

SANITARY PROGRESS IN DERBY.*

By R. LAURIE, M.D.,

Deputy Chairman of the Sanitary Committee, Derby.

[AFTER expressing his thanks for the honour done to him in electing him President, and sketching briefly the chief legislation relating to sanitation, the author proceeded:]

It is my desire to place before you some points relating to the progress of sanitation in our own town during the Victorian era; for, as in many other branches of art, science, and industry, there seemed to be an awakening to new and better things with the advent of our gracious Sovereign to the throne.

At the beginning of this period Derby consisted of five parishes, which contained, within and without the borough, 35,000 inhabitants, having rapidly increased since the beginning of the century, for in 1801 the population was only 10,832. The number of inhabited houses was 6,699, of uninhabited 124, and of houses in process of building 120, the streets, roads, and buildings covering an area of about 500 acres.

At the end of 1899 the estimated population was 106,401, an increase of about 71,000; while the number of inhabited houses had increased from 6,699 to over 22,000, very few being empty. The streets now extend to about 74 miles, and the town covers an area of 3,445 acres, which will be increased to over 9,000 if Parliament sanctions the proposals for extension of the borough.

There are two questions of great magnitude at present occupying the attention of our Council and the town at large: I refer to the proposed sewage scheme, and the powers just acquired, in conjunction with Sheffield, Leicester, and Nottingham, for a further supply of water.

Before giving any particulars of these schemes, let us just look for a few moments at what was the condition of things sixty years ago. A report to which I have had access, and from which I have largely drawn my information, gives a graphic picture of the sanitary condition of Derby at that time.

Sewers.—As to the drainage of the town, this seems to have been of the most primitive character. We are told that

“the natural drainage of the town was good, both as to the quality of the soil and the fall; but the obstruction offered

* Presidential Address delivered before the Derby Medical Society on November 13th, 1900.

by weirs and dams on the river, and by the foul brooks, render it at present extremely defective. These streams—the Markeaton, the Bramble, and others—are so surcharged with the town refuse as to be, in fact, nothing but great open sewers, the offensive emanations from which, owing to the circumstances stated and the untrapped condition of the street sewers, rise sensibly into the atmosphere so as to offend in every quarter of the town.”

These brooks were, in truth, poisonous conduits, carrying filth and disease wherever they flowed. Many parts of the town, especially in the lower quarters, were exposed to a perpetual saturation owing to the weirs and dams before mentioned, while cesspools and privies abounded in profusion, and in many cases the drainage was conducted along open ditches, even where there were sewers. The local committee reports that

“the sewers are constantly accumulating decomposing refuse, and altogether in a very defective state, no attention having been paid to a general system of drainage, either as regards shape, size, fall, or direction. In no instance has due regard been paid to obtain as much fall as possible; many sewers of large dimensions and considerable fall discharge their contents into others at right angles, which are more contracted and are nearly level. Very few of them are trapped, causing the most offensive smells, especially in humid states of the atmosphere. There are no means of preventing the formation of such accumulations, the only method of removing them being to break up the street and open the sewers.”

The cleansing of sewers was done at the expense of the Commissioners, under the Derby Improvement Act, by opening the sewers from the streets, removing the accumulations, and carting the deposit to the Commissioners' yard. The deposit was either sold for manure, or, if unsuitable for the purpose, was “tipped” in the nearest place which could be found to receive deposits of refuse. The house-drains which communicated with these sewers, besides being untrapped, were furnished with a scanty supply of water, proper flushing being a thing unknown, but depending entirely on the casual rainfall.

The annual cost of this work amounted to £30, while at the present time we spend over £1,000 a year for this purpose, and in addition use $1\frac{3}{4}$ million gallons of water for sewer-flushing alone.

The Corporation have long been alive to the faulty condition of our sewers, and the defective methods for the disposal of their

contents. From time to time various schemes have been considered; but the question is of such magnitude, and involves so great an expenditure of money, that the Corporation have shown wisdom by delaying action in the matter. All the methods proposed have been proved to be more or less unsatisfactory, and we can congratulate ourselves that we have not been landed in a large outlay with disappointing results. We now hope and believe that the scheme adopted is, as far as possible, perfect.

The laying of the new sewers is merely a matter of engineering, but the treatment and disposal of the sewage has all along been the difficult point to deal with. Instead of the introduction of any of the various patent methods before the public, which, after all, are faulty, and in many cases most expensive to work, advantage has been taken of the latest scientific investigations.

