Thesis

"A Review of Sanitation in an Urban Sanitary District during 5 years with remarks as to the difficulties in the way of progress therein"

March 1886
The population of the Urban Sanitary district is the subject of this thesis and the sanitary history of which during the past 5 years I propose briefly to review was in 1881 returned as 4,110 and in 1871 it was 3,342 and the acreage is 10,800 acres. The population consists almost entirely of glass-bottle makers, potteries and miners. One part which adjoins the river is flat and level with the river almost. The population of this sub-district which we shall call A was in 1881 returned as 1,769. The other part is situated partly on an eminence and partly level, the latter part of this sub-district which we shall call B being almost rural in character. The population of this sub-district was returned at the Census of 1881 as 2,341. The houses in the district by a street in each parish continuous towards the east with the houses forming a part of an adjoining Urban Sanitary district (a town in fact) the population of which at 1881 was 10,543. Towards the west then is an interval of a quarter of a mile between the houses of this district and those of the two adjoining

...
District on the north is the river \( U \) on the south there is an interval of more than a mile between the houses of the district and those of any other sanitary district.

In 1881 subdistrict A was sewered but the houses were not connected therewith by drains. While in B from the houses to the sewers were drains with gully traps for the removal of liquid sewage. This was conveyed by a mile and by irrigation was distributed on land. The drains were of earthenware pipe. The solid excreta and refuse was removed from both parts of the district by privies and soak pits of the ordinary kind which were built of brick and covered.

In neither district was there any provision made for draining the soil and the storm water was carried off by the common drains in subdistrict B. The water supply was from wells and in many cases it was bad in quality and insufficient in quantity. Good many houses had only rainwater for water supply.

With this outline of the sanitary condition of the district in 1881 I shall now give the death rate for the year.

In 1881 there were 99 deaths registered.
giving a death rate of 24.08 per 1000 living - 23 deaths were due to Scarlet fever, one to Typhoid fever, 2 to Continued fever, 2 due to Hooping Cough, and 6 to Diarrhoea - there were 60 deaths from Phthisis. The Zymotic rate for the year was 8.027 per 1000 living. The following table will show the number of deaths in each subdistrict.

<table>
<thead>
<tr>
<th>Subdistrict</th>
<th>Scarlet Fever</th>
<th>Diarrhoea</th>
<th>Hooping Cough</th>
<th>Continued Fever</th>
<th>Enteric Fever</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>6</td>
<td>4</td>
<td>2</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>B</td>
<td>17</td>
<td>2</td>
<td>-</td>
<td>1</td>
<td>-</td>
</tr>
</tbody>
</table>

In 1882 the sanitary condition of the district remained the same as in 1881. There were 76 deaths registered which gave a death rate of 18.1 per 1000 living and a Zymotic rate of 3.5 per 1000. The following table gives the numbers in each subdistrict of deaths from Zymotic disease in 1882. Phthisis caused 5 deaths.

<table>
<thead>
<tr>
<th>Subdistrict</th>
<th>Measles</th>
<th>Diarrhoea</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>B</td>
<td>5</td>
<td>4</td>
</tr>
</tbody>
</table>

In 1883 with the exception of ten houses in subdistrict A all the houses during the year were provided with gully traps Communicating
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<tr>
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<th>Scarlet Fever</th>
<th>Diarrhoea</th>
<th>Hooping Cough</th>
<th>Continued Fever</th>
<th>Enteric Fever</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>6</td>
<td>4</td>
<td>2</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>B</td>
<td>17</td>
<td>2</td>
<td>-</td>
<td>1</td>
<td>-</td>
</tr>
</tbody>
</table>

In 1882 the sanitary condition of the district remained the same as in 1881 - there were 76 deaths registered which gave a death rate of 18.1 per 1000 living and a Zymotic rate of 3.5 per 1000 - the following table gives the numbers in each subdistrict of deaths from Zymotic disease in 1882. Phthisis Caused 5 deaths.

