

ON BACK-TO-BACK HOUSES.

By JAMES NIVEN, M.A., M.B., Medical Officer of Health,
Manchester.

*With Illustrations of various types of Back-to-Back Houses
met with in Practice, and the methods adopted for dealing
with this class of property, by*

T. DE COURCY MEADE, M.INST.C.E., City Surveyor,
Manchester.

Read at Sessional Meeting, March 13th, 1895.

THE objects of this paper are:—1. To discuss the influence of back-to-back houses on health, and—2, To explain what action the Manchester Corporation is taking to remedy the defects of these dwellings. The most important investigations on the effects of these houses on health are probably contained in the contribution of Dr. Tatham to the Report by Dr. Barry and Mr. P. Gordon Smith on this subject, and in a paper by Mr. Herbert Jones, Medical Officer of Health for Crewe, in *Public Health*, August, 1893. Dr. Tatham endeavoured to elucidate the question by comparing the death-rates from all causes, from infectious diseases, from phthisis, and from lung diseases, in the Registration sub-districts of Greengate and Regent Road in Salford.

The registration sub-districts are classified according to the proportion of back-to-back houses in them, and the figures are totalled in groups as shown in the table on the opposite page.

These are most striking figures, which make it highly probable that the mere fact of being back-to-back renders a house injurious to its inmates. But, however valuable the results obtained may be, they fall short of proof and are open to these objections.

In the first place the back-to-back houses, certainly, on the whole, lie in the older and less sanitary parts of Salford, so that, in the total of districts containing no back-to-back houses, there are many that are probably much healthier than any of those containing back-to-back houses, and these will doubtless lower the total death-rates.

In the second place, when we examine in detail the tables

Table showing the Mortality Statistics from all and certain Specified Causes during the five years 1879-83, in groups of Districts containing different proportions of back-to-back houses comprised within the Greengate and Regent Road Registration sub-districts of Salford.

DISTRICT.	Population.	All Causes		Pulmonary Diseases other than Phthisis.		Phthisis.		Small-pox, Measles, Scarlet fever, Diphtheria, Whooping Cough, Fever, Diarrhoea.		Deaths from Diseases enumerated in Columns 3-5.		Deaths from Diseases not enumerated in Columns 3-5.		Diarrhoea.	
		Registered.	Death-rate per 1,000 living.	Registered.	Death-rate per 1,000 living.	Registered.	Death-rate per 1,000 living.	Registered.	Death-rate per 1,000 living.	Registered.	Death-rate per 1,000 living.	Registered.	Death-rate per 1,000 living.	Registered.	Death-rate per 1,000 living.
	1	2	3	4	5	6	7	8							
<i>Greengate—</i>															
GROUP I.—9 Districts containing no back-to-back houses	8,713	1,199	27.5	289	6.6	123	2.8	198	4.5	610	13.9	589	13.6	62	1.42
“ II.—13 Districts containing an average proportion of 23 per cent. of back-to-back houses	11,749	1,719	29.2	457	7.8	195	3.3	282	4.8	934	15.9	785	13.3	91	1.55
“ III.—12 Districts containing an average proportion of 56 per cent. of back-to-back houses	11,405	1,738	30.5	449	7.9	203	3.6	352	6.2	1,009	17.7	729	12.8	121	2.12
Greengate Sub-District	31,867	4,656	29.2	1,195	7.5	521	3.3	832	5.2	2,553	16.0	2,103	13.2	274	1.72
<i>Regent Road—</i>															
GROUP I.—72 Districts containing no back-to-back houses	54,264	7,079	26.1	1,560	5.7	725	2.7	1,330	4.9	3,615	13.3	3,464	12.8	418	1.54
“ II.—10 Districts containing an average proportion of 18 per cent. of back-to-back houses	8,773	1,276	29.1	329	7.5	119	2.7	215	4.9	663	15.1	613	14.0	81	1.85
“ III.—6 Districts containing an average proportion of 50 per cent. of back-to-back houses	4,380	817	37.3	189	8.6	99	4.5	167	7.6	455	20.7	362	16.6	62	2.83
Regent Road Sub-District	57,417	9,172	27.2	2,078	6.3	943	2.8	1,712	5.0	4,733	14.1	4,439	13.1	561	1.66

furnished by Dr. Tatham, and scrutinise the districts adjoining those containing back-to-back houses, we find that in these also the mortalities are very high, being frequently in excess of the mortalities in the districts containing back-to-back houses.

Nevertheless in the Greengate district Dr. Tatham considers that the back-to-back houses, except for their structural arrangement, are placed under better sanitary conditions on the whole than through houses, and that there is no great difference in the social condition of the people inhabiting the two classes of dwellings. The figures for this district have, therefore, considerable value.

The ideal method of estimating the effect of back-to-back houses on the death-rates would be, if possible, to take a number of back-to-back houses built in the same manner as a similar number of through houses of similar materials and of equal soundness of construction, inhabited by the same class of people, engaged in the same pursuits and of equal social position, and then to compare the fortunes of the inhabitants in the two groups.

Fortunately we possess such an investigation in Mr. Jones' admirable paper.

The results at which he arrives are similar to those previously obtained by Dr. Tatham.

I would also mention an inquiry made by Dr. Pilkington of Preston, twenty years ago, which brought out a very excessive mortality in back-to-back houses.

Most medical men are agreed on this subject. But opinions must be able to stand the test of figures, and Dr. Bell, of Bradford, in a paper published in *Public Health*, February, 1892, has given figures which certainly appear to show that back-to-back houses of fair construction may be occupied without injury to health. The mode in which these houses were selected was criticised adversely by Dr. Evans, but there still wants something to explain the very low rates of mortality in them. The figures appear to suggest that in calculating these death-rates Dr. Bell omitted to distribute the deaths in public institutions of persons coming from these houses.

