Report of the City Health Department / City of Winnipeg.

CITY OF WINNIPEG

REPORT
OF THE
CITY HEALTH
Department

FOR THE YEAR ENDING
31st DECEMBER

1928

Presented by

The Medical Officer

July 1929

CITY OF WINNIPEG

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CITY *HEALTH*

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CONTENTS

Committee on Health
1928

Alderman R. J. Shore, Chairman
Alderman A. H. Pulford
Alderman S. J. Farmer
Alderman F. H. Davidson
Alderman T. Boyd
Alderman T. Flye
Alderman W. B. Simpson
Alderman J. Blumberg
Alderman J. A. Barry
His Worship Mayor D. McLean,
(ex-officio)

Staff
(December, 1928)

Medical Health Officer
A. J. Douglas, M.D.

Laboratory

Bacteriologist—M. S. Lougheed, M.D.
Assistant Bacteriologist—Miss M. Wilson
Laboratory Boy—J. R. Bentham

District Physicians

W. Turnbull, M.D.
O. C. Dorman, M.D.
E. H. Alexander, M.D.

Communicable Diseases Division

Chief Inspector—W. J. T. Watt
Inspector—A. Paull
" —C. H. Hargrave
" —H. H. Marshall
" —H. Robinson
" —G. Hanby*

Tuberculosis Nurse—Miss K. M. Vanetta
" " —Miss H. Smyth
" " —Miss M. Simpson
Record Clerk—G. Moore
Clerk—G. W. Kelly

* Retired March 31st, 1928

Staff—Continued

Sanitary Inspections Division

Chief Inspector—E. W. J. Hague
Smoke and Supervising Inspector—
P. Pickering
Inspector—S. J. Scheving
" —O. S. Oliver*
" —B. C. Brough
" —J. McHardy
" —A. Barclay
" —J. Shepherd
* Retired June 30th
† Retired March 31st

Tenement and Supervising Inspector—
A. Officer
Supervising Inspector—D. Little
Inspector—J. Foggie
" —R. McQuillan
" —A. Aitken
" —F. C. Austin
" —B. Davies
Inspectors' Clerk—W. Hanby†
" " —G. Duffield
Clerk—S. L. Steele

Dairy Division

Chief Inspector—E. C. Brown
Creameries Inspector—F. Lutley
Inspector—T. J. Booth
" —J. M. Jackson

Food Division

Chief Inspector—A. Rigby
Inspector—A. W. Foote
" —G. R. Mines

Bureau of Child Hygiene

Manager—A. G. Lawrence
Nurse—Miss M. M. Wonnacott
" —Miss A. J. Attrill
" —Miss L. Spratt
" —Miss C. Maddin
" —Miss A. Moore
" —Miss C. Munro
" —Miss L. A. Schwalm
" —Miss E. A. Bennett
" —Miss M. M. Harper

Nurse—Miss A. M. Wilkins
" —Miss H. A. Carter
" —Miss C. W. Thom
" —Mrs. C. E. Smith
" —Miss M. B. Bowles
Dietitian—Miss M. A. Graham
Assistant—Mrs. J. McDonald
" —Mrs. H. Twist
" —Mrs. A. B. Gibson
Caretaker—G. Wade

Attending Physician—R. F. Rorke, M.D.
" " —F. G. Schwalm, M.D.

Division of Records and Statistics

Secretary—A. G. Lawrence
Stenographer-Clerk—Miss E. S. Halliday

Stenographer-Clerks—
Miss E. Fraser
Miss F. J. V. Orr

Street Cleaning Division

Chief of Division—E. A. Wood
Scavenging Superintendent—J. Middleton
Street Cleaning Superintendent—
L. Woodhall

Clerk—J. J. Higgins
" —C. Fortt*
" —J. McTavish
Stenographer—Miss V. Pope

* Transferred to Comptroller's Dept. in April

Report of the Medical Health Officer

City Health Department,
Winnipeg, Man., April 2nd, 1929

Chairman and Members of the
Committee on Health

Gentlemen:

I have the honor to submit for your consideration the report of the Health Department for the year 1928. This includes the reports of the heads of Divisions, and a statement of the cost of the year's work.

Vital Statistics

The number of deaths, excluding stillbirths, was 1,806. Assuming the population to be 202,377 (City Assessor's figures), this gives a gross death rate of 8.92. This is slightly over the rate of 1927, which was 8.29 and the second lowest we have on record.

The number of deaths in children under one year of age was 284, giving a mortality rate of 63.46 per 1,000 living births. Again this is a higher rate than last year's record low of 61.17, and is attributable to the increased number of deaths due to the influenza outbreak in the month of December. For the first eleven months, our rate was under 60, but the December rate of 100 raised the total for the year. Even at this our rate is the second lowest we have recorded.

The number of births, excluding stillbirths, was 4,475, giving a birth rate of 22.11. This rate shows a slight decline under that of the previous year which was 22.44.

The marriage rate shows a slight increase over 1927, the figures being 13.92 and 12.27 respectively.

Further details regarding births and deaths will be found in the report of the Statistician. These figures are of interest and importance. They extend over the period of which we have a record and should be studied in order to obtain an appreciation of the variations which have taken place over a period of years.

Financial Statement

The statement is divided into two parts, the first covering those services concerning the control and prevention of disease, and the second, refuse collection and disposal, and street cleaning services.

Control and Prevention of Disease, 1928
Summary

(a)	Personal services	$ 99,056.82
(b)	Outside services	7,709.50
(c)	Material, supplies and repairs	7,360.32
(d)	Equipment and replacements	2,880.25
(e)	Fuel, water, light and power	1,209.64
(f)	Other expenses	250.00
(i)	Interest	600.00
		$119,066.53

Expenditure by Divisions

C-1 Administration and Statistics (Controllable)—

(a)	Personal Services	$ 11,530.00	
(b)	Outside Services	151.23	
(c)	Material, Supplies and Repairs	491.53	
(d)	Equipment, Additions and Replacements	94.08	
(f)	Unforseen Expenditures	250.00	
			$ 12,516.84

C-2 Bacteriological Laboratory (Controllable)—

(a)	Personal Services	$ 5,706.00	
(b)	Outside services	44.52	
(c)	Material, Supplies and Repairs	660.64	
(d)	Equipment, Additions and Replacements	11.02	
(e)	Fuel, Water, Light and Power	108.49	
			$ 6,530.67

C-3 Treatment and Prevention of Communicable Diseases—

C-3-1 Acute Communicable Diseases (Controllable)—

(a)	Personal Services	$ 11,328.00	
(b)	Outside Services	165.70	
(c)	Material, Supplies and Repairs	559.17	
(d)	Equipment, Additions and Replacements	287.60	
			$ 12,340.47

C-3-2 Tuberculosis (Controllable)—

(a)	Personal Services	$ 4,130.00	
(c)	Material, Supplies and Repairs	1,414.69	
(d)	Equipment, Additions and Replacements	172.37	
			$ 5,717.06

C-3-3 Smallpox and Diphtheria Prevention (Controllable)—

(b)	Outside Services	$ 1,946.25	
(c)	Material, Supplies and Repairs	792.34	
			$ 2,738.59

C-3-4 Automobile Services (Controllable)—

(b)	Outside Services	$ 283.29	
(c)	Material, Supplies and Repairs	529.48	
(d)	Equipment, Additions and Replacements	613.00	
			$ 1,425.77

C-3-5 Fixed Charges on Debenture Debt (Uncontrollable)—

(i)	Interest	$ 600.00	
			$ 600.00

Total Treatment and Prevention of Communicable Diseases $ 22,821.89

C-4 Sanitary Inspection (Controllable)—

(a)	Personal Services	$ 28,758.00	
(b)	Outside Services	39.02	
(c)	Material, Supplies and Repairs	296.26	
(d)	Equipment, Additions and Replacements	748.55	
			$ 29,841.83

C-5 Food and Dairy Inspection (Controllable)—

C-5-1 Dairy Inspection—

(a)	Personal Services	$ 7,800.00	
(b)	Outside Services	500.40	
(c)	Material, Supplies and Repairs	245.07	
(d)	Equipment, Additions and Replacements	218.48	
			$ 8,763.95

C-5-2 Food Inspection—

(a)	Personal Services	$ 6,526.00	
(b)	Outside Services	36.00	
(c)	Material, Supplies and Repairs	81.88	
(d)	Equipment, Additions and Replacements	151.87	
			$ 6,795.75

Total Food and Dairy Inspection $ 15,559.70

C-6 Child Welfare (Controllable)—

C-6-1 Babies' Milk Depot—

(a)	Personal Services	$ 4,038.23	
(b)	Outside Services	3,610.34	
(c)	Material, Supplies and Repairs	1,745.04	
(d)	Equipment, Additions and Replacements	13.88	
(e)	Fuel, Water, Light and Power	1,101.15	
			$ 10,508.64

C-6-2 Child Welfare Visiting Nurses—

(a)	Personal Services	$ 19,240.59	
(c)	Material, Supplies and Repairs	136.11	
(d)	Equipment, Additions and Replacements	569.40	
			$ 19,946.10
	Total Child Welfare		$ 30,454.74

C-7 Medical Relief (Controllable)—

C-7-1 District Physicians—

(b)	Outside Services	$ 932.75	
(c)	Material, Supplies and Repairs	208.51	
			$ 1,141.26

C-7-2 Insulin—

(c)	Supplies	$ 199.60	
			$ 199.60
	Total Medical Relief		$ 1,340.86

Gross Expenditure, Control and Prevention of Disease $119,066 53

Revenue

(Credited to City's Revenue Account)

Police Court Fines and Costs	$ 103.50	
Fees for Fumigation	.75	
Fees for Laboratory Work	271.50	
Sale of Infant's Feedings at Milk Depot	1,010.05	
		$ 1,385.80
Net Expenditure		$117,680.73

Cost per Capita, Control and Prevention of Disease

(Population 202,377)

Gross Expenditure per Capita	59.8 cents
Net Expenditure per Capita	59.1 cents

Refuse Collection and Disposal and Street Cleaning, 1928

Summary

(a)	Personal Services	$210,993.82
(b)	Outside Services	57,088.62
(c)	Material, Supplies and Repairs	41,073.85
(d)	Equipment and Replacements	5,853.92
(e)	Fuel, Water, Light and Power	2,241.53
(f)	Other Expenses	250.00
(i)	Interest	9,745.00
(i)	Sinking Fund	4,174.46
		$331,421.20

Expenditure by Divisions

C-8 REFUSE COLLECTION AND DISPOSAL

C-8-1 Scavenging—

(a)	Personal Services	$ 86,036.42	
(b)	Outside Services	21,138.36	
(c)	Material, Supplies and Repairs	26,045.72	
(d)	Equipment, Additions and Replacements	4,869.02	
(e)	Fuel, Water, Light and Power	107.00	
(f)	Other Expenses	250.00	
			$138,446.52

C-8-3 Nuisance Ground Operating—

(a)	Personal Services	3,367.05	
(b)	Outside Services	1,907.15	
(c)	Material, Supplies and Repairs	18.41	
			$ 5,292.61

C-8-6 Crematory No. 2 Operating—

(a)	Personal Services	$ 8,689.15	
(b)	Outside Services	1,110.74	
(c)	Material, Supplies and Repairs	189.31	
(e)	Fuel, Water, Light and Power	281.59	
			$ 10,270.79

C-8-7—Crematory No. 2 Maintenance—

(a)	Personal Services		
(b)	Outside Services		
(c)	Material, Supplies and Repairs	$ 1,400.27	
			$ 1,400.27

C-8-8 Crematory No. 3 Operating—

(a)	Personal Services	$ 14,033.00	
(b)	Outside Services	799.65	
(c)	Material, Supplies and Repairs	136.80	
(e)	Fuel, Water, Light and Power	1,146.29	
			$ 16,115.74

C-8-9 Crematory No. 3 Maintenance—

(a)	Personal Services		
(b)	Outside Services		
(c)	Material, Supplies and Repairs	$ 2,253.06	
			$ 2,253.06
Repairs to Boiler No. 3 Incinerator			$ 2,984.87

C-8-10 Ash Removal—

(a)	Personal Services	$ 17,049.08	
(b)	Outside Services	21,687.75	
(c)	Material, Supplies and Repairs	1,492.60	
			$ 40,229.43

C-8-11 Fixed Charges on Debenture Debt—

(i)	Interest	$ 9,745.00	
(i)	Sinking Fund	4,174.46	
			$ 13,919.46
	Total, Refuse Collection and Disposal		$230,912.75

D-1 OFFICE OF STREET CLEANING DIVISION.

D-1-1 Administration—

(a)	Personal Services	$ 9,044.53	
(b)	Outside Services	50.73	
(c)	Material, Supplies and Repairs	386.58	
(d)	Equipment, Additions and Replacements		
			$ 9,481.84

D-1-2 Automobile Services—

(b)	Outside Services	$ 195.25	
(c)	Material, Supplies and Repairs	392.40	
(d)	Equipment, Additions and Replacements	1,100.00	
			$ 1,687.65

D-4-1—Asphalt Cleaning (Pavement)—

(a)	Personal Services	$ 60,710.19	
(b)	Outside Services	6,478.95	
(c)	Material, Supplies and Repairs	5,210.84	
(d)	Equipment, Additions and Replacements	115.10	(Cr.)
			$ 72,284.88

D-4-2 Macadam Pavement Cleaning—

(a)	Personal Services	$ 3,004.88	
(b)	Outside Services	709.48	
(c)	Material, Supplies and Repairs	.....	
			$ 3,714.36

D-4-4 Paved Lane Cleaning and Paper Picking—

(a)	Personal Services	$ 3,601.72	
(b)	Outside Services	587.40	
(c)	Material, Supplies and Repairs	.....	
			$ 4,189.12

D-4-6 Street Sprinkling and Flushing—

(a)	Personal Services	$ 475.83	
(b)	Outside Services	1,139.91	
(c)	Material, Supplies and Repairs	434.29	
(d)	Equipment, Additions and Replacements	.....	
(e)	Fuel, Water, Light and Power	343.25	
			$ 2,393.28

D-5-3 Cutting Noxious Weeds—

(a)	Personal Services	$ 4,431.03	
(b)	Outside Services	411.25	
(c)	Material, Supplies and Repairs	16.80	
			$ 4,859.08

D-5-4	**Yards Maintenance—**		
(a)	Personal Services	$ 550.94	
(b)	Outside Services	872.00	
(c)	Material, Supplies and Repairs	111.90	
(d)	Equipment, Additions and Replacements		
(e)	Fuel, Water, Light and Power	363.40	
			$ 1,898.24
	Total, Refuse Collection and Disposal and Street Cleaning		$331,421.20

Communicable Diseases

The total number of cases of communicable diseases was 5,481 and 176 deaths, against 4,270 cases and 192 deaths in 1927. The increase in the total is largely due to extensive outbreaks of measles, and poliomyelitis which occurred during the year. These figures will now be dealt with in more detail.

Typhoid fever cases notified during the year totalled 18, with 2 deaths, giving a gross death rate of 1.0 per 100,000 population. The corrected rate which excludes non-residents and cases contracted outside the city is .0. In 1927 there were 27 cases and 6 deaths, rates 3.0 and 1.5 respectively. Eight of the total for 1928 were outside cases, two were doubtful, the probability is they originated outside the city. Of the eight city cases, three were traced to a common source, food infection in a restaurant. The remaining five were not connected with any demonstrable focus of infection, and were unconnected in any way, they in all probability contracted the disease from an unrecognized carrier.

Smallpox did not give much trouble during the year, but as usual prevailed to a limited extent. Indeed, so far as the city itself is concerned, there was remarkable freedom from the disease compared with past years. The type was uniformly mild. Twenty cases were recorded with no deaths, against 48 with no deaths for the preceding year. Fifteen of these were admitted to our local hospital from adjoining municipalities. We have no record of the source of infection or vaccination status of this group. Of the five city cases, three contracted the disease while visiting outside the city, and two were secondary to these. All five were in unvaccinated individuals.

What has been said in reports of previous years regarding smallpox still applies. The fact that 1928 was an off year does not mean that this disease is still not a menace. With little smallpox, vaccination falls off, and a more susceptible population develops. This is a potential danger, give the disease a good start and an epidemic results. Our people should appreciate that disregard of the simple precaution of vaccination may sometime endanger not only themselves but the community, and be the cause of much suffering and financial loss.

Nine hundred and ninety-seven cases of chickenpox were reported, against one thousand and eighteen for the preceding year. As has been pointed out in former years many of these cases reach us through the nurses of the Medical Inspection Department of the city schools.

Cases seen by physicians are notified, but many cases are seen neither by physician or nurse, consequently we do not get very complete notification of this disease. It is interesting to note the increase in all wards, during the months of May and June, rather an unusual season for prevalence.

All cases of chickenpox that come to our attention are checked as to diagnosis. Anything suspicious in the report card is carefully investigated in order that no mistake may occur, and that smallpox may not get an opportunity to masquerade, as it often has done, under the title of its less important relative.

Mumps prevailed rather extensively, cases numbering 411, against 290 in 1927. Here again the school nurses were of great service in bringing cases to light. In the past when mumps was unusually prevalent, much school attendance was lost unnecessarily by susceptible contacts. To meet this an arrangement has been made by which susceptibles may continue at school for twelve days after exposure and be excluded from the 12th to the 18th day. This is a decided improvement and so far has worked satisfactorily from the standpoint of control.

Whooping cough shows a decrease over the previous year, 340 cases, four deaths, being reported against 476 cases and seven deaths.

The Department continues to supply pertussis vaccine and medical attention to persons unable to pay. Our experience with this preparation leads us to believe that to be of service, it should be given in the early stages. The earlier, the better, possibly best of all in the febrile stage preceding the appearance of the cough.

The total number of cases of diphtheria reported for the year was 605, deaths 22, giving a death rate per 100,000 population of 10.9 and a case fatality of 3.6 per cent. In 1927 there were 542 cases, 34 deaths and rates of 17.1 and 6.2 respectively.

As will be seen from the figures, cases were slightly increased, deaths were lowered. Outside cases numbered 77. Deaths of non-residents totalled 7, leaving cases and deaths for the city at 528 and 15.

There was a considerable reduction in the number of carriers brought to light, 72 against 142, also a drop in unrecognized cases from 36 to 27. Fifty-three cases were reported from institutions, against fifty-five for the preceding year.

The following table gives the geographical distribution of City cases and deaths:

	Cases	Deaths
Ward one	70	1
Ward two	195	7
Ward three	210	7

Ward one has a rate of 1.6; Ward 2, 10.4; Ward 3, 9.3 per 100,000.

Immunization with toxoid was carried out throughout the year. All the City schools were covered by the Department, and considerable work was accomplished on children of pre-school age at the Babies' Milk Depot, and at the hospitals. In addition many pre-school children received this protection at the hands of their family physicians, and in institutions.

The following table shows what was done in the City schools.

	Schick Tested	Toxoid Administered
Ward one	526	409
Ward two	1,236	472
Ward three	1,336	685

It is to be noted that Ward one has a much lower diphtheria incidence than Wards two and three, also that more school children in Wards two and three were immunized. The explanation of the more favorable rate in Ward one probably is better environmental conditions as regards possibility of exposure, and more toxoid administered by family physicians.

Diphtheria rates in this City have been steadily coming down for the past ten years, but they are still too high. The remedy is more general immunization of children, particularly children of pre-school age. In spite of the fact that facilities are provided for extending this treatment to every child in the community, and that this has had wide publicity, too many people remain indifferent to the importance of this necessary procedure.

Diphtheria today is a preventable disease and can be banished from a community. The way to accomplish this is by the employment of toxoid on all susceptible children. We are trying to bring about this end, but to attain the goal, more cooperation must be forthcoming from the public.

Scarlet fever prevailed to a less extent than in 1927, 764 cases and 3 deaths, against 885 cases and 6 deaths. As will be seen from the foregoing, the type continues remarkably mild. Death rates per 100,000 of 1.5 and 3.0, and case fatality rates of .4 and .67 per cent are unusually low for this disease.

The cases were scattering in character, in different parts of the City, with a few small neighborhood outbreaks due to contact. Prevalence was greatest in the months of February and June, and it is of interest to note that the first six months of the year contributed 500 cases or two-thirds of the year's total. There was a big drop in institutional cases. The only increase noted was in suspect cases, this is to be expected when the mild type prevails. No milk borne outbreak occurred during the year.

Scarlet fever has shown a marked downward trend for the past six months, and the fact that our line is now below the line of normal expectancy, leads us to entertain the hope that 1929 may be a favorable year and we may look for a further decline in the number of cases.

One case of anthrax came to light during the year. The patient recovered. We were not able to decide definitely the source of infection. Suspicion was directed to a brush, but bacteriological examination of this proved negative.

Influenza, or what was called influenza, prevailed very extensively in the month of December. The type was not comparable in point of virulence with the outbreak of 1918, and while many people were ill, very few notifications were made to the Department by physicians.

The number of cases reported bore no relation to the number that occurred, there must have been many hundreds, possibly many thousands of these, for our outbreak was part of the great epidemic which spread over the continent from west to east. We are of the opinion that only very severe cases were reported. Notifications numbered forty-eight, with twenty-four deaths, of these, 37 cases and 12 deaths, occurred in the month of December.

Tuberculosis of the lung gives a total of 209 cases, and seventy-three deaths. In 1927 there were 229 cases and 74 deaths. Rates per 100,000: 1928, 36.1; 1927, 37.2.

Sources from which cases were reported are as follows:

Winnipeg General Hospital and Children's Hospital Clinics	57
King Edward Memorial Hospital	47
Ninette Sanatorium	18
Health Department Laboratory	9
Physicians	23
Death registration	17
St. Roch's Hospital	18
Non-residents	20
	209

Our death rate of 1928 is our lowest on record.

Little change has taken place in the way this work has been carried on during the past five years. Nurses from the Department continue to assist in the work of the clinics, with the exception of the one held at the Municipal Hospitals. There is a falling off in the number of cases reported by the King Edward Hospital and the Ninette Sanatorium. This may be explained to some extent in the increased notifications from physicians, also by reason of 20 fewer cases being recorded for the year. The Department continued to supply milk to those in need, also sputum refills, handkerchiefs, disinfectants and where necessary, medical assistance.

Infantile Paralysis Chart.
showing age incidence.
Winnipeg. 1928.
10
20
30
40
50
0-5
6-12
13-16
17+
July.
August.
Sept br.
Oct br.
Nov br.
Dec br.

Again we regret to report so many cases coming in in advanced stages of the disease, often through death registration. We are making some progress but checking up contacts late is not the way to arrest the spread of this disease. It cannot be too strongly emphasized that the uneducated or careless open case of tuberculosis is a menace. Just how many of these are in our midst we have no means of knowing, but we do know that too many cases come to us in a late and frequently an infectious stage of the disease.

The outstanding event of the year from a health viewpoint was the outbreak of acute anterior poliomyelitis, which occurred during the Summer and early Autumn. In the month of July, seven cases of acute anterior poliomyelitis were notified to the Department. This was the first intimation that the City was soon to be visited by a large outbreak of this disease. The type, particularly in the early cases, was severe and the percentage of fatalities high. Table one on page 61 shows cases and deaths reported by months for twelve years previous. Reference to this table will show that the disease appeared in June 1916, July 1917, August 1920 and August 1924. The proportions of these outbreaks bear no comparison with the figures of 1928, yet with the exception of 1920, which lasted until November, all seem to arise and subside about the same season of the year.

In the outbreak of 1920, the bulk of the cases occurred in Ward three. Distributed as follows:

	Ward one	Ward two	Ward three
Cases	5	18	21
Deaths	2	6	3

In this year's outbreak we find Ward two bearing the brunt of the attack, with 103 out of 225 City cases:

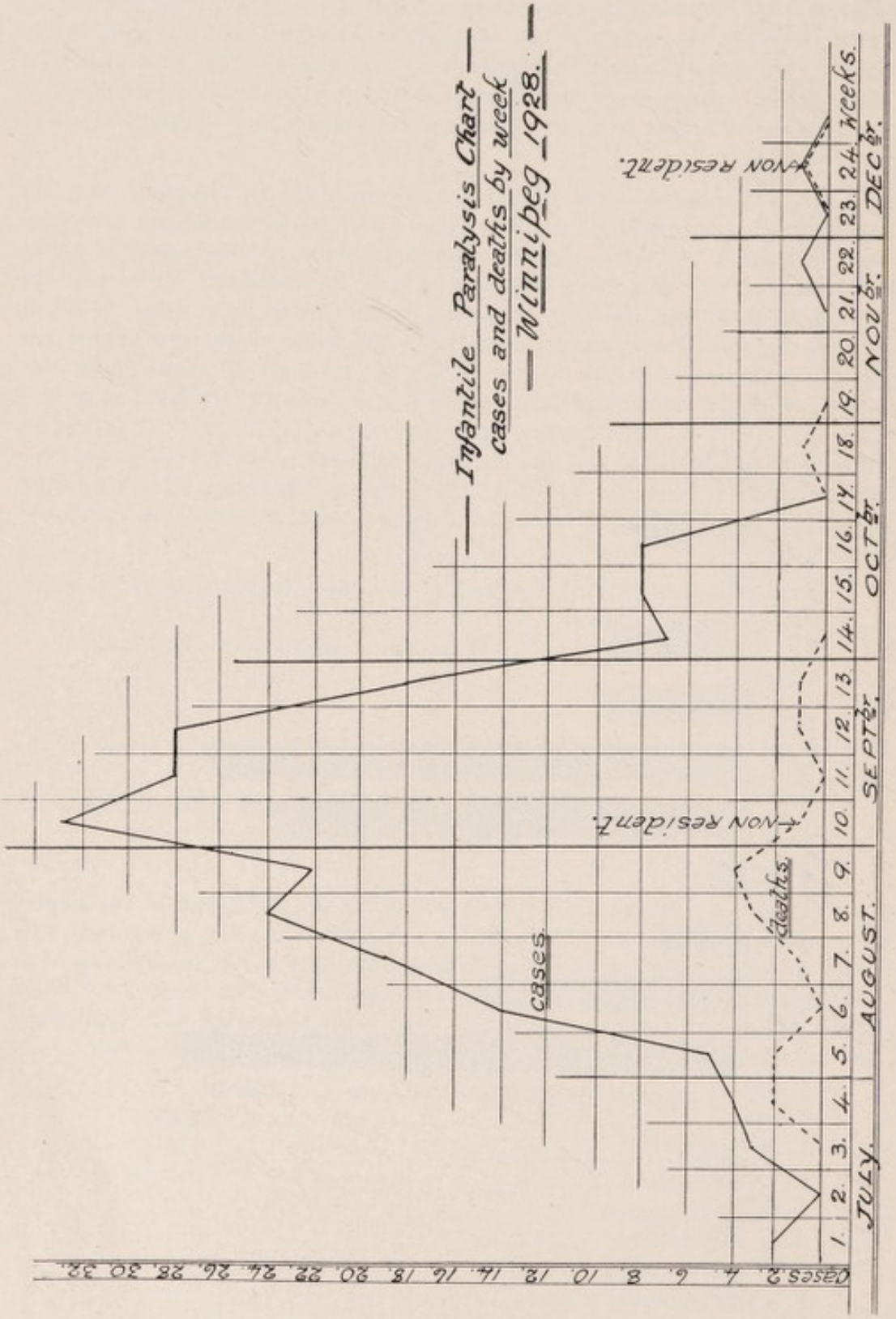
	Ward one	Ward two	Ward three	Non-resident
Cases	68	103	54	54
Deaths	6	6	3	2

We do not attempt to offer any reason for the difference in the figures for 1920 from those of 1928, records show that Ward one continually suffered a higher case fatality rate during 1920 than it did in 1928 and that deaths are out of proportion when compared with the figures of Ward three. Ward two fatality rate is also high when compared with 1928 when the cases were 103 against 18 and the number of deaths the same.

Deaths by months for 1920 and 1928 are as follows:

	1920	1928
July	—	3
August	—	9
September	—	2
October	3	1
November	3	—
December	1	—

Two deaths in September and November of patients admitted from outside the City are excluded.


— Infantile Paralysis Chart —
cases and deaths by week
— Winnipeg 1928. —
cases.
deaths.
Non Resident.
Non Resident.
JULY.
AUGUST.
SEPTEMBER.
OCTOBER.
NOVEMBER.
DECEMBER.
1. 2. 3. 4. 5. 6. 7. 8. 9. 10. 11. 12. 13. 14. 15. 16. 17. 18. 19. 20. 21. 22. 23. 24. weeks.
cases 2 4 6 8 10 12 14 16 18 20 22 24 26 28 30 32.

The following table shows sex of City patients 1928, by months:

	Male	Female
July	5	5
August	50	32
September	62	49
October	8	12
November	—	1
December	—	1
	125	100

Fifty-four outside cases are not dealt with in this table.

The accompanying graphs show (1) age incidence for City cases, plotted for each month, and (2) cases and deaths recorded each week from July 1st to December 31st, 1928. This latter chart is prepared from the report made on the case by the Department, not from the dates of notification.

The peak was reached in the week ending September 7th. To appreciate the progress of the outbreak, study should be made of the spot maps.

As already stated seven cases were reported during the month of July as follows:

July 21st, two cases, investigation showed that both were children and had recently arrived in the City from country points where they had been visiting. One had been out of the city three weeks and sickened a week after it arrived at a farm. The other sickened the day after it arrived in the City from the country where it had resided four days. The date for the former was July 6th, for the latter July 19th. They resided in Ward two but were not known to one another.

In one instance (that of the child taken ill at the farm) there had been contact to sick children in the neighbourhood, but no history of Paralysis. Both recovered. Ages eight and nine respectively.

July 24th, a case was reported, ten year old child. This child sickened on the 20th and died on the 22nd. Ward three.

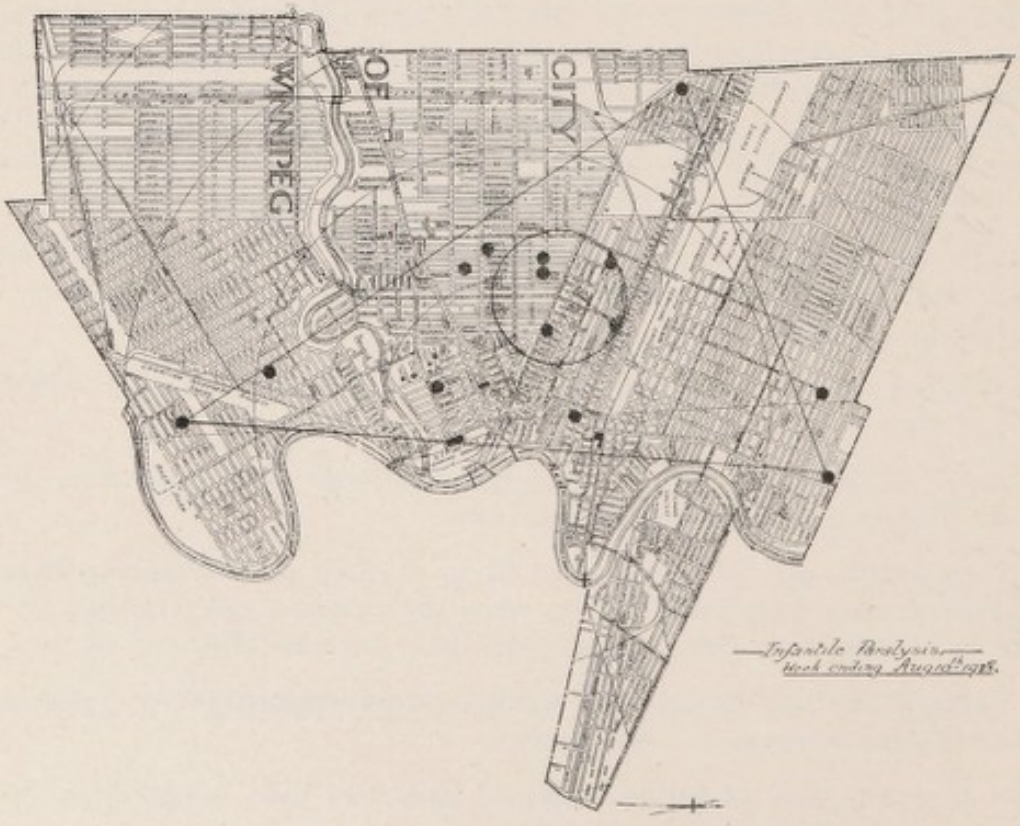
July 27th, a child eight years old reported. Died same day. Had been ill three days. Resided in Ward one.

July 28th, girl of 15 reported ill at a camp near Winnipeg Beach. Had been there twenty-four hours when she sickened and was brought to the City. Died July 29th. Home, Ward two, extreme West end of City.

July 28th, boy of thirteen residing in extreme North end of City. Date of first symptoms a week earlier.

July 30th, boy of fifteen, sickened 28th, had been ailing for a week previous. Died. Home, centre of City.

Infantile Paralysis. Location of cases and deaths from July 1 to August 3, 1928.



Cases and deaths for week ending August 10.

Three subsequent cases were added to the month of July, reports of these cases being received during the month of August. Their ages were four, four and one-half and two and one-half. Date of illness July 1st, July 19th, and July 29th, respectively. Location; two in North end (Ward Three), one in Ward Two (extreme West end).

Ages varied from two and one-half to fifteen years. Sex equally divided. None were related in any way. The cases visiting in the country may have received their infection in the City. The first cases reported were from wide spread points in the City, one in the centre of Fort Rouge, two in the extreme West end, and two in the extreme North end. Two could be classed as middle centre, and while not close, were on parallel streets. Two were on the same street, one had been in contact to illness in the home. Two had had contact to illness in homes outside their own. All lived in detached houses. Living conditions were, in four cases, above the average, and in no case were the sanitary conditions reported poor. Number of exposed persons in nine homes were fifty-eight, adults thirty-two, children twenty-six. Of the first seven cases recorded, three were fatal. There was one in each ward and might be said to represent the points of a triangle divided from each other by a distance of over three miles.

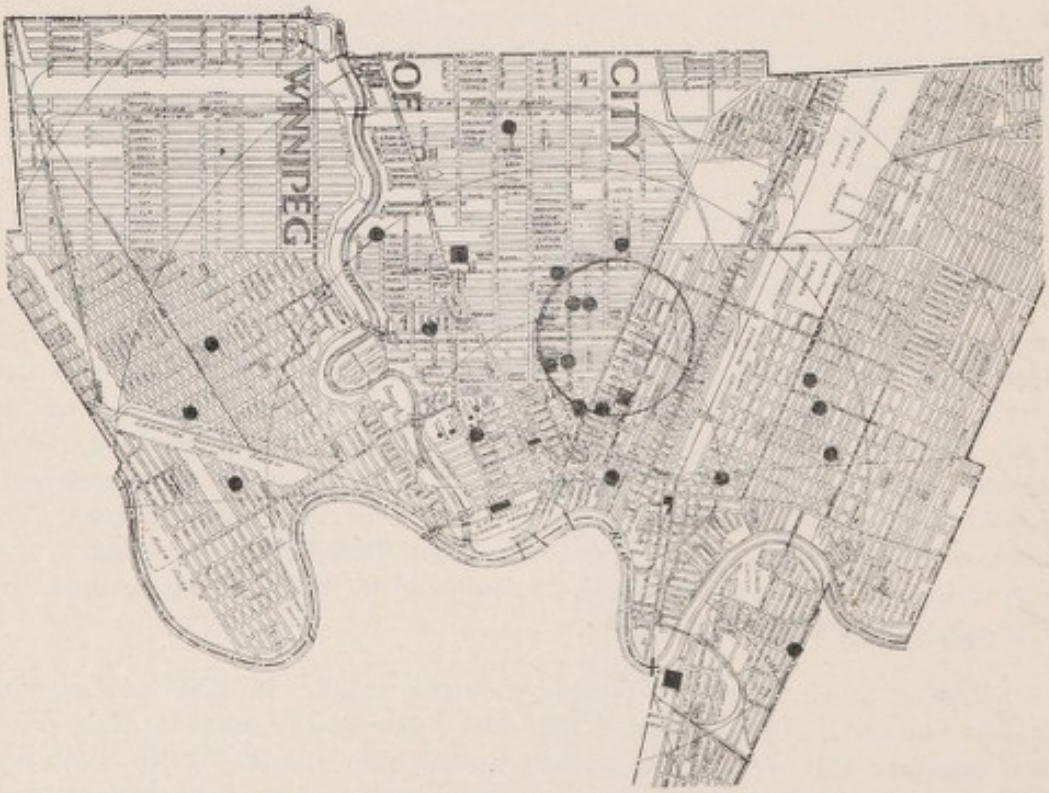
Commencing from this position in the first week of August and ending August 3rd, we find the map showing four cases and one death during that week.

The case which terminated fatally occupies a place in the centre of the triangle, referred to in the above paragraph, and with no relation to previous cases. One case is added to the extreme end of Ward Three, viz: Elmwood, while the remaining three cases are in Ward Two and in the neighbourhood of previous cases, one of which had terminated fatally in Weston.