Briefly, the new sewage scheme is as follows: The sewage will be collected into four large covered tanks, each holding 800,000 gallons, where the mineral matter will settle, and the organic matter will be subjected to the action of self-sown anaërobic bacteria. It will then pass on to contact-beds, having an area of 90,000 square yards, where it will be acted upon by aërobic bacteria, by which the organic impurities will be rendered innocuous. As a further precaution, and as a safeguard against pollution of the river, the filtrate from the contact-beds will be passed over 175 acres of land.

To sum up, in the words of Mr. Mansergh, our consulting engineer:

“The sewage now discharged into the river, watercourses, and ditches will be intercepted by the new sewers, and the watercourses and ditches thereby restored to their proper function of conveying land and rain water to the river. The flooding of the low-lying parts of the borough will be done away with, except in rare and infrequent cases which cannot be dealt with by sewers. The added districts will be given sufficient sewerage facilities, and the sewage will be dealt with by the best process known to-day, without nuisance or inconvenience to anyone, on a site to which no valid objection can be taken.”

If all this be accomplished, I think we shall not consider £290,000 too high a price to pay for it.

Water-supply.—One of the most important questions to be dealt with is undoubtedly a good water-supply. From what I have already stated as to the ideas of sanitation at the beginning of the period to which I am referring, it will not surprise you to know that in this matter things were as bad, if not worse, than is the case in the

matter of drainage. The town was supplied with water from wells varying from 15 to 60 feet in depth, from tanks of various sizes containing rain-water, and from the river Derwent and the Markeaton Brook. The works connected with the latter sources were private property belonging to the Commissioners under the Local Improvement Act. Out of 6,943 houses, only about 580 were supplied from the Waterworks, leaving 6,360 to be supplied from the wells, tanks, and in some cases from the river and brook direct. The quality of the water was not, on the whole, complained of, nor the price; but it is stated to have been very hard, and in time of heavy rains even the water supplied from the Waterworks, which we must presume was likely to be of a better quality, was so polluted, owing to water being driven into the reservoirs from the river, that it was found unfit to drink. In the courts and lanes, and, in fact, wherever wells existed, constant fouling took place, owing to percolation from cess-pools, privies, and to surface contamination. The marvel is, not that the health of the town should have been so bad, but that it attained even the level that it did. To-day (November, 1900) we have only 115 houses supplied by seventy-four wells, while the daily average supply of water from our Waterworks is $2\frac{3}{4}$ million gallons for all purposes. The water is good in quality, is constantly examined both chemically and bacteriologically, and any deterioration instantly inquired into.

Derwent Water Bill.—Though our present supply under ordinary circumstances is fairly adequate, except in very dry weather, it has been deemed wise to look ahead, especially in view of the possible added area which will require supplying; hence the action taken by our Corporation, which has resulted in the formation of the Derwent Valley Water Board, which controls the watershed of the Derwent, and is expected to be able to meet all demands for many years to come, not only for Derby, but also for Sheffield, Nottingham, and Leicester.

Before leaving the question of water-supply, it may be interesting to note the improvement which now obtains as to street watering and the provision made for the suppression of fire.

We read in the report already mentioned that for street watering and suppression of fires

“the supply is very inadequate, and what exists is tedious and difficult of being procured; this occasions much inconvenience and loss. For the latter purpose there exist but three public stand-pipes and but few street-plugs; and the moving power being constantly kept up to its utmost, no use can be made of the water without the aid of other

machinery, and even with that the effect is very insufficient. Where water has to be pumped or carried from wells, or from the river, still greater delay is experienced, and in the event of large or extensive fires serious losses would be inevitable. The public waterworks supply but the central and older quarters."

At the present time over 9,000,000 gallons are used annually for watering our streets.

A legal provision for the prevention of fires is stated by the local committee to be much required in Derby, for

"at present the establishment consists only of one large and four small manual engines, under the management of a Fire Brigade connected with the Borough Police, and paid by means of an evasion of the Municipal Reform Act, viz., the Town Council voting an annual stipend to the Mayor upon the understanding that he will give up so much of it as may be required for the Fire Brigade."

Our present fire brigade is a great advance upon this. It is under the control of the chief constable, and consists of a permanent section of eight men, all experts in every department of fire extinction, and an auxiliary section consisting of the whole of the police force of 120 men, who have all been trained in hose, hydrant, and ladder drill.

Our appliance consists of: One steam fire-engine, two hose-carts, several hand-pumps, and three fire-escapes.

Hydrants are placed in the public streets at a maximum distance of 80 yards, and are connected with the water-mains, which vary in diameter from 4 to 13 inches. The average pressure of water in the mains throughout the town is 80 lbs. to the square inch. In addition, in various parts of the town large tanks have been sunk under the roadway, supplied with water from the canal, river, or water-mains, from which the engine can work, thus enabling the natural force of the water in the mains to be used in addition to the force of the engine.

