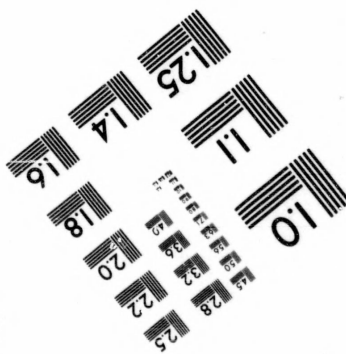
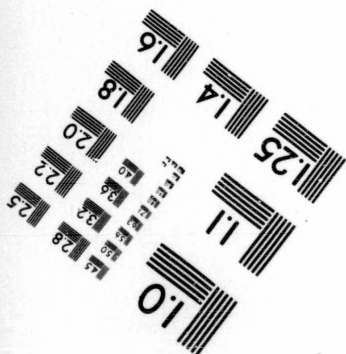
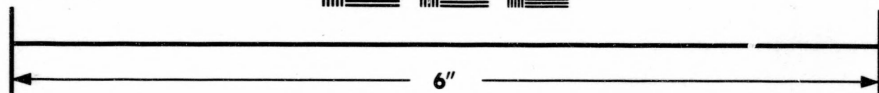
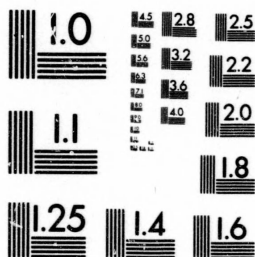


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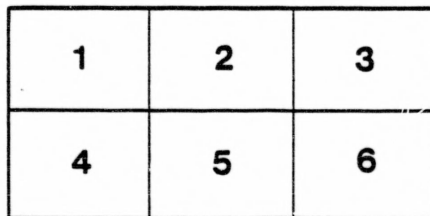
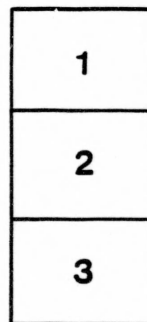
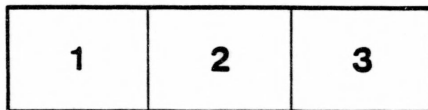
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ON SOME OF THE CAUSES  
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EXCESSIVE MORTALITY  
OF  
YOUNG CHILDREN  
IN THE  
CITY OF MONTREAL.

BY PHILIP P. CARPENTER, B. A., PH. D.,

Hon. Secretary of the Montreal Sanitary Association.

(Reprinted from the CANADIAN NATURALIST for June, 1869.)

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6

ON SOME OF THE CAUSES OF THE EXCESSIVE MORTALITY  
OF YOUNG CHILDREN IN THE CITY OF MONTREAL.

By PHILIP P. CARPENTER, B.A., Ph. D.

Hon. Secretary of the Montreal Sanitary Association.

The object of the present paper is (1) to continue and enlarge upon the data given in the *Canadian Naturalist*, New Series, Vol. 3, pp. 134-156, under the head of "Vital Statistics of Montreal;" and (2) to enquire into some of the causes of the most unusual disproportion between the deaths of young children and adults.

The lettering and numbering is so given as to correspond with the previous article, to which the reader would do well to refer back. The figures for 1866 are repeated, along with the general average of 12 years, in order to make a suitable comparison with the succeeding years. It should be remembered that in each of the years beginning with 1866 the official directors and executors of public hygiene have stated that the city was never before in so cleanly a condition.

A.—THE CENSUS RETURNS.

In advance of the approaching Census, it is most important to remember how inaccurate the last was proved to be; the double entry of "uncooked" figures for Quebec deaths presenting a discrepancy of 296 (see p. 134), and the Montreal deaths presenting a known deficiency of 1,143 (see Table 8, p. 147). It behoves all members of the governments therefore, both federal, provincial and municipal, and all who can bring influence to bear upon these governments, to see to it that the appointments are not given to incompetent political favourites, but to the best men that can be found for so important a public work. The citizens of the largest (and the most unhealthy) city in the Dominion should especially see to this.

B.—THE PROTONOTARY'S RETURNS.

These continue to be the only accessible data for the Births in Montreal, as well as for both Births and Deaths in the surrounding counties. Yet they only record religious ceremonies. The births among Baptists (a very small sect, however, in this city and province) are not publicly registered. An imperative Registration of Births and Deaths (with the *proximate* and *remote* causes of the latter under medical certificate) is among

the first duties of our government. It should not be left to the peculiar views of the leaders in either Province, but should be *uniform for the whole Dominion*, and enforced by sufficient penalties.