The map of week ending August 10th, shows this triangle with two sides almost five miles long and converging on a point in the South end, or in Ward One, and about the centre of the triangle and grouped about within a circle whose diameter is one mile, lie five cases, leaving four cases outside the circle, East, South and West. The centre of this circle is Notre Dame and Sherbrook, and from this point and within the radius of half a mile we have three of the five cases reported week ending August 3rd, thus making eight cases in this circle and four immediately adjoining, a total of twelve cases of a total of nineteen reported. The balance of the cases show Wards One and Three with three each, and one case in Weston. New territory is invaded in week ending August 3rd, and again in August 10th.

The map of August 17th has nineteen cases. In this location and within the circle lie seven cases and two immediately outside. Two cases are reported this week from a home on the City Limits South. Both had visited and dined at a home within the circle seven days before their

Infantile Paralysis. Cases and deaths for week ending August 17, 1928



Cases and deaths for week ending August 24.

attack. The South and West of Osborne, however, is affected the previous week. A death is shown in River Heights and one in Weston, also a case in Weston. Weston has now recorded a case for four consecutive weeks. Five cases are scattered East to West in Ward Three.

The death reported in River Heights had some association with a family residing in the neighborhood of Jessie Avenue, in which district a death occurred in July. This family was not affected, or related, to this case however.

Twenty-four cases, including deaths, are spotted for the week ending August 24th. Eight cases and one death are approximately within this mile circle. Five of the cases in Ward Three lie adjacent to cases reported the week previous. Six of the cases are on the outside of the circle and start at a point immediately East, travelling around in a semi-circle to a point West. Three cases lie West of Osborne in Ward One and in an entirely new position.

During the last week of August twenty-two cases are spotted, and six of this number are still within the circle. Six are South of Portage Avenue, two West of Osborne, one in Weston. Six are scattered in the affected districts in Ward Three. One case is in centre West.

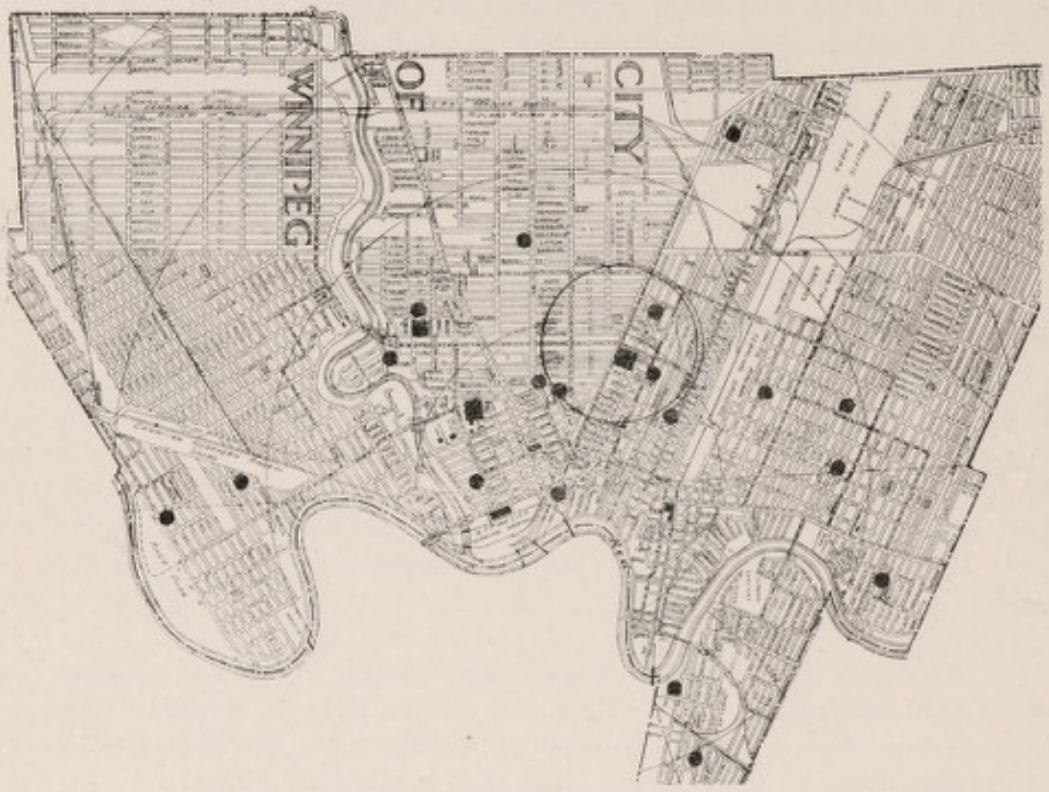
A review of the situation to the end of August shows the centre Eastern end of Ward Two bearing the brunt of the outbreak, and all points within their respective wards that had started out with a case early in the outbreak have continued to add to their respective numbers, notably Osborne West, Weston, North end West of Main Street, and Elmwood East of Kelvin. No cases were reported in section West of Kelvin to the river and East of Osborne to the river.

The map for the first week of September shows a new group of cases along the Corydon Avenue street car route, and the centre of Ward Two cases has changed to a point about Arlington and Sargent Avenue. From this point and occupying the same sized circle we can group six cases. Two cases are reported in a new district South of Portage, the remaining cases are scattered.

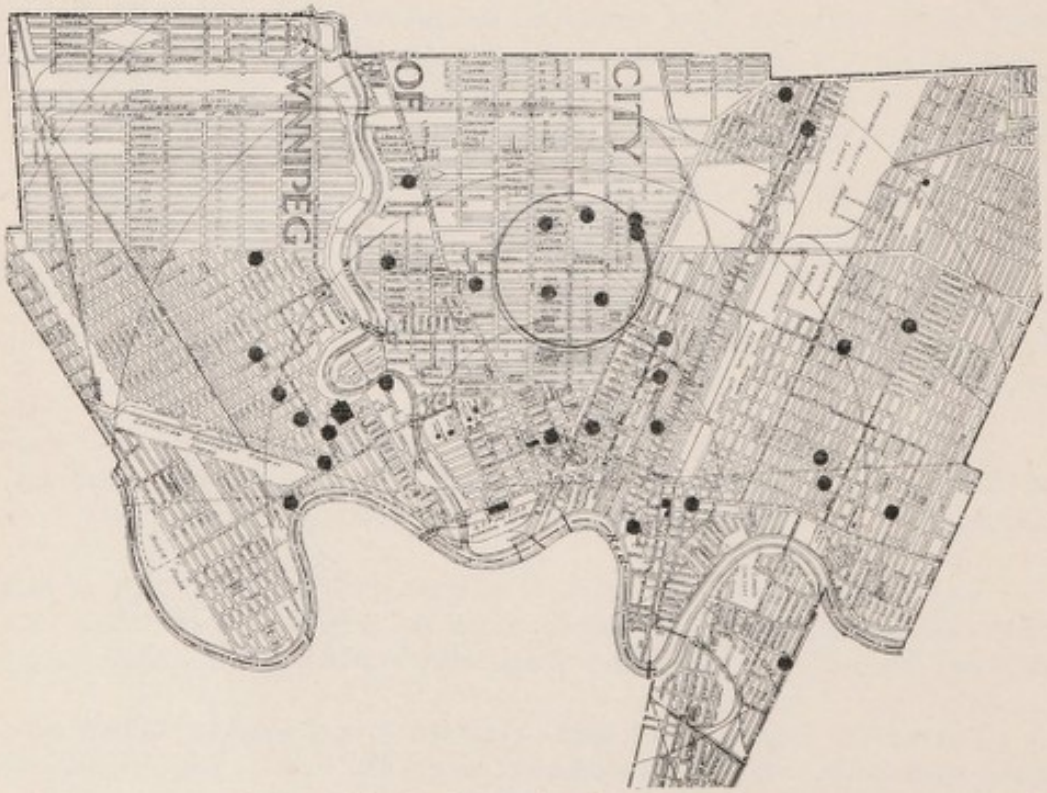
Continuing into the second week there is little change. The group of six this week occupies a slightly different position. Cases are more scattered in Ward One and Three, but remain in affected districts.

Week ending September 21st. The circle still holds a group of eight cases, favouring the same position as in the previous week, while cases in Ward One are moving further West. Other districts show little change.

During the last week of September there is a marked falling off in number of cases. Ward Two continues to get the bulk of the infection and we find five within the circle and five cases directly East of it.



Infantile Paralysis. Cases and deaths for week ending August 31, 1928



Cases and deaths for week ending September 7.

In reviewing the map for September, the movement of this outbreak is noticeably West. Certain districts are only slightly affected. River Heights, South of Portage, West, extreme West end, Extreme North-east of Main, and all East of the Exhibition grounds between C.P.R. tracks and Dufferin Avenue to Main Street, also Point Douglas. Districts not affected—Riverview and McPhillips West.

October shows Ward One as having the bulk of the cases reported for the month, and the West and South of Portage mostly affected.

In summarizing the reports prepared by the inspectors, the following is submitted:

The total cases reported for the city is 225, and show 141 as having suffered from paralysis in some form, while 84 belong to the non-paralytic type. July cases show 9 with paralysis and 1 with no paralysis. August, 76 with paralysis; 6 with no paralysis. September, 49 with paralysis; 62 with no paralysis. October, 6 with paralysis; 14 with no paralysis. November, none with paralysis; 1 with preparalysis. December, 1 with paralysis.

Cases treated in the home totalled 105, while 120 were removed to hospital for treatment.

Fifteen secondary cases occurred in twelve homes. In one home four cases followed what appeared to be an unrecognized case, or contact to cases following a case which was not recognized. The dates for these are as follows:

Case not recognized	September	17
First Case	"	18
Second Case	"	22
Third Case	"	24
Fourth Case	"	30

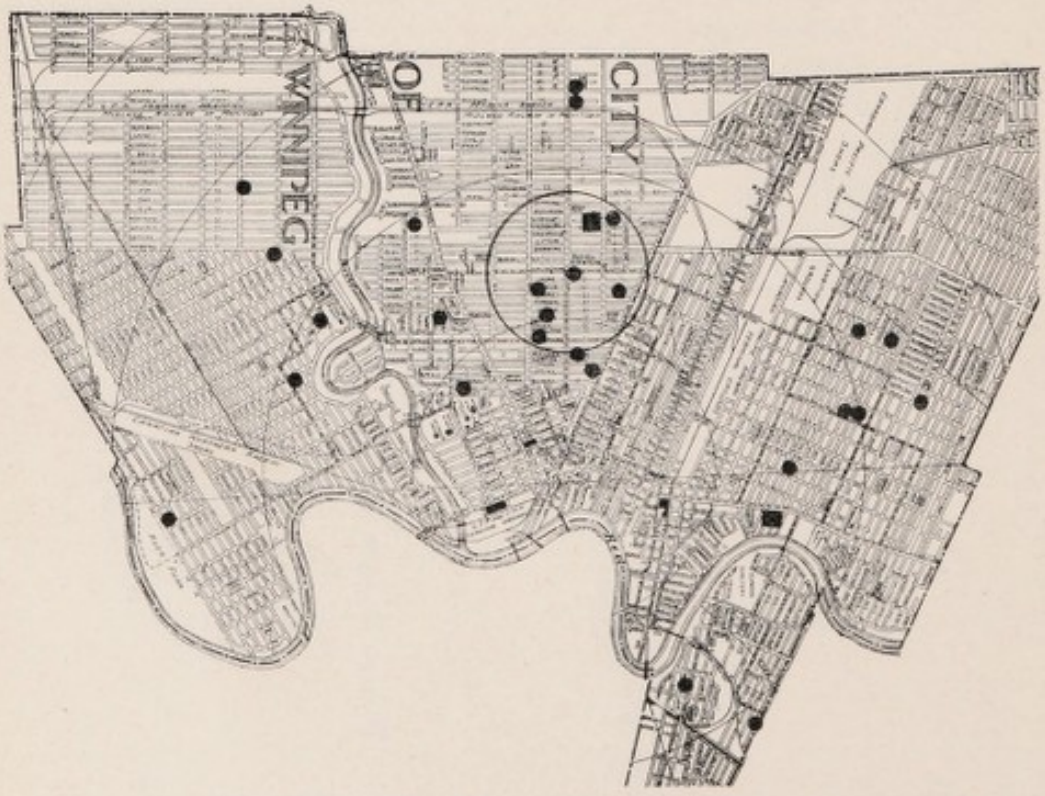
Recording these cases by months gives the following:

July	–
August	3
September	8
October	4
November	–

The length of time between cases is as follows:

Cases	Days
2	–
3	1
1	2
1	3
2	4
3	6
1	7
1	8
1	25
—	
15	

Infantile Paralysis. Cases and deaths for week ending September 14, 1928.



Cases and deaths for week ending September 21.

In fourteen instances contact to an existing case outside of the affected home was reported; it is not possible, however, to state any definite time between time of contact and developing disease. The contact established between an existing case outside, and the one declared, was only in evidence in five cases for the month of August, and in nine cases during September.

In fourteen affected homes sickness of a minor nature had existed prior to, or coincident with, the development of a case. In a majority of instances the headache, cold, or indisposition complained of, passed off without need for medical attention.

In nine cases there was a history of having had contact with sickness in homes other than the one affected. The distribution of these cases is as follows: July, 2; August, 4; September, 3.

Food Supply:—

The following questions relating to food supply were asked in all homes where the case was notified: source of milk supply, fruit, vegetables, butter, cream and ice cream. With the exception of milk supply, no attempt has been made to summarize the sources of these supplies.

The milk supplies in the 225 cases notified are as follows:

Pasteurized	111
Raw Milk	65
Both Raw and Pasteurized	38
No Milk Used	1
Milk Supply not known	10
Total	225

The following is a review of the August and September cases taken not earlier than one month after initial symptoms:

	July	August	September
Deceased	4	8	3
Paralysis and still under treatment	4	48	23
Paralysis, treatment not continued	2	17	22
No Paralysis	–	8	44
Information not obtainable	–	1	18
Died from other cause	–	–	1

Summary showing sanitary conditions recorded on reports made up by inspectors is as follows:

Sanitary Condition:

	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total
Good	4	43	61	10	1	1	120
Fair	5	27	42	9	–	–	83
Poor	–	6	5	1	–	–	12
Unclassified	1	6	3	–	–	–	10

The only comment to be made on this summary is the surprisingly high percentage of homes affected reported to have good sanitary surroundings.

Animals kept on premises were recorded in sixty instances, these, usually are recorded as a dog or cat.

The following table bearing on "fly situation" may also be of interest, in that it gives a finding corresponding to the general sanitary conditions recorded:

Flies:

	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total
Many	–	4	4	–	–	–	8
Few	5	18	45	5	–	–	73
None	3	55	61	15	1	1	136
Not Record'd	2	5	1	–	–	–	8

What was done in the way of prevention and control is as follows:

In this connection it should be said that the Department received splendid cooperation and support from the Medical and nursing professions, the Minister of Health of the Province, the Deputy Minister of Health, the Provincial Board of Health, The Municipal Hospitals, the press, the public, and especially from the Medical Research Committee of the University of Manitoba. We cannot adequately express our appreciation of this assistance.

When it became evident that the City and parts of the Province, were in for a serious outbreak of poliomyelitis, a meeting of the Winnipeg Medical Society was called for the purpose of discussing what is known about the disease and ways and means for combatting it. It was thought advisable at this meeting to give the public all the information possible about poliomyelitis through the columns of the daily papers, the idea back of this was to prevent undue alarm and possible panic on the part of our citizens. Physicians were selected to contribute short articles, which the papers were good enough to publish, on various phases of the disease, such as:—The Nature of Poliomyelitis; Serum treatment of Poliomyelitis; Later treatment of Poliomyelitis; Symptoms of Poliomyelitis; and Epidemiology of Poliomyelitis. These articles were very widely read and we think had a great effect in allaying public anxiety. The attitude of the newspapers during this outbreak is worthy of the highest praise, they gave the facts from day to day regarding the progress of the outbreak, but overstated nothing and published no scare headlines or sensational articles.

It is a matter of gratification to be able to report that nothing approaching a panic developed among our people at any time, the public took a common sense view of the situation and did not lose its head.

The importance of early diagnosis of cases and of the possible beneficial effects of serum treatment was recognized. The Medical Research Committee of the University of Manitoba assumed the responsibility of pro-

viding serum, which was prepared under the direction of Dr. F. T. Cadham, the Provincial Board of Health paying for the same. At first it was difficult to get an adequate supply of serum owing to uncertainty of securing donors. Later on owing to the increased number of these, there was never a shortage. Facilities for early diagnosis were provided by the Medical Research Committee of the University of Manitoba. This work was carried out largely by Drs. J. McEachern, Bruce Chown, and Mary Mackenzie. The procedure was to examine the patient, obtain a specimen of spinal fluid, test this and administer serum when deemed necessary. This service functioned twenty-four hours a day from about the middle of August until the end of October. Full particulars as to its operation and results will be found in special monographs by Dr. F. T. Cadham, Dr. C. R. Gilmore, Chairman, Medical Research Committee, Professor A. T. Cameron, Secretary of the Medical Research Committee of the University of Manitoba, Dr. John McEachern, Dr. Bruce Chown and Dr. Mary Mackenzie.

All those mentioned above, and indeed everyone who bore a part in this work is entitled to the gratitude of the citizens of Winnipeg.

I should like to add the names of Dr. Lennox Bell and Mr. Harry Botterell, as two young men who rendered especially fine service.

Preventive Measures Carried out by this Department

Where the case was isolated in the home the following measures for disease control were recommended:

Children who resided on the premises were quarantined. Food handlers were quarantined unless arrangements were made for their change of address, when the individual was prohibited from engaging in such occupation for a period of two weeks.

Teachers, or persons having to do with children when exposed to a case, were quarantined for a similar period.

Isolation

The sick-room was prepared as in other acute infections, attention being paid to screening. Where nose and throat discharges could be received on rags or other suitable material and burned, this course was recommended, alternative, to be immersed in a strong solution of disinfectant before being disposed of. Disinfectant was supplied by the Department. Concurrent disinfection was recommended. Sick-room dishes, etc., were kept separate; sterilization was recommended when necessary to remove them from the sick-room. Clothing and bed-linen were sterilized or put through suitable disinfectant.

At the termination of the case—thorough cleansing, sunning and airing of all material in the sick-room, and scrubbing of sick room with soap and warm water.

The question of what to do about opening the schools came up. In this connection a meeting was held in the Parliament Buildings by the Executive of the Provincial Board of Health together with the City Health Authorities and representatives of the Public and Parochial schools. It was decided at this meeting not to open the Public, Parochial schools and Sunday Schools until October 1st, that is the opening was delayed a month.

We do not attempt to say just how much or how little benefit this brought about. It was the general opinion that had the schools been already open, it would have been undesirable to close them. The chief reasons for delaying the opening was that by so doing, many children visiting at outside points, summer resorts, etc., would be kept out of the City, also there was a very insistent demand on the part of the public that the opening be delayed. Indeed many parents made it plain that they would not send their children to school, even if the schools were open. If this measure did nothing else it was certainly a factor in allaying public apprehension. There was some protest when the decision was made to open in October, but it is worthy of note that no increase in cases followed the reassembling of the children in the schools.

The conclusions we are able to arrive at about this puzzling disease as a result of our experience are neither definite nor satisfactory.

It would appear that in some instances which have been already mentioned, contact may have played a part in spreading the infection.

We cannot say that milk or any other food, insects, or animals can be convicted of conveying the disease. Until more is known about the cause, our understanding of the mode of transmission will be inconclusive.

Freedom of certain areas of the city was rather an interesting feature. A large hotel, lodging house and light housekeeping section in the centre of the city with a considerable child population, with facilities for contact infection very evident, was hardly affected at all. A large area in Fort Rouge consisting mainly of detached houses did not produce a case. The disease was most widely spread in an area on the West side where detached houses and apartment blocks were the type of buildings found and where the population lived under sanitary conditions much above the average. Another district largely inhabited by people of foreign birth and extraction, living under poor sanitary conditions, escaped practically scot free. There was no instance of a case arising in any institution for the care of children in the City.

We did not attempt to classify patients from the standpoint of nationality. This might bear investigation, the dietetic habits of certain of our foreign-born fellow citizens might have a bearing on their immunity or otherwise to the disease.

In our opinion the administration of serum early in the attack was of definite value.

Milk Supply

During the year resolutions from the Winnipeg Medical Society, the Trades and Labor Council, and the Winnipeg Board of Trade were received by the City Council urging that a by-law be passed requiring that all except certified milk be pasteurized. These resolutions were forwarded to your Committee on Health, which referred them to a sub-committee for report. A discussion of this matter will be found in the report of the Chief Dairy Inspector. A reference to our annual reports for the past ten years will show that we are on record as approving scientific pasteurization as the most valuable method now known of making a milk supply safe. It is a procedure whose worth is now widely accepted by health authorities.

Mosquito Prevention

The gentlemen who conducted the campaign for mosquito prevention which was carried on in the spring of the year, are entitled to the thanks of the community. Lack of funds prevented plans being carried as far as its promotors desired but a real demonstration was given of the possibilities of what can be achieved by scientific methods to prevent mosquitos from breeding. We hope that 1929 will see adequate funds forthcoming for furthering this beneficent and important work.

Medical Relief

The total number of calls made by district physicians was 342, as compared with 322 during 1927. The Margaret Scott Nursing Mission as in the past rendered us valuable assistance, 144 calls being handled against 121 for the preceding year.

Dr. Lougheed and Mr. Watt rendered fine service in attending sick calls requiring immediate assistance and in clearing diagnosis of doubtful cases.

School certificates issued by the department totalled 2,955. The issuing of these certificates means considerable work, and is important in character. Many of the children have to be medically examined and their cases gone into very carefully.

Insulin

A total of 173,600 units of Insulin was distributed. In 1927 the amount was 134,000. The amount collected was $284.00. During the year the Provincial Board of Health did away with making a charge for this product.

A total of 2,554,000 units of Diphtheria Antitoxin was given out, amount collected $96.50 up to April 1928. This is also now distributed gratis, our supply is obtained from the Provincial Board of Health. The Board also supplies us with toxoid and vaccine against smallpox.

Municipal Hospitals

The following summary submitted by the Municipal Hospitals shows the number of cases of communicable diseases discharged during 1928, together with the number of deaths occurring in these institutions.

King George Isolation Hospital and Annex

	Cases	Deaths	Percentages
Diphtheria	470	17	3.62%
Diphtheria carriers	45	0	0
Scarlet fever	606	2	0.33%
Measles	233	6	2.58%
Measles, German	25	0	0
Erysipelas	61	3	4.92%
Meningitis	4	3	75.00%
Parotitis	37	0	0
Pertussis	26	2	7.69%
Poliomyelitis	144	5	3.47%
Polioencephalitis	24	4	16.66%
Smallpox	19	0	0
Varicella	78	0	0
Miscellaneous	363	8	2.21%
	2,135	50	
Gross death rate (Isolation Department)			2.34%
*Corrected death rate (Isolation Department)			1.26%

*After deducting all deaths (23) which took place in the Isolation Department within 36 hours of admission.

King Edward Memorial Hospital and Annex

Tuberculosis	183	44	24.09%

Legislation Enacted

Dominion—

No legislation affecting this Department.

Provincial—

"The Government Liquor Control Act" contains some provisions regarding sanitation in Hotels and Beer Parlors and as a result a considerable amount of money was spent by applicants for beer licenses in making such premises comply with the Act.

Under the "Manitoba Factories Act" regulations were promulgated regarding Dry Cleaning, Dry Dyeing and Cleaning Businesses. These regulations which were principally enacted in order to prevent fire, deal with the use of inflammable volatile substances such as carbon bisulphide,

gasoline, naphtha, benzine, etc. Incidentally, inasmuch as the vapours from such substances are inimical to health, the regulations are valuable as protecting the health of the workers in such establishments. A ventilation system of sufficient capacity to completely change the air every five minutes is required in all rooms. A humidity of 40% is required.

The Minimum Wage Board made new regulations regarding Bag Factories, including ventilation and sanitation.

The City of Winnipeg—

A new Lodging House By-law No. 13017 was enacted by the City Council. This by-law will give the Department a much better control of Lodging Houses. They are in future to be licensed, and although the fee for license is nominal ($1.00 per annum) each premises must comply with the provisions of the by-law which sets forth very clearly what is required as regards the construction, ventilation, plumbing, cleanliness, overcrowding, etc.

The Zoning By-law (No. 13060) was also completed and ready for Council by the end of the year. The By-law is an enabling by-law principally and provides the machinery by which the City will eventually be properly zoned. Separate by-laws will, however be subsequently required creating the various districts or zones contemplated by the Zoning By-law. The Use Districts set forth in the by-law are eight in number, 3 residential, 2 commercial, 2 industrial, and 1 unrestricted. The uses permitted in each district are clearly specified. Provision is made to secure more open spaces surrounding every dwelling in future erected in the residence districts.

Administration of the by-laws is placed in the hands of the Commissioner of Buildings as regards new buildings, and the Health Officer as regards the use of land, completed buildings or premises. Appeal from any decision of the Building Commissioner or Health Officer is provided for, the Zoning Board being the final arbiter.

Legislation Required

Valuable provisions which have been of service to the Department for 19 years as regards the plumbing fixtures required in dwellings and apartment blocks were omitted from the revised Building By-law. We accordingly prepared an amendment to the Health By-law for the purpose of including these necessary provisions. This by-law is still before the Health and Safety Committees and it seems probable that the requirements asked will be inserted in the Plumbing By-law rather than the Health By-law. This of course is immaterial to us so long as we get the legislation asked for. We enumerated several other matters last year on which some legislation might be desirable but only one of these—Lodging Houses—was dealt with last year.

Installation of Plumbing

The construction of sewers and water mains keeps pace with the growth of the City.

A few necessary extensions were constructed during the year. Fifty-four notices were served on owners to install plumbing. Forty-three outside privies were removed, but 24 new closets were constructed in connection with houses built on streets without sewers or water mains, so that the net reduction was 19. All new buildings on streets with sewers and water mains were of course, provided with plumbing. 838 dwellings were built so that the number (24) of these built on streets without sewers was a very small proportion of the whole.

December 31st, 1927		December 31st, 1928	
Brick pit closets	290	Brick pit closets	271
Earth pits	2	Earth pits	2
Total	292	Total	273

An extremely small number of outside closets for a City of this size.

Since 1905 the reduction has been as follows:—

	Box Closets	Earth Pits	Brick Pits	Total
June 30, 1905	6,153	186	.....	6,339
December 31, 1905	3,182	80	1,020	4,912
June 30, 1906	2,255	747	1,325	4,327
December 31, 1906	1,105	662	1,626	3,393
December 31, 1907	80	201	1,535	1,816
December 31, 1908	25	103	1,492	1,625
December 31, 1909	.....	53	1,432	1,485
December 31, 1910	.....	52	1,300	1,352
December 31, 1911	.....	47	1,171	1,218
December 31, 1912	.....	31	1,014	1,045
December 31, 1913	.....	39	838	877
December 31, 1914	.....	18	648	666
December 31, 1915	.....	14	504	518
December 31, 1916	.....	9	447	456
December 31, 1917	.....	11	442	453
December 31, 1918	.....	5	421	426
December 31, 1919	.....	6	438	444
December 31, 1920	.....	1	402	403
December 31, 1921	.....	1	399	400
December 31, 1922	.....	1	388	389
December 31, 1923	.....	1	351	352
December 31, 1924	.....	2	339	341
December 31, 1925	.....	2	318	320
December 31, 1926	.....	3	303	306
December 31, 1927	.....	2	290	292
December 31, 1928	.....	2	271	273

Extension of Sewers and Water Mains

On completion of our Annual Census of outside closets the following list was prepared and sent to the Public Utilities Committee.

List of Streets with Four or More Houses Requiring Sewers or Water Mains

December 31st, 1928

1—FORT ROUGE

Street	Block	Houses	Total	Remarks
Renfrew Street	Haskins to Jackson	1		Sewer laid. No water main.
Renfrew Street	Jackson to Lennon	2		
Renfrew Street	Lennon to Mathers	1	4	
Lindsay Street	Haskins to Jackson	2		3 at Midland Railway Shops. 1 at C.N.R. Signal box.
Lindsay Street	Jackson to Lennon	1		
Lindsay Street	Lennon to Mathers	7	10	
Cambridge St.	Jackson to Scotland	7		
Cambridge St.	Scotland to Mathers	4	11	
Fleet Avenue	Stafford to Harrow	1		Water main to 100′ W. of Stafford ordered Sept. 4, 1928. Sewer to 100′ W. of Stafford ordered Oct. 5, 1928. Re-advertised Sept. '29. Tenders called Dec. 10, 1928. Water main to 61′ W. of Harrow recommended Oct. 29, 1928.
Fleet Avenue	Harrow to Guelph	1		
Fleet Avenue	Guelph to Wilton	1		
Fleet Avenue	Wilton to Rockwood	2	5	
Lorette Avenue	Harrow to Guelph	3		Sewer, Harrow to Thurso. Advertised Jan. 14, 1924. Not proceeded with.
Lorette Avenue	Guelph to Wilton	1		
Lorette Avenue	Wilton to Thurso	2	6	
Scotland Ave.	Wentworth to Stafford	1		Sewer, Harrow to Rockwood. Advertised Jan. 14, 1924. Not proceeded with.
Scotland Ave.	Stafford to Guelph	2		
Scotland Ave.	Guelph to Wilton	5		
Scotland Ave.	Wilton to Rockwood	1		
Scotland Ave.	Rockwood to Cambridge	2	11	

Street	Block	Houses	Total	Remarks
Weatherdon Ave.	Stafford to Harrow	7		Water main Stafford to 181′ W. recommended Oct. 29, 1928.
Weatherdon Ave.	Harrow to Guelph	2		
Weatherdon Ave.	Rockwood to Thurso	4		
Weatherdon Ave.	Nathaniel to Beaumont	1		
Weatherdon Ave.	Beaumont to Cambr'ge	2	16	
Carter Ave.	Stafford to Harrow	4		
Carter Ave.	Harrow to Guelph	5		
Carter Ave.	Nathaniel to Beaumont	1		
Carter Ave.	Beaumont to Cambridge	2	10	
Hector Avenue	Stafford to Harrow	5	5	
Pembina Highway	(Scattered)	11	11	
Ebby Ave.	Lilac to Wentworth	4		Sewer, Lilac to W. line of Lot 28, Blk. 21, Pl. 1606, ordered June 11, 1928. Also water main July 23, 1928.
Ebby Ave.	Wentworth to Stafford	2		
Ebby Ave.	Beaumont to Cambridge	2	8	
			97	
On streets with fewer than four houses, or in which sewers and water mains have recently been constructed			35	
Total			132	

2—ASSINIBOINE RIVER TO HIGGINS AVE.

Street	Block	Houses	Total	Remarks
Centre Street	Calder to Ellice	2		
Centre Street	Ellice to Sargent	5	7	Water main. No sewer.
Keewatin St.	Rapelje to St. Matthews	2		Water main. No sewer. Private sewer N. of Logan owned by Thos. Jackson & Sons. City sewer extends to 150′ N. of Gallagher Ave.
Keewatin St.	St.Matthews to Ellice	2		
Keewatin St.	William to Elgin	3		
Keewatin St.	Logan to C.P.R. Main Line	1	8	
			15	
On streets with fewer than four houses, or in which sewers or water mains have recently been constructed			25	
Total			40	

3—C.P.R. MAIN LINE TO NORTH CITY LIMITS

Street	Block	Houses	Total	Remarks
Atlantic Ave.	Airlies to McPhillips	3		
Atlantic Ave.	McPhillips to Fife	1	4	
Bannerman Ave.	C.P.R. Beach track to Airlies	2		
Bannerman Ave.	Airlies to McPhillips	2	4	
Boyd Ave.	Prince to McPhillips	4	4	
Cathedral Ave.	Galloway to C.P.R. Beach track	1		
Cathedral Ave.	C.P.R. Beach track to Airlies	2		
Cathedral Ave.	Airlies to Radford	1	4	
Inkster Ave.	Parr to Arlington	4		
Inkster Ave.	Arlington to C.P.R. Beach track	1		
Inkster Ave.	C.P.R. Beach track to Sinclair	1		
Inkster Ave.	Sinclair to Airlies	1	7	
Kitchener Ave.	Keewatin to Hearn St.	4	4	(Dairies)
Lansdowne Ave.	Parr to Sinclair	4	4	
Mountain Ave.	McPhillips to Fife	6	6	
Robertson St.	Mountain to Church	4	4	
Penninghame St.	Mountain to Church	5	5	
			46	
	On streets with fewer than four houses, or in which sewers and water mains have recently been constructed		22	
	Total		68	

4—ELMWOOD

Street	Block	Houses	Total	Remarks
Beach Ave.	Foster to Cameron	2		Sewer laid. No water.
Beach Ave.	Cameron to Kent	1		
Beach Ave.	Kent to Keenleyside	5		
Beach Ave.	Keenleyside to E. City limits	3	11	

Street	Block	Houses	Total	Remarks
Herbert Ave.	Foster to Green	6		Water main laid.
Herbert Ave.	Kent to Keenleyside	3	9	No sewer.
Nairn Ave.	Wolfe to Grey	2		
Nairn Ave.	Cameron to Kent	2	4	Sewer. No water main.
			24	
On streets with fewer than four houses, or in which sewers and water mains have recently been constructed			9	
Total			33	

Summary

Fort Rouge	97
Assiniboine River to C.P.R. Main Line	15
C.P.R. Main Line to Northern City Limits	46
Elmwood	24
	182
On streets with less than four houses, or where sewers or water mains have recently been laid	91
Total outside closets in use, December 31, 1928	273

Table Showing Additions and Removals During 1928

Outside closets in use, December 31, 1927	292
New closets built in 1928	24
	316
Less closets removed during the year	43
Remaining, December 31	273

N.B.—Out of 838 houses built in 1928, only 24 were erected on streets without sewers and water mains.

Housing

There were **838** new houses built in 1928, and **29** apartment blocks with **577** suites. Thus the new building will accommodate **1415** families. When we took our Annual Census in December there where **459** vacant houses and **385** vacant suites.

The increase in population during the year was approximately 2,000, so that the amount of building done would not appear to be more than enough to accommodate this increase. So far as we can ascertain, there does not appear to be any change in those single-family houses which are occupied as multiple dwellings. Further comment on housing conditions will be found in the reports of the Chief Health Inspector and the Tenement Inspector. The new Zoning By-law just passed should prove to be of assistance in preventing the blighting of new residence districts by reason of the encroachment thereon of commercial premises; and also in regulating and defining those portions of the City in which trades which may be objectionable shall be permitted to be established.

Educational Work

Every year the Department is asked to supply speakers and lecturers on health topics. This year was no exception and several members of the staff have fulfilled this pleasant duty. We could wish that the interest of citizens was even keener, and such calls more frequent, for we recognize the great importance of educating the public in these matters, in order that we may obtain that support and co-operation, so necessary in modern health work.

For the improvement and education of our own staff the following course of lectures was arranged for the season 1927-28:

1927

Nov. 26—Protection of Child Life—Dr. A. J. Douglas, Medical Health Officer.

Dec. 3—The Ventilation of Industrial Plants—Mr. P. Pickering, Smoke Inspector.

Dec. 10—A Talk on Immunity—Dr. M. S. Lougheed, Bacteriologist.

1928

Jan. 14—A Visit to Hudson's Bay Store—(ventilating system, etc.)

Jan. 21—Carbon Monoxide—Mr. J. Foggie, Sanitary Inspector.

Jan. 28—The Greek that Doctors Speak—Dr. Manly Finkelstein.

Feb. 4—Lead and Benzol Poisoning—Dr. D. Nicholson.

Feb. 11—Infant Welfare and Maternal Mortality—Mr. A. G. Lawrence, Manager, Bureau of Child Hygiene.

Feb. 18—Notes from the Annual Meeting of the Milk Inspectors' Association—W. A. Shoults, V.S., Provincial Department of Health.

Feb. 25—Round Table Discussion on "Housing"—Introduced by Mr. A. Officer, Tenement Inspector.

Mar. 3—Sterilization of Eating Utensils—Mr. A. Rigby, Chief Food Inspector.

Mar. 10—Some Recent Milk-borne Outbreaks—Mr. E. C. Brown, Chief Dairy Inspector.

Mar. 17—Causes of Mental Breakdown—Dr. A. T. Mathers.

Mar. 24—Social Evening.

Staff

During the year Messrs. George and Walter Hanby and Mr. O. S. Oliver, retired from the City Service on pensions. Mr. George Hanby was connected with the department for over twenty-five years as Inspector on the Communicable Diseases Division. Mr. Walter Hanby was clerk in the Sanitary Inspection Division for twenty-five years, and Mr. Oliver was an Inspector on the Sanitary Inspection Division for twenty-four years. All these gentlemen were efficient, valuable members of our staff and we chronicle their departure with regret.

In conclusion, I desire to express to the members of the staff my very sincere appreciation of the faithful manner in which they have discharged their duties throughout the year.

Respectfully submitted,

A. J. DOUGLAS,

Medical Health Officer.

Report of Bacteriologist

A. J. Douglas, Esq., M.D.,
Medical Health Officer.

Dear Sir:

I have the honor to submit herewith a report of the work performed in the Bacteriological Laboratory for the year ending December 31st, 1928.

