

Dr. G.S. Buchanan's report to the Local Government Board on the sanitary condition of the county borough of West Bromwich, and on prevalence of enteric fever there / [G.S. Buchanan].

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**Dr. G. S. Buchanan's Report to the Local Government Board
on the Sanitary Condition of the County Borough of
West Bromwich, and on prevalence of Enteric Fever
there.**

R. THORNE THORNE,
Medical Officer,
February 1st, 1896.

THE occasion of the inquiry which forms the subject of this report was a prevalence of enteric fever in the Borough of West Bromwich in the autumn of 1895. Fourteen cases were notified in August, 24 in September, and 34 in October. At the time of my visit in November further cases were occurring. Records of previous years show persistence of this disease in the borough; since the adoption of the Notification Act in 1890, there have been but two months in which no cases of enteric fever were notified, while in the autumn of each year the disease has shown exceptional prevalence.

Before considering the circumstances under which enteric fever has been, and is now, prevalent in West Bromwich, it will be convenient to give some general description of the borough, its sanitary condition, and administration. In so doing I propose to follow the report to the Board in which Dr. Ballard recorded the condition of the district in 1875.

I have nothing to add to Dr. Ballard's description of the physical characteristics of the Urban Sanitary District of West Bromwich, which, without alteration of area, was constituted a Borough in 1882, and has since become a County Borough.

It is situated on an irregular table-land bounded on all sides but the east by a horseshoe bend of the River Tame. The eastern part of the borough consists of open land, sloping to the boundary from a central ridge which runs northward from the southern or south-eastern confines of the district. Most of the land here is agricultural, and it comprises Sandwell Park, and Dartmouth Park recently acquired by the Corporation as a recreation ground. West of the ridge is the populous area of the borough, comprising West Bromwich proper, along with certain other groups of population, some at a level considerably higher than the rest of the borough, which have grown up near past or present centres of employment. These groups of population are separated one from another by large areas of waste land, by canals, and disused coal pits, and, save where the main roads allow it, have not much communication one with another.

Except for a limited area in the south-eastern portion of the district, situated upon thick Permian strata, the borough lies entirely on the Coal Measures, which are here intersected by faults. Hence its geological character varies greatly. The superficial soil consists in different quarters of the district of porous sand and fine gravel, of friable shale which readily turns to stiff clay, of marl, and of solid limestone. Where the coal seams have been worked out, sinking of the surface has here and there occurred. Evidence of this is especially found in the western part of the borough, where houses may be

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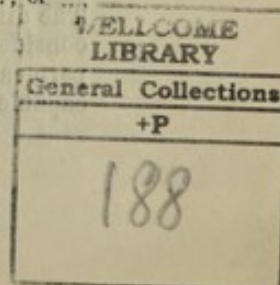
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seen which have been injured in the past by subsidence of the surface; while in particular places, notably at Hill Top and along Dial Lane, subsidence is still going on, and is rendering some dwellings unfit for habitation, besides causing troublesome deflections of sewers and water mains.

The population is almost entirely of the artisan and labouring classes, who find their work in various industries of the borough. These are chiefly iron and metal works of different kinds, especially manufactories of hardware and "hollow-ware." Coal and iron mining still go on, but to a less extent than formerly. Brick-making is an important industry in the southern part of the borough. The houses of the working class are for the most part small, and are not often inhabited by more than one family. Rents usually range from three to six shillings a week. As the resources of West Bromwich developed, many artisans bought small plots of land and built houses, or otherwise acquired small house properties. In the course of time many of these properties have become subdivided, or, as seems to have often been the case, mortgaged by their owners to their full value. Thus ownership in houses is in many cases complicated, and in one or another way a large number of inhabitants of the borough have an interest in small house property. In some of the most populous areas, however, are comprised estates belonging to large owners.

The total area of the district is 5,710 acres; its population, which in 1871 was 47,918, and in 1881 was 56,295, was 59,474 in 1891, of whom 30,026 were males and 29,448 females. The number of inhabited houses in 1891 was 12,378, giving the proportion of 4·8 inhabitants per house; 12,284 houses were assessed in 1894, and the Town Clerk informs me that the total value rateable for the general district rate was 156,216*l.* 12*s.* 6*d.* in that year.