<table>
<thead>
<tr>
<th>Subdistrict</th>
<th>Measles</th>
<th>Diarrhoea</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>B</td>
<td>5</td>
<td>4</td>
</tr>
</tbody>
</table>

In 1883, with the exception of ten houses in subdistrict A all the houses during the year were provided with gully traps communicating...
With drains for the removal of liquid sewerage from the houses and during the latter 4 months of the year a new supply of water was distributed over the district and used by the great majority of the inhabitants at once—We may therefore expect that there will be a decrease in the number of deaths from typhus diseases and more especially diarrhoea. During this year in which these improvements above mentioned were taking place 107 deaths were registered. The death-rate was thus 2.5 per 1000 living for the year estimating the population at the middle of the year. 29 deaths were due to typhus diseases and the typhus rate was thus 0.7 per 1000. Six deaths were returned as from croup and from the fact that diphtheria was prevalent in the district having in fact caused 5 deaths we may almost certainly say that some if not all would be of a diphtheritic character. What also shows the connection of the 2 diseases is that in 1881 when there were no deaths from diphtheria there were no deaths from croup. In 1883, 1884, and 1885 there were deaths from diphtheria in each year and also death from croup—they are
therefore apparently mostly found together and would lead one to suppose they had a common origin—

I am of opinion that it is very difficult & almost impossible thing from this intimate association of the two diseases to find out exactly the number of deaths from croup & diphtheria as they are no doubt very often confounded if they are not different phases of the same disease.

The following table gives the number of deaths from the different Zymotic Diseases which caused death in each Subdistrict during the year 1883—

<table>
<thead>
<tr>
<th>Subdistrict</th>
<th>Diphtheria</th>
<th>Hooping Cough</th>
<th>Enteric Fever</th>
<th>Diarrhoea</th>
<th>Simple Cholera</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>2</td>
<td>6</td>
<td>1</td>
<td>3</td>
<td>0</td>
</tr>
<tr>
<td>B</td>
<td>3</td>
<td>0</td>
<td>1</td>
<td>6</td>
<td>1</td>
</tr>
</tbody>
</table>

The death from enteric fever in Subdistrict B was that of a person who had just come into the District who had indeed been ill when brought into it. I may mention here that there is no workhouse or other Institution in the district to which people could come from other District. As an instance of the way in which disease is produced I may bear state
that in subdistrict B where you will observe there were six deaths from diarrhoea. I found numerous cases of this disease in that subdistrict and on inquiry at a row of houses where the disease was most prevalent I found that they all used rain water having no other water supply for domestic purposes. This water was stored in tanks built underground of brick. As these tanks were situated between the privies and ash pits, of course on a lower level and considering the fact that they were uncemented it would, therefore, be a miracle if the water escaped pollution. The water was as a matter of course found to be coloured and had an offensive odour. The case of simple cholera also occurred here. During the 3 years 1881-83 (the greater part of the latter year) the two subdistricts A and B differed only in this that while there was provision made for the removal of liquid sewerage in B there was no such provision in A. From the foregoing tables you will observe that while in A there were 10 deaths from diarrhoea during the 3 years there were only 12 in B. The deaths from this disease are therefore much less in B than in A in proportion.
to the population as we should expect. All the deaths from whooping cough occurred in the undrained district and this would lead one to ask is there any connection between the state of drainage and the increase of deaths? I should think the greater dampness is generally almost flooded state of A in wet weather is to be attributed the excess of deaths in this subdistrict. This wetness in A was greater than in B because of the latter being on a higher level. This damp wet state of A have no doubt junct the complications of the disease e.g. Bronchitis, Pneumonia to these increase the fatality from it.

The 2 deaths from enteric fever excluding the imported case occurred in subdistrict A. Scarlet fever & measles were somewhat more prevalent in B than in A rising from the number of deaths occurring in each. Diphtheria was equally prevalent in both.

