Document 28 (Online Companion)

General Board of Health: Report by the special investigators assigned to undertake house-to-house inquiries in the cholera outbreak area[1]

Donald Fraser, Thomas Hughes, and John Ludlow completed house-to-house inquiries in the outbreak area at the end of September 1854. As they finished investigating each street, they submitted tables containing the information requested by the president of the General Board of Health (later set in tabular form—Document 23). They filed a summary the following month which was published, along with the tables containing the data they had collected, in July 1855 as part of the General Board of Health's final set of reports on the third cholera epidemic.[2]

Sir,

Pursuant to the instructions received from **you**, we have made a house-to-house inspection of that portion of the City of Westminster comprised in the registrars' subdistricts of Berwick Street and Golden Square, St. James, and St. Anne's, Soho where cholera has been most prevalent. Our inspection has been guided chiefly by the paper of instructions issued by you to us on 8 September, which is embodied in this report and printed in italics. That paper of instructions begins as follows:—

you: Benjamin Hall, president of GBoH.

Heads of inquiry in the districts of St. James, Westminster which has suffered most from Cholera

1. The inquiry to be a house-to-house inquiry, especially and primarily in the streets which have suffered most and in regard to the houses in those streets which have had cases and deaths.

2. The inquiry will resolve itself into the condition of the atmosphere before and at the beginning of the attack.

A. Structural peculiarities of the streets as regards ventilation.

We have given the great mass of facts collected by us as the results of these inquiries in the **schedules**[3] and tables which accompany this report and shall therefore confine ourselves to general remarks and to placing before you such conclusions as we think may fairly be drawn from the before-mentioned tables.

schedules: "In wider sense, any tabular or classified statement, esp. one arranged under headings prescribed by official authority . . ." (*OED*). Used interchangeably with tables by the authors.

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[1] General Board of Health, *Report on the Outbreak of Cholera in the sub-districts of Berwick Street, Golden Square, and St. Anne's*, by Donald Fraser, Thomas Hughes, and J. M. Ludlow (London: HMSO, 1855), in References (Online Companion).

[2] General Board of Health, Medical Council, *Appendix to Report of the Committee for Scientific Inquiries in Relation to the Cholera-Epidemic of 1854* (London: HMSO, 1855), 138–65.

[3] General Board of Health (1855), Medical Council, CfSI "Tables" in References (Online Companion).

The district to which our attention has been directed forms . . . a portion of the subdistricts of three different registrars. It is bounded on the north by Great Marlborough Street and Noel Street; on the east by Berwick Street and Walkers's Court; on the south by Little Pulteney Street and Brewer Street; and on the west by Lower John Street, Godlden Square, Upper John Street, and King Street. It comprises thirty-one streets, twelve courts, and one square. The population of these subdistricts at the census of 1851 was Berwick Street (10, 798), Golden Square (14,139), and St. Anne's (17,335). The elevation above Trinity high-water mark is Berwick Street subdistrict (65 feet), Golden Square (68 feet), and St. Anne's, Soho (64 feet).[3/4]

In the course of our inspection, we have visited about 800 houses, calling at some, however, for purposes of inquiry only. We have annexed a table of the streets with the number of houses in each and the greater number of houses visited by us. Our method has been to inspect every house in streets where cholera has been at all general. In those streets where the cases have been few, [we] inspected all those houses where there have been deaths and to take several other houses in the street (the number regulated by the amount of epidemic disease which we found to exist) and to inspect them for the purposes of comparison. In the case of streets and places which have been entirely or almost exempt from disease—i.e., Great Marlborough Street, Upper and Lower John Street, King Street, Brewer Street, Golden Square, and Little Pulteney Street—we have visited few houses except those where cases have occurred.

With respect to the districts generally, we have to remark that the houses are let at high rents and are decidedly not of a very low class, but are nevertheless almost universally old and inconvenient. The streets are narrow in proportion to the height of the houses, except in the cases of Great Marlborough Street, Great Pulteney Street, and Broad Street. The ends of almost all the streets, instead of being continued by other streets running more or less in a line with themselves, cut other streets or turn themselves at right angles. With the exceptions of Golden Square and the space between Poland Street and Marshall Street, where the workhouse and its grounds stand, there is no open space whatever in the district. The back of all the streets are filled up with courts, workshops, warehouses, and here and there with cow-houses and stables. Many of the smaller streets form culs-de-sac, e.g. Bentinck Street, Dufour's Place, Noel Street, Marlborough Row, Pew's Place.

There is no single street or succession of streets in the whole district down which a free current of air can pass from one end of the district to the other. We need hardly add that the ventilation of the district is very bad. In fact, although well acquainted with London, we do not know of any district composed of houses of the same class worse adapted for proper ventilation.

During the month of August, only twenty-six cases of cholera had been registered in the subdistricts of Berwick Street and Golden Square. But on the morning of Friday 1 September, the disease broke out with fearful, inexplicable, and fatal violence, as will hereafter be detailed, and continued with little abatement until the morning of the 5th, when it began rapidly to decline. During the latter part of Thursday 31 August, the wind changed from south-west to north-east, and so continued (with a slight variation on 3 and 6 September). During the following week, the horizontal movement being trifling, the mean temperature in the sun during week ending 2 September was 103.1, the mean lowest on the grass was 45.4. During the week ending 9 September, the mean highest was 98.5, the mean lowest was 37.4. The electricity was positive with [4/5] moderate tension. During the latter days of August, the sky was clear with occasionally a few strata of clouds, but the atmosphere was hazy, more particularly on the 31st, when many intelligent inhabitants of the above-mentioned districts describe it to have been stagnant, sultry, and oppressive to a degree they had never before experienced. Several of them state that on the evening of that day, they felt it so close and overpowering within their houses that they opened the doors and windows and stood at the front doors, without experiencing any relief.

As above stated, the prevailing winds at the time of the outbreak appear to have been from the east or north-east. One of us remarked that in the worst district, where the streets run east and west and there is no westerly outlet (such as Noel Street, [Peter] Street, Bentinck Street, Broad Street, and Husband Street), there is an almost invariable preponderance of cases of disease at the south-west ends. We think that the evidence bears out this remark.

While upon the general external features of the district, we may say that the centre of pestilence was in the two blocks of houses bounded on the north by Broad Street, on the south by Silver Street and [Great] Pulteney Street, on the east by New Street, and on the west by Marshall / Street. To this district we should probably have had to add the adjacent block to the east bounded by Broad Street on the north, Berwick Street on the east, Maindenhead Court and Husband Street on the south, and New Street on the west were it not that about two-thirds of it are occupied by the model lodging-house [under construction], the church, and Messrs. Huggins' brewery, which have been entirely exempt from the disease. The mortality on the immediate outskirts of this block—in New Street and Husband Street—is at least very remarkable. In fact, the model lodging-house [site] is surrounded by deaths on every side, except where fronted by the church and brewery. We have not any materials (such as a plan of the levels) to en-

able us to speak with confidence on this point, but we are inclined to think it will be found that the centre of Broad Street—where Cambridge Street runs into it—is the lowest point of the immediate neighbourhood. To use the expression of the inhabitant, " [it] is the sink of the whole district, out of which the disease seemed unable to get." We reserve our remarks on the gully grates of this district until we come to the subject of gully grates and ventilating shafts.

B. Nuisances, slaughter-houses, noxious trades, etc.

7 September: The same day Snow finished his first investigation and met with the parish Sanitary Committee that evening.

The chief nuisance of this district are the cesspools, which we believe exist in numbers in every street, often without the knowledge of the occupants of the houses. We need not particularize any of these as we shall have to return to them hereafter. [We] merely refer to our tables to show how frequent they are and the general feeling with respect to them. [5/6]

There is one wholesale slaughterhouse in the district of which great complaints are made in the neighbourhood. It is situated at the back of Marshall Street and belongs to Mr. Holmes, the butcher in Silver Street. Here, on average, five oxen and seven sheep are slaughtered daily. The premises are spacious and were certainly very clean when we visited them on **7 September** and were told that the method of carrying on the business had not been altered.