The work done is shown in the following table and for comparison the totals of the preceding three years are added.

1928	Swabs for Diphtheria		Sputa for T.B.		Urethral Smears		Widals for Typhoid		Water	Milk and Cream	Urinalyses	Miscellaneous	Vaccinations	Total Examinations per Month
		Pos.		Pos.		Pos.		Pos.						
January	655	38	51	8	32	3	1	0	58	170	35	4	23	1039
February	1238	81	31	3	28	4	6	2	51	180	27	10	53	1624
March	857	37	72	6	55	2	4	0	52	189	28	9	23	1289
April	378	11	47	3	29	6	5	1	59	185	21	8	65	797
May	392	13	29	6	39	4	4	0	70	173	19	1	677	1404
June	1615	31	34	0	17	3	1	0	60	261	18	5	108	2119
July	1823	20	35	5	25	2	1	1	67	129	17	8	33	2138
August	2312	18	24	4	52	8	5	2	60	120	15	6	34	2628
September	399	10	40	2	31	3	3	0	54	147	16	11	72	773
October	404	23	44	6	30	2	4	0	63	199	15	7	74	840
November	885	27	52	2	31	4	0	0	62	145	14	13	117	1319
December	520	25	41	5	34	4	0	0	59	121	15	12	23	825
1928 Totals	11478	334	500	51	403	45	34	4	715	2029	240	94	1302	16795
1927 "	10161	441	582	62	337	34	22	5	788	2116	277	94	1187	15582
1926 "	9563	361	468	59	340	53	70	13	715	2160	289	175	2493	16273
1925 "	8714	378	501	50	317	68	32	4	536	1472	339	140	1731	13782

Water

During the year 715 samples of water were tested bacteriologically. Enumeration of colonies of micro-organisms on agar was done on each specimen as well as inoculating broth cultures for gas formers. The samples were drawn from the following sources:

1. Domestic supply. Tap water from this laboratory was tested daily. The bacterial counts were low with some seasonal variation.

2. Public Swimming Baths. Samples from the Cornish, Pritchard and Y.M.C.A. baths were tested weekly, while open.

3. Various water mains. Samples were taken from various mains which had undergone alteration.

4. Samples from private individuals, residences, hotels, etc.

Milk and Cream

The number of samples examined totalled 2,031, about the same as in the preceding year. These samples were examined for butter fat content, and the milk for water and solids in addition. There were 478 bacterial counts made, which varied from 1,000 to over 100,000 colonies per c.c. There were 1,877 samples of milk, 152 samples of cream, including 3 samples of ice cream and 2 samples of cheese.

1. Dairy Inspectors brought in 1,796 of milk and 124 samples of cream.

2. The Bureau of Child Hygiene sent in 26 samples of milk and skimmed milk and 13 samples of cream.

3 Private individuals submitted 55 samples of milk, 15 samples of cream including the 3 samples of ice cream, and 2 samples of cheese.

Diphtheria Cultures

Cultures examined for the diphtheria bacillus totalled 11,478, an increase over last year. The organism was found in 334 cultures.

These cultures are made for Doctors, Nurses, Health Inspectors, School Nurses, Margaret Scott Nursing Mission Nurses, and others. Over one-half of the cultures were taken in the Laboratory.

Widals for Typhoid Fever

Blood examinations for aggultination of typhoid and paratyphoid bacilli totalled 34 with 4 giving a positive reaction.

Urethral Smears

These totalled 403 for the year, and includes smears from the urethra, vagina and cervix for the presence of gonococci. These smears were sent in for examination by the Doctors.

Urinalyses

These totalled 240. Specimens were sent in for examination by Doctors, Nurses, Insurance Companies, the Bureau of Child Hygiene, and by private individuals. The tests required are chemical, microscopical, sugar estimations and for tubercle bacilli.

Vaccinations

These gave a total of 1,302. The source of individuals making up the list was as follows:

1. Children up to and including school age, especially in the month of May, when over one-half of the total are done.

2. Employees of the two railroads and large stores who are required to have certificates of vaccination.

3. Contacts with cases.

Miscellaneous

This includes examination of mother's milk, gastric contents, hairs for parasites, blood counts, preparation of vaccines, and bacteriological examination of foods sent in by Mr. Rigby, Chief Food Inspector.

Dispensary Work

The examination of school children for freedom from contagious diseases, and the issuing of certificates for return to school has been continued as usual. Adults have come for free medical advice. The more serious of these have been referred to the Hospitals. House calls have been made at the request of the Welfare Agencies and these cases disposed of at the time, if necessary, by having the patient transferred to hospital.

In conclusion I desire to express my appreciation for the manner in which Miss Wilson, the assistant, and Mr Robert Benham, the attendant, have fulfilled their respective duties.

Respectfully submitted,

M. S. LOUGHEED, M.D.,

Bacteriologist.

Report of Chief of Division of Communicable Diseases

A. J. Douglas, Esq., M.D.,
Medical Health Officer.

Dear Sir:

I beg to submit herewith report of work done by this division during the past year.

The total number of cases of communicable diseases recorded during the year was five thousand, four hundred and eighty-one; deaths, one hundred and seventy-six, as compared with four thousand, two hundred and seventy cases and one hundred and ninety-two deaths for 1927.

The difference in cases is made up by the increase in number of cases of measles and the outbreak of anterior poliomyelitis, the latter disease contributing a total of two hundred and seventy-nine cases, as compared with four for the preceding year.

The tables accompanying this report show the progress of the work during the year and brief review of these is here submitted for your consideration.

The outstanding occurrence for the year was the outbreak of acute anterior poliomyelitis; the first case being reported in July, reaching its peak in September and subsiding in the month of October. The preparation of reports and subsequent investigations of these cases involved much extra work, the substance of which has been recorded in a previous report.

An outbreak of measles in March developed into fair proportions by the month of June when the total cases recorded reached four hundred and fifty-seven. During the fall months of the year cases dropped and reached the low point of nineteen cases in October but again increased in December to one hundred and thirty cases. The fatality rate was low, being .4 per hundred cases.

We are able to record again a quiet year for Typhoid Fever and Smallpox; the bulk of our trouble in these diseases being the recording of outside or non-resident cases.

Scarlet Fever was prevalent in mild form during the year; only three deaths being recorded in a total of seven hundred and sixty-one cases. As has been stated in previous reports, control of this disease is rendered more difficult when the type is mild, as many cases must escape recognition and in this way spread infection.

The Diphtheria situation did not show much change over the preceding year; the fatality rate was lowered but the number of cases reported was slightly higher.

Diphtheria and Smallpox Prevention

During the year we were able, as in former years, to cover all City schools. Toxoid administration is carried on with the co-operation of the Medical Inspection Department of Schools. It increases considerably the work of this department, nevertheless, by reducing the number of susceptibles to these diseases we believe it will ultimately mean the cutting down of work.

It was interesting to note the demand for Toxoid in several of the schools in Ward Two, where they suffered a serious outbreak of Diphtheria in 1927. The consents in one school alone being increased from sixty-six to one hundred and eighty-seven.

There is very little demand for this protection in children of preschool age, and we believe it is in this age group that attention should be focussed to get the best results.

Vaccinations increased from one thousand, nine hundred and seven in 1927 to two thousand, two hundred and sixteen in 1928. The total number of cards sent out was seven thousand six hundred and fifty-three.

Inspectors' Reports

A summary of the monthly reports prepared by Inspectors of this Division is appended to this report and shows the following:

They made eight thousand, nine hundred and eighty-six visits for the purpose of placing or raising quarantines, etc., as against six thousand, six hundred and ninety-six during 1927.

The total number of reports made was four thousand, two hundred and thirty-three; against three thousand, four hundred and seventy-eight for 1927. They attended to the disinfection of bedding, etc., in 1264 homes, sprayed 137 homes, and fumigated 14 rooms.

Quarantines inspected totalled 891, a falling off compared with the figures (1021), 1927. This procedure is not always considered necessary, but we feel that work of this nature is important, in that, the quarantined home is kept alive to the fact that isolation must be maintained for the good of contacts in the home as well as those who may have indirect contact outside. Other calls have reached the high total of 2988; many of these are in connection with vaccination work done at the schools, as distribution of literature, medical supplies, etc., is done by inspectors of this division.

Miscellaneous Calls

The work of this division includes the making of calls to homes where communicable disease is suspected to exist, or to homes where parents or others desire a diagnosis and are unable or not desirous of securing the services of a physician.

Many of these are given us by the school visiting nurse who is able to advise us fairly correctly of the nature of the call. It is not possible with our limited staff to confirm all such cases, especially during an outbreak of measles, mumps, and other minor infections, but a close check is put on all reports and all cases of a suspicious nature are seen.

During the year, 515 such calls were made, and in many instances what might have remained an unreported case of diphtheria or scarlet fever was reported as a true case and final disposition made.

Tuberculosis Visiting Nurses

This work has fallen on the shoulders of three nurses, and, as may be seen by the perusal of the summary of their report and other tables submitted, they have had a busy year.

Tuberculosis of Lungs

There were 209 cases and 73 deaths, distributed as follows:

	WARDS			Institutional	Non-Resident	Total
	1	2	3			
Cases	32	82	71	4	20	209
Deaths	15	19	23	–	16	73
Population	60,599	66,959	74,819			202,377
Morbidity Rate Per 100,000	51.1	122.4	94.8			
Mortality Rate Per 100,000	24.7	28.3	30.7			

SUMMARY of cases and deaths as they appear in each district:

	DISTRICTS			Institutional	Non-Resident	Total
	1	2	3			
Cases	89	50	46	4	20	209
Positive	71	5	23			99
Clinically Positive	18	45	23			86
Deaths	24	14	19		16	73

CASES IN HOSPITAL: As they appear on our records at the end of the year:

DISTRICTS	1	2	3	Total
Patients in King Edward Memorial Hospital	49	24	21	94
Patients in Ninette	35	2	9	46
Patients in St. Roch's Hospital	10	8	2	20
Patients in Children's Hospital	1	–	–	1

VISITING LIST: Cases on visiting list for 1928:

DISTRICTS	1	2	3	Total
Cases	114	205	144	463
Non-Visiting	33	14	3	50

SUMMARY: Showing number and classification of patients in each District:

	Total	Positive	Clinically Positive	Suspect	Family Contacts
DISTRICT ONE	114	68	20	12	14
DISTRICT TWO	205	47	90	27	41
DISTRICT THREE	144	39	56	27	22

District 1. Includes all Ward One and part of Ward Two, North Boundary being South side of William Avenue to Arlington Street, then Notre Dame to Western Limits.

District 2. Includes part of Wards Two and Three, North limit, Burrows South, East limit Main Street, South limit William Avenue West to Arlington Street and Notre Dame to West Limits.

District 3. North limits to Burrows Avenue North and West. All East of Main Street to Market Avenue, including Elmwood.

Table showing Sex and Age incidence of cases and deaths notified during the year 1928:

SEX		AGES	CASES	DEATHS
	Female			
District 1	43	0 — 10 years	10	1
District 2	19	11 — 20 "	37	7
District 3	18	21 — 30 "	60	15
Total	80	31 — 40 "	32	11
	Male	41 — 50 "	30	9
District 1	46	51 — 60 "	12	9
District 2	31	61 — 70 "	3	5
District 3	28	71 — 80 "	1	–
Total	105		185	57
	Unclassified			
Outside	20			
Institutional	4	Non-Resident	20	16
	24	Institutional	4	–
Total	209	TOTAL	209	73

Nationality of Cases Reported

Canadian	53	Americans	3
English	27	Greek	–
Scotch	14	Ukranian	21
Irish	5	Negro	1
Icelandic	2	French	1
Swedish	3	Roumanian	–
Norwegian	3	Finlander	2
German	12	Danish	–
Polish	10	Hungarian	1
Ruthenian	4	Unclassified	1
Austrian	2		185
Dutch	1	Non-Resident	20
Italian	2	Institutional	4
Russian	–		209
Jewish	15		
Chinese	2		

Nurses' Reports

Review of summary of monthly reports for the year show that 5435 visits have been made to homes of patients. First visits totalled 164 with 4937 subsequent calls.

Chest Clinics

Nurses from this department continue to co-operate with the work of the Winnipeg General and Children's Hospitals. The reports for the year of the Winnipeg General Hospital show a total attendance of 990 at the Day Clinic and 263 at the Evening Clinic, making a total of 1253 as compared with 1104 during 1927. This is a record attendance. Examinations made totalled 618, as compared with 544 during 1927. X-rays numbered 429 against 366.

The total attendance at the Children's Hospital was 790 against 728 during 1927. Examinations totalled 522 and X-ray examinations, 242.

The King Edward Memorial Hospital conduct a clinic every morning, this is supervised by the staff of the Municipal Hospitals.

Relief Work

Our nurses are in constant touch with the agents of the Social Welfare Commission, also agents of other charitable organizations. This is an important side of the work, and frequently the nurse is called upon to assist in straightening out some social problem.

The department supplied needy patients with 13,532 quarts of milk; 91 patients benefited. We also supplied medical supplies, refills, flasks, handkerchiefs, rubbing alcohol, etc., etc.

Concluding Remarks

Two changes in the personnel of this division were made necessary during the year. Mr. George Hanby retired on pension after 23 years service with this division; his place was taken by Mr. Harry Robinson who was transferred from the Bacteriological Department. The transfer from the office of our junior clerk, Mr. Stewart Steele, to the Sanitary Division necessitated a new appointment here. Mr. George Kelly was appointed. Along with other members of this division these men have filled their respective positions admirably.

We again wish to place on record our thanks to those agencies which work with us from year to year, and by whose help and assistance our labours are considerably lightened and work made more pleasant.

Yours obediently,

W. J. T. WATT,

Chief, Division of Communicable Diseases

COMMUNICABLE DISEASES—1928

DISEASES	Jan.		Feb.		Mar.		Apr.		May		June		July		Aug.		Sept.		Oct.		Nov.		Dec.		Totals 1928		Totals 1927	
	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases	Deaths
Typhoid Fever	....	....	....	....	2	....	1	1	....	....	2	....	3	1	4	....	1	....	4	....	1	....	....	....	18	2	27	6
Smallpox	2	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	15	....	3	....	20	....	48	....
Chickenpox	101	....	88	....	60	....	31	....	102	....	212	....	69	....	31	....	6	....	37	....	113	....	147	....	997	....	1,018	....
Measles	9	....	6	....	62	1	122	....	333	2	457	1	310	1	96	1	30	1	19	....	21	....	130	....	1,595	7	456	3
Scarlet Fever	76	....	99	1	92	....	54	....	85	....	94	....	52	....	35	....	31	....	38	1	54	1	54	....	764	3	885	6
Whooping Cough	8	....	12	....	12	....	3	1	50	....	32	....	28	....	44	....	24	....	39	1	41	1	47	1	340	4	476	7
Mumps	33	....	63	....	65	....	30	....	33	....	36	....	10	....	7	....	4	....	17	....	63	....	50	....	411	....	290	....
Diphtheria	78	3	74	3	35	....	29	2	42	2	43	....	43	2	36	4	46	1	49	2	70	2	60	1	605	22	542	34
Diphtheria Carriers	8	....	13	....	11	....	2	....	1	....	2	....	7	....	5	....	1	....	1	....	17	....	4	....	72	....	142	....
Erysipelas	16	1	7	....	18	2	4	....	10	2	3	....	6	....	4	....	6	....	3	....	12	....	12	2	101	7	93	7
Pulmonary Tuberculosis	13	2	11	5	23	8	24	6	15	11	16	9	15	5	14	....	10	1	22	9	19	8	27	9	209	73	229	74
Anterior Poliomyelitis	....	....	....	....	....	....	....	....	....	....	....	....	9	3	79	9	155	3	33	1	1	1	2	....	279	17	4	1
Cerebrospinal Meningitis	....	....	....	....	....	....	2	....	2	....	1	1	2	1	....	....	....	....	....	....	1	1	....	....	8	3	8	2
Influenza	2	2	2	2	1	1	....	....	1	1	2	2	....	....	1	1	....	....	1	1	1	2	37	12	48	24	42	42
Lethargic Encephalitis	1	1	....	....	....	....	....	....	1	1	....	....	....	....	1	1	....	....	....	....	....	....	1	1	4	4	4	4
Puerperal Septicemia	....	....	....	....	2	2	....	1	1	....	....	....	2	2	....	....	....	....	2	3	2	1	1	1	11	11	6	6
Totals	347	9	375	11	383	14	302	11	676	19	900	13	556	15	357	16	314	6	265	18	431	17	575	27	5,481	176	4,270	192

COMMUNICABLE DISEASE RATES

	1928				1927				1926				1925			
	Cases	Deaths	Rate per 100,000	Rate per 100 Cases	Cases	Deaths	Rate per 100,000	Rate per 100 Cases	Cases	Deaths	Rate per 100,000	Rate per 100 Cases	Cases	Deaths	Rate per 100,000	Rate per 100 Cases
Diphtheria	605	22	10.9	3.6	542	34	17.1	6.2	554	20	10.1	3.6	515	26	13.3	5.0
Scarlet Fever	764	3	1.5	.4	885	6	3.0	.67	676	8	4.0	1.1	645	8	4.09	1.2
Measles	1,595	7	3.4	.4	456	3	1.5	.6	2,844	11	5.5	.3	2,411	9	4.6	.4
Whooping Cough	340	4	2.0	1.2	476	7	3.5	1.4	422	6	3.0	1.4	689	14	7.17	2.0
Typhoid Fever	18	2	1.0	11.1	27	6	3.0	22.2	66	8	4.0	12.1	42	6	3.07	14.3
Typhoid Fever Corrected		2		.0		3	1.5			2	1.0			2	1.0	
Tuberculosis of Lungs	209	73	36.1	34.9	229	74	37.2	32.3	232	88	44.6	37.5	183	81	41.5	44.2
Tuberculosis, All Forms		114	56.3			93	46.7			116	58.8			104	53.2	
Influenza	48	24	11.8	50.0	42	42			31	31			33	31	15.8	
Erysipelas	101	7	3.4	6.9	93	7	3.5	7.5	90	14	7.1	15.5	57	5		
Smallpox	20				48				43	2	1.0	4.6	41			
Puerperal Septicemia	10	10	4.9		6	6			7	7			8	8		
Cerebrospinal Meningitis	8	3	1.5		8	2			1	1			1	1		
Anterior Poliomyelitis	279	17	8.4	6.1	4	1							1	1		
Lethargic Encephalitis	4	4	2.0		4	4			7	7			7	5		
Diphtheria Carriers	72				142				107				101			
Mumps	411				290				1,506				436			
Chickenpox	997				1,018				770	1			662			

COMMUNICABLE DISEASES

Cases and Deaths by Wards, 1928

DISEASES	Ward 1		Ward 2		Ward 3		Outside		Totals, 1928		Totals, 1927
	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases	Deaths	Deaths
Typhoid Fever	3	....	5	....	2	1	8	1	18	2	6
Smallpox	2	....	1	....	2	....	15	....	20	....	....
Measles	215	....	568	1	735	6	54	....	1,572	7	3
Scarlet Fever	167	2	245	1	223	....	126	....	761	3	6
Whooping Cough	77	1	150	1	103	1	7	1	337	4	7
Diphtheria	70	1	195	7	210	7	77	7	552	22	34
Erysipelas	15	1	32	1	34	1	10	4	91	7	7
Pulmonary Tuberculosis	32	15	82	19	71	23	20	16	205	73	74
Cerebrospinal Meningitis	.....	....	3	1	2	1	2	1	7	3	2
Influenza	8	7	18	12	7	3	10	2	43	24	42
Anterior Poliomyelitis	70	6	102	6	54	3	53	2	279	17	1
Puerperal Septicemia	2	2	3	3	1	1	4	4	10	10	6
Lethargic Encephalitis	2	2	1	1	....	....	1	1	4	4	4
Chickenpox	230	....	361	....	348	....	27	....	966	....	....
Mumps	123	....	143	....	117	....	3	....	386	....	....

REPORT OF SCHOOL MEDICAL INSPECTION SERVICE ON COMMUNICABLE DISEASES

Affecting Schools December 31st, 1927, to December 31st, 1928

Furnished by courtesy of Dr. Mary Crawford

School Population, 1928 41,850
School Children Suffering from Communicable Diseases 1,695
Total Percentage Discovered by Nurses 52.21%

These cases are classified as follows:

DISEASES	School Children	Discovered by Nurses	
		Number	Percentage of School Children
Scarlet Fever	318	67	21.07%
Measles	403	249	61.76%
German Measles	19	3	15.78%
Mumps	231	182	78.78%
Chickenpox	476	291	61.13%
Whooping Cough	88	75	85.22%
Throat Carrier	11	5	45.45%
Nose Carrier	7	6	85.71%
Ear Carrier	1	1	100.00%
Clinical Throat	124	16	12.90%
Anterior Poliomyelitis (not complete)	17	.....	.....

SCARLET FEVER—1928

	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total 1928	Total 1927
Scarlet Fever Cases	76	99	92	54	85	94	52	35	31	38	54	54	764	885
Secondary Cases	6	6	8	2	9	7	6	3	4	1	5	7	64	115
Return Cases	....	2	....	2	....	....	2	....	1	....	....	....	7	9
Missed Cases	4	3	....	....	6	4	....	1	....	3	3	2	26	36
Institutional Cases	3	1	4	5	3	2	....	1	1	....	....	....	20	51
Outside Cases	16	16	14	11	11	14	7	12	3	7	8	7	126	107
School Children	32	51	42	23	46	53	24	9	14	19	27	24	364	395
Sec'y to School Children	5	6	9	2	8	6	4	2	4	....	5	6	57	73
Under School Age	13	17	13	7	10	13	15	7	5	7	10	9	126	146
Sec'y to Under School Age	....	....	2	....	1	1	2	1	....	....	....	....	7	30
Adults	6	8	8	6	5	4	....	3	5	4	4	7	60	69
Secondary to Adults	1	....	....	....	1	1	....	....	....	1	....	1	5	12
Suspects	5	7	8	2	10	8	3	1	....	3	6	7	60	53

DIPHTHERIA—1928

	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total 1928	Total 1927
Diphtheria Cases	78	74	35	29	42	43	43	36	46	49	70	60	605	542
Diphtheria Carriers	8	13	11	2	1	2	7	5	1	1	17	4	72	142
Secondary Cases	5	11	2	3	2	6	4	2	3	1	6	8	53	52
Return Cases	....	....	....	....	....	....	....	1	....	....	....	....	1	1
Unrecognized Cases	3	3	3	1	2	4	2	2	....	....	6	1	27	36
Outside Cases	10	4	5	....	8	11	8	1	12	3	3	12	77	79
Institutional Cases	7	11	3	2	....	1	3	....	12	3	9	2	53	55
Institutional Carriers	....	7	6	....	....	1	....	....	1	....	....	....	15	30
Suspects	3	2	4	2	1	5	1	....	....	1	3	4	26	30

SCHICK TEST AND TOXOID ADMINISTRATION IN SCHOOLS—1928

SCHOOLS	Total Schick				Positive				Negative				Toxoid Completed			
	1928	1927	1926	1923–5	1928	1927	1926	1923–5	1928	1927	1926	1923–5	1928	1927	1926	1923–5
Ward 1.																
Wolseley	42	43	61	82	40	30	43	52	2	11	18	30	40	28	42	42
Laura Secord	85	40	93	152	54	28	71	121	31	11	22	31	47	25	69	116
River Heights	14	57	43	63	12	22	34	43	2	33	6	20	8	16	29	39
Sir John Franklin	17	31	31	32	14	20	15	19	2	9	11	13	11	15	15	14
Mulvey	75	51	90	113	47	28	71	76	27	22	14	37	34	24	68	60
Carlton	82	54	85	155	56	35	60	112	22	15	23	39	44	29	52	92
Lord Roberts	51	159	119	208	33	95	76	152	15	59	34	56	28	74	69	140
Gladstone	24	59	54	75	16	45	40	59	5	14	12	16	8	30	35	46
Earl Grey	22	52	72	131	11	29	61	81	9	23	10	50	10	27	50	72
La Verendrye	44	77	82	111	31	41	65	79	9	33	15	32	25	33	59	65
Fort Rouge	10	24	24	46	7	17	13	42	1	7	8	4	6	9	13	36
Grosvenor	21	65	58	71	11	27	47	54	8	34	10	17	8	20	42	44
St. Ignatius	9	28	30	51	6	8	22	44	1	17	5	7	1	6	18	33
St. Mary's	9	46	60	.....	5	43	33	.....	2	3	24	.....	5	36	24	.....
Riverview	21	75	59	124	14	64	34	97	6	11	16	22	13	37	28	79
Totals	526	861	961	1414	357	532	685	1031	142	302	228	374	288	409	613	878

SCHICK TEST AND TOXOID ADMINISTRATION IN SCHOOLS—1928

SCHOOLS	Total Schicks				Positive				Negative				Toxoid Completed			
	1928	1927	1926	1923–5	1928	1927	1926	1923–5	1928	1927	1926	1923–5	1928	1927	1926	1923–5
Ward 2.																
Cecil Rhodes	96	103	105	198	62	52	80	147	34	35	18	49	56	50	77	112
Greenway	187	66	103	149	117	39	80	116	61	24	19	33	96	35	75	81
John M. King	117	88	139	172	84	52	75	98	29	29	54	74	77	41	67	92
Pinkham	62	76	83	161	50	37	66	84	12	35	17	77	43	32	61	56
Principal Sparling	77	71	128	159	59	39	76	104	14	31	50	49	47	34	67	94
Ellen St. Kindergarten	43	31	32	.....	30	12	17	.....	12	19	15	.....	24	11	17	.....
Albert	90	71	87	128	68	35	54	85	16	20	28	43	58	32	52	75
Isbister	80	59	123	111	66	41	63	75	11	15	42	36	51	38	60	51
Montcalm	30	17	46	98	27	8	38	72	3	9	8	25	20	8	37	58
General Wolfe	....	41	85	161	....	21	65	82	....	19	20	62	....	17	57	82
Isaac Brock	117	73	97	129	75	50	69	101	35	13	19	28	66	45	53	83
Argyle	69	49	61	81	46	19	42	48	23	29	18	32	31	15	36	41
Wellington	69	70	85	135	58	43	58	79	8	16	24	56	47	40	53	66
Somerset	72	42	77	122	47	18	46	180	21	12	31	42	38	14	43	73
Victoria	19	9	13	73	15	5	9	42	2	3	4	30	8	5	8	39
Dufferin	86	62	119	236	56	21	64	146	30	41	53	90	48	20	60	116
St. Edwards	22	83	83	.....	10	48	32	.....	6	25	51	.....	7	35	27	.....
Totals	1236	1011	1466	2113	870	540	934	1459	317	375	471	726	717	472	850	1119

SCHICK TEST AND TOXOID ADMINISTRATION IN SCHOOLS—1928

SCHOOLS	Total Schicks				Positive				Negative				Toxoid Completed			
	1928	1927	1926	1923–5	1928	1927	1926	1923–5	1928	1927	1926	1923–5	1928	1927	1926	1923–5
Ward 3.																
Machray	100	102	140	216	66	25	75	140	32	59	62	76	54	23	68	110
William Whyte	75	109	139	263	42	46	73	149	32	62	66	114	34	44	61	141
David Livingstone	61	118	188	242	32	81	122	105	23	37	65	137	30	71	114	93
King Edward	116	139	162	505	74	77	85	288	39	55	77	217	60	67	83	219
Aberdeen	76	104	177	271	35	74	102	149	39	25	75	122	28	63	83	125
Margaret Scott	65	58	94	258	45	33	63	143	13	23	27	104	37	27	57	115
Sir Sam Steele	20	23	36	73	11	13	30	45	8	8	6	28	11	12	29	32
George V.	19	29	30	87	13	22	20	50	4	7	9	37	10	21	18	41
Champlain	57	45	50	141	53	3	35	77	2	41	13	64	41	3	29	58
Norquay	132	142	228	446	61	71	128	245	63	61	86	201	44	66	113	203
Strathcona	97	136	161	534	60	51	101	306	35	83	60	228	57	51	92	288
Lord Nelson	43	68	84	158	35	39	44	65	4	26	40	93	30	33	41	53
Florence Nightingale	22	33	10	73	17	20	5	52	1	8	5	21	14	17	4	47
Ralph Brown	88	77	96	213	62	40	71	161	24	34	20	52	47	31	68	102
Luxton	50	50	84	159	48	24	53	78	2	20	21	81	42	21	45	64
Anna Gibson	23	24	38	35	17	16	26	27	4	7	10	8	14	11	24	24
Lord Selkirk	95	84	114	202	62	59	76	141	29	24	33	61	54	54	68	116
Faraday	91	90	112	192	67	36	79	111	24	44	23	91	48	32	73	73
Elmwood	58	29	30	93	53	21	24	53	3	8	5	40	42	17	21	45
Peretz	48	28	62	.....	35	20	41	.....	12	8	21	.....	18	17	35	.....
Liberty Temple	....	17	....	.....	....	10	....	.....	....	6	....	.....	....	4	....	.....
Totals	1336	1505	2035	4161	888	781	1253	2385	393	646	724	1775	715	685	1126	1949

ACUTE ANTERIOR POLIOMYELITIS CASES REPORTED BY MONTHS ALSO DEATHS FROM 1916 TO 1927

	Jan.		Feb.		Mar.		April		May		June		July		Aug.		Sept.		Oct.		Nov.		Dec.		Total Cases	Total Deaths
	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.	C.	D.		
1927	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	3	1	1	....	....	....	....	....	4	1
1926	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
1925	....	....	....	....	....	....	....	....	....	....	1	1	....	....	....	....	....	....	....	....	....	....	....	....	1	1
1924	....	....	1	1	....	....	....	....	....	....	....	....	....	....	2	1	6	....	3	1	....	....	1	....	13	3
1923	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1	....	....	....	....	....	....	....	....	....	1	....
1922	....	....	....	....	....	....	....	....	....	....	....	....	1	1	....	....	....	....	....	....	....	....	....	....	1	1
1921	....	....	....	....	1	1	....	....	....	....	....	....	....	....	....	....	4	....	....	....	1	....	....	....	6	1
1920	....	1	1	....	....	....	....	....	....	....	....	....	....	....	1	....	2	....	33	5	9	5	1	1	47	12
1919	....	....	....	....	....	....	....	....	....	1	....	....	....	....	....	....	1	....	....	....	....	....	....	....	1	1
1918	....	....	....	....	....	....	....	....	1	....	....	....	2	....	2	....	1	....	1	....	....	....	....	....	7	....
1917	....	....	....	....	....	....	....	....	....	....	....	....	3	....	4	....	2	....	2	....	5	1	....	....	16	1
1916	1	1	....	....	....	....	....	....	....	....	....	1	1	....	7	....	7	1	2	....	2	1	....	....	20	4
	1	2	2	1	1	1	....	....	1	1	1	2	7	1	17	1	26	2	42	6	17	7	2	1	117	25

INSPECTORS' REPORT—1928

	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Totals 1928	Totals 1927
Number of Visits	498	601	734	678	1239	1424	912	553	413	644	639	651	8986	6696
Houses Quarantined	263	292	302	214	501	624	386	189	198	200	342	386	3897	3105
Quarantines Raised	25	47	75	84	184	270	289	84	46	30	19	57	1210	700
Quarantines Inspected	83	110	71	86	87	85	78	64	36	59	65	67	891	1021
Other Calls	127	152	286	294	467	445	159	216	133	355	213	141	2988	1870
New Cases Investigated	280	308	316	216	445	783	432	218	217	180	401	437	4233	3478
Rooms Fumigated	3	1	1	....	....	1	2	....	2	1	1	2	14	37
Houses Fumigated	....	....	....	....	....	....	....	....	....	....	....	....	....	1
Special Reports	5	6	4	....	2	3	2	....	1	2	3	2	30	38
Sanitary Defects Reported	1	3	2	1	1	1	1	1	....	2	3	2	18	22
Bedding, etc., Disinfected	114	135	118	80	95	117	96	86	109	102	102	110	1264	1334
Rooms Sprayed	11	12	9	15	11	10	9	17	3	16	8	16	137	174
Houses Sprayed	....	2	1	....	....	....	....	....	....	....	1	....	4	10

TUBERCULOSIS—SUMMARY SHOWING SOURCES FROM WHICH CASES ARE RECEIVED

	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Totals 1928	Totals 1927
King Edward Hospital	4	1	1	6	4	6	3	9	2	....	3	8	47	66
Ninette Sanatorium	....	1	6	....	1	....	....	....	1	4	2	3	18	29
Clinics	4	5	6	12	1	3	5	1	5	4	7	4	57	58
Death Sheet	2	....	1	2	2	2	1	....	....	1	3	3	17	17
City Laboratory	....	1	2	1	1	....	3	....	....	....	....	1	9	9
St. Roch's Hospital	....	2	1	1	3	3	1	2	....	....	3	2	18	15
Doctors and Others	....	1	3	1	2	....	1	1	1	9	1	3	23	11
Outside Cases	3	....	3	1	1	2	1	1	1	4	....	3	20	24
Total Cases	13	11	23	24	15	16	15	14	10	22	19	27	209	229
Total Deaths	2	5	8	6	11	9	5	....	1	9	8	9	73	74

CHILDREN'S HOSPITAL CHEST CLINIC—1928

	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Totals 1928	Totals 1927
Cases	59	37	109	116	60	47	57	71	61	67	66	40	790	728
Old Cases	51	30	76	81	48	42	38	52	39	36	45	25	563	487
New Cases	8	7	33	35	12	5	19	19	22	31	21	15	227	241
Examinations	35	30	80	83	40	34	37	29	30	51	34	39	522	457
X-Ray Examinations	21	9	45	27	12	15	14	27	21	22	19	10	242	267

WINNIPEG GENERAL HOSPITAL CHEST CLINIC—1928

	Jan.		Feb.		Mar.		April		May		June		July		Aug.		Sept.		Oct.		Nov.		Dec.		Totals			
																									1928		1927	
	Day	Night	Day	Night	Day	Night	Day	Night	Day	Night	Day	Night	Day	Night	Day	Night	Day	Night	Day	Night	Day	Night	Day	Night	Day	Night	Day	Night
Cases	123	28	118	30	123	18	65	25	55	29	57	25	90	12	81	22	91	15	67	18	78	26	42	15	990	263	845	259
Old Cases	88	15	76	12	87	9	45	10	40	11	40	18	67	8	51	13	71	9	37	13	47	12	31	11	680	141	574	138
New Cases	35	13	42	18	36	9	20	15	15	18	17	7	23	4	30	9	20	6	30	5	31	14	11	4	310	122	271	121
Men	35	5	30	11	44	3	26	3	26	12	23	10	37	4	19	5	26	6	24	4	32	11	22	10	344	84	314	96
Women	70	18	60	14	61	13	37	15	29	16	30	14	44	8	36	15	41	7	39	11	36	15	18	5	501	151	442	142
Children	18	5	28	5	18	2	2	7	....	1	4	1	9	....	26	2	24	2	4	3	10	....	2	....	145	28	89	21
Examinations	57	23	40	16	55	9	39	17	25	23	33	16	34	6	28	12	26	7	43	11	40	18	34	6	454	164	389	155
X-Ray Examinations	46	11	49	16	54	8	9	7	15	10	9	8	34	8	30	8	37	6	17	6	17	12	8	4	325	104	272	94

TUBERCULOSIS—1928

Showing Sleeping Accommodation of 185 Patients

Rooms Occupied by One Family		PATIENTS				CONTACTS			
		With Room to Self	With Bed but not Room to Self	With neither Bed nor Room to Self	Totals	Total Number of Contacts in Home	Sleeping in same Bed as Patient	Sleeping in same Room but separate Bed	Totals
1 Room	15	6	1	8	15	20	9	11	20
2 Rooms	17	2	1	14	17	49	15	12	27
3 Rooms	19	8	1	10	19	29	9	8	17
4 Rooms and Over	127	85	9	33	127	544	36	28	64
Institutional	4	....	....	....	4	....	....	....	....
Unclassified	3	....	....	....	3	....	....	....	....
Totals	185	101	12	65	185	642	69	59	128

TUBERCULOSIS NURSES' REPORT—1928

	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Totals 1928	Totals 1927
Number of Visits	279	426	503	491	504	476	498	369	426	545	471	447	5435	5122
To Old Cases	251	412	445	448	468	429	456	342	399	469	419	399	4937	4811
To New Cases	6	10	29	12	11	13	10	18	7	21	11	16	164	187
On Behalf of Patients	1	3	6	10	16	9	7	9	1	26	36	13	137	19
Other Calls	21	1	23	21	9	25	25	....	19	29	5	19	197	105
Patients sent to King Edward Hospital	2	3	3	2	1	2	....	1	3	6	3	6	32	60
Patients sent to Ninette Sanatorium	1	....	....	1	....	....	....	....	2	1	....	....	5	15
Patients sent to St. Roch's Hospital	....	....	1	....	1	....	2	....	2	1	....	....	7	10
Suspects	1	2	6	3	1	2	5	....	3	1	2	....	26	24

Report of Chief Health Inspector

A. J. Douglas, Esq., M.D.,
Medical Health Officer.

Dear Sir:

I have the honour to submit herewith a report of the work accomplished during 1928 in this Division of the Health Department, as set forth in my own report, and in those of the Tenement and Smoke Inspectors, as follows:—

Abatement of Nuisances

The table which follows sets forth in concise form a summary of the work done by the inspectors of this division.

