35	.0100	0.10	.0362	.0062
2584	Foxcroft.....	Well.....	17.5	11.7	0	0	1.37	.0008	0.28	.0008	.0022

ANALYSES OF SAMPLES OF WATER—Continued.

Number.	Town or City.	Source.	Hardness.	Alkalinity.	Color.	Oxygen consumed.	Chlorine.	Nitrite.	Nitrate.	AMMONIA.	
										Free.	Albuminoid.
2585	Foxcroft.....	Well.....	30.8	18.0	0	.04	2.30	.0008	0.75	.0006	.0036
2586	Farmington.....	Spring.....	22.8	1.2	0	.02	0.12	0	0.02	.0004	.0014
2587	Dover.....	Public supply.....	22.8	1.0	5.5	.88	0.07	Trace	Trace	.0014	.0158
2588	Foxcroft.....	Well.....	20.8	17.0	0.1	.10	0.72	.0040	0.01	.0140	.0146
2589	North East Harbor.....	Public supply.....	22.1	1.5	1.4	.28	0.62	0	0	.0026	.0114
2590	Wilton.....	Public supply.....	12.8	1.4	0.5	.14	0.10	0	0	.0008	.0092
2591	Brooks.....	Public supply.....	4.0	2.1	0	.01	0.20	Trace	0.04	.0004	.0010
2592	Richmond.....	Well.....	22.8	7.5	0.7	.01	0.52	0	0	.0006	.0012
2593	South Paris.....	Well.....	22.8	2.0	0	.02	0.10	0	0.06	.0006	.0120
2594	Lewiston.....	Public supply.....	12.8	1.5	0.7	.12	0.22	0	0	.0010	.0026
2595	East Corinth.....	Well.....	17.2	13.0	0.1	.07	0.32	0	0.10	.0038	.0032
2596	East Corinth.....	Well.....	25.0	19.0	1.8	.17	0.52	.0010	0.01	.0320	.0180
2597	Belgrade.....	Well.....	2.3	1.0	0.1	0	0.27	0	Trace	.0004	.0006
2598	Dover.....	Spring.....	32.3	0.4	0.1	.11	6.50	.0070	0.30	.0158	.0076
2599	Long Island.....	Well.....	11.1	4.5	0.8	.11	6.60	0	0.03	.0310	.0042
2600	Long Island.....	Well.....	4.6	2.1	0.5	.01	2.50	.0003	0.04	.0084	.0010
2601	Caribou.....	Public supply.....	2.8	1.1	5.0	1.23	0.05	0	0	.0014	.0174
2602	Brewer.....	Well.....	12.8	10.1	0.2	.03	0.47	Trace	0	.0110	.0016
2603	Buxton.....	Well.....	13.1	2.2	1.0	.58	0.65	.0007	0	.0326	.0398
2604	York.....	Spring.....	8.5	4.0	0.2	.06	2.20	.0010	0.08	.0758	.0050
2605	Bryant Pond.....	Well.....	1.7	1.0	0	.01	0.07	0	0.05	.0006	.0050
2606	Richmond.....	Well.....	10.1	9.9	1.2	.41	8.45	.0950	0.68	.1294	.0234
2607	Berwick.....	Public supply.....	3.8	1.1	2.1	.36	0.25	0	0	.0010	.0122
2608	Brownville.....	Well.....	3.4	0.8	0	.03	0.72	.0004	0.60	.0016	.0024
2609	Union.....	Public supply.....	4.1	1.5	0.8	.09	0.47	0	0	.0004	.0138

2610	Van Buren.....	Public supply.....	6.1	4.2	2.3	.35	0.07	0	0	.0004	.0062
2611	Danforth.....	Public supply.....	13.0	8.1	0.4	.12	0.55	0	0.17	.0004	.0064
2612	E. Millinocket.....	Public supply.....	10.8	7.0	0	0	0.17	0	0	.0002	.0014
2613	Friendship.....	Public supply.....	2.9	1.0	0.1	.05	1.17	0	0.11	.0016	.0040
2614	Bethel.....	Public supply.....	1.1	0.8	0.9	.22	0.05	0	0	.0004	.0090
2615	Rumford.....	Public supply.....	4.6	2.0	2.0	.15	0.32	Trace	0.05	.0018	.0060
2616	Island Falls.....	Well.....	6.2	3.1	0.9	.01	1.15	.0006	0.45	.0026	.0026
2617	Patten.....	Public supply.....	8.1	6.0	0.4	.03	0.30	Trace	0.13	.0002	.0026
2618	Hiram.....	Well.....	2.7	1.6	0.2	.02	0.22	Trace	0	.0002	.0014
2619	Mexico.....	Spring.....	3.2	1.7	0	.07	0.30	0	0.02	0	.0016
2620	So. Berwick.....	Public supply.....	2.8	2.5	3.7	.50	0.40	0	0	.0008	.0190
2621	Mexico.....	Spring.....	3.9	2.0	0	.01	0.40	0	0.08	.0004	.0010
2622	Hiram.....	Well.....	1.8	0.8	0	.02	0.07	0	0	.0002	.0012
2623	Mechanic Falls.....	Public supply.....	2.5	1.5	0.9	.22	0.35	Trace	0	.0010	.0122
2624	Mechanic Falls.....	Public supply.....	2.3	1.3	0.9	.22	0.35	Trace	0	.0010	.0106
2625	Hallowell.....	Well.....	32.7	19.0	1.4	.23	3.27	Trace	0	.0008	.0100
2626	Hiram.....	Fountain.....	3.2	0.7	0	.03	0.52	0	0.05	.0005	.0022
2627	Hiram.....	Fountain.....	2.6	0.6	0	.01	0.25	0	0.05	.0002	.0014
2628	York.....	Public supply.....	1.4	0.5	1.4	.25	0.62	0	0	.0008	.0106
2629	Presque Isle.....	Public supply.....	22.1	10.2	3.4	.71	0.37	0	0.05	.0008	.0108
2630	No. Berwick.....	Public supply.....	2.5	1.2	1.5	.16	0.35	0	0	.0006	.0022
2631	Mexico.....	Well.....	2.8	2.0	0.5	.04	0.20	Trace	0	.0020	.0026
2632	Houlton.....	Public supply.....	10.8	6.0	1.9	.39	0.25	Trace	0.01	.0008	.0090
2633	Sullivan.....	Spring.....	7.9	3.5	0	.06	3.12	Trace	0.20	.0008	.0028
2634	Kittery.....	Public supply.....	1.7	0.5	4.5	.36	0.60	0	0	.0006	.0164
2635	Sherman Mills.....	Well.....	6.2	4.0	0.2	.18	0.15	Trace	0.32	.0004	.0042
2636	Sherman Mills.....	Well.....	4.6	1.8	0	0	0.70	0	0.18	.0004	.0012
2637	Hiram.....	Well.....	2.8	1.5	0.1	0	0.12	0	0.02	0	.0018
2638	Sangerville.....	Public supply.....	5.6	4.1	0.2	.01	0.12	0	0.05	.0004	.0022
2639	Farmington.....	Public supply.....	1.6	1.6	0.5	.11	0.15	0	0	.0008	.0078
2640	Dexter.....	Well.....	8.5	6.0	0.4	.08	4.02	Trace	1.00	.0442	.0086
2641	Mexico.....	Brook.....	3.4	1.3	1.0	.16	0.22	.0003	0.03	.0022	.0084
2642	Mexico.....	Spring.....	3.5	1.9	0	.05	0.37	0	0.11	.0006	.0014
2643	Mexico.....	Spring.....	2.2	1.1	0	.02	0.25	.0003	Trace	.0010	.0028
2644	Mexico.....	Spring.....	3.1	1.6	1.0	.20	0.15	0	0.03	.0006	.0060
2645	Mexico.....	Public supply.....	2.2	1.3	3.3	.41	0.12	0	0	.0014	.0184
2646	Mexico.....	Springs.....	3.2	1.7	0	.38	0.42	0	0.10	0	.0012
2647	Brownville.....	Public supply.....	3.5	3.0	0	.02	0.15	.0006	0.02	.0012	.0024
2648	Brownville.....	Public supply.....	2.8	2.0	0	0	0.07	0	0.01	.0002	.0014
2649	Brownville.....	Public supply.....	3.1	2.2	0	.01	0.22	0	Trace	0	.0026

ANALYSES OF SAMPLES OF WATER—Continued.

Number.	Town or City.	Source.	Hardness.	Alkalinity.	Color.	Oxygen consumed.	Chlorine.	Nitrite.	Nitrate.	AMMONIA.	
										Free.	Albuminoid.
2650	Brownville.....	Public supply.....	4.2	2.7	0	.06	0.22	0	0.03	0	.0016
2651	Bailey Island.....	Well.....	10.1	8.5	0.8	.19	1.57	0	0	.0140	.0098
2652	Farmington.....	Spring.....	4.6	2.1	0.5	.09	0.17	.0008	0.13	.0070	.0054
2653	Livermore Falls.....	Public supply.....	2.6	0.6	0.6	.16	0.15	0	0	.0008	.0124
2654	Falmouth.....	Spring.....	3.1	1.2	0	.02	0.85	0	0.09	.0004	.0016
2655	Falmouth.....	Lake.....	1.8	0.8	0.8	.16	0.15	0	Trace	.0006	.0062
2656	Falmouth.....	Spring.....	8.9	5.1	0.8	.11	1.22	.0020	0.08	.0114	.0072
2657	Auburn.....	Well.....	3.5	2.1	0	0	0.22	0	0	0	.0054
2658	Falmouth.....	Spring.....	4.6	2.2	0.5	.06	0.77	0	0	.0006	.0038
2659	Pejepscot.....	Well.....	18.4	6.0	0.7	.11	4.75	.0040	0.66	.0150	.0074
2660	Bingham.....	Spring.....	2.9	1.1	0.1	.06	0.15	0	0.01	.0006	.0048
2661	Kezar Falls.....	Spring.....	4.1	0.6	0	.01	0.35	0	0.03	.0002	.0022
2662	Lisbon Falls.....	Well.....	8.5	3.0	0.5	.01	0.77	.0010	0.35	.0076	.0044
2663	Manchester.....	Spring.....	3.1	1.5	0	0	0.25	0	0.02	.0002	.0048
2664	Richmond.....	Spring.....	4.9	2.7	0	.01	0.62	0	0.14	.0006	.0038
2665	Manchester.....	Well.....	10.6	4.0	0	.03	7.02	Trace	0.67	.0012	.0030
2666	Bridgton.....	Spring.....	3.0	1.1	0	0	0.15	0	0.08	.0028	.0028
2667	Medomak.....	Well.....	2.9	1.0	1.0	.10	1.32	Trace	0.01	.0092	.0076
2668	Medomak.....	Spring.....	10.1	2.6	0	.03	23.70	0	0	.0006	.0028
2669	Lockes Mills.....	Well.....	2.4	0.2	0	.02	0.10	0	0	.0016	.0040
2670	Medomak.....	Well.....	4.0	2.5	0.4	.02	1.57	0	0.03	.0004	.0034
2671	Round Pond.....	Spring.....	4.6	2.6	0.7	.08	0.65	.0003	Trace	.0070	.0058
2672	Sebago.....	Well.....	1.7	0.8	0	.12	0.25	0	0	.0004	.0012
2673	Waterville.....	Public supply.....	3.0	1.2	1.0	.29	0.20	0	0	.0014	.0158
2674	Round Pond.....	Spring.....	3.8	1.7	0.4	0.3	1.52	.0003	0.11	.0034	.0052