Rapidity of intimation of an outbreak of a fire is effected by means of electric fire-alarms and telephones at twenty-four points in the town, which are in communication with central fire-stations and the police office.

We claim that we have now a system which thoroughly secures efficiency and despatch.

Description of Streets in Lower Quarters and Courts and Alleys.—The streets in the older quarters, and those inhabited by the

working-classes in 1840, were narrow, damp, ill-paved, and ill-cleansed, and in some cases with badly-formed channels down the middle, constantly carrying a stream of accumulated filth. The courts were of the worst possible description, ill-paved, if paved at all, and communicating with the street by long narrow tunnels passing through masses of buildings. There was very little privy accommodation, and pig-sties abounded, while cesspits, which were open receptacles for all kinds of refuse, and served as ashpits as well, were also commonly found.

“In summer and autumn the courts and yards infested with these nuisances became intolerable to all but those accustomed to their presence. The passages were covered with creeping insects, so that the unfortunate occupants were obliged to keep their windows and doors closed, and that at the season when the admission of air is felt to be most necessary.”

In short, says the report :

“it is only when the earth and air have become surcharged, the one with their palpable contents, and the other with their gaseous emanations, that the endeavour to remove the nuisance is forced upon the sufferers as a measure of necessity, and that even with only temporary relief.”

No provision was made whatever in the Local Act for drainage, sewerage, or paving of these courts and yards, and here, as in the narrow streets, the drainage was effected entirely by surface drains, often broken and neglected, their condition depending entirely on the will or ability of the owners. The same unsatisfactory arrangement also applied with reference to cleansing and scavenging.

“It is much to be regretted,” says the Derby Committee, “that the ignorance upon these important subjects is by no means confined to the working-classes, but extends to those of whom, from their station of life, better things might have been expected. So little, indeed, are the evils of defective drainage appreciated, that a majority of the Derby Improvement Commissioners, who are inhabitants assessed at an annual rate of £30 and upwards, have for three years past, and down to the very last meeting at the end of September last (1842), evinced the strongest disposition to resist the adoption of plans which had been submitted to them after much inquiry and consideration for effecting improvements in the general drainage of the town, simply because their

adoption would entail an addition of 4d. in the £ to the rates for a limited period of thirty years. So general and so great is the ignorance, and so naturally does it harmonize with the short-sighted economy by which it is accompanied, that it is believed that nothing short of a compulsory Act of Parliament will overcome it, their object being to make the most of their possessions, regardless of those circumstances on which depend the comfort and well-being of their tenants. It may be said that, owing to the general prevalence of the noisome damp and the defect of structural arrangement, interior and exterior to the habitations of the working classes in Derby, all the quarters occupied by them are unhealthy. There is usually one room on the ground-floor in which the family cook, eat, and pass the day, with one or two sleeping-rooms over it, according to the wants or circumstances of the family."

Rents averaged from 1s. 9d. to 2s. per week, the extremes being 1s. 6d. and 3s. 6d., the last having occasionally a small back-yard and other conveniences.

With the exception of the very worst localities and the lodging-houses, one house was found to contain but one family, the ordinary habit being for one family to hire a house, and if their means were reduced, or their numbers small, to let one or more of the rooms to unmarried men or women. The dimensions of the rooms varied from about 12 feet by 10 feet to 14 feet by 12 feet, and the height from 7 to 10 feet. The walls on the ground-floor were usually of brick or stone, and those of the upper of plaster.

In the better quarters of the town the houses were furnished with water-closets, connected with the sewers by house-drains; but in the poorer quarters the closets were of the commonest description, with cesspits attached. In the courts and yards, again, there were generally found but one closet to even six houses. At the present time we have w.c.'s in 11,854 houses, 4,739 tub-closets, and 6,160 privies. We are now seeking powers to convert these latter into w.c.'s.

Scavenging.—As regards the general scavenging of the streets, I find there was a regular service under the direction of the Commissioners' surveyor, and that by a bye-law of these Commissioners it was ordered

"That as soon as a street shall have been paved and completed, and declared a public highway under the powers of the Act, the same shall be regularly cleaned, not less frequently than once a week."

The most central streets were cleansed daily, those on the outskirts of the town once a week, and the intermediate streets in proportion to their proximity to the centre or suburbs of the town. As in other matters, the better parts of the town were attended to, while the courts, lanes, and alleys were left to themselves.