The total number of inspections and re-inspections was **41,750** or **462** more than last year. This equals 4,175 inspections for each of the ten district inspectors.

Complaints numbered **2,698** or **222** less than 1927. Over **359** of these complaints were unfounded, or were rectified before receipt of the same.

SANITARY INSPECTIONS FOR THE YEAR 1928

	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Totals
Complaints received in Office	114	104	163	175	242	201	207	146	145	152	126	91	1866
Complaints made to Inspector	83	71	69	74	72	71	56	69	72	60	75	60	832
Total	197	175	232	249	314	272	263	215	217	212	201	151	2698
Of Above:													
Complaints re non-removal of garbage, etc.	35	34	45	60	40	40	28	35	32	41	30	25	445
Complaints re nuisances, etc	162	141	187	189	274	232	235	180	185	171	171	126	2253
Total	197	175	232	249	314	272	263	215	217	212	201	151	2698
Complaints well founded	173	153	204	218	264	239	230	184	182	183	176	133	2339
Complaints unfounded or rectified previous to receipt of same	24	22	28	31	50	33	33	31	35	29	25	18	359
Total	197	175	232	249	314	272	263	215	217	212	201	151	2698
Written notices (informal)	302	294	432	334	464	353	252	293	355	265	292	198	3834
Written notices (statutory)	130	120	136	248	243	208	165	165	172	160	144	88	1979
Verbal notices or warnings	902	795	842	880	991	848	830	759	786	773	873	739	10018
Total	1334	1209	1410	1462	1698	1409	1247	1217	1313	1198	1309	1025	15831
INSPECTIONS MADE													
Dwelling houses	240	146	170	174	170	173	122	175	147	135	168	319	2139
Tenements and apartment blocks	178	148	142	97	112	113	86	58	95	90	115	388	1622
Hotels and lodging houses	37	43	78	42	11	23	20	7	22	18	33	20	354
Schools and public buildings	2	2	1	....	....	....	2	....	1	2	....	....	10
Abattoirs	2	2	2	2	2	2	2	2	....	2	....	2	20
Workshops and factories	40	54	71	39	35	43	37	32	36	31	46	23	487
Offices	2	7	13	4	3	8	2	11	7	9	7	10	83

SANITARY INSPECTIONS FOR THE YEAR 1928—Continued.

	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Totals
Restaurants and stores	61	79	64	46	58	60	54	66	74	51	61	50	724
Stables, livery, feed and sale	23	32	25	27	26	28	19	29	20	19	30	29	307
Stables, private	118	162	127	135	126	127	91	116	116	75	98	73	1364
Laundries, hand	45	48	64	120	59	57	35	38	40	33	36	56	631
Laundries, steam	1	8	....	1	4	4	4	3	1	4	2	2	34
Dog kennels	13	13	12	29	25	21	14	12	13	14	11	4	181
Theatres and places of amusement	5	8	8	5	6	7	5	5	5	5	4	6	69
Public bath houses	4	5	2	9	8	8	8	4	8	8	5	5	74
Public bath houses, water samples	5	4	8	10	15	12	19	13	12	14	8	8	128
Comfort stations, public	20	20	20	20	22	22	23	12	24	22	20	20	245
Maternity and Infants' homes	....	....	....	....	....	2	....	....	....	....	....	....	2
Hospitals, private	....	....	....	....	3	1	2	....	....	....	....	1	7
Common drinking cups and towels	5	4	17	5	7	6	4	3	3	2	3	2	61
Barber shops	11	11	19	16	12	11	9	9	9	8	9	6	130
Second-hand stores and junk yards	20	37	40	78	61	38	31	25	26	15	42	27	440
Pool rooms	20	30	25	31	57	41	18	16	19	10	19	19	305
Yards, sheds, areas, etc	503	470	797	924	986	745	558	592	516	554	489	486	7620
Vacant lots (nuisances)	64	77	116	111	69	70	57	68	60	59	62	52	865
Streets and lanes (nuisances)	382	345	296	310	334	293	254	190	366	366	418	243	3997
Infectious diseases (houses placarded, disinfected, etc.)	....	....	....	....	....	....	....	....	....	....	....	....	.....
Gasoline filling stations	30	37	41	28	31	36	32	31	27	28	24	24	369
Garages	20	27	30	19	25	28	30	28	24	19	18	24	292
Undertakers' establishments	....	....	....	....	6	....	....	....	....	....	....	....	6
Bedding factories	....	....	....	....	....	....	1	....	1	....	....	....	2
Lack of heat in dwellings	3	2	....	....	....	....	....	....	1	7	7	10	30
Wiping rags	....	....	....	....	....	....	....	....	2	1	8	2	13
Refrigerators, chemical	....	....	....	....	....	....	....	....	....	....	....	....	.....
Cemeteries (water supply)	....	....	....	....	3	....	....	....	....	....	....	....	3
Contractors' closets	....	....	....	....	....	....	176	136	105	79	79	49	624
Total number of inspections	1854	1821	2188	2282	2276	1979	1715	1681	1780	1680	1822	1960	23038
Re-inspections	1249	1285	1544	1689	1973	1843	1643	1711	1635	1561	1443	1136	18712
Total number of inspections and re-inspections	3103	3106	3732	3971	4249	3822	3358	3392	3415	3241	3265	3096	41750

SANITARY INSPECTIONS FOR THE YEAR 1928—Continued

	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Totals
DEFECTS AND NUISANCES DISCOVERED AND ABATED:													
Drains, choked or defective	16	19	24	23	21	30	29	26	17	15	15	15	250
Sinks and wash-basins, choked or defective	16	23	22	17	14	15	10	8	9	10	13	10	167
Water closets and fittings, choked or defective	34	43	40	34	24	35	21	28	27	24	36	25	381
Baths and fittings, choked or defective	1	3	1	1	1	1	2	1	2	2	5	4	24
Urinals & fittings, choked or defective	3	3	4	5	7	7	8	6	8	4	5	3	63
Soil-pipes, clean-outs, etc., choked or defective	12	15	11	10	8	16	14	17	12	11	11	12	149
Catch-basins and traps, choked or defective	11	12	20	11	15	16	16	25	12	17	9	9	173
W. C. compartments, defective light and ventilation	2	1	3	5	1	....	1	1	....	1	2	2	19
Plumbing and water pipes, frozen	36	38	23	13	....	....	....	....	....	....	....	11	121
Vent stacks, frozen	3	2	1	....	....	....	....	....	....	....	....	....	6
Sewer connections, frozen	....	1	2	....	....	....	....	....	....	....	....	....	3
Water services, defective or cut off	20	22	30	25	26	14	6	10	10	6	9	13	191
Plumbing fixtures, insufficient	2	2	3	4	3	3	....	2	2	3	1	1	26
New plumbing, notice to install	24	4	....	3	3	5	....	1	3	4	6	1	54
Total plumbing defects	180	188	184	151	133	142	107	125	102	97	112	106	1627
Dirty yards, courts, sheds, etc.	212	485	492	504	516	341	315	324	367	318	292	251	4417
Poultry kept in dwelling	4	3	1	4	5	2	3	3	2	4	3	3	37
Pigeons kept in dwelling	1	1	1	....	3	4	3	....	1	....	....	....	14
Animals kept in dwelling	1	1	2	....	2	1	1	3	4	....	3	1	19
Poultry kept under insanitary conditions	5	2	6	11	12	18	15	16	16	18	12	8	139
Cows or other cattle kept under insanitary conditions	3	5	7	5	5	4	1	3	2	2	2	4	43

SANITARY INSPECTIONS FOR THE YEAR 1928—Continued

	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Totals
Cows or other cattle kept too close to dwelling	....	1	....	2	1	....	2	3	5	2	....	....	16
Hogs, unlawfully keeping	....	....	....	....	....	....	....	....	....	....	....	....	.....
Horses, insanitary stables	4	6	7	6	3	6	7	3	8	2	....	....	52
Garbage receptacles	127	143	181	242	445	532	443	318	286	271	140	141	3269
Refuse receptacles	73	54	72	101	138	83	30	34	48	93	6	13	745
Manure bins, defective	46	59	60	73	58	51	31	37	27	24	45	19	530
Ash receptacles	41	15	14	8	6	6	....	5	1	22	32	20	170
Paper receptacles	14	13	12	13	24	15	8	20	10	21	10	11	171
Cellars and basements, defective	15	15	26	16	22	42	32	36	24	20	21	14	283
Dwellings, dilapidated & insanitary	3	2	7	5	5	3	4	5	4	2	6	12	58
Tenements, dilapidated & insanitary	2	2	1	2	6	5	2	1	1	....	1	....	23
Offices and workshops, dilapidated & insanitary	....	2	....	....	1	....	....	2	....	3	....	....	8
Dilapidated and insanitary other buildings	3	1	2	4	5	3	....	1	2	3	6	15	45
Overcrowding (day inspections)	25	45	34	21	13	38	11	12	26	32	33	24	314
Overcrowding (night inspections)	....	....	....	....	....	....	....	....	....	....	....	....	.....
Overcrowding (notices)	2	4	2	7	1	3	5	....	3	11	13	3	54
Rat-infested buildings	3	3	8	3	7	2	1	3	5	5	2	2	44
Cockroach infested buildings	3	5	1	4	1	7	3	4	1	1	3	1	34
Bed-bug infested buildings	1	....	4	3	2	12	16	12	5	12	4	....	71
Chimneys, defective	6	6	4	3	1	2	2	4	2	2	5	3	40
Roofs, defective	8	3	16	8	13	20	21	19	8	9	8	4	137
Eavestroughs and rain-water leaders, defective	3	4	18	21	23	49	48	34	17	13	12	7	249
Gas fittings and piping, defective	....	2	1	....	1	....	2	2	1	....	....	....	9
Furnaces and heating apparatus, defective	12	8	6	....	....	1	....	2	1	8	7	9	54
Refrigerators, defective	....	....	....	....	....	1	....	....	....	....	....	....	1
Lighting, defective	2	....	3	1	2	1	....	....	....	....	....	1	10
Ventilation, defective	2	6	2	1	3	1	3	4	....	2	....	2	26
Pit closets, concrete or brick, notices	2	5	9	16	16	15	15	3	10	15	10	5	121

SANITARY INSPECTIONS FOR THE YEAR 1928—Continued

	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Totals
Cont actors' closets, notices	38	27	33	64	97	98	72	84	71	56	44	28	712
Chemical or patent closets	....	....	....	....	....	....	....	....	....	2	2	2	6
Stagnant water, vacant lots	....	....	41	42	8	15	23	15	....	....	....	....	144
Other nuisances, vacant lots	64	80	89	85	73	58	48	59	60	57	55	50	778
Nuisances on lanes or streets	388	361	297	295	334	277	248	240	358	358	410	243	3809
Total number of defects	1113	1369	1459	1570	1852	1716	1415	1311	1376	1388	1187	896	16652
Total plumbing defects	180	188	184	151	133	142	107	125	102	97	112	106	1627
Total defects discovered (including plumbing defects)	1293	1557	1643	1721	1985	1858	1522	1436	1478	1485	1299	1002	18279
SMOKE NUISANCES													
Chimneys and smoke stacks (observations)	40	32	14	17	28	57	47	15	37	51	60	57	455
Furnaces, boilers, fuels, etc., inspections of	113	109	19	45	47	84	76	51	94	86	186	131	1047
Total	153	141	33	62	75	141	123	66	131	137	246	194	1502
Notices, statutory	3	3	....	....	....	1	....	2	....	2	3	2	16
Notices, verbal	41	37	5	13	6	5	17	10	36	29	45	47	291
Total	44	40	5	13	6	6	17	12	36	31	48	49	307
MISCELLANEOUS													
Milk samples taken	....	....	....	....	....	....	....	....	....	....	....	....	.....
Water samples taken	12	12	12	12	16	12	17	9	12	12	12	12	150
Chemical tests (plumbing & drainage)	....	....	....	....	....	....	....	....	....	....	....	....	.....
Positive results.....Negative	....	....	....	....	....	....	....	....	....	....	....	....	.....
Cases reported for prosecution	....	....	1	1	1	....	....	2	1	2	1	....	9
Time attending court (hours)	....	....	1	½	....	....	....	2	½	....	....	....	4

Frozen Plumbing and Water Pipes

One hundred and twenty-four cases were dealt with. In previous reports we have explained the difficulty owing to low temperatures in Winter, and the flimsy construction of old buildings, in keeping the plumbing and water pipes from freezing. As these old buildings gradually disappear by demolition, we shall begin to reap the advantage of the newer and warmer type of construction now required by the Building By-law. But the poorest families naturally gravitate to the oldest houses, and a combination of poor construction and lack of fuel makes serious consequences for many such families in Winter.

Other Plumbing Defects

These numbered 1,423 or 274 fewer than in 1927. They included choked and defective drains, sinks, washbasins, water-closets, baths, urinals, soil-stacks, catch-basins and clean-outs. There were 80 notices served to install new or additional plumbing. Out of 827 new dwelling houses constructed only 24 were built on streets without sewers or water mains. There are only 273 occupied buildings in the City without plumbing.

Defective Roofs, Eavestroughs and Rain Water Leaders

Complaints re defective roofs 137. Defective eavestroughs and rain water leaders 249. Owing to the excessive rainfall this work increased.

Garbage, Manure and Other Receptacles

The keeping of all garbage, tin cans, manure, etc., in proper covered receptacles whilst awaiting removal is a most important matter if we are to keep down the fly nuisance, avoid providing sustenance for rats, prevent offensive odors, and to avoid an unsightly condition of yards and lanes. A metallic garbage can with a closely-fitting metallic cover is just as necessary an adjunct to a properly kept dwelling as is a tea kettle. During the Summer a campaign for the renewal of missing and defective receptacles was conducted. The following notices were served:—

To provide Garbage Cans	3,269
To provide Receptacles for incombustible material	745
To provide or repair Manure Bins	530
To provide Ash Receptacles	170
To provide Paper Receptacles	171
Total	4,885

Scavenging

Although the actual work of scavenging is done by another division of the Department, our inspectors are expected to keep the same under observation, to report places apparently missed, and to see that the re-

fuse is kept as required by the regulations so as to facilitate removal. The Street Cleaning Division gave, during the Summer months, the semi-weekly garbage service in the tenement district recommended in our last year's report. The result was a great improvement in the yards and lanes of this district. This service was however discontinued in the Fall. We still need a more frequent service for the removal of lawn cuttings and garden refuse in Summer.

We received 445 complaints regarding the non-removal of garbage, etc., or of improper methods of storing the same.

The following requests were sent to the Street Cleaning Division:—

To clean Contractors' Closets	350
To remove garbage	25
To remove dead animals	15
To remove ashes	38
To clean brick pit closets	28
To remove infected bedding	2
To remove manure from lanes or streets	14
To remove tins or incombustible refuse	43
To clean up vacant lots	5
Total	520

A close co-operation exists between the two Divisions.

Contractors' Closets

Permits issued 786, or 55 more than in 1927. Inspections and notices 1336. Some contractors put up well-constructed, fly-proof closets, with water-tight receptacles; others are extremely careless in this regard.

Feed and Sale Stables

There were 14 permits issued. One fewer than last year, and 307 inspections were made.

Keeping of Animals

Inspections of private stables, 1,364. The following cases were dealt with:—

Cows kept in insanitary stables, sheds, etc.	42
Calves kept in insanitary stables, sheds, etc.	2
Horses kept in insanitary stables, sheds, etc.	47
Sheep kept in insanitary stables, sheds, etc.	200
Goats kept in insanitary stables, sheds, etc.	10
Pigs kept in insanitary stables, sheds, etc.	–
Total	301

These animals were kept in 59 different stables or sheds. Two cows were kept on the prairie.

Action Taken and Results:

Stables vacated and placarded	–
Stables vacated (not placarded)	2
Stables Improved	50
Stables Demolished	–
Number of animals kept reduced	–
Pending	7
Cows kept on prairie removed	2
Total	61

Number of Animals Removed:

Horses	2
Cows	9
Calves	1
Pigs	–
Goats	9
Sheep	197
Total	218

Poultry:

Poultry kept in dwellings	37 cases
Poultry kept in insanitary pens, sheds, etc.	129 cases
Pigeons kept in dwellings	14 cases
Total	180
Other animals kept in dwellings (mostly dogs and cats)	19

Licensed Dog Kennels

Permits issued 32, as against 34 in 1927. Inspections made 181.

Nuisances in Yards, Sheds, Lanes, Vacant Lots, etc.

Dirty yards, courts, sheds, etc.	4,417
Stagnant water on vacant lots	144
Other nuisances on vacant lots	778
Nuisances on streets and lanes	3,809
Total	9,148

So long as we have people with careless habits who do not appear to care where or how they dispose of refuse matter there will always be need of the sanitary inspector to regulate.

Nuisances Abated Compulsorily and Charged as Taxes

None.

Compulsory Sewer Notices

One only.

Applications for City Installed Plumbing

None this year.

Overcrowding

Day inspections made 314, Night inspections 0. Notices to abate overcrowding 54.

We notice a tendency towards increased overcrowding in lodging houses for men. This will now be checked by the new Lodging House By-law passed this year. The proprietors of all such houses are now required to obtain a license. Every sleeping room will be measured and a card affixed therein indicating the number of men permitted to occupy.

Housing

There were 838 new houses constructed; 20 new apartment blocks, and 9 additions or enlargements of blocks, with a total of 577 additional suites. Adding the 838 new houses, and the 577 additional suites, we get a total additional accommodation for 1415 families. All of this building was done by private enterprise. The Winnipeg Housing Commission has not been responsible for any new building for some years.

At December 31st, our Annual Vacant House Survey showed only 459 vacant houses or 1.3% only of all houses in the City (34,359); and 385 vacant suites or 4.2% of all suites (9,202). Estimating roughly the increase of population during 1928 as 2,000, which we are assured is approximately correct, it would appear that the amount of building done is calculated to take care of this increase. Few, if any, dwellings are being erected for rent.

The large number of one-family dwellings which are in fact occupied as multiple dwellings, do not appear to be affected by the construction of new dwelling-houses and apartment blocks in recent years. The majority of the families living in such houses in single rooms, or suites of rooms are not in a financial position to either buy a house, or to rent a suite in an apartment block proper. They do not own even the cheap furniture provided in the rooms they occupy. No doubt a few such families, owing to the birth of children, or better financial conditions do eventually manage to secure a house of sorts. Many such no doubt have to go to the suburbs

outside Winnipeg in order to do this, a cheaper grade of construction being allowed there and rents being also cheaper. As pointed out in previous reports many such families would no doubt make an effort to rent and furnish small houses for their exclusive use provided such were available. The new houses however are out of their reach, being built for owners only. They are also too expensive for this class of tenant. Nobody is building for rent. There does not seem to be any indication of a desire on the part of investors to build for rental any small, warm, dwellings within the City Limits, and as a result, the rooming house or unlawful tenement continues to flourish, and, in the present state of affairs fulfills a useful function, viz., that of providing a shelter for those unable to afford anything better. Many of these people live of course under conditions which are not desirable. We have frequently pointed out the reasons why this is so. Apparently such houses are here to stay, but if this be admitted then some action should be taken to improve in some measure the conditions found in such houses. We still think that a good method would be to place all such houses under the control of the Health Officer, by requiring the proprietors to obtain a license to keep a "House Let in Lodgings." This means something rather different from the houses licensed under the new Lodging House By-law passed this year, which deals with houses where sleeping accommodation is provided for transients, by the night or by the week. It is true that the Lodging House By-law provides that where some of the rooms in a house are rented by the night or the week, and other rooms in the house are rented by the month, the whole house becomes a lodging house under the definition of the by-law. There are not, however, many such houses, whereas there must be at least 3,000 single-family dwellings occupied as multiple dwellings.

Following up our remarks in last year's report regarding the deficiencies as regards housing conditions of the new Building By-law, and more particularly the omission therefrom of all requirements respecting the number of plumbing fixtures to be installed in multiple dwellings, we prepared and submitted to your Committee in September a by-law in the form of an amendment to the Health By-law dealing with this question. This was referred by your Committee to the Safety Committee and has been under discussion. At the time of writing, it seems probable that all requirements as regards plumbing fixtures will be inserted in a proposed amendment to the Plumbing By-law instead of the Health By-law. This is immaterial so long as we obtain the legislation necessary to deal with the matter. If such an amendment becomes law, we shall then be able to require in all such houses the provision of more adequate sanitary conveniences.

The chapter in the Building By-law which deals with the alterations required when a single-family dwelling is converted to tenement uses is of little value from the viewpoint of health, although it regulates the safety features. It offers opportunity to owners of such houses to obtain a permit and legally convert them into apartment blocks without doing much to fit them up properly for such use. Admittedly such houses cannot

be made to comply with the provisions of the by-law respecting new apartment blocks, but a good deal more should be required than is found in the present Building By-law. Even though the requirements of the by-law are so easy there appears to be no desire on the part of owners of such houses to obtain permits and legally convert them. The owner simply rents the premises for a dwelling and so long as he gets his rent does not interest himself as to how the house is occupied, and certainly effects no improvements which would render such a house more suitable for use as a multiple dwelling. The sub-letting is done by the lessees of such houses, and they are not likely to effect any alterations or improvements worth the name. About all the lessee does is to furnish the rooms and install numerous gas stoves. The regulation of such conversions is more a housing question than a problem of building construction. The Health Officer, who sees the conditions and knows the effect of the same is the person best able to deal with the problem, and could do a good deal to improve conditions if given the necessary legislation.

Zoning

The Zoning By-law recently enacted should materially assist in obtaining in the years to come much better housing conditions, by preventing the premature blighting of residence districts and more properly regulating the use of land and buildings in the City. The by-law however is largely permissive only and the actual zoning or districting of the City still remains to be done. Supplementary by-laws will be required in order to do this. The Building Commissioner is named as the officer responsible for the enforcement of the by-law in so far as it relates to new buildings; and the Health Officer as regards the use of land and of buildings already erected. Until the various supplementary by-laws are enacted which will create and set apart the various Residence, Commercial and Industrial Districts contemplated and defined as regards use in the Zoning By-law, we do not know just what effect these may have on the work of the Department. As the Health Officer is given very extensive power in the matter of preventing infractions of the by-law, even to the point of placarding premises and forbidding occupation; and as the provisions of the by-law are somewhat complicated and not easily understood by those not having made a study of the subject; and as also the work of the Health Officer will largely consist of detecting unlawful and prohibited uses, it is evident that in order to efficiently carry out the duties imposed on us, any officers of the Department detailed for such work must devote some time to a study of the by-law. It may require the appointment of one or more inspectors specially trained for this work. Inasmuch as uses of property in existence in any district, be it residential, commercial or industrial, at the time the by-law creating such a district is passed are permitted to be continued and only future unlawful uses are to be prevented, this may entail the taking of a complete survey of all buildings in a zoned district at the time of the enactment of the by-law creating such district, with a record of the manner of use of all such buildings. It may be seen therefore that considerable work may be involved.

Gas Stoves and Fittings

Only 9 cases were dealt with as against 28 last year. This is not to say that conditions are satisfactory, there being no by-law to properly regulate these appliances.

Chemical and Mechanical Refrigerators

We are glad to report that no complaints similar to those described fully in last year's report were received. The remarks made then however as to the necessity for further investigation and possibly of legislation still hold good. Especially is this the case where a large number of refrigerators in an apartment block are connected in series, and supplied with the refrigerating chemical through pipes inside the walls from compression tanks in the basement.

Cross Connections—Water Supplies

No instances detected this year.

Workshops, Manufactories, and Office Buildings

Inspections of workshops and manufactories 487; office buildings 83.

Some of the places coming under our notice by complaint or otherwise were as follows: Garages, as stated in our last report more investigation as to the carbon monoxide hazard both in storage and repair garages is necessary, with probably some more stringent legislation as regards the proper construction of such buildings (windows and roof vents) as well as the installation of mechanical systems of ventilation.

Some further inspections were made and evidence obtained of unhealthy, even dangerous, conditions. We took up this matter with the Provincial Bureau of Labor, as many, if not all these places are within its jurisdiction. We find that the Bureau accepts responsibility in the matter, and is also making investigations with a view to obtaining better conditions and preventing carbon monoxide hazards in garages and repair shops.

The escape of waste liquids from a gas-plant. The importation of wiping rags from the Orient which were alleged to be unsterilized. Dust from coal and wood yards. Offensive odors from soap works. Danger from the use of hydro-cyanic acid as an insecticide in a furniture warehouse. Alleged nuisance from a chicken hatchery. Offensive odors from the process of evaporating buttermilk. The manufacture of a chemical washing compound. Escape of waste water from a marble-cutting plant. The erection and operation of a lime kiln. Proposition for the establishment of a pickle factory, a fertilizer plant, and a stock yard. The examination of basements for which permits had been applied for to operate pool rooms, bowling alleys, etc., therein.

Rats

There were 44 complaints regarding rat-infested buildings, or 9 fewer than last year. The bounty of five cents for each rat tail delivered at the Health Office was continued, but there was a big drop this year in the number delivered (1,793 as against 4,871 in 1927). The bounty paid was $89.65 as against $243.55 in 1927. There was however more poison distributed, viz: 1,174 boxes, as against 1,107 in 1927. Ward 1 got 12%: Ward 2, 36.5%: and Ward 3, 51.5% of this.

Just why there should have been 3,000 fewer rat tails delivered we do not know, but I do not believe it is because there are fewer rats, but rather because fewer people are sufficiently interested to catch them and bring them in. In 1927 there were for instance 1,471 tails from the Saskatchewan Avenue Nuisance Ground alone, this year only 4, and yet it is not likely that the rat population of this dump has decreased. We need examination of cellars and basements by the owners or occupants. The prevention of the access of rats to buildings by sealing up all possible points of entrance, screening of windows, etc. Following that the extermination of any rats already in the building, especially in large stables, abattoirs and food warehouses. We also need more covered metal receptacles for garbage in order to limit as far as is possible the food supply of rats. The number of rats which infest fence bins constructed to hold garbage cans and burrow underneath garages even in good residence districts is far too many. In these districts rats rarely gain entrance to the basements of the dwellings, which are fully modern, but the combination of fence bins and loose garbage is very attractive to rats. Rats could quickly be starved out of such districts if the fence bins were made rat-proof and all garbage kept in covered metallic receptacles. We are glad to note that in some districts these measures are being taken.

Public Baths and Comfort Stations

Inspections of baths 74, of Comfort Stations 245. Samples of water taken from swimming pools and submitted to the City Bacteriologist for examination, 128. Samples are also taken regularly from the Y.M.C.A. pool. Both the baths and comfort stations were kept in a clean and sanitary condition throughout the year and the condition of the swimming pools improves as more attention is paid to cleaning and chlorinating.

Private Hospitals

Only 3 permits were issued. One or two applications made during the year were declined for various reasons.

We have suggested to the Provincial Board of Health that inasmuch as some of these private hospitals take in maternity cases, that they should all be under the supervision of the Board, which already has control of Maternity and Infants' Homes.

Undertakers' Establishments

Permits issued 7. Reports showed conditions to be satisfactory.

Common Drinking Cups and Towels

There were 61 inspections made and warnings given where necessary.

Chimneys and Furnaces

Defective chimneys dealt with 40. Defective furnaces, stove pipes, etc., 54. Most complaints were of the lack of sufficient heat, or of smoke or gases escaping into the rooms of buildings. Where danger from fire is noted the Building Commissioner's Department is notified.

Billiard Rooms

Permits issued 59, or 10 less than last year. Inspections 305.

Second-Hand Dealers and Junk Yards

Permits issued 143, one more than in 1927. Inspections 440.

Wiping Rags

Complaint was made during the year that wiping rags from the Orient, which had not been properly sterilized as required by the regulations of the Provincial Board of Health were being brought into the City. A few such consignments were found. These rags, although clean in appearance, and although the importers claimed that they had been properly sterilized in Japan, were not packed and marked as required by the regulations and bore no declaration as to the place or date of sterilization. The rags were taken to a local laundry and there properly treated. The importers were informed that all future shipments must comply with the regulations.

Bedding Factories

No complaints were received of the use of unsuitable materials in the making of articles of bedding or in upholstering during the year.

Barber Shops

One hundred and thirty inspections were made during the year.

Vermin

There were 34 complaints received about cockroach infested buildings, and 71 regarding bed-bugs.

Theatres and Places of Amusement

Sixty-nine inspections of such places were made. No serious cause for complaint was found.

Schools and Public Buildings

Only 10 inspections were made.

Laundries

Permits for hand laundries 113, or 4 fewer than last year. Inspections 631. All proprietors of these laundries are required to thoroughly cleanse and repair the premises before licenses are renewed on June 1st in each year. In some of the older buildings it is not possible to attain a very high standard.

There were two applications made for permission to establish new laundries and petition forms were prepared for the applicants. In each case however the petitions were abandoned as it was found impossible to secure the requisite number of signatures of owners of adjacent properties giving consent. Inspections of steam laundries 34. These were found to be in good sanitary condition.

Hotels

Permits issued 60. One more than in 1927. As a result of the new Liquor Control Act permitting the issue of licenses for Beer Parlors, there was a very marked movement in hotel properties. Money was spent freely for the purpose of fitting up the new beer parlors, including the sanitary conveniences required by the Act. This disposition to spend money in making improvements extended in many instances to the other parts of the building, with the result that the Department found it possible to obtain considerable improvement in the sanitary condition of a number of the hotels this year.

Lodging Houses

The new Lodging House By-law was passed in October, with a further amendment in January, 1929.

We are now making inspections of all houses coming under the By-law as fast as press of other work will permit and hope during the coming year to get all lodging houses brought up to the standard set by the by-law. The investigations made show that the by-law was really needed and that this class of dwelling requires a more frequent inspection in order that the men who use these houses may enjoy better conditions as regards decency and cleanliness.

Insanitary Buildings

The table given below shows the number and class of premises for which notices were served upon owners and occupiers under Section 103 of the Public Health Act, under which section the Health Officer has

power to require that premises be put into a proper sanitary condition or else closed up:—

Dwelling houses, general insanitary condition	24
Dwelling houses, unlawful conversion of same to tenements	–
Tenement houses	5
Basement and cellar dwellings	1
Dark rooms (dwellings)	–
Stores occupied as dwellings	5
Factories and Workshops	6
Stables	1
	42
Notices served on owners and agents	39
Notices served on occupants	32

Results:—

Notices complied with (premises put into sanitary condition)	27
Premises closed and placarded	12
Cases still pending	3
	42
Remaining closed on December 31st, 1927	176
Premises repaired or demolished during 1928	18
	158
Premises closed during 1928 (dwellings 8, stables 1, other premises 3)	12
Remaining closed on December 31st, 1928	170

Work Done for Other Divisions or Departments

We made a good many inspections and reports for the Social Welfare Commission. In addition to inspections as to the habitability of dwellings, the Commission has asked us to inspect and report once a month on all houses in which boarders are kept at the expense of the Commission. We investigate complaints as to the keeping of garbage for the Street Cleaning Division: Procure samples of the City Water supply twice a week from a number of points for the Bacteriological Division and the City Chemist: Inspect the Public Baths and Comfort Stations monthly and take water samples from the swimming pools. Many inspections are also made for the License Department.

Prosecutions for 1928

Nature of Charges	Cases
Nuisance on premises	1
Deposit refuse, manure, garbage, etc.	4
Wilful obstruction of Sanitary Constable	1
Neglect to comply with notice of Health Officer	2
Food Prosecutions	2
Dairy Prosecutions	4
Total	14

How Disposed of

Fines	Cases	Fines
Convicted and Reprimanded	2	
$ 3.00	2	$ 6.00
$ 5.00	1	$ 5.00
$ 6.50	1	$ 6.50
$ 8.00	4	$ 32.00
$13.00	3	$ 39.00
$15.00	1	$ 15.00
Total	14	$103.50

This is the smallest number of prosecutions in the history of the Health Department. It is 12 less than in 1927, which was previously the lowest. I think that we have perhaps gone to extremes in our anxiety to avoid prosecutions and that a little sharper action in the case of those who habitually disregard notices served upon them might not be amiss.

Staff

We have still only ten district inspectors. A few years ago we had 15. The present districts are too large. We have no night inspectors to check up overcrowding. The population is increasing and the City growing.

All of the inspectors and clerks of this division have performed their duties in a satisfactory manner and show much interest in their work.

Yours obediently,

ERNEST W. J. HAGUE,

Chief Health Inspector

Report of Tenement Inspector

A. J. Douglas, Esq., M.D.,
Medical Health Officer.

Dear Sir:

I have pleasure in submitting for your consideration the following report on tenement inspection and action taken during the year 1928 in housing conditions.

Complaints received during the year numbered 82, as against 112 last year and 104 the previous year. Of the 82 complaints received, 35 related to the improper storage of garbage and other refuse. The other complaints referred to defective plumbing, foul odors in basements, bed bugs, cockroaches, rats, dampness, overcrowding, etc.

At the beginning of the year, we had occasion to check up on the conditions obtaining in an old tenement in the centre of the City. The building is of brick, two storeys in height, the first floor being occupied as stores and the rooms on the second floor let out as living rooms. There are 33 rooms in all, five being occupied by families. Rooms rented by the night were three; by the week 1; by the month 29. The total rents collected, not including that obtained from transients by the night, amounted to $200 per month. The entire upper floor was leased by one man who sublet as above. Considerable repairs were undertaken both by the owner and lessee. As a result of a communication from the Chief of Police, we made a night inspection early this year (1929), when we found insanitary conditions and overcrowding. The lessee was prosecuted and fined $10. We thereafter served notice requiring a general cleansing of the premises, removal of filthy old mattresses, bed coverings, springs, floor coverings, etc., the provision of a constant supply of both hot and cold running water, the cleansing of washrooms and water closet compartments, etc. If the present manner of occupation is to continue, the premises will require to be licensed under the Lodging House By-law and a higher standard of cleanliness obtained and maintained than formerly. The work is on hand at the time of writing this report.

Reference was made in last year's report, to another old tenement and lodging house similar to that referred to above, repairs and alterations being on hand at the end of the year. The premises were renovated throughout, walls and ceilings painted, floors painted, new beds, springs and mattresses provided, plumbing repaired and a shower bath installed, etc. Conditions are now good.

Each year we have to deal with stores unlawfully occupied as dwellings. During the past year we had to serve closing notices in four such cases, while in a number of other instances the premises were restored to

their original use without our having to take drastic action. The practice of converting stores to use as dwellings would be more general but for a constant check by our Inspectors. It is sometimes possible to properly fit up such premises, as for instance, in the case of stores situated on a corner, but it is rarely possible when the store is situated in the centre of a block, as natural light and ventilation can only be obtained from the front and rear of the premises. In most of the cases we come across, flimsy partitions are erected and the rooms are devoid of natural light and ventilation.

In the Spring, we were called to investigate a complaint of seepage of water through the basement wall of an apartment block. After examination of various possible causes, we found by the use of fluorescin, that the drains in an adjoining building were fractured. We served notice on the owner of the adjoining premises requiring him to have the defective drains repaired; the work was done and the cause of complaint removed. Dampness in basement suites is less common than a few years ago. This is due to more care being taken in the damp-proofing of walls, the provision of proper weeping and sub-soil drains and the care of roof water by rain leaders to sewer connected catch basins; also, we have each year, been having repairs made when such are necessary, as is instanced in the following case.

One of our apartment blocks had a history of dampness. We discovered that a rain leader which conveyed water from the roof of a porch discharged into the ground alongside the basement wall. A further investigation revealed that there were no weeping drains entering the catch basin and neither did the rain leaders. We served notice and later discussed matters with the owners who agreed to make the necessary repairs. Weeping drains were laid, the outer walls below grade waterproofed and the rain leaders connected.

During the year a great deal of work in repairs and improvements was carried out in many of our old tenements and apartment blocks. A number of these old buildings have to be inspected each year and repairs made, so as to keep them in a fairly habitable condition.

As an instance of the above, we inspected an old terrace of brick veneer construction, two storeys in height with attic rooms. We were accompanied by representatives of the owners, also several contractors. A few of the houses had been vacant for some time and it was the intention of the owners to effect repairs in order that they might once more be occupied, as they had abandoned a previous plan to raze the building and erect a modern apartment block. The building is very old, has settled considerably and the brick veneer cracked very badly. As a result, floors have gone out of level, plaster cracked, etc. We indicated that the Department was very much averse to the manner of occupation in such premises (light-housekeeping in various rooms), and that we were determined to control as far as possible the occupation by families of attic rooms. We also stated—as we do in all such cases—that we thought the

owners of such properties should make it their business to ascertain how the premises are occupied also that if fire should occur, with fatalities, especially to occupants of attic rooms, the owners would not be blameless. We explained how that it would be better for the owners to prepare a plan of the premises, indicating thereon additional plumbing fixtures, etc., and that the Building Inspector might then consent to these and such other alterations as might be made with the view to fitting up the premises for tenement occupation. The work was not gone on with and most of the premises remain vacant.