The whole of the blood, entrails, etc., are bought by contractors, who remove them daily. The premises are abundantly supplied with water, which is used very freely. There is plenty of room and the place is as airy as the situation will admit of, surrounded as it is by other buildings. At the lower end of the slaughterhouse floor there is a drain dividing into two branches, one of which runs into a large stone tank which is left open while the slaughtering is going on and into which the blood flows. Here it remains until the evening, when it is taken away at the same time [as] the offal and the rest of the refuse is removed. The other branch of this drain runs into a sewer. It is closed while the slaughtering is going on, but [afterwards] is opened and any remains of blood and filth which are left about are washed into it. We were assured by the persons employed and the owner of the premises that the blood washed down this drain into the sewer is so trifling that it cannot possibly coagulate so as to create any impediment or nuisance in the sewer. On the other hand, a **person** employed by the Commissioners of Sewers assured us that he had often himself seen large masses of coagulated blood in the neighbouring main sewer, which could only have come from the slaughter-house in question.

A person: Edmund Cooper (from Document 24) accompanied them during this part of their investigation.

Notwithstanding the apparent cleanliness of this slaughterhouse, great complaints are made in the neighbourhood of the smells which come from it, especially the smell of sour grains on which the beasts in the adjoining cowshed are fed, and which is represented as being worse than that created by the removal of the refuse. We have taken this slaughterhouse as a favorable example of such places, but for an average specimen of the smaller slaughterhouses, we mention one at 19 Silver Street, much complained of by the neighbours. For detailed information, we beg to refer you to the special report upon it made to the [General] Board of Health by one of us, from which it will be seen that in this, as in most of the other small slaughterhouses, part of the basement—commonly the kitchen, dark and ill ventilated—is the place in which they kill.

We think that this, and consequently all other slaughterhouses in the district must exercise a serious influence on the health of their respective neighbourhoods and ought not to be allowed to exist in so crowded a part of London. The smaller butchers, particularly those in Berwick Street who kill only a few sheep weekly, almost invariably allow the whole of the blood and part of [6/7] the offal to run into the sewer, as it is not worth contractors' while to take such small quantities. We cannot say whether this custom is the cause of the great mortality which has taken place amongst the butchers and their families, for which we refer to the tables. The fact is certainly strange, as their houses are in general well kept, not overcrowded, and in good condition. They are for the most part persons in good circumstances.

We may mention as a nuisance a large **tripe** boiling establishment at the back of Silver Street and Marshall Street, close to the slaughterhouse before mentioned. Great complaints were made of this place by the neighbours, and we remarked that the whole of the contents of the **paunches** and other refuse are discharged into the sewer. The mass of this refuse entering into a sewer a few yards from the spot where the before-mentioned slaughterhouse discharges itself cannot fail to cause frequent deposits. Mr. Cooper from the Commission of Sewers, who was with us on the day we visited this neighbourhood, confirms us in this view. Deposits are more likely to occur [there] as the sewer only commences a few yards from here, viz., opposite the end of Broad Street. Consequently, there is no water or sink drainage to carry on the refuse.

tripe: Stomach tissue from slaughtered ruminants intended for human consumption.

paunches: Stomach and/or entrails of ruminants.

Mr. York, the inspector of pavements, informed us that when he passed the tripe shop in Silver Street on 1 November, an overpowering, offensive stench proceeded from it. [The smell was] still worse at the boiling-house and slaughterhouse in Marshall Street. There are in this district several dealers in bones, rags, grease, and other refuse whose shops are much complained of by their neighbours. In the parish of St. James' alone there are seventeen such places. We think that in shops or dwellings, accumulations of imperfectly cleaned bones must have an injurious effect on the health and should not be permitted.

No complaints were made to us of other noxious trades except in

Dufour's Place, where the inhabitants of several houses complained very much of Mr. Nicoll's waterproof and cloth pressing manufactory.

C. Smells in the streets and their source, gully grates, gutters, etc. Whether the gully grates are trapped, whether cases and death [were] more numerous in houses near gully grates.

Throughout all the neighbourhood, but more in some streets than others, the inhabitants complain greatly of smells in the streets. In one case, the offensive smell was complained of by neighbours as arising from the tripe boiling establishment and slaughterhouse in Marshall Street already spoken of; also from the smell of the fermenting grains, usually kept in large quantities in the cow yard adjoining the latter place; from the various smaller slaughterhouses in the neighbourhood; and several of the fishmonger shops and yards, particularly one in Berwick Street. The inmates of 22 Great Pulteney Street made great com-[7/8]complaint of offensive effluvia arising from the fishmonger's premises at 41 Silver Street.

In a few other cases, people complained of a stench arising from some of the **areas** in consequence of foul **necessaries** located there. For instance, at 34 Berwick Street there was an untrapped privy and cesspool in the front area, overflowing in consequence of the drain being stopped. It had been **suffered** to remain in this condition for many months, the house being unoccupied save by a person taking charge of it. With such a focus for originating disease, we are not surprised to find that the adjoining house on the right hand, the two adjoining houses on the left, and two houses immediately opposite had one or more fatal cases of cholera in each of them, while in the forty-four houses north of this there were only two deaths from cholera.

With the above exceptions, the gullies were complained of as the source of the offensive smells. In many cases, we can state from our own experience that neither were the inhabitants mistaken as to their source, nor were the complaints groundless. As to the proportion of gullies which are trapped, we are unable from our own examination to speak positively. The Commissioners of Sewers state it to be one-half. But that point appears of less importance when we state that from some of those represented to be trapped, most offensive smells proceeded. For example, immediately opposite 5 South Row (the house in which the **first fatal case** of cholera occurred in the Golden Square [sub]district **this year**), the gully is marked in the plan of the Commissioners of Sewers as trapped. A shoemaker who works in the front room of the ground floor complained of the stench proceeding from that gully being so great as to compel him frequently to shut his window. When he was desirous of opening it for a short time, he had recourse to the expedient of covering the gully grating with a piece of oil cloth with stones laid upon it. In Little Windmill Street and other places, as will be hereafter detailed, the inhabitants complained particularly of the offensive effluvia proceeding both from trapped and untrapped gullies.

Although it does not appear in every instance that the houses opposite to the gully gratings suffered most from cholera, it is nevertheless an undeniable fact that several of the houses in which the greatest mortality occurred are situated opposite gullies. [Take,] for example, 23 Peter Street, a corner and double house in which there were twelve deaths. Opposite the angle of the house, and opposite to the side entrance in Green's Court, are two untrapped gullies of which the neighbours complained greatly. In this court next door to 23 Peter Street, there were two fatal cases of cholera. Next door but two, [there was] one fatal case. Opposite, facing the side entrance of 23 Peter Street, next to the gully hole, [there] was one fatal case. And in each of the two houses in Peter Street adjoining No. 23, there had been fatal cases. It is right to observe, however, that the basement and two privies situated in house No. 23 were in a most filthy condition, as will be stated in another part of the report. [8/9]

At 1 Brewer Street there were six attacks of cholera, five of which proved fatal. This is a corner house, one side being in Little Windmill Street. Opposite the entrance in Brewer Street, there is a trapped gully communicating with the new sewer, which the inhabitants state to be **inodorous**. Opposite to the angle of the house is a ventilating shaft. At the side of the house in Little Windmill Street is a gully communicating with the sewer constructed in 1852 and represented by the Commissioners of Sewers as being trapped. On the opposite side of the street [is] a similar one. One of the survivors in the house told us that they had been greatly annoyed by the smell from the gully in Little Windmill Street. On the evening preceding the fearful outbreak of cholera in this neighbourhood, the stench had been so great that they had thrown a quantity of chloride of lime down it.

In Hopkins Street, Nos. 9, 10, 11 stand apart. Their water closets are all trapped and their yards and premises are much cleaner than other houses of the same class in the locality. Opposite No. 11 is an untrapped gully, and a few feet further on, another. From the former of these, in particular, the landlord of the house stated that unpleasant smells issued. In this house, [there] were four fatal cases of cholera, in No. 10 two, and in No. 9 eight.

In 5 Berwick Street, a grocer's,there were seven deaths from cholera. Immediately opposite the shop is an untrapped gully grating, from which the man in the shop stated that most offensive smells issued.

In St. Ann's Court, where there were thirty-three deaths from cholera, there are two gully holes much complained of by the inhabitants.