We have thus more deaths from diarrhoea, enteric fever & cough and fewer deaths from scarlet fever & measles and as many deaths from diphtheria in the undrained portion.
portion in comparison with the drained in which there were more deaths from scarlet fever and measles. In the three years the proportion of deaths of children under 1 year of age to the 1000 born was 160 - we may now proceed to consider the vital statistics of the remaining 2 years and contrast these with those of '81 '82 and '83. In 1884 the drainage of the district was completed and the improved water supply was distributed all over the district and those wells the water of which was found to be of bad quality were closed - they were gradually being closed in 1883 (latter part of it) but in this year all were closed with one exception which was that of a spring the water of which was found to be good.

We shall now therefore expect those diseases arising from use of polluted water or defective drainage to be considerably reduced in number and the health of the district generally to be greatly improved.

In this year 90 deaths were
registered which estimating the population as usual to the middle of the year gave a death-rate of 20.7 per 1000 living. The Typhotic rate was 5 per 1000.

Annexed is a similar table to the preceding for this year:

<table>
<thead>
<tr>
<th></th>
<th>Scarlet Fever</th>
<th>Typhoid Fever</th>
<th>Brainfever</th>
<th>Diphtheria</th>
<th>Hooping Cough</th>
<th>Measles</th>
</tr>
</thead>
<tbody>
<tr>
<td>Subdiv. A</td>
<td>1</td>
<td>0</td>
<td>2</td>
<td>2</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>do B</td>
<td>0</td>
<td>4</td>
<td>2</td>
<td>9</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

You will observe that the deaths from Brainfever are less than in the three preceding years; the average for these 3 years being 7.3 of the 4 registered during this year 2 were complicated with other diseases.

In the three preceding years we find that the Typhotic deaths were more numerous in A than in B; and we shall now ascertain whether with improved drainage the deaths continue to be more numerous in A than in B. While we have in B (the drained portion) 15 deaths from Typhotic disease in 1884 we have only 8 deaths in A although the proportion of the
This reverses the state of matters in 1881-82-83.
In 1885, with a pure water supply, and the drainage complete all over the district, we have the same sanitary state as in the year preceding. The deaths in this year were 83, which estimating the population to the middle of the year gave a death rate of 18.7 per 1000 living.

The typhoid deaths were seven in all, and the typhoid rate was thus 0.5 per 1000. Two deaths from diarrhoea occurred in children a few weeks old and were complicated as a secondary cause with Convulsions.

Again is annexed a table showing the distribution of the Typhoid diseases causing death in A & B during 1885:

<table>
<thead>
<tr>
<th>Sub. A</th>
<th>Diarrhoea</th>
<th>Diphtheria</th>
<th>Enteric Fever</th>
<th>Scarlet Fever</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1</td>
<td>—</td>
<td></td>
<td>—</td>
</tr>
<tr>
<td>1</td>
<td>2</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
</tbody>
</table>

We have in this year again evidence of the improved sanitary condition of A as it shows again a decrease of deaths from Typhoid disease and that to a greater degree than...
In the preceding year—taking the 2 years together— we find that while in A, we have 9 typhoid deaths; in B we have 20;—the proportion of the population in A is to that in B as 9 to 11½. This reverses the order of things in 1881—82—83.

The evidence of an improved sanitary condition in the whole district may be found (1) in the reduction of the typhoid rates in 1884—85 the mean of which was 3.2 as compared with those of 1881—82—83 the mean of which was 6.07. In England & Wales the mean typhoid rate in 1881—82 was 2.44. This is much less than that which has existed in the district

(2) there is a marked reduction in the deaths from diarrhoea under the improved conditions of a good supply of water & better drainage. I think this reduction is principally due to the newer water supply.