Drainage.—Systematic sewerage of the district was commenced in 1882, and is now completed for the whole of its most populous part. An area of considerable size about Dial Lane has not yet been brought into the existing system of sewers on account of subsidence of the ground due to mining operations. The sewer system was designed by the Borough Surveyor, Mr. Eayrs. A low-level sewer passes from the south-western corner of the borough, where it adjoins Smethwick, and, following the curve of the River Tame around the western half of the borough, delivers its contents on the sewage farm at Friar's Park, at the northern extremity of the district. About two-thirds of the populous part of the borough are drained into this low-level sewer. It appears laid with sufficient gradients to ensure a steady flow, and where manhole covers were removed for my inspection no silting was to be observed. From time to time difficulties as regards this sewer have arisen from subsidence, but they appear to have been overcome by the use of socketted iron pipes; moreover, the condition of the sewer in subsiding areas receives periodic attention. The northern part of the borough drains directly to Friar's Park by a high-level sewer, the sewage reaching the farm by crossing some two miles of waste land in a hydraulic main. The main sewer on this high-level system seems also free from silting, and to have a good fall, while the branch sewers of each system appear to be laid with due consideration of the conditions of the area they serve. There are ventilating grids at the road level, usually at intervals of 100 yards, from which vertical shafts pass directly to the crown of the sewer, and there are ventilating manholes at important junctions and bends. Where local objection has been raised to road-level ventilators, the Town Council in many cases has substituted a ventilating shaft carried up the side of an adjacent building. Flushing chambers are provided at dead ends and in a few places along the main sewers; they are supplied in each instance with a flush of 800 gallons, delivered to them by two watercarts which make a complete round of the district in the course of a fortnight.

The sewage farm at Friar's Park consists in part of elevated land, largely composed of old pit mounds, and in part of a narrow and level plain that borders the River Tame where it forms the northern limit of the borough. The difficulties of using the elevated land for sewage treatment have been considerable. The soil is chiefly a loose shale, in some places too easily permeable, in others readily forming an impervious stiff clay; nowhere capable of supporting much vegetation. The presence of pit mounds produces



ridges and hollows, in which pools of water accumulate. A large part of this land has now been roughly levelled, and made to serve as a broad irrigation area; but at the present time much of the sewage passes over the land without either penetrating the soil or getting purified by vegetation. This elevated portion receives the whole of the high-level sewage, and also a portion of the low-level sewage which is pumped on to it. The rest of the low-level sewage is passed by gravitation on to 40 acres of land bordering the Tame, laid out in intermittent filtration areas and underdrained. Part of the soil here is a fairly rich loam, and suitable, therefore, for the purpose. The effluents from the farm discharge at different places into the River Tame. Out of 230 acres acquired by the Town Council for sewage disposal purposes, 101 acres are now utilised for the treatment of sewage. Further levelling and laying out of the remaining acres, which consist chiefly of the pit mound area, is proposed by the Surveyor, who has been at great pains in contriving means of utilising this land for purposes of sewage disposal.

The Roads, to the improper state of which Dr. Ballard drew attention in 1875, have since been largely reconstructed. There are now 63 miles of dedicated roadway, constructed of macadam and apparently drained into the sewers in an efficient manner. Only a few miles of road in the borough are now undedicated. Fifty-five miles of brick footways have been constructed since 1874.