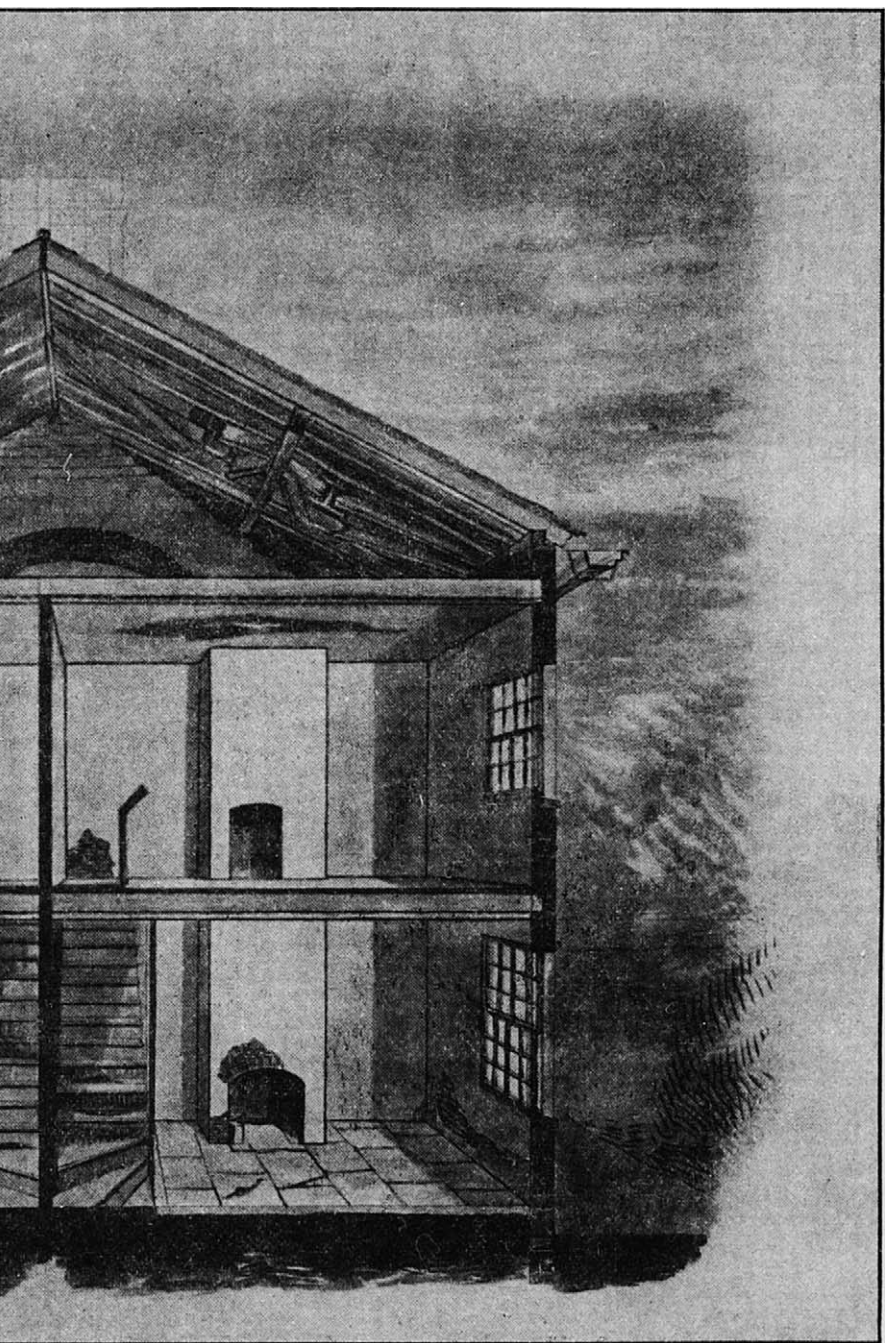
The investigation which I have made has reference only to Manchester. The back-to-back houses here are mainly in the older parts of the city. They are, many of them, dilapidated, with defective roofs, walls, floors, windows, and doors.

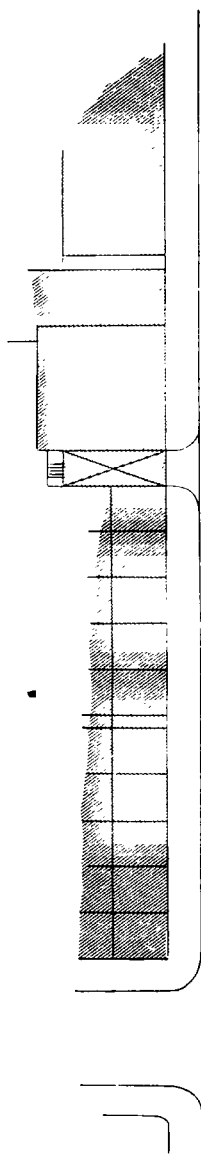
The condition of these dwellings is shown by Diagram 1, p. 256, giving a perspective view of the interior of two of these dwellings.

Then again, they are often contained in closed courts, when the privies, generally defective, are arranged in stacks in the

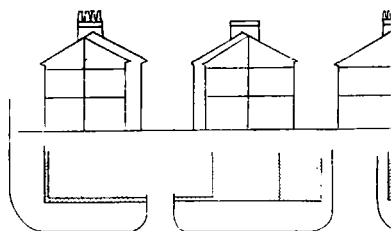
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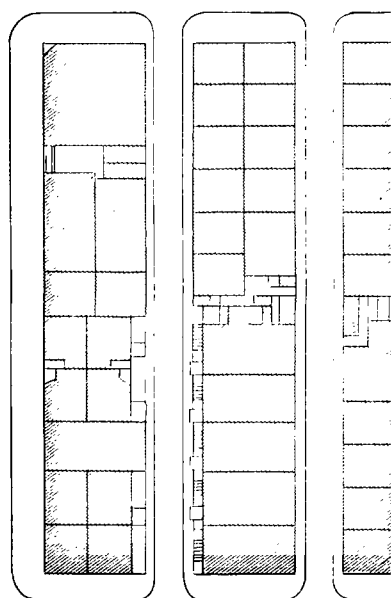