In the following tables, Vaudreuil and Soulanges, having been permanently removed to another registration district, are no longer represented by averages. The population of the six counties was 81,291 in 1861, to which the average increase, viz., 2,938, is added year by year. This alteration somewhat affects the averages as previously given:—

4. *Montreal City: Returns of Baptisms and Funeral Services.*

Year.	Supposed Population.	Births.	Deaths.	Excess of Births over Deaths.	Deaths per 1,000 Living.	Deaths per 100 Births.
Average of 7 years .....	93,583	4,545	3,390	1,155	36.2	74
Montreal City in 1865 .....	103,363	5,543	3,761	1,782	36.4	68
“ 1866 .....	111,374	5,158	3,381	1,777	30.3	65
“ 1867 .....	116,608	5,598	4,247	1,351	37.7	70
“ 1868 .....	122,088	5,060	4,567	493	37.4	90
Average of 4 years .....	113,358	5,339	3,989	1,350	35.4	75

5. *Six adjacent Counties: Returns of Baptisms and Funeral Services.*

Year.	Supposed Population.	Births.	Deaths.	Excess of Births over Deaths.	Deaths per 1,000 Living.	Deaths per 100 Births.
Average of 8 Counties for 7 years .....	109,611	3,923	1,911	2,012	17.4	48
Six Counties in 1865 .....	93,043	2,763	1,651	1,112	17.7	59
“ 1866 .....	95,981	2,591	1,415	1,176	14.8	59
“ 1867 .....	98,919	2,686	1,603	1,083	16.2	59
“ 1868 .....	101,857	2,588	1,532	1,056	15.4	59
Average of 4 years .....	97,450	2,657	1,550	1,107	16.0	59
Ditto, corrected to the Population of Montreal .....	113,358	3,091	1,803	1,288	16.0	59
Ditto, Montreal City .....	113,358	5,339	3,989	1,350	35.4	75
Balance for and against the City .....	0	2,248	2,186	62	19.4	16

It appears, therefore, that though our mothers give birth to more than 2,000 infants yearly, in addition to the infants born among the same number of country people, the city only gains 62 lives, as the fruit of all this suffering and loss!

The deaths registered by the Clergy, in the city of Montreal, as compared with those registered at the Cemeteries, present the following results.

8. *Comparison of Mortality-Records in Montreal City, 1866—1868.*

Year.	Cemetery Returns.	Clergy Returns.	Not Entered in Clergy Returns.	Or, per 100 Deaths.	Or, per 1,000 Living.
1866 .....	3,610	3,381	229	6.3	2.0
1867 .....	4,465	4,247	218	4.9	1.9
1868 .....	4,842	4,567	275	5.7	2.2
Total .....	12,917	12,195	722	5.6	2.0

C.—INTERMENTS AT THE CEMETERIES.

The allowances to be made in estimating the accuracy of these returns are stated at p. 147; for the comparison of years, of seasons and of ages *with each other*, they are invaluable. During the last year, the descriptive columns in the weekly sheets have been filled up with much more accuracy than heretofore, in consequence of urgent representations from the Sanitary and Medical Associations; but they are not yet accurate enough for the requirements either of medical, sanitary or statistical science. This is greatly to be regretted and deprecated; because in a large city, where all the interments are made at two cemeteries, a very little determination on the part of the officials would produce nearly all that can be desired.



9. Total Deaths in Montreal, of all ages, for each month.					10. Deaths of Children under 12 in Montreal, for each month.					11. Deaths of Adults (and children above 12) in Montreal, for each month.					
Month.	Total for each month, for 12 years.				1866.	1867.	1868.	Total for each month, for 12 years.	1866.	1867.	1868.	Total for each month, for 12 years.	1866.	1867.	1868.
	January.....	2,792	227	260											
February.....	2,539	234	281	363	146	175	230	860	114	137	112	940	110	119	123
March.....	2,920	287	381	346	183	244	234*	1,028	110	137	112	1,028	110	119	123
April.....	3,068	293	321	387	183	202	264	977	106	101	125	1,028	110	119	123
May.....	3,051	258	324	481	152	223	356	941	103	107	105	977	103	107	105
June.....	3,381	284	469	416	181	302	311	941	74	89	123*	941	74	89	123*
July.....	4,558	415	607	631	341	578	598	931	98	149	140	931	98	149	140
August.....	4,321	387	696	713	289	547	573	963	114	86	82	963	114	86	82
September.....	3,245	394	363	406	280	277	324	925	108	87	127	925	108	87	127
October.....	2,741	265	234	323	157	147	202	964	104	99	91	964	104	99	91
November.....	2,567	260	274	284	156	175	193	937	130	88	87	937	130	88	87
December.....	2,814	296	195	256	166	107	109	1,004	1,226	1,274	1,318	1,004	1,226	1,274	1,318
Total of each year.	38,297	3,610	4,465	4,842	2,384	3,191	3,524	11,365	1,226	1,274	1,318	11,365	1,226	1,274	1,318

\* At the beginning of this month, after an unusually severe winter, there came a rapid thaw, with special stenches in the drains and on the surface of the low levels. This was succeeded by a sudden frost, with peculiarly severe N. E. storms. The children's deaths rose from 47 at the opening of the month to 79 in the thaw; and fell again in the week of cold storms to 46. The deaths of adults were scarcely affected by either change.

