Report on the health of Dublin for the year 1867 : to which is added a yearly report of analysis of food etc.

REPORT

ON THE

HEALTH OF DUBLIN,

FOR THE YEAR

1867.

BY

E. D. MAPOTHER, M.D.,

MEDICAL OFFICER OF HEALTH.

To which is added a Yearly Report of Analyses of Food, &c.,

By C. A. Cameron, M.D.,

City Analyst.

DUBLIN:

JOSEPH DOLLARD, PRINTER, 14 DAME STREET.

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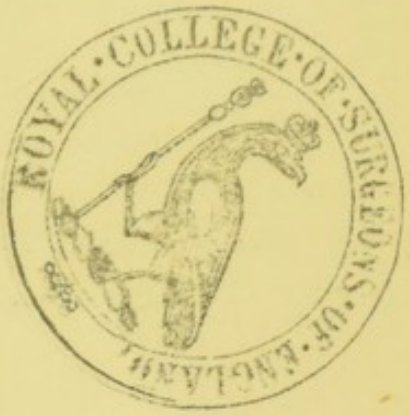

BY

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MEDICAL OFFICER OF HEALTH.

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1868.

Public Health Committee, Dublin Corporation :

THE RIGHT HON. THE LORD MAYOR,
(WILLIAM CARROLL, M.D.)

Alderman BONSALL,
" TARPEY,
" JOHN REYNOLDS, J.P.,
" M'CANN,
" PLUNKETT,
" JOYNT, D.L.,
" CAMPBELL, J.P.,
" GREGG,
" MACKEY, J.P.,
" MOYLAN, D.L.,
" M'SWINEY.
Councillor NORWOOD.
" EAKINS,
" BYRNE,
" DRAPER,
" Hon. J. P. VEREKER,
" LONG, M.D.,

Councillor MACLEAN, Chairman,
" RYAN, M.D.,
" O'RORKE.
" MURPHY,
" DEVITT,
" HAMILTON,
" BARRINGTON, D.L.,
" JAMESON, J.P.,
" WARREN,
" BOLGER,
" OWENS, M.D.,
" ROCHFORD,
" WHELAN,
" GAVACAN,
" LEONARD,
" O'REILLY,
" JOSEPH.

Medical Officer of Health :

E. D. MAPOTHER, M.D., 125 Stephen's Green.

Public Analyst :

C. A. CAMERON, M.D., M.R.I.A., 101 Lower Baggot Street.

Inspector of Nuisances :

Mr. ROBERT ALCOCK.

Fever Inspector :

WM. HARWOOD.

Sanitary Sergeants of the Metropolitan Police.

A Division.
HENRY DEVLIN, Chancery Lane Station
JOHN BYRNE, Kevin Street Barracks

B Division.
JAMES HALLIGAN, College Street Station
DANIEL RYAN Do.

C Division.
THOMAS FITZGERALD, Frederick Lane Station
JOHN DUNNE, Sackville Lane Station

D. Division.
MARK BYRNE, Bridewell Lane Station
JAMES MENTON, Green Street Station

REPORT.

TO THE PUBLIC HEALTH COMMITTEE, DUBLIN CORPORATION.

MY LORD MAYOR AND GENTLEMEN,

It is my duty to submit to you a Report on the Health of Dublin during the year 1867, and the measures to preserve it, which have been carried out under your direction. I do so with very great pleasure, as such measures, during the past and a few previous years, seem to have controlled very sensibly the spread of such diseases as are preventable.

To make this result apparent, it will be best to compare the entire mortality, and that by various diseases, during the last and two preceding years, in ours as well as in some other cities, in a series of Tables.

GENERAL MORTALITY.