The annual expenditure under this head was about £380. At the present time it is nearly £5,000, and the cost of removal of night-soil and day ashes amounts to over £10,000.

Smoke Nuisance.—Not only were the streets, courts, and alleys in a state of filth, and the river Derwent and the Markeaton and other brooks little else than open sewers, but the very atmosphere was poisonous and deleterious from the exhalations therefrom, added to which was the pollution by smoke from the various manufactories in the town. Referring to this, Dr. Baker in his report ascribes much injury to public health in the borough to the continued presence of

“torrents of black smoke that issue from the manufacturing chimneys, the nuisance from which is much augmented in heavy and moist states of the atmosphere.”

And he quaintly closes his report on this nuisance as follows :

“Such is the state of the air that, in gardens in the town, none but deciduous shrubs can be kept alive ; evergreens become nevergreens, and a miserable existence of three or four years is the usual span of their lives. . . . Now, as trees (and flowers, many of which thrive as ill as the trees) are not nervous or fanciful, the fact just stated is alone sufficient to show what sort of atmosphere we enjoy in manufacturing towns.”

To-day, while our manufactories have increased in number, a better state of things exists, owing to the fact that it is now the duty of the Health Committee to see that all reasonable means are taken by manufacturers and others to abate this nuisance ; and though at first this measure met with some opposition, and the usual cry that trade and tradesmen would alike be driven from the town, both, I am happy to think, appear still flourishing, while the atmosphere is greatly improved.

Open Spaces.—With such a low appreciation of the primary and essential laws of health as evinced by the deplorable state of things I have endeavoured to describe, it will not surprise you to know that the provision of open spaces in the way of recreation-grounds was of the scantiest description, and that, too, of a most unsavoury

character. The only ground then available was what is known as Chester Green, an account of which in the report is as follows :

“ There are no common lands belonging to the town, but there is a small common called Chester Green, in the hamlet of Little Chester, in the parish of St. Alkmund, in Derby, containing about 15 acres. That plot of land is in a low situation, the ditches around it are seldom cleansed, and in consequence of its being sometimes overflowed by the river Derwent, it is calculated to add to the malaria which arises to a considerable extent in that neighbourhood from the low situation and from the immense number of small houses which are occupied by the labouring poor. These houses have been erected within the last twenty years, but the drainage from them is most imperfect.”

It was about this time that Mr. Joseph Strutt, with a generosity and a foresight truly refreshing, gave to the town the Arboretum, and though the public at that time were only admitted free on Sundays (except during Divine Service) and on Wednesdays, yet the Commissioners report that the

“ Arboretum has already produced a perceptible effect in improving the appearance and demeanour of the working-classes, and it has doubtless conferred an equal benefit upon their health.”

I need hardly remind you that now these grounds are entirely free to the public, and that, for the manner in which they are kept, they reflect the highest credit upon those responsible, and will compare most favourably with any other grounds of similar size in other towns.

In addition, the town now boasts the Rowditch, with an area of about 6 acres, Markeaton, about 9 acres, and Bass's recreation-ground, about 7 acres—all important air-spaces in our rapidly-growing town.

Public Baths.—As regards public baths, the Committee reported:

“ There are no very safe and convenient open bathing-places near the town, those commonly used being the canals and the river Derwent ; but the places are too near to public roads or frequented footpaths, and bathing consequently is little practised by the adult population.

“ The town is remarkably ill-provided with public baths ; there is a small tepid swimming-bath and two or three warm sitting-baths on the premises of Mr. Hall, spar and marble manufacturer, supplied chiefly from the waste water

of his steam-engine—the whole on a very limited scale, and by no means well arranged.

“Bathing as a means of health seems little understood, and still less practised, in Derby, even amongst the middle classes; and warm bathing is altogether beyond the reach of the working classes.”

We cannot greatly boast of the facilities afforded even at the present time. The baths in Full Street are not up to date, but it speaks well for the public that they are patronized to overcrowding. The Council have recently passed practically unanimously a scheme for the erection of slipper, swimming, and Turkish baths in Reginald Street at a cost of £15,000; and, in addition, we have free open-air baths in connection with the Markeaton and Bass' recreation-grounds. Baths in houses are becoming more common year by year.