(3) the proportion of deaths from children under 1 year per 1000 born was as previously mentioned 160 in 1881, 82, 83 on an average.In 1884—85 the average proportion was only 147 per 1000 born.
This shows that the circumstances are conducing to mortality of infants have been lessened in their influence—

(4) Although there has been an apparent increase from enteric disease found that in each case they were sporadic as no other cases existed in the neighbourhood of each. Two of the deaths of the 5 which occurred during this year occurred at the outskirts of the district but were in this way connected either with water supply or milk supply—only one death from Rheumatic Fever during the 5 years of that was in 1884 in Subdistrict A which was then drained so far as I have already said—

These statistics as far as they show the improved state of public health in the whole district during 1884-85 compared with what prevailed in 1881-82-83 and as regards the Subdistrict A & B they show the improvement in the former from improved drainage—no doubt if we had been able to get the data for a longer period than we have we should have been better satisfied with the deductions from their accuracy
but although not extended over a long period and although taken from a comparatively small population yet they bear out the facts & truths of sanitary science viz that diarrhoea especially is increased by polluted water & bad drainage and that other Typhotic diseases are also increased thereby. It is yet to be seen whether the improvement of the last 2 years will continue.

As regards Phthisis I shall give the number of deaths in each year from this disease & also from the other lung diseases in the following table, the rate per 1000 living from all these diseases & the percentage of deaths from all causes which these diseases give.

<table>
<thead>
<tr>
<th>Year</th>
<th>Phthisis</th>
<th>Bronchitis</th>
<th>Pneumonia</th>
<th>Pleurisy</th>
<th>Rate per 1000 living</th>
<th>Rate per 1000 deaths from all causes</th>
</tr>
</thead>
<tbody>
<tr>
<td>1881</td>
<td>6</td>
<td>11</td>
<td></td>
<td></td>
<td>4.13</td>
<td>17.17</td>
</tr>
<tr>
<td>1882</td>
<td>5</td>
<td>9</td>
<td></td>
<td></td>
<td>3.34</td>
<td>18.42</td>
</tr>
<tr>
<td>1883</td>
<td>9</td>
<td>18</td>
<td></td>
<td></td>
<td>6.32</td>
<td>25.23</td>
</tr>
<tr>
<td>1884</td>
<td>6</td>
<td>17</td>
<td></td>
<td></td>
<td>5.29</td>
<td>25</td>
</tr>
<tr>
<td>1885</td>
<td>8</td>
<td>12</td>
<td></td>
<td></td>
<td>4.52</td>
<td>24.09</td>
</tr>
</tbody>
</table>

In 1881 & 1882 the deaths from Phthisis were taking the average 5½
and during last 3 years 12½. This would induce one to think that the exciting causes of this disease have been more active during the past 3 years. Including the other three diseases of the respiratory organs the rate for 1000 living from phthisis to take in the average of 1881-82 3.73 and during 1883-84-85 the average rate was 5.44 - There has therefore been an increase from these diseases during the past 3 years as compared with the preceding 2 years. Drainage for the removal of liquid sewage does not seem to affect the deaths from phthisis as in the 3 years 1881-82-83 the deaths in B were 12 and only 8 in A i.e. the deaths were less numerous in the undrained portion in proportion to the population. With the whole district with the completed system of drainage & improved water supply in 1884-85 we have an average of 16 deaths from phthisis per annum and in 1881-82-83 an average of 6.6 per annum. This of course does not in anyway disprove the theory or I should say the truth of Dr Buchanan...
Statement that this disease is very considerably reduced by the reduction of the level of the subsoil water or to put it in other words, that this disease increases or decreases in inverse ratio to the distance between the basements of dwellings and the level of the subsoil water. In this district I have no doubt that there would be a great reduction of deaths from this disease if there was a system of drainage for drying the ground + basements of the houses.

