

REPORTS
FROM
COMMISSIONERS:

FOURTEEN VOLUMES.

—(5.)—

STATE OF LARGE TOWNS
AND
POPULOUS DISTRICTS.

Session
4 February—9 August 1845.

VOL. XVIII.



1845.

REPORTS FROM COMMISSIONERS:

1845.

FOURTEEN VOLUMES:—CONTENTS OF THE

FIFTH VOLUME.

N. B.—*THE* Figures at the beginning of the line, correspond with the N^o at the foot of each Report; and the Figures at the end of the line, refer to the MS. Paging of the Volumes arranged for The House of Commons.



STATE OF LARGE TOWNS AND POPULOUS DISTRICTS:

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State of LARGE TOWNS and POPULOUS DISTRICTS; together with
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SECOND REPORT

OF

THE COMMISSIONERS

FOR INQUIRING INTO THE



STATE OF LARGE TOWNS AND POPULOUS DISTRICTS.

WITH

APPENDIX—PART I.

Presented to both Houses of Parliament by Command of Her Majesty.

LONDON:

PRINTED BY WILLIAM CLOWES AND SONS, STAMFORD STREET,
FOR HER MAJESTY'S STATIONERY OFFICE.

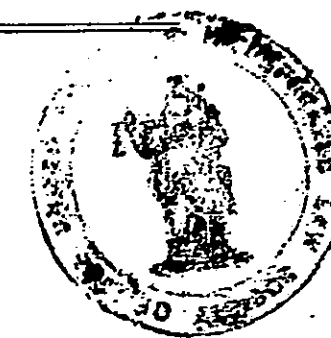
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SECOND REPORT.

SECOND REPORT OF COMMISSIONERS OF INQUIRY INTO THE STATE OF LARGE TOWNS AND POPULOUS DISTRICTS.

TO THE QUEEN'S MOST EXCELLENT MAJESTY.

IN pursuance of the terms of your Majesty's Commission, whereby we are enjoined to report to your Majesty, from time to time, our proceedings, we, the undersigned Commissioners, do now humbly present this our further Report.

We stated in our First Report the course which we considered it our duty to pursue in prosecution of our inquiry, to which we appended the evidence we had then received, and also an abstract of the replies then given from fifty towns visited, showing their condition in respect to drainage, cleansing, and the supply of water.

We now add in an Appendix the reports made by the several Commissioners. We refer to them, as showing the existence of evils varying slightly in character, and prevailing with different degrees of intensity in the several towns visited, but generally pressing with most severity on the poorer classes. We believe they may be taken as correct indications of the prevailing condition of other towns and populous districts in this part of the United Kingdom. In this report we shall endeavour to point out those evils, which, we are of opinion, might be removed by greater vigilance and activity on the part of the existing authorities, and to bring under consideration such as require further legislative provisions for their prevention.

It appears from the replies above alluded to, that there are only eight of the fifty towns visited in which even a tolerably favourable report could be given in respect to drainage and cleansing; and as regards the supply of water, the returns, especially in the districts inhabited by the poorer classes, are still more unfavourable.

The general prevalence of the evils demonstrated affords direct evidence of an equal neglect of the preventive and corrective remedies, and of the absence of the requisite regulations for ensuring the adoption of such measures as have been enacted.

General neglect of
preventive and
corrective remedies.

Until the publication of the reports made to the Poor Law Commissioners in 1839, upon the condition of the poorer classes of your Majesty's subjects in certain parts of the Metropolis, followed by the Report of a Select Committee of the House of Commons in the year 1840, "on the Health of Large Towns and Populous Districts," the extensive injury to the public health, now proved to arise from causes capable of removal, appears to have escaped general observation, while the means of remedying the evils by improvements in drainage, or by other structural arrangements, as have been carried into operation, have been executed more with a view to the appearance of the town, or the comfort of a portion of its inhabitants, than directed to maintain the health of the whole community.

We have much satisfaction in stating that subsequent investigations and reports have excited increased attention to the importance of providing for the physical condition of the poorer inhabitants of large towns. The wealthy and intelligent classes resident in them are now for the most part becoming alive to this great question, and to the necessity of providing for the removal of those causes, which tend to vitiate the air in the quarters occupied by the poor, and especially in those most densely crowded. We trust that, assisted by the information which the advance of science and general intelligence places at their command, and directed by the views and suggestions published from time to time in reports laid before Parliament, by your Majesty's direction, the local authorities will carry into operation with efficiency, under such guidance as we shall presently consider it our duty to recommend, the laws that may be intrusted to their execution.

CAUSES OF DISEASE.

Advantage of the mode of inquiry adopted.

Economy in the construction of works essential.