The Awakening.—I have now given you, even at the risk of being tedious, a fairly exhaustive digest of the report made at the beginning of the period I have selected, but must proceed now a stage further. I have already stated that up to the year 1872 legislation on sanitary matters was of a very piecemeal character; certain towns and districts prior to this date had, chiefly under pressure of the local medical faculty, appointed medical officers of health under Section 12 of the Towns Improvement Clauses Act, 1847, which enabled the Commissioners to appoint a person of skill and experience, who shall be styled “the officer of health, and whose duty it shall be to ascertain the existence of diseases within the limits of the special Act, especially epidemics and contagious diseases.” This section was not compulsory, as far as I can gather. Liverpool claims the honour of having been first to obtain powers to appoint a medical officer of health. Dr. William Henry Duncan was the first to hold that office in this country. In 1848 the City of London followed, and Sir John Simon, K.C.B., was appointed. But it was from the passing of the Public Health Act, 1875, repealing the Act of 1872, that real advance was made in sanitary legislation, as it provided for the creation of a sanitary authority in each part of England and Wales, whether it was a rural district or an urban town, and required such authorities to appoint a medical officer of health. The Local Government Board issued an Order, dated November 11th, 1872, defining the qualification, appointment, term of office, duties, etc. I may say in passing that at first a very low estimate was put on professional services by public bodies. In some cases no payment was assigned, while in others, according to Sir John Simon, the salary ranged down to £2 or £3 per annum,

while £21 10s. was a very good average. The officers so appointed have, however, nobly stuck to their work, and to them and their successors is due in a large measure the great stride in the advancement of public health.

It was not until 1876 that our own town really awakened to a full sense of its duty by appointing a medical officer of health, the first to hold that office being our late friend, William Iliffe; and I should like to pay a warm tribute to the manner in which he faced the herculean task which confronted him, and how nobly he overcame many difficulties and obstacles, and paved the way for many reforms which have been effected since that period.

In a review of the first ten years (1877-86) of sanitary work after the appointment of a medical officer of health Mr. Iliffe says: "Previous to 1876 no real sanitary work had been accomplished in Derby," and he summarizes the principal defects existing at the commencement of that period, showing that little or no advance had been made upon the state of things I have been describing as in existence in 1840. There was not in 1886 a sewer in the borough ventilated, and not a house that was not directly communicating with the sewers.

To-day, while we cannot boast of a satisfactory system of sewers or of sewage disposal, they are so far improved that ventilation where possible has been carried out, and ere many years shall have passed the new scheme which has been approved, both of a system of sewers and of sewage disposal, will remove from our borough the stain under which it has so long lain. At the same time, all houses are now cut off from direct communication with the sewers, and in this way much risk of poisoning by sewer-gas has been removed.

The town refuse of all description, including human excrement, was conveyed for disposal to the Nottingham Road and thrown promiscuously into a heap, and left to further putrefaction in close proximity to houses and the railway-station; while to-day we have a Fry's destructor constantly at work to burn and reduce the bulk of the refuse. As an indication of the growth of our town and the increase of work thrown on the Sanitary Department in this respect, I may mention that last year we carted 35,973 loads of refuse, as compared with 15,422 in 1881.

There was no mortuary worthy of the name, while now we have a good mortuary and a post-mortem room, both frequently in use.

Wells were very prevalent, though not to the same extent as in 1840. To-day their number has diminished to below seventy-four, as I have already stated.

The courts and alleys were very much left to themselves, unpaved

and never cleansed, except—and that very rarely—by private efforts; while at the present time nearly all are paved, and during the summer season are regularly flushed and cleansed by the Corporation, nearly two million gallons of water having been used for this purpose last year.

Hospital Accommodation.—Little provision had been made for dealing with the isolation of infectious diseases. It is true that a wooden hospital had been put up in a hurry in 1872 at Rowditch during an epidemic of small-pox, and that it continued more or less in use until May, 1890, when it was burned down by order of the Sanitary Committee. It was a very primitive structure, and one which would be instantly condemned as utterly unsuitable at the present time, all the points essential to a properly-equipped infectious hospital being conspicuous by their absence. As many of you may not remember this building, I may perhaps be allowed to quote from a report of the late Sir R. Thorne Thorne, who inspected it in 1880. It consisted of one ward pavilion, a detached kitchen, a porter's lodge (tenanted by an old man and his wife), a laundry, a block containing certain accommodation for a resident medical officer and for nurses, an ambulance-shed holding a leather-lined cab, a dead-house, and a disinfecting apparatus. The ward pavilion was a wooden building, the framing of which was covered on the outside only with boarding, the joints being protected by strips of wood. The outside was tarred and the inside limewashed. The roof consisted of open slating laid on 1-inch boarding, louvred at the apex. There were two wards, divided by a nurses' room and a bath room. Each ward contained twenty beds, the amount of floor space and cubic space per bed being only some 80 square feet and 1,400 cubic feet respectively. Opening from each ward, but not properly separated therefrom by means of a cross-ventilated lobby, were an ash-closet and ward sink. At the time of Sir R. Thorne Thorne's visit in 1880 it was so dilapidated that it was only possibly habitable by the liberal use of screens to keep out the wind, which had free entry through large spaces between the planks forming the walls. This hospital had been a marked success in dealing with the small-pox epidemic of 1872—so much so that the urban authority determined to retain these temporary buildings for future contingencies. It is, however, a curious fact that they did not profit by their experience as to the benefit of isolation in small-pox to extend the principle to scarlet fever, although the latter disease was prevalent in a far more fatal form than small-pox. According to the medical officer of health, between July, 1878, and December, 1879, 306 persons died of scarlet fever, while up to