2675	Dover	Public supply	2.8	0.7	3.2	.59	0.07	Trace	Trace	.0016	.0174
2676	Woodfords	Spring	7.7	3.2		.06	2.27	.0020	0.79	.0404	.0184
2677	Sherman	Well	15.5	7.1	0	.03	5.67	.0006	3.50	.0052	.0050
2678	Fort Fairfield	Public supply	14.0	12.5	0	.05	0.17	0	0.02	.0002	.0040
2679	Mars Hill	Spring	11.1	10.6	0	0	0.12	0	Trace	.0016	.0020
2680	Sherman	Well	15.9	10.4	0.7	.08	0.85	.0005	0.10	.0142	.0036
2681	Augusta	Well	8.0	4.1	0.2	.01	0.32	0	0.03	.0050	.0048
2682	Richmond	Well	25.4	9.2	1.2	.23	4.57	.0050	0	.1220	.1360
2683	Port Clyde	Pond	1.7	0.2	12.0	1.26	1.52	0	0	.0028	.0356
2684	So. Paris	Well	7.2	1.4	3.7	.51	0.62	Trace	0.03	.0022	.0174
2685	Windham	Spring	4.3	1.6	0	0	0.77	0	0.25	.0005	.0013
2686	So. Paris	Well	6.2	2.5	0	.01	2.20	0	0.30	.0002	.0040
2687	Vinalhaven	Pond	1.5	0.5	1.2	.26	1.37	0	0	.0026	.0302
2688	Vinalhaven	Pond	2.3	0.3	13.0	1.34	1.30	0	0	.0026	.0302
2689	Dixfield	Spring	2.1	1.0	0	.03	0.20	.0002	0	.0015	.0033
2690	Stratton	Public supply	5.2	4.0	0	.03	0.05	0	0	0	.0021
2691	Farmington	Well	4.5	2.0	0.2	.14	0.20	.0001	0	.0011	.0084
2692	Mt. Vernon	Spring	6.2	5.1	0	.05	0.20	Trace	0	0	.0009
2693	New Harbor	Well	9.2	3.0	0	.08	0.70	.0004	Trace	.0017	.0046
2694	Gardiner	Well	7.4	4.0	0.1	.30	0.90	.0013	0.04	.0190	.0108
2695	Port Clyde	Well	12.4	9.5	0	.21	0.75	.0003	0	.0072	.0087
2696	Newry	Well	1.5	1.0	0	.02	0.10	0	0.01	.0004	.0047
2697	Belgrade	Well	6.2	2.2	0	.13	0.17	.0004	Trace	.0013	.0024
2698	Belgrade	Well	9.5	4.0	0	.04	3.42	.0001	3.0	.0015	.0070
2699	Dover	Pond	2.4	2.3	1.4	.48	0.10	Trace	Trace	.0032	.0166
2700	Dover	Brook	4.6	4.0	3.0	.47	0.12	0	0	.0025	.0173
2701	Farmington	Spring	8.9	8.0	1.0	.10	1.50	.0001	0.01	.0006	.0045
2702	Bangor	Well	12.6	5.4	0	.54	2.85	.0032	0.55	.0115	.0075
2703	Eliot	Well	7.4	5.0	0	.04	1.15	0	0	.0004	.0026
2704	Farmington	Well	3.1	2.2	0	.02	0.27	.0001	0.03	.0020	.0015
2705	Harrison	Spring	4.6	1.0	0	.03	0.47	.0002	0.25	.0010	.0056
2706	Harrison	Well	4.2	2.7	0	.08	0.27	0	0.01	.0018	.0055
2707	Harrison	Spring	2.4	0.9	0	.01	0.15	0	0	.0002	.0029
2708	Madison	Well	4.6	0.7	1.0	.10	1.75	.0036	0.22	.0045	.0057
2709	Norridgewock	Well	6.2	3.1	0	.25	0.30	.0008	0.01	.0470	.0202
2710	Rumford	Well	2.5	0.4	0	.03	0.20	.0001	0.03	.0164	.0054
2711	Bryant Pond	Spring	1.5	0.8	0	.04	0.15	Trace	0	.0046	.0031
2712	Lewiston	Well	5.7	1.3	0.5	.01	0.15	Trace	0.01	.0004	.0047
2718	Hiram	Well	2.8	1.1	0.5	.16	0.30	0	0.04	.0002	.0029
2714	Farmington	Well	9.8	5.2	0.5	.04	2.42	.0001	0.12	0	.0039

## ANALYSES OF SAMPLES OF WATER—Continued.

Number.	Town or City.	Source.	Hardness.	Alkalinity.	Color.	Oxygen consumed.	Chlorine.	Nitrite.	Nitrate.	AMMONIA.	
										Free.	Albuminoid.
2715	Presque Isle	Well	10.8	0.2	8.0	.11	1.70	.0025	0.60	.0062	.0043
2716	Limerick	Well	12.6	6.6	2.0	.73	3.85	.0030	0.175	.0082	.0105
2717	Hiram	Spring	2.1	0.6	0	.03	0.10	0	0.01	.0029	.0027
2718	Dixfield	Well	6.2	2.5	0	.01	0.05	.0001	0.01	.0054	.0044
2719	Kezar Falls	Well	3.5	1.0	0	.03	0.85	.0002	0.45	.0081	.0075
2720	Rowe Pond	Spring	5.1	2.1	0	.07	0.15	0	0	.0028	.0158
2721	Hiram	Well	7.5	3.0	0	.12	1.55	.0007	0.90	.0026	.0088
2722	Skowhegan	Well	8.2	acid	15.0	1.68	3.00	.0090	2.75	.0057	.0613
2723	Rumford	Aqueduct	1.5	0.4	0	.02	0.07	.0001	0.01	0	.0016
2724	Portland	Spring	3.4	1.6	0	.01	0.20	.0001	0.02	.0007	.0033
2725	Hiram	Spring	2.1	0.2	0	.04	0.10	Trace	0.01	.0008	.0043
2726	Island Falls	Well	5.6	1.1	0	.03	1.00	.0150	0.55	.0246	.0002
2727	Saco	Well	18.5	6.0	0.5	.32	4.90	.0015	0.17	.0017	.0282
2728	Gulford	Well	16.9	7.1	0	.10	1.27	.0020	0.05	.0050	.0012
2729	Anson	Well	3.0	1.0	0	.17	1.00	Trace	0.08	.0002	.0022
2730	Anson	Well	9.2	1.2	0	.03	2.10	0	0.50	0	.0048
2731	Farmington Falls	Well	6.2	1.1	0	.04	3.10	.0080	0.20	.0014	.0044
2732	Cornish	Well	11.9	0.8	0.3	.08	174.00	0	0.85	.0010	.0066
2733	Cornish	Well	2.6	1.0	1.2	.09	0.25	0	Trace	.0038	.0090
2734	Dover	Public supply	2.3	0.3	3.8	.51	0.10	0	0	.0012	.0154
2735	Fryeburg	Spring	1.9	1.0	0	.02	0.10	0	0	.0008	.0030
2736	Fryeburg	Well	2.3	0.3	0	.01	0.15	0	0.03	0	.0010
2737	Fryeburg	Spring	2.9	1.2	0	0	0.10	0	0	.0008	.0038
2738	Locke Mills	Well	13.9	0.6	0.6	.13	5.57	.0010	2.75	.0062	.0098
2739	Foxcroft	Well	9.8	4.5	0.1	.03	0.62	.0010	0.25	.0108	.0048



2740	Lisbon Fall	Well	6.4	2.3	0	.05	0.82	0	0.30	.0010	.0016
2741	Durham	Spring	4.6	2.1	0	0	0.27	0	0.06	.0022	.0018
2742	Kezar Falls	Well	3.8	0.4	0	.03	1.30	.0005	0.04	.0004	.0032
2743	Fryeburg	Well	4.6	0.7	0	.02	0.52	Trace	0.35	.0014	.0014
2744	Buxton	Spring	3.6	0.6	0	.02	0.45	Trace	0.05	.0002	.0024
2745	Rumford	Well	6.2	0.3	0	.03	1.65	.0004	0.60	.0004	.0086
2746	Lisbon Falls	Well	9.2	4.0	0.3	.02	1.82	0	0.35	.0006	.0032
2747	Lisbon Falls	Well	4.8	2.2	0.2	.04	0.62	0	0.30	0	.0022
2748	Machias	Spring	3.8	1.1	0	.01	0.70	0	0	.0014	.0008
2749	Brewer	Well	8.8	5.1	0.4	.01	0.25	.0003	0	.0184	.0016
2750	Brewer	Well	11.5	5.6	0	.01	0.57	0	0	.0148	.0030
2751	Brewer	Pond	2.0	1.2	1.5	.28	0.22	0	0	.0008	.0128
2752	Phillips	Well	7.7	0.1	0.2	.06	4.00	Trace	1.10	0	.0027
2753	Woodland	Public supply	2.0	0.4	2.7	.50	0.17	0	0	.0064	.0094
2754	Woodland	Spring	5.8	2.2	0	.04	0.32	0	0.02	.0008	.0014
2755	Woodland	Spring	6.2	1.5	0	.05	1.27	.0018	0.17	.0028	.0094
2756	Eastport	Well	11.1	3.1	0.2	.11	6.25	.0010	0.40	.1112	.0158
2757	Bridgton	Well	6.6	2.3	0.6	.06	0.87	.0060	0.25	.0070	.0038
2758	Norcross	Well	9.2	0.4	0.6	.24	11.70	.0150	0.50	.0580	.0022
2759	New Gloucester	Well	4.0	1.8	0.3	.05	0.22	0	0.05	0	.0024
2760	Lisbon Falls	Well	6.0	1.2	0.2	.01	0.67	.0004	0.20	.0042	.0012
2761	Brewer	Well	10.9	5.0	0.2	.02	0.55	0	0.50	.0128	.0030
2762	Oldtown	Well	23.1	3.7	0.9	.24	0.55	.0070	0	.0180	.0126
2763	New Gloucester	Spring	4.3	1.6	0.3	.05	0.27	0	0.01	.0002	.0030
2764	Lisbon Falls	Well	5.4	0.4	0.3	.03	0.98	0	0.20	0	.0012
2765	Milo	Spring	1.9	0.2	1.8	.38	1.10	0	0	.0010	.0142
2766	Winthrop	Well	14.9	12.1	0.6	.19	0.27	Trace	0.06	.0030	.0070
2767	Augusta	Spring	5.5	5.4	0.2	.04	0.32	0	0.02	.0002	.0028
2768	Ross Corners	Well	3.5	1.6	0	.02	0.45	0	0.12	0	.0054
2769	Dixfield	Spring	2.3	1.3	5.9	.84	0.15	0	Trace	.0018	.0238
2770	Auburn	Spring	13.0	11.3	0	.02	0.52	0	0	.0004	.0016
2771	Fort Fairfield	Spring	17.2	11.0	0.3	.04	1.00	0	0.30	0	.0020
2772	New Vineyard	Well	5.9	1.2	0	.08	0.12	0	0.03	.0076	.0048
2773	Lisbon Falls	Well	8.6	6.1	0.8	.13	0.57	0	0.25	.0008	.0082
2774	Waterford	Well	4.6	3.0	0	.11	0.75	0	0.16	.0004	.0048
2775	Lisbon Falls	Well	5.8	1.6	0.5	.07	1.40	Trace	0.80	.0014	.0046
2776	Skowhegan	Well	11.1	8.2	0.1	.01	0.90	0	0	.0060	.0046
2777	Brewer	Well	14.7	8.4	0	.06	1.97	Trace	0.16	.0004	.0080
2778	Limington	Spring	2.8	1.6	0	.01	0.15	0	0.01	.0004	.0018
2779	Skowhegan	Well	6.8	6.0	0.1	.05	1.02	0	0	.0280	.0008

WORK IN THE LABORATORY OF HYGIENE.

## ANALYSES OF SAMPLES OF WATER—Continued.

Number.	Town or city.	Source.	Hardness.	Alkalinity.	Color.	Oxygen consumed.	Chlorine.	Nitrite.	Nitrate.	AMMONIA.	
										Free.	Albuminoid.
2780	Lisbon Falls.....	Well.....	9.5	9.4	1.3	.48	0.37	0	Trace	.0350	.0308
2781	Lisbon Falls.....	Well.....	1.1	0.5	0	.01	0.20	0	0.03	0	.0010
2782	Mt. Vernon.....	Spring.....	2.5	1.3	0	.03	0.15	0	0.08	0	.0014
2783	Hiram.....	Spring.....	4.1	3.1	0.1	.10	0.30	0	0.01	.0008	.0044
2784	Lisbon.....	Well.....	13.3	1.4	0.3	.04	4.40	.0008	1.65	.0015	.0051
2785	Lisbon Falls.....	Spring.....	2.3	3.3	0.5	.04	3.05	.0004	1.10	.0005	.0051
2786	Lisbon Falls.....	Well.....	2.2	1.8	0.1	.03	0.22	.0005	0.04	0	.0006
2787	Dresden.....	Well.....	4.6	3.3	0.8	.11	0.87	0	0.04	.0006	.0104
2788	Lily Bay.....	Spring.....	2.5	1.0	0	.25	0.07	0	0.01	0	.0052
2789	Strong.....	Well.....	4.3	3.6	0	.10	0.25	0	0.12	.0002	.0020
2790	Haven.....	Well.....	6.9	4.9	0	.07	2.77	Trace	0.02	.0002	.0016
2791	Rangeley.....	Spring.....	2.4	5.5	0.2	.17	0.05	0	0.05	.0004	.0028
2792	Hallowell.....	Public supply.....	3.3	1.8	4.2	.75	0.27	0	Trace	.0025	.0292
2793	Baldwin.....	Well.....	3.1	1.0	0	.20	1.92	.0010	0.40	.0040	.0042
2794	Pittsfield.....	Public supply.....	2.9	1.6	4.3	.77	0.15	0	0	.0028	.0270
2795	Brunswick.....	Spring.....	2.1	0.4	0.9	.17	0.67	0	0.05	.0008	.0140
2796	Rangeley.....	Spring.....	7.8	6.2	0	.01	0.10	0	0.03	.0003	.0043
2797	Brunswick.....	Well.....	3.6	0.3	0.9	.23	1.40	0	0.05	.0014	.0162
2798	Waterville.....	Public supply.....	3.0	1.3	0.7	.17	0.22	0	0	.0004	.0134
2799	Gardiner.....	Public supply.....	2.3	1.7	2.3	.33	0.30	0	Trace	.0012	.0152
2800	Newport.....	Public supply.....	3.1	2.2	2.7	.62	0.22	0	0	.0018	.0192
2801	Madison.....	Public supply.....	2.2	1.0	6.5	1.09	0.10	0	0	.0032	.0210
2802	Fryeburg.....	Well.....	4.4	1.8	0	.01	1.37	0	0.50	.0002	.0044
2803	Lisbon.....	Well.....	2.3	1.1	0	.07	0.17	0	0	.0002	.0022
2804	Hiram.....	Well.....	2.3	0.8	0	0	0.47	0	0.02	0	.0022