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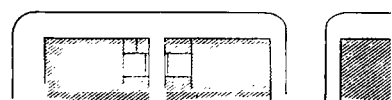
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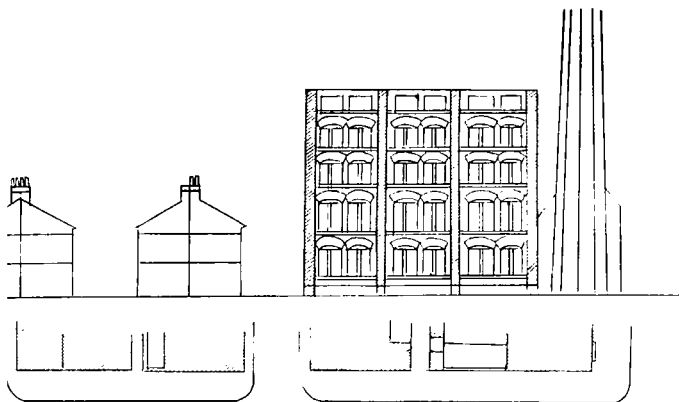
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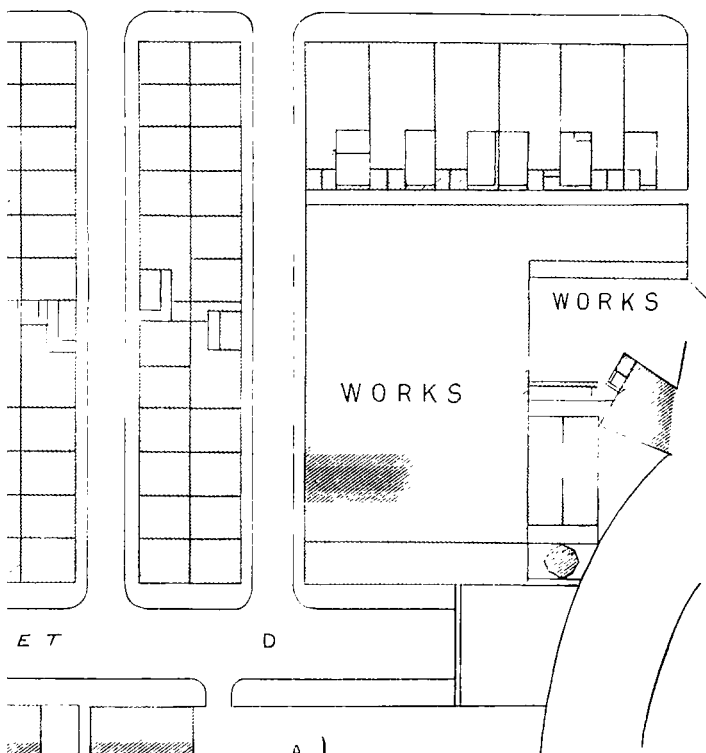
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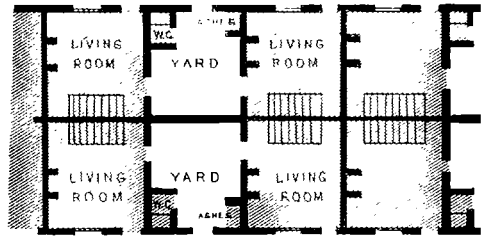
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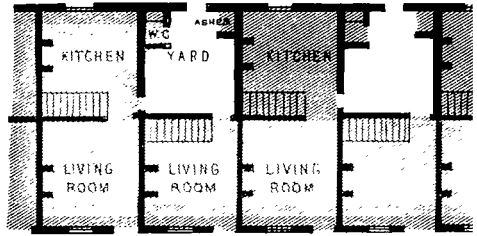
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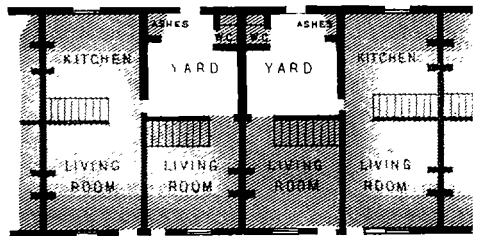
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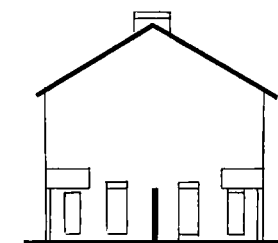
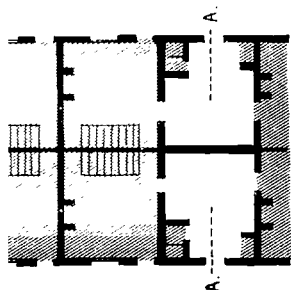


