Mr. Spear's report to the Local Government Board upon recent prevalence of diphtheria and "croup" in the Stalybridge urban sanitary district, and upon the general sanitary circumstances of the district / [John Spear].

Mr. Spear's Report to the Local Government Board upon recent prevalence of Diphtheria and "Croup" in the Stalybridge Urban Sanitary District, and upon the General Sanitary Circumstances of the District.

George Buchanan,
Medical Department,
June 21st, 1890.

The urban district of Stalybridge covers an area of 3,071 acres, and contains a population, mainly aggregated on the western border of the district, now estimated at 28,000. On the west is Ashton-under-Lyne (the two towns being almost continuous); on the south and south-west are the Dukinfield and Hyde Urban Districts; on the north and north-west, the Mossley and Hurst Urban Districts; and on the east is an elevated and for some distance sparsely populated tract of country. The River Tame and the Huddersfield Canal pass side by side through a valley which cuts the district in an east and west direction, and upon the somewhat steep sides of which the town is situated. Geologically, the western and more populous borders of the district are on the Lower Coal Measures or Gannister Beds; the eastern part on the Mill Stone Grit and Shale. The surface soil is chiefly clay and shale. Cotton mills supply the staple industry.

Mortality statistics of the district during recent years are given below:—

Year.	Deaths from all Causes per 1,000 of Population.	Deaths under 1 to 1,000 Births.	Number of Deaths from							
			Small-pox.	Measles.	Scarla-tina.	Diph-theria.	Croup.	Whooping Cough.	Fever.	Diarrhœa.
1880	21·6		—	13	6	1	?	9	8	38
1881	22·6		—	—	9	—	?	16	7	27
1882	22·2		—	6	8	—	3	30	12	34
1883	21·5		—	4	9	—	6	—	8	13
1884	26·1	184	—	6	29	—	6	11	6	45
1885	23·3	175	—	7	3	—	1	28	4	16
1886	22·5	194	—	1	1	—	2	22	11	21
1887	23·6	162	—	68	3	1	3	5	1	19
1888	20·2	161	2	—	8	—	3	9	7	18
1889	23·2	205	—	41	9	7	17	4	4	18

The most notable features of this table are the high general mortality shown, the high infant mortality, the endemic prevalence of "fever" (apparently all typhoid), the large increase in the mortality from diphtheria during 1889, and the coincident large increase in the mortality from "croup." During 1889, in addition to the deaths above recorded, four were registered from "laryngitis" or "laryngitis, tonsillitis"; and during the first two months of 1890 two deaths from diphtheria were registered and two from "croup." Investigation of the circumstances of this recent fatal prevalence of throat diseases was the chief purpose of my inquiry.

So far as I could learn, the number of non-fatal cases of diphtheria, or of other sore throat, had been, relatively to the deaths, remarkably few. A system of compulsory notification of infectious diseases (diphtheria but not croup being amongst those scheduled) is in force in the district, but, except for those that proved fatal, no single case of diphtheria had been reported to the authority. One medical man practising in the district told me that during 1889 he had had three or four cases of what he regarded as inflammatory croup terminating in recovery, and another that he had had two or three cases of severe sore throat that he considered suspicious of diphtheria. In one house I myself found a child suffering from a sore throat that I

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regarded as diphtheritic, and I learned that the mother had suffered similarly before. In only three houses where a fatal attack or fatal attacks occurred, either of diphtheria or "croup" or laryngitis, did I find that other members of the family had suffered from *non-fatal* sore throat. The disease was undoubtedly very fatal, and with few exceptions death occurred within three or four days of seizure, or at least of the occurrence of any noticeable symptoms.

There can be little doubt that many of the so-called cases of "croup" were cases of true diphtheria. The history of the household invasion, alone, was in several cases strongly suggestive of this. Thus:—

In one family, within a week, two children died from "croup," and another from "tracheitis" (so certified). [One medical man who saw the last-named case assures me that it was without doubt a case of diphtheria, and certified it as such to the authority. A fourth death in the family three weeks later is not without suspicion; it was certified as due to "broncho-pneumonia."]

In a second family, two children died within two days of each other, of what was certified as "croup."

In a third, within a month, one child died of what was certified as "croup," and another from what was certified as "laryngitis."