2805	Oakland.....	Public supply.....	2.3	1.0	1.5	.25	0.15	Trace	0	.0034	.0120
2806	Norridgewock.....	Public supply.....	3.1	2.0	2.5	.23	0.70	0	0	.0006	.0102
2807	Temple.....	Spring.....	2.7	1.2	0.2	.01	0.15	0	Trace	0	.0022
2808	Kingfield.....	Public supply.....	2.0	0.9	2.5	.44	0.07	0	0	0	.0108
2809	Temple.....	Spring.....	5.6	5.6	0	.04	0.20	0	0	0	.0018
2810	Greenville.....	Well.....	6.7	6.5	0.1	0	0.15	0	0	0	.0014
2811	Richmond.....	Public supply.....	2.8	1.3	4.2	1.06	0.67	0	0	0	.0006
2812	Gardiner.....	Spring.....	3.2	2.8	0	0	0.35	0	0.05	0	.0032
2813	Newfield.....	Spring.....	2.2	0.8	0	0	0.20	Trace	Trace	.0010	.0030
2814	Buxton.....	Spring.....	4.2	2.5	0.3	.07	1.07	.0010	0.12	.0018	.0056
2815	Sebago.....	Spring.....	5.2	3.3	0.9	.16	0.32	Trace	0	0	.0058
2816	Augusta.....	Public supply.....	2.4	1.8	1.8	.35	0.22	0	0	0	.0010
2817	Skowhegan.....	Public supply.....	2.8	1.5	3.9	.56	0.40	0	0.02	.0030	.0146
2818	Castine.....	Public supply.....	5.7	2.5	0.8	.31	0.57	Trace	0.15	.0003	.0089
2819	Seal Harbor.....	Public supply.....	1.6	1.1	0.9	0.47	0.625	0	0	.0018	.0092
2820	Old Town.....	Public supply.....	2.4	0.9	7.2	1.53	0.10	0	0	0	.0044
2821	Wilton.....	Public supply.....	4.6	1.0	0.5	0.12	0.20	Trace	0	0	.0030
2822	Kennebunk.....	Well.....	19.75	11.9	2.4	0.44	4.10	.0003	0.175	.0030	.0284
2823	Corinna.....	Well.....	26.0	13.8	0	0.17	1.325	.0018	0.60	.0032	.0144
2824	Brewer.....	Public supply.....	3.2	0.3	6.8	1.45	0.075	Trace	0	0	.0032
2825	Bangor.....	Public supply.....	2.9	0.8	1.3	0.59	0.125	0	0	0	.0016
2826	No. Jay.....	Spring.....	2.7	1.5	0	0.04	0.125	.0006	0.02	.0014	.0036
2827	Eastport.....	Public supply.....	2.33	0.6	4.9	0.78	0.425	0	0	0	.0042
2828	Farmington.....	Well.....	3.65	2.15	0	0.02	0.125	0	0.02	0	.0036
2829	Millinocket.....	Public supply.....	1.5	1.0	3.8	0.70	0.025	0	0	0	.0007
2830	Bangor.....	Drilled well.....	10.32	4.1	0	0.07	1.70	0.010	0.45	.0030	.0030
2831	Bucksport.....	Public supply.....	2.66	1.0	11.7	1.72	0.45	0	0	0	.0050
2832	Catais.....	Public supply.....	2.9	0.9	1.1	0.30	0.20	Trace	0.015	.0008	.0088
2833	Lubec.....	Public supply.....	8.16	4.9	0	0.02	1.35	Trace	0.15	.0006	.0038
2834	Machias.....	Public supply.....	1.6	0.4	11.5	1.56	0.35	0	0	0	.0018
2835	Canton.....	Well.....	4.0	1.5	0.9	0.25	1.825	0	0.03	.0006	.0122
2836	Wilton.....	Well.....	2.32	1.8	0.2	0.03	0.05	0	0	0	.0004
2837	Canton.....	Well.....	7.3	5.1	2.9	0.63	2.05	.0004	0.125	.0046	.0298
2838	Canton.....	Well.....	4.6	1.1	0.9	0.25	2.02	0	0.03	.0016	.0140
2839	Orono.....	Public supply.....	2.2	0.9	6.5	0.91	0.25	0	0	0	.0038
2840	Rangeley.....	Well.....	4.8	2.5	0	0.10	0.225	0	0.15	.0006	.0068
2841	Bar Harbor.....	Public supply.....	2.0	1.4	0.3	0.16	0.575	0	0	0	.0004
2842	Gardiner.....	Well.....	7.3	2.5	0.2	0.05	1.425	Trace	0.30	.0020	.0058
2843	E. Wilton.....	Spring.....	2.3	1.1	0.2	0.09	0.15	0	0.01	.0005	.0095
2844	Litchfield.....	Well.....	12.0	8.5	0	0.02	0.275	0	Trace	0	.0024

ANALYSES OF SAMPLES OF WATER—Continued.

Number.	Town or City.	Source.	Hardness.	Alkalinity.	Color.	Oxygen consumed.	Chlorine.	Nitrite.	Nitrate.	AMMONIA.	
										Free.	Albuminoid.
2845	Wilton.....	Well.....	4.23	3.4	0.2	0	0.30	0	0.087	.0010	.0026
2846	Biddeford Pool.....	Public supply.....	4.08	0.5	0	0.03	2.40	.0002	0.10	.0004	.0050
2847	Biddeford Pool.....	Pond.....	2.62	0.3	3.0	0.50	4.5	0	0	.0022	.0578
2848	Bridgton.....	Well.....	2.62	2.10	0.1	0.10	0.30	Trace	0.875	.0272	.0152
2849	Strong.....	Well.....	2.1	0.9	0	0.03	0.125	Trace	0	.0005	.0071
2850	E. Wilton.....	Well.....	3.2	2.9	0.3	0.05	0.30	Trace	0.06	.0002	.0060
2851	Damariscotta.....	Public supply.....	1.27	0.3	0.9	0.26	0.475	Trace	0	.0022	.0164
2852	Strong.....	Well.....	1.8	0.9	0.1	0.03	0.125	0	0	0	.0022
2853	Gorham.....	Public supply.....	1.6	0.8	0.2	0.24	0.175	0	0	.0002	.0116
2854	Hallowell.....	Spring.....	2.2	1.2	0.4	0.04	0.425	.0004	0.04	0	.0068
2855	Buxton.....	Well.....	2.77	2.3	0.2	0.10	0.30	.001	0.06	.0352	.0086
2856	Warren.....	Public supply.....	1.5	0.8	2.9	0.57	0.475	0	0	.0038	.0176
2857	Northeast Harbor.....	Public supply.....	2.5	0.3	4.0	0.69	0.45	0	0	.0050	.0224
2858	W. Baldwin.....	Well.....	1.9	0.6	0.2	0.04	0.125	0	0.03	.0019	.0064
2859	Farmington.....	Spring.....	3.35	2.4	0.4	0.11	0.90	.0003	0.02	.0002	.0086
2860	Fearsport.....	Public supply.....	1.75	0.4	0.8	0.20	0.20	0	0	.0007	.0127
2861	Union.....	Public supply.....	2.62	1.7	0.8	0.20	0.475	0	0	.0008	.0180
2862	Brunswick.....	Public supply.....	2.92	1.6	0	0.04	0.50	0	0.01	.0005	.0025
2863	Yarmouthville.....	Public supply.....	3.2	2.6	0.1	0.04	0.40	0	0.10	.0002	.0040
2864	Turner.....	Well.....	1.75	0.80	0	0.03	0.20	0	0.03	.0004	.0034
2865	Strong.....	Well.....	4.81	1.6	0	0.02	0.875	.0003	0.275	.0008	.0048
2866	Friendship.....	Public supply.....	3.65	0.7	0.9	0.07	1.625	.0015	0.25	.0156	.0056
2867	Foxcroft.....	Drilled well.....	12.55	6.5	0.2	0.01	1.40	.0009	0.25	0	.0048
2868	Camden.....	Public supply.....	1.6	0.2	0.1	0.14	0.40	0	0	.0015	.0071
2869	Brooks.....	Public supply.....	2.77	1.6	0	0.02	0.55	0	0.01	0	.0044

2870	Patten.....	Public supply.....	6.6	4.2	0.3	0.08	0.40	0	0.12	.0004	.0060
2871	Norway.....	Public supply.....	2.18	0.8	0.9	0.26	0.175	0	0	.0014	.0124
2872	Phillips.....	Public supply.....	1.75	0.6	2.9	0.58	0.075	0	0	.0080	.0138
2873	Warren.....	Well.....	5.84	1.3	0.1	0.05	2.15	Trace	1.00	.0020	.0134
2874	Oakland.....	Well.....	10.51	5.2	0.1	0.03	3.575	0.001	0.60	.0018	.0088
2875	S. Paris.....	Well.....	2.1	0.5	0	0.02	0.10	0	0.017	.0006	.0056
2876	Fryeburg.....	Public supply.....	2.2	0.4	0	0.12	0.125	0	0.03	.0008	.0042
2877	S. Paris.....	Well.....	4.23	3.6	0	0.01	0.10	0	0	.0002	.0032
2878	Rumford Falls.....	Public supply.....	5.8	2.7	4.3	0.28	0.32	.0003	0.05	.0044	.0082
2879	Mechanic Falls.....	Public supply.....	4.23	1.8	2.4	0.30	0.375	0	0	.0013	.0105
2880	Bethel.....	Public supply.....	1.46	0.6	2.4	0.31	0.075	0	0	.0002	.0062
2881	Farmington.....	Driven well.....	7.00	4.1	0	0.04	0.225	.007	0.225	.0052	.0083
2882	Farmington.....	Public supply.....	2.40	1.3	0.3	0.12	0.075	0	0	.0010	.0094
2883	Dixfield.....	Public supply.....	2.60	1.0	4.5	0.65	0.10	0	0	.0018	.0125
2884	Winterport.....	Public supply.....	4.3	2.9	0.8	0.20	0.35	0	0.015	.0010	.0090
2885	Rangeley.....	Well.....	9.5	7.3	0	0.02	0.175	0	Trace	.0016	.0056
2886	Boothbay Harbor.....	Public supply.....	1.89	0.7	1.7	0.33	0.75	0	0	.0025	.0208
2887	Dover.....	Public supply.....	2.2	1.2	5.2	0.94	0.20	0	0	.0025	.0160
2888	Danforth.....	Public supply.....	8.3	7.1	0	0.26	0.425	0	0.10	.0003	.0079
2889	Bridgton.....	Public supply.....	1.46	0.3	0.9	0.34	0.15	0	0	.0016	.0134
2890	Lewiston.....	Public supply.....	2.4	1.2	0.3	0.19	0.15	Trace	0	.0016	.0094
2891	Strong.....	Public supply.....	4.0	1.3	5.8	0.98	0.10	0	0	.0036	.0193
2892	Auburn.....	Public supply.....	2.4	1.2	0.2	0.14	0.175	0	0	.0009	.0111
2893	Livermore Falls.....	Public supply.....	1.89	0.8	0	0.12	0.20	0	0	.0012	.0138
2894	Buckfield.....	Public supply.....	1.7	0.7	0	0.14	0.175	0	0	.0008	.0130
2895	Ellsworth.....	Public supply.....	1.6	0.8	3.5	0.66	0.275	0	0	.0012	.0138
2896	Wilton.....	Spring.....	3.2	1.1	0.2	0.06	0.225	0	0	.0002	.0255
2897	Winter Harbor.....	Public supply.....	1.31	0.1	6.5	1.06	0.70	0	0	.0068	.0232
2898	Sanford.....	Public supply.....	1.94	1.1	0	0.05	0.175	0	Trace	.0003	.0059
2899	Auburn.....	Well.....	6.54	3.3	0	0.19	1.05	0	0.30	.0016	.0044
2900	Kennebunk.....	Public supply.....	1.75	0.6	4.6	0.60	0.475	0	0	.0016	.0114
2901	N. Jay.....	Well.....	7.92	2.5	0	0.04	0.90	.0006	0.60	.0007	.0081
2902	Berwick.....	Public supply.....	3.21	1.2	0.8	0.22	0.50	0	0.03	.0016	.0093
2903	Canton.....	Well.....	3.62	2.6	0	0.01	0.15	0	0.012	.0022	.0053
2904	Presque Isle.....	Public supply.....	11.65	9.3	2.8	0.60	0.525	0	0.075	.0022	.0134
2905	A. Berwick.....	Public supply.....	4.08	0.40	7.0	1.11	0.425	0	0	.0045	.0324
2906	Fryeburg.....	Well.....	2.48	0.70	0	0.04	3.225	Trace	0.20	.0008	.0036
2907	Brownfield.....	Spring.....	6.13	5.9	0.1	0.05	0.225	Trace	0	.0052	.0044
2908	Biddeford.....	Public supply.....	2.33	0.20	0.2	0.11	0.20	0	0	.0002	.0045
2909	Fort Fairfield.....	Public supply.....	14.06	12.10	0.1	0.05	0.20	0	0.05	.0008	.0032

ANALYSES OF SAMPLES OF WATER—Continued.

298

STATE BOARD OF HEALTH.