At 3 Broad Street, there were nine cases of cholera, six of which

areas: Multiple meanings, depending on context: "A vacant piece of ground ... ; a clear or open space within a building" (*OED*); below-street-level outside space beside the exterior basement door.

necessaries: Privies and water closets; toilets.

suffered: Allowed.

first fatal case: See p. 22 below.

this year: 1854, which indicates the report was written long before it was published in the summer of 1855.

inodorous: "Without smell or scent" (*OED*).

were fatal. A drain from the next house, which runs close to the back room on the ground floor, is usually very offensive and requires constant use of chloride of lime. On the left of this house, opposite No. 2, is an untrapped gully. At No. 4, there were four deaths; at No. 5, three, at No. 6, one; and at No. 7, one. Opposite No. 6 is a gully stated by the Commissioners of Sewers to be trapped. But on 28 August, the inmates of No. 8 found it so offensive that they were compelled to close their windows in consequence.

At 14 Silver Street, there were two deaths. The stench from a gully hole nearly opposite was stated to have been very great on Saturday 2 September.

We are decidedly of [the] opinion that the gully grates (when imperfectly trapped) and ventilating shafts, as at present constructed, must have an injurious effect on the health of any districts. We think that such places as the tripe dressing and boiling establishments, and the slaughter-houses already spoken of, render those parts of the parish in which they are situated unwholesome from the foul odours emitted from them. [In addition, they] also cause the sewers in the immediate neighbourhood, which receive the **soil** and drainage from them, to send forth from the street **gullies** and into the un-[9/10]trapped house drains such noxious exhalations as must of necessity not only produce a predisposition to disease, but also engender it, and greatly increase the mortality in any district where epidemic disease prevails.

soil: In this context, filth.

gullies: Sewer grates, usually placed in the gutter next to the sidewalk.

D. Smells in houses and their source; [were] such smells worse during the night or in the morning before the houses or shops were opened?

In a large majority of the houses which we visited, the inmates complained of bad smells of various descriptions. We also were fully sensible of their presence [during house-to-house visitations], more particularly in the lower part of Marshall Street, in Little Windmill Street, Cambridge Street, Brewer Street, Silver Street, Peter Street, South Row, and St. Ann's Court; [in] many houses in Berwick Street and Broad Street, etc. The source of these smells were generally the necessaries**.** In several cases, [they arose] from collections of dust and refuse in the **dust bins,** but this cause had existed to a much greater extent before the outbreak of cholera.

dust bin: Trash cans, refuse bins.

In many cases, offensive smells proceeded from the interior of the over-crowded rooms in which slop pails and other utensils were kept containing night soil, urine, and other offensive matter. These were emptied once in the twenty-four hours, either into the water closet or down the sink; in the case of the attics, not unfrequently into a gutter on the roof, and from that by the rain pipe into a sink in the back yard. Several instances of this latter practice were complained of by the neighbours as occasioning a great stench.

In several instances, the air in the rooms and houses was rendered more close, foul, and unwholesome by the inmates keeping dogs and other animals. For example, at 38 Silver Street, the man who occupied the upper part of the house kept twenty-seven dogs in one room. Their excrement was discharged into the gutter on the roof, where they accumulated and were described as emitting "a horrible stench." At No. 44, one death from cholera occurred in the person of the charwoman who kept about seventeen dogs, cats, and rabbits.

In may of the houses where the drains (probably old, imperfect brick ones) passed under the kitchen floors, they were a fruitful source of malodours. When [the smells] did arise from that cause or from foul [water] closets situated within the house, more particularly in the basements, the smells were invariably, as might be supposed, worse during the night or towards morning. It is worthy of note that this was the period when, as far as we could draw a conclusion, the majority of choleraic seizures took place. Several of the inhabitants stated that they frequently felt sick and uncomfortable in the morning until they had opened the doors and windows for a short time. This was not merely the case where a number of persons occupied one room or floor, but frequently [on] the ground floor where no had slept in the shop or parlour. [10/11]

*E. Whether the house had privy or water closet or cesspool, and the position of these; whether complaints of smells from them; whether they were in good condition; whether the water closets were supplied with water; whether the house drainage **stopped**; whether the sinks were in good condition; their position; whether smells from them. This district has been lately drained. Ascertain how many of the houses have drains connected with the new sewers; whether the house drains pass under the house to reach the sewer; the structure of the house drains, pipe or brick drains, and their condition; whether subject to stoppage or smells from them.*

stopped: Blocked.

For the information on this subject as to each particular house, we beg to refer to our tables. Out of all the houses visited by us, we do not remember to have found one unsupplied with a necessary of some description except in Nag's Head Mews, Portland Mews, and Brown's Court. In the first, there is a **gallery** consisting of nine dwelling rooms (rented at 4*s* a week each) and two **warerooms** situated over coach houses and stables, occupied by thirty-seven inmates (two of the rooms being inhabited by eighteen adults and children). In this gallery there had been one death by cholera, a woman. Six persons slept in the room where this woman died. There is only one trapped privy for the whole of this tenement. In a very large majority of houses, the necessaries are situated in the back yards, level with the ground floor. In almost all the remainder, the necessaries are below the level of the ground in

gallery: In this context, a long, narrow apartment.

wareroom: Display room for sale of goods.

the basement, and frequently within the building.

We have already stated our belief (which we here beg to repeat) that there are very many cesspools in the district besides those the existence of which is known. The old cesspools have not been filled up when the house drainage was connected with the street sewers. The consequence is that only the overflow goes away into the sewer. This remark does not apply to the Craven Estate in this district, in which (we were informed by a trustworthy authority, Mr. York, the clerk to the Commissioners of Paving) on the last renewal of leases, the cesspools were ordered to be thoroughly removed and new brick drains carried under the houses into the sewers. In many cases, as may be seen by our tables, we know that cesspools do exist. For instance, at 10 Cambridge Street it frequently overflows the yard. At 9 Bentinck Street, it was greatly complained of by the inmates of the houses in Broad Street, which overlooked the premises. In Marlborough Row, we saw a large cesspool being emptied. In Bridle Lane, a monster cesspool, formerly a **dung pit**, exists which has not been emptied for many months. The complaints of smells from necessaries were general all over the neighbourhood, but the complainants oftener spoke of their neighbours' necessaries than their own. We can, however, say from our own personal experience that scarcely any of the necessaries in the district are really free from foul smells. Their general condition is far from satisfactory. In very few instances is the water **laid on**. In many instances, the waste pipe from the water butt discharges itself into [11/12] them, but this arrangement is very insufficient. In the remaining houses (the proportions can be ascertained by reference to our tables), there is no means of cleansing at all except by pouring down water by hand.

dung pit: Manure receptacle.

laid on: Plumbing connected so that the toilets are flushable.

We remarked nothing particular as to the sinks and drains in the areas, except that many smelt badly, we conclude, from defective trapping. In 14 Noel Street, which was the house with the greatest mortality in the street, the sink was very foul. It was situated in the kitchen. We should observe that gutter pipes communicating with the drains are a fruitful source of foul smells, more particularly in those cases where the occupants of the attics are able to empty their slops into the roof gutters. As to whether or what proportions of the drains of the houses do or do not drain into the new sewers, as well as their position, structure, and condition, we feel it is useless for us to pretend to report on the subject. Our authorities would necessarily be the Commissioners of Sewers and the inhabitants, whose statements on these subjects is hopelessly irreconcilable. But, we believe that, with few exceptions, the drains pass under the kitchens. Among the exceptions may be instanced Marlborough Row, where the drains run back and communicate with house drains and sewers in Carnaby Street.

We found several instances of stoppages. Some of these may possibly be accounted for by the fact that the old sewers were made at a much higher level than the more recently constructed ones. The house drains communicating with them were nearly horizontal. Where a new sewer has been made in the street and the houses drain into it by means of the old drains, frequent deposits and stoppages take place in the latter in consequence of the little or no fall in them until near the junction with the sewer. Therefore, to give full effect to the benefit derivable from a new sewer passing through a street at a lower level than the original on, it would be necessary to reconstruct the house drains communicating with it.

F. Examine the basements as to the depth of the floor below the level of the street; whether there had been any accumulations of house refuse in these basements or in the adjoining cellars before the outbreak. Consider the effect of these conditions on the general ventilation of the house, especially at night. Ascertain whether the dustmen and scavengers are regularly employed in removing rubbish, what their contract is, [and] whether it is fulfilled.