the date of Sir R. Thorne Thorne's visit only two cases of the disease had been isolated, one by special request of the parties concerned, and the other an infant, six months old, which had come with its mother from a common lodging-house.

The medical officer of health reported to the urban authority in 1879 on the ready adaptability of the hospital for the reception of all kinds of infectious cases, provided certain repairs were carried out. As these were estimated to cost £300, the urban authority determined only to spend £40 with a view of preserving the foundations, the wards being left in an uninhabitable condition.

The original cost of this hospital and its outbuildings was £1,500. The site was rented from the Corporation by the Local Board of Health for £5 per annum. This, together with the necessary repairs, and eight shillings a week to the resident porter, and expenses for gas, coal, and water, constituted the current expenses when the building was empty. Our present hospital, when in full work, entails an annual expenditure of over £2,000.

The Derby Improvement Act, 1879, contained provisions for compulsory notification of infectious diseases. This Act came into operation January 1st, 1880, and remained in force until January, 1900, when the general Act superseded it. In the first quarter of that year—1880—145 cases of scarlet fever, 5 of diphtheria, and 21 of enteric fever were reported; and, following on this, considerable activity began to be manifested by the urban sanitary authority. The hospital was repaired and made habitable, and was continually in use up to May 1st, 1890, when the new hospital was opened by Mr. Councillor (now Alderman) Harrison. As far back as 1880 Mr. Iliffe, in his annual report, refers to the refusal of the Town Council to sanction the erection of a suitable isolation hospital, partly on the ground of expense, and partly because they considered the infirmary the proper place for all infectious cases to be treated. It was not until 1890 that these objections were overcome, and the present hospital took shape. When opened, it consisted of an administrative block, an isolation pavilion, consisting of two separate and distinct portions, each comprising a ward with three beds and a ward for two beds, with a nurses' duty-room between, and a general pavilion, consisting of a male and female ward of ten beds each, with an air space of 2,000 cubic feet to each bed, and with nurses' room, etc. There is also laundry, mortuary block, and boiler-house. The whole was erected at a cost of £8,000. The scheme was not so large as the Sanitary Committee wished, but the Council would not consent to a larger outlay. The unwisdom of this was soon evident, for in 1893 another pavilion was erected at a

cost of £3,000, while this year a very necessary addition has been made by providing a discharge block. At the present time, owing to pressing needs and to arrangements entered into with the Infirmary Board, the Sanitary Committee are contemplating the early further enlargement of the hospital, and at the same time providing a site for a small-pox hospital at the required distance away from the present buildings.

I need not tire you with a description of our hospital, which, in respect of position and equipment, we consider is second to none in the country. We are all acquainted with the good work done there, and the efficient and loyal manner in which the staff perform their duties; so much so that the difficulty we have now is not to persuade people to let their scarlet fever cases be removed, but rather to meet all the urgent requests for removal.

There are certain suggestions abroad that isolation hospitals have had their day, and that they are a source of increased danger rather than a means of safety to the general public; but I think it will be long before the public and the profession are persuaded to entertain so illogical an idea. This is, however, neither the time nor the place to examine these fallacies. I will satisfy myself by stating that since the hospital has been opened about 2,500 cases have been treated there, and that while during the twelve years prior to its erection and the reception of patients there were 549 deaths, being an average of 45·7 per year, since the opening of the hospital, ten years ago, there have been 129 deaths, showing an average of 12·9.

It may be interesting to you to know that the old leather-lined cab of the wooden hospital period is now represented by a new ambulance, just delivered within the past month, which is a model of comfort and ingenuity; in fact, it is a replica of the one shown at the Paris Exhibition by the builders, and the only one of its class to obtain a silver medal. In this way, then, you have every assurance that patients in transit to the hospital have had provided for them the best and the most comfortable carriage at present in the market; and I am constrained to say that, wherever the comfort and well-being of our patients are concerned, the sanitary committee are ever ready and willing to see that such are promptly attended to.