Excrement Disposal.—The method of excrement disposal in the greater part of the borough seems to have altered but little since the date of Dr. Ballard's report. Usually a group of houses possess a large, high-walled, covered, brick midden, sunk some three or four feet below the surface and accessible only by a door so placed in one of its walls that thorough cleaning of the interior is impossible. Built on to it are usually two or more privies, the structure of which frequently allows excreta to accumulate beneath the seat instead of passing into the midden; and in this way nuisance is created. Into the midden itself slops and refuse of all kinds are thrown, with the result of producing a semi-liquid, evil-smelling mass, which is suffered to accumulate until detected by the nuisance inspector or until some householder is found willing to inform the Sanitary Authority that nuisance has arisen. Some privies of later date have been so constructed or modified as to separate the privy vault from the midden. In such cases excreta pass into a chamber beside the privy situated below the ground level and of some 50 cubic feet capacity. This chamber is made of bricks, cemented inadequately, if at all, on their inner surface, is unventilated, and is accessible for cleaning purposes only by raising a cover. In regard of premises provided with these privy pits the large ash midden is as objectionable as ever; constructed like those which also contain excreta, its contents are almost as unwholesome. Moreover, as the contents of the privy pits are out of sight, attention is often not attracted to them until they actually overflow; the more porous and faultily constructed these pits are, therefore, the less often are they looked to. In almost every case where the covers were removed for my inspection I found these privy pits full. Notwithstanding the completion of the sewerage of the district, and the fact that the sewers are designed to allow for a general system of water carriage, substitution of waterclosets for privies has so far taken place only to a limited extent. Though all new houses within the sewered area are now always provided with waterclosets, these, together with those which have replaced old privies, hardly amount to more than 500 in number. Several of the closets are waste-water closets on Duckett's or Day's plan, which are thought to be especially suitable for West Bromwich. With the construction of these and other waterclosets in the borough little fault is to be found. Considering what have been the habits of the people with regard to excrement disposal, it is not surprising to hear of occasional complaints of insufficient flushing, of blocking of soil pipes, or of broken tippers of slop waterclosets following on misuse of these structures. Such complaints may reasonably be expected to diminish as the watercloset becomes more common.

On premises where waterclosets have been erected, the closet drain on its way to the sewer is provided with a ventilating shaft passing up the back wall

of the house and terminating above the eaves. Such drains are not provided with trap or ventilator at their junction with the sewer.

Removal of Excreta and Refuse, which is undertaken by the Town Council, is supervised by a sub-committee. Since 1894 part of it has been transferred to contractors. All premises served by waterclosets are provided in each instance with a movable receptacle for dry refuse, which is removed periodically by the day cart. From premises with middens all refuse is collected by the night-soil carts, which make visits as instructed by the Sanitary Department. The labour of emptying the privy middens is considerable, on account of their size, the difficulty of access to them, and of the time taken in baling out their more liquid contents. The Town Clerk informs me that in 1894 the cost of removal of night-soil undertaken by the borough was 3,288*l.* It is found difficult to dispose of the refuse. At present it is "tipped" on waste land rented for the purpose by the Town Council in different quarters of the borough. The principal "tip," situated above Lyndon, is said to be very offensive in hot weather, and with the wind in certain directions matter from it is blown long distances about the district. Other tips are to be found at Dagger Lane, Wednesbury Fields, and elsewhere, all open to the same objections. Refuse removed by the contractors is required to be taken out of the borough. A recent proposal to the Town Council to provide a Refuse Destructor at Hall End was not carried out, largely on account of local opposition. In respect of refuse removal, therefore, the custom of West Bromwich remains much as Dr. Ballard reported it in 1875.

Water Supply.—The local wells, which furnished the chief supply of water in 1875, have now, in the great majority of cases, become disused, and have been superseded by a constant supply from the mains of the South Staffordshire Water Company. The company's engineer informs me that 11,423 houses are now so supplied out of some 12,000 houses in the borough. Here and there in the populous part of the town, an old well forms the only supply to a group of houses, or its water is used in preference to tap water also to be obtained on the premises. Where such wells exist, they are almost without exception liable to dangerous pollution from foul soil in their neighbourhood.

Dwellings.—The majority of the West Bromwich houses are two storied and four roomed. They abut on the street in front, and open at the back to a yard common to several houses. Back-to-back houses are not unfrequently met with: some were built in that way, others appear to have been rendered back-to-back at a later date by partitioning a "through" house. Each dwelling is usually provided with a cellar, opening to the ground level by a grating, and with a small pantry, often completely dark and placed in the centre of the house. While many inhabited houses present few defects of structure, others of the same type exhibit much dilapidation. Broken and leaky roofs are common. Flooring, stairs, and window fittings are often defective. In the areas chiefly affected by subsidence due to mining, some inhabited houses may be found with their walls so cracked as to be unfit for use as dwellings. Many defects, such as those of windows and floors, are no doubt largely due to the carelessness of the inmates, but their persistence in bad properties is chiefly due to indifference on the part of the landlord, an indifference not always confined to the poorer owners of small estates. In some of the worst cases rent is always paid through agents and the tenant does not know who is the owner of the house. One defect is common to almost every house in the borough, whether its structure is good or bad in other respects; damp-proof courses are unknown, and the walls of the houses are everywhere wet, more especially as the faulty structure of the yards frequently allows rain water or slop water to collect against the side of the house. The roofs of dwellings as a rule are spouted, and rain water is collected either in tubs, or, in the older part of the district, by carrying the downspouting to a bricked soft-water tank below the surface of the ground, placed usually in the bakehouse, and within a few feet of the midden. These tanks are seldom if ever cleaned out, and their structure is defective. I did not hear of one that had overflowed even after heavy rainfall.