There was also an increase of deaths from the other diseases of the respiratory organs. During the first 2 years there was an average of 10 deaths and during the last 3 years an average of 15 deaths. Let it phthisis, Bronchitis, Pneumonia + Pneumonia there has been a gradual increase in the proportion of the deaths from these diseases per 100 deaths from all causes. Until last year when there was a very slight fall indeed. As regards occupation I find that of the total number of deaths
from phthisis during the 5 years 18

1834 the following were the occup-
ations of such as had any. -Glass-
blowers 4 - 2 were butchers & 5 were glassbottle-
makers 3 of whom were glassblowers-
and 2 glassmoulders. 4 of the deaths-
were children under 5 years. The oc-
cupations of the remaining 19 were-
not those as are generally supposed-
to produce this or other lung disease-
11 were domestics, 2 clerks, 2 laborers-
1 child of 8 years, 1 butcher, 1 clayminder-
1 a joiner. Only 217 deaths or about-
17 per cent of the total number were-

deaths of persons following trades-
which are supposed to be convers-

to the production of this disease.-
Glassblowers, I consider are apt-
to suffer from this and other lung-
diseases from the great variability-
of temperature to which they are-
exposed and also to the strain-
placed on the lungs in glass-
blowing. But thus see that-
this must be some other cause-
at work besides occupation-
& account for the other deaths-
and I think that (excluding the-
aging of the blood as pointed out-
by Dr. Buchan an) it is to be found-


in the overcrowding and bad or I may say the want of ventilation of the sleeping rooms of the working classes. Dr. B. L. Richardson in his Hygiene (p. 40) states that in his model city "that large class of deaths from pulmonary consumption induced in less favored cities by exposure to unwholesome and badly ventilated rooms." He thus lays stress on this matter of bad ventilation and how that drainage has been carried out in too many districts in England and Wales it becomes a very important matter. The evil is made still worse since as stated by the Medical Officer to the Privy Council "the dwelling place to which he (the working man) goes to rest is as badly ventilated as the workshop which he leaves." This is an affair is too frequently the case in this district.

Of the 67 deaths from Bronchitis, Pneumonia and Pleurisy 36 were children under 5 years and 5 under 10 years, another 6 of 16 of us occupation and 8 were domestics. There are thus 50 deaths which
Could not be affected by 6c-18.

Culmination out of the 69——of the remainder 5 were coal miners, the
was employed in brick-work and
was a manager of a brick-work.

4 were labourers, 1 fireman, 1 glass-
founder, 1 line-burner, 1 cooper, 1 coal
wainer and 1 a carter. Although
there are numerous potteries who
reside in the district there was
not a single death from any of
these diseases amongst them in
the 5 years. Not knowing the
number of miners in the district
it is impossible for me to give the
rate of mortality of the miners
in the district from this disease——
and I may say the same as
regards other occupations.

The Medical Officer of Health may
obtain this information from the
census returns but I am of opinion
that each Medical Officer of Health
on his appointment should be
furnished with a return of the
population of his district classified
according to occupation. I am
quite certain that the majority
of the Medical Officers of Health of
Small sanitary districts (urban) do not possess this information. He could then be able to estimate the rate of mortality from any disease class of diseases amongst the followers of any occupation - as Dr. Farr says, "the only way in which the mortality and duration of life of miners can be determined is to determine the rates of deaths at each age to the living during a certain time." From the data we have not we see that occupation has much to do with the etiology since 74 per cent of the deaths were persons of no occupation. I am speaking of the deaths from Bronchitis, Pneumonia, Pleurisy. There is no doubt that it does have an effect in the causation of some disease of the respiratory organs. I am inclined to concur in the opinion that "not only phthisis but other other diseases of the lungs such as pneumonia and Bronchitis are frequented to a large extent under like conditions" (Vide Wilson p 72) viz, deficient ventilation causing respiratory insufficiencies. The chief causes therefore of phthisis and other pulmonary
diseases to be Considered by the Medical officer of Health are (1) and especially as regards phthisis or waterlogged or damp soil (2) occupation in badly ventilated workshops and especially where there are particles of fine dust thrown off in the manufactorying processes (3) Bad ventilation and overcrowding of dwellings and especially sleeping apartments.