Registers of deaths generally the best guide in such inquiries.

We have reason to believe that the course of inquiry adopted by us for obtaining information respecting the condition of the several towns visited, by calling to our aid the assistance of the most influential and intelligent of the inhabitants, through whose means and local knowledge the peculiar conditions of many localities were closely investigated, has exposed to their view scenes of misery and neglect, of which many were previously ignorant, and directed their attention to causes of disease, arising from the defective state, or absence, of proper structural arrangements.

We have found it necessary to investigate many details, involving questions of economy and efficiency in the execution of works; there is much evidence to show that the practicability of improvement is mainly dependent on the economy of construction, and on the mode of levying the charges, and distributing the repayment of the cost over a series of years. We have brought forward these details in the evidence already laid before your Majesty; and in the course of this Report we shall further point out such as we consider best adapted to effect the objects desired.

Although we have deemed it necessary, in carrying out to the fullest extent the object of your Majesty's Commission, to institute particular inquiry into the condition of several of the largest towns, we were careful to make it understood that our investigations were not made for the purpose of recommending any specific plan for the improvement of the drainage, or for removing the other defects in the several districts so visited, but that the object of the inquiry was principally directed to the collection of data, sufficient to enable us to suggest recommendations upon which an efficient general measure to ameliorate the prevalent evils might be founded.

We stated in the First Report that we had selected the several towns for examination with reference to the rates of mortality, as shown "by the returns of the registers of death, with a few exceptions, to be the highest." The character of the information, contained in the Appendices to our Reports, strongly exhibits the advantages to be derived from registration, as far as the present system enables us to ascertain the true causes of disease and death, the proportion of deaths to the population, or the occupation of those who died.

The statements of excessive mortality, derived from an examination of the books of the registrars of the towns visited by us, in every instance produced a laudable zeal on the part of the inhabitants of those towns to aid our inquiries as to the causes of disease in those places, and their local knowledge enabled them materially to facilitate our investigations.

As the subjects specified in your Majesty's Commission are essentially of a practical character, we have endeavoured to avoid as far as possible the discussion of the theoretical causes of disease. All the medical witnesses examined before us are unanimous as to the injurious effects produced by emanations from animal or vegetable matter in a state of decay, whether they act as direct or contingent causes of disease; and they are quite concurrent in their opinion that the existence of such causes and their prevalence have been sufficiently ascertained to require the interference of the legislature.¹ The presence of such emanations, whether they be derived from stagnant ditches, from open cesspools, or from accumulations of decaying refuse, is a great cause of disease and death, not confined to the immediate district in which they occur, but extending their influence to neighbouring, and even to distant places.²

These physical causes of disease may affect various localities and different classes of persons, but are most common and virulent in the neglected districts and dwellings of the poor, who are peculiarly exposed to the aggravating influences of such causes,—not necessarily connected with their condition in life, but capable of being removed by efficient drainage, cleansing, improvements of buildings, ventilation, and a sufficient supply of good water.

It is too commonly supposed that the evils above adverted to are the inseparable concomitants of poverty; and, doubtless, so long as the inhabitants of the most neglected and filthy abodes in crowded cities are unable to provide for themselves better and healthier dwellings, sufficient light and air, more open situations, effective cleansing and drainage, and adequate supplies of water, their vigour and health are undermined, and their lives shortened by the deleterious external influ-

Evidence of Dr. S. Smith, First Report, Q. 912.

² Ibid., First Report, Q. 969.

CAUSES OF DISEASE.

ences consequent upon the want of efficient arrangements for securing the above objects. The operation of general sanitary arrangements, will enable a greater number to contribute a share to such arrangements by which they must largely benefit, and thereby, and at a comparatively small cost to the community at large, to have the advantage of the remedial improvements above specified.

Without entering into any discussion upon the influence which poverty and distress may occasion on the rates of mortality, which no sanitary improvements can entirely prevent, we are desirous to remove the injurious impression that a great amount of excessive disease and death in this country is due to causes, which cannot in a considerable degree be removed by legislative enactments when earnestly enforced. At the same time we must express our opinion that the efficient execution of the law will tend to reduce sickness and disease, and so far increase the means of the poor.

Medical witnesses of much experience state that the continued action of injurious emanations, though they may not always produce fever, often become the cause of some of the most common and fatal maladies of this country,¹ and the residence more or less prolonged in a vitiated atmosphere is a great cause of the scrofulous diseases, extensively prevalent in the large towns.²

In an enquiry into the influence of employments on health, it appears that the relative excess of deaths from consumption among tradesmen and artisans, compared with other classes, is mainly to be attributed to the vitiated state of the atmosphere in their shops and dwellings. The average age at death from consumption has been found to be lower in the case of tradesmen than among artisans, this is stated to be owing to a larger proportion of the latter being employed in out-door work, and therefore less continually exposed to the influence of an impure air.³

In addition to the evils arising from the absence of ventilation in the interior of dwellings, a great amount of disease is engendered by the polluted condition of the atmosphere in the close and confined courts in which a large proportion of the poor constantly dwell.