\* This includes 30 deaths from sunstroke in a single week, in consequence of the excessive heat. Yet the average deaths of adults did not exceed that of April; these 30 extra deaths being compensated by unusual healthiness in other respects. At the same time, the children, none of whom died from sunstroke, had nearly doubled their April rate of dying.



12. Average Weekly Mortality, of all ages, for each Month.					13. Average Weekly Mortality of Children under 12, for each Month.				14. Average Weekly Mortality of Adults (and Children above 12,) for each Month.			
Months.	Average of 12 Years.	1866.	1867.	1868.	Average of 12 Years.	1866.	1867.	1868.	Average of 12 Years.	1866.	1867.	1868.
January	52.7	56.7	65.0	57.5	35.8	37.5	41.0	40.0	16.9	19.2	24.0	17.5
February	52.9	58.5	70.2	72.6	34.9	36.5	43.7	46.0	17.9	22.0	26.5	26.6
March	54.1	59.4	76.2	85.5	36.6	36.6	48.8	58.5	17.4	22.8	27.4	28.0
April	60.1	73.2	80.2	96.7	40.0	45.7	50.5	66.0	20.1	27.5	29.7	30.7
May	57.6	64.5	81.0	96.2	38.9	38.0	55.7	71.2	18.5	26.5	25.2	25.0
June	65.0	56.8	93.8	103.9	46.9	36.2	72.4	77.7	18.1	20.6	21.4	26.2
July	93.4	103.7	166.8	157.7	75.5	85.2	74.5	127.0	17.9	18.5	22.2	30.7*
August	82.1	96.7	139.2	142.6	63.3	72.2	100.4	114.6	18.1	24.5	29.8	28.0
September	62.4	78.8	90.7	101.5	44.6	50.0	69.2	81.0	17.8	22.8	21.5	20.5
October	51.7	66.2	58.5	65.8	33.5	39.2	36.7	40.4	18.2	27.0	21.7	25.4
November	50.3	65.0	54.8	70.9	31.9	39.0	35.0	48.2	18.3	26.0	19.8	22.7
December	52.1	59.2	48.7	63.9	33.5	33.2	27.7	42.2	18.6	26.0	22.0	21.7
Average Week of Year.	61.2	69.4	85.4	93.1	43.0	45.9	61.2	67.7	18.1	23.6	24.3	25.3

\* Without the 30 deaths from sunstroke, the Adult average for July would have been only 23.2, (or a little more than that of November,) in spite of the unusually oppressive heat. Probably persons were afraid to drink so much liquor. In Lancashire, it has been found that the health of the people is improved in times of special privation, as during the cotton famine, simply because they cannot afford to swallow so much drink-poison.

18. *Weeks of Maximum and Minimum Mortality, for all ages, in Montreal.*

Year.	Highest Mortality, in week ending	Lowest Mortality, in week ending	Which is at the yearly rate, per 1,000 living, of		Range of variation, at yearly rate per 1,000.	Actual Range of variation, between max. and min. weeks.	General Average of the year, per 1000
			Maximum	Minimum			
1866	July 21..121	{ June 9.44 } { Dec. 1.45 }	54	19	35	77	32.2
1867	" 27..185	Nov. 2.39	82	17	65	146	38.3*
1868	" 18..209	Jan. 18.48	89	20	69	161	39.6

*Or, for Children under 12 years of age only:—*

1864	July 2..116	Oct. 22...25	58	12	46	91	34.1
1865	" 1..103	" 28...24	50	10	40	79	26.8
1866	" 21..102	Jan. 6...25	48	11	37	77	21.4
1867	" 27..157	Dec. 28...19	70	9	61	138	27.4
1868	" 18..152	{ Jan. 18 } { Oct. 24 }	64	14	50	120	28.8

*Or, for Adults only:—*

1864	Apr. 30..36	Sept. 3....7	18	3	15	29	11.2
1865	Aug. 5..33	" 23....10	16	5	11	23	11.0
1866	May 19..37	July 14....14	18	7	11	23	11.0
1867	" 11..35	June 22....10	16	5	11	25	10.9
1868	July 18..57†	Sep. 12....12	24	5	19	45	10.8

\* If the mortality (corrected for increase of population) had been calculated from September 1st, 1866, to September 1st, 1867, it would have given the death-rate of the year as 40.6 per 1000.

† Thirty of these were from sunstroke: see note to Table 11. It appears that, with this exception, the range of variation for adults is remarkably uniform.

These tables, compiled with the greatest attainable accuracy for the space of 14 years, prove to an absolute demonstration, after making all reasonable deductions for possibilities of error, not merely on the average of years, but in each single successive year, (1) that the mortality of Montreal is excessive as compared with the immediately adjacent country districts, under the same climatal conditions, but less favoured as regards wealth and intelligence; (2), that this excess is utterly disproportionate in the ratio of the deaths of children and adults; (3), that this excessive mortality of children uniformly attains its greatest height during the heats of summer. It is possible to bring out these facts with even greater distinctness.