Throughout the district, the basements generally were in a bad condition—dark, damp, ill-ventilated, and frequently dilapidated. Their depths, on average, we should estimate at from 7½ to 9 feet from ceiling to floor, the latter being from 6 to 8 feet below the level of the street. The basement of 3 South Row, which we measured, may be taken as a fair specimen. It was 8½ feet from ceiling to floor, and the latter 7 feet below the level of the street. In the front kitchen of this basement there had been one death from cholera, eight individuals occupying the room, for which a rent of 3*s*. 6*d*. per week was paid. The back kitchen, a small mise-[12/13]rable place for which 2*s*. per week was paid, was occupied by six persons, one of whom had a dangerous attack of choleraic diarrhoea.

In very few of the kitchens occupied as dwellings were the requirements of the 53rd section of Schedule K of the Metropolitan Building Acts complied with, and many of these apartment were disgracefully overcrowded, especially in St. Ann's Court and neighbourhood. At 6 St. Ann's Court, a woman died from cholera in the kitchen, which had been occupied by three adults and three children. The five survivors slept in it with the corpse on the night after the death. The cobler in the shop above stated that offensive smells proceeded from the kitchen window and [a] hole or cellar in [the] front area, where bones and other refuse were thrown. In 21 St. Ann's Court, the kitchen had three beds in it, two for adults and one for the children. In 19 St. Ann's Court, the kitchen as well as the whole house was much crowded. There had been four cases of cholera, of which two were fatal, and twenty severe cases of diarrhoea. In 2 and 3 Crown Court, the kitchens were overcrowded. Like those mentioned above, as well as many others, [they] were totally unfit for human habitations.

dustmen: Those who empty refuse receptacles.

ashpits: "Ashhole, a hole beneath a fireplace or furnace into which the ashes fall" (*OED*).

feeing: Bribing.

In very few of the basements, areas, or back yards were there large accumulations of dust or other refuse. A few days previous to our visit, the parochial authorities had sent round the dustman to remove the contents of dust-bins, etc. But before the outbreak of cholera, most offensive accumulations were allowed to remain for five or six weeks, and longer. Many of the inhabitants complained that they could not get the **dustmen** to empty the **ashpits**, etc., without **feeing** them. On inquiry as to the nature of their contract and its obligations, the surveyor of pavements, Mr. York, jun., informed us that there were two contractors for the whole parish. They were bound to send round their carts daily and remove any collection of dust, etc., when required to do so by an inhabitant. If they refused or neglected to do so, application to the Paving Board by the aggrieved inhabitant was invariably successful in procuring a removal of the dust, etc., within twenty-four hours. But many of the inhabitants were unaware of this mode of obtaining redress, and probably many who were aware of it were unwilling to act upon it, as Mr. Your, jun., stated that the applications to compel the dustmen to do their duty were very few. We would suggest the propriety of making the dustmen empty each ashpit at stated periods, oftener if required, and of making their non-compliance, after a request to do so by an inhabitant, punishable by a small fine. Full information on this point should be printed on the receipts given by the paving commissioners. The action of accumulation of dust, of vegetable and other refuse, for a lengthened period, even when the receptacles are in the yard or area, must be very injurious to the health of persons in the vicinity. Where the receptacles are in the basement within the building, as is frequently the case in this neighbourhood, the pernicious action on the health of the inmates must be increased and cannot fail to become, in many instances, an active source of disease. [13/14]

*G. Examine the houses as to their general cleanliness and means of ventilation. Examine also the back yards and inquire what their condition was before the epidemic. Note if they were **flagged**, or filthy, etc.*

flagged: If flagstones were present.

In the interior streets such as Peter Street, Hopkins Street, South Row, etc., the general character of the houses as regards cleanliness is much as is usually met with in London in houses of the same class. With few exceptions, separate families occupy every floor. In many cases, every room in the house, and as a general consequence in such cases, the passages, stairs, and walls are extremely dirty, as well as the interior of the rooms. On entering, we found the air close, oppressive, and tainted with a combination of unwholesome odours arising from the number of persons cooking their food, eating, sleeping, washing, and drying their clothes in the same apartments. Their personal ablutions [were] little attended to. Living in such a condition and inhaling such a polluted atmosphere, day after day, must of necessity produce a predisposition to disease, as it does not actually engender it.

In some of the better description of streets, [such] as Berwick Street, Silver Street, etc., in houses with shops and occupied by a thriving and respectable class of tradesmen, we found the basements in a much filthier condition that we should have expected. This arose, in many instances, from the entire absence of back premises. Therefore, the water closet and dust bin had to be placed in the front area or within the building, the basement being generally dark, damp, and ill-ventilated.

We beg to refer to our tables for an account of the ventilation of the houses in each street. But we wish particularly to remark that in many of those houses where the ventilation is unobjectionable, the advantages derivable therefrom are in a great measure neutralized by the space at the back being filled up by workshops and other buildings. Generally speaking, we found the back yards tolerably clean, as much so as the nature of the premises would admit. Some improvement [was], no doubt, in consequence of the parochial visitation which had been set on foot, although the inhabitants, with few exceptions, stated that they were much in their usual condition. Many of the smaller yards were flagged all over. Those which were not, and the larger ones, had usually a strip of pavement laid along the centre.

H. Examine whether the disease occurred in the upper or lower flats. Get, if possible, the proportion of cases in the flats.

For detailed information as to the streets, houses, and flats in which the greatest mortality occurred, we refer to the tables which accompany this report. Their accuracy as regards the number of deaths may be relied upon, [since] our inquiries at the houses have been verified by one of us at the various hospitals and workhouses where many of the deaths occurred. But we found it exceedingly difficult to obtain satisfactory information as [14/15] to the proportion of attacks. In many instances, much time had elapsed before making our inquiries, the inmates of a large number of houses had in the meantime left the neighbourhood, while those who remained were unable to draw the distinction between cholera and diarrhoea.

I. Estimate as closely as you can he condition of the inhabitants ss to overcrowding, personal cleanliness, habits, diet, etc.

Throughout the whole neighbourhood, with few exceptions, the houses were very much overcrowded. As stated in section G, many families reside in rooms or tenements belonging to a non-resident landlord, and wash, dry, cook, and sleep in the same apartment. For more detailed information as to the number of inmates in each house or floor, we refer to our schedules. Although in some streets, [such] as Peter Street, Husband Street, etc., the

inhabitants might be described as dirty, yet in the other and major part of the district the inhabitants, as regards personal cleanliness, were on a par with persons of the same class in similar metropolitan localities. This observation may be made in respect to their habits and diet, as we found about an average amount of intemperance and improvidence—and consequently of poverty. Although we scarcely met with a case in which an intemperate man recovered from cholera, we nevertheless met with many fatal cases occurring to those who had lived regularly and well and who, up to the period of seizure, had been considered healthy and robust.

***K.*:** There is no J subheading in the report,

K. *Get the number of cases in each house, and the number of deaths of persons who lived in each house.*

Vide: See.

Vide [section] H.

2nd. Examine the water supply as to—
A. Its source.
B. Quality
C. Amount.
D. Whether drawn from pipes or water butts, and the condition of the butts.

The subdistricts of Berwick Street and Golden Square are supplied by the Grand Junction and New River Companies, St. Anne, Soho by the New River only. The quality of the water, especially that of the New River—although not what could be desired—is much superior to some and, we believe, equal to that supplied by any of the metropolitan water companies. We heard little or no complaints throughout the district, either as to the quality or the amount of supply. We again refer to our schedules for particular information as to whether the water was kept in butts or cisterns, and the position of these, which, as well as their condition, we found with few exceptions most unsatisfactory. They were, in many cases, wholly or partially uncovered, [15/16] not cleaned for months—in some cases, for years—and had an accumulation of dirt at the bottom and adhering to their sides. In many cases, the butts, and more particularly the cisterns, were situated in the basement within the building in close, unwholesome, and disgusting propinquity to the water closets and dust bins, in positions where the water could not fail to become impregnated with exhalations from the former and solid particles from the latter.

3. Note the general condition in the streets and courts, and inquire what was the state of the cleansing before the outbreak.

With probably a few exceptions, [such] as Bridle Lane, Peter Street, etc., we saw little to complain of in the general cleanliness of the streets. We were informed that the condition was but little different previous to the outbreak.