In a fourth two children died within a week of each other from "croup," and another a week later from "pyrexia, irritation of the brain."

In a fifth, three children died within a week; the deaths in two cases being ascribed to "laryngitis, tracheitis," in the other to "malformation."

As to age, 32 fatal cases may be thus classified:—Under one year, one; one to two, four; two to four, 16; four to eight, nine; eight to ten, two.

I could not trace the various family outbreaks of diphtheria to any common source, nor, in the great majority of cases, was any chain of infection discoverable. So far as I could find, the earliest family invasion of the series occurred in November 1888, when, in the course of a week, two children of a family living in Kenworthy Street died from what was certified as "croup." I could not discover that these children had been exposed to any risk of direct infection; although it has to be noted that in the neighbouring districts of Saddleworth Rural and Upper Mill Urban diphtheria was then, and in Upper Mill had been for some time, prevalent.* The next known case was in Grosvenor Street (the same locality), and the child, who was certified likewise to have died from "croup," had been a playfellow of the previously deceased children, and had visited their house. Subsequently, the monthly list of family invasions (from diphtheria, "croup," and "laryngitis") was as follows:—January, one; February, two; March, five; April, three; May, one; August, two; September, one; October, five; November, one; December, two; January (1890), one; February, three. I did not find much evidence of the extension of infection through the attendance of children at school. Three of the October cases were amongst children attending one school; on the other hand, of the total number of initial sufferers, eleven were amongst non-attendants. There was no significant community of milk supply. As to locality, the disease was widely distributed throughout the town, although certain quarters suffered more than others. In a large proportion of the cases it was noticed that the infected houses were exposed, through direct connexions with the sewers, to the entrance of drain and sewer air. To this matter I will again refer.

Sanitary Condition of the District.

Sewerage and Drainage.—The district is sewered chiefly by pipe sewers, but partly by brick and stone channels all emptying by many different outlets into the river as it passes through the town. Some years ago, owing, it is said, to the entire absence of ventilation of the sewers, two men working in one of them lost their lives; and since then they have been ventilated at various points by open man-holes, while the authority have likerwise favoured the plan—one that is open to grave objection—of connecting with the sewers rain-water

* It should also be mentioned that sewer air was found blowing into the house through an internal gully connexion, a defect that remained unremedied at the time of my visit many months later.

spouts from the roofs of houses. There are evidently many branch sewers that are still without ventilation or that are ventilated only by the ineffective and objectionable method last referred to. Waterclosets are uncommon (there are only some 60 in the town), but a large proportion of the middensteads are drained into the public sewers; this mistaken and mischievous plan of dealing with sloppy midden-privies having been adopted by the authority some ten years ago, and for a while actively enforced.

During the last five years direct connexions between the interior of houses and the sewers have been severed in more than 1,000 cases, and it was believed that the greater part of this work had been accomplished. Nevertheless, direct connexion by kitchen slop-stone or by cellar gully, sometimes even without the intervention of a trap, was found in thirteen of the houses invaded by diphtheria or "croup" during the recent prevalence, or in nearly 50 per cent. of their number; while in five others untrapped or defective drains existed in such close proximity to the doors and windows as to produce practically the same result as if the drain had been within the house. In most of the above cases, in fact, it was obvious that the houses were habitually invaded by sewer air, and in three cases in which the experiment was tried the draught coming from the drain was sufficiently strong to extinguish a lighted candle applied to the opening,

Sewage is discharged, as I have said, into the River Tame by numerous outlets. The Tame is a somewhat broad but very shallow stream, and in summer, when the weather is at all dry, the flow of water is much diminished. Nuisance then arises, and the people along the banks complain. Below Stalybridge the stream passes through Ashton and other populous places, serving throughout as an open sewer.

Refuse Disposal.—The system of privy-middens is in general use in the district. The middens are generally very large and deep, often sloppy, and in many places in exceedingly confined situations. In 1879 and for some years afterwards the authority, as already explained, required the drainage of middensteads, but this plan being found a failure (as might have been anticipated had the experience of other places been consulted), in January 1888 it was decided that all new middens or those requiring re-construction should be made water-tight and roofed over. The prescribed size of the structure was still excessive, that of the ashpit alone being *not less than* 15 *square feet;* and although deep excavations were now abandoned the floor of the middens was still to be sunk 12 inches below the ground level. The principal requirements of a well constructed receptacle for filth were, in short, ignored; and the new middens, although showing some improvement over the old, are a source of much nuisance.