	Population 1861	Persons to acre	Deaths			Deaths per 1000		
			1865	1866	1867	1865	1866	1867
Dublin City ..	254808	66·9	6959	7571	7374	28·	29·5	28·9
Dublin District	314409	32·7	8151	9034	8607	25·9	28·7	27·
London District	2803989	39·0	73460	80129	70588	26·1	28·5	23
London (Central)	378058	...	9948	10282	8641	26·3	27·2	22·3
Liverpool ...	476368	94·8	17290	20202	15878	36·4	42·4	30·
Glasgow ...	423723	85·4	13887	12745	12560	32·7	30·07	28·9
Belfast ...	123479	11·9	...	...	3527	...	...	28·6
Cork	93389	6·7	...	..	2373	..	...	25·6
Limerick ...	50068	5·8	...	...	1126	...	...	22·7
Waterford ...	30570	1·7	...	...	842	...	...	27·7

The rates in the above Irish provincial towns are not reliable, as they include rural districts, and thrice as many deaths have been often recorded in one week as in others. The real mortality never fluctuates so astonishingly.

The city is at present divided into seven Registration Districts, co-terminous with the Dispensary Districts; but there are two Medical Officers and Registrars for each, and it would be very desirable that the death rates of the fourteen sub-districts should be separately registered. For instance, a death rate of so large a district as No. 4, South City, which includes Fitzwilliam-square and Townsend-street neighbourhoods, in which health-promoting causes are greatest and least respectively, can give no reliable information. If such a sub-division be impracticable, the deaths which occur in residences above and below a certain valuation (say £10) should be distinguished. The latter class would embrace all tenements.

The death-rates in the seven districts has been as follows :—

	Deaths per 1,000 living. 1865.	1866.	1867.
Summer-hill District	18·1	23·4	22·5
Coleraine-street	20·1	19·3	22·2
Blackhall-street	43·4	46·7	48·4
Do. abstracting Workhouse deaths	31·2	28·1	27·7
Meath-street	45·4	46·9	51·4
Do. abstracting Workhouse deaths	27·7	25·1	24·4
High-street	20·4	24·2	21·1
Peter-street	21·7	22·8	27 3
Grand Canal-street	17·54	17·5	18·1

During each of the quarters the annual rate of mortality was as follows :

	Deaths per 1,000 living. 1865.	1866.	1867.
January, February, March	34·4	32·6	36·5
April, May, June	25·6	28·02	29·3
July, August, September	23·8	25·1	23·7
October, November, December	27·02	33·03	25·9

Zymotic diseases, which include all those that are spreading and preventable, produced in each year 1,483, 2,309, and 1,673 deaths respectively.

Fever produced, in all these years, a greater loss of life than any other zymotic--492, 480, and 309 having thus perished in 1865, 1866, and 1867 respectively. The ratio of such deaths to population in each district is shown in the following Table :—

	Per 10,000 living. 1865.	1866.	1867.
Summer-hill	7·7	6·8	7·5
Coleraine-street	3·9	7·01	7·
Blackhall-street, containing the Hardwicke Fever Hospital	38·0	32·07	24·
Meath-street, containing the Cork-street Fever Hospital	52·0	63·8	30·
High-street	7·6	12·2	5·
Peter-street	12·9	10 3	9·
Grand Canal-street	9·3	11·1	6·

During the months of each of the three years the deaths by fever were distributed as follows :—January, 55, 46, 41 ; February, 41, 50, 32 ; March, 49, 41, 34 ; April, 45, 48, 26 ; May, 36, 59, 29 ; June, 45, 35, 22 ; July, 28, 27, 27 ; August, 24, 32, 15 ; September, 27, 21, 25 ; October, 27, 39, 23 ; November, 41, 29, 24 ; and December, 57, 33, 29.

From city dwellings, the Hardwicke and Cork-street Fever Hospitals received 3,245 patients, or 127 out of every 10,000 of the population, during 1865 ; 2,536, or 99 per 10,000, during the succeeding year ; and 1,841, or 72 per 10,000 during that just passed.