4. Examine whether the disturbance of the ground in making a sewer through the old burial ground in Little Marlborough Street, or the filtrations from it into the sewer, or the drainage of any nuisance into the general sewerage of the district had had any effect, or whether the sewers had accumulations in them that might have been injurious.

We found two opinions, amongst others, prevalent throughout the neighbourhood. One, that the disturbance of the old burial ground was the chief cause of the outbreak of cholera, the ravages of which (many of the inhabitants maintained) followed the line of the new sewer. The other, that a pump in Broad Street was at the bottom of the mischief. Neither of these causes, we believe, affords a satisfactory reason for the outbreak. Both, we suspect, had been prominently put forth by interested persons who were desirous of diverting the current of popular indignation from their own particular nuisances. For example, we found the owner of the monster slaughterhouse in Marshall Street—who had also an interest in the tripe boiling establishment adjoining—to be one of the loudest and most eager in declaiming against the sewers and maintaining that the disease followed the line of the new sewer. In reference to these opinions, we may observe that no case of cholera occurred in Little Marlborough Street through which a new sewer was constructed last year and which is represented by the Commissioners of Sewers to be the centre of the plague pit. But we believe it is not, as Mr. York, clerk to the Paving Commissioners, who is evidently well acquainted with the antiquities of the neighbourhood, assured us that he had seen old plans of the ground of an authentic character and of a date anterior to the present houses, which represented the pest field as extending considerably to the south and east of that stated by the Commissioners of Sewers. It embraced King Street, Carnaby Street, [the] west side of Marshall Street, and the ground between.

But even were this [16/17] position of the pest field the correct one, it does not enable us to attribute to the circumstance of the new sewer being constructed through it the outbreak of cholera in this neighbourhood. Even admitting for the sake of argument the various theories as to the summer heat drying the clayey earth, causing it to crack and so permitting the pestiferous emanations to escape, or filtrations from the old burial ground permeating into the sewer, etc., etc., we have to remark that the virulence of the cholera manifested itself in Cambridge Street, Broad Street, Berwick Street, and other places [such] as St. Ann's Court, etc., still more remote from any spot pointed out as a portion of the pest field. Another portion of the line of the new sewer, however, from Great Pulteney Street eastward

to Silver Street, which appears to to have been the site of an old burying ground, seems to have been visited by cholera with great severity.

We may say, generally, that although several of the streets in which the new sewer has been constructed have suffered severely from cholera, we also find that in the same neighbourhood many other streets through which the new sewer runs have been almost or entirely exempt from the diseases. Among the former we may mention South Row, Marlborough Row, Great Pulteney Street, east end of Silver Street, etc. Among the latter [are] Little Marlborough Street, north end of Marshall Street, Brewer Street, etc. A reference to our tables will show that one of the places where cholera was most fatal was the south-west end of Broad Street, between Marshall Street and Cambridge Street, where a new sewer was built during the year 1851, with a fall southward toward Cambridge Street and Little Windmill Street. In the portion of Broad Street east of Cambridge Street, cholera was scarcely less fatal. Here, and in Poland Street, the sewer was built in 1823. It discharges itself into Berwick Street and is entirely unconnected with, and perfectly independent of, the sewer above alluded to built in 1851. The mortality from cholera was very great in New Street, Peter Street, St. Ann's Court, etc.—places supplied by the old sewers.

The drainage of certain nuisance into the sewer, as for example in slaughterhouse and tripe boiling establishment in Marshall Street—the deposit occasioned by the coagulated blood from the former and the refuse from the latter—must have a deteriorating effect upon the health of the immediate neighbourhood and favor the progress of epidemic disease. Nevertheless, from the facts above stated, we consider that the outbreak of cholera cannot be specially attributed to the disturbance of the old burial ground, the construction of any one sewer or the drainage of a nuisance into any particular portion of the sewerage of the district. The cholera was equally fatal in different streets supplied by sewers which have no communication with each other and have separate outlets into the Northumberland Street sewer, three quarters of a mile distant.

The following is a list of the streets in which the new sewers were completed in February 1854, respecting which a reference [17/18] to our tables will show to what extent they suffered in comparison with the others:

Queen Street, [off] Oxford Street
Marlborough **Mews**
Blenheim Mews
Blenheim Street
Argyle Place, from Argyle Street to King Street
King Street, from Argyle Place to Foubert's Place
Little Marlborough Street
Foubert's Place
Tyler's Street
Tyler's Court and Marshall Street, from South Row
South Row
Cross Court
Lowndes Court
Marlborough Row
Silver Street, from Bridle Lane to Windmill Street
Great Pulteney Street
Glasshouse Street, [off] Brewer Street
Little Pulteney Street, from Regent Street to Windmill Street
Great Crown Court
Little Crown Court
Archer Street
Part of Regent Street
Smith's Court and Yard

We now come to the second prevalent opinion, that the impure condition of the water in the Broad Street pump was the main cause of disease. As to this, we are bound to say that there are some cases of disease and death which we find ourselves unable to explain upon any other hypothesis than that of the deleterious influence of this water.

Two such cases which came under our observation are exceedingly interesting. As they are probably the most important which have been brought forward in connexion with this question, we think it right to state them at length. Mr. Eley, a percussion cap manufacturer, has his premises at 38 Broad Street but lives with his mother at West End, Hampstead. This lady, being partial to the water from Broad Street pump, used to have a supply sent to her. On Thursday 31 August, [he] had some sent up to her as usual. Of this she partook freely, as did also a niece who was on a visit to her. A servant in the house partook more sparingly. On Friday 1 September, Mrs. Eley was seized with cholera and died on Saturday. On Sunday, the niece returned to her own residence in Islington, was attacked by cholera on the same or following day and died. The servant had a slight attack of diarrhoea.

There had been no case of cholera in West End previously, nor up to the period of our inquiry some weeks after. Neither had there been any case of cholera in the part of Islington where the niece resided. Mrs. Eley had not been in the neighbourhood of [18/19] Broad Street during the past year nor, so far as information could be obtained, in a locality where cholera prevailed. Certainly, not for a week previously, as during that period she had not extended her walks beyond her own neighbourhood—the Finchley Road, etc. The only indirect communication which could be traced between her and any cholera patient was through the medium of her son, who went daily to his manufactory in Broad Street. [He] had frequent communications with one of his men who resided on the premises and was suffering from an attack of cholera, from which he recovered. Mr. Eley, however, [was] in no way affected by the disease. Mr. Eley rarely drank the water from the pump. But the water bottle in his bedroom [was] occasionally filled with it. Mr. Eley had frequently remarked that, after being drawn forty-eight hours,

it had a most unpleasant taste and flavour, as if dead mice were in it.

[In the second case,] Mr. Wickwar of Brighton had been summoned to see his brother, attacked by cholera at 6 Poland Street. On arriving there and finding his brother dead, he declined to see the body but remained for about twenty minutes in the house. [He] partook of a slight luncheon of rump steak, together with a little cold brandy and water . . . from the Broad Street pump. He then went to Holford Square, Pentonville, was seized with cholera the same night and died. This latter case is not by any means so striking as the first mentioned, as it may be said by some that Mr. W[ickwar] imbibed the poison while breathing a choleraic atmosphere for twenty minutes.

Several other persons in the neighbourhood stated that they had repeatedly found the water from Broad Street so unpleasant that they desisted from drinking it for a time. At 10 Cross Street, where eight deaths from cholera had taken place, one of the survivors stated they had been in the habit of drinking water from Marlborough Street pump till within a day or two of the outbreak, when finding it exceedingly unpleasant, they sent for some from Broad Street.

In many of the cases investigated by us, it was proved that the individuals had been in the habit of using that water. Many mechanics working in the district who usually drank of the water were attacked by cholera at their own houses, situated at a distance. For instance, at Mr. Ash's artificial tooth, etc., manufactory [at] 8 and 9 Broad Street, seven such cases occurred. One of the men [was] visited by one of us at his house in Seymour Street, St. Pancras, where cholera was not prevalent. On the other hand, our tables will equally show many instances in which persons drinking this water either were never attacked or recovered when attacked. Many deaths in the infected districts occurred [among] persons who were not in the habit of using this water, whilst the range of the disease extended beyond the limits within which the water from this pump was drank.