Number.	Town or City.	Source.	Hardness.	Alkalinity.	Color.	Oxygen consumed.	Chlorine.	Nitrite.	Nitrate.	AMMONIA.	
										Free.	Albuminoid.
2910	Caribou	Public supply	4.8	1.1	7.9	1.31	0.15	0	0	.0034	.0158
2911	Fryeburg	Well	4.38	1.2	0	0.09	1.675	.001	2.25	.0019	.0090
2912	Houlton	Public supply	4.6	2.5	6.1	0.99	0.15	0	0	.0034	.0132
2913	Hallowell	Brook	4.38	3.0	2.2	0.35	0.35	0	0.01	.0004	.0150
2914	Bryant Pond	Spring	1.89	0.8	0	0	0.12	0	0.03	.0002	.0024
2915	Van Buren	Public supply	4.8	2.7	3.1	0.59	0.15	0	Trace	.0034	.0078
2916	Camden	Spring	3.94	1.7	0	0.02	0.525	0	0	.0003	.0027
2917	Springvale	Public supply	3.45	1.2	0.5	0.04	0.30	Trace	0.015	.0094	.0140
2918	Kezar Falls	Well	2.62	0.6	0	0.05	0.425	0	0.03	.0012	.0034
2919	Oakland	Well	6.86	4.0	0.1	0.09	1.35	Trace	0.125	.0004	.0084
2920	Anson	Well	2.00	0.5	0.1	0.04	0.375	Trace	0.125	.0004	.0084
2921	Bangor	Artesian well	10.64	5.2	0.9	0.11	1.95	.0008	0	.1520	.0280
2922	Fort Fairfield	Well	13.14	10.5	0.2	0.01	1.45	.0006	0	0.40	.0006
2923	Sangerville	Public supply	4.5	1.5	0.1	0.03	0.15	0	0.02	.0008	.0058
2924	Madison	Well	4.5	1.0	0.3	0.02	3.75	.0005	0.50	.0004	.0028
2925	Lisbon Falls	Well	14.01	5.2	0.1	0.09	1.85	0	0.45	0	.0054
2926	Kittery	Public supply	1.60	0.10	0	0.385	0.60	0	0	0.056	.0194
2927	Lebanon	Well	29.2	2.0	4.6	0.05	8.55	.0008	2.0	0.070	.0088
2928	Augusta	Cistern	3.0	0.3	0	0.32	0.10	0	0	0.046	.0186
2929	E. Hiram	Well	2.92	2.1	0	0.06	1.30	0	0.175	.0022	.0044
2930	Brownville	Public supply	3.3	2.0	0	0.02	0.125	0	0	0	.0022
2931	Durham	Spring	6.71	4.3	0	0.04	0.275	0	0	.0005	.0095
2932	Brownville	Public supply	3.79	1.6	0	0.04	0.125	0	Trace	.0003	.0039
2933	Brownville	Public supply	2.04	1.4	0	0.03	0.075	0	0	.0014	.0030
2934	Brewer	Artesian well	5.91	2.2	1.2	0.14	1.20	Trace	0	.0760	.0274

2935	Brownville.....	Public supply.....	4.3	2.1	0.1	0.08	0.25	0	0.02	0	.0040
2936	Portland.....	Spring.....	3.6	1.3	0	0.09	1.75	0	Trace	0	.0036
2937	E. Millinocket.....	Public supply.....	8.03	5.6	0.2	0.04	0.175	0	0	0	.0042
2938	Maplewood.....	Well.....	2.19	1.6	0	0.07	0.20	0.002	0	.0015	.0025
2939	Bemis.....	Spring.....	1.6	1.0	2.6	0.97	0.20	0	0.045	.0005	.0071
2940	Skowhegan.....	Spring.....	14.6	12.5	0	0.04	1.125	Trace	0.035	0	.0024
2941	Skowhegan.....	Spring.....	2.4	0.4	0	0.04	0.075	Trace	0.03	.0004	.0074
2942	Bemis.....	Spring.....	1.89	1.2	0.4	0.02	0.225	0	0.225	.0006	.0044
2943	York Village.....	Public supply.....	1.7	0.9	0.8	0.17	0.60	0	Trace	.0032	.0080
2944	Riley.....	Well.....	2.4	1.3	1.4	0.04	0.125	0	0.0125	.0002	.0018
2945	Madison.....	Spring.....	3.02	1.1	0.1	0.04	3.925	.0008	0.55	.0022	.0040
2946	Dedham.....	Spring.....	4.3	3.0	0	0.07	0.25	0	0.0125	0	.0022
2947	Farmington.....	Well.....	2.92	1.7	0.1	0.04	0.525	Trace	0.175	0	.0040
2948	Skowhegan.....	Well.....	10.22	4.7	2.6	0.28	4.25	Trace	0.02	.1080	.0344
2949	Patten.....	Well.....	17.1	4.5	0.1	0.13	4.10	.0015	2.25	.0230	.0026
2950	Lockes Mills.....	Bored well.....	22.5	1.4	0.3	0.29	13.90	.001	5.0	.0970	.0152
2951	Anson.....	Well.....	8.25	4.2	0	0.05	1.825	0	0.10	.0024	.0022
2952	Anson.....	Well.....	7.8	2.0	0.1	0.09	7.3	.0004	1.25	.0007	.0135
2953	Anson.....	Well.....	11.5	6.5	2.3	0.135	1.25	.0005	0.015	.016	.0214
2954	W. Windham.....	Spring.....	8.45	1.6	0	0.35	0.275	Trace	0.025	.0005	.0029
2955	Foxcroft.....	Drilled well.....	7.9	7.2	0.1	0.03	0.375	0	0.175	0	.0012
2956	Monmouth.....	Well.....	6.0	3.0	0.4	0.10	0.775	0	0.03	0	.0068
2957	Bemis.....	Brook.....	2.4	1.1	3.3	0.77	0.35	0	0.02	.0017	.0161
2958	Bemis.....	Brook.....	1.5	1.0	4.6	0.71	0.325	0	0.02	.0012	.0108
2959	N. New Portland.....	Well.....	2.8	1.9	0.1	0.16	0.125	0	0	.0003	.0057
2960	Lisbon Falls.....	Well.....	15.75	6.0	0.6	0.30	3.6	0	0.75	.0010	.0168
2961	Lisbon Falls.....	Well.....	18.00	5.1	0.9	0.28	3.6	0	1.00	.0018	.0158
2962	Richmond.....	Drilled well.....	12.75	1.0	0.9	0.13	1.825	.005	1.20	.0210	.0128
2963	N. Baldwin.....	Well.....	3.3	1.1	0.1	0.05	2.625	Trace	0.60	.0010	.0052
2964	N. Berwick.....	Public supply.....	2.25	1.3	2.5	0.30	0.30	0	0	.0005	.0095
2965	Dixfield.....	Well.....	17.0	10.3	0	0.02	0.775	0	0.35	0	.0024
2966	N. Baldwin.....	Spring.....	2.1	1.3	0	0.02	0.30	0	0.09	0	.0042
2967	Monson.....	Well.....	7.5	3.2	0	0.06	3.475	0	0.875	0	.0022
2968	Monson.....	Well.....	20.0	10.5	0.3	0.08	3.20	0	0.30	0	.0056
2969	Greenville Junction.....	Well.....	2.1	1.5	0.1	0.04	0.15	Trace	Trace	.0006	.0022
2970	Bangor.....	Well.....	21.0	10.6	0	0.02	3.35	0	0.50	0	.0012
2971	Bath.....	Public supply.....	2.4	0.4	5.7	0.87	0.55	0	0	.0016	.0218
2972	Bath.....	Public supply.....	1.5	1.2	2.3	0.43	0.425	0	0	.0014	.0160
2973	Dover.....	Public supply.....	3.1	1.6	3.9	0.75	0.10	0	0	.0014	.0102
2974	Hanover.....	Spring.....	3.0	1.1	0	0.02	0.075	0	0.025	0	.0026

ANALYSES OF SAMPLES OF WATER—Continued.

Number.	Town or City.	Source.	Hardness.	Alkalinity.	Color.	Oxygen consumed.	Chlorine.	Nitrite.	Nitrate.	AMMONIA.	
										Free.	Albuminoid..
2975	Solon.....	Drilled well.....	7.35	0.8	1.7	0.84	3.225	.001	0	.1620	.1860
2976	Denmark.....	Spring.....	2.8	1.1	0	0.03	0.25	0	0.04	0	.0050
2977	Buxton.....	Well.....	1.5	0	0	0.06	0.275	.0005	0.15	.0007	.0080
2978	Hallowell.....	Well.....	2.3	1.9	0	0.05	0.85	.0003	0.90	0	.0058
2979	Lincoln.....	Well.....	10.5	2.05	0.3	0.05	5.575	0	0.175	.0005	.0053
2980	Lincoln.....	Well.....	15.7	13.15	0.1	0.04	0.70	.001	Trace	.0078	.0058
2981	Lincoln.....	Well.....	11.0	6.2	0.1	0.02	1.075	.0001	0.30	.0002	.0036
2982	Lincoln.....	Well.....	2.0	7.2	0.7	0.02	0.20	0	0	.0003	.0013
2983	Lincoln.....	Well.....	13.5	5.6	0.1	0.13	2.725	0	1.20	.0002	.0096
2984	Oakfield.....	Drilled well.....	64.3	10.1	0.8	0.42	6.025	.0001	2.25	.0200	.0426
2985	Lincoln.....	Well.....	8.25	4.3	0.1	0.04	0.15	0	0	0	.0030
2986	Warren.....	Well.....	14.70	3.8	0	0.05	5.65	.002	1.00	.0076	.0025
2987	Skowhegan.....	Spring.....	1.72	1.15	0.3	0.08	0.15	0	0.015	0	.0030
2988	Hiram.....	Spring.....	1.8	1.1	0.3	0.07	0.15	0	0	0	.0088
2989	Hiram.....	Well.....	2.1	1.55	0.9	0.16	0.625	0	Trace	.0128	.0128
2990	Lewiston.....	Public supply.....	1.95	1.45	2.0	0.12	0.40	0	0	0	.0002
2991	Cornish.....	Spring.....	5.25	1.8	0	0.02	2.55	Trace	0.50	.0036	.0060
2992	Hanover.....	Spring.....	1.5	0.5	0	0.06	0.10	0	0	.0012	.0040
2993	E. Brownfield.....	Spring.....	1.65	0.2	0	0.05	0.15	Trace	Trace	.0020	.0040
2994	Readfield Depot.....	Well.....	3.0	0.9	0.1	0.15	0.425	Trace	0.10	.0009	.0061
2995	Yarmouth.....	Spring.....	3.75	1.0	0.7	0.09	0.40	.0001	0	.0006	.0053
2996	W. Pownal.....	Well.....	4.5	3.8	0	0.09	0.325	0	0.025	.0012	.0048
2997	W. Pownal.....	Well.....	4.25	2.1	0	0.05	0.30	0	0.015	.0002	.0046
2998	W. Pownal.....	Well.....	3.75	1.4	0	0.03	1.05	0	0.125	.0004	.0046
2999	W. Pownal.....	Well.....	5.5	3.7	0.1	0.06	0.375	.0008	0.02	.0026	.0056



3000	Alfred.....	Well.....	3.15	0.7	0.9	0.11	0.575	0	0.075	.0008	.0138
3001	W. Pownal.....	Drilled well.....	4.5	2.5	0	0.04	0.30	Trace	0	.0012	.0086
3002	Patten.....	Well.....	9.0	2.3	0.1	0.36	0.75	.0008	0.60	.0009	.0109
3003	Litchfield.....	Well.....	7.65	3.4	0.1	0.19	1.35	0	0.50	.0016	.0096
3004	Hampden.....	Drilled well.....	13.5	1.0	0.1	0.5	2.125	.0015	0.15	.0008	.0032
3005	Dixfield.....	Well.....	4.55	1.6	1.5	0.10	0.15	0	0.0125	.0552	.0168
3006	Bridgton.....	Spring.....	3.9	1.1	0	0.01	0.275	0	0.055	0	.0036
3007	Leeds Junction.....	Spring.....	2.25	2.0	0	0.01	0.425	0	0.20	.0003	.0071
3008	Farmington.....	Spring.....	3.0	1.8	0	0	0.15	0	0.055	0	.0014
3009	Hallowell.....	Reservoir.....	7.85	1.2	0	0.03	1.65	.0002	0.15	.0002	.0064
3010	Sheepscoot.....	Well.....	2.1	1.2	0.7	0.04	0.225	0	0.015	.0128	.0064
3011	Brewer.....	Artesian well.....	12.0	1.6	0	0.05	1.6	.0012	0.175	.0004	.0028
3012	Greenville.....	Well.....	3.9	1.0	0.8	0.19	0.325	0	0.03	.0006	.0108