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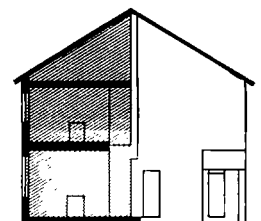
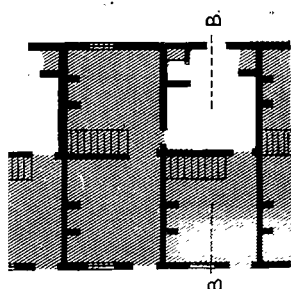
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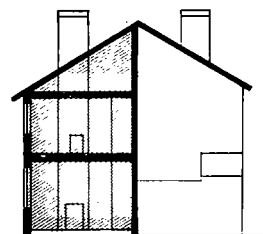
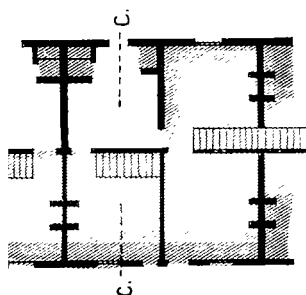
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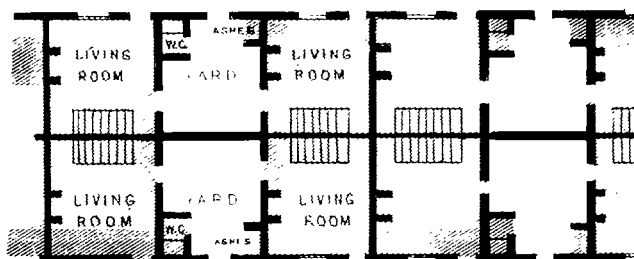
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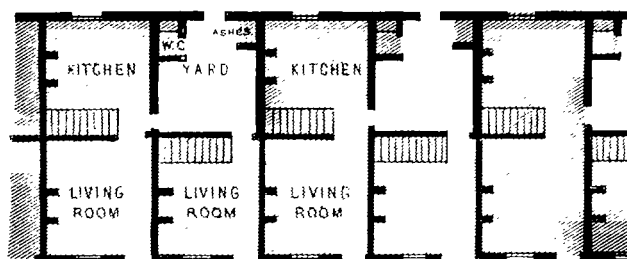
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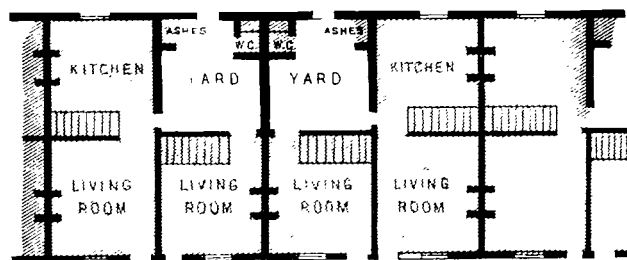
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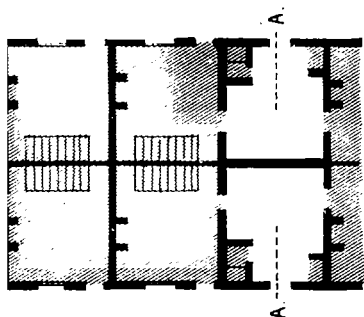
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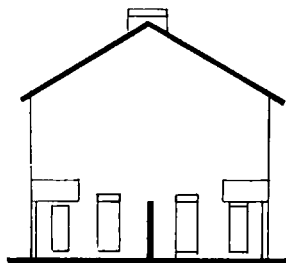
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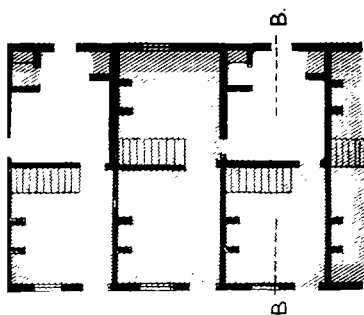
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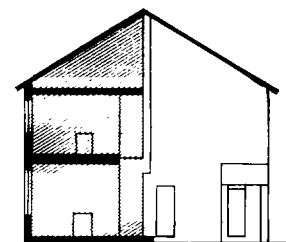
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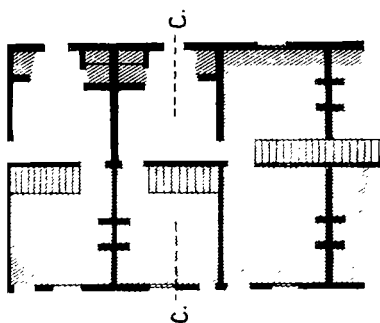
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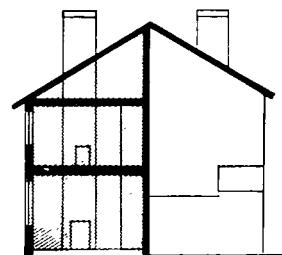
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interior of the court, or they are in narrow and confined streets and overshadowed, perhaps, by lofty buildings, with pail closets underneath bedrooms. A view of some of these conditions is given in Diagram 2, p. 256.

With the proviso, then, that this inquiry does not relate to back-to-back houses in the abstract, but to these dwellings as they occur in Manchester, I go on to describe the mode of inquiry pursued.

The old township of Manchester alone is dealt with. A census was, in the beginning of the present year, taken in each of the Inspectors districts in this area of the inhabitants in the back-to-back houses. This proceeding was rendered necessary by the operations of the Sanitary Committee which have considerably altered the number of back-to-back houses since 1891.

It was assumed that the population of these houses had not much altered since the census. Certainly it will not have diminished.

A description was obtained of the districts, and the total area was divided up into portions corresponding to this description, the object being to select portions of the districts in which the inhabitants of back-to-back houses were similar to those inhabiting other houses in their social conditions, pursuits, character and circumstances generally.

The population of each sub-district was calculated on the basis of the censuses of 1881 and 1891 to the middle of the period 1891-94. A slight error will occur in the population of the districts, if the diminution of population has been at a different rate in these years, but such error will certainly not be large.

The death-rates for the sub-districts were then calculated out from different causes, and at groups of ages, as shown in the following tables, summarised from the separate tables for each sub-district.

Tables 3 and 4 refer only to the selected districts.

The figures marked "difference" are figures which I have elsewhere called poverty indices. They show the death-rates on the actual population due to deaths which have occurred in public institutions, mostly in the Union.

It will be seen that in these selected districts there is, as far as these figures are concerned, rather more poverty in the other houses than in the back-to-back houses.

Table 5 sums up the figures for the selected districts, by the addition of their populations and deaths and a fresh calculation of the death-rates.

TABLE I.—*Death-rates in † selected Districts in the Township of Manchester in 1891-94 in all Houses and in Back-to-Back Houses respectively.*

District.	ALL HOUSES.				BACK-TO-BACK HOUSES.			
	Population.	Death-rates after Distribution.	Death-rates without Distribution.	Difference.	Population.	Death-rates after Distribution.	Death-rates without Distribution.	Difference.
7a	5952	33.4	26.6	6.8	961	39.3	33.0	6.3
9a	8617	36.3	24.6	11.7	1418	44.1	35.9	8.2
10	14,214	34.5	26.7	7.8	1894	46.3	38.0	8.3
11a	10,919	28.5	23.3	5.2	2267	34.7	30.2	4.5
1a	4722	18.2	14.2	4.0	506	20.8	18.8	2.0
9b	8689	30.4	24.9	5.5	773	36.9	32.7	4.2
3	13,534	28.5	21.5	7.0	1371	28.6	24.4	4.2
6c	7769	27.3	23.9	3.4	387	29.1	27.2	1.9
8a	817	24.8	19.3	5.5	147	25.5	22.1	3.4

† These Districts were selected entirely from the statement of the character of the Districts, with one exception, viz.: 7b, which was relegated to the following Table on account of the large poverty index for back-to-back houses.