The mortality of July, 1867, having reached a higher point than that of any previous year without special epidemics or unusual heat, in spite of comforting assurances from the city

authorities that the yards had never been so well cleansed, the Sanitary Association instituted enquiries into the condition, during the same season, of New York and Boston, and analyzed the returns on the cemetery sheets to ascertain during what period of life the special mortality prevailed. The following are the results.

21. *Analysis of Children's Deaths in Montreal, for the year 1867.*

Deaths.	Under 1 year, (including 201 blanks, or still-born.)	Above 1 year, and under 5.	Above 5 years, and under 12.	Total Children under 12.	Total, all ages above 12.
Interments of children . . . . .	2,063	910	218	3,191	1,274
Or, per year of life . . . . .	2,063	228	31	266	22
Condition, according to the prophecy of Isaiah . . . . .	0	0	0	0	4,465
Proportion of total deaths per year of life; one in . . . . .	2.1	19.6	144.0	16.7	203.0

	Under 1 year.	Total under 5.	.....	Total under 12.	Total, all ages.
Total interments . . . . .	2,063	2,973	.....	3,191	4,465
Percentage of <i>total</i> deaths . . . . .	46.2	66.6	.....	71.5	100.0
Percentage of <i>children's</i> deaths . . . . .	64.6	93.2	.....	100.0	.....
Supposed number of children living, corrected from the census of 1861 . . . . .	5,158	19,627	.....	37,761	116,608
Deaths of children, per 1,000 living <i>at the same age</i> . . . . .	399.9	151.4	.....	84.5	38.3
Or, 1 in every . . . . . (living at the same age.)	2.5	6.6	.....	11.8	26
Ditto, average of 10 years . . . . .	2.5	7.0	.....	13.0	28
Ditto, average of Lower Canada, less principal cities . . . . .	.....	.....	.....	27.0	96

	.....	Between 5 and 12.	Total above 5.	Total above 12.	Total, all ages.
Supposed number of persons living in the city . . . . .	.....	18,144	96,981	78,837	116,608
Deaths per 1,000 living <i>at the same age</i> . . . . .	.....	12.0	15.4	16.1	38.3
Or, 1 in every . . . . . (living at the same age.)	.....	83	65	62	26

It is evident, therefore, that the children from 5 years upward are remarkably healthy in this city, the principal reason being that all the moribund children are killed off at an earlier age. It is *those children who are confined to the house* or to its immediate surroundings who are, in this city, so peculiarly

unhealthy. The principal causes of the death-rate, therefore, must be looked-for in the condition of the dwellings.

But, as it is shewn that the special mortality of the city follows the months, not indeed for adults, but for children, let us examine whether it specially follows any particular period of childhood.

22. Deaths of Children in Montreal, 1867, according to ages and months.

	Under 1 year.		From 1 to 5 yrs.		From 5 to 12 yrs.		All ages under 12.	
	Total.	Weekly average.	Total.	Weekly average.	Total.	Weekly average.	Total.	Weekly average.
January .....	94	23.5	46	11.5	22	5.5	162	40.5
February .....	109	27.2	49	12.2	16	4.0	174	43.5
March .....	159	31.8	53	10.6	26	5.2	238	47.6
April .....	126	31.5	62	15.5	13	3.2	201	40.2
May .....	135	33.7	70	17.5	18	4.5	223	44.7
June .....	229	45.8	101	20.2	32	6.4	362	72.4
July .....	404	101.0	146	36.5	28	7.0	578	144.5
August .....	359	71.8	172	34.4	16	3.2	547	109.4
September .....	157	39.2	107	26.7	13	3.2	277	69.2
October .....	95	23.7	40	10.0	12	3.0	147	36.7
November .....	101	25.2	25	6.2	14	3.5	140	35.0
December .....	95	19.0	39	7.8	8	1.6	142	28.4
Total .....	2163	39.7	910	17.5	218	4.2	3191	61.3

The numbers are so few in the third column that they cannot be relied on for averages in a single year; but the very slight increase of June and July over the early months of the year is very noteworthy. In the second column, while the July death-rate is three times that of February, in the first column it is nearly four times. It would appear, therefore, that the summer influences affect but slightly children above 5; and, most of all, those under 1 year. A single average year of life in each of the columns gives the following death-rate for an average week:—

23. *Average Weekly Death-rate of Children in Montreal, 1867, for each year of life.*

	Under 1 year.	From 1 to 5.	From 5 to 12.	Total.
December .....	19.0	1.9	0.2	2.4
July.....	101.0	9.1	1.0	12.0
June, July, August .....	72.9	7.6	0.8	9.1
April, May, September, October.....	32.0	4.3	0.5	4.4
Nov., Dec., Jan., Feb., March.....	25.3	2.4	0.6	3.3
Average for year .....	39.7	4.4	0.6	....