## DIPHTHERIA—Sept. 1, 1906, to Dec. 31, 1909.

TOWN OR CITY.	Number.			Results.		Positives.		Negatives.		No slip.		
	Male.	Female.	Total.	+	0.	Male.	Female.	Male.	Female.	+	0.	Total.
Ashland	12	35	47	11	36	4	7	8	28	0	0	47
Athens	0	3	3	1	2	2	1	0	2	0	0	3
Auburn	93	133	226	53	173	20	33	73	100	2	10	238
Augusta	175	238	413	100	313	53	47	122	191	9	24	446
Bangor	4	9	13	2	11	1	1	3	7	0	0	13
Bar Harbor	2	9	11	2	9	0	2	2	0	0	0	11
Bath	36	54	90	16	74	4	12	32	42	0	0	90
Belfast	6	9	15	5	10	4	1	3	8	0	1	16
Belgrade	2	4	6	2	4	0	2	2	0	0	0	6
Bethel	6	12	18	3	15	1	2	5	10	0	0	18
Biddeford	14	13	27	2	25	1	1	13	12	0	0	27
Bingham	108	90	198	44	154	32	12	76	78	1	5	204
Blaine	4	0	4	1	3	1	0	3	0	0	0	4
Bluehill	1	0	1	1	0	1	0	0	0	0	0	1
Bolsters Mills	1	0	1	0	1	0	0	1	0	0	0	1
Boothbay Harbor	0	1	1	0	1	0	0	0	1	0	0	1
Bowdoinham	1	0	1	0	1	0	0	1	0	0	0	1
Bradford	2	4	6	0	6	0	0	2	4	0	0	6
Bridgewater	0	1	1	0	1	0	0	0	1	0	0	1
Bridgton	1	3	4	0	4	0	0	1	3	0	0	4
Bristol	0	0	0	0	0	0	0	0	0	0	1	1
Brooks	0	3	3	0	3	0	0	3	0	0	0	3
Brunswick	2	2	4	0	4	0	0	2	2	1	15	20
Bucksport	2	2	4	2	2	1	1	1	1	0	0	4
Burnham	1	0	1	0	1	0	0	1	0	0	0	1
Calais	48	50	98	13	85	9	4	39	46	0	0	98
Camden	8	4	12	1	11	1	0	7	4	0	0	12
Canton	1	2	3	0	3	0	0	1	2	0	0	3
Caribou	3	0	3	0	3	0	0	3	0	0	0	3
Castine	0	1	1	0	1	0	0	0	1	0	0	1
Cherryfield	2	2	4	0	4	0	0	2	2	0	0	4
Clinton	3	2	5	0	5	0	0	3	2	0	0	5
Columbia Falls	1	3	4	0	4	0	0	1	3	0	0	4
Corinna	0	3	3	0	3	0	0	0	3	0	0	3
Cumberland Center	2	1	3	1	2	1	0	1	1	0	1	4
Cumberland Mills	4	9	13	3	10	2	1	2	8	0	0	13
Damariscotta	7	8	15	3	12	1	2	6	6	0	0	15
Deer Isle	0	2	2	1	1	0	1	0	1	0	0	2
Dexter	3	5	8	2	6	1	1	2	4	0	0	8
Dover	4	3	7	1	6	0	1	4	2	0	0	7
East Boothbay	0	1	1	0	1	0	0	0	1	0	0	1
East Eddington	2	1	3	0	3	0	0	2	1	0	0	3
East Machias	1	0	1	0	1	0	0	1	0	0	0	1
East Millinocket	9	6	15	1	14	1	0	8	6	0	0	15
Easton	0	4	4	1	3	0	1	0	3	0	0	4
Eastport	17	30	47	21	26	2	13	9	17	0	0	47
East Raymond	1	0	1	0	1	0	0	1	0	0	0	1
Ellsworth	24	28	52	12	40	5	7	19	21	0	0	52
Enfield	0	1	1	0	1	0	0	0	1	0	0	1
Fairfield	8	9	17	2	15	1	1	7	8	1	0	18
Farmington	3	8	11	0	11	0	0	3	8	0	1	12
Fort Fairfield	3	7	10	2	8	1	1	2	6	0	0	10
Foxcroft	3	1	4	1	3	1	0	2	1	0	1	5
Franklin	0	1	1	1	0	0	1	0	0	0	0	1
Friendship	7	23	30	8	22	1	7	6	16	0	1	31
Fryeburg	0	1	1	0	1	0	0	0	1	0	0	1
Gardiner	16	39	55	18	37	5	13	11	26	1	0	56
Goodwin Mills	0	2	2	0	2	0	0	0	2	0	0	2
Gray	1	0	1	0	1	0	0	1	0	0	0	1
Greene	3	5	8	4	4	3	1	0	4	0	0	8
Greenville	7	13	20	2	18	1	1	6	12	0	0	20
Gulford	2	8	10	0	10	0	0	2	8	0	0	10
Hallowell	23	31	54	13	41	5	8	18	23	2	9	65
Harmony	0	1	1	0	1	0	0	0	1	0	0	1
Harrison	7	3	10	2	8	2	0	5	3	0	0	10

DIPHTHERIA—Continued.

TOWN OR CITY.	Number.			Results.		Positives.		Negatives.		No. slip.		Total.
	Male.	Female.	Total.	+	0.	Male.	Female.	Male.	Female.	+	0.	
Hartland	5	9	14	0	14	0	0	5	9	0	0	14
Hebron	6	7	13	4	9	2	2	4	5	0	1	14
Houlton	5	5	10	1	9	1	0	4	5	0	0	10
Island Falls	7	7	14	3	11	1	2	6	5	0	0	14
Kennebunkport	3	4	7	1	6	1	0	2	4	0	0	7
Kingfield	3	3	6	2	4	1	1	2	2	0	0	7
Kittery	4	3	7	2	5	0	2	4	1	0	0	7
Kittery Point	0	1	1	0	1	0	0	0	1	0	0	1
Leeds	4	4	8	0	8	0	0	4	4	0	0	8
Lewiston	65	71	136	41	95	15	26	50	45	4	2	142
Lincoln	1	0	1	0	1	0	0	1	0	0	0	1
Lisbon Falls	2	3	5	2	3	1	1	1	2	0	0	5
Litchfield	3	0	3	1	2	1	0	2	0	0	0	3
Livermore Falls	12	12	24	7	17	4	3	8	9	1	0	25
Lovell	2	2	4	2	2	0	2	2	0	0	0	4
Lubec	4	4	8	5	3	3	2	1	2	0	0	8
Machias	3	5	8	0	8	0	0	3	5	0	0	8
Madison	11	10	21	8	13	3	5	8	5	1	0	22
Mars Hill	3	2	5	0	5	0	0	3	2	1	0	6
Mexico	0	4	4	2	2	0	2	0	2	0	0	4
Millbridge	0	2	2	0	2	0	0	0	2	0	0	2
Millinocket	4	2	6	2	4	1	1	3	1	0	0	6
Milltown	4	9	13	5	8	2	3	2	6	0	0	13
Milo	1	3	4	0	4	0	0	1	3	0	0	4
Monmouth	2	5	7	0	7	0	0	2	5	0	0	7
Monson	0	1	1	0	1	0	0	0	1	0	0	1
Morrill	1	4	5	2	3	1	1	0	3	0	0	5
Mt. Desert	0	0	0	0	0	0	0	0	0	1	1	2
National Home	2	0	2	0	2	0	0	2	0	0	0	3
Norridgewock	0	5	5	2	3	0	2	0	3	0	0	5
North Anson	4	7	11	1	10	1	0	3	7	0	0	11
Northeast Harbor	6	6	12	0	12	0	0	6	6	0	0	12
North Haven	0	1	1	0	1	0	0	0	1	0	0	1
North New Portland	0	1	1	0	1	0	0	0	1	0	0	1
North Vassalboro	1	0	1	1	0	1	0	0	0	0	0	1
North Waterford	1	0	1	0	1	0	0	1	0	0	0	1
North Windham	3	5	8	1	7	0	1	3	4	0	0	8
Norway	3	2	5	1	4	1	0	2	2	0	1	6
Oakland	5	9	14	2	12	0	2	5	7	0	0	14
Ogunquit	0	1	1	0	1	0	0	0	1	0	0	1
Old Town	21	39	60	14	46	6	8	15	31	1	0	61
Orono	3	2	5	3	2	1	2	2	0	0	0	5
Oxford	3	3	6	1	5	1	0	2	3	0	0	6
Penobscot	0	1	1	0	1	0	0	0	1	0	0	1
Phillips	15	28	43	16	27	5	11	10	17	0	0	43
Phippsburg	1	3	4	1	3	0	1	1	2	0	0	4
Pittsfield	1	3	4	1	3	0	1	1	2	0	0	4
Portland	94	16	110	11	99	7	4	87	12	0	2	112
Presque Isle	8	9	17	7	10	3	4	5	5	0	1	18
Princeton	1	0	1	0	1	0	0	1	0	0	0	1
Rangeley	11	9	20	6	14	4	2	7	7	0	0	20
Readfield	0	1	1	1	0	0	1	0	0	0	0	1
Richmond	1	2	3	1	2	1	0	0	2	0	0	3
Ridlonville	0	1	1	0	1	0	0	0	1	0	0	1
Rockland	43	31	74	19	55	11	8	32	23	1	3	78
Rockport	8	18	26	10	16	2	8	6	10	0	0	26
Round Pond	2	0	2	0	2	0	0	2	0	0	0	2
Rumford	2	2	4	0	4	0	0	2	2	0	0	4
Saco	0	2	2	1	1	0	1	0	1	0	0	2
Saint Francis	1	0	1	0	1	0	0	1	0	0	0	1
Sangerville	2	2	4	3	1	1	2	1	0	0	0	4
Seal Harbor	1	0	1	1	0	1	0	0	0	0	0	1
Searsport	5	6	11	2	9	0	2	5	4	0	0	11
Shawmut	0	2	2	0	2	0	0	0	2	0	0	2
Sherman	0	2	2	0	2	0	0	0	2	0	0	2

## DIPHTHERIA—Concluded.

TOWN OR CITY.	Number.			Results.		Positives.		Negatives.		No. slip.		Total.
	Male.	Female.	Total.	+	0.	Male.	Female.	Male.	Female.	+	0.	
Sidney	14	5	19	9	10	7	2	7	3	0	0	19
Skowhegan	44	88	132	35	97	12	23	32	65	2	1	135
Smyrna Mills	4	1	5	0	5	0	0	4	1	0	0	5
Solon	0	1	1	0	1	0	0	0	1	0	0	1
South Berwick	2	2	4	1	3	0	1	2	1	0	0	4
South Brewer	0	2	2	0	2	0	0	0	2	0	0	2
South Eliot	1	0	1	0	1	0	0	1	0	0	0	1
South Paris	1	13	14	3	11	0	3	1	10	0	0	14
South Portland	7	6	13	4	9	3	1	4	5	0	1	14
South Thomaston	1	1	2	0	2	0	0	1	1	0	0	2
South Windham	7	8	15	1	14	1	0	6	8	0	0	15
Springfield	0	2	2	0	2	0	0	0	2	0	0	2
Stonington	5	6	11	4	7	3	1	2	5	0	0	11
Strong	0	1	1	1	0	0	1	0	0	0	0	1
Sullivan	2	1	3	0	3	0	0	2	1	0	0	3
Tenants Harbor	5	3	8	1	7	0	1	5	2	0	0	8
Thomaston	7	17	24	11	13	4	7	3	10	0	0	24
Turner	2	1	3	0	3	0	0	2	1	0	0	3
Union	2	1	3	0	3	0	0	2	1	0	0	3
Van Buren	2	2	4	0	4	0	0	2	2	0	0	4
Vinalhaven	3	3	6	0	6	0	0	3	3	0	0	6
Waldoboro	30	38	68	14	54	7	7	23	31	0	1	69
Warren	3	1	4	0	4	0	0	3	1	0	0	4
Washburn	0	7	7	2	5	0	2	0	5	0	0	7
Waterville	47	72	119	33	86	14	19	33	53	0	4	123
Weeks Mills	0	1	1	1	0	0	1	0	0	0	0	1
Wells Depot	1	1	2	0	2	0	0	1	1	0	0	2
Westbrook	85	76	161	57	104	33	24	52	52	0	1	162
West Enfield	1	0	1	0	1	0	0	1	0	0	0	1
West Pownal	1	0	1	0	1	0	0	1	0	0	0	1
West Sullivan	2	6	8	2	6	0	2	2	4	0	0	8
West Woolwich	1	1	2	0	2	0	0	1	1	0	0	2
Wilton	0	4	4	0	4	0	0	0	4	0	0	4
Wiscasset	9	6	15	8	7	7	1	2	5	0	1	16
Woodland	40	52	92	30	62	11	19	29	33	0	0	92
Yarmouth	5	4	9	3	6	2	1	3	3	0	0	9
Yarmouthville	0	3	3	1	2	0	1	0	2	0	0	3
York	4	8	12	1	11	0	1	4	7	0	0	12
York Village	3	2	5	2	3	1	1	2	1	0	0	5
Total	1,440	1,790	3,230	773	2,452	360	418	1,080	1,372	26	90	3,349

TUBERCULOSIS—Sept. 1, 1906, to Dec. 31, 1909.