The neighbourhoods in which fever has prevailed most, in each of the three years, are arranged below :—

1865.	1866.	1867
Church-street	Church-street	Church-street.
Beresford-street		Beresford-street.
Greek-street	Fisher's-lane	Greek-street.
	Dispensary-lane	East Arran-street.
Barrack-street		
Lr. Mecklenburgh-st.	Montgomery-street	
Cole's lane		
Coombe	Kilmainham	Coombe.
Skinner's-alley	Marrowbone-lane	Marrowbone-lane.
	New-street	Cork-street.
Patrick-street		Kevin-street.
West Essex-street	West Essex-street	Golden-lane.
Townsend-street	Townsend-street	Townsend-street.
Poolbeg-street	City-quay	
Wood-quay	Wood-quay	

The residences of these patients are sent to us twice weekly, by the authorities of these hospitals, and on Monday night a list of the deaths by preventable diseases which have occurred during the previous week is transmitted by the Registrar-General. Some days may elapse before the origin of a fever case will be made known by these means, and they do not include cases treated in the patients' own homes, unless fatal. For these reasons your Committee have directed the Inspector to call twice weekly at each Dispensary Station, where the physicians kindly furnish valuable information.

The infected house is then visited; the state of the ash-pit, privy, and house-drain is examined, and, if necessary, orders are given to have them put in proper order; the room where the case has arisen is aired, and directed to be whitewashed, and the inmates are urged to have the clothes and bedding sent to the hot-air chamber, Marrowbone-lane, for disinfection. If any fresh case has occurred, the address and regulations of the nearest dispensary are given, or the patient is urged to seek admission into hospital; and it is to be regretted that there are not greater powers to compel them to do so; if there were, it would be quite possible to stamp out an outbreak of contagious disease.

The year was remarkable for the outbreak of an unusual and most virulent disease, which was best termed cerebro-spinal or purple fever, but to which the erroneous and frightful name of "Black Death" was also applied. During the summer of 1866, seven cases had been noted, but the disease did not become epidemic until March, and at any time five weekly was the greatest number of deaths. About ninety altogether perished. Some of the cases presented only the symptoms of inflammation of the brain and spinal cord; others those of a prostrating blood poison; and in many these phenomena were combined. The most quickly fatal termination was five hours, and the average about forty-two. Recovery occurred in about one-third of the cases. Previous health or habits seem to have had no influence, and youth is the only positive predisposing cause, in which it agrees closely with

the parasitic diseases of lower animals. There is some reason to regard the disease as allied to scurvy, and promoted by want of vegetable food. As purples in the pig, and splenic apoplexy in cattle, were rife at the same time, and were somewhat like the human malady, it was suggested that eating the flesh of such animals might have produced it; but as families were never attacked, but single individuals only, this seems improbable. It did not appear to be catching. The pestilence is so appaling, and its causes so obscure, that an investigation by physicians commissioned by Government is most desirable.

During 1865, 1866, 1867, 70, 23, and 1 persons died of small-pox, many of the victims having been unvaccinated. The parents or other responsible persons in any house where a case had occurred were urged to bring their children, or all other unvaccinated persons, to the dispensary of the district, its address and regulations being given; and they were informed that they subjected themselves to a penalty for not so doing. Information was also given to the dispensary medical officers of any unvaccinated children. The freedom from this disease in 1867 is most extraordinary.

Scarlatina, in 1865, produced 43 deaths, and was most prevalent during August; and in 1866, 63 died from the disease, the greatest number being in September; and in 1867 it destroyed 199, of whom 42 died in November. As the poison of the disease is known to be most virulent and tenacious, the use of the disinfecting chamber was insisted on.

The furnace is lighted twice weekly, $2\frac{1}{2}$ cwt. of coal being sufficient to raise the chamber to 300°, and keep it so for eighteen hours. 613 articles belonging to 53 persons attacked with contagious disease have been disinfected gratuitously, since the chamber was finished in January.

The chamber cannot be fully utilized without the co-operation of the fever hospitals, for when the patients are being brought to these, their bedding and bed-clothes might also be taken to the disinfecting chamber. In the fever hospitals the clothes are puri-

fied by airing; but as there is no hot-air chamber, with a heat of 300°, it may be feared that clothes are not freed from so persistent a poison as scarlatina.