Tuberculosis.—The recognition of the communicability of tuberculosis, and the possibilities of diminishing the ravages of this scourge, have imposed fresh responsibilities upon public bodies. Our sanitary authorities have fully realized the duties thus laid upon them. Early in February, 1899, our medical officer of health presented to his committee a report referring chiefly to recognised

facts bearing upon tuberculosis. A further report was asked for with respect to the practicability of certain suggested preventive measures. The medical officer of health, in company with the chairman (Mr. Alderman Harrison) and the Mayor (Mr. Alderman Ann), visited Nordrach and several other sanatoria on the Continent specially devoted to the open-air treatment of consumption; and though the information gained did not justify the recommendation of a municipal sanatorium, various measures were adopted which are calculated to diminish the evil and lessen the disease.

The sanitary authority have provided spitting-cups, which are lent out to any phthisical patient free of charge. Every room where a death from phthisis occurs is thoroughly disinfected (if the owner consents), while a circular has been drawn up and distributed freely pointing out the precautions advisable in cases of consumption. Recognising that milk is a great source of tuberculosis, samples of all milk sold in the borough are being obtained and bacteriologically examined by Professor Delépine, powers for proceeding in the case of milk found to be infected having been obtained in the Derby Corporation Tramways Act, 1899. In this way, then, have the sanitary committee been quietly, though effectually, carrying out measures which it is hoped will prove of use in mitigating and diminishing this fell disease.

Results.—There are many other points of interest and progress which I might touch upon connected with the various inspectorial duties; but time forbids, and I must hasten to bring these somewhat discursive observations to a conclusion. It will naturally be asked, What has been the practical result of these improvements? How far have we succeeded in the primary object of all this sanitary legislation and action? How has it affected the health of the borough and the condition of the inhabitants? According to the report of 1840-43, we find that the state of the public health in Derby, especially that of the operative classes, was unfavourable; for while the average mortality of all England was 22 per 1,000, and 20 per 1,000 in many parts of the country, that of our own town was as high as 26 per 1,000.

The difference between rates of 20 and 26 per 1,000 amounted to 648 deaths; for if the deaths had been at the lower rate during these years, they would have numbered 2,101, whereas the actual deaths during that period were 2,749.

In 1840 typhus fever was not an uncommon complaint, and this, as well as other zymotic diseases, was more prevalent in such districts as were low-lying and overcrowded, and otherwise wholly insanitary, notably the Walker Lane area. This same fact is borne

out by figures from the last annual report of our medical officer of health. While, happily, typhus fever is absolutely unknown in our town at the present time, the most insanitary and overcrowded districts produce the highest death-rate, not only from zymotic diseases, but from all causes. In two districts in Kingsmead Ward, in one—the Walker Lane area—the deaths were 43, or at a rate of 24 per 1,000; and in the other—the Redshaw Street area, which is of more modern construction—the death-rate was only 14 per 1,000.

Happily, the former pestiferous area, under powers of the Derby Improvement Act, 1879, is now being cleared and opened up.

In 1840 the deaths from zymotic diseases were 250, while in 1899, with a population trebled, they only numbered 173; in other words, the zymotic death-rate, which was 7·14 per 1,000 of the total population in 1840, had been reduced to 1·62 in 1899.

The infantile mortality appears to have been excessive, and, though there is still room for improvement in this respect, we are in a much better position to-day, having reduced the death-rate of children under five years to one-half.

In 1840, with a population of 35,000, the deaths under this heading were 448, giving a rate of 12·9 of total population; while in 1899, with a population of 106,000, the number was 667, giving a rate of 6·3.

I mention this point specially, because we have just taken one step in the right direction by sanctioning the appointment of a female sanitary inspector, whose principal duties will be to visit houses in those districts which are notoriously insanitary, to use her influence in encouraging cleanliness, and inculcate principles necessary for the proper rearing of infants, especially those hand-fed, and to otherwise assist the medical officer of health and his staff in their endeavours to reduce the death-rate among the young, which is a blot upon all our large towns as regards the general mortality. It is impossible for me to go deeply into the statistical side of the question; but, for the sake of comparison, I will submit a few figures.

For the three years 1841-43 the death-rate in Derby was :

From all causes	...	...	...	26·1
Consumption	..	...	...	4·8
Fever and epidemic diseases	...	...	...	7·1

while in the three years 1897-99 these had been reduced to :

From all causes	...	...	...	16·5
Consumption	...	...	...	1·07
Fever and epidemic diseases	...	...	...	1·9

To put it in another way, the death-rate at the beginning of this period was 26·1; to-day it is 16·5; that is a difference of 9·6.