TABLE II.—*Death-rates in unselected Districts in the Township of Manchester, 1891-94, in all Houses and in Back-to-Back Houses respectively.*

District.	ALL HOUSES.				BACK-TO-BACK HOUSES.			
	Population.	Death-rates after Distribution.	Death rates without Distribution.	Difference.	Population.	Death-rates after Distribution.	Death-rates without Distribution.	Difference.
1b	5457	24.0	15.3	8.7	397	29.0	20.2	8.8
* 2a	13,197	33.5	22.3	11.2	1528	31.6	27.3	4.3
2b	549	17.8	14.1	3.7	127	15.8	11.8	4.0
6a * (Angel Meadow)	2159	49.7	17.1	32.6	354	32.5	26.2	6.3
6b * (Angel Meadow)	7496	40.8	22.9	17.9	2208	38.5	28.0	10.5
7b	12,061	22.4	20.2	2.2	555	26.1	20.3	5.8
8b	25,148	24.3	22.1	2.2	120	20.8	16.7	4.1
11b	3203	23.3	21.8	1.5	5	50.0	50.0	—

* Contain a large lodging-house element (see column of differences).

TABLE III.—Populations in selected Districts in all Houses and in Back-to-Back Houses at Groups of Ages.

District.	Under 1 Year.		Ages 1 to 5.		Ages 6 to 15.		Ages 15 to 25.		Ages 25 to 45.		Ages 45 to 65.		65 and upwards.	
	All Houses.	Back to Back.	All Houses.	Back to Back.	All Houses.	Back to Back.	All Houses.	Back to Back.	All Houses.	Back to Back.	All Houses.	Back to Back.	All Houses.	Back to Back.
7 ^a	169	30	602	113	1328	211	1147	142	1751	317	816	131	139	17
9 ^a	267	56	873	172	1975	279	1738	233	2380	462	1187	203	197	13
10	442	73	1441	227	3259	410	2868	307	3019	601	1960	232	325	44
11 ^a	339	95	1107	300	2504	426	2203	378	3011	745	1506	279	249	46
1 ^a	110	17	393	74	946	141	978	76	1441	129	729	58	125	11
3	316	51	1127	172	2712	286	2803	223	4130	407	2090	200	356	32
6 ^c	220	14	786	51	1733	75	1497	56	2286	135	1065	45	182	11
8 ^a	23	7	83	19	182	28	158	18	240	54	112	15	19	6
9 ^b	270	30	880	94	1992	152	1753	115	2396	288	1199	84	199	10

ON BACK-TO-BACK HOUSES.

TABLE IV.—*Death-rates from all Causes at Groups of Ages in selected Districts in 1891-94.*

District.	Under 1 Year.		Ages 1 to 5.		Ages 5 to 15.		Ages 15 to 25.		Ages 25 to 45.		Ages 45 to 65.		65 and upwards.	
	All Houses.	Back to Back.	All Houses.	Back to Back.	All Houses.	Back to Back.	All Houses.	Back to Back.	All Houses.	Back to Back.	All Houses.	Back to Back.	All Houses.	Back to Back.
7a	331.1	375.0	64.3	75.2	5.6	5.9	6.5	8.8	18.1	22.1	46.6	47.7	136.7	132.3
9a	259.4	294.8	67.9	78.5	6.7	12.6	6.6	14.0	20.8	15.4	64.4	56.7	172.2	442.3
10	279.5	359.5	62.8	87.1	7.2	6.7	7.8	5.7	18.3	21.6	54.6	73.3	160.0	164.8
11a	272.9	284.1	49.2	57.5	6.4	8.2	6.1	7.3	13.8	12.4	39.5	44.8	136.6	141.3
1a	213.5	205.7	40.7	47.3	3.4	1.8	3.3	0.0	7.6	7.8	24.0	38.8	90.0	0.0
3	338.0	269.6	53.2	36.3	5.8	2.6	5.0	3.4	14.8	13.5	40.7	33.8	122.2	171.9
6c	236.5	285.5	38.2	44.1	6.1	13.3	6.5	4.5	16.6	9.3	44.8	33.3	131.8	90.9
8a	130.4	71.4	42.2	52.6	4.1	17.9	4.7	0.0	14.6	9.3	55.8	16.7	131.4	166.7
9b	278.8	300.0	61.1	63.8	4.0	6.6	6.8	10.9	14.6	13.0	42.5	47.6	145.8	350.0

The general result of this calculation is seen to be in accord with Dr. Tatham's figures, although I think there is a decided advantage in the method pursued.

It will be seen that in infancy and in advanced years there is an excess of mortality in back-to-back houses which is not found in the middle period of life.

There is also a decided excess in lung diseases other than phthisis, and in zymotic diseases. There is also an excess in the death-rate from phthisis, though not so marked.

I now come to the second part of this paper, viz., a statement of the proceedings which have been adopted in reference to back to back houses in the City of Manchester. In Dr. Tatham's recent report on the health of Manchester for 1891-93, is given a map showing, by shading, the mortalities in districts in the years 1888-90, and a very large surface indeed is covered by black, indicating a death-rate of over 40 per 1,000. The excessive mortality in these districts has long been known, and in 1885 the Unhealthy Dwellings Committee was formed to deal with the conditions which were considered to give rise to it. Dr. Tatham's investigations published in Dr. Barry and Mr. Gordon Smith's Report in 1888, pointed very strongly to the influence of back-to-back houses in producing these high death-rates, and, undoubtedly, largely determined the subsequent policy in Manchester, which has been, as far as possible, to deal first with this class of property; a policy in which I decidedly concur.

Insanitary houses are dealt with in Manchester under the Local Act of 1867, section 41, which reads as follows:—

In any case where it is certified to the Corporation by an Inspector of Nuisances, or by any two medical practitioners, that any building or part of a building is unfit for human habitation, the Corporation may by their order, affixed conspicuously on such building, declare that the same is not fit for human habitation, and shall not, after a date therein to be specified, be inhabited; and any person who shall, after the date or time mentioned in such order, let or occupy, or continue to let or occupy, or knowingly suffer to be occupied, such building or part of a building, shall be liable to a penalty not exceeding five pounds, and for a continuing offence not exceeding forty shillings for every day during which the offence may continue: provided always, that if at any time after such order the Corporation shall be satisfied that such house has become or been rendered fit for human habitation they may revoke their said order, and the same shall thenceforward cease to operate.

It will be observed that in this Act the Sanitary Inspector

takes the place of the Medical Officer of Health, a circumstance which was due to there having been no Medical Officer of Health when the Act was passed.