This leads to the subject of overcrowding and I shall first ask the question: what is overcrowding? Here is a great amount of uncertainty about this matter and some amount of cubic space allowable per individual should be fixed on and in the case of reduction beyond this should necessitate the action of local authorities. I have been informed of several Medical Officers of Health who make the limit 300 cubic feet per adult and for children whose combined ages amounted to 18 years they allow the space of one adult. Thus three children whose ages were 4, 6, and 8 respectively they class as an adult. Parke in his practical hygiene (footnote p. 117)
states that the poor law board does not allow less than 300 cubic feet per head in dormitories and (page 125) although according to his belief from 750 to 1000 cubic feet is the proper amount of space per head, probably only from 200 to 250 cubic feet would be found in artisan rooms for head, and also that some persons class 2 children as equal to one adult and that when such is the case it would be safer to do so with children under one year.

Dr. A. W. Richardson in his "model city" allows in sleeping apartments 1200 cubic feet per head, and Prof. Coefield (Dwelling Houses p 16) says "we are not able to insist on anything like 7000 or 750 cubic feet of space (per individual) in all instances and amounts varying down to as low as 300 cubic feet per individual are adopted. In the case of a family living in one room which is so small as to afford less than 300 cubic feet per individual it is usual to consider that the limit of overcrowding which should be allowed by law has been reached." Dr. Wilson (Handbook of Hygiene) states that it is difficult even
with the aid of a well devised
plan of ventilation to supply the
necessary amount of fresh air per
head per hour without creating
drafts occasionally in a cubic
space of less than 600 cubic feet.

Pr. de Chaumont holds that
each healthy adult ought to have
1000 cubic feet of space allowed.

From all these different state-
ments it is clear that whatever
opinion casts the
little difference in the amount necessary
in order to keep the air at the
standard of purity and there is
not much difference is that, it is
evident that nothing less than
300 cubic feet per head should be allowed. Now if this is so why
should it not be acted on? Data
found on visiting 18 houses, taken
at random, of working people in
this district that five were over-
crowded if you take 300 cubic feet
as the minimum space. Now
although this space is admitted
on all sides to be very small in-
deed and entirely inadequate
with good ventilation to keep the
air at the highest standard of
purity, without causing dangerous
drafts yet I find that out of the
18 houses, as have been taken at random, that 5 are under that amount. In the first house I found that there was a family of 7 persons occupied a room with a cubic space for each individual of 214 cubic feet. In the second for each there was a cubic space of 216 cubic feet each. In the 3rd house there were two rooms. In one room 3 persons slept, the cubic space allowed for each was 210 cubic feet; in the other room 6 slept in a cubic space for each of 168 cubic feet. In the 4th house there was a room with seven occupants and the cubic space for each was 174 cubic feet. In the 5th house there was one room with 9 occupants and as the room was unusually large the space was 266 cubic feet per head. That overcrowding therefor takes place to a very alarming extent amongst the working class community is thus perfectly evident and this can scarcely be wondered at since the great majority of the houses of the average workman contain only one room (sleeping room). What makes matters still worse is the fact that
there is a total absence of ventilation, and that especially in winter any accidental opening by which a little fresh air would be admitted are carefully closed up. The people have a dread of any open space made with a view to ventilation and their whole thought in cold weather is how to shut out the external air. There have often been a bedroom, and I have no doubt it is nothing new in the experience of practitioners among the working classes, which a working man and his family have occupied together, without a fireplace and with a window that could not be opened. In other cases I have found that where there has been a fireplace it has been closed up as when a fire was put in; it smoked and when there was done in there was a down draught and so the fireplace is either closed with any rubbish stuffed into it or completely built up. Imagine a family of young children passing a night in such a veritable box as that. And then brought down in the morning to the living room to be dressed. The living room
door, in my experience I find mostly open even in cold weather, with such a state of things can it be wondered that a child exposed under such circumstances should be seized with Bronchitis. When once seized with this disease what chance has a child of recovering under the like circumstances, exposed to constant draughts during the day & breathing, with what little breathing power remains to it, in atmosphere during the night.