About 1885 the authority, recognising the insufficient amount of closet accommodation in certain quarters of the town, decided that at least one privy to three houses ought to be provided. The action that followed in order to secure this result was by no means universal, and it is fortunate that this was so having regard to the structural nature of the accommodation it was still the fashion to provide. Some of the worst examples to be found in the town of foul middens hemmed-in by already overcrowded property have been supplied by the enforcement of the above-mentioned rule.

In a very few cases a real improvement has been effected by the abolition of the old privy and the substitution of one of the box or tub variety. Even in these cases, however, the large ashpit has been retained.

The authority provide for the removal of refuse, and employ a staff of men with horses and carts for the purpose. The removal is not effected systematically, but on complaint either of the inspector or of the householder. By a singular arrangement, too, for a sanitary authority, a fixed charge is made for each visit of the scavengers.

Water Supply.—A public water supply, provided in 1864, is available in all parts of the town. The works are owned by Stalybridge, Ashton, and other neighbouring authorities. There are two reservoirs, both being fed from moorland surface water of similar character. Stalybridge, together with a part of Ashton and certain outlying districts, is supplied from the

Swinshaw reservoir. The supply is said to be abundant and is laid on at constant pressure.

House Accommodation.—There is a considerable amount of crowding of buildings upon area at Stalybridge. Courts, some of them entered by covered ways, are numerous. There are a number of back-to-back houses, and many more without through ventilation. Some of the courts are exceedingly close and confined, and yet a considerable proportion of their area is allowed to be occupied by accumulations of excrement and other filth in large and deep middensteads. Many houses in the town derive their sole air supply from such confined and befouled spaces, and are rendered unfit for human habitation in consequence. Even as regards the houses that abut upon the public streets a similar condition of things is often found at their rear—a space enclosed on every side, and within it, occupying a large proportion of the area, and close by the back doors and windows, foul middensteads.

In addition to these defects of surroundings, many of the cottages of the district are very small, ill-ventilated, and ill-lighted; some, having regard to the paucity of accommodation, are overcrowded.

Lodging-houses.—No attempt has been made to register "houses let in lodgings"; common lodging-houses are left to the supervision of the police. Certain of the latter houses that I visited were overcrowded, the rooms without proper ventilation, and the privy and lavatory accommodation wholly insufficient.

School and Factory Accommodation.—In pursuing my inquiries as to causation of various outbreaks of disease I had occasion to visit two of the public elementary schools, a private dame school, and two of the factories where numbers of young people are employed. The Castle Hall school I found unprovided with proper means of ventilation, and the atmosphere of the rooms was close and stuffy; the closets used by the children are of the most objectionable type—cesspit privies with an overflow pipe to the sewers. The St. George's Schools are of more modern construction; and proper trough closets are provided. Here also, however, there is a deficiency of means for the introduction of fresh air into the school and class rooms; the children's greatcoats, &c., are hung up in the rooms, and from the lavatory of the infants' department a drain appears to be directly connected with the public sewer. The private dame school consisted of a little ill-ventilated cottage, much overcrowded by the children received, and exposed to foul emanations from an enormous privy-midden in the yard common to this and neighbouring houses.*

In one factory privy-accommodation of a form said to be not uncommon in the district was observed. The privies are built one above the other to the number of storeys in the factory (in this case six), and communicate directly with a rough cesspool at the foot of the range. The privies open immediately from the workrooms, and all crevices to the external air are carefully stopped up. On opening the closet door from the workroom the gust of foul air that meets one, coming apparently straight from the cesspool far below, is overpowering. The workrooms are kept exceedingly close and warm (the temperature in those I visited varying from 80 to 90 F.), which renders it all the more important that the air supply should be pure.

In the second factory I visited, the closet accommodation was of a similar description—that of cesspit privies—but disconnected from the workrooms.

Slaughter-houses.—There are reported to be some 24 registered slaughter-houses in the district. Several of them are situated amongst the crowded yards and back places already described, so as to be unavoidably a source of nuisance.