There is little overcrowding of houses on area. Most of the dwellings have considerable yard space at the back, and completely closed courts are few. The yard, however, usually contains a cluster of outbuildings, a bake-

house or "brew-house," a midden and its associated privies, not unfrequently back to back with the bakehouse, sheds, fowl and pigeon houses, and the like. The condition of these yards is usually objectionable. Paving is often confined to irregular brickwork a few feet in breadth alongside the houses; elsewhere the yard surface is irregular and the surface water does not drain away. As there are no drains inside the houses, slop water is thrown into open outside gutters, or on to the yard surface, or into the midden. The yard gutters are often merely rude channels of brick, laid without proper regard to level, with right-angled bends and with large gaps in their course. The gutters of each yard lead to a gully which is designed to take to the sewer the whole slop water and drainage of the common yard. This gully is commonly placed at the street end of the covered entry which leads from the yard to the street. Either on account of improper guttering of the entry or of blocking of the gully, or both, the slop water conducted into this passage frequently accumulates there and finally overflows the footway. The inhabitants of the dwellings abutting on the common yard are slack to remedy this state of things; the condition of the entries is everybody's business and hence no one attends to it. Houses abutting on yards of the kind I have described are thus in close relation with soil polluted by their own and their neighbour's waste water, and also contaminated most likely by soakage from privies. Yards common to several houses form the ordinary playground of the children.

Several new groups of artisans' dwellings, let at rentals of four to six shillings a week, have been constructed by private enterprise in various parts of the borough, and in many particulars they are a great improvement on the older houses. In all cases waterclosets and pails for dry ashes are required to be provided, and the yards are paved and drained. Building is regulated by byelaws framed under Local Improvement Acts of 1854 and 1865, but in some respects these byelaws might be amended. They do not require concrete foundations or damp-proof courses to new houses, which in consequence soon become damp; they do not provide sufficiently for open space about buildings; and do not regulate open space in proportion to the height of the dwelling. For the most part, the byelaws merely give general powers to the Town Council to regulate drainage, thickness of walls, and other matters, without specifying what is to be required on these points.

Ten *Common Lodging-houses* are at present registered in the borough. Those that I inspected were open to several objections. Thus the ventilation of rooms was unsatisfactory, the privies were too few for the registered number of lodgers, the yards were dirty and badly paved or not paved at all; and this notwithstanding that byelaws were adopted in 1869 under which these and other deficiencies should be readily dealt with.

Dairies, Cowsheds, and Milkshops.—Milkshops and dairies are registered, but not much milk is stored in them. Some of the cowsheds that I saw were practically without light, the cubic space provided was insufficient, and their paving, drainage, and water supply required amendment. Shortcomings such as these are prohibited by the borough regulations.

The Slaughter-houses that I inspected were generally clean and well kept. Manure and offal appear to be commonly allowed to remain on the premises longer than is permissible under the borough byelaws. The *Bakehouses* are on the whole satisfactory, and those which are deficient are receiving attention. *Insanitary Workshops* are also attended to by the Medical Officer of Health.

SANITARY ADMINISTRATION.

Since 1882, the Town Council has exercised the functions which were vested in the Board of Commissioners of West Bromwich under the local Improvement Acts of 1854 and 1865. There is a Sanitary Committee consisting of 12 members, which meets monthly, and has sub-committees to deal with night-soil removal and with the isolation hospital.

The Medical Officer of Health, Dr. J. H. Manley, receives a salary of 150*l.*, and is not required to give his whole time to the duties of the office. He receives an extra remuneration of 50*l.* a year in respect of workshop

inspection. Dr. Manley was appointed in 1890, and has given much attention to the public health of the borough. In particular, he made for the Sanitary Authority a general sanitary survey of the district three years ago. He has in his annual reports frequently directed attention to, and suggested remedies for, sundry of the shortcomings of the district, and is also at great pains to furnish the Sanitary Committee with practical proposals for dealing with them in detail.