In such cases as that referred to above, where the premises are illegally occupied for tenement uses, if the buildings were properly laid out in suites and a sufficient number of plumbing fixtures installed in such positions as to be accessible to the various tenants and a resident caretaker appointed, it would be in the best interests of owners and occupants and more satisfactory from our point of view. The initial expense is no doubt the drawback, but the owners would eventually be reimbursed.

Respectfully submitted,

ALEX. OFFICER,

Tenement and Supervising Inspector.

Report of Smoke Inspector

A. J. Douglas, Esq., M.D.,
Medical Health Officer.

Sir:

I respectfully submit herewith report on smoke nuisances and their abatement for the year 1928.

SMOKE INSPECTIONS

	January	February	March	April	May	June	July	August	September	October	November	December	Totals
Observations:													
Chimneys & Smoke Stacks	40	32	14	17	28	57	47	15	37	51	60	57	455
Inspections of furnaces, boilers, fuel, etc.	113	109	19	45	47	84	76	51	94	86	186	137	1047
Totals	153	141	33	62	75	141	123	66	131	137	246	194	1502
Notices:													
Statutory	3	3	....	....	....	1	....	2	....	2	3	2	16
Verbal	41	37	5	13	6	5	17	10	36	29	45	47	291
Totals	44	40	5	13	6	6	17	12	36	31	48	49	307

The educative policy in preference to prosecution has been continued during the past year. I am of the opinion however that we have now reached the stage where more vigorous action is necessary to ensure progress in the elimination of objectionable smoke from chimneys.

It is unfortunate that some persons, even those of high education and executive ability minimize the seriousness of atmospheric pollution by smoke and ash. These same people would very strongly object to eating tainted food, drinking impure milk or water and certainly would not eat a meal without first washing the hands. They insist on purchase of bread that is wrapped and also in protecting food from dust. Yet they ignore the importance of breathing air free from the gaseous products of combustion also soot and ash particles.

The seriousness of air pollution by unnecessary volumes of dense smoke poured into the atmosphere is sufficiently bad itself for persons to realize its importance. When the economic side is considered however and one realizes the havoc a smoke laden atmosphere plays in the form of

additional work and expense to the housewife due to soiling of fabrics, etc., and the destruction of same by the acid in the atmosphere, the question becomes more important still.

If then, one understands the engineering side of the question and knows that the emission of dense smoke is avoidable and is a direct economic loss to the owners of such plants there is no valid reason why violators of the smoke regulation should not be prosecuted.

One must also realize that smoke shuts out the sun's rays and instead of bright sunny days it causes a gloomy atmosphere with a resultant feeling of depression instead of an exhilarating feeling which would otherwise prevail.

Laymen cannot be expected to understand the technical phase of the situation. There will always be temporary lapses of the smoke regulations even where the best types of mechanical stokers are installed. A machine is like the human body, it deteriorates with age and the limit depends on the care bestowed on it. Minor repairs are necessary at intervals and cannot always be avoided. The persistent offender is the one who requires most watching.

Handfired boilers are of course the worst offenders and a low volatile coal (semi-bituminous) is always preferred to a high volatile coal (bituminous). Where there is ample boiler capacity Canadian lignite coal is used with excellent results.

There are instances where a high ash coal is consumed on grate bars having very narrow air spaces and in others the method of firing and too free use of the slice bar causes clinker to form over the grate area thus preventing the passage of air necessary for combustion.

Overloading of boilers is a common cause of dense smoke emission from chimneys owing to there being insufficient volume of air admitted both below and over the fuel bed.

The combustion space is very often too small and the gases distilled from the coal are cooled by the boiler shell before combustion commences. Excess air over the fuel bed is necessary in all cases of handfiring in order that the oxygen of the air may mix with the distilled gases.

The above remarks emphasize the facts that responsibility for the economic condition in the boiler room calls for porperly trained men. The ordinary boiler room is a hot, dirty and unattractive place and probably for this reason it is generally the last place to receive attention from Superintendents of buildings or Agents. Very often the firemen are hired for small wages instead of ability.

There are certain mechanical stokers which require little skill from the fireman, one of these being the chain grate. They are very suitable for either a low or high ash coal, are easily adapted to varying steam loads and have no intricate mechanism.

Many furnaces will vary in smoke condition depending on the carefulness of the fireman. In some plants even a well trained man could not secure economy and prevent the emission of dense smoke even with a low volatile coal. Because the volocity in a chimney is high, it does not follow that there is adequate draft. The chimney area may be too small, there may be too many bends in the breeching or there may be air leakage in flue, breeching or boiler setting. Insufficient draft is responsible for considerable trouble in the boiler room.

In many plants the grate surface installed is not properly proportioned to the load carried. This may be remedied in handfired furnaces but the cost of alteration to stoker equipment would be considerable.

One must understand that the handfired furnace violates all the principles involved in securing good combustion. More often than not coal is fired in large quantities at long intervals with the result that the furnace temperature is lowered, the resistance of the air flow through the fuel bed is increased and a large volume of combustible gas is generated which cannot be burned owing to lack of air and the necessary amount of heat.

The increasing use of electricity, gas and coke, also district steam heating plants will eventually solve to a marked degree the smoke problem in the near future. The personal element is the most difficult obstacle to overcome in the fight against smoke. One may observe the same chimney for several hours and find conditions from the smoke viewpoint satisfactory, yet a later observation would show conditions to the contrary.

Properly designed furnaces may smoke to a greater or less degree depending on the method of the fireman, the kind and size of coal and the rate of combustion. Smokeless conditions should prevail when burning a coal suitable to the type of furnace except during the following unfavorable operating conditions, viz:

When fires are built. There is not the required temperature for combustion.

When the air supply is inadequate to provide the necessary amount of oxygen. A portion of the gases distilled are not properly mixed with air.

When the rate of combustion is suddenly increased and fires are forced.

When fires have been banked for some time and the furnace temperature is reduced below the ignition point of the distilled gases.

The causes for the emission of dense smoke it will be seen are many and varied and it is only by careful study of the installation and general operating condition that satisfactory results can be obtained. Co-operation and interest of the parties concerned is absolutely necessary in all cases.

There are many instances where a fireman is responsible for two or three boilers at different apartment or business blocks. In such cases there is always a tendency to heavy firing with the resultant emission of dense smoke. Moreover such premises are not very easily observed unless by chance or complaint owing to the length of time between firing.

The most serious condition which has caused all persons concerned considerable trouble during the past year has been due to the emission of ash from the chimneys of two steam plants where pulverized coal is used.

Our experience points to the fact that the only remedy is the provision of a high chimney in order to distribute the fly ash over a large area. Although there are ash collectors of various types on the market it would appear that engineering skill has not yet developed a type with the required efficiency to totally eliminate the nuisance.

This fly ash is very irritating to the mucous membrane and eyes and is so fine that it penetrates through storm windows and the inside sash to interior rooms of dwellings in vicinity, causing a deposit of dust on furniture, fabric, etc.

It is expected that these objectionable conditions will shortly be remedied.

There has been the usual quota of complaints due to defective hot-air furnaces.

The defects found are generally broken fire pots, defective joints of same or in the combustion chamber and radiation flue. Improper smoke pipe connections to furnace, defective casings and smoke flues and dangerous position of smoke pipe dampers are often found. Burnt out grates and fittings cause considerable trouble as in such instances the furnace cannot be used, resulting in partial heating of the premises by a small stove or subsequent freezing of the plumbing.

A defective furnace may be the cause of serious unhealthful conditions and more attention should be paid by owners of property to ensure the protection a tenant is entitled to.

The nuisance created by smoke from roundhouses and locomotives continues. In the absence of necessary legislation we are powerless to insist on improved conditions being established. Public sentiment will eventually compel Railways to permanently relieve the districts affected by smoke.

In addition to smoke abatement duties, the following inspections were also made, viz:—Hotels, Private Hospitals, Undertakers' Parlors, Public Baths and Comfort Stations, also other inspections relative to Departmental work.

Your obedient servant,

P. PICKERING,

Smoke Inspector.

Report of Chief Dairy Inspector

A. J. Douglas, Esq., M.D.,
Medical Health Officer.

Dear Sir:

I have the honor to submit herewith a report covering the work of the Dairy Division for the year 1928.

The Manitoba farmer found himself in better circumstances than those of the previous year. Splendid weather for seeding followed by copious June rains and a beautiful dry fall for harvesting and threshing rounded out one of the best seasons for this Province.

Severe frosts in August reduced the expectant yield and grade of our western grain crops; but taking things all around, we must admit having a prosperous year both in agricultural and business activities.

Mixed farming apparently gets boosted whenever the grain crop is poor, but loses favor and falls off should the prospects for grain appear above normal.

We are interested in mixed farming because we realize that it is definitely associated with the question of a stable and adequate milk supply. Not only must we have sufficient dairy herds, but we must also have contented farmers; and it would appear that the interesting diversifications of mixed farming offer the surest means of attaining that end.

The most acute problem on many farms is "how to keep the boys and girls on the land;" and while the individual may have his own solution applying to his own particular case, this does not assist the community. Should no general solution be forthcoming, the problem will soon apply to the farmer himself. Abandoned farms spell tragedy, and are a poor advertisement to any Province; but the most harmful advertising comes from the disappointed amateur farmer who after struggling for a few years, finally admits defeat.

Milk Vendors Licenses

A total of 123 permits authorizing licenses were issued during the year, including 116 Dairies, and 7 Milk Depots; the former being charged a fee based on the number of milking cows in the herd, and the latter on the number of delivery wagons in service on the street. During the year four dairy licenses, and one depot license were cancelled or abandoned, leaving the number active at 112 and 6 respectively.

Two dairy licenses were transferred, and it may be noted that all cancellations of dairy licenses were due to a desire, on the part of the proprietors to discontinue the tuberculin test, and the sale of raw milk.

	1926	1927	1928
Dairy Licenses issued	125	125	116
Dairy Licenses active	123	122	112
Depot Licenses issued	8	10	7
Depot Licenses active	7	7	6
Total Licenses issued	133	135	123
Total Licenses active	130	129	118

The licensed dairies have 150 delivery wagons, and the Milk Depots 205; making a total of 355 number plates issued during the year.

Revenue derived from License fees, etc., amounted to $2,615.00 being approximately $100.00 less than the previous year due to the decrease in number of permits.

1,152 cows @ $1.00 per head	$ 1,152.00	
1,719 cows @ .50 per head	859.50	
Total for Dairy Licenses		$ 2,011.50
190 vehicles @ $ 2.00 each	$ 380.00	
15 vehicles @ $10.00 each	150.00	
Total for Depot Licenses		$ 530.00
2 transfers @ $2.00		4.00
139 Inspection fees @ $0.50		69.50
		$ 2,615.00

Classification of Licenses

	1924	1926	1928
Raw Milk Dairies—City	9	9	8
Raw Milk Dairies—Country	110	114	104
Raw Milk Depots	2	1	0
Pasteurizers—City	2	2	3
Pasteurizers—Suburban	2	2	2
Small Depots—City	0	2	1
Total	125	130	118

The Licensed Dairies

The licensed dairies designated under the Municipal Tuberculosis Order as class "A" dairies, are located at distances varying from 5 to 25 miles from the City Hall. There are 112 of these dairies including 2 Certified Milk Farms, and 110 Raw Milk Dairies with tuberculin tested herds; with the exception of the Certified Milk farms, they all distribute their own product, and the majority own and operate their own dairies.

A small number have sufficient land to be designated as farmers, but the majority have only a few acres of land on which the premises are located, and rely on rented or unenclosed land for pasture. Many grow little or no feed, and have to purchase same from farmers, or in the open market. The same conditions apply in regard to making additions or replenishments to the dairy herd, as accommodation and conveniences for the raising of stock are limited.

On account of these conditions it is obvious that production costs must be on a higher base than that applied to farm production; and this constitutes the main reason for these dairymen claiming that it does not pay to produce milk for disposal to a pasteurizing plant. During the past two years however a number of large dairymen have discontinued the retail business, and are disposing of their product wholesale to a pasteurizing plant; and by concentrating on economic methods of production, have apparently demonstrated that it can be made to pay. These dairies average about 25 milch cows, and 5 dry cows each, while a number raise a few calves every year. Altogether the 112 dairymen own approximately 4,000 head of cattle classified as follows:

Milking Cows	2,800
Dry Cows or Springers	560
Herd Bulls	80
Heifers	320
Calves	240
Total	4,000

All these dairies are provided with practical modern buildings, the stables have concrete floors, with a minimum cubic air space of 500 feet per animal, and a minimum window area of 2 square feet per animal; while the herds are tuberculin tested and kept under constant supervision by the Veterinary Inspector of the Federal Department of Agriculture. All dairies are provided with a suitable milk house with concrete floors, and the water supply in all cases is from drilled wells with steel casing brought above the surface and amply protected. A large number have electric light and power installed, and a smaller number are equipped with suitable apparatus for handling bottled milk. Not including the certified milk, the licensed dairies handle approximately 37½% of the City trade.

Certified Milk Farms

The certified milk farms supply approximately 1½% of the City trade, the falling off being due to competition of other special milks both pasteurized and raw. However, during the past year Certified milk has again demonstrated its right to a class of its own, being the most consistent in cleanliness and quality, and standing at the head of all series of tests applied.

The Pasteurizing Plants

The five plants handling and distributing pasteurized milk and cream are located three inside, and two outside the City; and they are responsible for 60% of our supply, while two of the City plants act as distributing agents for "Certified Milk."

The three city plants have been in business for 5, 15 and 24 years respectively, and during this period several marked changes have taken place in organization, buildings and equipment in all cases.

The two outside plants started in a very small way, and as is usual in such cases, found it easier to extend the business than to extend the accommodation at the plant, and as a consequence they are crowded and operating at over capacity most of the time. We are informed that the proprietors of these plants are contemplating the advisability of providing entirely new premises and equipment at an early date.

The City plants are well laid out on generous lines, and are capable of handling a much larger volume without inconvenience.

The five plants combined have 12 pasteurizing vats, and put over an average of 40 batches per day. Each vat is provided with a recording thermostat which is checked periodically, and observations taken. The charts are kept on file and are accessible to, and at the disposal of our Inspector at any time.

The milk in all cases is pre-warmed, filtered or clarified, heated to a temperature between 142° and 144° F., and held from 30 to 40 minutes; passing over the cooler, it is bottled, capped, and placed in cold storage.

In regard to our City plants, we have little criticism to offer concerning their premises and equipment; but the outside plants are a little behind in both these respects.

The Tuberculin Test

The herds on all dairies licensed to sell direct to the consumer in this City, are submitted to the tuberculin test, administered by the Veterinary Inspectors of the Federal Department of Agriculture, Health of Animals Branch; under agreement entered into in 1922. The scheme is known as the Municipal Tuberculosis Order, and is generally referred to as the "M.T.O."

Under these regulations the herds are tested at intervals, all reactors removed and slaughtered, and compensation paid to the owner.

Tests of the herd are conducted at 60 day intervals just so long as reactors are found, but when the herd is clear, six month intervals are the rule, and should a herd continue clean, an annual test may be considered sufficient.

All additions to the herd, either by birth or purchase, must be kept under isolation, and must not be placed with the herd, until they have passed two tests with a sixty day interval.

Proposed additions are also tested whenever requested by the dairymen and all precautions are taken with a view to preventing the carrying of infection to the herd.

All cows kept singly or for private use inside the City come under the same regulations, and are periodically tested.

For the year ending March 31st, 1928, a total of 6,695 cattle were tested in connection with 122 herds; of this number 3,076 were tested for the first time, while 11,619 re-tests were conducted, making a total of 14,695 tests for the year.

A total of 581 animals were slaughtered, including 568 reactors to the test, and 13 suspicious cases.

Proposed additions tested on approval produced 279 reactors, which further emphasizes the large number of cattle required to keep up the herds. Compensation paid amounted to $17,350.

Unfortunately during the past two years we have had several sporadic outbreaks or throw-backs, where healthy herds have apparently become re-infected with the disease; and have shown an exceptional high percentage of reactors; which would indicate the swift manner in which this disease can travel when introduced into a clean herd.

These outbreaks usually occur in connection with the large dairies occupying a small area of land, and in no case where the dairy is located on a farm with sufficient land for all purposes, has such an outbreak recurred.

The following is a brief summary of the situation showing number of reactors slaughtered, and compensation paid over a period of six years.

Year Ending	Reactors	Compensation
March 31st, 1923	3,970	$158,037.33
March 31st, 1924	1,568	63,049.33
March 31st, 1925	952	38,479.00
March 31st, 1926	901	28,802.16
March 31st, 1927	616	19,211.00
March 31st, 1928	568	17,450.40
	8,575	$325,029.22

From April 1st to September 30th, 1928 over $9,000 has been paid in compensation, bringing the total to over $334,000, or one-third of a million.

The test commenced in July, 1922 so that this amount covers 6¼ years.

The normal total of all cattle in these herds at any time during this period was fairly constant at 4,000 head; so it is evident that the number of reactors slaughtered would more than wipe out the entire 115 herds at least twice in 6 years. Reactors found in cattle submitted as additions on approval are not credited as no compensation is paid.

Milk Consumption

Approximately 16,500 gallons of milk are consumed daily in Winnipeg being an increase of 500 gallons over the previous year. The increased consumption is accounted for by the increase in population and a heavier demand on account of the improvement in business, building, and industrial activities.

Of the total daily supply, 240 gallons is certified milk; 6,360 gallons is raw milk from Tuberculin tested cows, of which the licensed dairies are credited with 6,140 gallons; and private cow-keepers with 220 gallons. About 320 gallons of raw milk might be considered as "Special," on account of the manner in which it is handled and delivered to the consumer.

The amount of cream consumed is approximately 1,437½ gallons, or 23,000 half-pints per day.

On a milk and cream basis the daily consumption is 66,000 plus 23,000—89,000 quarts.

Our opinion based on many years experience, is that the factors responsible when milk consumption is curtailed are:—

1. Inadequate or indifferent supply.
2. Lack of general prosperity.
3. No confidence in the vendor, or his product.
4. Price charged the consumer too high.

We are gratified to note that for many years now we have had an abundant supply of wholesome milk; that times are improving; that the milk vendor appears to have the confidence of the consumer; and the price charged is reasonable. Hence the small but steady increase shown in per capita consumption, commencing in 1920 and continuing to the present time.

In making our calculations, no credit is given for **buttermilk**, cultured milk, skimmed milk, milk powder, evaporated milk, or condensed milk; of which large quantities are consumed yearly.

Classification of Daily Supply

Pasteurized Milk	9,900 gallons—	39,600 quarts
Raw Milk	6,360 gallons—	25,440 quarts
Certified Milk	240 gallons—	960 quarts
Total fluid milk	16,500 gallons—	66,000 quarts

Pasteurized Cream, bottled	590	gallons—	9,440 half-pints
Raw Cream, bottled	57.5	gallons—	920 half-pints
Pasteurized Cream, bulk	790	gallons—	12,640 half-pints
Total Cream	1,437.5	gallons—	23,000 half-pints

Percentage Classification

	1926	1927	1928
Pasteurized Milk	57%	58%	60%
Raw:—T. Tested herds	41%	40%	38.5%
Certified Milk	2%	2%	1.5%

The falling off in regard to Certified milk, is due to the increased sale of Special raw milks, and Special pasteurized milk, such as Jersey milk, etc., all of which are sold at a price much below that charged for Certified.

Consumption and Distribution

Following is a summary showing variations in the total daily, and per capita consumption of milk only; and delivery wagons utilized during the past 9 years.

	Gallons per day	Pints per capita	Delivery Wagons
1920	13,000	0.54	220
1921	13,500	0.55	240
1922	14,500	0.58	275
1923	15,000	0.60	300
1924	15,250	0.62	315
1925	15,250	0.62	330
1926	15,500	0.63	335
1927	16,000	0.64	345
1928	16,500	0.65	355

Delivery Service

It may be noted that 355 wagons are required to deliver the total daily supply; and that wholesale delivery and private cows account for at least 750 gallons daily; therefore we will be approximately correct in stating, that 350 retail wagons are required to deliver 15,750 gallons of milk daily; which gives an average of 45 gallons, or less than 200 quarts per vehicle. From these figures we may infer that many vehicles are on the road loaded only to half capacity or less; and the cost per quart of delivery service is possibly on a higher basis, than would be the case with a smaller number of distributors, and less overlapping.

The large pasteurizing concerns naturally give service on every street in the city, employing sufficient vehicles for this purpose; whilst over 100 small raw milk distributors, with one or two wagons each, are intermixed all over the place; each route being from 6 to 10 times the area of the average pasteurized milk route. In fact there are dairymen with 2 wagons, covering approximately 2 out of the 3 City wards.

Competition in making sales is largely responsible for this condition, and the large area covered by our City with a scattered population in the outside districts, forms a contributing factor. Of course the milk companies carry quantities of cream, buttermilk, etc., which increases their average when taken into account.

Daily per Capita Consumption—1928

Fluid Milk only, Imperial measure	0.65 pints
Milk and Cream basis, Imperial measure	0.88 pints
Fluid Milk only, U.S. measure	0.81 pints
Milk and Cream basis, U.S. measure	1.10 pints

Special Milk Examinations

Having regard to the fact that there are approximately 300 horse drawn delivery wagons, and about 50 motor trucks, the chances of inspection and sampling from each individual vehicle, in a regular manner are very small. On a monthly system it is comparatively easy to come across a fresh batch every day early in the month; but when it comes to picking up the odd ones, they are not so easily found.

In order to avoid over-lapping, each Inspector takes a City Ward, and attempts to check up all those who deliver the major portion of their load in that Ward.

Sediment tests are made, and samples for butter fat are taken indiscriminately from all, at irregular intervals; and the results obtained, when judged along with our knowledge of the dairies, enables us to make a fair and reasonable classification for comparative purposes.

During the past two years we have given special attention to a definite number of select brands of milk, in order that we may see how they stand up to an examination covering a whole year.

The output of any dairy cannot be given a high standing on one or two tests, nor should it be condemned; but a series of tests over a period of time, gives real information.

For this purpose we selected the best 25 brands of milk based on our previous years experience; all with one or two exceptions being delivered in bottles with the name and day on the cap.

The whole unbroken pint bottle is taken as a sample, and placed in an iced container for conveyance to the Laboratory. Not more than four samples are taken by each Inspector, so that they are not kept too long on the road. The bacteriologist opens the bottles and takes his sample for plate count; after which a sample for butter fat is taken, followed by a sediment test. Periodically each of these brands of milk is examined by the chemist for possible adulteration in the shape of preservatives, etc.

All pasteurized and certified milks are included in this classification, together with a number of the best brands of raw milk. From 10 to 30 samples of each brand were examined; the largest number being taken from the larger dairies.

On the completion of the series a normal average is arrived at for each brand of milk; and in order to be as fair as possible one of the highest plate counts is ignored for each ten samples examined. Each brand is then given a percentage of points on place, giving precedence to plate count, sediment test, then butter fat, and finally total solids.

The results obtained by these series of special tests, clearly indicate:

1. That Certified milk is superior to all other brands, being practically perfect.

2. That specially pasteurized milk when same is produced by a select dairy, or a selected number of dairies, stands high.

3. That a small number of raw milk dairies are able to produce milk, almost up to the standard of certified.

4. That the large companies standardize the milk, so as to distribute an uniform product.

5. That pasteurized milk from the larger plants very seldom has a low plate count.

6. That "colonies" from pasteurized milk have a formation different to those from raw milk.

7. That the use of the clarifier in large plants gives a clearer sediment disc than does the cylindrical cotton bag filter.

8. That one or two raw milk dairymen cannot get a low plate count and one or two others cannot get a clean sediment disc.

Classification of Selected Brands

The following table shows the comparative standing of the 25 brands of milk selected as the best out of 125 brands sold in the City.

The 25 select brands include Pasteurized 6, Certified 4 and Raw Milk 15 and are placed according to quality, cleanliness and bacteria content, by numbers 1 to 25 on normal average in each case.

The final placing on all points is shown on a percentage basis.

No.	Brand of Milk	Standing			Percentage
		Bacteria	Quality	Cleanliness	
1	Certified	1	3	1	99.0
2	Certified	2	4	2	98.4
3	Pasteurized Sp.	9	1	5	97.0
4	Raw	8	5	4	96.4
5	Raw	4	8	8	96.0
6	Certified	3	17	3	95.4
7	Certified	6	10	9	95.0
8	Pasteurized	13	6	11	94.0
9	Raw	10	18	6	93.2
10	Raw	17	13	15	93.0
11	Raw	5	9	21	93.0
12	Pasteurized	17	2	17	92.8
13	Pasteurized	22	7	14	91.4
14	Raw	11	25	10	90.8
15	Raw	12	19	16	90.6
16	Raw	15	11	23	90.2
17	Raw	14	14	22	90.0
18	Raw	21	24	7	89.6
19	Pasteurized	19	23	12	89.2
20	Raw	20	16	19	89.0
21	Raw	23	12	20	89.0
22	Raw	18	20	18	88.8
23	Raw	16	15	25	88.8
24	Pasteurized	25	22	13	88.0
25	Raw	24	21	24	86.2

Bacteriological Examinations

Out of 480 samples brought in for bacteriological examination, satisfactory completions were obtained in 443 instances, including 157 of pasteurized milk, 89 of certified milk and 197 of raw milk.

Plate Counts—1928

	0 to 1000	1000 to 5000	5000 to 10000	10000 to 25000	25000 to 50000	50000 to 100000	Over 100000	Total
January	2	3	5	7	5	2	15	39
February	1	4	2	8	5	6	13	39
March	1	3	5	2	9	2	15	37
April	5	6	5	6	3	9	4	38
May	2	5	2	8	7	13	2	39
June	2	1	3	2	5	10	7	30
July	....	4	3	5	3	18	4	37
August	....	6	3	7	2	15	....	33
September	3	8	5	6	4	11	2	39
October	3	9	5	7	3	10	2	39
November	1	7	4	8	2	11	2	35
December	4	8	5	5	3	11	2	38
Total	24	64	47	71	51	118	68	443

Plate Counts of 1,000 or less

Pasteurized, 7 times out of 157 samples 4.4%
Certified, 8 times out of 89 samples 9.0%
Raw Milk, 9 times out of 197 samples 4.5%

The above indicates the ability of the Certified Milk Producer to keep the lead by 2 to 1 on low counts. It would also indicate that pasteurized milk and Selected Raw Milk are about on a par in regard to bacteria content, the percentage of low counts being practically equal.

A count of 1,000 or less is very exceptional and it is possible that a comparison of all results of 10,000 or less would come nearer normal.

Plate Counts of 10,000 or less

	Pasteurized	Certified	Raw	Total
January	1	2	7	10
February	2	3	2	7
March	2	6	1	9
April	3	8	5	16
May	2	5	2	9
June	....	3	3	6
July	....	5	2	7
August	3	6	....	9
September	4	7	5	16
October	5	6	6	17
N vember	1	7	4	12
December	2	7	8	17
Total Low Counts	25	65	45	135
Total Plate Counts	157	89	197	443
Percentage	16%	73%	23%	30%

The following table shows the percentage of samples which would comply with arbitrary standards of 5,000; 10,000; 25,000; 50,000 and 100,000 per c. c.

Not over 5,000 ..... 88 out of 443—20%
" " 10,000 ..... 135 " " 443—30%
" " 25,000 ..... 206 " " 443—46%
" " 50,000 ..... 257 " " 443—58%
" " 100,000 ..... 375 " " 443—85%
Over 100,000 ..... 68 " " 443—15%

From the above it is evident that with 15% of the samples taken from 25 select sources, going over 100,000, that arbitrary standards even with a very high maximum are misleading and even dangerous and that results require to be thoroughly analysed in a broad minded manner, with due regard to cause and effect.

Milk and Dairy Inspection—1928
Summary of Inspections

Private cow keepers stables inspected	543
Dealers and sales stables inspected	72
Pasteurizing apparatus inspected	388
City Milk Depots inspected	60
City Creameries inspected	129
Delivery Vehicles inspected	3,352
Special City Inspections or Investigations	45
Total City Inspections	4,589
Licensed Dairy Farms Inspected	1,141
Milk and Cream Shippers inspected	220
Milk and Cream Stations visited	36
Country Creameries visited	29
Suburban Milk Depots inspected	45
Special Country Inspections or Investigations	122
Total Country Inspections	1,593
Milk tested for Butter Fat and Solids	1,592
Cream tested for Butter Fat	129
Special Plate Counts for bacteria content	480
Sediment tests for cleanliness	1,248
Chemical Tests for adulteration	278
Total Tests and Examinations	3,717
Milk and cream condemned (lbs.)	5,765
Value of condemned product	$209.20
Notices served or mailed	1,015
Cases of sickness investigated	15
Mileage, Country	13,598

Country Cases of Sickness Investigated

A total of 15 cases were discovered or reported, of which 9 cases were communicable; 5 being in connection with milk shippers, and 4 on licensed dairies.

The usual precautions applicable in each case were taken, and the year ended without a single milk-borne outbreak of any description.

1928 Prices of Pasteurized Milk for 25 Canadian Cities
Delivered bottled to the Consumer
Cents per 40-oz. Quart

	March	June	September	December
Victoria, B.C.	12½	12½	12½	12½
Vancouver, B.C.	11	11	11	11
Calgary, Alta.	12	11	11	12
Edmonton, Alta.	12½	11	12½	12½
Saskatoon, Sask.	13	13	13	13
Moose Jaw, Sask.	12	12	12	12
Regina, Sask.	13	12½	12½	13
Brandon, Man.	12½	11	11	12½
Winnipeg, Man.	13	12	12	13
Fort William, Ont.	14	12½	12½	14
Brantford, Ont.	12½	11	11	12
Hamilton, Ont.	13	12	13	13
Kitchener, Ont.	12	12	12	12
London, Ont.	11	11	11	11
Ottawa, Ont.	12	11	11	13
St. Catherines, Ont.	13	13	13	13
Toronto, Ont.	12½	12½	12½	12½
Windsor, Ont.	14	14	14	14
Montreal, P.Q.	13	12	12	13
Quebec, P.Q.	14	12	12	14
Sherbrooke, P.Q.	10	10	11	11
Three Rivers, P.Q.	12½	9	9	12½
St. John, N.B.	14	14	14	14
Moncton, N.B.	10	10	10	10
Halifax, N.S.	12½	12½	12½	12½

The above tabulation indicates a reasonable uniformity throughout Canada. In most Cities, the winter price is slightly higher than that applied to summer.

Variations are accounted for by local conditions governing cost of production and transportation, such as climate, and proximity of suitable farm land, pasture and water. Winnipeg, fortunately, is the centre of an agricultural district, which has amply demonstrated its ability to produce an abundant supply.

1928 Prices of Pasteurized Milk for 24 U.S. Cities
Delivered bottled to the Consumer
Cents per 32-oz. Quart

	March	June	September	December
Birmingham, Ala.	18	18	18	18
San Francisco, Cal.	14	14	14	14
Denver, Colo.	—	12	12	12
Hartford, Conn.	16	16	16	16
Washington, D.C.	15	15	15	14½
Miami, Fla.	22	20	20	20
Chicago, Ill.	14	14	14	14
Indianapolis, Ind.	12	12	12	13
New Orleans, La.	14	14	14	14
Baltimore, Md.	14	14	14	14
Boston, Mass.	15½	14½	15½	15½
Detroit, Mich.	14	14	14	14
Minneapolis, Minn.	12	12	12	12
St. Louis, Mo.	13	13	13	13
Atlantic City, N.J.	15	15	15	15
New York, N.Y.	15	15	16	16
Cincinnati, Ohio	—	14	14	14
Portland, Ore.	—	12	—	—
Pittsburgh, Pa.	14	13	14	15
Newport, R.I.	14	14	15	15
Salt Lake City, Utah	—	—	10	—
Richmond, Va.	14	14	14	14
Tacoma, Wash.	10	—	—	—
Milwaukee, Wis.	11	11	11	11

United States prices average about 2¢ per quart higher than ours, and the bottle holds 20% less; but the list includes some very large cities where the costs of production, handling and transportation are considerably greater and the producer receives a higher price for his product. Several large cities are closer together and in many cases overlap and in some cases cross over the field of production pertaining to their neighbors.

In most cases little if any variation in retail prices occur, climatic conditions being more suitable for a flat rate.

Pasteurization in 26 Canadian Cities—1928

Percentage of Milk Supply Pasteurized

	%	
Saskatoon, Sask.	100	Municipal Tuberculosis Order
Hamilton, Ont.	100	Provincial Legislation
Windsor, Ont.	100	Provincial Legislation
Toronto, Ont.	99.5	0.5% Certified Milk
Ottawa, Ont.	97.5	Municipal Tuberculosis Order
Kitchener, Ont.	96	
Montreal, P.Q.	96	Certified and Special excepted
St. John, N.B.	96	
Vancouver, B.C.	95	Certified and Special excepted
Regina, Sask.	95	Municipal Tuberculosis Order
Calgary, Alta.	94	Municipal Tuberculosis Order
Brantford, Ont.	92	Municipal Tuberculosis Order
Fort William, Ont.	91	9% City Herds, T. Tested
St. Catherines, Ont.	90	
Moose Jaw, Sask.	86	Municipal Tuberculosis Order
London, Ont.	75	Municipal Tuberculosis Order
Halifax, N.S.	75	
Three Rivers, P.Q.	65	
Edmonton, Alta.	60	Municipal Tuberculosis Order
Winnipeg, Man.	60	Municipal Tuberculosis Order
Quebec, P.Q.	40	
Victoria, B.C.	33	Herds all Tuberculin Tested
Sherbrooke, P.Q.	30	
Brandon, Man.	25	Municipal Tuberculosis Order
Moncton, N.B.	20	Municipal Tuberculosis Order
Sydney, N.S.	0	

In 1925 only 8 Canadian Cities had 90% or more pasteurization, whereas in 1928 we find that 14 Cities have arrived in this class.

Pasteurization is practically 100% compulsory in 4 cities with only Certified Milk excepted. In 2 Cities "Certified" and "Special" are excepted. In 10 Cities milk from herds coming under the Municipal Tuberculosis Order may be excepted.

In a number of cities, it is evident that the milk of cows kept for private use of the citizen owners runs from 1 to 5%, furnishing another problem to be solved before 100% pasteurization can be accomplished.

Compulsory Pasteurization

The question of requiring that the milk supply should be pasteurized will require looking into by the authorities of all large cities as time goes forward. In 1919 we recommended pasteurization as the best and cheapest means of rendering our milk supply safe.

In 1922 we felt compelled to accept what appeared to be the next best thing in the way of an improved milk supply; and thus the Municipal Tuberculosis Order was introduced, which provides for the Tuberculin testing of Dairy Herds under certain conditions. That this move was popular at the time may be judged from the fact that no objection was raised by any section of the public, and no mention was made of compulsory pasteurization. The M.T.O. has cost the Federal Government a lot of money, and it has cost the Dairymen a lot of money, making it exceedingly difficult for many to keep their heads above water and remain in business. The system of raw milk dairies has grown up with our City, commencing at a time when pasteurization was not thought of; the numerous small cow keepers of the early days forming the nucleii from which these dairies have been developed.

Whenever new and more stringent regulations have been introduced, the majority have undertaken to comply rather than discontinue in this business, and when the M.T.O. was introduced in 1922, heavy obligations were assumed or liabilities incurred of which many are still outstanding.

Another relic of the early days is found in the number of privately owned cows kept in certain sections of the City, although the 1922 regulations made this practice appear possible only as an expensive luxury.

As health officials, we are anxious to provide the public with an abundant supply of wholesome clean safe milk of a high quality and at a reasonable cost; and we are also anxious to show a decrease in consumption of a class of milk where the margin of safety is in doubt or subject to intermittent fluctuations. We believe that all milk should be produced and handled under the most ideal conditions attainable; with the additional safeguard of pasteurization constituting a second line of defence.

Of course we do not expect to change from 60% to 100% pasteurization over night, nor in one year; but we are of the opinion that the first logical step would be to cease the issuance of any new license for raw milk. Such action would not work out any injustice and would prevent enlargement of the scope of any of the problems with which we may have to deal. We could follow up by gradual pressure on the poorer class raw milk dairies, and would thus find a great improvement in those desiring to stay, while at the same time the reduction in proportion of raw milk consumed would be gradual and all producers assimilated without loss of productive power.

When drastic changes are desirable, they should be effected without disturbance to the economic body, so co-ordinated that we do not destroy the Winnipeg district as a productive area. We must not forget that 10,000 gallons of milk is produced daily in the Winnipeg district, of which 6,000 gallons is supplied directly to our citizens. The whole of this milk should be conserved and absorbed in connection with any system which may be introduced.

Pasteurization in Cities

Referring to the tabulated statement previously given, we find that three cities, Saskatoon, Hamilton, and Windsor, stand at 100%. Toronto is also 100%, less 0.5% certified. Montreal 96%, and Vancouver 95%, allow for Special Raw Milk in addition to Certified. Ottawa 97½%, Vancouver 95%, and Calgary 94%, have each attained this position voluntarily without legislation.