Measles, in 1865, caused 157 deaths, and prevailed most during July, August, and September, when 63 occurred. In 1866, 34 persons perished, 13 of them in January; and in 1867, 258, March being the most fatal month. The airing of the rooms and of the bed-clothes and dress was insisted on by our inspectors.

Diarrhœa was much less fatal than usual, and we were granted entire immunity from cholera. During the hot months, when the re-appearance of this pestilence was dreaded, the sewers and street channels in the poorer neighbourhoods were flushed with carbolic acid—that made by Calvert of Manchester, is most reliable. The solid sells at 3s. per lb., and the solution at 1s. per lb. The fish and fruit markets were vigilantly inspected, and the boiling and filtering of the water supplied from so unsafe a source as the canals were the preventive measures relied on.

The number of cases of diarrhœal disease during each of the weeks when that type prevails, is recorded in the following table, and the concomitant temperature and rainfall, two of the controlling circumstances, are noted. The cholera cases of 1866 are also given :—

Week ending		Cholera	Diarrhœa				Mean Temperature				Rainfall in Inches			
		1866	1867	1866	1865	1864	186	1866	1865	1864	1867	1866	1865	1864
May	5		1	0	1	1	52·3	43·0	53·5	52·7	·41	·50	·99	·00
	12		2	3	3	1	57·4	52·3	49·5	54·6	1·31	·51	·78	·50
	19		3	0	2	1	46·9	48·0	53·0	61·7	·38	·06	·18	·0
	26		8	2	4	2	48.0	52·7	57·6	54·2	·47	·0	·09	·34
June	2		7	5	2	0	55·5	50·1	54·3	47·5	·26	1·47	1·97	·17
	9		4	5	2	0	56·9	56·2	63·7	58·1	·44	·95	·0	·43
	16		4	2	1	0	58·8	56·9	58·0	56·1	·03	·73	·0	·28
	23		2	4	3	1	58·2	55·8	62·8	57·7	·00	1·64	·14	·68
	30		4	7	4	2	58·8	63·4	62·4	56·9	·01	·10	·33	·40
July	7		2	1	7	1	55·9	54·9	63·3	57·3	·15	·95	·69	·0
	14		2	2	9	3	62·9	63·7	59·1	58·0	·64	·04	·49	·0
	21		5	3	4	1	57·4	61·7	60·5	64·2	1·57	·0	·66	·24
	28	1	5	6	7	4	57 8	63·3	64·2	62·2	·18	·20	·01	·39
Aug.	4	2	1	3	10	4	57·0	56·7	56·2	59·6	·11	·75	·28	·08
	11	5	3	3	5	7	59·5	55·7	61·4	57·4	·45	·90	2·18	·17
	18	13	4	7	9	7	62·4	56·7	58·7	57·6	·27	·07	1·06	·04
	25	30	16	8	13	12	62·7	61·7	62·4	52·7	·37	·45	·76	·77
Sept.	1	41	8	4	7	10	60 5	57·5	60·9	59·7	1·32	·20	·06	·46
	8	46	10	11	10	11	59·3	54·9	64·2	57·3	·55	1·05	·08	·76
	15	51	17	9	13	11	57·1	54·2	65·2	53·3	·43	1·08	·02	.36
	22	66	22	13	5	13	53·1	51·4	55·1	55·2	·08	·62	·0	·51
	29	58	14	7	11	4	55·0	51·1	58·4	54·6	·07	·16	·0	·0
Oct.	6	43	10	8	11	6	48 9	54·0	57·9	49·7	·21	·006	·41	·0
	13	69	7	6	10	9	50·0	50·2	54·5	50·2	1·09	·35	1·48	·05
	20	80	5	13	9	1	51·1	51·7	45·1	48·8	·46	·24	·23	3·91
	27	80	2	9	12	2	53 6	47·4	47·3	50·0	·72	·49	1·03	2·19
Nov.	3	66	4	9	9	4	46·5	48·3	44·0	45·8	·54	·66	·20	·14
	10	73	5	8	5	5	43·4	46·2	42·1	40·8	·01	·39	·09	·19
	17	51	2	8	5	4	45 0	44·5	47·3	46·3	·19	63	·31	1·54
	24	45	3	7	1	4	40·4	41·3	44·9	41·3	·00	·09	2·41	·85
Dec.	1	32	2	7	5	0	41·1	42·6	42·0	44·0	·61	·21	1·31	·43
	8	12	2	9	5	4	34 1	44·8	45·9	45·3	·05	77	·89	1·00
	15	1	3	4	5	1	45·8	42·0	42·6	41·7	·27	·51	·02	·36
	22	4	2	5	4	4	44 0	43·3	47 1	33·4	·32	·25	·01	·97
	29	7	3	6	8	2	41·9	45·5	45·3	37·4	·11	·14	1·60	·02