There is an *Inspector of Nuisances*, at an annual salary of 130*l.* The present inspector was appointed in the early part of 1895. He appears to be a capable officer, and I found him already well acquainted with the district. He has an assistant receiving 80*l.* a year, who is chiefly concerned with management of the night-soil department. A man is specially employed to disinfect rooms and clean public urinals. The demands on the Inspector of Nuisances from different parts of the borough are very considerable, and such as to prevent his undertaking any systematic rounds of his district. There is one clerk in the Sanitary Department.

Common lodging-houses are supervised by the Superintendent of Police at a salary of 20*l.*; dairies, cowsheds, and milkshops, by three police inspectors at 10*l.* a year each, and the canal boats by a separate inspector at 25*l.* per annum. None of these officers come into relation with the Sanitary Committee, but report periodically to the Executive Committee of the Town Council.

Byelaws.—Under certain local Acts already referred to, byelaws were made by the then Commissioners in regard of new streets and buildings, common lodging-houses, slaughter-houses, and nuisance prevention. Save for others recently made for the public mortuary, no alteration or addition to the borough byelaws has been made during the past 20 years. I have already indicated defects in some cases in the scope of the byelaws and in their proper enforcement. Dairies, cowsheds, and milkshops, are regulated under a borough Order, which contains most of the requirements of the "Dairies, Cowsheds, and Milkshops Order, 1885." Parts II., III., and V. of *The Public Health Acts Amendment Act, 1890*, were adopted in May 1891, but no byelaws have yet been made under this Act. The Sanitary Authority has taken some action under *The Housing of the Working Classes Act*, in dealing with certain of the worst of the houses in the borough that are unfit for habitation. In some cases these have been finally closed, in others certain repairs have been required. Several cases of serious *overcrowding* have also been dealt with by the Sanitary Committee.

Procedure in Repression of Infectious Disease.—The Infectious Disease (Notification) Act has been in operation since 1890, and the whole of the Infectious Diseases (Prevention) Act was adopted in the following year. The isolation hospital, which, by arrangement, receives patients from the Urban District of Handsworth as well as from West Bromwich, was built (under loan sanctioned by the Board) in 1884 on open and high ground to the north of Lyndon. It stands on an area of some five acres and consists of two pavilions, each with two wards of eight beds each, separated by a covered way 96 feet long. In addition there are two observation wards of one bed each. There is a laundry, and a house used for administrative purposes. In this and in the pavilions sleeping accommodation is found for only four nurses. Dr. Manley, the Medical Officer of Health, is also medical superintendent of the hospital. A good ambulance was purchased in 1888 and is kept at the hospital. There is a hot-air disinfector, but I am informed that not much reliance is placed in it, and that wherever practicable infected articles are destroyed and compensation given. This is the only disinfecting apparatus in the borough.

The hospital has been used year by year for scarlet fever and now and again for small-pox, one of the two pavilions being set aside for the purpose when small-pox occurs in the borough. No other diseases are treated in the hospital. It has been customary to treat cases of enteric fever, as they occur among the poorer inhabitants of the district, in their homes, and therefore under conditions unfavourable to the patient and tending at the same time to propagation of infection. In particular instances, the patients have on the score of destitution been removed to the workhouse infirmary; and this has

been of rather frequent occurrence of late, eight enteric fever cases from the borough having been admitted to the infirmary this year. Considerable objection, however, has been taken to this practice by the Guardians, who contend that cases which arise in West Bromwich should, irrespective of pauperism, be isolated and cared for by the Sanitary Authority of the borough. A proposal was recently made by the Town Council to contract with the "General" Hospital of the district for the admission of enteric fever cases, but this was not acceded to by the governing body of the latter institution. No other plan to provide hospital accommodation for enteric fever cases has since been entertained by the Town Council.

There is a good *Public Mortuary*, which was constructed in 1885.