TOWN OR CITY.	Number.			Results.		Positives.		Negatives.		No slip.		Total.
	Male.	Female.	Total.	+	o.	Male.	Female.	Male.	Female.	+	o.	
Addison	0	1	1	0	1	0	0	0	1	0	0	2
Albion	1	0	1	0	1	0	0	1	0	0	1	1
Andover	1	3	4	2	2	1	1	0	2	0	0	4
Anson	1	0	1	0	1	0	0	1	0	0	0	1
Ashland	5	1	6	0	6	0	0	5	1	0	0	1
Athens	1	3	4	0	4	0	0	1	3	0	0	4
Auburn	41	24	65	26	39	13	13	26	11	0	2	67
Augusta	148	134	282	76	206	37	89	111	95	7	38	325
Bangor	61	65	126	38	88	18	20	43	45	0	7	133
Bar Harbor	2	0	2	0	2	0	0	2	0	1	1	4
Bath	47	63	115	25	90	11	14	36	54	0	4	119
Belfast	17	9	26	9	17	6	3	11	6	0	1	27
Belgrade	5	3	8	2	6	1	1	4	2	0	0	8
Berwick	0	0	0	0	0	0	0	0	0	1	1	2
Bethel	7	7	14	3	11	1	2	6	5	0	0	14
Biddeford	53	56	109	36	73	19	17	34	39	2	4	115
Blaine	4	12	16	5	11	0	5	4	7	0	0	16
Bluehill	2	7	9	4	5	1	1	4	4	0	1	10
Boothbay Harbor	5	3	8	1	7	0	1	1	2	0	0	8
Boothplamham	5	2	7	4	3	4	0	1	2	0	0	7
Bradford	8	20	28	8	20	3	5	5	15	0	2	30
Brewer	0	1	1	1	0	0	0	1	0	0	0	1
Bridgewater	2	1	3	0	3	0	0	2	1	0	0	3
Bridgton	6	9	15	3	12	2	1	4	8	1	1	16
Bristol	0	0	0	0	0	0	0	0	0	1	1	2
Brooks	4	4	8	5	3	3	2	1	2	0	0	9
Brownfield	1	3	4	1	3	0	1	1	2	0	0	4
Brunswick	0	2	2	1	1	0	1	0	1	4	1	7
Bryants Pond	3	0	3	0	3	0	0	3	0	0	0	3
Buckfield	1	2	3	0	3	0	0	1	2	0	0	3
Burnham	2	2	4	0	4	0	0	2	2	0	0	4
Calais	34	46	80	29	51	11	13	23	28	0	0	80
Camden	4	34	38	12	26	4	12	4	22	0	1	39
Canaan	2	0	2	2	0	0	0	0	0	0	0	2
Canton	6	4	12	4	8	2	4	5	0	0	0	12
Caribou	13	31	44	17	27	2	9	5	22	0	0	45
Castine	0	2	2	0	2	0	0	0	2	0	0	2
Charleston	5	2	7	1	6	0	1	5	1	1	1	9
Cherryfield	1	2	3	0	3	0	0	1	2	0	0	3
Chisholm	1	1	2	0	2	0	0	1	1	0	0	2
Clinton	2	2	4	1	3	1	0	1	2	0	0	4
Corinna	0	3	3	0	3	0	0	0	3	0	0	3
Cornish	3	2	5	1	4	0	1	3	1	0	0	5
Cumberland	0	1	1	1	0	0	1	0	0	0	0	1
Damariscotta	3	1	4	1	3	1	0	2	1	0	0	4
Danforth	0	2	2	1	1	0	1	0	1	0	1	3
Dayton	2	0	2	0	2	0	0	2	0	0	0	2
Deer Isle	1	0	1	1	0	1	0	0	0	0	0	1
Dexter	10	9	19	9	10	3	3	4	6	0	1	20
Dixfield	6	4	10	5	5	3	2	3	2	0	0	10
Dover	4	10	14	4	10	2	2	2	8	0	0	14
Dresden	2	0	2	1	1	1	0	1	0	0	0	2
Durham	1	0	1	0	1	0	0	1	0	0	0	1
Eagle Lake Mills	0	1	1	0	1	0	0	0	1	0	0	1
East Dixfield	1	3	4	0	4	0	0	1	3	0	0	4
East Machias	6	11	17	2	15	0	2	6	9	0	0	18
East Millinocket	0	2	2	0	2	0	0	0	2	0	0	2
Easton	1	1	2	0	2	0	0	1	1	0	0	2
Eastport	15	4	19	6	13	5	1	10	3	0	0	19
East Sebago	0	0	0	0	0	0	0	0	0	0	0	0
Ellot	1	0	1	0	1	0	0	0	0	0	1	1
Ellsworth	3	2	5	2	3	1	1	2	1	0	0	5
Enfield	3	3	6	0	6	0	0	3	3	0	0	6
Exeter	1	0	1	0	1	0	0	1	0	0	0	1

## TUBERCULOSIS—Continued.

TOWN OR CITY.	Number.			Results.		Positives.		Negatives.		No slip.		Total.
	Male.	Female.	Total.	+	0.	Male.	Female.	Male.	Female.	+	0.	
Fairfield	5	14	19	5	14	1	4	4	10	2	1	22
Falmouth	4	5	9	4	5	1	3	3	2	0	0	9
Farmington	22	27	49	10	39	10	0	12	27	0	0	49
Fort Fairfield	11	15	26	6	20	2	4	0	11	0	4	30
Fort Kent	1	1	2	0	2	0	0	1	1	0	0	2
Foxcroft	7	7	14	3	11	2	1	5	6	0	0	14
Franklin	7	4	11	2	9	0	2	7	2	0	0	11
Fryeburg	2	4	6	1	5	1	0	1	4	0	0	6
Gardner	61	39	100	29	71	22	7	39	32	0	0	100
Goodwin's Mills	2	2	4	0	4	0	0	2	2	0	0	4
Gorham	0	0	0	0	0	0	0	0	0	2	2	2
Gray	1	5	6	3	3	1	2	0	3	0	0	6
Greene	2	2	4	1	3	1	0	1	2	0	0	4
Greenville	10	24	34	8	26	2	6	8	18	0	0	34
Gulford	39	8	47	20	27	19	1	28	7	2	4	53
Hallowell	37	32	69	20	49	11	9	26	23	2	5	76
Harmony	4	6	10	3	7	1	2	2	5	0	0	10
Harrison	10	8	18	5	13	4	1	6	7	0	1	19
Hartland	10	9	19	7	12	3	4	7	5	0	1	20
Heron	0	1	1	1	0	0	1	0	0	0	0	1
Houlton	3	6	9	0	9	0	0	3	6	0	0	9
Island Falls	6	2	8	3	5	3	0	3	2	0	0	8
Islesboro	3	3	6	2	4	1	1	2	2	0	0	6
Jackman	0	2	2	0	2	0	0	0	2	0	0	2
Jefferson	6	5	11	1	10	0	1	6	4	0	0	11
Jonesport	0	0	0	0	0	0	0	0	0	0	1	1
Kennebunk	1	2	3	1	2	0	1	1	1	0	0	3
Kennebunkport	1	2	3	1	2	0	1	1	1	0	0	3
Kent's Hill	0	1	1	1	0	0	1	0	0	0	0	1
Kingfield	3	7	10	1	9	0	1	3	6	0	0	10
Kingman	2	0	2	0	2	0	0	2	0	0	0	2
Kittery	1	5	6	0	6	0	0	1	5	0	0	6
LaGrange	2	4	6	1	5	1	0	1	4	0	0	6
Lebanon	1	0	1	1	0	1	0	0	0	0	0	1
Leeds	1	0	1	0	1	0	0	1	0	0	0	1
Lewiston	100	90	190	60	130	39	21	61	69	6	3	199
Limestone	4	10	14	5	9	2	3	2	7	1	1	16
Lincoln	3	4	7	1	6	0	1	3	3	0	0	7
Lisbon	1	0	1	1	0	1	0	0	0	0	0	1
Lisbon Falls	11	7	18	5	13	3	2	8	5	0	0	18
Litchfield	8	3	11	4	7	3	1	5	2	0	0	11
Livermore	3	4	7	1	6	1	0	2	4	0	0	7
Livermore Falls	7	11	18	7	11	3	4	4	7	1	0	18
Lubec	2	1	3	0	3	0	0	2	1	0	0	3
Machias	22	34	56	17	39	6	11	16	23	0	0	56
Madison	2	1	3	0	3	0	0	2	1	0	0	3
Mars Hill	9	6	15	7	8	4	3	5	3	0	0	15
Mechanic Falls	11	10	21	4	17	3	1	8	9	0	0	21
Merrill Plantation	1	0	1	0	1	0	0	1	0	0	0	1
Mexico	2	1	3	2	1	1	1	1	0	0	0	3
Milbridge	4	4	8	3	5	3	0	1	4	0	0	8
Millinocket	3	2	5	4	1	3	1	0	1	0	0	5
Milo	2	4	6	3	3	0	2	2	1	0	0	6
Monmouth	6	5	11	5	6	3	2	3	3	0	1	12
Monson	5	3	8	5	3	4	1	1	2	0	0	8
Mount Desert	1	0	1	0	1	0	0	1	0	0	0	1
Mount Vernon	5	4	9	0	9	0	0	5	4	0	0	9
Naples	2	1	3	1	2	1	0	1	1	0	0	3
New Gloucester	1	2	3	1	2	0	1	1	1	0	0	3
Newport	1	2	3	1	2	1	0	0	2	0	1	4
New Portland	0	0	0	0	0	0	0	0	0	0	1	1
New Sharon	1	1	2	0	2	0	0	1	1	0	0	2
New Sweden	0	1	1	0	1	0	0	0	1	0	0	1
New Vineyard	0	1	1	0	1	0	0	0	1	0	0	1

TUBERCULOSIS—Continued.

TOWN OR CITY.	Number.			Results.		Positives.		Negatives.		No. slip.		Total.
	Male.	Female.	Total.	+	0.	Male.	Female.	Male.	Female.	+	0.	
Norridgewock	8	6	14	2	12	1	1	7	5	0	0	14
North Anson	21	13	34	11	23	9	2	12	11	1	3	33
North Berwick	5	2	7	3	4	1	2	0	0	0	0	7
North Conway	0	1	1	0	1	0	0	0	1	0	0	1
Northeast Harbor	1	3	4	0	4	0	0	1	3	0	0	4
North Fryeburg	3	1	4	0	4	0	0	3	1	0	0	4
North Haven	1	0	1	0	1	0	0	1	0	1	0	2
North New Portland	4	16	20	5	15	0	5	4	11	0	0	20
North Pownal	0	1	1	0	1	0	0	0	1	0	0	1
North Vassalboro	4	2	6	1	5	1	0	3	2	0	0	6
North Whitefield	2	1	3	3	0	2	1	0	0	0	0	3
North Windham	2	2	4	1	3	1	0	1	2	0	0	4
Norway	5	6	11	2	9	1	1	4	5	0	0	11
Oakland	3	3	6	0	6	0	0	3	3	0	0	6
Ogunquit	0	0	0	0	0	0	0	0	0	1	1	2
Old Orchard	1	1	2	1	1	1	0	1	1	0	0	2
Old Town	38	37	75	15	60	8	7	30	30	1	3	79
Orland	0	2	2	1	1	0	1	0	1	0	0	2
Orono	4	12	16	3	13	0	3	4	9	0	0	16
Oxford	2	2	4	0	4	0	0	2	2	0	0	4
Palermo	1	0	1	0	1	0	0	1	0	0	0	1
Parkman	0	1	1	0	1	0	0	0	1	0	0	1
Patten	6	3	9	4	5	2	2	4	1	0	0	9
Peaks Island	0	1	1	0	1	0	0	0	1	0	0	1
Peru	0	1	1	0	1	0	0	0	1	0	0	1
Phillips	4	11	15	4	11	3	1	1	10	0	0	15
Phippsburg	0	15	15	7	8	0	7	0	8	0	1	16
Pittsfield	3	2	5	0	5	0	0	3	2	0	0	5
Poland	1	0	1	1	0	1	0	0	0	0	0	1
Portland	207	229	436	106	330	64	42	143	187	8	11	455
Presque Isle	31	18	49	10	39	7	3	24	15	0	0	49
Princeton	3	3	6	3	3	0	3	3	0	0	0	6
Prospect Harbor	4	3	7	2	5	0	2	4	1	0	0	7
Rangley	8	4	12	2	10	2	0	6	4	0	0	12
Readfield	2	1	3	0	3	0	0	2	1	0	1	4
Red Beach	1	0	1	1	0	1	0	0	0	0	0	1
Rockland	45	39	84	23	56	19	9	26	30	0	0	84
Rockport	2	7	9	3	6	1	2	1	5	0	0	9
Round Pond	3	3	6	0	6	0	0	3	3	0	0	6
Rumford	27	28	55	18	37	6	12	21	16	0	1	56
Saco	6	7	13	2	11	1	1	5	6	1	0	14
Saint Albans	1	0	1	1	0	1	0	0	0	0	0	1
Sanford	0	1	1	0	1	0	0	0	1	0	0	1
Sangerville	6	2	8	2	6	2	0	4	2	0	0	8
Scarboro	0	1	1	0	1	0	0	0	1	0	0	1
Searsport	1	7	8	2	6	1	1	0	6	0	0	8
Sedgwick	5	4	9	1	8	0	1	5	3	0	0	9
Shawmut	4	11	15	3	12	2	1	2	10	0	0	15
Shiloh	6	10	16	1	15	0	1	6	9	0	0	16
Sidney	7	12	19	5	14	2	3	5	9	0	0	19
Skowhegan	12	27	39	8	31	3	5	9	22	0	1	40
Smyrna Mills	5	2	7	1	6	1	0	4	2	0	0	7
Solon	0	0	0	0	0	0	0	0	0	0	1	1
South Berwick	10	11	21	2	19	1	1	9	10	0	0	21
South Brewer	5	7	12	4	8	2	2	3	5	2	3	17
South Brooksville	0	1	1	0	1	0	0	0	1	0	0	1
South China	0	1	1	0	1	0	0	0	1	0	0	1
South Elliot	1	1	2	0	2	0	0	0	1	0	0	2
South Gardiner	1	4	5	0	5	0	0	0	1	4	0	5
South Hope	1	0	1	1	0	1	0	0	0	0	0	1
South Paris	5	5	10	3	7	1	1	0	3	0	0	10
South Portland	25	35	60	13	47	7	11	13	24	4	0	60
South Windham	7	6	13	4	9	2	2	1	4	0	0	13
Springfield	2	1	3	1	2	0	1	1	0	0	0	3
Stockholm	0	2	2	0	2	0	0	2	0	0	0	2