Two remarkable instances where a large number of people, living or working in the centre of the district [and] escaped from cholera, deserve particular notice. The workhouse in Poland Street lost only five of its inmates out of 535, exclusive, of course, of those persons who were brought in labouring under the disease. The [19/20] inmates of the workhouse had not used Broad Street pump water, having a pump well on the premises in addition to being supplied by the Grand Junction Company. In reference to the workhouse, we were happy to observe that the condition of the inmates were as satisfactory as circumstance would admit of. The other case [of exemption] . . . is the brewery in Broad Street. None of the men working there died of cholera. None of them, as far as could be ascertained, drank water from any of the street pumps as there is a deep well in the brewery, in addition to the supply from the New River [Company].

The alleged reason for the deleterious effects of the pump water is the presumed percolation of the sewage into the pump well. But a careful examination of the latter has failed to reveal any defect in the brickwork through which such contamination could take place. Nevertheless, a permeation might take place to a slight extent without discovering the precise spot where it took place. Certainly, such an occurrence appears by no means improbable when we consider the close proximity of the sewers to the well, independent of the percolation which may take place from the imperfect house drainage of the neighbourhood. Several necessaries with cesspools [are] situated within a few feet of the well and on a higher level. Mr. York informed us that the line of sewer is ten feet distant from the pump. The sewer [is] twenty-three feet below the surface of the ground, the well twenty-eight feet deep, and the surface of the water twenty feet below the level of the street. From the date at which we made our inquiries, we were unable to make any analytical or microscopical examination of the water and can therefor give no personal opinion as to its condition. Nor is there any necessity for our doing so. This part of the investigation has been made by **abler hands** under the direction of the General Board of Health.

abler hands: Dr. Hassall and Mr. Patterson; see Document 31 (Online Companion), 240–41.

Having now replied in detail to the heads of inquiry furnished us by the General Board of Health, we beg to offer a few general remarks on some point connected with the sudden outbreak of cholera in St. James' and St. Anne's, an outbreak which we believe to be unprecedented, at least in this county, as regards its mortality, extending so fearfully as it did over a large district. . . . [It] decimated the inhabitants of several of the streets and courts, such as Broad Street, Hopkins Street, Pulteney Court, etc. The number of those in which attacks took place was more remarkable even than the number of victims in a street. In Broad Street, which contains forty-nine houses, excluding the brewery, we found that only one house or, at the most two, on the south side of the street escaped.[4] On the north side, eleven houses escaped, including the six corner houses. The population of Broad Street at the last census, allowing for the houses since pulled down, was about 860. [20/21] The recent mortality from cholera was ninety, in addition to twenty-five fatal cases occurring to persons working in Broad Street but dying in other parts of London. Some of them [had] first complained of indisposition while at their work in Broad Street. For example, in Mr. Eley's percussion cap manufactory [at] 38 Broad Street, sixteen of the workpeople (two men and fourteen girls) died of the disease at the commencement of the outbreak in St. James'. The houses of those whom we could trace [were]

[4] [Original note:] There was some doubt as to the second house in consequence of the former occcupans having left and the statements of the neighbours being contrary.

situated, however, in districts of London where cholera was prevalent, [such] as Lambeth, etc.

Throughout the surrounding neighbourhood, the mortality was more or less on a par with Broad Street. For example, in Hopkins Street, all the houses except three had been pulled down: . . . about sixty-seven inhabitants, the deaths were fifteen.

In Cambridge Street: fourteen houses, population 179, deaths sixteen, ten on the west side, six on the east.

[In] Kemp's Court: six houses, population twenty-eight, deaths nine, in three houses.

In Pulteney Court: nine houses, population under 200, deaths twenty-four, only one house escaped.

New Street: nine houses, ten deaths, one house only escaped.

In St. Ann's Court and Place, containing thirty-three houses, forty-six of its inhabitants died.

In Cross Street, Marlborough Row, Berwick Street, etc., the mortality was also very great. As the number of deaths in each house and street is given in the tables which accompany this report, it will be unnecessary to allude further to them a present.

One of the most important and singular features in the fearful outburst of cholera in St. James's and St. Anne's was its suddenness and the large number of individuals attacked simultaneously in different parts of the district. The epidemic attained its acme on the second, if not on the first day of the outbreak. Its intensity remained stationary for two days after, and then on Tuesday 5 September—the fifth day of the outbreak—the deaths declined by about fifty percent. The virulence of the disease also abated as the attacks became less numerous. During the first days of the outbreak, almost every attack proved fatal. After a few days, the medical attendants were gratified [to find] an occasional recovery take place. On inquiring among the practitioners residing in the neighbourhood, they informed us that although there had been a few cases of cholera during the month of August, there had been nothing connected with the general health of the district to lead them to apprehend any outbreak of endemic or epidemic disease. The condition of the neighbourhood as regards existing nuisances, overcrowding, etc., [was] much the same as in 1849, when St. James' was, next to Hampstead and Paddington, the most lightly visited of all the metropolitan parishes. Since that period, considerable improvement had been made in the drainage of the district by the [21/22] construction of new sewers in many of the streets.

Dr. Parkes, the registrar of the Golden Square subdistrict, informed us that the first death from cholera registered by him occurred on 6 August at 5 South Row, the victim being a breeches maker, aged 47. The second death was that of a female child, aged one year, and occurred on 11 August at 6 King Street. The third death, on 13 August, was a dressmaker, aged 40, in Broad Street. The fourth was a policeman, aged 36, at 11 Edmund Court. Only six more deaths from cholera were registered by Dr. Parkes up to 31 August, inclusive. But on 1 September five deaths were registered by him (the disease having taken place during the previous twenty-four hours).

On 2 September, he registered 43 deaths.
3 " (Sunday) none.
4 " he registered 48 deaths.
5 " " 31 "
6 " " 20 "
7 " " 16 "
8 " " 8 "
9 " " 11 ", including 5 from the workhouse, up to 2 o'clock, the date of our inquiry.

On inquiring with Mr. James, the registrar of Berwick Street subdistrict, we ascertained that he only registered six deaths as occurring in August, namely:

On 7 August, a woman at 21 Great Windmill Street.
16 " , a man at Berwick Street.
16 " , a woman at 76 Berwick Street.
19 " , a man at 76 Berwick Street.
27 " , a woman at 6 Queen's Head Court.
30 " , a man at 32 Little Pulteney Street.

Mr. Jones, the registrar of St. Anne, Soho [subdistrict] registered only five deaths from cholera during the month of August, namely:

On 21 August, at 19 Crown Street.
24 " , " 22 Porter Street.
27 " , " 9 Gerard Street.
29 " , " 7 Grafton Street.
31 " , " 16 King Street.

The total number of deaths in the three subdistricts on 1 and 2 September, including those of persons who had been removed to the hospitals and workhouses, was 201. From 1 to 13 September, inclusive, the deaths amounted to 539. From that to the 20th (which was the first day of the month on which no death took place), the number was 31. Up to the 30th, only 10 more occurred, making the total number of deaths from cholera during the month of September in these limited districts 609. [22/23]

On looking through the Registrar-General's reports for 1849, we are not surprised to find that the streets, and in some cases the houses, in which deaths then occurred have again suffered from the recent visitation. For example, at 10 Cross Street, where a death from cholera occurred on 5

July 1849, eight deaths took place during the first week of last September [1854]. Marshall Street, South Row, Little Windmill Street, St. Ann's Place and Court were noted among the most infected localities of the district in 1849 and appear in much the same unfortunate preeminence now.

As to the floors in which the greatest mortality has occurred, we beg to refer to the tables which accompany this report. But in reference to this subject, we should wish to quote some observations contained in a pamphlet written by the Rev. Mr. Whitehead, the exemplary and indefatigable curate of St. Luke's, Berwick Street. He writes, "of the 373 deaths to which the writer confines his attention, no less than seventy-one were those of householders or of members of their families. This mortality in the families of householders is especially noticeable on the east side of Berwick Street, being at the rate of 37 percent of the deaths. In Broad Street, it was 14½ percent." . .