In reviewing the work of the Sanitary Authority since Dr. Ballard reported in 1875, it is satisfactory to note that many of the greater evils pointed out by him have practically disappeared, and that others are being energetically dealt with. Nevertheless, in some ways, and these of great moment to the public health of the borough, the Town Council has been altogether inactive or at the best has engaged in half-hearted action. This is most notable with regard to insanitary houses and their surroundings. In some cases nothing has been done owing in the main to opposition on the part of property owners in the borough; in others it would seem that the execution of sanitary measures required by the Authority has been allowed to be prevented by obstacles in legal procedure that do not appear to have been insurmountable. I obtained some indication, too, that improvements required by the Sanitary Authority are sometimes quite inadequate to remedy the defects they are designed to meet. Not unfrequently, it appears, when a house is reported as structurally unfit for habitation, it is allowed to be used as a dwelling after the execution of a few wholly insufficient repairs. Again, when a nuisance is reported as arising from the character and condition of a privy midden, it has been deemed to be abated by patching the wall or repairing the roof of the structure. So, too, when a yard is declared improperly drained, remedy is found in the provision of a few feet of inadequate guttering. The Sanitary Authority appears to have been too often content with such makeshift performances, and has thus conduced to perpetuation of some of the worst sanitary evils of the borough.

ENTERIC FEVER IN WEST BROMWICH.

The mortality records of the borough show that in each of the last 20 years deaths from enteric fever have been registered in greater or less amount, though in no year has there occurred any conspicuous epidemic. Since 1890, information as to sickness from this disease is available from the notification returns, and in the following table I have set out the number of cases thus ascertained to have occurred yearly in the whole borough and in each of seven groups of population into which it may, for present purposes, conveniently be divided.

TABLE I.—NUMBER of ENTERIC FEVER CASES notified in WEST BROMWICH, 1890—1895.

Approximate Population	"LYNG."	SPON LANE.	BEECHES.	CARTER'S GREEN and SWAN VILLAGE.	GREET'S GREEN and GREAT BRIDGE.	HILL TOP.	OLD CHURCH, and other outlying Places.	WHOLE BOROUGH.
	10,000	10,000	8,000	7,000	9,000	10,000	6,000	60,000
1890	5	1	12	2	6	49	9	84
1891	3	1	7	4	6	24	3	47
1892	1	12	2	1	4	5	3	28
1893	19	12	21	18	5	14	2	91
1894	48	4	4	4	5	6	4	75
Whole of 1895 to November 16	37	8	6	22	9	28	2	112

Cases notified from the workhouse infirmary are recorded in the divisions whence the patients were received.

It will be seen that the prevalence of enteric fever in West Bromwich during the last three years has tended rather to increase than to diminish; that special incidence has been now on one now on another division of the district; that the disease has never been absent for a whole year in any one division; and that in the present year 112 cases have been reported as occurring in the borough up to November 16th. Of these 18 were notified before May; 3 in that month; 4 in June; 5 in July; and 3 up to August 17th, after which the progress of enteric fever has been that exhibited in the following table:—

TABLE II.—NUMBER of ENTERIC FEVER CASES notified in WEST BROMWICH in 1895.

PERIOD.	"LYNG."	SPON LANE.	BEECHES.	CARTER'S GREEN and SWAN VILLAGE.	GREET'S GREEN and GREAT BRIDGE.	HILL TOP.	OLD CHURCH, and other outlying Places.	WHOLE BOROUGH.
1895.								
January to August 17 - }	2	7	3	9	5	6	1	33
Week ending:—								
August 24 -	1	—	1	1	1	2	—	6
" 31 -	4	—	—	—	—	—	—	4
September 7 -	1	—	—	—	—	1	—	2
" 14 -	3	—	—	—	—	1	—	4
" 21 -	2	—	1	—	—	1	—	4
" 28 -	5	—	—	1	1	5	1	13
October 5 -	3	—	1	3	—	1	—	8
" 12 -	3	—	—	3	—	3	—	9
" 19 -	3	—	—	1	2	—	—	6
" 26 -	3	—	—	—	—	2	—	5
November 2 -	3	—	—	3	—	1	—	7
" 9 -	1	1	—	—	—	3	—	5
" 16 -	3	—	—	1	—	2	—	6
Whole of 1895 to November 16 - }	37	8	6	22	9	28	2	112

Of the 112 cases 55 were males, 57 females, and so far 15 deaths have been recorded. I had a good deal of evidence that the disease has attacked considerably more persons (especially children) than the notification returns show.