There is no doubt a great difficulty in dealing with this subject of overcrowding and what is generally accepted as the greatest difficulty is the extra expense which would be incurred by the Artizan in renting a house with greater bedroom accommodation. What I cannot but consider as another difficulty is the uncertainty as to the minimum space to be allowed per head including male female, old & young because as I have said there are Medical officers of Health who class 2 or 3 children as one
adult, and so if one medical officer says that all should have 300 cubic feet of space and recommends action where this is not obtained he is met by the statement of the Medical Officers of Health that children should be grouped as little children already stated to require the space allowed for an adult.

The Public Health Act (1875) gives us no assistance as it simply states that there should be action by the Local Authority where a house or part of a house is so overcrowded as to be dangerous or injurious to the health of the inmates whether or not members of the same family. This according to the authorities already mentioned would be the case in any house where there was a bedroom which did not give a cubic space to each sleeper of from 750 to 1000 cubic feet. It is impossible even to get a space of 300 cubic feet in the sleeping apartment of the average working man with a large family and with equal justice action should be taken where there is a space of 500 cubic feet as this also is too small for health. If the space was definitely settled
by law and that loophole of escape of allowing the same space for 2 or 3 children as for one adult was closed.

I am of opinion much might be done to lessen the amount of overcrowding.

The overcrowding caused by persons keeping lodgers, and that by persons who have not anything like the required space for their own family could be dealt with. As a case in point I may mention that in the first house of the 18 in which I found overcrowding 7 members of one family occupied one room and in a recess on the stair landing was a bed occupied in turns by 3 lodgers. One of them who worked during the night occupied the bed during the day.

This instance is not a solitary instance of the kind which I have met with amongst the working classes more especially miners.

This is a subject of the greatest importance as show that there is a lower water supply and an improved system of drainage in most district in England this overcrowding and bad ventilation must exercise a very considerable influence in increasing the death-rate from
pulmonary diseases and is spread by the infectious disease not only by exposing people to a greater extent to the infection but in inducing a low state of health in which the resistance of the body to infection is reduced to a minimum—since it has been shown that the tendency to phthisis and other lung diseases is increased among workmen in trades in which the air they breathe is infirm from dust or the greater need is there that he should have a room in which he may at some time of the 24 hours breathe a comparatively pure air. The only time at present when he does so is when he is outside his dwelling or workshop. Dr. Wilson in his handbook of Hygiene says "that in places where there is a scarcity of houses it is evidently impossible to obviate the nuisance (of overcrowding) to any extent because in attempting to reduce it in one part you only increase it elsewhere." In reply to this I say why in the first place should there be a scarcity of houses as you may be sure where there is a demand for houses there.
are very soon built. Again if the
minimum space was fixed on and
made say from 250 to 300 cubic
feet instead and was in action all
over the country the people would
not then be able to increase the
overcrowding elsewhere as they would
find the same measures in force
all over the country wherever they
went.

There is also much resentment
felt by the people themselves at
anything in the shape of interference
in the matter of overcrowding and
this no doubt has some effect
on the members of the sanitary
authorities who are their repres-
entatives.

This leads me to the difficulties
in the way of sanitation generally.
According to Dr. Wilson it is the
permissive nature of the legislation
on sanitary matters and that
it is so there can be no doubt.

The majority of the clauses of
the Public Health Act (1875) hold
the words "the sanitary authority
may to" and very often the words
"where the sanitary authority is
satisfied to" - I think they require
a good deal of satisfaction especially where there is a prospect of increased expenditure.