Consumption produced 969 deaths in 1865, having been most fatal in the months of January, February and March. In 1866, 929 were destroyed by it, March, April, and September being the most fatal months, and in 1867, 831 fatal cases occurred, especially during February, when 97 succumbed.

The ill-aired and overcrowded state of workrooms, and of the tenements in which the poor dwell, very greatly caused by the faulty construction of the window frames, which seldom open down, are most potent exciting causes of this scourge in Dublin.

Infantile convulsions and whooping-cough are two other maladies much promoted by want of fresh air. The former carried off 511, 493, and 532, during each of the three years, and whooping-cough was fatal in 145 instances during 1867.

Bronchitis caused the death of 1,126 persons during the year, 530 having perished during January, February, and March, and 234 during the last quarter.

During these six months in London and suburbs, 5,616 persons died from this disease, or 1 in 249 annually in the population, while the ratio in Dublin was 1 in 166. This greater mortality is, no doubt, due in a great measure to causes beyond the control of your Committee—such as insufficient clothing, fuel and food—but the dwellings of the poor are often badly protected against the weather, and many of them are so ruinous that they should be demolished. There is need for the erection of comfortable residences for the humbler classes, and the Industrial Tenements' Company have just opened a block of buildings containing 120 rooms. It is to be hoped the example will be largely followed.

Many rain-spouts discharge over, instead of under the flags, and this cirumstance may cause many poor persons, whose feet are badly protected, to catch fatal bronchitis. The old, whose circulation is weak, and independent power of producing heat slight, mainly fall. Ablution of the skin is more neglected by the poor of this than most other cities, and hence lung and kidney diseases are very greatly promoted. In their rooms, filled with persons of different sexes, a bath cannot be taken, and there is, therefore, the greatest need for the erection of free or cheap baths and wash-houses which, by Act of Parliament, the Corporation is empowered to establish.

The greater amount of impurity in the air from the burning of coal during cold weather in cities may promote bronchitis, for in rural districts fall of temperature does not so extraordinarily increase that disease.

Some of the employments or manufactures which injure the health of the surrounding inhabitants may be noticed.

1. Chemical works.—They have been frequently inspected, and I have much satisfaction in stating that, owing to the suggestions of the City Analyst and myself, the nuisances they produced have been completely abated. A little chlorine and sulphurous acid gases unavoidably escape, but they are disinfectant in the unwholesome neighbourhoods in which all the works are situate, and any little inconvenience they occasion may be borne when the employment they give is remembered. During the east winds these gases will blow over the fashionable squares and streets placed eastward in this, different from most other cities.

2. The Gas Company have adopted the oxide of iron purifying process, advocated by me in 1865, and the noxious escape of sulphuretted hydrogen has therefore almost entirely ceased.

3. Several fat-melting and bone-boiling establishments have been improved by carefully covering the boilers, conducting the vapours through the furnace, raising the chimneys, and compelling the periodical removal of the fetid property.