## TUBERCULOSIS—Concluded.

TOWN OR CITY.	Number.			Results.		Positives.		Negatives.		No slip.		Total.
	Male.	Female.	Total.	+	0.	Male.	Female.	Male.	Female.	+	0.	
Stonington	2	3	10	2	8	0	2	2	6	0	0	10
Stratton	4	4	4	3	1	3	1	0	0	0	0	4
Strong	2	2	2	0	2	0	2	2	0	0	0	2
Sullivan	3	2	5	1	4	1	0	2	2	0	0	5
Tenants Harbor	18	6	16	3	13	3	7	7	6	0	0	16
Thomaston	17	14	31	7	24	6	1	11	13	0	0	31
Turner	0	0	2	1	1	0	1	0	1	0	0	2
Union	0	0	0	0	0	0	0	0	0	1	0	1
Upton	1	1	1	0	1	0	0	1	0	0	0	1
Van Buren	11	2	19	3	16	3	0	8	8	0	0	19
Vinalhaven	2	2	4	0	4	0	2	2	2	0	0	4
Waldoboro	17	16	33	11	22	6	5	11	11	0	0	33
Warren	6	6	8	1	7	1	0	5	2	0	0	8
Waterville	103	145	248	93	155	41	52	62	93	9	7	264
Webster	0	1	1	1	0	0	1	0	0	0	0	1
Weid	2	3	5	2	3	2	3	3	2	1	1	6
Wells	1	3	4	1	3	0	1	1	2	0	0	4
West Auburn	0	1	1	0	1	0	0	0	1	0	0	1
Westbrook	29	27	56	14	42	7	7	22	20	2	2	60
West Enfield	6	1	7	4	3	3	1	3	0	0	0	7
West Paris	1	4	5	0	5	0	1	4	1	0	0	5
West Pownal	2	1	3	1	2	1	1	1	1	0	0	3
West Sullivan	23	22	45	15	30	10	5	13	17	0	0	45
Whitneyville	0	1	1	0	1	0	0	0	1	0	0	1
Wilton	10	4	14	4	10	4	0	6	4	0	0	14
Windham	1	0	1	0	1	0	0	1	0	0	0	1
Winthrop	0	1	1	0	1	0	0	0	1	0	0	1
Wiscasset	0	4	4	0	4	0	0	0	4	0	0	4
Woodfords	2	2	4	2	2	2	1	1	1	1	1	4
Woodland	2	2	5	3	2	1	1	1	1	1	0	5
Woolwich	4	0	4	1	3	3	2	3	0	0	0	4
Wytopitlock	1	3	4	2	2	1	1	0	2	0	0	4
Yarmouth	4	2	6	4	2	2	2	2	2	0	0	6
York	3	3	6	0	6	0	0	3	3	0	0	6
York Beach	1	0	1	0	1	0	0	1	0	0	0	1
York Village	2	1	3	0	3	0	0	2	1	0	0	3
Total	1,889	2,020	3,909	1,102	2,807	584	518	1,306	1,501	63	134	4,106



TYPHOID FEVER—Sept. 1, 1906 to Dec. 31, 1909.

TOWN OR CITY.	Number.			Results.		Positives.		Negatives.		No. slip.		Total.
	Male.	Female.	Total.	+	0.	Male.	Female.	Male.	Female.	+	0.	
Ashland	8	3	11	2	0	9	2	0	6	3	0	11
Auburn	6	1	7	0	0	7	0	0	6	1	0	7
Augusta	77	68	145	25	120	11	14	66	54	3	18	166
Bangor	11	7	18	5	13	1	4	10	3	0	0	18
Baring	0	1	1	1	0	0	1	0	0	0	0	1
Bath	19	11	30	5	25	1	4	18	7	0	0	30
Belgrade	0	0	0	0	0	0	0	0	0	0	2	2
Bethel	5	1	6	1	5	0	1	5	0	0	0	6
Biddeford	1	3	4	0	4	0	0	1	3	0	0	4
Blaine	0	2	2	0	2	0	0	0	2	0	0	2
Bluehill	4	4	8	0	8	0	0	4	4	0	0	8
Bowdoinham	2	2	4	1	3	1	0	1	2	0	0	4
Bradford	0	1	1	1	0	0	1	0	0	0	0	1
Brunswick	0	4	4	1	3	0	0	1	3	0	0	4
Bryants Pond	1	0	1	0	1	0	0	1	0	0	0	1
Buckfield	3	3	6	1	5	1	0	2	3	0	0	6
Burnham	2	0	2	0	2	0	0	2	0	0	0	2
Calais	29	16	45	17	28	13	4	16	12	0	0	45
Camden	2	1	3	2	1	1	1	1	0	0	0	3
Canaan	1	1	2	0	2	0	0	1	1	0	0	2
Canton	1	1	2	1	1	0	1	1	0	0	0	2
Caribou	1	2	3	1	2	0	1	1	1	0	0	3
Carthage	1	0	1	0	1	0	0	1	0	0	0	1
Cherryfield	11	2	13	3	10	2	1	9	1	0	0	13
China	0	1	1	0	1	0	0	0	1	0	0	1
Clinton	2	0	2	0	2	0	0	2	0	0	0	2
Cornish	0	1	1	0	1	0	0	0	1	0	0	1
Dexter	0	0	0	0	0	0	0	0	0	0	1	1
Dixfield	3	5	8	1	7	0	1	3	4	0	0	8
Easton	0	1	1	0	1	0	0	0	1	0	0	1
East Dixfield	1	0	1	0	1	0	0	1	0	0	0	1
East Millinocket	3	5	8	3	5	1	2	2	3	0	0	8
Fairfield	3	1	4	0	4	0	0	3	1	0	0	4
Farmington	2	1	3	0	3	0	0	2	1	0	0	3
Foxcroft	2	2	4	0	4	0	0	2	2	0	0	4
Franklin	2	1	3	0	3	0	0	2	1	0	0	3
Gardiner	5	11	16	3	13	1	2	4	9	0	1	17
Garland	3	2	5	1	4	1	0	2	2	0	0	5
Gorham	0	1	1	0	1	0	0	0	1	0	0	1
Greenville	9	4	13	1	12	0	1	9	3	0	0	13
Guilford	8	1	9	1	8	0	1	8	0	0	0	9
Hallowell	15	19	34	5	29	2	3	13	16	0	2	36
Harrison	2	0	2	0	2	0	0	2	0	0	0	2
Hartland	0	1	1	0	1	0	0	0	1	0	0	1
Hebron	4	3	7	0	7	0	0	4	3	0	0	7
Hermon	0	0	0	0	0	0	0	0	0	0	2	2
Island Falls	1	0	1	0	1	0	0	1	0	0	1	2
Isle of Springs	0	0	0	0	0	0	0	0	0	0	1	1
Jefferson	8	7	15	4	11	3	1	5	6	0	0	15
Jonesport	1	0	1	0	1	0	0	1	0	0	0	1
Kingfield	1	0	1	0	1	0	0	1	0	0	0	1
Lewiston	5	7	12	4	8	1	3	4	4	0	0	12
Lincoln	4	4	8	2	6	2	0	2	4	0	0	8
Linneus	1	0	1	0	1	0	0	1	0	0	0	1
Litchfield	2	1	3	1	2	0	1	2	0	0	0	3
Livermore Falls	8	2	10	2	8	1	1	7	1	0	0	10
Lubec	3	5	8	3	5	0	3	3	2	0	0	8
Machias	3	9	12	2	10	0	2	3	7	0	0	12
Mars Hill	3	3	6	1	5	1	0	2	3	0	0	6
Mechanic Falls	0	0	0	0	0	0	0	0	0	0	1	1
Mexico	1	0	1	0	1	0	0	1	0	0	0	1
Milbridge	7	2	9	0	9	0	0	7	2	0	0	9
Millinocket	8	2	10	1	9	1	0	7	2	0	0	10
Milltown	1	0	1	0	1	0	0	1	0	0	0	1

TYPHOID FEVER—Concluded.

TOWN OR CITY.	Number.			Results.		Positives.		Negatives.		No slip.		Total.
	Male.	Female.	Total.	+	0.	Male.	Female.	Male.	Female.	+	0.	
Milo	1	1	2	1	1	0	1	1	0	0	0	2
Monson	5	2	7	2	5	2	0	3	0	0	0	2
Mt. Desert	1	0	1	0	1	0	0	1	0	0	0	1
Mt. Vernon	3	3	6	2	4	0	2	3	1	1	0	6
New Sharon	1	1	2	0	2	0	0	1	1	0	0	2
North Berwick	5	3	8	0	8	0	0	5	3	0	0	8
Northeast Harbor	0	4	4	0	4	0	0	0	4	0	0	4
North Vassalboro	2	0	2	0	2	0	0	2	0	0	0	2
North New Portland	0	1	1	0	1	0	0	0	1	0	0	1
Oakland	14	10	24	6	18	3	3	11	7	0	1	25
Old Town	5	4	9	3	6	2	1	3	3	0	1	10
Orono	1	2	3	0	3	0	0	1	2	0	0	3
Oxford	1	0	1	0	1	0	0	1	0	0	0	1
Patten	2	0	2	0	2	0	0	2	0	0	0	2
Peaks Island	0	0	0	0	0	0	0	0	0	0	5	5
Phillips	3	0	3	1	2	1	0	2	0	0	0	3
Phippsburg	3	2	5	1	4	1	0	2	2	0	0	5
Portland	46	18	64	13	51	8	5	38	13	2	4	70
Presque Isle	0	1	1	1	0	0	1	0	0	0	0	1
Princeton	4	0	4	1	3	1	0	3	0	0	0	4
Rangleley	1	3	4	0	4	0	0	1	3	0	0	4
Robbinston	3	1	4	1	3	1	0	2	1	0	0	4
Rockland	1	3	4	1	3	1	0	0	3	0	0	4
Rockport	6	3	9	3	6	2	1	4	2	0	0	9
Round Pond	1	1	2	0	2	0	0	1	1	0	0	2
Rumford	2	0	2	0	2	0	0	2	0	0	0	2
Sabattus	1	0	1	1	0	1	0	0	0	0	0	1
Saco	3	0	3	0	3	0	0	3	0	0	0	3
Sangerville	2	1	3	0	3	0	0	2	1	0	0	3
Scarboro	0	2	2	0	2	0	0	0	2	0	0	2
Searsport	0	1	1	1	0	0	1	0	0	0	0	1
Shawmut	1	0	1	0	1	0	0	1	0	0	0	1
Sidney	1	1	2	0	2	0	0	1	1	0	0	2
Skowhegan	2	1	3	1	2	1	0	1	1	0	0	3
South Berwick	6	1	7	2	5	2	0	4	1	0	0	7
South China	1	1	2	0	2	0	0	1	1	0	0	2
South Elliot	1	0	1	1	0	0	1	0	0	0	0	1
South Gardiner	1	0	1	0	1	0	0	1	0	0	0	1
South Paris	1	2	3	0	3	0	0	1	2	0	0	3
South Thomaston	0	1	1	0	1	0	0	0	1	0	0	1
South Windham	2	12	14	0	14	0	0	2	12	0	0	14
Springfield	2	1	3	1	2	1	0	1	1	0	0	3
Squirrel Island	0	2	2	1	1	0	1	0	1	0	0	2
Stonington	14	9	23	6	17	3	3	11	6	0	0	23
Tenants Harbor	4	1	5	0	5	0	0	4	1	0	0	5
Thomaston	1	0	1	0	1	0	0	1	0	0	0	1
Van Buren	1	0	1	0	1	0	0	1	0	0	0	1
Vinalhaven	5	1	6	1	5	1	0	4	1	0	0	6
Waldoboro	11	2	13	4	9	4	0	7	2	0	0	13
Washburn	5	1	6	1	5	1	0	4	1	0	0	6
Waterville	14	13	27	4	23	2	2	12	11	0	3	30
West Paris	1	1	2	1	1	1	0	0	1	0	0	2
West Pownal	2	3	5	1	4	1	0	2	2	0	0	5
Woodfords	1	3	4	0	4	0	0	1	3	0	0	4
Woodland	11	3	14	1	13	0	1	11	2	0	0	14
Woolwich	0	2	2	1	1	0	1	0	1	0	0	2
York Harbor	5	9	14	2	12	2	0	3	9	0	0	14
York Village	3	0	3	1	2	1	0	2	0	0	0	3
Total	519	373	892	160	723	91	78	429	294	5	44	941

## FINANCIAL STATEMENTS.

The following statements show the amount of money which was spent from the appropriations for running expenses of the State board of health for each of the years included in the period 1906-1909, so arranged as to indicate the sums spent for various purposes.