As the members of the sanitary authorities from the nature of their qualifications to act as such, are interested in preventing expenditure and thus keeping down the rates, and as the people who elect them are also interested in the same object and considering the ignorance that exists among the people very often, on sanitary matters it is not to be wondered at and not surprising that where they possibly can do so (and they are permitted to do so too frequently) they take an active part in this especially the case in any question involving expense and in most instances the local government board cannot interfere. For instance in this sanitary authority you will have noticed the great number of deaths from scarlet fever in 1881. There is no hospital for infectious cases of disease in this neighborhood for the purpose of isolating such cases.
And the Union authorities are adverse to receiving any such cases in their hospitals. There are 4 urban sanitary districts in which this is included lying close together this one being between the other 3. What should have been done and what was talked of when the epidemic of scarlet fever was on (and I may say it was spread over all the 4 districts) was to combine and erect a small hospital for the reception of infectious cases. There has not however been anything done and should any case of smallpox occur there would be no means whatever of Preventing its spread by isolation. Here you see they are permitted not to take action and they don't, simply to keep down the rates, as it resolved itself into a question of defence. The Local Government Board could only point out that it was necessary and I must admit the authorities also were of that opinion and then the matter remains-
Another matter which I submit requires some remedy is the mode of appointment of Medical Officers of Health and here may reach that all the subjects I have touched on refer to England & Wales.

At present there are two modes of appointing Medical Officers of Health. In the one case the Medical officers is paid altogether by the Local Authorities and he is thus the servant of such Local Authority and may be dismissed by them at any time without the Consent or interference of the Local Government Board. In the other case the Local Government Board pay half the Salaries and then the Board has the same power in the Appointment of Medical Officers of Health as they have in the case of Union Medical Officers. In the former instance what is the result? Have not the slightest doubt but that in many cases the Medical Officers of Health overlooks many things
which he would not otherwise be able to exercise on the premises and offensive trades carried on
perhaps by members of the sanitary authorities themselves.

The medical officer of health occupies a very responsible position and accordingly he ought
to be in a position to speak out without fear or favour, and this applies more especially to
practitioners who are allowed to practice. There is also the

a very unsatisfactory state of matters and the medical officer
should not, however little he may be influenced by them, be the subject
of so many inducements to negligence in the discharge of his

officer. Dr. G. Wilson says that what is wanted is a thoroughly organised

Public Health Service with efficient trained Health Officers who shall be

and competent sanitary inspectors all of them holding permanent
Appointments under the Control of the Local Government Board. What in my opinion would remedy the present evil to a very considerable extent would be the appointment of all medical officers of health in sanitary districts on the same footing as District Medical Officers of Villages which is ad vitam ad Culpam and this would take away the power of the Local Authorities of dismissing a Medical Officer of Health without the consent of the Local Government Board. As they (the medical officers of health) may incur the displeasure of members of authorities from simply recommending extensive improvements this is the more necessary. I may here refer briefly to another matter and that is the question of Compulsory registration or Notification of Cases of Infectious Disease. At present a medical officer of health may reside at any distance from the limits
Sanitary district to which he may be
Medical officers and are seldom
or except for inspection to since
his practice is not there. Thus
of course speaking of a Medical
Officers in a small urban sanitary
District and who is not debarred
from practice. The first notification
therefor which wherever occurs in the
outbreak of any infectious disease
is from the Registrar of births
and deaths when there is a
death from such a disease. The
Inspector of Nuisances might in
form him but as they are also
Generally Road Surveyors and
Collectors so they are generally
too busily engaged to inquire if
Any cases of infectious disease
exist in the District. He need not
do that when a death has occurred
the steps which may be taken to
arrest the spread of the disease
are often ineffectual whereas
If he had received intimation of
the first case and if this case
was thoroughly isolated the
disease would thus be
arrested in its spread is all
probability.