4. So many factories pour out injurious smoke, that the Committee might with advantage take steps to prevent this evil, by enforcing the raising of chimneys, the adoption of consuming apparatuses, or of stoking carefully pursued. In English towns the penalty is proportional to the number of times in the twenty-four hours when black smoke is seen to issue from the chimney.

5. The slaughter-houses number 107, 13 being for pigs, and 17 are now disused. Bacon-curers have found that the least decomposition will spoil their produce; hence they keep their yards scrupulously clean, and even they prevent the rotting of blood in the sewers, by pouring in brine. These facts alone suggest that the stenches from slaughter-houses are not wholesome for men to breathe, and such stenches are in many slaughter-houses freely given off by the blood cast into the sewers, in which, owing to imperfect fall and water supply, it lodges till it rots, and by the earth into which blood and fluid filth soak—the surface being in most cases very badly paved. While in most well-ordered towns in England and all such on the Continent, in Paris for instance, since 1765, there are cleanly abattoirs; in Dublin there are 107

slaughter-yards huddled amongst the densely-populated spots of the city. The driving of the cattle, and the carriage of their carcases through the streets, and the slaughtering of them before the eyes of many people whose dwellings overlook these repulsive places, have a brutalizing effect on our citizens which should be lessened by the compulsory use of a suitable number of abattoirs. As it would be probably desirable that markets should be connected with them, the following four sites seem convenient—1. Cattle Market. 2. Square, bounded by Britain-street, Cole's-lane, Sampson's-lane, and Moore-street. 3. Square, bounded by William-street, Castle Market, South George's-street, and Exchequer-street. 4. Square, bounded by Great Brunswick-street, Spring Garden-lane, Townsend-street, and Shaw-street.

Meat which is unfit for food, from decomposition or from parasitic or contagious diseases having infected the animal, can never be seized with certainty, unless the slaughtering-places and markets be concentrated. The latter dangerous condition can only be judged of by a physician or veterinarian skilled in the use of the microscope.

6. Dairy proprietors have been proceeded against on former instances for keeping their cow-yards in a filthy, unpaved, and unsewered state, by which the air in many densely-peopled neighbourhoods was polluted. So over-crowded are many of these places that the animals can scarcely lie down except by turns. Such barbarous treatment should be punished by the Society for Preventing Cruelty to Animals, or prevented by extending the power of licensing and defining space in cow-yards which is conferred by the Metropolis Management Act.

In the following tables the work effected by the Committee, and the inspections and proceedings of the eight Sanitary Sergeants, are briefly summarized :—

SANITARY WORKS, 1867.

House Drains built	364
Do. cleansed	590
Privies and Water-closets built	281
Do. repaired	1,150
Ashpits built	322
Do. cleansed	4,099

Dwellings cleansed and repaired	4,680
Yards &c., cleansed	3,824
Manure removed	1,344
Swine removed from dwellings	276
Do. yards	1,284
Manufactory Nuisances—Chandlery	4
,, Bones	4
,, Lead	1
Houses closed	8
Gut Manufactory	1
Smoke	4
Knackers' Yards	1
Miscellaneous Nuisances	1,873

Inspections by Sergeants, 1867.

Houses	31,943
Rooms	95.676
Lodgings	1,716
Bakeries	1,287
Slaughter Houses	2,477
Notices served	9,477
Summonses	1,935
Convicted	1,850
Dismissed	26
Defects discovered	19,214
Do. remedied	17,228
Standing	2

I have the honor to be,

Your faithful servant,

E. D. MAPOTHER.

1*st February*, 1868.

Annual Report of Dr. Cameron,

CITY ANALYST.

14*th February*, 1868.

I beg to submit for the information of the Public Health Committee a statement of the duties performed by me during the year 1867.

Analyses of Food.