In the year 1887 the policy was inaugurated of pulling down some of the houses in back-to-back blocks to make yards for the remainder, which were then made into through houses opening at the back into these yards. It was not, however until 1892 that these operations assumed very large proportions. In 1894 they have been considerably extended. In 1890 Dr. Tatham presented to the Sanitary Committee a report dealing with this process of conversion of back-to-back houses, which was re-issued in 1893. In this report are stated very clearly the limitations, under which he was prepared to approve of such alterations, as follows:—

“Without presuming to dogmatise on this difficult question, which, after all, is not exclusively a medical one, the Medical Officer of Health would ask the attention of the Committee to the following considerations:—

- “1. It is generally admitted that back-to-back houses are bad in principle; the chief grounds for this statement are set forth in the last para. on page 1 (ante).
- “2. Most of the houses of this construction in Manchester are very old; they are overcrowded on site, dilapidated, and ill-drained. Resting, as they do for the most part, on the bare ground, the floors are cold and damp. Where they do not open into back yards, they abut on narrow streets, which are frequently *culs de sac*. They are of necessity unventilated and are without decent closet accomodation.
- “6. Inasmuch as the reconstruction or the renovation of houses on any really satisfactory plan will entail a heavy outlay on the owners, it becomes a serious question whether the Corporation is justified in conferring, so to speak, “a new lease of life” on property which is practically worn out, and which on this account is incapable of restoration to a condition fairly compatible with health.
- “4. Wherever attempts have been made—in Manchester or elsewhere—to deal with worn-out or ill-constructed back-to-back property otherwise than by demolition, the results, judged from a sanitary point of view, are not satisfactory.
- “5. It is a significant fact, to which attention has been directed in the report of Dr. Barry and Mr. Gordon Smith, that in the manufacturing districts of Lancashire, in the Potteries, and in the Black Country,

where dwellings of the back-to-back class had formerly prevailed to a very considerable extent, the system of building houses unprovided with means for through ventilation has been almost entirely discontinued. In the Yorkshire borough of Todmorden, where back-to-back house construction was at one time the rule, the erection of further buildings of this type is prohibited by local bye-law.

"Although the Corporation will probably hesitate to peremptorily require the demolition of all the back-to-back property in the city at an early date, it nevertheless appears to the Medical Officer of Health desirable that the further use of such buildings for human habitation should be restricted to those cases in which they can be brought into conformity with suitable conditions. On this point unfortunately no experience from other towns is available for our guidance; but it would seem expedient that the Corporation should lay down at least two fundamental requirements, in default of which the future occupation of such dwellings should be prohibited. These requirements should be—

"(a) That the principal materials of which the houses are constructed should be sound, and be capable of thorough repair according to one or other of the plans appended to this report.

"(b) That in every case the streets on both sides of the rows of cottages should be through streets without obstruction at either end; and that they should measure eight yards in width, at the least."

Concurrently with the alteration of houses in the above manner, several areas were condemned entirely under the Housing of the Working Classes Act, in the years 1889-91, and on two of these blocks Artizans' Dwellings have been erected in the style so well known in London. One of these blocks is intended to house 1,250 persons, the other to house 450 persons.

This is, indeed, the only proceeding possible, where it is desired to erect dwellings to take a population equal to that which has been displaced in crowded districts, if at the same time we are to secure a sufficient supply of fresh air and light.

It has been objected to these dwellings that the children are necessarily thrown together much more intimately than where the houses are quite separate opening on a street, and that infectious disease spreads more certainly in them merely from the aggregation of infection. Possibly it may be so to some extent, but not I think to such an extent as to form a serious argument against them.

I do not, in fact, know of any drawback attaching to these

dwellings, which does not also attach to cottages; and, if well contrived, soundly constructed, well ventilated, and properly drained, they should be an enormous advance. I consider such a building as has been erected off Oldham Road, in Manchester, with its large internal square, as a useful addition to the housing of the people.

But these buildings in successive storeys are not in favour in Lancashire. They are popularly known as barracks, and landlord and tenant combine to assail them. I can scarcely believe but that, if sufficient accommodation is provided for the tenants, they will ultimately become popular. To secure this end, however, they do undoubtedly require to offer very substantial advantages over separate houses.

It is, I think, absolutely essential to exercise a strict control, and to insist on having satisfactory tenants in the tenements.

To return to the methods of dealing with back-to-back houses. I have said that I concurred in the policy which had been pursued, viz., absolutely to condemn those back-to-back houses which do not fulfil the conditions laid down by Dr. Tatham, and in the remainder to insist on the making of yards for the houses with proper provision of conveniences. The magnitude of this task may be inferred from the following statement of back-to-back houses, presented by the Superintendent of the Sanitary Department in 1891. From this it will be at once seen in what a large proportion of these houses the living rooms must be plunged in darkness, and how large a number do not fulfil the condition of having a street 24 feet in width in front of them.

Statement of Back-to-Back Houses in the City, in accordance with the Resolution of the Unhealthy Dwellings Sub-Committee of November 18th, 1890.

Total number of back-to-back houses..... 9,240

Number of two-storey back-to-back houses opening into streets, courts, or passages of the following widths:—

From 1 to 2 yards.....	105	
" 2 to 3 ".....	423	One of this number is
" 3 to 4 ".....	634	One storey high only
" 4 to 5 ".....	981	One of this number is
" 5 to 6 ".....	1351	One storey high only
" 6 to 7 ".....	964	
" 7 to 8 ".....	954	Five of this number are
" 8 to 9 ".....	418	One storey high only
" 9 to 10 ".....	618	Eleven of this number are
" 10 to 11 ".....	251	One storey high only
" 11 to 12 ".....	554	
" 12 to 13 ".....	132	
" 13 to 14 ".....	132	
" 14 to 30 ".....	360	

Number of three-storey back-to-back houses opening into streets, courts, or passages of the following widths :

From 1 to 2 yards.....	14	
" 2 3	80	
" 3 4	128	
" 4 5	147	Ten of this number are
" 5 6	176	[four storeys high
" 6 7	135	
" 7 8	64	
" 8 9	46	
" 9 10	89	Four of this number are
" 10 11	29	[four storeys high
" 11 12	99	
" 12 13	11	Four of this number are
" 13 14	23	[four storeys high
" 14 30	88	

Number of two-storey houses opening on to open spaces, &c.	174	Three of this number are
Number of three-storey houses opening on to open spaces, &c.	55	[one storey high only
Number of houses where high buildings are near, and interfere with light and ventilation.....	370	Fourteen of this number
Number of houses at present unoccupied ...	513	[are four storeys high
Total amount of rental per week	£1,470 3 8½	
Average rental per week	0 3 2	
Total number of occupants	31,008	
Average number of occupants in each house.....	3½	

Attached to the Report of Dr. Tatham in 1893 are plans according to which alterations might be carried out in back-to-back houses.