1906.	
Printing and binding .....	\$197 55
Stationery .....	274 99
Books and sanitary journals .....	289 20
Postage .....	310 39
Express, telegraph and telephone .....	194 54
Secretary's salary .....	2,000 00
Expenses of Secretary .....	12 00
Expenses of members .....	141 12
Clerical help .....	877 40
Engraving and drawing .....	6 00
Help other than clerical .....	130 28
Laboratory Supplies .....	290 12
Instruments and apparatus .....	1 50
Vaccine, antitoxin, disinfectants, etc. ....	24 95
Office furnishings .....	201 65
Miscellaneous .....	48 31
	\$5,000 00

1907.	
Printing and binding .....	\$106 16
Stationery .....	334 11
Books and sanitary journals .....	209 73
Postage .....	159 14
Express, telegraph and telephone .....	190 73
Secretary's salary .....	2,250 00
Expenses of Secretary .....	161 92
Expenses of members .....	447 82
Clerical help .....	1,008 83
Help other than clerical .....	14 87
Vaccine, antitoxin, disinfectants, etc. ....	5 42
Office furnishings .....	97 85
Miscellaneous .....	13 42
	\$5,000 00

1908.	
Printing and binding .....	\$124 29
Stationery .....	133 84
Books and sanitary journals .....	207 13
Postage .....	206 94
Express, telegraph and telephone .....	172 95
Secretary's salary .....	2,500 00
Expenses of Secretary .....	205 33
Expenses of members .....	238 66
Clerical help .....	982 71
Engraving and drawing .....	5 25
Help other than clerical .....	6 00
Office furnishings .....	82 10
Miscellaneous .....	34 25
	<hr/>
	\$4,989 45

1909.	
Printing and binding .....	\$213 15
Stationery .....	206 54
Books and sanitary journals .....	212 09
Postage .....	227 75
Express, telegraph and telephone .....	188 17
Secretary's salary .....	2,500 00
Expenses of Secretary .....	116 41
Expenses of members .....	177 15
Drawings, photographs, charts, and other material for exhibit and educative work .....	285 08
Travelling and other expenses in exhibit and edu- cative work .....	137 81
Clerical help .....	1,107 58
Help other than clerical .....	36 45
Office furnishings .....	57 25
Miscellaneous .....	34 10
	<hr/>
	\$5,499 53

#### EPIDEMIC FUND.

For each of the four years 1906-1909, there has been an epidemic or emergency fund at the disposal of the State board of health to be used with the consent of the Governor and Council in case of the invasion or threatened invasion of small-pox or other dangerous epidemic diseases into the State. The following shows the amount of this fund which has been used in each of these four years.

1906 .....	\$3,000 00
1907 .....	868 97
1908 .....	896 27
1909 .....	52 35

## STATE LABORATORY OF HYGIENE.

1906.

Stationery .....	\$21 21	
Books and sanitary journals .....	21 10	
Postage .....	1 00	
Express, telegraph and telephone .....	81 78	
Salaries .....	2,077 14	
Travelling and other expenses of Director.....	4 00	
Chemical and bacteriological supplies .....	110 31	
Instruments and apparatus .....	8 00	
Heating and lighting .....	119 54	
Rent .....	264 34	
Water .....	20 00	
Furnishings and repairs .....	271 58	
		<hr/> \$3,000 00

1907.

Printing .....	\$62 89	
Stationery .....	26 75	
Books and sanitary journals .....	185 85	
Postage .....	72 00	
Express, telegraph and telephone .....	109 07	
Salaries .....	2,433 75	
Travelling and other expenses of Director.....	64 62	
Chemical and bacteriological supplies .....	411 66	
Instruments and apparatus .....	448 88	
Insurance .....	22 00	
Heating and lighting .....	165 61	
Rent .....	234 00	
Water .....	40 00	
Furnishings and repairs .....	185 13	
		<hr/> \$4,462 21

1908.

Printing .....	\$87 56	
Stationery .....	18 74	
Books and sanitary journals .....	50 21	
Postage .....	100 77	
Express, telegraph and telephone .....	162 71	
Salaries .....	2,516 64	
Travelling and other expenses of Director.....	8 35	
Chemical and bacteriological supplies .....	728 10	
Insurance .....	15 00	
Heating and lighting .....	202 12	
Rent .....	420 00	
Water .....	40 00	
Furnishings and repairs .....	149 74	
		<hr/> \$4,499 94

1909.

Printing .....	\$80 42
Stationery .....	28 25
Books and sanitary journals .....	48 30
Postage .....	112 88
Express, telegraph and telephone .....	226 98
Salaries .....	2,666 65
Travelling and other expenses of Director.....	28 65
Chemical and bacteriological supplies .....	470 40
Instruments and apparatus .....	213 10
Insurance .....	29 6c
Heating and lighting .....	190 62
Rent .....	308 00
Water .....	40 00
Furnishings and repairs .....	35 60
Miscellaneous .....	20 45
	<hr/>
	\$4,499 90

## REPORT OF THE STATE BOARD OF EMBALMING EXAMINERS.

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Complying with the requirements of Chapter 18, Section 17, the following report for the years 1906-1909 is made to the State Board of Health:

A. G. Young, secretary of the State Board of Health, is *ex-officio* a member and clerk and treasurer of the board. The other members for the years 1906 and 1907 were: Frank Redington, Waterville, *Chairman*; Richard H. Stubbs, M. D., Augusta, and Ralph B. White, Bangor.

At the meeting of the State Board of Embalming Examiners held May 12, 1908, Mr. H. W. Rich, of Portland, was present as the newly-appointed member taking the place of Frank Redington, whose term of office had expired.

At the meeting of May 11, 1909, Mr. J. C. Flagg, of Richmond, was for the first time in attendance, he having been appointed to take the place of Ralph B. White, whose term of office had expired.

Meetings were held on the following dates for the purpose of examining candidates: June 20 and October 3, 1906; May 15 and October 29, 1907; January 23, May 12 and November 10, 1908; May 11 and November 9, 1909.

The following is a list of the persons who passed a successful examination at the meetings of the board during the period 1906-1909, and have received the certificate which is given to licensed embalmers. The dates indicate the meeting at which the several persons received their examinations, and the last column of the table gives the number of the license certificate of each.

Name.	Residence.	Date of Examination.	License Number.
Daniel J. Ellsworth	Portland, Me.	June 20, 1906	155
Alton F. Hussey	East Vassalboro, Me.	June 20, 1906	156
Walter S. Dillingham	Turner, Me.	June 20, 1906	157
E. M. Bucknam	Machias, Me.	June 20, 1906	158
Harry F. Bragdon	Millinocket, Me.	June 20, 1906	159
N. G. Jackson	Bath, Me.	June 20, 1906	160
F. S. Nye	Brewer, Me.	June 20, 1906	161
Thaddeus L. Montgomery	Boothbay Harbor, Me.	June 20, 1906	162
B. C. Peabody	Portland, Me.	October 3, 1906	163
Winfield Scott Hinckley	Lisbon, Me.	October 3, 1906	164
Joseph Davison	Monson, Me.	October 3, 1906	165
T. Harold Branch	Waterville, Me.	October 3, 1906	166
Harry W. Corson	Newcastle, Me.	October 3, 1906	167
William C. Chadbourne	Bath, Me.	May 15, 1907	168
Kervin L. Deymore	Freeport, Me.	May 15, 1907	169
W. W. Fish	Freeport, Me.	May 15, 1907	170
U. S. Gushee	Farmington, Me.	May 15, 1907	171
Myron J. Hall	Casco, Me.	May 15, 1907	172
Fred B. Penley	Auburn, Me.	May 15, 1907	173
Galen R. Ramsay	Dexter, Me.	May 15, 1907	174
Norris E. Stanley	South Hiram, Me.	May 15, 1907	175
Stanley P. Elliott	Pemaquid, Me.	October 29, 1907	176
Clarence P. Voter	Rumford Falls, Me.	October 29, 1907	177
George S. Staples	Sebago Lake, Me.	October 29, 1907	178
Philip N. Colbath	Gardiner, Me.	October 29, 1907	179
Oliver G. Lombard	South Portland, Me.	January 23, 1908	180
H. H. Whitney	Caribou, Me.	January 23, 1908	181
James Elmer Warren	Buckfield, Me.	May 12, 1908	182
William F. Mullen	Augusta, Me.	May 12, 1908	183
Wilbur F. Merrill	Wiscasset, Me.	May 12, 1908	184
Charles W. Plummer	Newcastle, Me.	May 12, 1908	185
John H. Grondin	Waterville, Me.	May 12, 1908	186
Eugene Z. Keny	Lewiston, Me.	May 12, 1908	187
James R. Sederquest	St. Stephen, N. B.	May 12, 1908	188
Hanno A. Packard	Bethel, Me.	May 12, 1908	189
Charles E. Cowley, Jr.	Wiscasset, Me.	November 10, 1908	190
George Alfred Evison	Boston Mass.	November 10, 1908	191
John H. Westwood, Jr.	Portland, Me.	November 10, 1908	192
Prince M. Bessey	Augusta, Me.	November 10, 1908	193
John E. Graney, Jr.	Portland, Me.	November 10, 1908	194
Hamlin B. Bowes	Union, Me.	November 10, 1908	195
Harry C. Austin	Ellsworth, Me.	November 10, 1908	196
Leon C. Roberts	Readfield, Me.	November 10, 1908	197
Charles E. Merrill	Auburn, Me.	November 10, 1908	198
Douglas S. Pease	Colebrook, N. H.	November 10, 1908	199
Bernice M. White	Bangor, Me.	November 10, 1908	200
G. R. Lewis	Rumford, Me.	November 10, 1908	201
Harry B. Mitchell	Yarmouth, Me.	November 10, 1908	202
Frank E. Dillingham	Turner, Me.	November 10, 1908	203
Walter M. Spear	Standish, Me.	November 10, 1908	204
Norman A. Fuller	Portland, Me.	November 10, 1908	205
Arthur G. Andrews	Ashland, Me.	May 11, 1909	206
L. J. Buckley	Bangor, Me.	May 11, 1909	207
Frank Dunn	Houlton, Me.	May 11, 1909	208
Charles K. Durgan	West Harpswell, Me.	May 11, 1909	209
John M. Leonard	Livermore Falls, Me.	May 11, 1909	210
John W. McAlister	Auburn, Me.	May 11, 1909	211
Guy L. Meader	Lisbon, Me.	May 11, 1909	212
L. E. Mitchell	Portland, Me.	May 11, 1909	213
Irving L. Rich	Portland, Me.	May 11, 1909	214
Charles Rodrigue	Waterville, Maine.	May 11, 1909	215
J. H. Thing	Belgrade, Me.	May 11, 1909	216
Freeman E. Wass	Jonesport, Me.	May 11, 1909	217
Lyman W. Wilkins	Gardiner, Me.	May 11, 1909	218
Mrs. R. A. Wing	Livermore Falls, Me.	May 11, 1909	219
William S. Dresser	Portland, Me.	November 9, 1909	220
Nelson G. Riley	Milltown, N. B.	November 9, 1909	221
W. S. Carver	Vinalhaven, Me.	November 9, 1909	222
Richard J. Duddy	Portland, Me.	November 9, 1909	223
A. Thurston Parker	Portsmouth, N. H.	November 9, 1909	224
Thomas G. Lord	Skowhegan, Me.	November 9, 1909	225
Maurice D. Towle	Belfast, Me.	November 9, 1909	226
Edward McKeever	Lincoln, Me.	November 9, 1909	227



## RECEIPTS AND DISBURSEMENTS.

Receipts—1906.	
Balance, January 1, 1906 .....	\$476 25
License fees .....	75 00

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\$551 25

Disbursements.	
Expenses of Clerk .....	\$27 40
Expenses of Members.....	98 00
Balance on hand .....	425 85

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\$551 25

Receipts—1907.	
Balance, January 1, 1907 .....	\$425 85
License fees .....	65 00

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\$490 85

Disbursements.	
Printing .....	\$6 15
Postage .....	30 00
Expenses of Clerk .....	16 65
Expenses of Members .....	36 45
Balance on hand .....	401 60

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\$490 85

Receipts—1908.	
Balance, January 1, 1908 .....	\$401 60
License fees .....	151 60

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\$553 20

Disbursements.	
Printing .....	\$10 80
Expenses of Clerk .....	24 05
Expenses of Members .....	37 35
To State Treasurer .....	81 00
Balance .....	400 00

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\$553 20

## STATE BOARD OF HEALTH.

Receipts—1909.	
Balance, January 1, 1909 .....	\$400 00
License fees .....	125 00
	\$525 00
Disbursements.	
Printing .....	\$4 54
Expenses of Clerk .....	14 24
Expenses of Members .....	65 15
To State Treasurer .....	41 07
Balance .....	400 00
	\$525 00