The following analyses were performed :—

	No. of Samples.	
Milk (pure, or nearly pure)	42	87
,, (largely adulterated)	45	
Tea (pure)	1	
Coffee (pure)	1	
Bread (pure)	2	
Butter (adulterated)	1	
Whiskey (adulterated)	1	
Rice Flour (pure)	2	
,, (adulterated)	1	
Oatmeal (pure)	1	
Total	97	

Twenty-nine vendors of the adulterated articles were fined by the Lord Mayor, in sums varying from 5s. to £2, together with costs. The greater number (69) of the samples of the milk analysed, were examined by directions of the Lord Mayor.

I may here mention that every sample of milk examined by me was subjected to complete analysis, such as I usually charge two guineas for performing in my private capacity as an analytical chemist. By no mode of testing with lactometers or galactometers can the adulteration of milk with any certainty be determined. Of the 87 samples of milk analysed in 1867, 45 were adulterated with from 12 to 50 per cent. of water.

I attended on twenty-three occasions the Courts of the Lord Mayor and the Recorder, to give evidence in cases of food adulteration and diseased meat.

Waterworks Committee,

I made three complete quantitative analyses of lead alloys for the Waterworks Committee, for the purpose of determining the relative amounts of lead, tin, and antimony contained in each specimen. I am engaged in another, and much more extended investigation for this Committee, but the results are not yet arrived at.

Public Abattoirs.

By directions of the Committee, I prepared a long Report on the subject of public *abattoirs*, in which I described, from personal observation, the public slaughter-houses of Paris, London, and Edinburgh. For the purposes of this document, I obtained valuable reports from Dr. Letheby, Medical Officer of Health, London, Dr. Littlejohn, Medical Officer of Health, Edinburgh, and other eminent authorities, relative to the modes of inspecting animals and meat offered for sale, as practised in those and other cities. I also stated the results of my own inspection of meat, and the diseases of animals, which rendered their flesh dangerous, or, at least, unwholesome food. This report has been printed by order of the Committee.

Liffey Nuisance Committee.

I attended the meetings of this Committee, and submitted to them two Reports upon the subject of their inquiry.

Committee on Heating and Ventilation of the Council Room.

I attended the meetings of this Committee, and submitted to them my views relative to the proper mode of heating the Council Chamber.

Diseased Meat.

I have inspected a large number of animals, and quantities of meat, with the view of ascertaining whether or not they were fit to be used as human food. About 100 animals, carcasses, and parts of carcasses were examined—the scrutiny, in many cases, lasting from one to two hours—and the following were condemned as being in a diseased state :—

18¾	Carcasses of	Beef.
12	,,	Sheep.
8	,,	Pigs.
1	Carcass of	Calf.
Total, 39¾		

Also 725 lbs. of Bacon.

The weight of the ox varies from 600 lbs. to 1,500 lbs. ; of the sheep, from 60 lbs. to 120 lbs. ; and of the pig, from 300 lbs. to 1,000 lbs., according to the breed and stage of feeding. Assuming the weights of these animals condemned in Dublin last year to be on the average as follows—oxen, 800 lbs. ; sheep, 80 lbs ; pigs, 400 lbs.—then the weight of the meat condemned would amount to—

Beef	14,600 lbs.
Mutton	960 ,,
Pork	3,200 ,,
Bacon	725 ,,
Veal	125 ,,
	19,610 lbs.

Chemical Works.

I have paid twice a month visits of inspection to the different Chemical Works, and I am glad in being able to state that they are not nearly so objectionable to the public as was formerly the case. The proprietors have shown every disposition to abate the escape of noxious and unpleasant gases and vapours, and they have willingly incurred great expense in carrying out the improvements in this respect, which have been from time to time suggested to them.

Waste Land.

Three years ago I directed attention to the existence of several acres of marshy waste land, situated near the eastern parts of the River Liffey, and from which, more especially in warm weather, the most dangerous vapours, gases, and miasma were evolved. I am now able to report that, owing to the pressure applied to the owners of this dangerous, and in every respect useless land, its reclamation has been actively carried on since 1866, and only about two acres remain still in a marshy condition.

CHARLES A. CAMERON, M.D.,

City Analyst.

102, *Lower Baggot-street,*
11*th February*, 1868.