These plans are marked A, B, C, D. The first three are exhibited in a diagram (p. 256) showing the dwellings converted into through houses.

Supposing in a double row of back-to-back houses, these are numbered 1, 3, 5, 7, &c., facing one way, and that those back-to-back with them are numbered 2, 4, 6, 8, &c., then plan A consists in taking out houses 3 and 4, which are replaced by yards. Into the yards replacing 3 and 4, each of which contains a water-closet and ash-box, an opening is made from the houses 1, 2, 5 and 6. Houses 9 and 10 are taken out and made into yards for houses 7, 8, 11 and 12. In this way the houses are made through and a free circulation of air takes place about every block of four.

Plan B consists in taking out numbers 3, 7, 11, &c. 1 and 2 are made into a double through house, which opens into the yard replacing 3, into which, also, opens No. 4; 5 and 6 are made into a double through house opening into the yard replacing No. 7, into which also opens No. 8 and so forth.

Plan C consists in removing houses 3 and 5, 11 and 13, and so on, replacing them by yards.

1 and 2 made double and through, and 4 open into the yard replacing 3, while 7 and 8 made into a through house, as well as 6, open into the yard replacing 5.

Plan D consists in shaving a portion off houses 2, 4, 6, 8, &c., and converting these portions into yards.

D is omitted, as it is not intended to alter more houses on this plan. Of those shown I should be disposed to admit A and C only, and C only where the houses have more than two storeys, in cases where a gain of light would be secured by adopting this plan. The circulation of air round the houses in plan A is so great an advantage as to give a clear preference to it. By any of these plans, A, B, and C, fair-sized yards are provided, common, it is true, to two houses. Water-closets are substituted for the pails formerly used, itself an enormous improvement. The ash-boxes are placed in a convenient position under cover. The drains are well-laid, and go directly into the street sewer.

So far as yards are concerned, these altered houses are in a much better position than many through houses, which are now provided at the back with extremely small air-spaces, the ground of which is, not rarely, soaked with urine.

It is the possibility of so much improving the air-spaces round the houses, and of removing from these dwellings conditions than which it would be difficult to imagine worse, which leads me to say that I heartily concur in the policy of first dealing with back-to-back property.

The difficulties are much more considerable when we come to deal with the defects of through houses.

All recent alterations have not been carried out strictly according to these three plans. Taking it as their aim to bring light and a free circulation of unpolluted air to the altered dwellings, the Corporation have been able in some instances to secure more substantial betterments, of one of which, made in 1894, I show a diagram (p. 256). In this case good yards and abundant air space have been furnished at the backs of the houses, and the back-to-back houses have been made through. In carrying out these alterations, it is intended in future to provide windows on the sides of the houses abutting on yards.

We are now in a position to consider what the Corporation have done in regard to these dwellings.

The following statement shows the total operations carried out by the Unhealthy Dwellings Committee since they were constituted in 1885.

Statement showing the number of houses (mostly back-to-back) certified as unfit for human habitation, and dealt with by the Unhealthy Dwellings Sub-Committee from February, 1885, to March 1st, 1895 :—

Total number of houses certified to, and dealt with by the Committee	4,485
Total number of houses actually added and made into double through houses with yards	817
Total number of houses actually demolished (exclusive of those in various areas)	440
Total number of houses actually repaired, and nearly all made into single through houses with yards	503
Total number of houses permanently closed	1,495
Actually treated	3,255

Leaving 1,230 which are accounted for below:—

Scheduled and dealt with in areas	225
Referred to and dealt with by other Committees	19
Awaiting expiration of notices to close	747
Stand adjourned	237
Orders of Committee not yet carried out	2

1,230

The following return prepared by Mr. Rook, the Superintendent of the Sanitary Department, for Alderman Walton Smith, Chairman of the Sanitary Committee, of the alterations carried out in the worst districts of Manchester, shows clearly the rate at which these changes are going on.

Summary of Houses dealt with in the worst Districts of Manchester from January, 1889 to March 1st, 1895.

Year.	Number dealt with.	No. added, made into double through Houses and provided with Yards.	Number Demolished.	No. Repaired, and nearly all made into single through Houses, with Yards.
Jan. to Dec., 1889	152	9	13	12
Do. 1890	47	11	11	7
Do. 1891	109	31	13	17
Do. 1892	403	82	44	92
Do. 1893	373	69	52	104
Do. 1894	956	59	31	12
Totals - -	2,040	261	164	244
Jan. to Mar. 1895	260			
	2,300			

In addition to these, 239 houses have been demolished in the Oldham Road Area (on block 2) and Workmen's Dwellings built on the site, and 121 houses (on block 1) are now closed, and will be dealt with in a similar manner in due course.

105 houses have been demolished on the Pollard Street Area, and Workmen's Dwellings built on the site.

On the Pott Street Area, 58 houses have been purchased by the Corporation, a portion of which are now closed.

It will be seen from these figures that a considerable number of people must have been entirely displaced by these operations; not, it is true so many as at first sight appears, since at least one-third of the houses remain of those in which alterations have been carried out. What becomes of these people? No systematic inquiry has been made into the subsequent history of those who have had to leave the houses pulled down, but it has been ascertained that a portion of them do altogether leave the district, and go out into districts where building operations are going on. The greatest number, however, remain in parts not far removed from their old home, and there is thus, for a time, a tendency created to overcrowding in lodgings. This tendency, it is believed, is only temporary. A gradual pressure outwards is created. A wave, as it were, of outward movement permeates the community. It must be admitted, however, that the tendency to overcrowding requires to be very carefully watched over. This tendency, from the census which was taken in 1890 of back-to-back houses, and again in this year, does not seem to have materially affected back-to-back houses; and, indeed, the average number of persons living in these dwellings is lower than we should expect, though many of them contain large families. I have made inquiries as to any tendency which may have arisen in recent years to an increase in the number of new dwellings.