It appears, therefore, that a boy of 5 years has about 100 times the chance of life that can be hoped for an infant of 6 months, both in December and July. But according to seasons, the older child has 42 chances of life, as compared with his baby-brother, in winter; 64 chances in spring and autumn; and 91 chances in summer.

So the child under 5, as compared with the baby, has 10 chances in December, 11 in July,  $9\frac{1}{2}$  in summer,  $7\frac{1}{2}$  in spring and autumn,  $10\frac{1}{2}$  in winter.

On the average of the year, the child under 5 has *nine* chances of life as compared with the baby; the child above 5, *sixty-six* chances. Against what fearful odds do the infants in this city struggle into life!

24. *Comparison of Montreal Children's Death-rate in air-poisoning, open, and frost-bound months.*

Average.	Air-poisoning Months : June, July, August.	Open Months : April, May, Sept., Oct.	Frost-bound Months : Nov., Dec., Jan., Feb., March.
Average weekly death-rate of children, under 1 year,.....1867..	72.9	32.0	25.3
Ditto, between 1 and 5 years ..1867..	30.4	17.4	9.7
Ditto, between 5 and 12 years..1867..	5.6	3.5	4.0
Ditto, all ages under 12 years ..1867..	108.8	53.0	39.2
Average week for 10 years, all ages, .	61.9	39.2	34.5

That the excessive infantile mortality of July, 1867, was not due to exceptional climatal influences, will appear from the following statistics of Boston, obligingly furnished by Mr. Antonio, the

Registrar of that city. Boston is far more crowded than Montreal, with a much larger proportion of Irish lodging-houses, and with a raw, damp climate. But "the sanitary laws are good, and faithfully executed."

25. Comparative Sanitary Statistics of Boston, 1867.

Average population of Boston for previous 10 years.....	178,500
Supposed " " for 1867.....	196,000
Total Yearly Deaths on the average of 10 years.....	2,474
Or, per 1,000 of present population.....	12.7
Deaths in highest month (August) on average of 10 years.....	461
Or, per 1,000 of present population, at yearly rate of.....	28.2
Deaths in lowest month (June) on average of 10 years.....	299
Or, per 1,000 of present population, at yearly rate of.....	18.3
Total Deaths during	
" July, 1866.....	482
" July, 1867.....	365
" August, 1867.....	452
Deaths of infants under	
" 1 year, July, 1867.....	107
" children between 1 and 5 years, July, 1867.....	62
" " 5 and 10 years, July, 1867.....	18
" infants under 1 year, Aug., 1867.....	158
" children between 1 and 5 years, Aug., 1867.....	86
" " 5 and 10 years, Aug., 1867.....	22
Yearly rate of Deaths among 5,500 children under 1 year, July, 1867, per 1,000.....	233.0
" " 24,000 " 5 years, " ".....	84.5
" " 43,000 " 10 years, " ".....	52.2
Deaths from Cholera infantum,	
" July, 1866.....	89.0
" July, 1867.....	49.0

By correcting these numbers according to the ratio of Montreal population, it appears that the July deaths were here more than three times those of Boston, although an unprecedented number of families had left our city; that of the total deaths in the year, only 39 per cent in Boston are of children under 5 years, instead of 65 per cent in Montreal; and that of these only 24 per cent in Boston were under one year, instead of 46 per cent in Montreal. Of the children born in Montreal, two out of every five died within the year.

These being the frightful facts of the case, so far as they can be at present ascertained, it becomes the duty of every thoughtful citizen to enquire into their causes.

The most evident of these is the fearful number of illegitimate children each year thrown away by their unnatural and most wicked parents, and placed under the fostering care of the Sœurs Grises at their Foundling Hospital. The condition in which they are received will be understood from the following table.

*26. Condition of Infants received at the Montreal  
Foundling Hospital.*

CONDITION.	1865.	1866.	1867.	1868.	Total.
Without covering .....	334	286	424	293	1,337
With only a cotton cloth .....	18	.....	10	.....	28
Almost frozen .....	6	.....	7	20	33
Bleeding through want of the necessary } offices at birth. .... }	15	11	13	25	64
Not washed after birth .....	31	29	18	30	108
Wounded by Instruments .....	8	4	8	7	27
Tainted with Syphilis .....	84	80	46	139	349
Sick .....	118	85	17	40	300
Dying .....	28	26	23	18	95
Dead .....	2	.....	3	4	9
With bloody flux .....	.....	15	13	.....	28
With Hæmorrhage of the lungs .....	.....	13	10	8	31
Not classed as above, but frequently } covered with vermin .....	85	75	20	94	274
Total received .....	729	624	652	678	2,683

Whenever there appears a chance of life, these infants are sent into the country, in the care of nurses under surveillance. Even under favourable circumstances, there would be but poor chance of saving the lives of most of these abandoned ones; but it appears from a Report presented by the Medical officers to the City Council that the nurses are often unable to supply them with natural aliment. When they die, the corpses are sent to Montreal for interment, and are entered in our city bills of mortality, as their baptisms had been in the Protonotary's returns. The following statistics have been compiled from the Register of Deaths kept at the Hôpital Général.