The popularity of the M.T.O. is noted from the fact that 11 cities quoted come under the scheme; which also embraces many smaller towns not mentioned here.

The M.T.O. was discontinued in 1923 but all municipalities already accepted, were kept on ever since that date. There is no doubt but that the M.T.O. provided at the time a splendid stimulus for improvement in conditions under which milk is produced and did provide for pasteurization in certain cases, thereby contributing towards the increase in percentage pasteurization in some cities.

The question of compulsory pasteurization is a big question, providing many problems both legislative, administrative and economic, and cannot be lightly decided upon.

Problems of Pasteurization

The following briefly draws attention to certain features which may be directly or indirectly connected with the question of compulsory pasteurization.

1. Effect on total supply:—quality, quantity, short, adequate or abundant. Will production be stimulated?

2. Effect on consumption:—increase or decrease.

3. Effect on nutrition:—palatability, nourishing and providing a safe and properly balanced diet for infants.

4. Retail prices. Would the public pay more or get any advantage on savings in delivery cost, etc?

5. The agreement with the Federal Government. What to do with it.

6. Cost of Tuberculin Testing to the Federal Department.

7. Cost to Dairymen of complying with 1922 By-law.

8. 1922 By-law in its 7th year. Is it too young to change?

9. Question of keeping faith with those who expended heavily and incurred obligations on the possible stability of the By-law.

10. Should a change be retroactive in regard to those in business since 1922 or later?

11. Effect on Licensed dairies as producers.

12. Effect on private owners of cows in the City.

13. Question of faith with the private owners whose average investment amounts to $500 each.

14. Possible monopoly to the pasteurizing interests.

15. Can they be trusted to handle such monopoly?

16 Co-operative Plants: possibilities.

17. Municipal Plants. Create monopoly for people.

18. All plants to be located in Winnipeg, should they?

19. Suburban Plants. Should we allow them?

20. Farm Plants. Should they be prohibited?

21. Could a system of pasteurizing for individuals be operated economically?

22. Cost of handling, testing, checking, pasteurization, bottling and delivery service.

23. Is the present "spread" fair?

24. Could we expect a reduction in "spread"?

25. If savings are effected, who will get the benefit, the public, producer, or operator?

26. Possibilities of a gradual change.

(a) No new Raw Milk Licenses.

(b) Annual reduction in number issued.

27. What exceptions should be allowed.

(a) No exceptions. Example: Windsor, Hamilton.

(b) Certified Milk. Example: Toronto.

(c) Certified and Special. Example: Montreal.

(d) Tuberculin Tested Herds. Example: Cities under M.T.O.

28. Should all dairy herds be Tuberculin Tested in addition to Pasteurization. Example: Saskatoon. This is a heavy load on production.

29. Difficulties of enforcement. In order that the public get suitable protection and in order to make the regulation water-tight, it would be necessary to re-organize the staff on a more generous and efficient basis. Revenue would be less and expenditure higher

30. Pasteurization as a Health Measure. Outbreaks, cases, carriers. Protection required for summer resorts, beaches, fresh air camps, etc.

Significant Figures

The City pasteurizing plants represent a capitalization of approximately	$ 2,500,000.00
and the suburban plants	75,000.00
The Licensed Dairies have an investment of	$ 1,120,000.00
and the private cow keepers	100,000.00
Cost of Tuberculin Test for 6¼ years operation—	
Dominion Government Compensation	$ 335,000.00
Dairymen, An equivalent amount	335,000.00
Dairymen, Special Improvements	180,000.00
Dominion Govt. Administration, estimated	150,000.00
Total Cost of Test	$ 1,000,000.00
Basic Price of Milk to Consumer	12-13 cents.
Extra Cost to consumer per annum to bring all milk up to basic level	$ 75,150.00
Extra paid by consumer if base level is raised 1¢, $75,150 plus $240,900 amounts to	$ 316,050.00
On a Milk and Cream base extra cost of 1¢ raise is $75,150 plus $324,850 amounts to	$ 400,000.00
A 1¢ reduction in base level would save	$ 324,850.00
On milk only, a 1¢ fluctuation amounts to, per day	$ 660.00
On milk and cream a 1¢ fluctuation amounts to, per day	$ 890.00

The Dairy Industry

During the past two years, despite the improvement in business and general conditions in Canada, there has been a steady falling off in the amount of dairy products produced and manufactured in the country; so that while we have been priding ourselves for some years on the fact that Manitoba had got into the export business, we now find that Canada as a whole is importing more than she is exporting.

It is reported that for the year 1928 total imports of Creamery Butter amounted to approximately 17,000,000 pounds with exports of only around 2,000,000 pounds, showing an adverse balance of 15,000,000 pounds with a value of approximately $6,000,000. The only consolation we have is that this balance is mostly going to our sister Dominions, namely New Zealand and Australia.

With the system of Cream Grading employed in all of the Prairie Provinces and the process of manufacture including high Temperature Pasteurization, there is no doubt but what we are now manufacturing the best butter ever known in Canada; but for some reason we cannot supply enough of it.

A combination of causes must be producing this effect, and first we have the reduction in number of active dairy producers and the fact that less cows are kept.

The good price for beef and a consequent demand for feeders, together with the demand for fresh dairy cows to supply vacancies in the City herds, have undoubtedly contributed largely to this condition and the difficulties involved in getting new and suitable settlers on to the land, along with an exhibition of readiness on the part of many to leave the land, are all problems requiring a solution.

It is also just possible that the employment of the tuberculin test under the various plans at present in vogue; together with indiscriminate slaughter of all reactors, may be a determining factor in our gross production, in so much as it affects dairy cattle.

I have the honor to be,

Sir,

Your obedient servant,

E. C. BROWN,

Chief Dairy Inspector.

DAIRY INSPECTION—1928

	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Totals
Country Inspections:													
Licensed Dairies	105	68	97	103	95	111	90	91	97	106	89	89	1141
Milk Shippers	2	2	4	3	9	13	37	22	18	40	11	7	168
Cream Shippers	.....	.....	.....	.....	.....	.....	17	12	23	.....	.....	.....	52
Milk Stations	2	3	4	....	....	6	....	5	....	5	1	....	26
Cream Stations	.....	.....	.....	.....	.....	4	.....	5	.....	1	.....	.....	10
Creameries	.....	1	.....	3	1	2	1	7	5	3	2	4	29
Milk Depots	2	3	4	6	7	2	3	4	4	3	4	3	45
Special	12	7	8	7	10	.....	10	11	16	17	18	6	122
Total	123	84	117	122	122	138	158	157	163	175	125	109	1593
Mileage: Country—													
Inspector A	600	410	565	405	780	600	1000	1420	1110	895	710	400	8895
Inspector B	155	75	164	159	210	210	210	195	205	215	180	170	2148
Inspector C	145	125	190	180	190	225	150	310	235	345	220	240	2555
Total	900	610	919	744	1180	1035	1360	1925	1550	1455	1110	810	13598

DAIRY INSPECTION—1928

	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Totals
City Inspections:													
Cow Keepers	258	196	64	.....	11	4	2	3	3	1	1	.....	543
Cow Dealers	.....	12	6	6	6	6	6	6	6	6	6	6	72
Pasteurizers	18	21	34	39	41	36	29	36	27	30	39	38	388
Milk Depots	15	17	6	3	5	4	3	1	2	.....	.....	4	60
Creameries	18	11	19	11	7	10	13	4	17	7	6	6	129
Vehicles	221	260	309	305	375	312	220	229	260	319	266	276	3352
Special	2	3	7	3	2	6	6	4	3	2	4	3	45
Total	532	520	445	367	447	378	279	283	318	365	322	333	4589
Notices:													
General	.....	.....	.....	.....	115	.....	.....	.....	.....	.....	.....	.....	115
Special	1	7	16	7	3	8	10	3	20	.....	3	2	80
Formal	.....	.....	.....	2	.....	10	1	4	.....	3	1	.....	21
Verbal	127	168	100	39	40	42	39	20	25	33	29	13	675
Consultations	7	67	12	7	6	4	3	6	7	.....	.....	5	124
Total	135	242	128	55	164	64	53	33	52	36	33	20	1015

DAIRY INSPECTION—1928

	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Totals
Samples:													
Milk Tested	133	157	143	159	141	135	106	102	122	173	117	94	1582
Cream Tested	8	8	15	8	10	10	12	9	7	17	15	10	129
Plate Counts	30	49	42	39	40	40	36	34	40	50	40	40	480
Sediment Tests	56	86	94	77	175	116	101	120	114	129	100	80	1248
Chemical Tests	6	30	24	24	24	24	22	22	24	30	24	24	278
Total	233	330	318	307	390	325	277	287	307	399	296	248	3717
Condemnations:													
Milk, lbs.	210	70	480	560	240	780	160	80	320	1010	640	530	5080
Cream, lbs.	50	.....	.....	.....	.....	160	100	76	249	50	.....	.....	685
Total	260	70	480	560	240	940	260	156	569	1060	640	530	5765
Sickness Investigated:													
Communicable	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	8	1	9
All Other Cases	2	1	1	.....	.....	1	.....	.....	.....	.....	.....	1	6
Total	2	1	1	.....	.....	1	.....	.....	.....	.....	8	2	15

Report of Chief Food Inspector

A. J. Douglas, Esq., M.D.,
Medical Health Officer.

Dear Sir:

I beg to submit a report of the activities of the Food Division for the year 1928.

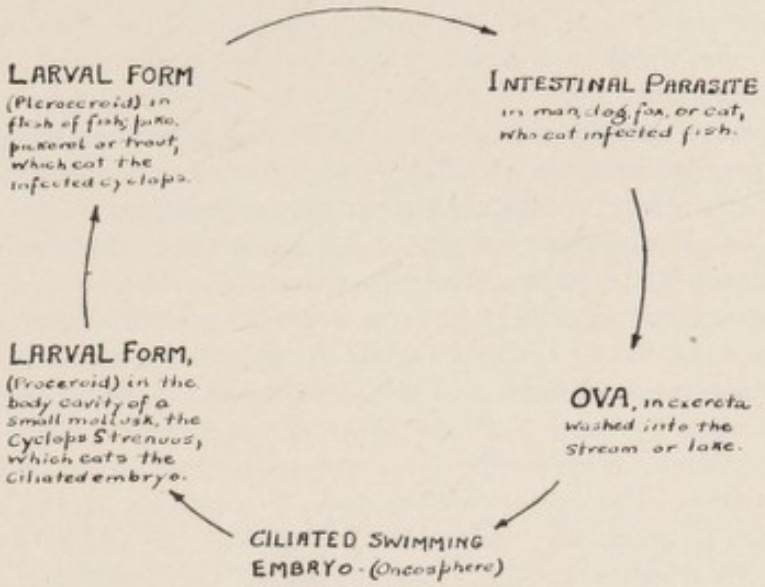
Cysts in Jackfish

From the viewpoint of Food Inspection, probably the most important event of the year was the discovery by Dr. Daniel Nicholson, M.D., of the University Staff, that a considerable percentage of the Jackfish caught in the adjacent Lakes are infested with the cysts of the Dibothriocephalus latus. We were able to supply Professor Nicholson with most of the fish examined. Seven out of thirty-five jackfish were found to be infested. Summer caught fish were more infested than Winter fish. Professor Nicholson did some excellent work in illustrating the pathogenicity of the infested fish by feeding them to dogs and recovering the mature worm from the dogs. Freezing the fish did not appear to affect the cyst in any way, as after being in cold storage for months, the larvae appeared quite active when exposed to a warm temperature or dipped in warm water. The life history is not so simple as that of the Beef or Pork Tapeworm. Dr. Nicholson in his interesting report includes these diagrams showing the life history of the Fish Tapeworm and larva from infected Pike.

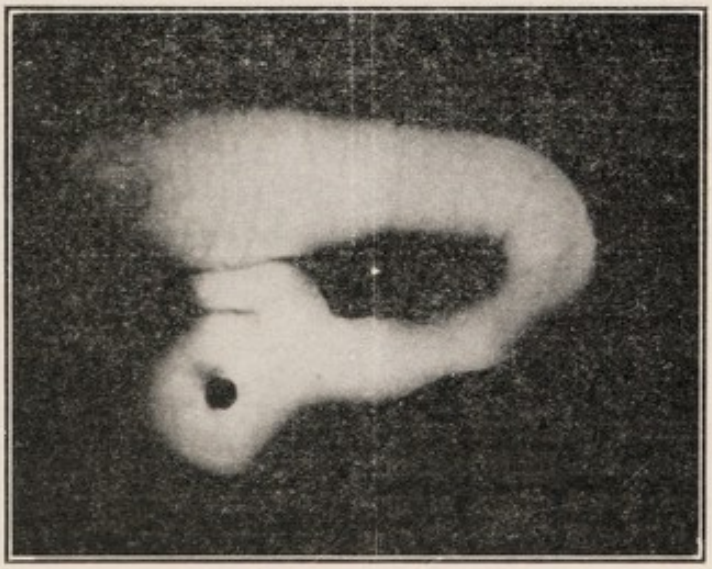
There were five cases of fish Tapeworm recorded at the Winnipeg General Hospital during 1927. It is possible that a number of cases go unreported especially in rural districts. The cases reported are generally women. It is assumed they acquire the parasite from tasting uncooked spiced fish to ascertain the flavor, otherwise the organism is easily killed by cooking.

Food Poisoning

Judging by the reports we have received, the condition known as "Food Poisoning" is fairly common. Several friends have reported that when on vacations or attending conventions, either they or acquaintances in the party have had attacks of this complaint. While some attacks have passed off, other cases required medical and hospital attention. Although seldom attended with fatal results, "Food Poisoning" is a serious condition. It is disagreeable enough when at home, but should a person suffer an attack while in a strange hotel, surrounded by the com-



Life History of Fish Tapeworm



Large larva from infested Pike, showing segments and head withdrawn. The tail is curled around an air bubble. X 13. Photograph by Dr. Daniel Nicholson.

motion which usually attends such an atmosphere, he is liable to remember the experience for a long time. Several of the cases locally have been working men who accordingly lost considerable time besides the expense of medical attention.

A considerable lack of knowledge surrounds the subject of "Food Poisoning" and there is a still greater lack of knowledge of prevention. Did the disturbance arise from the ingestion of decomposed food as the term "Ptomaine" would imply, the solution would be comparatively easy, as with improved methods of refrigeration, no product should readily decompose even in hot weather. But in the majority of cases no sign of decomposition is apparent in the food implicated. Neither is cooking always a preventative as many cases occur in food which has been exposed to the ordinary cooking temperature, especially is this true of reheated products such as veal pies. So far as I am aware, no authoritative investigation has been conducted in this country and it would seem a subject for consideration by some National Body engaged in Research work, since certain organisms, responsible for food poisoning, seem indigenous to certain countries. For instance, Botulism, so common at one time on the Pacific Coast, is practically unknown in England. So far as we have been able, we have tried to ascertain the cause of the outbreaks which have come to our notice locally. Only persons engaged in investigating such cases can appreciate the difficulty which confronts the ordinary laboratory technician with inadequate equipment, first in isolating the responsible organism from the mass of germs with which food exposed to the air is impregnated and then allocating it to its proper origin, since the investigation conducted by the Medical Research Council of Great Britain indicates that the majority of cases of Food Poisoning are caused by the contamination of otherwise wholesome meat from human or animal sources. I have ventured to relate as briefly as facts will allow, some of our investigations into this subject during the past year.

So far as our investigations go, they point to the contamination of otherwise wholesome food. Our conclusions indicate the necessity of scrupulous cleanliness, washing of hands before handling food and the absence of rats and mice in food places. We had some rather extensive outbreaks of food poisoning, fortunately with no serious after effects.

Case No. 1—

This apparently was from canned pork and beans. The can was rusty inside, although the labelling indicated it was canned within the last year. While other foods were eaten, canned pork and beans was the only food which was eaten by all those affected. A woman and four children were ill with the usual food poisoning symptoms. The symptoms started about twelve hours after consumption of the evening meal, which is rather a delayed incubation period and no doubt accounted for the severity of the attack which lasted two days. We recovered an organism from the remains of the can which resembled the Salmonella group but it had no effects when fed to Guinea Pigs. The rusty condition of the can would indicate that air had been admitted at some time. Probably a pin hole and the hole rusted .

Owing to the packers having changed their type of label the past year we were able to determine the age of can, otherwise the age would likely have been indefinite. This would indicate the advisability of the packers and retailers for their own information, having the cans marked in some manner, so as to be able to tell the age of the can.

Case No. 2—

Two women and two children were victims in this case. The food consisted of pork chops, bread and new potatoes. The attack was characterized by the usual food poisoning symptoms, vomiting, abdominal distress, etc., and commenced about six hours after the infestion of the food. Suspicion was directed to the potatoes which, the women preparing the meat said, contained quite a number of green sunburned potatoes. I also found quite a number among those remaining at the store were sunburnt. Indications were that this was a case of Solanine poisoning.

Case No. 3—

Twenty persons were involved in this case. Out of a variety of foodstuffs consumed at lunch, a roast of stuffed veal cooked the previous day was the only food consumed by all those affected. Those who ate the dressing being particularly affected. The interior of the meat was sour, but the only organism we recovered was B. Subtilis. Evidence seemed to point to the presence of toxins elaborated by some organism which we were unable to isolate. Suspicion was directed to contamination either in handling or rodent infection of the materials used in stuffing the joint of veal.

Case No. 4—

Three persons were affected in this outbreak. The meal consisted of bacon, Graham Gems, coffee, cookies and cheese. One of the patients did not partake of the cookies and cheese. Suspicion pointed to the bacon which was the only food eaten by all three. A jar of jelly was submitted, said to have been taken from the frying pan in which the bacon was cooked. This jelly contained a bacillus resembling the organisms of the Salmonella Group. As it is unusual to get jelly from fried bacon, we were at a loss to account for its presence, in view of the fact that we were told the pan was clean. After some days we discovered that the pan had been used previously and deposited in the warming oven over night without washing.

The bacon on examination proved practically sterile. The inference is that either by rodent origin or handling the jelly was infested. This case was apparently a mixed infection and intoxication as the subjects became ill respectively 2, 4 and 8 hours after infestion. The last case (a man) suddenly collapsing without any immediate symptoms, although he said he had felt indisposed four hours before and had gone for a walk and felt normal as a result.

The extraordinary improvement noted last year in the handling of fresh fruit was continued again this year. A poor crop in Ontario was more than offset by a large crop in British Columbia of excellent quality.

The arsenical spray problem was conspicuous by its absence locally, due to Government Supervision and less imported fruit.

Abattoirs

A large amount of improvement has been done in all the abattoirs. Relaying of impervious floors and remodelling premises has been common. One abattoir installed an up to date chicken feeding plant. Another put up a fire-proof building for lard rendering and cooked products. This plant also installed a "Dry Rendering" Lard machine. This process, since the lard is not exposed to the steam, improves the color, taste, cleanliness and keeping properties of the finished product. We had numerous complaints of meat tasting of drugs. This was confined to plants using a Calcium Chloride spray in removing frost off the refrigerator pipes and would seem to indicate occasional contamination in some manner.

A system of Beef Grading similar to the grading of eggs and butter, whereby a consumer could be assured of getting the highest class beef, has been started. At present it is voluntary, that is a retailer may request to have his meat graded and Government stamped in such a manner as to leave a mark indicating the grade on every cut of meat. In these days when the average housewife is trained for the office rather than the home, an assurance that the beef she buys is not only wholesome but of high edible quality is an advantage. An extraordinary feature of the beef business today is the demand for "Baby Beef." The 3 and 4 year old steer is no longer wanted.

Bakeries

Two of the large bakeries installed new rooms where the "sponges" are kept under increased heat and humidity than was otherwise possible in the operating room. This enables the operating room to be kept at a lower temperature which greatly increases the comfort of the workers. A large biscuit factory in addition to the aforesaid improvement has installed additional facilities for dipping chocolates by machinery which is naturally more sanitary than hand dipping. The room being under refrigeration enables them to operate in the hottest and coldest weather at an uniform temperature.

Condemnations

An extraordinary wet summer from June to August curtailed the amount of veal shipped from country points and is reflected in smaller amount of veal condemned.

The two largest items were fish and poultry.

The fish was a car of imported frozen whitefish which was found to be decomposing when thawed out.

The poultry condemnations were larger than usual owing to the extraordinary mild weather prevailing in the Fall which induced farmers to hold their poultry for colder weather. When the usual cold spell did not appear before Christmas, a glut of poultry was the result. Much of this poultry was packed warm, probably with the idea of obtaining the higher price given for unfrozen poultry, consequently, owing to unreasonably warm weather and conditions under which it had to be handled, an enormous amount decomposed. The amount of Tubercular Fowl was quite noticeable. Winnipeg is becoming an extremely busy poultry market and the inspection around Christmas time taxes the resources of the Staff. In addition quite a number of citizens receive birds from the country which on opening prove to be Tubercular and accordingly they request a report from the Department.

Confectioners

There was a slight increase in numbers and a decided improvement in methods and equipment. This was brought about by the installation of new systems of refrigeration, other than using the ice cream cabinet with accompanying leakage and soiled floor caused by men changing the salt and ice. The new methods in vogue comprise either a refrigerating solution controlled by a thermostat which starts a pump circulating the brine when above a certain temperature or small cartons containing a refrigerating solution which is taken back every alternate day and replaced by another carton of the solution, which has been exposed to a temperature of 20 below zero. The carton is air-tight, so there is no evaporation or leakage and retains a low temperature for 48 hours in the warmest weather.

We have now what is probably the largest wholesale confectioner in Canada, their requirement of eggs alone for the year being 120,000 lbs.

Egg-Breaking Plants

We had two of the most modern egg-breaking plants operating this year. This is an operation which requires the highest technique and cleanliness, if a high class article is to be produced. The eggs after being broken into a pail are frozen and it is this practice of the eggs being frozen and held frozen that was responsible for the idea that any kind of eggs could be used and any quick methods followed. The methods used by some of the old style firms were quite insanitary. A couple of prosecutions stopped these practices some years ago. The practice in up-to-date factories is to have each egg candled and inspected for odor after breaking, as one "musty" egg can spoil a pailful. The breaking is done on wires into an individual cup and an ample supply of hot water is provided for washing contaminated cups and hands of operators. The broken eggs are then put through an homogenizer and shell, blood spots, etc.,

removed. Egg albumen for druggists is one of the products. As the work is rather tedious, the girls get a recess of 10 minutes at the end of each hour for relaxation, so that when working they will be alert in their work.

Flies

Given weather conditions such as we had last year when the continual rains prevented flies moving outside to any extent, it was quite easy to see where flies come from.

Generally speaking most places were free from flies, but in those places where flies were noticeable last winter the fly nuisance was the worst I have seen in some years. Two places at any rate which, in spite of repeated warnings, neglected killing flies last winter, were ready to admit they never had such a fly pestilence as existed in their premises last summer.

Groceries

There were 279 grocery stores as compared with 241 last year. The improvement in the modern grocery store noted last year continues, altogether the clean well-arranged modern grocery, with low windows and the varied colorful advertising matter on cans and cartons presents a very attractive appearance.

Peddlers

We had requests from peddlers to be allowed to put wagons on vacant lots and occupy these all day. As in past years we have found families proceeding to live in these wagons, the request was refused on the ground that it was impossible for them to provide adequate sanitary accommodation as required by the Regulations governing Food Places.

Poultry Slaughterhouses

Operations in Poultry Feeding Slaughterhouses were again curtailed owing to an outbreak of infectious disease.

A new innovation is the practice of "Dry Scalding." The old type of scalding used to be objectionable as it gave the fowl the typical dark appearance of scalded fowl especially when subsequently frozen. In the new method the water is considerably below boiling point, generally from 124 to 129° F. The birds are plunged in this water for 20 to 50 seconds, the length of time depending on the age of the fowl. The appearance of the birds cannot be detected from dry plucked fowl and of course the process of defeathering is much quicker.

The water should be changed every 250 birds, as it becomes highly contaminated.

Some investigators claim the keeping quality is impaired.

Prosecutions

These were confined to two.

One was for insanitary conditions in regard to the candling of eggs, the other was for selling unsound butter.

Restaurants

There was an increase this year of 34 in this class of business. This seems a large increase, but the increase in proportion to population over a space of 10 years is rather startling. In 1918 we had 156 restaurants and 183,595 population. In 1928 we had 283 restaurants and a population of 202,377. While we had an increase of 10 percent in population, we had an increase of 81 percent in restaurants.

Improved conditions enabling young men to obtain employment account for the increase last year, but over a term of years, during prosperous years and others not so good there has been a steady increase in the number of places providing meals. New innovations are the catering to lady patrons and the manner in which ladies patronize the stools at Lunch Counters. The number of female employees in business has increased during the last ten years and home cooking suffers accordingly. So much has been written about dieting that there has in the past been a tendency to curtail meat. Large cattle are now sold at a discount, the consumer wants small joints, the butcher small cattle.

Staff

I beg to record my appreciation of the willing services of Inspector Foote and Mines in the work which is continually increasing, especially in the Fall months.

Respectfully submitted,

ARTHUR RIGBY,

Chief Food Inspector.

PREMISES UNDER INSPECTION AND IMPROVEMENTS MADE

DESCRIPTION	Number Under Inspection	New Modern	Cement Floors	Renovated	New Plumbing	Remodelled
Abattoirs	3	....	....	....	....	....
Auction Rooms	1	....	....	....	....	....
Bakeries	62	1	....	22	....	6
Biscuit and Cereal Factories	4	....	....	....	....	....
Bottling Plants	13	....	....	3	....	....
Breweries	5	....	....	....	....	3
Butcher Shops	187	5	....	44	....	5
Butter Rooms	2	....	....	....	....	....
Candy Factories	23	4	....	7	....	....
Canning Factories	1	....	....	....	....	....
Cold Storage Plants	6	....	....	2	....	1
Commission and Produce Houses	55	3	....	2	....	....
Confectioners and Ice Cream Parlors	317	16	....	74	5	12
Delicatessen Shops	5	1	....	1	....	....
Fish Stores	10	....	....	2	....	....
Fruit Houses (Wholesale)	37	5	....	2	....	1
General Stores	400	16	....	42	3	4
Groceries (Retail)	249	10	....	60	5	8
Groceries (Wholesale)	36	4	....	2	....	....
Hawkers' Vehicles	82	....	....	40	....	....
Hotel Kitchens	22	....	1	2	....	11
Jam, Pickle and Vinegar Factories	7	1	....	....	....	....
Markets	2	....	....	....	....	....
Packing Plants	3	....	....	1	....	....
Peanut Butter Factories	1	....	....	....	....	....
Poultry Slaughter Houses	7	3	....	2	....	....
Restaurants	283	29	1	177	5	37
Railway and Express Companies	3	....	....	....	....	1
Sausage Factories	17	2	....	4	....	1
Tea, Coffee and Spice Houses	6	1	....	....	....	....
Yeast Factories	1	....	....	....	....	....
Totals	1850	101	2	489	18	90

FOOD CONDEMNATIONS—1928

DESCRIPTION	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Totals
Beef	.....	.....	.....	.....	.....	200	.....	.....	.....	.....	.....	.....	200
Veal	91	98	448	227	1,316	293	642	180	.....	94	.....	85	3,474
Pork	.....	652	.....	.....	.....	50	.....	.....	.....	.....	.....	.....	702
Mutton	.....	43	.....	.....	.....	.....	.....	166	.....	.....	.....	.....	209
Poultry	830	688	711	87	74½	347	899	141½	131½	499	3,531	11,373½	19,313
Fish	.....	.....	21,400	.....	.....	.....	.....	.....	.....	.....	.....	.....	21,400
Dried Fruit	.....	400	62	.....	.....	.....	.....	.....	.....	.....	.....	.....	462
Nuts	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	50	100	150
Jam	.....	.....	.....	.....	.....	.....	.....	.....	30	.....	.....	100	130
Vegetables	.....	.....	.....	.....	.....	.....	.....	2,000	.....	.....	.....	.....	2,000
Eggs	.....	.....	.....	.....	.....	.....	7	.....	70	.....	.....	.....	77
Candy	.....	.....	5½	70	.....	.....	.....	40	.....	130	.....	.....	245½
Biscuits	.....	.....	20	.....	.....	.....	.....	.....	30	.....	.....	.....	50
Cereals	.....	.....	12	.....	.....	.....	200	.....	.....	.....	140	.....	352
Canned Goods	.....	.....	.....	40	352	.....	.....	.....	1,968	300	200	720	3,580
Coffee	170	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	170
Cheese	.....	30	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	30
Game (Rabbits)	25	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	25
Tea	.....	.....	.....	.....	.....	115	.....	150	.....	.....	.....	.....	265
Sugar	.....	475	100	400	150	.....	300	100	650	2,890	.....	.....	4,865
Totals	1,116	2,386	22,758½	824	1,892½	1,005	2,048	2,777½	2,879½	3,913	3,921	12,378½	57,699½

INSPECTIONS OF PREMISES—1928

PREMISES	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Totals
Abattoirs and Packers	26	21	22	20	15	13	22	22	22	19	21	19	242
Bakeries	55	74	69	71	66	49	78	71	71	81	70	69	824
Bakery Vehicles	34	42	37	28	26	26	37	37	45	46	31	39	428
Biscuit Factories and Cereal	5	4	5	8	6	2	3	5	4	6	4	5	57
Breweries	17	13	10	10	15	8	7	9	13	19	11	10	142
Butcher's Shops	157	273	170	165	174	129	154	143	159	162	161	167	2,014
Butter and Cheese	7	16	4	3	4	3	3	3	3	5	6	4	61
Candy Factories	23	8	29	24	26	17	20	28	21	28	27	28	279
Cold Storage Plants	10	10	12	10	8	6	8	6	7	9	10	8	104
Fish Stores	22	27	26	21	27	20	20	27	19	17	17	16	259
Fruit Stores	71	58	75	66	71	67	57	83	91	68	67	52	826
General Stores	387	372	387	388	391	347	338	326	393	416	379	378	4,502
Grocers	156	154	160	156	174	149	118	153	157	176	181	155	1,889
Hawkers' Vehicles	125	118	126	121	140	136	101	166	112	140	120	106	1,511
Hotel Kitchens	26	19	55	36	34	33	17	28	31	41	29	33	382
Ice Cream Parlors and Confectionery	184	159	192	175	194	190	189	214	203	199	203	164	2,266
Jam, Pickle and Spice Factories	9	9	12	12	13	8	5	9	9	12	12	9	129
Markets and Auction Rooms	6	5	8	4	5	11	9	9	10	14	12	17	110
Produce, Commission and Eggs	46	52	55	52	45	40	64	51	60	51	60	47	623
Peanut Butter	.....	1	.....	1	.....	.....	.....	2	1	.....	.....	.....	5

Railway Cars	.....	.....	.....	.....	.....	1	4	.....	.....	.....	.....	.....	5
Restaurants and Lunch Counters	317	309	345	349	361	293	244	321	332	365	333	283	3,852
Sausage Factories	17	20	17	19	16	14	20	12	21	24	21	21	222
Special	121	114	137	112	112	93	82	111	106	113	125	131	1,357
Temperance Bars	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1
Delicatessen	.....	.....	.....	.....	.....	.....	.....	2	.....	1	.....	.....	3
Poultry Slaughterhouse	9	7	6	4	2	3	2	12	14	18	16	19	112
Railway Express	5	7	7	4	7	6	2	5	5	9	8	7	72
Totals	1,836	1,892	1,966	1,859	1,942	1,664	1,604	1,855	1,909	2,039	1,924	1,787	22,277
Notices to Improve Conditions	90	106	119	148	157	87	73	81	111	108	120	82	1,282

PROSECUTIONS

	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Totals
Insanitary Premises	....	....	1	....	....	....	....	....	....	....	....	....	1
Unsound Food	1	....	....	....	....	....	....	....	....	....	....	....	1
Exposing to Contamination	....	....	....	....	....	....	....	....	....	....	....	....	....
No Permits	....	....	....	....	....	....	....	....	....	....	....	....	....
Amount of Fines and Costs	$8.00	....	$15.00	....	....	....	....	....	....	....	....	....	....

Bureau of Child Hygiene

A. J. Douglas, Esq., M.D.,
Medical Health Officer.

Dear Sir:

I have the honor to submit herewith a report on the work of the Bureau of Child Hygiene for the year 1928.

Summary of Conditions in 1928

Crude Birth rate, 22.11 per 1,000 population, a decline of 8.5 points in seven years.

Crude Infant Mortality rate, 63.4 per 1,000 live births, second lowest rate recorded.

Crude Stillbirth rate, 40.7 per 1,000 live births, 1.2 less than average for past five years.

Crude Puerperal Mortality rate, 5.1 per 1,000 live births, 0.3 less than the average for the past five years.

Infant death rate from diseases of digestive system, 6.9 per 1,000 live births, second lowest recorded.

Infant death rate from diseases of respiratory system, 8.9 per 1,000 live births, lowest recorded.

Infant death rate from diseases of early infancy, 38.7 per 1,000 live births, 3.8 above the average of the past five years.

Infant death rate from all other diseases, 8.9 per 1,000 live births, lowest recorded.

Lower Birth Rate

Live births numbered 4,475, an increase of 12 over the total for 1927, giving a crude rate of 22.11 per 1,000 population against 22.44 for 1927. These are our lowest recorded crude birth rates.

The current rate shows a decline for the seventh year in succession, the 1920 crude rate being 32.06. This high rate was due to exceptional circumstances but our crude rates for the years 1908 to 1919 ranged between 28.5 and 31.8 per 1,000 population, the high birth rates being due to the unusually large proportion of young parents in our population.

Although there has been a marked decrease in the number of live births (6,174 in 1920 to 4,475 in 1928), there has been a great increase in the number of births to mothers from surrounding towns and municipalities taking place in city hospitals (690 in 1919 to 1,200 in 1928), so that the live births to resident mothers have declined even more than the crude rates indicate. The actual figures are: 1920, 5,359 live births to resident mothers; 1928, 3,275.

In the latter year, 305 live births to Winnipeg mothers occurred in the adjoining City of St. Boniface, so that our total for 1928 is 3,580, giving a corrected rate of 17.6 per 1,000 population. The gross rate is 22.11.

Infant Mortality Rate Second Lowest Recorded

Infant mortality presented an interesting study in 1928 as the sequence of monthly death rates regarded as normal since 1915, i.e. the "peak" occurring in the spring months, was reversed, December showing the highest mortality due to a wave of influenza.

The infant death rate at the end of April stood at 56, a record for the first four months of any year and as there was comparatively little sickness throughout the Summer and Fall, mortality rates continued below 59 until September, setting a new standard for the first eight months of the year. At the end of November the rate was 60, but December brought an outbreak of influenza which raised the infant death rate for that month to 100, due largely to increased deaths from diseases of early infancy. These latter deaths totalled 21, the highest for any month for over 2½ years. In studying the effects of an influenza epidemic, the greatly increased number of deaths of newly born infants coincident with the epidemic is sometimes overlooked.

The final rate for the year is 63.4, or 1.2 points higher than the rate for 1927. The current rate is the second lowest we have recorded.

Stillbirths Decrease

This slight increase in the infant mortality rate is more than offset by a decrease in the stillbirth rate, 1928 showing a rate of 40.7 per 1,000 live births, against 45.0 for 1927. The current rate is 1.4 points lower than the average for the past five years, 42.1, which, as we pointed out in our previous report, is far too high for a city of Winnipeg's standing.

Causes of Infant Deaths

Diseases of Early Infancy were again the leading cause of death, this group of diseases having taken precedence over diarrhoeal diseases in 1917.

Of the 284 total infant deaths, 173 were assigned to diseases of early infancy, giving a rate of 38.7 per 1,000 live births as compared with 29.3 for 1927, our lowest recorded figure and 34.9, the average rate for the past

five years. It was hoped that the 1927 rate pointed to a definite improvement in this undesirable feature of our infant welfare work, but the current increase would seem to indicate that there is no change. It is true that the December influenza epidemic increased the number of these deaths, but the rate up to the end of November was also unsatisfactory.

Diseases of the Digestive System accounted for 31 of the total 284 infant deaths, giving a rate of 6.9, the second lowest recorded for this group. Our death rates from diarrhoeal diseases are very favorable in spite of our high summer temperatures and compare well with the rates of communities with large appropriations for Child Welfare work. The rate for 1927 was 9.0 and the average for the past five years, 8.0.

Diseases of the Respiratory System caused fewer deaths in 1928 than in any other previous year, 40 infants succumbing to these infections, giving a rate of 8.9 per 1,000 live births, the lowest recorded. The rate for 1927 was 11.9 and the average for the past five years, 11.0.

Climatic conditions have a great influence upon this rate but there has been a very marked decrease in infant deaths assigned to this cause since child welfare work was inaugurated. In 1912, for instance, the rate was 30.2; in 1917, 23.9; in 1922, 13.3; and in 1928, 8.9 per 1,000 live births.