The greatest incidence this year has been in the "Lyng," Carter's Green, and Hill Top Divisions. The Lyng is the part of West Bromwich proper to the south of the High Street; Carter's Green and Swan Village are groups of houses round the bifurcation of the High Street to the west of West Bromwich proper; Hill Top is high ground in the corner of the borough about a mile to the north-west of Swan Village. These divisions of West Bromwich are in large measure separated one from another by waste land. Upon detailed inquiry it was soon seen that within each of these three divisions a limited area had suffered an altogether exceptional amount of fever. In the Lyng division, 23 out of 37 notified cases occurred in a square block of six short streets, bounded by Moor Street, Dove Street, Braybrook Street, and Lyng Lane. All the 13 cases notified in the Carter's Green and Swan Village division since August 20th came from a group of five streets, which is isolated on three sides from the rest of the division by the railway, open country, and waste land. In the Hill Top division, 15 out of 28 notified cases occurred in Long Square, a long street ending blindly, closely built with houses, and separated by waste land from other streets. I therefore made particular inquiries into the incidence of enteric fever in these infected localities. From their situation it was not to be anticipated that the persons attacked in the separate localities had any community of employment, nor was this the case. Each grouping of invaded dwellings is sewered, but none of the houses possess inside drains, while the inlets to the sewer outside appear properly trapped. I did not learn of nor observe any particular defects in the sewer draining any one of these localities. There is over a mile of sewer on the low-level system between the Lyng and Carter's Green infected locality, while Long Square is drained into the high-level sewer system.

Although all three of the heavily invaded localities receive, in common with the rest of the borough, water from the South Staffordshire Water Company, there were facts which tended to disprove a general infection of the water supply; nor was there any suggestion of a local infection of the water main in any one infected area.*

The milk consumed by persons attacked was, I found, obtained as regards each of the three invaded areas from altogether different sources, and, taking the groups separately, I could not learn as to any one of them that all the persons attacked had consumed milk from any one source.

The character of the invaded premises did not differ greatly in any of the three heavily affected localities from that described as common in the borough generally. These areas in the Lyng and Carter's Green present, in a marked form, defects of surface drainage, unpaved yards, and unwholesome privy accommodation. Dampness of dwellings is almost universal. In Long Square, the invaded locality at Hill Top, the houses are old, damp, and in many cases dilapidated. Several are back-to-back. The yards are unpaved and the surface is very badly drained. Although for most of the Long Square houses water or slop closets were provided two or three years ago, the old midden has been left in almost all cases to serve as a receptacle for so-called dry refuse. In practice, however, it receives all kinds of slops, frequently including, I found, the urine of enteric fever cases. From my own observation I had reason to suspect that liquid matter from these cases might also be thrown on the surface of the yard or into the open gutter, especially where eloset and midden are some distance from the house.

It is clear that in each of these exceptionally invaded localities there exists a general pollution of soil in the immediate neighbourhood of houses, and therefore that there are local conditions, such as would favour the dissemination of enteric fever. To give a single instance, I may mention six cases which occurred in Smith Street in the Lyng group. The first four houses in this street, Nos. 1, 3, 5, and 7, have at the back a few feet of brick paving and guttering, beyond which is an open yard, unpaved and faultily drained. In this yard, some 20 feet from the central house and abutting on the "brew-house," is a large covered midden having on either side a pit privy, the whole being common to the four houses. As usual the midden, supposed to be used for dry refuse, contained much liquid matter when I saw it; as usual, the pit privy was covered inside with cement obviously insufficient to make it water-tight. At the beginning of August a boy, living in No. 3, was attacked with "gastric fever." He was ill a fortnight or more but not seriously. On August 27th his father and mother were notified as suffering from enteric fever, and were allowed to remain in the house. On the 18th of September a boy, T. J., living in No. 1, was notified as attacked by the same disease, followed in four days by his brother J. J. On October 1st a girl, living in No. 5, was similarly notified. Elsewhere in the row, at No. 15, which also opens to the same yard, a case occurred at the end of August, and was followed by five other cases occurring at intervals in the same house.

A similar history was obtained for a group of nine cases which occurred in four out of five adjoining houses in Long Square, and for other premises in the localities heavily affected.