## 27. Mortality at the Montreal Foundling Hospital.

Year.	1863	1864	1865	1866	1867	1868	Total.	Average of six years.
January .....	26	49	58	39	32	34	235	39
February .....	32	22	38	34	34	33	193	32
March .....	38	54	52	43	47	48	282	47
April .....	48	53	67	68	47	61	344	57
May .....	59	43	51	66	53	61	333	55
June .....	80	65	68	68	82	101	464	77
July .....	102	86	104	94	101	94	581	97
August .....	63	59	70	64	85	76	417	69
September .....	48	36	41	35	43	49	252	42
October .....	43	50	43	50	31	29	246	41
November .....	39	46	42	36	44	34	241	40
December .....	45	42	31	32	35	25	210	35
Total .....	623	605	665	629	634	642	3,798	†
Deduct <i>Adults</i> ...	8	16	20	15	15	†	74	†
Total <i>Children</i> ...	615	589	645	614	619	642	3,724	621
Of whom died, Under 7 days...	11	18	24	23	36	22	134	22
“ 1 month...	427	404	401	402	368	348	2,350	362
Under 1 year...	590	573	612	593	583	610	3,561	593
Between 1 and 5 years .....	24*	14	32*	21	34	31	156	26
Between 5 and 12 years .....	1	2	1	0	2	1	7	1

A more simple mode of keeping the register having been adopted at the suggestion of the writer, the following table has been eliminated for the past year. The numbers in the first column are included in the second, and both in the third.

\* A large proportion of these deaths were from *rougeole*. It will be observed that the children, being in the country, escaped the fatal scarlatina which ravaged the city children in 1864, and also the unusual city mortality of July, 1867; also that last year June was in excess of July, which has never happened in the city. It is marvelous to observe that the coldest month is also the healthiest; even for these children who are so often received partially or entirely frozen, and so generally with insufficient clothing.

† In consequence of the mode in which the register was kept previously to 1868, some deaths of adults had been added-in with those of children; and for so small a number, distributed over the months, it was not thought needful to analyze the returns afresh.

28. *Death-rate, per months and ages, at the Montreal Foundling Hospital, 1868.*

	Under 1 week.	Under 1 month.	Under 1 year.	Between 1 and 5 Years.	Between 5 and 12 years.	Total Deaths.
January .....	2	16	26	5	0	31
February .....	1	16	26	7	0	33
March .....	2	16	44	4	0	48
April .....	2	33	59	2	0	61
May .....	1	31	60	0	1	61
June .....	2	58	100	1	0	101
July .....	4	42	93	1	0	94
August .....	1	47	72	4	0	76
September .....	3	33	46	3	0	49
October .....	0	19	29	0	0	29
November .....	2	23	31	3	0	34
December .....	2	14	24	1	0	25
Total .....	22	348	610	31	1	642

A comparison of figures in the second column fully bears out the common impression in the city that children born in winter have much greater chance of life than those born in summer. The following table exhibits the frightful loss of life to the community from parental neglect.

29. *Balance of Life at the Montreal Foundling Hospital.*

Years.	Infants received.	Died at the		Total Deaths.	Remaining alive.	Or, per cent.
		Hospital.	Nurses' Houses.			
1855 .....	729	17	639	656	73	10.0
1866 .....	624	15	566	581	43	6.9
1867 .....	652	46	552	598	54	8.3
1868 .....	678	14	623	637	41	6.1
Total .....	2,683	92	2,380	2,472	211	7.8

Many persons have attributed this excess of mortality to the existence of the Foundling Hospital; and one of the "religious" newspapers asserted (although the facts of the case were easily accessible) that "it was estimated that about 2,000 children die annually in it."\* In order to correct these and other unfounded rumours, the Mère Supérieure of the Sœurs Grises has obligingly furnished the writer with the needful statistics, which, without any exaggeration, are appalling in the extreme. The Sisters are quite willing to allow that, with more knowledge, and with more means at their disposal to render available the knowledge already possessed, a much larger propor-

\* See the *Echo* of June 19th, 1867.

tion of these "unwelcome children" could be saved, to become useful members of the community; but even this religious city cannot provide ladies more willing to do this most loathsome of works, and more devoted to the service which they thus offer to our common Saviour. Materials are not accessible to make an extended comparison of the mortality among Montreal foundlings with that of the same class elsewhere, but the following particulars are given in the "Fifth Annual Report of the Board of State Charities of Massachusetts," pp. 35, 37, 38, 45:—