In 1899 the total deaths were 1,775; if with the present population the death-rate had been the same as in 1843, there would have been 1,046 additional deaths, making a total of 2,821. These 1,046 lives saved, valued at £150 (Farr), mean an annual saving of £156,900, which capitalized works out at about £3,000,000.

I have endeavoured, though feebly, I admit, to place before you a picture portraying the advance in sanitary measures, and the results arising therefrom, during the past sixty years, and I claim that we, as medical men, as guardians of the public health, are specially interested in, and intimately associated with, this advance; the moving force, though not always self-evident—the *vis a tergo*, if I may so term it—has been all through this period supplied by members of our own profession.

The late Sir Thomas Grainger Stewart, in his Presidential Address to the British Medical Association in Edinburgh in 1898, on "The Reciprocal Duties of our Profession to the Community, and of the Community to the Profession," well defines our position:

"That our duty is to do our best to prevent disease, to cure disease, and to alleviate suffering in individual patients, and to protect the community against preventable maladies. The duty of the community is to afford us every facility for so doing."

The chemist and sanitary engineer have done much to further this grand work, but upon our profession lies still the chief responsibility. As a whole, I think we have been somewhat backward in this duty. To-day the greatest difficulties in health administration arise from the comparative ignorance of the public on sanitary matters.

In our public bodies the necessity for education still exists; not perhaps so markedly as in the earlier days, but even now personal and self interests are apt to warp the mind, and there is too much tendency to look only to the money outlay incurred, forgetting that health is really the wealth of the community. Measures which are for the better administration of sanitary matters are looked upon with jealous eyes. As an instance, I may mention that Part III. of the Public Health Acts Amendment Act was introduced to our local Council three times before we succeeded in getting it passed. Only a month ago, on the proposition to appoint a female inspector, the question was at once raised, "How much are we paying for inspectorial work at the present time?" I should in all fairness state that the proposal was, on the whole, most cordially received and carried; but this is just an instance showing that we, who are more intimately connected with public life, have still much work

to do. But this is not all; every member of our profession in his daily practice may be, and I believe is, an apostle of sanitary measures. We may impress upon the individual the importance of hygienic laws in the home, the factory, and workshop, and by so doing we shall help on the work which was initiated by those early pioneers, Southwood Smith and Rumsey, and by many others in the various towns, not excepting our own. I find that of the six gentlemen who formed the sanitary committee in 1840, and assisted the Commissioners in drawing up the report I have so often referred to, four were medical men, viz., Thomas Bent, M.D.; William Baker, M.D.; Joseph Fox, Surgeon; J. Harwood, Surgeon; the others being W. C. Mousley, Esq., chairman, and Francis Jessop, Esq. Their work has been carried forward ably by Chadwick, Farr, Parkes, and Richardson, and the whole host of eminent men, whether as pharmacologists, therapeutists, bacteriologists, or medical officers of health, who with a self-sacrifice which is characteristic of our profession are putting forth all their energies for the uplifting of the masses, and improving the health of the community at large.

Our work in all its aspects is a noble one, but I hope you will agree with Sir Grainger Stewart that

“the prevention of disease is in its practical results perhaps the most important of all our duties. It is our chief glory that we have been able to accomplish so much; it is our highest hope that we shall accomplish more.”

ROYAL COMMISSION ON BEER POISONING.—A Royal Commission has been appointed to make investigations respecting the beer-poisoning epidemic.

The Commissioners are Lord Kelvin, Sir W. Hart Dyke, Sir W. S. Church, President of the Royal College of Physicians; Professor T. E. Thorpe, Government Analyst; Mr. H. Cosmo Bonsor, and Dr. B. A. Whitelegge, His Majesty's Chief Inspector of Factories. Dr. G. S. Buchanan, one of the Medical Inspectors of the Local Government Board, is the Secretary to the Commission.

The instructions to the Commissioners are—

To ascertain with respect to England and Wales :—

1. The amount of recent exceptional sickness and death attributable to poisoning by arsenic;
2. Whether such exceptional sickness and death have been due to arsenic in beer or in other articles of food or drink, and, if so,
 - (a) To what extent;
 - (b) By what ingredients, or in what manner the arsenic was conveyed; and
 - (c) In what way any such ingredients became arsenicated, and
3. If it is found that exceptional sickness and death have been due to arsenic in beer or in other articles of food or drink, by what safeguards the introduction of arsenic therein can be prevented.