All Other Diseases, the classification containing deaths from acute communicable diseases, diseases of the nervous system, etc., showed 40 infant deaths for 1928, giving a rate of 8.9 per 1,000 live births, against 49 deaths and a rate of 11.0 for 1927. The average mortality rate for this group for the past five years was 12.3.

Deaths from these causes of death have also shown a remarkable decline since the inauguration of child welfare work. In 1912 the mortality rate was 42.9; in 1917, 18.8; in 1922, 15.2; in 1928, 8.9 per 1,000 live births.

Infant Mortality by Sections

A tabulation showing the stillbirths, live births, infant deaths and infant death rates in each nursing section of the city in 1928 is given below:

Infant Mortality According to Nursing Sections

						Infant Mortality Rates per 100 Live Births	
			Still Births	Live Births	Infant Deaths	Under 1 yr.	Under 1 mth.
I	W	Fort Rouge, west of Pembina	14	305	17	5.6	3.3
I	E	Fort Rouge, east of Pembina	8	195	8	4.1	2.6
II		Red River to Spence St.	10	295	16	5.4	3.1
III	E	Spence, Ellice and Sherbrook Sts.	7	88	8	9.1	6.8
III	S	Assiniboine River to Ellice Ave.	12	329	16	4.9	4.3
III	N	Ellice Ave. to Notre Dame Ave.	19	360	24	9.1	2.5
IV	W	Notre Dame to C.P.R. Tracks	6	197	13	6.7	3.6
IV	C	Sherbrook St. to Main St.	9	260	25	6.6	6.9

			Still Births	Live Births	Infant Deaths	Infant Mortality Rates per 100 Live Births: Under 1 yr.	Under 1 mth.
IV	E	Point Douglas, south of C.P.R.	11	187	12	6.4	4.8
V	E	Point Douglas, north of C.P.R.					
V	S	C.P.R. Tracks to Selkirk Ave.	2	197	18	9.1	3.0
V	N	Pritchard Ave. to Burrows Ave.	8	174	14	8.0	4.6
VI	W	Burrows to Limits, W. of No. 500	7	239	23	9.6	3.3
VI	E	Burrows to Limits, E. of No. 499	5	264	12	4.5	3.0
VII		Elmwood	8	185	14	7.6	4.3
City			126	3,275	220	6.7	3.8
Non-Residents			56	1,200	64	5.3	3.6
Gross Totals and Rates			182	4,475	284	6.3	3.7

In addition, there were 11 stillbirths, 305 live births and 16 infant deaths registered in the adjoining City of St. Boniface, which rightly belong to Winnipeg according to the home addresses of the mothers concerned. These registrations are not officially included with Winnipeg figures.

Midwife Attendants

Only 129 live births were attended by midwives, giving a percentage of 2.9 of the total live births, the lowest yet recorded. In 1918, the number of births attended by midwives was 1,159, or 19.8% of the total births.

The Bureau of Child Hygiene has consistently recommended mothers to place themselves under the care of a physician rather than a midwife as there is no supervision over, or regulations governing either trained or untrained midwives in Manitoba. Under these circumstances, although the records show a low puerperal mortality rate in cases attended by these women, it is deemed the better policy to discourage the engagement of midwives as the development of their practices would attract unskilled and untrained women to take up the work.

Medical Attendants

An analysis of the live births registered in 1928 shows that twelve physicians attended 1,609 cases and that the remaining 2,637 were attended by 243 physicians.

Hospitalization of Maternity Cases

A continued increase is shown in the number of births taking place in hospitals and maternity homes, the percentage rising to 75.0 from 73.0% in 1927. In 1917 the percentage was 36.3 and in 1912, 31.5%.

Infants Born Out of Wedlock

An increase is again shown in the number of these births for the eighth year in succession, there being 358 such births, or 7.7% of the total births (including stillbirths). In 1927, there were 351 infants born out of wedlock, or 7.5% of the total births. In 1924, the percentage was 5.7; in 1920, 4.1%, the lowest recorded; in 1915, 5.5%; and in 1912, 7.6%.

The increase in the number of these births is due mainly to the increasing number of non-resident mothers making use of city hospitals rather than to an actual increase in the illegitimacy birth rate amongst residents of the City.

Maternal Mortality

A slight improvement is shown in the maternal mortality figures for 1928, there having been 23 such deaths, giving a rate of 5.1 per 1,000 live births, against 5.6 for 1927 and an average of 5.4 for the last five years.

Deaths of resident mothers in 1928 gave a rate of 4.0 per 1,000 live births and of non-resident mothers, 8.3. The difference between these two rates indicates very clearly where the need lies for greater effort to reduce the number of unnecessary deaths due to childbirth.

Unsatisfactory Feature in Infant Mortality

From the foregoing review of conditions in 1928, it is shown that infant mortality from diseases of the digestive system was 6.9; from diseases of the respiratory system, 8.9; and from all other diseases excepting diseases of early infancy, 8.9, a total for the three groups of 24.7 deaths per 1,000 live births, the lowest rate by far yet attained. The corresponding rate for 1927 was 31.9, our previous lowest rate for these groups.

This favorable figure for 1928 indicates a very satisfactory decline in mortality in the diseases over which control is exercised by various agencies, but the increased death rate from diseases of early infancy shows that the present measures to reduce this excessive waste of infant life and economic loss to the individuals concerned are inadequate.

Our 1928 rate of 38.7 deaths per 1,000 live births for diseases of early infancy is far too high and is out of line with our other rates.

Deaths of Infants Under Two Weeks of Age

A check on this cause of death is provided by the number of deaths of infants occurring shortly after birth.

Of the 284 total infant deaths which occurred during 1928, 138 were of infants aged seven days or under and 18 of infants aged 8 to 14 days. These 156 deaths gave a mortality rate per 1,000 live births of 34.8, more than half of the gross infant mortality rate for the year.

This mortality of infants under two weeks of age is usually higher amongst infants of resident mothers, leading one to believe that infants of mothers from country points are born with greater vitality. The rate, however, is not invariably higher.

The Bureau's nurses constantly stress the importance of expectant mothers placing themselves early under a physician's care, but as over 1,600 of our births are first children, the mothers of whom often do not come in contact with any advisory agency until they call in a physician, the problem is to get in touch with these mothers in order to urge pre-natal supervision and care.

This is the outstanding problem in our infant welfare work and the one which must be solved if our City is to reduce its infant mortality rate and continue to hold its place with cities of its class in regard to this important phase of public health.

Further Publicity Required

Statistics conclusively prove that both infant mortality and maternal mortality are lower when expectant mothers place themselves early under the case of their physician, yet our nurses, even in the very limited number of pre-natal cases which come to their attention, report difficulty in persuading some groups of expectant mothers to undergo examination or have an early consultation with their physician.

Undoubtedly the wide-spread newspaper publicity given Canada's high maternal mortality rate last year aroused public interest in this subject and it will be easier for public health nurses to discuss the question of pre-natal supervision with young expectant mothers than in previous years.

Child Welfare Nurses

The thirteen visiting nurses made a total of 41,373 visits to babies and 220 visits to infants' boarding houses. The number of new cases visited was 2,703, or 82.5% of the live births to resident mothers. In addition, 305 live births to Winnipeg mothers which occurred in the adjoining City of St. Boniface, were visited by our nurses, particulars of these births being received through the courtesy of the St. Boniface Registrar.

Calls to sick babies dropped from 1,700 in 1927 to 1,094 in 1928 and cases referred to private physicians decreased from 425 in 1927 to 385 in 1928. Cases referred to the Milk Depot Clinic, Hospitals and other agencies remain about the same. Treatments to babies, prescribed by private physicians and the attending physicians at the Milk Depot, decreased from 1,471 in 1927 to 917 in 1928. These figures again indicate the lesser amount of sickness prevalent in 1928. Further particulars of the nurses' work are given on page 137.

Babies' Clinic

New cases attending the Clinic in 1928 numbered 424, ten of which were non-residents. In 1927, new cases totalled 431.

By sections, the 1928 distribution was as follows:

District	I		II	III			IV			V		VI		VII
Section	W	E		E	S	N	W	C	E	S	N	W	E	
1928	16	19	24	4	22	31	36	46	22	52	31	24	50	37
1927	18	19	33	–	36	33	21	38	27	50	38	32	45	33

	City	Non-Residents	Total
1928	414	10	424
1927	423	8	431

Attendance at the Clinic totalled 5,311, against 5,141 in 1927. By months the attendance was as follows:

	J.	F.	M.	A.	M.	J.	J.	A.	S.	O.	N.	D.	Total
1928	366	428	434	419	484	430	452	520	462	492	454	370	5,311
1927	295	348	528	427	476	503	465	479	465	475	364	316	5,141

Doctor R. F. Rorke and Doctor F. G. Schwalm continued to act as attending physicians on alternate mornings. The clinic is conducted to correct wrong feeding, general cases being referred to the Children's Hospital.

Milk Dispensary

The feedings prepared in 1928 for the Bureau numbered 18,830 and for the Children's Hospital, 5,995, a total of 24,825. Cash collected at the Depot amounted to $1,010.05 and the Children's Hospital accounts amounted to $1,129.13, giving a total revenue of $2,139.18.

Free feedings, 10,009, were 815 fewer than in 1927, 10,824, and paid feedings, 8,821, showed a decline of 1,306. The policy of instructing mothers how to prepare feedings at home is responsible for the continued decline in the number of feedings prepared.

Greatly Reduced Expenditures

In conformance with Council's orders, the expenditures of the Milk Depot have been rigidly supervised and expenses kept as low as possible without interfering with efficient operation.

The gross cost of operating the Milk Depot in 1928 was $10,508; in 1927, $11,137.

In 1920, the first complete year I had charge of the Bureau, the Milk Depot gross operating cost was $20,914. In each year there is, of course, a fixed cost for heating, maintenance and cleaning which can be but little reduced. This substantial reduction in cost has been brought about by completely re-organizing the work, installing new apparatus and reducing the number of feedings prepared by having the nurses stress the importance of breast feeding and instructing the mothers how to prepare complementary feedings in their own homes.

It is to be noted that in 1920, the infant death rate was 101 per 1,000 living births; in 1928, 63, and in 1927, 61, figures which indicate greatly increased efficiency in child welfare work.

The staff of the Bureau continued to put forth their best efforts to conserve child life and prevent sickness. Many calls were made on Sundays, holidays and after hours, the nurses giving devoted service in the interests of their districts. Nurses Carter, Thom and Bowles deserve separate mention as they have acted as relief dietitians throughout the year owing to the non-appointment of an assistant dietitian for reasons of economy.

Respectfully submitted,

A. G. LAWRENCE,

Manager, Bureau of Child Hygiene.

CASES ATTENDING CLINIC AND FEEDINGS PREPARED AT BABIES' MILK DEPOT, 1928

1928	Total Attendance at Clinic	Cases on Dispensary List at 1st of month (including Children's Hospital)	Children's Hospital Feedings	MILK DEPOT				Cash Collected Dispensary	Children's Hospital Accounts	Cases Attending for First Time	FEEDINGS PREPARED						MILK USED		
				Paid Feedings	Free Feedings	Total Feedings (excluding Children's Hospital)	Grand Total Feedings (including Children's Hospital)				Lactic Acid	Protein	Casec	Evaporated Milk	Acidified	Condensed Milk	Whole Milk (quarts)	Cream (quarts)	Skim Milk (quarts)
Jan.	366	57	473	672	657	1329	1802	$ 84.50	$ 85.18	45	221	62	62	56	135	....	868	30	632
Feb.	428	61	470	688	884	1572	2042	29.25	105.97	42	73	119	58	65	176	....	910	33¼	792
Mar.	434	79	549	789	1095	1884	2433	156.55	109.56	41	155	107	117	55	225	....	1008	38¼	788
April	419	85	572	682	1017	1699	2271	51.75	94.40	25	127	68	119	30	210	....	978	35¾	640
May	484	74	469	667	1017	1684	2153	50.50	95.08	37	132	97	93	38	223	....	970	30½	720
June	430	61	408	679	791	1470	1878	109.90	65.05	31	196	15	90	....	155	6	793	33	660
July	452	60	442	679	810	1489	1931	51.25	90.13	37	314	41	83	....	146	6	1006	22¾	556
Aug.	520	66	489	742	898	1640	2129	54.60	115.08	47	339	136	65	....	208	....	1028	25½	616
Sept.	462	68	488	818	815	1633	2121	125.35	92.20	25	393	65	64	....	254	....	1168	27	634
Oct.	492	71	510	917	781	1698	2208	74.05	74.05	49	342	38	31	31	221	....	1052	24½	700
Nov.	454	69	474	817	656	1473	1947	124.65	91.75	22	203	21	78	42	320	....	962	30¾	712
Dec.	370	61	651	671	588	1259	1910	97.70	110.68	23	225	55	64	16	241	....	942	28¼	696
Totals	5311	67.8	5995	8821	10009	18830	24825	$1010.05	$1129.13	424	2720	824	924	333	2514	12	11685	359½	8146

VISITS MADE BY CHILD WELFARE NURSES — 1928

1928	No. of Days on Duty	Days on District	Days in Depot Convention, etc.	Total Live Births Visited	Deaths of Infants visited more than once	Visits to Babies	Visits to Infants' Boarding Homes	Other Visits	Calls to Sick Babies	Requested Calls	Cases Referred to Physicians	Cases Referred to Milk Depot	Cases Referred to Hospital	Cases Referred to Social Welfare	Cases Referred to M.S.N.M.	Cases Sent to Fresh Air Camp	Pre-natal Advice Given	Private Demonstrations	Treatments to Babies	Lectures Given
Jan.	270	227	43	234	....	3,131	17	....	108	123	37	23	17	2	4	....	37	5	60	11
Feb.	246½	213	33½	240	5	3,120	18	....	102	122	21	18	17	1	4	....	32	5	82	10
Mar.	289	253½	35½	247	8	3,758	21	....	95	121	31	24	12	5	5	....	44	6	83	6
April	259½	232	27½	258	4	3,488	11	....	67	94	25	15	10	1	2	....	42	1	89	4
May	280	251	29	219	7	3,871	8	....	70	119	25	11	14	....	2	6	45	5	64	1
June	282	242	40	199	5	3,757	18	....	60	88	37	15	12	3	....	3	39	10	82	....
July	245½	203½	42	247	1	3,234	12	2	55	75	21	20	16	....	5	1	31	2	100	....
Aug.	263½	218	45½	210	1	3,379	12	4	84	95	42	17	17	....	8	1	32	11	75	....
Sept.	243½	191½	52	196	3	2,912	19	....	57	85	20	17	17	1	1	1	36	6	31	....
Oct.	308½	256½	52	225	7	3,834	21	....	66	112	38	36	17	1	6	....	64	8	82	1
Nov.	293	254	39	211	5	3,708	32	1	98	115	45	15	19	2	5	....	56	2	78	....
Dec.	271	231	40	217	8	3,181	31	....	232	158	43	17	17	4	2	....	55	3	91	1
Total	3252	2773	479	2703	54	41,373	220	7	1094	1307	385	228	185	20	44	12	513	64	917	34

Statistician's Report

A. J. Douglas, Esq., M.D.,
Medical Health Officer.

Dear Sir:

I have the honor to submit herewith the report on Vital Statistics for the year 1928. As in previous years, copies of the birth and death registrations have been furnished the Department by courtesy of the Registrar, Mr. Magnus Peterson.

Respectfully submitted,

A. G. LAWRENCE,

Secretary.

Summary of Vital Statistics

Area of City Land, 14,865 acres; water, 622 acres; total, 15,287 acres (23.9 square miles).

	1928	1927
Population (City Assessor's figures)	202,377	198,932
Persons per acre of land	13.61	13.38
Natural increase, excess of births over deaths	2,669	2,813
Rate per 1,000 population	13.19	14.14
Stillbirths	182	200
Rate per 1,000 live births	40.67	44.81
Births, excluding stillbirths	4,475	4,463
Rate per 1,000 population	22.11	22.44
Deaths, excluding stillbirths	1,806	1,650
Rate per 1,000 population	8.92	8.29
Deaths of infants under 1 year	284	273
Infantile mortality rate per 1,000 living births	63.46	61.17
Marriages	2,818	2,441
Rate per 1,000 population	13.92	12.27

TYPHOID FEVER MORTALITY RATES PER 100,000 POPULATION, 1904-1928

1904	1905	1906	1907	1908	1909	1910	1911	1912	1913	1914	1915	1916	1917	1918	1919	1920	1921	1922	1923	1924	1925	1926	1927	1928
248.3	222.6	146.5	51.0	40.6	38.4	31.6	17.1	10.8	9.7	7.9	3.5	9.5	8.2	7.6	10.3	5.7	5.1	1.5	2.5	3.1	3.1	4.0	3.0	1.0
Corrected Rate for City							7.9	5.4	4.3	3.9	2.0	7.5	6.0	6.5	7.4	.0	.0	.0	.5	1.0	1.0	1.0	1.5	.0

CRUDE MORTALITY RATES PER 100,000 POPULATION FOR LEADING CAUSES OF DEATH, 1911-28

Year	Population	Tuberculosis of Lungs (31)	Tuberculosis other forms (32-37)	Cancer all forms (43-49)	Meningitis (71)	Cerebral Haemorrhage (74)	Diseases of the Heart (87-90)	Diseases of the Arteries (91)	Acute and Chronic Bronchitis (99)	Pneumonia all forms (100-101)	Appendicitis and Typhlitis (117)	Hernia, Intestinal Obstruction (118)	Acute and Chronic Nephritis (128-129)	Puerperal Deaths (143-150)	External Causes (165-203)
1928	202,377	36.1	20.3	105.2	6.4	48.9	129.0	10.9	5.9	62.3	15.8	15.8	34.1	11.4	65.2
1927	198,932	37.2	9.5	102.5	5.0	38.1	112.6	10.1	5.5	75.5	16.1	11.1	30.7	12.6	57.8
1926	197,125	44.6	14.2	100.4	7.6	39.1	105.5	12.2	4.0	70.5	15.7	12.2	32.5	12.7	62.9
1925	195,148	41.5	11.8	95.3	7.2	41.5	84.0	9.7	7.2	68.1	20.0	9.2	33.8	12.8	57.9
1924	194,850	44.6	16.9	88.8	8.7	42.6	96.5	11.3	7.7	80.6	13.8	6.7	20.5	13.3	43.6
1923	199,300	48.2	16.0	82.3	6.0	28.6	87.8	13.5	5.5	77.3	9.5	9.5	28.6	13.0	52.2
1922	199,129	52.7	11.0	93.4	6.0	45.2	87.4	15.0	5.0	87.4	19.1	9.5	29.1	12.5	40.7
1921	196,947	50.8	26.4	87.3	8.1	32.0	91.9	15.7	4.6	84.8	14.2	4.6	18.3	10.7	46.7
1920	192,571	71.7	20.8	79.4	13.0	45.7	68.6	11.9	13.5	132.9	14.0	9.9	25.3	28.0	47.3
1919	183,378	72.0	24.5	73.1	10.9	30.5	72.0	9.8	18.0	105.2	17.4	13.6	33.3	15.3	57.2
1918	183,595	86.6	26.7	80.6	7.6	32.1	78.5	9.3	10.9	117.6	19.1	10.9	38.7	19.1	49.0
1917	182,848	74.4	24.1	62.4	14.2	24.6	72.2	19.7	13.7	114.8	14.2	4.9	31.2	19.7	41.0
1916	200,090	79.5	24.4	63.5	20.5	25.0	71.5	17.5	21.0	129.4	12.5	9.0	29.0	20.5	41.5
1915	201,981	79.2	16.8	48.5	17.3	20.8	59.9	15.3	21.8	91.1	13.4	11.4	28.2	12.9	52.9
1914	203,255	72.8	19.7	44.3	12.8	19.2	53.1	10.3	22.1	93.0	6.4	6.4	28.0	26.1	60.5
1913	184,730	71.4	26.0	51.4	21.6	21.6	68.2	11.9	13.0	109.9	10.3	8.7	35.7	21.1	68.2
1912	166,553	64.8	29.4	49.2	22.8	30.6	78.1	4.8	21.0	168.1	8.4	6.6	39.0	21.0	74.5
1911	151,958	71.0	27.7	46.7	18.4	19.1	65.2	4.6	13.8	138.2	9.2	9.9	36.8	13.8	62.5

STILLBIRTHS, LIVE BIRTHS AND DEATHS, BY MONTH AND SEX, 1928

1928	STILLBIRTHS				LIVE BIRTHS				DEATHS			
Month	Male	Female	1928 Totals	1927 Totals	Male	Female	1928 Totals	1927 Totals	Male	Female	1928 Totals	1927 Totals
January	7	3	10	18	200	200	400	361	61	77	138	163
February	8	7	15	14	186	164	350	336	87	61	148	186
March	9	7	16	21	213	187	400	424	74	57	131	139
April	13	6	19	10	212	201	413	377	88	80	168	135
May	6	8	14	13	185	210	395	370	85	83	168	116
June	9	8	17	26	167	175	342	373	80	62	142	126
July	10	7	17	15	190	187	377	396	74	63	137	95
August	5	12	17	16	192	192	384	401	74	76	150	118
September	6	7	13	16	177	156	333	343	74	72	146	147
October	9	14	23	12	190	192	382	345	81	66	147	155
November	6	3	9	20	181	170	351	364	75	53	128	121
December	7	5	12	19	164	184	348	373	121	82	203	149
Totals	95	87	182	200	2,257	2,218	4,475	4,463	974	832	1,806	1,650

Year	Population	Total Stillbirths	Rate per 1M Live Births	Total Live Births	Rate per 1M Population	Total Deaths	Rate per 1M Population
1928	202,377	182	40.7	4,475	22.11	1,806	8.92
1927	198,932	200	44.8	4,463	22.44	1,650	8.29
1926	197,125	156	35.1	4,444	22.54	1,698	8.61
1925	195,148	188	40.6	4,632	23.73	1,619	8.30
1924	194,850	223	46.8	4,762	24.44	1,544	7.78
1923	199,300	211	40.5	5,214	26.16	1,698	8.52
1922	199,129	252	44.8	5,629	28.27	1,801	9.04
1921	196,947	238	39.5	6,029	30.61	1,721	8.74
1920	192,571	251	40.6	6,174	32.06	2,270	11.79
1919	183,378	206	39.2	5,254	28.65	2,108	11.49
1918	183,595	245	43.6	5,621	30.61	2,706	14.74
1917	182,848	192	35.2	5,446	29.79	1,728	9.45
1916	200,090	254	42.5	5,980	29.88	2,072	10.35
1915	201,981	225	38.6	5,823	28.82	1,763	8.73
1914	203,255	257	44.4	5,789	28.48	1,955	9.62

DEATHS BY MONTH, SEX AND AGE PERIOD, 1928

	Under 1		1 to 2		3 to 4		5 to 9		10 to 19		20 to 29		30 to 39		40 to 49		50 to 59		60 to 69		70 to 79		80 to 89		90 to 99		Totals	
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
January	5	12	2	2	1	2	2	4	6	4	3	5	7	5	8	7	11	11	4	12	11	11	1	2	....	....	61	77
February	10	11	4	....	1	....	1	1	4	3	3	5	6	5	8	3	13	9	21	8	11	14	5	2	....	....	87	61
March	13	12	1	....	....	2	1	....	3	4	5	4	6	6	8	4	12	8	11	6	10	7	4	3	....	1	74	57
April	9	16	2	4	1	....	2	....	6	1	2	8	7	3	12	6	12	7	16	11	14	9	5	12	....	3	88	80
May	13	15	1	3	....	1	2	3	4	6	8	4	11	8	5	4	15	10	9	14	9	9	8	5	....	1	85	83
June	11	8	4	3	1	....	3	2	4	3	5	6	7	7	6	7	6	6	11	6	15	8	7	5	....	1	80	62
July	14	7	2	1	1	1	3	5	3	4	5	2	7	5	11	6	6	10	10	6	6	10	5	6	1	....	74	63
August	10	11	1	3	2	1	6	3	8	2	9	9	3	5	7	4	5	9	13	11	5	15	5	3	....	....	74	76
September	11	15	2	3	2	3	3	1	4	5	2	5	5	6	4	7	9	4	9	4	19	12	3	7	1	....	74	72
October	14	11	1	1	....	1	4	2	1	5	8	1	5	6	10	6	15	13	7	8	10	7	4	4	2	1	81	66
November	11	9	1	3	....	....	3	1	5	4	4	4	3	6	5	7	16	3	10	9	15	5	2	....	....	2	75	53
December	26	10	3	2	1	2	2	1	2	2	5	4	11	11	15	12	21	7	13	8	17	11	5	12	....	....	121	82
Totals	147	137	24	25	10	13	32	23	50	43	59	57	78	73	99	73	141	97	134	103	142	118	54	61	4	9	974	832
Combined Totals 1928	284		49		23		55		93		116		151		172		238		237		260		115		13		1,806	
Totals 1927	273		56		27		52		85		92		124		188		179		239		244		80		10	1*	1,650	
Percentages of Totals 1928	15.73		2.71		1.27		3.05		5.15		6.42		8.36		9.52		13.18		13.12		14.40		6.37		.72	.	100.0	
Totals 1927	16.55		3.39		1.64		3.15		5.15		5.58		7.51		11.39		10.85		14.48		14.79		4.85		.61	.06	100.0	

*Unknown.

Nativity of Decedents, 1928

Winnipeg	423	Hungary	6
Manitoba (rest of)	125	Poland	85
Alberta	4	Jugo Slavia	2
New Brunswick	9	Ukraine	4
Nova Scotia	20	Belgium	5
Ontario	289	Denmark	3
Prince Edward Island	7	Finland	2
Quebec	49	France	1
Cape Breton	2	Germany	12
Saskatchewan	10	Bohemia	3
Canada	19	Holland	2
British Columbia	1	Iceland	28
England and Wales	234	Italy	10
Channel Islands	1	Norway	9
Orkney Islands	1	Roumania	6
Isle of Man	1	Russia	88
Ireland	75	Sweden	21
Scotland	139	Switzerland	1
Bermuda	1	Asia	1
India	1	China	8
South Africa	1	Syria	1
New Zealand	1	United States	48
Australia	1	Unknown	10
Austria	32		
Galicia	4	Total	1,806

Summary

	Deaths		Per Cent. of Total	
	1928	1927	1928	1927
Canada	958	862	53.1	52.3
British Isles	451	416	25.0	25.2
Europe (excluding British Isles)	324	296	17.9	17.9
United States	48	51	2.7	3.1
Asia	11	5	.6	.3
Other Countries	4	–	.2	–
Unknown	10	20	.5	1.2
Totals	1,806	1,650	100.0	100.0

Ratio of Males to 100 Females, 1921-28

	1928	1927	1926	1925	1924	1923	1922	1921
Stillbirths	109	130	129	132	137	134	105	138
Live Births	102	110	110	108	100	106	103	107
Deaths	117	123	108	110	113	118	115	110

Social Status of Decedents, 1928

	Male	Female	Totals	% of Total
Single, under 16 years	243	223	466	25.8
Single, 16 years and over	155	85	240	13.3
Total: Single	398	308	706	39.1
Married	446	331	777	43.0
Widowed	122	193	315	17.4
Divorced	1	0	1	.1
Unknown	7	0	7	.4
	974	832	1,806	100.0

Plural Births

Twin Births	62	51	50	48	57	58	74	89
Triple Births	.....	.....	1	.....	.....	.....	1	.....

Attendant at Birth

(Excluding Stillbirths—1925-28)

	1928		1927	1926	1925	1920
Physicians	4,344	97.1%	95.7%	95.2%	94.5%	89.0%
Midwives	129	2.9%	4.3%	3.8%	5.5%	11.0%
Unattended	2					
Unknown	.....					

Order of Birth, 1928

First Child	1,659	Eleventh Child	14
Second Child	1,031	Twelfth Child	19
Third Child	652	Thirteenth Child	11
Fourth Child	400	Fourteenth Child	6
Fifth Child	245	Fifteenth Child	5
Sixth Child	171	Sixteenth Child	1
Seventh Child	120	Unknown	7
Eighth Child	61		
Ninth Child	44	Total Live Births	4,475
Tenth Child	29		

First Children	37.1%
Second Children	23.0%
Third Children	14.6%
Fourth Children	8.9%
Fifth to Sixteenth Children	16.4%
	100.0%

Infants Born Out of Wedlock, 1921-28

(Including Stillbirths)

	1928	1927	1926	1925	1924	1923	1922	1921
Infants born out of Wedlock	358	351	313	279	284	280	299	317
Per Cent. of Total Births	7.7	7.5	6.8	5.8	5.7	5.4	5.3	5.0

Stillbirths According to Nationality of Mothers, 1921-28

(Rates per 1,000 Live Births)

	1928	1927	1926	1925	1924	1923	1922	1921
Canadian	46	38	27	34	46	40	37	48
British	31	48	41	45	49	45	42	33
Southern and Central European	43	54	46	45	49	32	51	34

Infant Mortality, 1910-28

	No. Births	No. Deaths	Rates per 1,000 Live Births
1928	4,475	284	63.4
1927	4,463	273	61.2
1926	4,444	314	70.6
1925	4,632	315	68.0
1924	4,762	323	67.8
1923	5,214	416	79.8
1922	5,629	500	88.8
1921	6,029	471	78.1
1920	6,174	625	101.2
1919	5,254	562	106.9
1918	5,621	516	91.8
1917	5,446	545	100.1
1916	5,980	700	117.0
1915	5,823	619	106.3
1914	5,789	729	125.9
1913	5,577	947	169.8
1912	4,870	1,006	206.6
1911	4,469	762	170.5
1910	3,772	628	166.5

Infant Mortality According to Nationality of Mothers, 1924-28

(Excluding Stillbirths)

	1928		Rates per 1,000 Live Births				
Nationality	Live Births	Deaths	1928	1927	1926	1925	1924
Canadian	1,835	121	66	64	78	59	62
English and Welsh	758	55	73	52	56	70	65
Irish	150	9	60	65	58	54	86
Scottish	387	19	49	43	67	82	48
American (U.S.A.)	176	5	28	80	57	40	41
Scandinavian	89	5	56	56	59	70	66
Southern and Central European	1,052	67	64	62	75	65	78
All Others	28	3	.....	.....	.....	.....	.....

Infant Mortality—Cause of Death

Number of Deaths

	1928	1927	1912
Acute Communicable Diseases	5	9	28
Other general diseases	19	25	80
Of nervous system and of organs of special sense	11	7	78
Of respiratory system	40	53	147
Of digestive system	31	40	399
Malformations and diseases of early infancy	173	131	251
All other diseases	5	8	23
	284	273	1,006

Rates per 1,000 Live Births

	1928	1927	1912
Acute communicable diseases	1.1	2.0	5.8
Other general diseases	4.2	5.6	16.4
Of nervous system and of organs of special sense	2.5	1.6	16.0
Of respiratory system	8.9	11.9	30.2
Of digestive system	6.9	9.0	81.9
Malformations and diseases of early infancy	38.7	29.3	51.6
All other diseases	1.1	1.8	4.7
	63.4	61.2	206.6

Per Cent of Total

	1928	1927	1912
Acute communicable diseases	1.8	3.3	2.8
Other general diseases	6.7	9.2	7.9
Of nervous system and of organs of special sense	3.8	2.6	7.8
Of respiratory system	14.1	19.4	14.6
Of digestive system	10.9	14.6	39.6
Malformations and diseases of early infancy	60.9	48.0	25.0
All other diseases	1.8	2.9	2.3
Totals	100.0	100.0	100.0

Classification of Ages of Decedents Under One Year of Age

1928

	No. of Deaths	Rate per 1,000 Births	Per Cent. of Total
Minutes to 1 week	138	30.8	48.6
Over 1 to 2 weeks	18	4.0	6.3
Over 2 to 3 weeks	5	1.1	1.8
Over 3 weeks to 1 month	7	1.6	2.5
Minutes to 1 month	168	37.5	59.2
Over 1 to 2 months	25	5.6	8.8
Over 2 to 3 months	22	4.9	7.7
Minutes to 3 months	215	48.0	75.7
Over 3 to 6 months	38	8.5	13.4
Over 6 to 9 months	14	3.1	4.9
Over 9 and under 12 months	17	3.8	6.0
	284	63.4	100.0

For comparison with the above, the final figures for the years 1927 and 1912 are given below:

1927

	No. of Deaths	Rate per 1,000 Births	Per Cent. of Total
Minutes to 3 months	189	42.3	69.2
Over 3 to 6 months	36	8.1	13.2
Over 6 to 9 months	23	5.2	8.4
Over 9 and under 12 months	25	5.6	9.2
	273	61.2	100.0

1912

	No. of Deaths	Rate per 1,000 Births	Per Cent. of Total
Minutes to 3 months	630	129.4	62.6
Over 3 to 6 months	189	38.8	18.8
Over 6 to 9 months	125	25.7	12.4
Over 9 and under 12 months	62	12.7	6.2
	1,006	206.6	100.0

Infant Mortality Statistics

For further particulars regarding infantile mortality, see report of the Manager, Bureau of Child Hygiene, pages 128 to 137.