30. *Comparative Mortality of Foundlings, under one year of age.*

	Per cent.
Supposed yearly death-rate at the Neapolitan Hospital.....	90
In some Hospitals, as high as.....	95
In some well-managed Hospitals, as low as from.....	40—60
In good Asylums, from.....	30—50
In good single families, from.....	20—35
<hr/>	
Average death-rate of infants in the whole of Massachusetts.....	13.5
“ “ “ in the country districts of ditto.....	12.6
“ “ “ in Suffolk county, including Boston.....	17.4
<hr/>	
Mortality at the Foundling Hospital, Ward Island, New York, 1868:—	
“ Infants suckled by their own mothers.....	20.0
“ “ bottle-fed on milk by their own mothers.....	29.5
“ Foundlings suckled by nurses.....	72.5
“ “ bottle-fed on milk by nurses.....	89.6
<hr/>	
Montreal Foundlings, bottle-fed by nurses, 1868.....	89.9
Ordinary Montreal Infants, 1867.....	29.3
Total City mortality of infants under one year, (in Boston, 17.4 :) in Montreal, 1867	36.8

It is an open question, which need not be here discussed, whether or not such institutions do more good, in the care of the forsaken, or harm, in the facility afforded to escape the shame of unlawful parentage. Two things are certain, viz., that while the passions of men remain uncontrolled by religion, especially when intensified by city life, these children will continue to be born; and that, where there are no such institutions, præ- and post-natal murder are common though often undiscovered crimes. Whether these children die scattered over the city, or collected into a hospital, or (as in our case) distributed through country homes, their deaths fairly belong to, as they have been thus far reckoned with, the city mortality.

One portion of the deaths, however, does *not* belong to us, viz.,

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those who are sent into the city from other places; sometimes in a hamper or carpet-bag, by rail; and frequently, as may be supposed, in a moribund condition.

The following table embodies all that is known of their origin.

### 30. Birth-place of Montreal Foundlings, 1865-68.

Years.	Montreal City.	Canadian Cities.					Country round Montreal.	Upper Canada.	United States.	Foreign Countries.	Total received from other places.	Total City and Country.
		Quebec.	Ottawa.	St. Hyacinthe.	Three Rivers.							
1865.....	443	147	20	26	8	44	15	25	1	286	729	
1866.....	448	83	18	9	6	40	11	7	0	176	624	
1867.....	413	98	20	21	12	42	15	29	2	239	652	
1868.....	356	110	62	30	19	30	26	44	1	322	678	
Total.....	1660	440	120	86	45	156	67	105	4	1023	2683	
Yearly average.	415	110	30	21	11	39	17	26	1	256	671	

A comparison may now be instituted between the mortality of ordinary children and those neglected by their parents.

### 31. Comparative Mortality of Montreal Foundlings and Ordinary Infants.

1867.	Baptized.	Interred.	Or, per 100 living at same age.
Total, Montreal Infants.....	5,598	2,063	36.8
Of whom were Foundlings.....	652	583	89.4
“ Ordinary Children.....	4,946	1,480	29.9
Proportion of Foundlings to ditto.....	1 in 8	1 in 2.5	(extra deaths) 59.5
Total, Boston Infants.....	.....	.....	17.4

In comparing Montreal with other cities, it would not be fair to make deductions for the peculiarities of our local institutions, because such peculiarities affect all large cities more or less; but, for the satisfaction of the inhabitants, the following table may be given. The strangers who are baptized in the city may be reckoned against those born here who are not baptized as infants.

### 32. Corrected Death-rate for Montreal City.

Year.	Total Deaths.	Proportion for Deaths of Imported Children.	Deaths of natives and ordinary inhabitants.	Corrected Death-rate per 1,000 living, at all ages.	Total Death-rate.
1865.....	4,025	258	3,767	36.3	37.8
1866.....	3,610	164	3,446	30.9	32.2
1867.....	4,465	219	4,246	36.4	38.3
1868.....	4,842	302	4,540	37.2	39.6
Average of 4 years.....	4,235	236	4,000	35.2	36.9

It follows that, although a portion of the lowered death-rate in 1866 was due to the unusually small number of infants received from the country, the balance, as compared with the average of the years before and after, viz., *no fewer than 550 lives, or 5.4 per 1,000 inhabitants*, may fairly be assigned to the anti-cholera cleansing. What a rebuke it gives to the members of the Council, and to the citizens who intrust to their care their own health and the very lives of their little ones, that in each succeeding year, notwithstanding the yearly boast that "the city was never so clean before," the death-rate has risen even above the previous number, humiliating as that is as compared with much larger and more crowded cities!

This table further rebukes those who attribute our excessive mortality to the strangers received at the Foundling Hospital, by showing that the average deduction to be made for this cause *only amounts to 1.7 deaths per 1,000 inhabitants*.