It appears, therefore, that while enteric fever has for some years past been widely prevalent in the borough, it has displayed exceptional prevalence this year in certain localities the insanitary conditions of which afford ample opportunities for the spread of the disease from the infected patient or from the premises he occupied. While these ample opportunities for spread of

* For reasons that will appear, any extensive inquiry into the relation, if any, between water supply and enteric fever in the borough seemed hardly practicable. I ascertained that West Bromwich is supplied with water from the South Staffordshire Water Company's water works at Handesford, the mains from which, on their way to the borough, supply the greater part of Cannock U.S.D., and the village of Bloxwich in Walsall U.S.D. From information supplied to me by the respective Medical Officers of Health of these districts, it appears that in the Cannock U.S.D., with a population of over 20,000, only three cases of enteric fever have been notified this year; and that Bloxwich, with a population of 17,000, has also had but three cases. After supplying West Bromwich, the water mains from Handesford join with mains bringing water from other sources, and supply Oldbury and Smethwick. I was informed that it is not possible in either of these towns to define any area supplied exclusively by Handesford water.

enteric fever exist in West Bromwich, it is obvious that any investigation having for its object determination of the amount of influence of one and another factor in the propagation of the disease is not likely to meet with much success.

CONCLUSION.

The defects in the sanitary condition of the borough which I have indicated require the sustained attention of the Sanitary Authority, and these several shortcomings should be dealt with in systematic fashion. It would be advantageous to deal with one area of the borough after another in detail, making use of the sanitary survey made by the Medical Officer of Health in 1892, and the records of the Sanitary Department since that date. It appears especially desirable that yards be properly paved and drained, and that the open drains which carry waste water to the sewer be properly constructed. In the event of the system of carrying slop-drains round the backs of houses and down common entries being retained, the Sanitary Authority would do well to see that the gullies at the street end of the entries are kept free of obstruction. The privy middens and large ash middens with pit privies at present common in the borough, constitute a serious danger to the health of its inhabitants. But the Town Council possesses sufficient powers for securing the substitution of proper water or slop closets for these structures. Where the sewer is for any reason not available for such closets, privies may with advantage be reconstructed on the principle embodied in the Board's Model Byelaws. Under no circumstances ought the existing large middens to be permitted to remain, even as receptacles for dry refuse. As the substitution of waterclosets for privies is proceeded with, the system of frequent removal of dry refuse in movable receptacles can be correspondingly extended.

The Town Council would find advantage in adopting a fresh series of byelaws. Those framed under local Acts with regard to new streets and buildings and nuisances are in many senses obsolete, and those which deal with other matters may usefully be revised. The defects of existing byelaws were brought to notice by the Medical Officer of Health in his annual report for 1891, and since then the Board has, on more than one occasion, drawn the attention of the Town Council to the necessity of revision of the present antiquated code of the borough. In this connexion the Town Council has the opportunity of making byelaws under the Public Health Acts Amendment Act, which would facilitate dealing with the insanitary conditions of older premises in the district. In view of the disregard of existing byelaws in the borough, the Town Council must needs take care to ensure proper observance of those which it possesses or adopts.

Adequate provision by the Sanitary Authority for the reception and treatment in hospital of cases of enteric fever as well as other infectious sickness is required, as is also better and more extended accommodation for nursing staff. I note that there is room for increase of buildings on the present hospital site. In any case the Town Council should provide hospital accommodation for small-pox cases elsewhere than at their existing hospital.

The Inspector of Nuisances cannot at the present time properly perform his multifarious duties. It is on every ground desirable that the borough should secure the services of a sufficient staff of competent inspectors.

G. S. BUCHANAN.

December 1895.

RECOMMENDATIONS.

1. The Town Council should give thorough and systematic attention to insanitary premises in the borough, and should exercise the various powers they possess or can obtain to remedy their condition in detail. In particular, they should proceed to deal effectively with—

(a.) Houses unfit for habitation.

(b.) Premises with drains improperly constructed.

(c.) Unpaved or insufficiently paved yards.

(d.) Nuisances arising from the accumulation of refuse and excrement.

To this end the Town Council should consider the question of an increase of their present inspectorial staff.

2. The Town Council should take steps to do away with the objectionable privy middens and pit privies in the borough, and to substitute a satisfactory system of removal of dry refuse and excrement. For the latter, water carriage should be employed where sewers are available for the purpose.

3. The Town Council should adopt a fresh series of byelaws, and should formulate them on the basis of the Model Series issued by the Local Government Board.

4. Adequate provision should be made by the Council without delay for the reception and treatment in hospital of persons suffering from enteric fever.

(1) The Government should be held responsible for the...
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