"This fact of itself disposes of a statement, which has gone the round of the papers, to the effect that the vast majority of the deaths occurred in the upper rooms, as it is notorious that in these streets householders and their families do not occupy the top, but rather the bottom of their houses. Even if that statement were true, the inference sought to be drawn from it, viz., that the habits of the people who occupy the top floors had more to do with the cause of the pestilence than any foul exhalations from beneath, would not be a fair one, both because every one knows that in a neighbourhood like this there are far more persons living on the second and third floors than in the kitchens, parlours, and 1st floors, and because it is plain that whilst very many who live at the top must have occasion to come downstairs in the course of the day, hardly any who live below are likely to go up; and so it might happen that the occupant of the garret should take the disease at such times when he was below. But the real truth is sufficiently at variance with the statement in question to lead to an inference, if such inferences be allowable, of a precisely opposite nature. The deaths of persons living and sleeping on the ground-floor were more numerous, in proportion to the number of its occupants, than those on any other floor, and that without counting the non-resident workmen, shopmen, etc., who must have taken the disease on the ground level, and who went, or were removed, to their own houses to die. But the writer does not choose to rest this statement on mere loose assertion; his previous acquaintance with the people and their houses, added to personal observation, and the observation of his colleagues, of the progress of the pestilence, has enabled him to ascertain what, probably, for obvious reasons, no one else could or can ascertain, the name of each deceased person, and the room in which he or she died; or, in case of removal or departure, the room hitherto occupied by the deceased. [23/24]

Deaths in or from kitchens			13
"	"	houses and cottages with no floor above the first	9
"	"	ground floor	60
"	"	first floor	100
"	"	second floor	114
"	"	third floor	73
"	"	workhouses	4
		Total	373

It must be admitted that ten houses in which the deaths were numerous, and which have no third floor, are here reckoned; but when it is added that the deaths in them which took place on the ground-floor exceeded those on the second, the admission need not go for much. In Broad Street, if the kitchens and parlours be reckoned together, the deaths were as nearly as possible equally distributed, about twenty to each floor, the extra six to the ground and second. It is noticeable that the streets and parts of streets to the north of Broad Street, and those furthest removed from it on the south, as Peter Street, Green's Court, Little Pulteney Street, Little Windmill Street, and Wardour Street on the east, are those in which the deaths on the upper floors preponderate. In Little Pulteney Street three out of the seven deaths, and in Wardour Street four out of the nine, were on the third floor."[5]

The latter paragraph of the above, and the streets mentioned, bear out the experiences of ourselves and others. Those houses which are filthy below and overcrowded throughout [have] the greatest mortality in the upper floors, a fair example of which we have more particularly detailed in our schedules in the case of South Row. Having alluded to Mr. Whitehead's pamphlet, we beg to quote further from it:

"In 1 house there were	11	deaths[6]		= 11
In each of 3 others	8	"		= 24
" 2 "	6	"		= 12
" 8 "	5	"		= 40
" 7 "	4	"		= 28
" 22 "	3	"		= 66
" 46 "	2	"		= 92
" 96 "	1	"		= 96
In the workhouse	4	"		= 4
	Total			373

Compare the numbers here, as well as the table below, with those Whitehead gave in Document 25–II (in the book and the Online Companion) for this passage, from the second edition of his pamphlet.

[5] The inspectors do not give a specific reference for Whitehead's pamphlet, which was *The Cholera in Berwick Street*, 1st edition (London : Hope & Co., 1854).

[6] [Original note:] We presume Mr. W. alluded to 23 Peter Street, among the inmates of which we ascertained that twelve deaths had taken place. [HW corrected the number in the second edition.]

"There were no less than twenty-one instances of husband and wife dying within a few days of each other. In one case, besides both parents, four children also died. At 10 Cross Street, a woman lost her husband and five grown children. Two other deaths [24/25] occurred in the same house. In another, both parents and three of their four children. In another, a widow and three of her children. At an average distance of fifteen yards from St. Luke's Church, stand four houses which collectively lost thirty-three persons."

Mr. Whitehead states that after a careful examination of the Registrar-General's returns, he ascertained the proportion of deaths at different ages in St. Luke's district to be as follows:

Aged 10 years and under				.....	66 deaths
Aged from 10 years to	20			.....	24 "
"	20	"	30	.....	44 "
"	30	"	40	.....	50 "
"	40	"	50	.....	56 "

and so on to 80 and upwards, at the rate which might be expected.

The twenty-four deaths in the second decade are thus distributed:

Aged	11 years	.....	5 deaths
"	12 "	.....	5 deaths
"	13 "	.....	4 deaths
"	14 "	.....	2 deaths
"	15 "	.....	0 deaths
"	16 "	.....	1 deaths
"	17 "	.....	0 deaths
"	18 "	.....	2 deaths
"	19 "	.....	3 deaths
"	20 "	.....	2 deaths

As to any special liability or exemption of any particular class, there is very little to be said. One thing at least is certain. The very old and the very poor have not supplied nearly so many victims as might have been anticipated, whereas the householders have supplied rather more than their due proportion.

The introductory paragraphs paragraphs in Mr. Whitehead's pamphlet are interesting as showing the fearful mortality in a limited area: "If a person were to start from the western end of Broad Street, and after traversing its whole length on the south side from west to east, to return as far as the brewery, and then going down Hopkins Street, along Husband Street, and up New Street, to end by walking through Pulteney Court, he would pass successively forty-five houses, of which only six[7] escaped without a death during the recent outburst of cholera in that neighbourhood. According to a calculation based upon the last census, those forty-five houses contained a population of about 1,000. Out of that number, 103[8] perished by the pestilence. [25/26]

Returning to Broad Street from Pulteney Court by way of Cambridge Street, he would indeed find a few houses in that short street which were spared, but he would still hear of its population being almost decimated, as it lost sixteen of its 179 inhabitants. Taking a more comprehensive view, he would find the western half of Broad Street to have been about the centre of the infected district. Starting from thence, anyone walking at a moderate rate in any direction might have gone beyond its limits in less than three minutes."

On hearing of the late, fearful outburst of cholera, the question which we heard asked on all sides and which naturally suggests itself to every inquiring mind is, What was the cause? The very importance of the question makes us diffident in replying to it. Nor could we receive any satisfactory answer to it from the medical practitioners or from the intelligent of the inhabitants in the district. The sewers, the air, the water, etc., were each assigned as the cause, more particularly the sewers. For ourselves, we have no new theory to offer. We are inclined to believe that there existed a peculiar condition of the atmosphere, which has been called choleraic, wherein the exhalations from sewers, impure water, bad house drainage, overcrowding, intemperance, [and] fear may operate on individuals so as to produce the disease. We [cannot] call to mind an instance in which the sufferer had not been exposed to the action of some of these circumstances which, during the prevalence of epidemics, act as fuel on a fire.

Allowing, indeed, more than their utmost effect to the miasmata diffused by the construction of the new sewer—to the unhealthy condition of the water from the Broad Street pump—we cannot help thinking that the outbreak mainly arose from the multitude of untrapped and imperfectly trapped gullies and ventilating shafts constantly emitting an immense amount of noxious, health-destroying exhalations. [Their] intensity must have been greatly increased by the structural peculiarity of the streets and by the stagnant condition of the atmosphere at the time of, and preceding, the attack. Thus, as poisonous emanations rose from the sewers, they remained suspended in the immediately surrounding atmosphere, which was remarked at the time to have little or no horizontal movement. The benefit of what little movement did exist would be mostly experienced at the corner of the streets. It is a remarkable fact that houses thus situated experienced decided

[7] [HW's note:] And from three of these six, no less than 18 non-residents caught their deaths, 16 from one factory.

[8] [HW's note:] Here, and throughout this narrative, the deaths recorded are only those of persons resident in the district at the time of the outburst of the pestilence, who died, many of them at their own houses, some in the workhouse, others at the hospitals, and a few in the country, having fled thither for security.

immunity, except in the case of those corner houses in which abundant *materiae morbi* existed or in [the] adjoining the premises. For instance, at the corner of Little Windmill Street and Brewer Street, several most offensive gullies at the side, [as well as] a choked up necessary behind belonging to the next house, sent up their pestiferous vapours. As a proof of the immunity of several corner houses, we may mention the six corner houses on the north side of Broad Street, although the street itself was the most heavily visited in the district.