At the discussions which were held at the Natural History Society on this subject, a great variety of causes were assigned for the excessive mortality among our children. Probably all of these have more or less effect; but many of them apply with fully equal, if not greater force to other cities; and others again apply to the country districts just as much as to ourselves. Thus the frightful number of unwelcome children born among us, averaging 400 yearly, besides those who are provided-for by their parents, may be attributed in part to the large garrison which has been till lately stationed here; but it is the fruit of the same sin that curses humanity elsewhere. A large number of infantile deaths are undoubtedly caused by the drunkenness of their parents; but Montreal is not an unusually drunken city. The milk sold by many dealers is of inferior quality; but taking the city through, it is probably better and cheaper than in most English cities. Errors in diet, and deficiency of parental care are undoubtedly grievous causes of disease; but there is no reason to think that Montreal mothers are less careful and enlightened than in the country round: they ought to be more so. As to unripe fruit, &c., the country children get far more of it than we; and at the ages at which city children get most of it, it has been proved that they are *unusually healthy*. And as to the idea that catholic infants are predisposed to death from exposure to cold through the custom of early christening, it so happens that the coldest months, during which this cause ought to operate most, are by far the lowest in the death-rate.

It is only distracting attention from the main and solemn issue, thus to beat around the bush. Every thoughtful person who has observed and studied the simplest facts and first principles in sanitary science, must be aware that a *sufficient cause* for all our deaths is to be found in the filth and pollutions which are allowed to remain in our midst, and which poison the air, more or less, of the whole city, but most of all of the low and swampy districts. A large proportion of the inhabitants pour their slops daily on the spongy soil around their dwellings; house drains or even paved water-courses are little known; the contents of privies surcharge the porous earth around; and our back-yards, unusually large as compared with English cities, and which ought therefore to add greatly to our healthiness, are only so many more square feet soaked through and through with fœtid matter, forming (except during the merciful winter frost) an incessant poison factory, wafting disease and death into our dwellings. A large number of our houses are built on stumps driven into this putrid soil or even marsh; the cellars are always charged with miasms, which find their way into the upper rooms; and too often the houses, even if not back to back, have no doors or windows except on one side. Very lately an M.D. of this city, with above the average of reputation, planted a group of cottages of this description on one of the worst undrained swamps in our midst. As if these evils, which may not meet the gaze of strangers, were not enough, the corporation persist in laying most of the streets in soft limestone, which in a very few days is ground to fine dust, and soon becomes charged with effete animal matter, in which form it enters our dwellings and lungs; or else it is in a state of mud, which emits so nauseous a stench that cottagers, who have shut their back windows to keep out the smell of the yards, are obliged to shut the front also to keep out the smell of the street. It is impossible faithfully to execute the contracts for street-cleaning, while this stone, long since reported against by the City Surveyor, and theoretically abandoned by the Road Committee, continues in full use: and as to the vaunted scavenging by-law, *the Council have refused the money to carry it out!* It may be said with very few exceptions, that in the more crowded parts of the city inhabited by all except the wealthy, there is scarcely a square yard of ground which is not charged with effete matter, ready to generate poisonous gases under the influence of every summer sun.

The foregoing may be regarded in great measure as errors of neglect or ignorance; but the very remedies applied at high cost are continual causes of disease. A large part of the older sewers in the city are made of absorbent and now putrid wood; and although the Council have determined to lay down no more, the brick sewers are often so badly constructed that the effete matter oozes through them, and deposits soon accumulate in their sluggish course. Moreover a large proportion of the house drains, even in high-rented dwellings, are still made of wood and untrapped. Only the new sewers are trapped at the gully-holes; and at times, and in special places, the stench from these old poison pits is insupportable. Thus our sewer and house drain system may be called (with few exceptions) an express contrivance for conveying the ordinary air-poisons, and the extraordinary infections of small-pox, scarlatina, &c., into every part of the city; and especially from the low into the higher levels, lest the rich should selfishly conclude that they were not affected by the evils which they allow to scourge the poor. The prevailing currents of air also, in the general direction of the river, while they serve somewhat to mitigate the unhealthiness of Griffintown, carry the air-poisons over the higher districts, where, being intercepted by the "Mountain," they impinge upon the fashionable streets and villas of our city.

Infants are more dependent on pure air even than children; they, more than adults; yet to all of us, unvitiated air is a necessary condition of health. Moreover, infants cannot escape from the air of their dwellings, nor from the poisons which fester there. The infantile death-rate is therefore the readiest thermometer, by which we estimate the virulence of poisonous emanations. How this thermometer rises and falls with the heat of the sun, has here been shewn. So far from wondering why so many children die in this city, we might rather wonder how so many manage to struggle into life, against such murderous forces. All these (as well as other) corrupting influences must be removed, if we hope to render up our account to the great Judge, free from the blood of these hundreds of children, to whom the Lord gave Life; who in their helplessness cry to us to nurture and guard it; but whom we, to save a few wretched dollars and a little toil and trouble, consign to a premature and therefore to a guilt-bearing Death.

MONTREAL, July 20th, 1869.