1928 CAUSE OF DEATH (By Sex and Age)	SEX		AGE IN YEARS														
	Male	Female	Under 1	1 to 2	3 to 4	5 to 9	10 to 19	20 to 29	30 to 39	40 to 49	50 to 59	60 to 69	70 to 79	80 to 89	90 to 99	100 to 109	Totals
1.—Epidemic, Endemic, and Infectious Diseases																	
1 Typhoid and paratyphoid fever:																	
(a) Typhoid fever	.....	2	.....	.....	.....	.....	.....	.....	1	.....	1	.....	.....	.....	.....	.....	2
7 Measles	5	2	2	5	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	7
8 Scarlet fever	2	1	.....	1	.....	1	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	3
9 Whooping-cough	2	2	2	1	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	4
10 Diphtheria	8	14	.....	4	6	9	1	1	.....	1	.....	.....	.....	.....	.....	.....	22
11 Influenza:																	
(a) With pulmonary complications specified	8	10	.....	.....	.....	1	1	1	4	2	.....	4	4	1	.....	.....	18
(b) Without pulmonary complications specified	2	4	1	1	.....	1	.....	.....	1	.....	.....	.....	2	.....	.....	.....	6
Totals, Nos. 1 to 11	27	35	5	12	7	12	3	2	6	3	1	4	6	1	.....	.....	62
21 Erysipelas	5	2	3	1	.....	.....	1	.....	.....	.....	1	.....	1	.....	.....	.....	7
22 Acute anterior poliomyelitis	11	6	.....	.....	1	6	8	2	.....	.....	.....	.....	.....	.....	.....	.....	17
23 Lethargic encephalitis	2	2	.....	.....	.....	.....	2	.....	.....	1	.....	.....	1	.....	.....	.....	4
24 Meningococcus meningitis	1	1	.....	.....	1	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	2
30 Mycoses	1	.....	.....	.....	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	1
31 Tuberculosis of the respiratory system	45	28	2	.....	.....	.....	5	22	15	12	11	4	2	.....	.....	.....	73
32 Tuberculosis of the meninges and central nervous system	13	6	5	4	.....	2	5	2	1	.....	.....	.....	.....	.....	.....	.....	19
33 Tuberculosis of the intestines and peritoneum	.....	9	.....	1	.....	.....	2	3	2	1	.....	.....	.....	.....	.....	.....	9

1928 CAUSE OF DEATH (By Sex and Age)	SEX		AGE IN YEARS														
	Male	Female	Under 1	1 to 2	3 to 4	5 to 9	10 to 19	20 to 29	30 to 39	40 to 49	50 to 59	60 to 69	70 to 79	80 to 89	90 to 99	100 to 109	Totals
34 Tuberculosis of the vertebral column	1	1					1		1								2
36 Tuberculosis of other organs:																	
(c) Tuberculosis of lymphatic system (mesenteric and retroperitoneal glands excepted)	1												1				1
(d) Tuberculosis of the genitourinary system	3	1					1		2		1						4
37 Disseminated tuberculosis:																	
(a) Acute	2	4	1	2	1			1	1								6
Totals, Nos. 31 to 37	65	49	8	7	1	2	14	28	22	13	12	4	3				114
38 Syphilis	6	5	4	1			1	1	2		2						11
40 Gonococcus infection		2	1							1							2
41 Purulent infection, septicemia	6	4		1		1	3		1		1	1	1	1			10
Totals, Class I	124	106	21	22	10	21	34	33	31	18	17	9	12	2			230
II.—General Diseases Not Included in Class I.																	
43 Cancer and other malignant tumors of the buccal cavity	5									1	1	1	1	1			5
44 Cancer and other malignant tumors of the stomach, liver	55	32							4	9	22	26	24	2			87
45 Cancer and other malignant tumors of the peritoneum, intestines, rectum	13	13						1	2	5	6	4	6	1	1		26
46 Cancer and other malignant tumors of the female genital organs		23							2	6	5	7	2	1			23
47 Cancer and other malignant tumors of the breast	1	23						3		4	5	6	6				24
48 Cancer and other malignant tumors of the skin	2									1	1						2

49	Cancer and other malignant tumors of other or unspecified organs	30	16	.....	1	1	2	1	1	3	1	8	14	10	4	.....	.....	46
	Totals, Nos. 43 to 49	106	107	.....	1	1	2	1	5	11	27	48	58	49	9	1	.....	213
50	Benign tumors and tumors not returned as malignant (tumors of the female genital organs excepted)	.....	1	.....	.....	.....	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	1
51	Acute rheumatic fever	5	7	.....	.....	.....	3	3	3	1	1	.....	1	.....	.....	.....	.....	12
52	Chronic rheumatism, osteoarthritis, gout	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	1
56	Rickets	1	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1
57	Diabetes mellitus	12	10	.....	.....	.....	1	1	2	2	2	4	3	5	2	.....	.....	22
58	Anemia, cholorosis:																	
	(a) Pernicious anemia	4	5	.....	.....	.....	.....	.....	.....	.....	2	3	3	1	.....	.....	.....	9
	(b) Other anemias and chlorosis	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	1
59	Diseases of the pituitary gland	1	.....	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	1
60	Diseases of the thyroid gland:																	
	(a) Exophthalmic goiter	2	6	.....	.....	.....	.....	1	2	.....	.....	4	1	.....	.....	.....	.....	8
	(b) Other diseases of the thyroid gland	3	2	.....	.....	.....	.....	.....	1	1	1	2	.....	.....	.....	.....	.....	5
62	Diseases of the thymus gland	1	1	1	.....	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	2
63	Diseases of the adrenals (Addison's disease)	1	2	.....	.....	.....	.....	.....	.....	2	1	.....	.....	.....	.....	.....	.....	3
65	Leukemia and Hodgkin's disease:																	
	(a) Leukemia	7	3	.....	1	1	.....	1	1	.....	2	1	3	.....	.....	.....	.....	10
	(b) Hodgkin's disease	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	.....	.....	1
66	Alcoholism (acute or chronic)	1	2	.....	.....	.....	.....	.....	1	.....	.....	2	.....	.....	.....	.....	.....	3
68	Chronic poisoning by organic substances	1	.....	.....	.....	.....	.....	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	1
69	Other general diseases	1	4	1	.....	1	1	1	.....	1	.....	.....	.....	.....	.....	.....	.....	5
	Totals, Class II.	148	151	3	2	3	7	9	16	20	36	65	69	57	11	1	.....	299
III.	**Diseases of the Nervous System and of the Organs of Special Sense**																	
70	Encephalitis	.....	2	.....	.....	.....	.....	.....	.....	.....	1	.....	1	.....	.....	.....	.....	2
71	Meningitis:																	
	*(a) Simple Meningitis	5	5	3	.....	3	1	.....	.....	2	1	.....	.....	.....	.....	.....	.....	10
	*(b) Nonepidemic cerebrospinal meningitis	2	1	2	.....	.....	.....	.....	1	.....	.....	.....	.....	.....	.....	.....	.....	3

1928 CAUSE OF DEATH (By Sex) and Age	SEX		AGE IN YEARS														
	Male	Female	Under 1	1 to 2	3 to 4	5 to 9	10 to 19	20 to 29	30 to 39	40 to 49	50 to 59	60 to 69	70 to 79	80 to 89	90 to 99	100 to 109	Totals
72 Tabes dorsalis (locomotor ataxia)	1									1							1
73 Other diseases of the spinal cord	2	2					1			1	1		1				4
74 Cerebral hemorrhage, apoplexy:																	
(a) Cerebral hemorrhage	37	49								6	20	26	22	11	1		86
(b) Cerebral embolism and thrombosis	7	6					1			1	2	5	2	2			13
75 Paralysis without specified cause:																	
(a) Hemiplegia	2	3								1	2		2				5
76 General paralysis of the insane	2	1						1			1			1			3
77 Other forms of mental alienation	2	1						1		1	1						3
78 Epilepsy	1		1														1
79 Convulsions (nonpuerperal; 5 years and over)	1												1				1
80 Infantile convulsions (under 5 years of age)	1	2	2	1													3
82 Neuralgia and neuritis		1										1					1
83 Softening of the brain	2	1											3				3
84 Other diseases of the nervous system	11	6						1	3	6	4		3				17
86 Diseases of the ear and of the mastoid process:																	
*(a) Diseases of the ear	4	3	2			1		2	1	1							7
*(b) Diseases of the mastoid process	7	4	1	1		2	2		3	1	1						11
Totals, Class III	87	87	11	2	3	4	4	6	9	21	32	33	34	14	1		174

	IV.—Diseases of the Circulatory System																	
87	Pericarditis		1	1														1
88	Endocarditis and myocarditis (acute)	15	10				3	2	5	9	4	2						25
89	Angina pectoris	14	7								2	4	4	9	2			21
90	Other diseases of the heart	109	105			1	1	9	7	11	18	31	52	47	33	4		214
91	Diseases of the arteries:																	
	(a) Aneurysm	8	1							1	2	3	1	1	1			9
	(b) Arteriosclerosis	8	2										2	3	4	1		10
	(c) Other diseases of the arteries	2	1										2		1			3
92	Embolism and thrombosis (not cerebral)	19	11							1	2	8	8	9	2			30
93	Diseases of veins ((varices, hemorrhoids, phlebitis, etc.)	1	2									1	1	1				3
95	Hemorrhage without specified cause	1	1					1	1									2
	Totals, Class IV	177	141	1		1	4	12	13	22	28	49	70	70	43	5		318
	V.—Diseases of the Respiratory System																	
97	Diseases of the nasal fossae and their annexa:																	
	*(b) Others under this title	1								1								1
98	Diseases of the larynx	2								1					1			2
99	Bronchitis:																	
	(a) Acute		1												1			1
	(b) Chronic	3	3						1				2	2	1			6
	(c) Unspecified (under 5 years of age)	1		1														1
	(d) Unspecified (5 years and over)	3	1								1			2	1			4
100	Bronchopneumonia:																	
	*(a) Bronchopneumonia	33	28	28	6	1	1		1	2	3	1	5	6	7			61
	*(b) Capillary bronchitis		1												1			1
101	Pneumonia:																	
	(a) Lobar	36	21	11	5	1		3	3	4	10	4	5	9	2			57
	(b) Unspecified	3	4			1			1					3	1	1		7
102	Pleurisy	3	1							1		2		1				4
103	Congestion and hemorrhagic infarct of the lung	2	2											3	1			4

1928 CAUSE OF DEATH (By Sex and Age)		SEX		AGE IN YEARS														
		Male	Female	Under 1	1 to 2	3 to 4	5 to 9	10 to 19	20 to 29	30 to 39	40 to 49	50 to 59	60 to 69	70 to 79	80 to 89	90 to 99	100 to 109	Totals
105	Asthma	1													1			1
107	Other diseases of the respiratory system (T.B. excepted)																	
	(b) Diseases of the mediastinum	1									1							1
	(c) Others under this title	4	2					1	1		3	1						6
	Totals, Class V	93	64	40	11	3	1	4	7	9	18	8	12	26	17	1		157
	VI.—Diseases of the Digestive System																	
109	Diseases of the pharynx and tonsils (including adenoid vegetations:																	
	*(b) Others under this title	2	2		2		1			1								4
110	Diseases of the esophagus		1											1				1
111	Ulcer of the stomach and duodenum:																	
	(a) Ulcer of the stomach	5	4								2	5	1	1				9
	(b) Ulcer of the duodenum	9	1						1	4	3	1		1				10
112	Other diseases of the stomach (cancer excepted)	2	5								1			2	3	1		7
113	Diarrhea and enteritis (under 2 years of age)	16	15	28	3													31
114	Diarrhea and enteritis (2 years and over)	4	4		2		1		1				1	3				8
117	Appendicitis and typhlitis	22	10		1		3	9	2	9	2	5		1				32
118	Hernia, intestinal obstruction:																	
	(a) Hernia	3	1									2		2				4
	(b) Intestinal obstruction	10	10	2	1	1	2	2	1		3	3	2	2	1			20
119	Other diseases of the intestines	2	3				1				1	2	1					5
122	Cirrhosis of the liver:																	
	(b) Not specified as alcoholic	7	3					1		2	1	3	1	2				10
123	Biliary calculi		3								1	1			1			3

124	Other diseases of the liver	4	7					2	2		1	2	3	1			11
125	Diseases of the pancreas	1	2							1			1	1			3
126	Peritonitis without specified cause	2	4	1				1	1			1	2				6
	Totals, Class VI	89	75	31	9	1	8	15	8	17	15	25	12	17	5	1	164
	VII.—Nonvenereal Diseases of the Genitourinary System and Annexa																
128	Acute nephritis (inc. unspecified under 10 years of age)		1				1										1
129	Chronic nephritis (inc. unspecified 10 years and over)	33	35					3	3	4	10	13	13	16	6		68
131	Other diseases of the kidneys and annexa	6	1				1			1			3	1	1		7
133	Diseases of the bladder	1	1											2			2
135	Diseases of the prostate	13										2	2	8		1	13
137	Cysts and other benign tumors of the ovary		2									1	1				2
138	Salpingitis and pelvic abscess (female)		4						1	2			1				4
139	Benign tumors of the uterus		2								1	1					2
141	Other diseases of the female genital organs		3						1	1		1					3
	Totals, Class VII	53	49				2	3	5	8	11	18	20	27	7	1	102
	VIII.—The Puerperal State																
143	Accidents of pregnancy:																
	(a) Abortion		1							1							1
	(b) Ectopic gestation		1								1						1
	(c) Others under this title		1							1							1
144	Puerperal hemorrhage		2						2								2
145	Other accidents of labor:																
	*(c) Others under this title		1							1							1
146	Puerperal septicemia		10					1	1	4	4						10
147	Puerperal phlegmasia, alba dolens, embolus, sudden death		2						1	1							2
148	Puerperal albuminuria and convulsions		5					2	2	1							5
	Totals, Class VIII		23					3	6	9	5						23
	IX.—Diseases of the Skin and of the Cellular Tissue																
151	Gangrene	5	5							2				4	4		10
153	Acute abscess	1	1										1	1			2
154	Other diseases of the skin and annexa	1		1													1
	Totals, Class IX	7	6	1						2			1	5	4		13

1928 CAUSE OF DEATH (By Sex and Age)	SEX		AGE IN YEARS														
	Male	Female	Under 1	1 to 2	3 to 4	5 to 9	10 to 19	20 to 29	30 to 39	40 to 49	50 to 59	60 to 69	70 to 79	80 to 89	90 to 99	100 to 109	Totals
X.—Diseases of the Bones and of the Organs of Locomotion																	
155 Diseases of the bones (tuberculosis excepted)	4	1							1	1	2	1					5
156 Diseases of the joints (T.B. and rheumatism excepted)	1						1										1
Totals Class X	5	1					1		1	1	2	1					6
XI.—Malformations																	
159 Congenital malformations (stillbirths not included)																	
*(a) Congenital hydrocephalus	4	3	7														7
*(b) Congenital malformations of the heart	4	8	12														12
*(c) Others under this title	7	7	14														14
Totals, Class XI	15	18	33														33
XII.—Early Infancy																	
160 Congenital debility, icterus, and sclerema	12	6	18														18
161 Premature birth; Injury at birth:																	
*(a) Premature birth (not stillborn)	44	37	81														81
(b) Injury at birth (not stillborn)	8	15	23														23
162 Other diseases peculiar to early infancy	6	12	18														18
Totals, Class XII	70	70	140														140
XIII.—Old Age																	
164 Senility	6	8											5	6	3		14
Totals, Class XIII	6	8											5	6	3		14
XIV.—External Causes																	
165 Suicide by solid or liquid poisons (corrosive substances excepted)		1						1									1
166 Suicide by corrosive substances	1	1									1	1					2
167 Suicide by poisonous gas	2							1	1	1							3

168	Suicide by hanging or strangulation	3	1						1		1	1		1				4
169	Suicide by drowning	2	1						1		1	1						3
170	Suicide by firearms	6	1						3	3	1							7
171	Suicide by cutting or piercing instruments	1	3						1	3								4
172	Suicide by jumping from high places		1							1								1
177	Other acute accidental poisonings (gas excepted)	10							2	2	2	3	1					10
178	Conflagration	3	2						1	1		1	1		1			5
179	Accidental burns (conflagration excepted)	3	3		2	1	1		1	1								6
180	Accidental mechanical suffocation	1		1														1
181	Accidental absorption of irrespirable, irritating, or poisonous gas	4	1				2			1	2							5
182	Accidental drowning	1	1				1	1										2
183	Accidental traumatism by firearms (wounds of war,ex.)	1	1							1		1						2
184	Accidental traumatism by cutting or piercing instruments		1											1				1
185	Accidental traumatism by fall	11	7				1				2	4	3	4	4			18
187	Accidental traumatism by machines	3							1	1	1							3
188	Accidental traumatism by other crushing (vehicles, railways, landslides, etc.)																	
	*(a) Railroad accidents	12	1					2	3	3	1	3			1			13
	*(b) Street-car Accidents	4					1				1	1	1					4
	*(c) Automobile accidents	19	4		1	1	1	3	3	1	5	5	2	1				23
	*(f) Injuries by other vehicles	1											1					1
	*(g) Landslides, other crushing	2					1		1									2
196	Other accidental electric shocks	3							2	1								3
197	Homicide by firearms	2								1		1						2
198	Homicide by cutting or piercing instruments	1								1								1
199	Homicide by other means	1	1					2										2
202	Other external violence	3		1						1	1							3
	Totals, Class XIV	101	31	2	3	2	8	8	22	23	19	22	10	7	6			132
	XV.—Ill Defined Diseases																	
205	Cause of death not specified or ill-defined:																	
	*(b) Not specified or unknown		1	1														1
	Totals, Class XV.		1	1														1
	Grand Totals	974	832	284	49	23	55	93	116	151	172	239	237	260	115	13		1806

	1928 CAUSE OF DEATH (By Month)	January	February	March	April	May	June	July	August	September	October	November	December	Totals
	I.—Epidemic, Endemic, and Infectious Diseases													
1	Typhoid and paratyphoid fever:													
	(a) Typhoid fever				1			1						2
7	Measles			1		2	1	1	1	1				7
8	Scarlet fever		1								1	1		3
9	Whooping-cough				1						1	1	1	4
10	Diphtheria	3	3		2	2		2	4	1	2	2	1	22
11	Influenza:													
	(a) With pulmonary complications specified	2	1	1		1	2					2	9	18
	(b) Without pulmonary complications specified		1						1		1		3	6
	Totals, Nos. 1 to 11	5	6	2	4	5	3	4	6	2	5	6	14	62
21	Erysipelas	1		2		2							2	7
22	Acute anterior poliomyelitis							3	9	3	1	1		17
23	Lethargic encephalitis	1				1			1				1	4
24	Meningococcus meningitis		1			1								2
30	Mycoses	1												1
31	Tuberculosis of the respiratory system	2	5	8	6	11	9	5		1	9	8	9	73
32	Tuberculosis of the meninges and central nervous system		1	2	3	3	4	1	2	1	1	1		19
33	Tuberculosis of the intestines and peritoneum				1	1	1	1	2	1		2		9
34	Tuberculosis of the vertebral column		1			1								2
36	Tuberculosis of other organs:													
	(c) Tuberculosis of lymphatic system (mesenteric and retroperitoneal glands excepted										1			1
	(d) Tuberculosis of the genitourinary system	1	1		1	1								4

37	Disseminated tuberculosis: (a) Acute	1	1			1		1		1			1	6
	Totals, Nos. 31 to 37	4	9	10	11	18	14	8	4	4	11	11	10	114
38	Syphilis		1		3	1				1		2	3	11
40	Gonococcus infection	1								1				2
41	Purulent infection, septicemia		2	1	1		1			1	1	3		10
	Totals, Class 1	13	19	15	19	28	18	15	20	12	18	23	30	230
	II.—General Diseases not Included in Class I													
43	Cancer and other malignant tumors of the buccal cavity				1	2			1				1	5
44	Cancer and other malignant tumors of the stomach, liver	4	13	7	6	12	7	4	7	10	4	5	8	87
45	Cancer and other malignant tumors of the peritoneum, intestines, rectum	4	1	1	3	4	2	2	1	3		3	2	26
46	Cancer and other malignant tumors of the female genital organs	3	1	1		3	3		4	2	3	2	1	23
47	Cancer and other malignant tumors of the breast	3		3	3		2	2	6	1	2	1	1	24
48	Cancer and other malignant tumors of the skin	1					1							2
49	Cancer and other malignant tumors of other or unspecified organs	6	2	4	5	6	5	4	2	6	2	2	2	46
	Totals, Nos. 43 to 49	21	17	16	18	27	20	12	21	22	11	13	15	213
50	Benign tumors and tumors not returned as malignant (tumors of the female genital organs excepted)		1											1
51	Acute rheumatic fever	2	1	2		2	1	1	1			1	1	12
52	Chronic rheumatism, osteoarthritis, gout	1												1

1928 CAUSE OF DEATH (By Month)	January	February	March	April	May	June	July	August	September	October	November	December	Totals
56 Rickets					1								1
57 Diabetes mellitus	3		1	3	2	1	2	4	2	1	1	2	22
58 Anemia, cholorosis:													
(a) Pernicious anemia	1				2		1			1	2	2	9
(b) Other anemias and cholorosis						1							1
59 Diseases of the pituitary gland								1					1
60 Diseases of the thyroid gland:													
(a) Exopthalmic goiter	1			1		2	1	2		1			8
(b) Other diseases of the thyroid gland	1	1		1						1	1		5
62 Diseases of the thymus gland					1				1				2
63 Diseases of the adrenals (Addison's disease)					1		1			1			3
65 Leukemia and Hodgkin's disease:													
(a) Leukemia	1	1	1	1	1		2	2			1		10
(b) Hodgkin's disease				1									1
66 Alcoholism (acute or chronic)					1	1						1	3
68 Chronic poisoning by organic substances											1		1
69 Other general diseases							1		1		1	2	5
Totals, Class II	31	21	20	25	38	26	21	31	26	16	21	23	299
III.—Diseases of the Nervous System and of the Organs of Special Sense													
70 Encephalitis	1							1					2
71 Meningitis:													
*(a) Simple meningitis			2			1	1	1		2	1	2	10
*(b) Nonepidemic cerebrospinal meningitis				1			1				1		3

72	Tabes dorsalis (locomotor ataxia)												1	1
73	Other diseases of the spinal cord	2			1				1					4
74	Cerebral hemorrhage, apoplexy:													
	(a) Cerebral hemorrhage	4	8	6	8	9	6	4	6	10	7	6	12	86
	(b) Cerebral embolism and thrombosis		3		1	3		1	1	2	1	1		13
75	Paralysis without specified cause:													
	(a) Hemiplegia	1		1	1				1		1			5
76	General paralysis of the insane	1			1	1								3
77	Other forms of mental alienation								1		1		1	3
78	Epilepsy			1										1
79	Convulsions (nonpuerperal; 5 years and over)					1								1
80	Infantile convulsions (under 5 years of age)				1			1	1					3
82	Neuralgia and neuritis						1							1
83	Softening of the brain			1									2	3
84	Other diseases of the nervous system	2		2	2	1		2	1	1	2	1	3	17
86	Diseases of the ear and of the mastoid process:													
	*(a) Diseases of the ear	1		2			2					2		7
	*(b) Diseases of the mastoid process	3			1	3	1		1		1		1	11
	Totals, Class 111	15	11	15	17	18	11	10	15	13	15	12	22	174
	IV.—Diseases of the Circulatory System													
87	Pericarditis							1						1
88	Endocarditis and myocardiidts (acute)		2		2	1	1	4		2	4	5	4	25
89	Angina pectoris	1	3	2	2		2	3	1	3	1	1	2	21
90	Other diseases of the heart	16	19	16	27	20	14	19	20	13	16	11	23	214
91	Diseases of the arteries:													
	(a) Aneurysm	1	1			1	1	1	1	1	1		1	9
	(b) Arteriosclerosis	1	1	2			1	1		1	2	1		10
	(c) Other diseases of the arteries						2			1				3
92	Embolism and thrombosis (not cerebral)	2			3	3	4	2	2	4	5	1	4	30
93	Diseases of veins (varices, hemorrhoids, phlebitis, etc.)	2	1											3

	1928 CAUSE OF DEATH (By Month)	January	February	March	April	May	June	July	August	September	October	November	December	Totals
95	Hemorrhage without specified cause								2					2
	Totals, Class IV	23	27	20	34	25	25	31	26	25	29	19	34	318
	V.—Diseases of the Respiratory System													
97	Diseases of the nasal fossae and their annexa:													
	*(b) Others under this title					1								1
98	Diseases of the larynx	1					1							2
99	Bronchitis													
	(a) Acute												1	1
	(b) Chronic	2		1						1		2		6
	(c) Unspecified (under 5 years of age)												1	1
	(d) Unspecified (5 years and over)						1		1	1			1	4
100	Bronchopneumonia:													
	*(a) Bronchopneumonia	1	7	5	7	6	4	6	2	1	6	3	13	61
	*(b) Capillary bronchitis										1			1
101	Pneumonia:													
	(a) Lobar	3	4	5	8	3	2	2	5	2	6	5	12	57
	(b) Unspecified					1		2	1			1	2	7
102	Pleurisy		2			1	1							4
103	Congestion and hemorrhagic infarct of the lung	1			2								1	4

105 Asthma									1				1
107 Other Diseases of the respiratory system (T.B. excepted):													
(b) Diseases of the mediastinum			1										1
(c) Others under this title	2	1							1	1		1	6
Totals, Class V.	10	14	12	17	12	9	10	9	7	14	11	32	157
VI.—Diseases of the Digestive System													
109 Diseases of the pharynx and tonsils (including adenoid vegetations)													
*(b) Others under this title				2		2							4
110 Diseases of the esophagus			1										1
111 Ulcer of the stomach and duodenum													
(a) Ulcer of the stomach		1	2	1			1			1		3	9
(b) Ulcer of the duodenum	1	1	2	1	1	1			1		2		10
112 Other diseases of the stomach (cancer excepted)				2			1		2	1	1		7
113 Diarrhea and enteritis (under 2 years of age)	1	1	1	2	2	1	1	4	9	5	2	2	31
114 Diarrhea and enteritis (2 years and over)			1					1	5			1	8
117 Appendicitis and typhlitis	2	1	4	5	3	3	2	1	3	3	2	3	32
118 Hernia, intestinal obstruction:													
(a) Hernia		1	2							1			4
(b) Intestinal obstruction	1	4	2	1	1	2	2	1	1	3	2		20

1928 CAUSE OF DEATH (By Month)		January	February	March	April	May	June	July	August	September	October	November	December	Totals
119	Other diseases of the intestines			1			1	2	1					5
122	Cirrhosis of the liver													
	(b) Not specified as alcoholic	1					1	1	1	1	3	1	1	10
123	Biliary calculi	1					1		1					3
124	Other diseases of the liver	2	2	1	1			3				1	1	11
125	Diseases of the pancreas						1	1					1	3
126	Peritonitis without specified cause	2	2		1	1								6
	Totals, Class VI.	11	13	17	16	8	13	14	10	22	17	11	12	164
VII.—Nonvenereal Diseases of the Genitourinary System and Annexa														
128	Acute nephritis (inc. unspecified under 10 years of age)							1						1
129	Chronic nephritis (inc. unspecified 10 years and over)	6	11	2	5	4	5	8	7	5	4	3	8	68
131	Other diseases of the kidneys and annexa			1			1	1	2			1	1	7
133	Diseases of the bladder						1					1		2
135	Diseases of the prostate	2	1	1		1	1			3		2	2	13
137	Cysts and other benign tumors of the ovary		1				1							2
138	Salpingitis and pelvic abscess (female)	1	2			1								4
139	Benign tumors of the uterus										1		1	2

141 Other diseases of the female genital organs			1	1					1				3
Totals, Class VII	9	15	5	6	6	9	10	9	9	5	7	12	102
VIII.—The Puerperal State													
143 Accidents of pregnancy:													
(a) Abortion		1											1
(b) Ectopic gestation		1											1
(c) Others under this title								1					1
144 Puerperal hemorrhage	1			1									2
145 Other accidents of labor:													
*(c) Others under this title	1												1
146 Puerperal septicemia			2	1			2			3	1	1	10
147 Puerperal phlegmasia, alba dolens, embolus, sudden death	1				1								2
148 Puerperal albuminuria and convulsions								1	2	2			5
Totals, Class VIII	3	2	2	2	1		2	2	2	5	1	1	23
IX.—Diseases of the Skin and of the Cellular Tissue													
151 Gangrene		2		2	1	3			2				10
153 Acute abscess	1						1						2
154 Other diseases of the skin and annexa												1	1
Totals, Class IX	1	2		2	1	3	1		2			1	13

1928 CAUSE OF DEATH (By Month)	January	February	March	April	May	June	July	August	September	October	November	December	Totals
X.—Diseases of the Bones and of the Organs of Locomotion													
155 Diseases of the bones (tuberculosis excepted)					1	1					1	2	5
156 Diseases of the joints (T.b. and rheumatism excepted)								1					1
Totals, Class X					1	1		1			1	2	6
XI.—Malformations													
159 Congenital malformations (stillbirths not included):													
*(a) Congenital hydrocephalus		1				1			1	2	1	1	7
*(b) Congenital malformations of the heart	2		1		2	1	2	2			1	1	12
*(c) Others under this title	1	1	1	1		1	2	3	1	2	1		14
Totals, Class XI	3	2	2	1	2	3	4	5	2	4	3	2	33
XII.—Early Infancy													
160 Congenital debility, icterus, and sclerema	3	1	1	1	1			1		2	2	6	18
161 Premature birth; Injury at birth:													
*(a) Premature birth (not stillborn)	4	3	7	5	10	6	9	8	7	6	5	11	81
*(b) Injury at birth (not stillborn)	2	2	2	4	3	2		1	4	1	1	1	23
162 Other diseases peculiar to early infancy	1	3	3	1	1	3	1	1	3			1	18
Totals, Class XII	10	9	13	11	15	11	10	11	14	9	8	19	140
XIII.—Old Age													
164 Senility			2	3	1	3			3		2		14
Totals, Class XIII			2	3	1	3			3		2		14

	XIV.—External Causes													
165	Suicide by solid or liquid poisons (corrosive substances excepted)												1	1
166	Suicide by corrosive substances		1		1									2
167	Suicide by poisonous gas	1				1			1					3
168	Suicide by hanging or strangulation		2				1						1	4
169	Suicide by drowning							2	1					3
170	Suicide by firearms	2			1		1	1				1	1	7
171	Suicide by cutting or piercing instruments						1	1		1			1	4
172	Suicide by jumping from high places					1								1
177	Other acute accidental poisonings (gas excepted)	2	1			1			2	1	3			10
178	Conflagration				5									5
179	Accidental burns (conflagration excepted)		1	1		2					1	1		6
180	Accidental mechanical suffocation			1										1
181	Accidental absorption of irrespirable, irritating, or poisonous gas					1				1	1	1	1	5
182	Accidental drowning							1	1					2
183	Accidental traumatism by firearms (wounds of war ex.)							1			1			2
184	Accidental traumatism by cutting or piercing instruments							1						1
185	Accidental traumatism by fall	1	3	2	2	3	1		1	2		2	1	18
187	Accidental traumatism by machines		1								2			3
188	Accidental traumatism by other crushing (vehicles, railways, landslides, etc).													
	*(a) Railroad accidents	1		2		1	1	1	1	2	1	1	2	13
	*(b) Street-car accidents				2				2					4
	*(c) Automobile accidents	1	2	2	4	1	2		1	2	4	2	2	23
	*(f) Injuries by other vehicles						1							1
	*(g) Landslides, other crushing							1			1			2
196	Other accidental electric shocks		2						1					3
197	Homicide by firearms												2	2
198	Homicide by cutting or piercing instruments					1								1
199	Homicide by other means						1					1		2

1928 CAUSE OF DEATH (By Month)	January	February	March	April	May	June	July	August	September	October	November	December	Totals
202 Other external violence	1									1		1	3
Totals, Class XIV	9	13	8	15	12	9	9	11	9	15	9	13	132
XV.—Ill-Defined Diseases													
205 Cause of death not specified or ill-defined: *(b) Not specified or unknown						1							1
Totals, Class XV						1							1
Grand Totals	138	148	131	168	168	142	137	150	146	147	128	203	1806

Report of Street Cleaning and Scavenging Division

A. J. Douglas, Esq., M.D.,
Medical Health Officer,
City Hall.

Dear Sir:

I have the honor to submit herewith the report of the Street Cleaning and Scavenging Division for the year 1928.

Scavenging

The growth of the City during the year is reflected in the increased service given the public by way of scavenging service. Between the months of April and October a bi-weekly collection service was given in the central or congested portion of the City, such service materially improved conditions existing in that district.

An increase of a million and a half pounds of garbage is shown for the year, in excess of the previous years collection, which very clearly indicates the growth of the work of this Division. An increase of over six million pounds of incombustible refuse is also recorded for the same period.

A Gotfredson tractor truck and six side dump trailers were added to the Division's equipment during the year.

In November the work of overhauling and painting the trailer equipment was commenced. The color scheme has been changed from a grey to a Canary Yellow and will give this equipment a cleaner and brighter appearance.

Incinerators

Early in January, this Division commenced supplying the Anthes Foundry with steam for heating purposes from the Saskatchewan Avenue Incinerator. For the year, the gross revenue from the sale of steam amounted to $1,200.00.

At this Incinerator a great improvement was made in connection with the forced draft fans. Formerly the two fans were operated from one 75 H.P. motor but as this arrangement was not working out satisfactorily it was decided to install a separate motor (rated at 10 H.P.) for each of the two fans. This alteration has turned out quite successful and in addition to being more efficient, a small saving is being made in the operation costs.

Steam heating coils were installed in the rest room at both Incinerators, replacing the coal stoves heretofore used for heating purposes. This installation has added to the comfort of the employees and at the same time reduced the expenditure for fuel.

Ash Removal

Each year the Division is experiencing greater difficulty in securing close-in dumps for the disposal of ash accumulation and before many years have passed the City will be faced with the question of securing suitable dumps for this class of refuse.

Street Cleaning

The year 1928 has seen an increase in this essential service as some 7½ miles of new pavements were constructed during the season. The question of purchasing a motor pick-up sweeper was before the Committee several times during the year but in each case the decision was in favor of the "White Wings."

Flushing

The horse-drawn power flushers owned by the Division were used more extensively this season than heretofore. These machines, being of an antiquated type, were continually requiring repairs.

Wood Camp Operations

The City Council again saw fit to place the operation of the City Wood Camp under the jurisdiction of this Division. During the wood year, which ended April 30th, 1928, some 150 men had passed through the City Wood Camp; 2,711 cords of wood had been cut and 4,713 cords of wood were delivered to various civic buildings and institutions within the City. Almost $6,000.00 was paid to the Greater Winnipeg Water District Railway for freight and passenger fares.

In conclusion I wish to place on record my appreciation of the work of the employees of this Division, all of whom have contributed towards the year's successful operation.

Your obedient servant,

E. A. WOOD,

Chief, Street Cleaning Division.

GARBAGE COLLECTION 1928

Month	Trucks & Trailers		City Teams & Singles		Hired Teams		Combined Total	
	No. of Lds.	Weight in. Lbs.	No. of Lds.	Weight in. Lbs.	No. of Lds.	Weight in. Lbs.	No. of Lds.	Weight in. Lbs.
Jan.	973	2,665,610	88	181,380	35	97,580	1096	2,944,570
Feb.	920	2,302,250	82	158,920	29	76,820	1031	2,537,990
Mar.	978	2,688,130	89	180,700	35	96,760	1102	2,965,590
April	926	2,887,450	81	185,900	37	121,810	1044	3,195,160
May	1038	3,781,270	99	278,720	45	153,700	1182	4,213,690
June	970	3,730,120	97	284,940	53	185,910	1120	4,200,970
July	991	3,806,290	105	319,160	54	196,980	1150	4,322,430
Aug.	1036	3,900,140	114	334,100	51	173,360	1201	4,407,600
Sept.	926	3,722,740	100	303,000	51	187,340	1077	4,213,080
Oct.	996	3,643,810	100	273,370	47	155,850	1143	4,073,030
Nov.	956	3,159,990	86	215,280	43	128,380	1085	3,503,650
Dec.	962	3,017,620	80	187,830	40	112,880	1082	3,318,330
	11672	39,305,420	1121	2,903,300	520	1,687,370	13313	43,896,090

Table Showing Average Weight Per Load

	Number of Loads	Total Weight	Average Wt. Per Load Lbs.
Truck & Trailers	11,672	39,305,420	3367
City Teams & Singles	1,121	2,903,300	2590
Hired Teams	520	1,687,370	3244
	13,313	43,896,090	3,297

Table Showing Percentage of Collection by Units

	Weight Lbs.	Percentage of Total Weight
Truck & Trailers	39,305,420	90%
City Teams & Singles	2,903,300	6½%
Hired Teams	1,687,370	3½%
	43,896,090	100%

COLLECTION OF INCOMBUSTIBLE REFUSE

	Trucks and Trailers		City Teams and Singles		Hired Teams		Combined Total	
	No. of Lds.	Weight in Lbs.	No. of Lds.	Weight in Lbs.	No. of Lds.	Weight in Lbs.	No. of Lds.	Weight in Lbs.
Jan.	261	793,900	187	396,210	61	159,940	509	1,350,050
Feb.	36	93,500	176	337,370	36	89,360	248	520,230
Mar.	318	851,290	196	370,220	28	69,760	542	1,291,270
April.	354	970,980	300	622,310	57	167,230	711	1,760,520
May	535	1,538,330	364	896,220	830	2,521,740	1729	4,956,290
June	477	1,559,450	451	1,118,150	190	644,745	1118	3,322,345
July	424	1,243,680	458	999,000	10	32,690	892	2,275,370
Aug.	440	1,240,140	408	840,330	27	85,350	875	2,165,820
Sept.	400	1,111,130	344	714,850	66	207,020	810	2,033,000
Oct.	512	1,428,140	371	800,710	72	215,560	955	2,444,410
Nov.	403	1,005,860	342	673,940	84	246,400	829	1,926,200
Dec.	85	230,440	178	339,190	90	262,580	353	832,210
	4245	12,066,840	3775	8,108,500	1551	4,702,375	9571	24,877,715

Table Showing Average Weight per Load

	Number of Loads	Total Weight Lbs.	Average Weight per Load Lbs.
Trucks and Trailers	4245	12,066,840	2843
City Teams and Singles	3775	8,108,500	2148
Hired Teams	1551	4,702,375	3032
	9571	24,877,715	2599

Table Showing Percentage of Collection by Units

	Weight, Lbs.	Percentage of Total Weight
Trucks and Trailers	12,066,840	48.5%
City Teams and Singles	8,108,500	32.5%
Hired Teams	4,702,375	19 %
	24,877,715	100.0%

REVENUE COLLECTED 1928

Month	Deposits Workmen's Closets	Scavenging	Incin. No. 2	Incin. No. 3	Ash Boxes & Garbage Cans	Total
January	$ 7.50	$ 51.00	$ 202.29	34.33		$ 295.12
February	18.75	25.50	.....	116.56		160.81
March	127.50	68.25	19.14	149.72	$ 6.00	370.61
April	390.00	66.00	184.28	966.07		1,606.35
May	675.00	88.05	198.90	32.35		994.30
June	457.50	65.75	149.03	115.59		787.87
July	322.50	244.68	272.29	128.63	12.00	980.10
August	315.00	156.74	150.36	51.20	11.65	684.95
September	247.50	192.95	241.95	154.44		836.84
October	255.00	334.65	155.17	69.67		814.49
November	97.50	114.05	241.44	201.64	11.65	666.28
December	15.00	157.05	100.41	95.46	11.65	379.57
Totals	$2,928.75	$1,564.67	$1,915.26	$2,115.66	$ 52.95	$8,577.29

MISCELLANEOUS DATA

Month	Cubic Yards of Street Sweepings Collected	Cubic Yards of Ashes Collected	Gallons of Water Used in Flushing Streets
January	.....	11,188	.....
February	.....	10,028	.....
March	3,464	8,624	.....
April	5,288	20,376	.....
May	5,884	11,188	255,000
June	1,700	744	295,500
July	2,004	116	440,000
August	2,114	132	552,500
September	2,160	128	322,500
October	3,708	884	.....
November	1,276	3,528	.....
December	296	6,432	.....
	27,894	73,368	1,865,500

COMPARATIVE TABLES

Garbage Collection

Year	Number of Loads Collected	Weight in Pounds	Increase in Pounds
1926	11,550	40,479,180	.....
1927	13,286	42,325,430	1,846,250
1928	13,313	43,896,090	1,570,660

Collection of Incombustible Refuse

Year	Number of Loads Collected	Weight in Pounds	Increase in Pounds
1926	6,034	15,894,150	.....
1927	6,682	18,579,020	2,684,870
1928	9,571	24,877,715	6,298,695

Ash Removal

Year	Number of Loads Collected	Weight in Pounds	Increase in Pounds
1926	19,012	90,215,000	.....
1927	23,378	108,973,000	18,758,000
1928	24,456	110,052,000	1,079,000