With regard to the sanitary improvement desirable to be carried out in order to guard as much as possible against any [26/27] future visitation of a similar character, we beg to offer a few suggestions. The first and most important which we would recommend is a compulsory and more perfect system of house drainage and the filling up and abolition of every cesspool in the neighbourhood. We are convinced that a much larger number exist than we have ascertained or than is generally supposed. Only a limited number can be proved to have been filled up. It is well known that there was one belonging to every house at a period not more remote than about twenty-five years. It is only within that time that water closets have been generally permitted to drain into the main sewer. A striking instance of the beneficial sanitary effects resulting from good house drainage was brought under our notice by Mr. York. Eight houses, namely numbers 12, 14, 15, 16, 38, and 40 Marshall Street, and 25 and 28 Broad Street had been efficiently drained into the new sewer, with **flap traps** placed at their further extremity, at the trifling cost of 14*s*. each. All escaped cholera, whereas (as our tables will show) the surrounding houses [were] severely visited.

flap traps: Essentially, hinged covers attached inside the sewer at the points at which drains from houses enter.

We would suggest the adoption of some measure to prevent the occupants of attics [from] converting the gutter on the roof, or the rain water pipes, into common sinks.

We also think it would be imperative to have every house provided with a separate and properly trapped water closet, [with] the water laid on.

The dust bins should not be situated within the building and they should be emptied at regular, stated intervals.

As to the main sewers, much advantage would be gained in the way of preventing accumulations, etc., if a greater fall could be obtained. That which now exists in this district—namely, **1 in 250**, appears very inadequate.

1 in 250: A slope in the sewer of 1 foot per 250 feet in length.

We also recommend that all untrapped gullies and ventilating shafts in the streets should be prohibited. We are aware that the question of a judicious ventilation of the sewers is a difficult one. We do not feel ourselves competent to offer any opinion on the subject. But we consider it our duty to state, most positively, as the result of careful observations and mature, unprejudiced reflection that the present system of venting the sewers is highly detrimental to the public health.

As to the removal of slaughterhouses, noxious trades, and nuisance from the proximity of dwelling houses, the desirableness of doing so appears so self-evident that we adduce no arguments in support of it, but merely bring the subject under your notice.

As has been remarked at the commencement of this report, the structural arrangements of the streets are extremely ill-adapted for proper ventilation and, consequently, for the removal of any noxious exhalations engendered in the locality. We therefore deem it very desirable that freer, continuous openings should be made through the district. For instance, as was suggested a few years ago by a committee of the inhabitants, a direct thoroughfare should be made from Berwick Street into Rupert Street and culs-de-sac should be done away with.

We likewise advise [27/28] that the parochial authorities should be required to see [that] the provisions of the 53rd section of the Metropolitan Buildings Act [are] fully carried out in order to prevent such cellars and kitchens as we met with in St. Ann's Court, etc., from being occupied as human dwellings. We hope the erection of model lodging houses and other suitable dwelling for the working classes will be continued.

Another important subject to be noticed is the water supply. Although we did not hear many complaints of deficiency of water, we know there was no super-abundance. The place and mode of keeping it is highly objectionable. The situation of the cistern or butts prevented [them from] being regularly or properly cleansed, and rendered their contents liable to foul impregnations. We hope that among the important sanitary measures to be brought before Parliament, the question of an [uninterrupted] supply of pure water to every house in the metropolis will not be lost sight of.

We cannot conclude our report without alluding to a fact which struck us all repeatedly during our inspection. In every street of this district, there were palpable nuisances, existing notoriously and known to everyone. Yet, the power or the will to remedy them was not forthcoming. In justice to the parish authorities, we must say that they appeared ready to do all in their power towards abating nuisances which were brought to their attention and were within their jurisdiction. Nor had we any reason to complain of the Commissioners of Sewers or of Pavings, or of the water companies or gas companies, or any other public or private body. The very readiness of all persons and bodies connected directly or indirectly with the public health to do all in their power on this occasion only throws out the aforesaid fact into stronger relief. There were nuisances. Day after day we passed them. People on all sides talked to us about them. Yet, nobody could or would remove them.

We may, perhaps, be allowed to say a few words on this subject. One great cause, perhaps the great cause of the evil, is the punctilious regard

for private property and vested interests which Englishmen cannot get over, even when the cholera is at their doors. The consequence is that monster nuisances remain, infecting the air while the parish authorities, or whoever else has taken up the matter, are corresponding with landlords or occupiers, or running after some other person who, or public body which, has more right than they . . . to set things straight. Sanitary arrangements have clearly shown that landlords and occupiers who allow certain conditions of things to exist in their houses or premises are injuring the public. Where those conditions are found, therefore, the power of acting at once, effectually, and at the sole expense of the parties—without any previous notices from householders or other machinery whatever—ought to be vested in one authority in each parish or district, whatever that may be, which is responsible for the public health. [28/29]

Here we have touched upon another question to which a definite answer must be given, before we can hope for any very sensible improvement in the sanitary condition of the metropolis. What is to be the authority responsible for the public health? Is there any such authority? Or are there to be six or seven in each district. At present, the guardians under the direction of the [General] Board of Health, are popularly supposed to be responsible for the healthy state of their respective parishes and to have the necessary powers in this behalf. But . . . enforcing the **Smoke Act** and other sanitary laws affecting the air and surface of the ground are left to the police and the magistrates. The supplies of water, gas, and sufficient sewer accommodation [is the purview of] three influential and independent bodies, each of which has power to limit its supplies, for its own purposes, and at its own time, break up the surface of any thoroughfare or court and heap them for days and weeks with all manner of filthy substances. [Hence,] it is impossible to say that the unlucky parish authorities have the means of performing their trust.

Smoke Act: The Smoke Nuisance Abatement Act of 1853 for the London metropolis.

We sincerely trust that the new Acts about to be passed may provide for more complete coordination between these bodies. The appointment of permanent inspectors of nuisances might help to solve the difficulty. If they are clothed with ample powers of entry into all houses and places whatsoever, and the parish is empowered upon a single complaint from them (without further notice) to abate all private nuisances at the expense of the parties causing the same; and if the magistrates may enforce the Smoke Act upon similar complaints from them; and if no paving commissioners, sewers commissioners, improvement commissioners, water companies, or gas companies are to be allowed to break up the streets or commence new works without communicating through these permanent inspectors to the parish authorities and the Board of Health, we think great progress will have been made in sanitary reform. Every one having the least acquaintance with such matters must at any rate feel that, until some such coordination has been established by this or some other means, no great improvement can be hoped for.

Above all, let all avoidable formalities be dispensed with which may in anywise hamper the transmission to the proper authorities of the earliest possible knowledge, or even suspicion, of any nuisance or which may tend to fix patently on individuals the responsibility for any complaint in sanitary matters. To exact a formal notice from the occupier of any alleged nuisance on the premises he occupies is absolutely to defeat the ends of sanitary reform. Owing to the deficiency of house accommodation and the consequent high rents exacted, the occupier is almost invariably at the mercy of the landlord. For him to complain openly of a nuisance is often as much to invite a **distraint** or, at least, a notice to quit. We could quote numerous instances in which information of nuisance of the worst description was extracted from occupiers with difficulty, given with the most evident reluctance and fear, amidst entreaties not to expose [29/30] them. Indeed, it stands to reason that the fouler the condition of any house, the greater generally will be the dependence of the occupier on the landlord [since] such premises will scarcely be tenanted [by anyone] but the poor, the outcast, and the improvident. Nor can we leave this subject without remaking that any such inspection as we have made must necessarily be of little value. Occasional inspection when disease has broken out is not what is wanted. Permanent inspection by persons living on the spot and properly authorized [is required], having for its object the foreseeing and prevention of disease. The facts which we collected after weeks of labour, from house to house, ought to have been ready to our hands on the first day that the cholera broke out. After the outbreak, every day which passes makes the obtaining of evidence which by relied upon more difficult.

distraint: Seizure of property in lieu of rent that may be owed.

The resident clergy, with their staffs of lay-helpers, would in most parishes be able, and we believe willing, to give that valuable aid to the authorities for the purpose of permanent inspection. Such gentlemen as Mr. Whitehead (from whose valuable work we have already quoted) and other clergymen whom we have met during this inquiry would render invaluable and gratuitous help to the authorities if they were once put in the way of doing so.

We have the honour to be, Sir,
Your most obedient servants,
D. Fraser.
Thos. Hughes.
J. M. Ludlow.