No increase, however, has occurred within the last three years, although there is reason to believe that on one side of the City just outside the boundary there has been an increase of building operations. Such, however, is the legitimate and even necessary outcome of these and other changes in the centre of Manchester, and we must be prepared to consider at no distant time, concurrently with a thinning of houses in the centre, the necessity of increased facilities for transit to and from the outer ring. In the meantime the present operations are calculated to effect a revolution in the habits and in the health of a considerable section of the poorest inhabitants of Manchester.

SIR FRANCIS POWELL, BART., M.P. (London) said that he had been much interested in Dr. Niven's paper, and the illustrations prepared by Mr. de Courcy Meade. Every figure which he gave was full of instruction and interest. He was rejoiced to hear a condemnation of the odious system of back-to-back houses proved by such clear statements. When he was Chairman of the Police and Sanitary Committee of the House of Commons, that Committee did not allow these houses to be built; he believed that they were not allowed to be built in Preston, and the lecturer had told them that they were not allowed in Manchester—then why should they be allowed in Leeds? It was a disgrace to Parliament and a scandal to legislation that in an Act passed so recently as 1893, new back-to-back houses should have been permitted in Leeds; it was the more to be condemned because Leeds is a Borough in which large districts are semi-rural in character. As a Sanitarian who had been labouring for very many years in promoting Sanitary Legislation, he felt it his duty to condemn the policy of Parliament in the Leeds Act of 1893. The lecturer had pointed out several ways in which this class of property might be improved, but they ought not to allow any more of it to be built. The upper classes of society are acted upon by a centrifugal force which causes them to live away from the centres of towns, and he thought that this force would also act in time on the artisan class; and with the provision of cheap modes of transit, there will not be the same need for congestion in centres—but they will be able to live in the suburbs or the country, where they can have, if not a garden, at least a park. He asked those present to accord a hearty vote of thanks to the lecturer and also to Mr. de Courcy Meade.

Prof. W. H. CORFIELD (London) said that he was engaged many years ago in the investigation of a number of outbreaks of infectious diseases under the Medical Officer of the Privy Council, Sir John Simon, and he found that infectious diseases spread much more rapidly in back-to-back houses than in others. This had also been proved in Liverpool, especially with regard to typhus fever; these back-to-back houses had been condemned by Dr. Taylor, who was formerly Medical Officer of Health there, and pulled down at the rate of 500 a year, resulting in a reduced general death-rate, and a greatly reduced mortality from typhus fever. Sometimes in these houses the rooms on the second storey, and even on the first, had no flues, thus enhancing the difficulty of ventilation. In a paper which he had prepared at the request of the Executive Committee of the International Congress of Hygiene at Buda Pesth, he submitted a number of sanitary principles in the form of a resolution, and among these was one condemning back-to-back houses; this resolution, much to his astonishment, met with a great deal of opposition principally, so far as back-to-back houses were concerned, from the French delegates. It was afterwards pointed out to him that to carry out the resolution it would have been necessary to pull down half of Paris. Perhaps this plan of construc-

tion which is there in vogue may in part account for the higher death-rate of that city as compared with many other large towns.

Mr. T. DE COURCY MEADE (Manchester), referring to the plans adopted for the improvement of back-to-back houses in Manchester, said that where the re-modelling of this class of property was carried out to the satisfaction of the Corporation the owners were paid a sum of money towards clearing away certain buildings or portions of buildings, and paving the areas so formed. The sum paid would probably equal the cost of pulling down the buildings and paving the site. With regard to the position of the water-closets, it was found by experience that the severe frosts in Lancashire damaged the closet basins and waste-preventing cisterns when they were placed apart from the dwelling, therefore the closets were now placed next to an external wall, and the waste-preventing cistern was fixed inside the dwelling house and actuated by means of a lever and pull and chain. He would not like it to be thought that the plans now inspected were considered complete models of their kind: they might be regarded as a compromise with the owners. The property re-modelled according to these plans was no doubt greatly improved, but many of the areas so dealt with were from their characters and surroundings incapable of being treated in a satisfactory manner—in fact, in many cases, nothing short of total demolition would be effectual. He would add that as a rule the owners were found willing to meet the requirements of the Corporation in a reasonable spirit.

Mr. T. LOCKE WORTHINGTON (London) said that during the last few years there had been much discussion and condemnation of "Back-to-back Cottages," but very little had been said concerning "Back-to-back Superimposed Colony or Block Dwellings." All houses should be "through-ventilated," whereas some modern block dwellings were practically back-to-back cottages superimposed. Not long ago he had been commissioned to examine and report upon the dwellings of poorer citizens in the towns of France. He found that *some* of the most recent artizans' block dwellings in Paris, though substantially constructed, and having, for Continental buildings, unusually good sanitary arrangements, were practically back-to-back dwellings. Nearer home, in London, are to be found several high superimposed well-built artizans' dwellings, in which the *sine quâ non* of a healthy home, viz., proper "through ventilation," has been overlooked.

Mr. S. S. PLATT (Rochdale) was surprised to hear that the pail-system had been found so bad and defective in Manchester, they did not find it so in Rochdale; and he saw no reason for it if the apparatus was properly constructed. Some of the plans exhibited showed rooms built over the closets. Twenty-three years ago this arrangement had been condemned in Rochdale, and he wondered that it was allowed in Manchester. The plan for re-arranging back-to-back houses in which through ventilation was not provided was,

he thought, objectionable; and he thought that a closet ought to be provided for each house—he did not like the closet placed adjoining the house. He would like to know whether the alterations made to the property in Manchester materially raised the rents and so drove away the population.

Dr. J. NIVEN (Manchester), in reply, said that he should object to an artizan dwelling in which the tenements became practically back-to-back dwellings. He did not think that there was any town in Lancashire where new back-to-back houses are now allowed to be built. A closet to each house, as suggested by Mr. Platt, would no doubt be desirable, but would take up room in the yard. The improved schemes had of course raised the rents, but had not made them prohibitive. The difficulties experienced from freezing of pipes, &c., were avoided both by the waste-water-closets and by having the cisterns of the water-closets inside the house. The small communication entailed by the latter arrangement between the house and the closet he did not regard as a serious matter.