The Dairies, Cowsheds, and Milkshops require to be further regulated. The Inspector of Nuisances has visited them and reported upon their structural

* When a case of typhoid fever occurred recently in one of the adjoining houses, the excreta of the patient were deposited in this midden.

condition, suggesting alterations that have only been very partially carried out. Hitherto no effective measures have been taken to isolate cases of infectious disease that have occurred in rooms connected with milkshops.

Byelaws.—Building regulations, and those relating to slaughter-houses, the removal of refuse and the like, are contained in the Stalybridge Improvement Act of 1881. The former, while containing many useful provisions, fall short of the model code issued by the Local Government Board. Especially, they allow the continued erection of large midden-privies, and they fail to prescribe all that is needed as regards the proper construction of house drains. The special ventilation of small bedrooms without fire-places has not in all cases been enforced.

Means of dealing with Infectious Disease.—By the Improvement Act just referred to, of 1881, medical men and householders are required to notify infectious disease. The Inspector of Nuisances has visited infected premises, supplied disinfectants, and given a printed form of instructions as to their use, and in many cases has fumigated infected houses. In the absence of a hospital, there has, however, rarely been any means of isolating a patient; while the Medical Officer of Health has not considered it his duty to make the information received under the Act the basis for systematic inquiries, nor has he considered it incumbent upon him to see that the use of "disinfectants," and of such precautions as under the circumstances have been possible, has been understood. Thus, even after preventable disease has broken out, conditions rendering the dwelling unwholesome, that ought to have been remedied before, have remained still undiscovered; and the so-called "disinfection," left to uninstructed or inadequately instructed persons, has often been a mere pretence.

As to hospital accommodation, the necessity of this provision has repeatedly been impressed upon the sanitary authority by the Board, and in 1886–87, in a prolonged correspondence, the advisability of combination for the purpose of the five authorities of the Ashton Union was urged upon them. The advice was, however, without result, but in 1888, during a small-pox epidemic, one of the neighbouring districts—that of Hyde—provided itself with a temporary hospital building, and Stalybridge, to a certain extent, was permitted to make use of it. Moreover, the small-pox epidemic induced the authority to take a step towards providing a hospital of their own. They bought for this purpose an isolated house, once a road-side inn, situated at the top of a hill some mile and a quarter from the town on the eastern or sparsely populated side. It is thought to convert this house, which is a roomy one, to the purposes of an administrative block, and to build the wards on a plot of land, adjacent but at a somewhat lower level. I very much fear the steep and toilsome ascent to this spot from the town will be felt as a serious inconvenience, both in respect of the removal of patients and for the necessarily frequent medical visits, and that, in consequence, the popularity and usefulness of the proposed institution may be impaired. Moreover, I think that an effort should still be made to combine with the neighbouring districts in the provision of a hospital. The site now chosen is situated in the opposite direction to that where a combined hospital should stand.

Sanitary Staff.—The Medical Officer of Health receives a salary of 80*l.* per annum, no part of which is repaid out of county funds. As already stated, systematic inquiries into reported outbreaks of disease are not made, nor are the systematic inspections, contemplated in the Board's instructions, carried out. The officer attends the monthly meetings of the sanitary committee, but his reports are practically confined to the annual statement. Copies of the latter are before the Board. For some years past it has been of a somewhat stereotyped character. The mistaken efforts of the authority to improve the privy accommodation of the town, &c., already dealt with, have not had the Medical Officer of Health's approval, or, so he informs me, been undertaken without a warning from him that the results would prove unsatisfactory. Generally speaking, I do not find that he has been able to impress on the authority the necessity of action, even where action is most required, or of his guiding their efforts, even when an effort has been decided upon. The

optimistic tone adopted by him in his annual reports—a tone quite unwarranted by the actual sanitary conditions existing—has naturally impaired the force of any serious criticism or warning that, in a less formal way, he may have offered to the authority. The Inspector of Nuisances receives a salary of 70*l.* per annum. He is an intelligent and willing officer, but requires skilled direction and supervision in his work.

I met the sanitary committee during the progress of my inquiry, and described to them in some detail the sanitary condition of the town, and the action that was required of them for its improvement. Careful attention was promised.

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