Our attention has been called to the consideration of the ages at which the physical causes of disease produce their most marked effect; and while the returns show that these effects are peculiarly severe on infantile life,⁴ yet they are not confined to any particular age, acting powerfully on persons in the full vigour of life, as well as on the younger part of the population. These returns all show that the extreme pressure of the physical causes of disease is upon the working population, shortening the average duration of life from 1 to 20, and even to 30 years, and decreasing to a material extent the working ability of the survivors. We find, however, at the same time, that the duration of life of the middle and higher classes is materially lessened by the pressure of these removeable causes of disease. In the diseases which follow, in a more marked degree, from the direct or indirect influence of injurious emanations, especially in the case of fevers of the typhoid type, by far the greater proportion of cases occur amongst the heads of families between the ages of 20 and 30, the very period when they have generally the greatest number of young children dependent on them for support.⁵ The effect of the physical causes of disease is not confined to any class or age.

The inquiries into the state of districts before and after improvement have distinctly shown, that increased facilities for the removal of refuse in and about the habitations of the poor have been rapidly followed by a marked improvement in the health, and by a reduction in the rate of mortality of the district. An instance of this kind was observed in Manchester by ascertaining the amount of deaths in 20 streets

Other diseases, besides fever, resulting from injurious emanations.

Extent of disease and mortality among infants.

Decrease in the mortality in improved districts.

¹ Evidence of Dr. S. Smith, First Report, Q. 920, 929.

² Evidence of Mr. Toynbee, First Report, Q. 5528. App. First Report, p. 12. Sir James Clark regards "the respiration of a deteriorated atmosphere, as one of the most powerful causes of tuberculous cachexia. There can be no doubt," he adds, "that the habitual respiration of rooms of ill-ventilated and gloomy alleys in large towns, is a powerful means of augmenting the hereditary disposition to scrofula, and even of inducing such a disposition de novo."

Mr. Allison after alluding to the fact that a large proportion of the great early mortality in large towns is due to scrofulous disease, remarks "that deficiency of fresh air and of exercise are among the most powerful and the most important, because often the most remediable of the causes from which scrofulous diathesis arises."—Cited in the Report by Dr. Duncan, App. First Report, p. 19.

³ Evidence of Dr. Guy, First Report, Q. 5582. Dr. Guy's estimate of the number of deaths from consumption.

⁴ App. First Report, Preston, p. 42; Nottingham, 138, 149.

⁵ Evidence of Dr. S. Smith, First Report, Q. 926.

CAUSES OF DISEASE.

Charges upon the community from excessive disease.

Influence of excessive mortality on the increase of population.

before and after their improvement, by which it was ascertained that the deaths immediately subsequent to the drainage and paving of the streets were diminished more than 20 per annum out of every 110.¹ This mode of exhibiting the immediate effects of structural improvement has been confirmed in other instances,² and is cited in verification of the same results, obtained by estimating the mortality in improved and in unimproved districts of a like population.

The loss of life which occurs annually from a neglect of the measures necessary for rendering wholesome the dwellings of the poor and the streets adjacent, must be accompanied by serious pecuniary charges both upon the sufferers themselves and upon the community. The prolonged attacks of sickness which precede this excessive mortality, render the victims of it incapable of following their daily occupations, and reduce them and their families to the necessity of seeking relief from the parish and other funds, which are eventually burthened with the maintenance of the surviving members of the family.

The pecuniary saving from this and other sources which has been pointed out as the inevitable result of a large outlay for improvements, has been urged upon us as an argument to justify the interference of the Legislature; and to show the enormous pecuniary loss incident on the present state of things, we refer to the table given in the Report on Lancashire. But we are unwilling to rest our case upon this foundation. The much higher and more important benefits to the health and morals of the community, which must equally result from such improvements, still more imperatively call for earnest endeavours to promote their adoption.

We have found the opinion to be very prevalent, that excessive mortality acting principally on the infantile part of the community, is a natural check to the increase of population, and that the scourges of disease and pestilence are consequent upon a disproportionate increase of births.

Although the facts within our reach have not enabled us to come to any precise conclusion in refutation of this opinion, we are anxious to draw especial attention to the returns of the registrars of deaths, which elucidate this important question. They clearly show that an excess of deaths, with but few exceptions, is accompanied by an excess of births. In the manufacturing districts, in which peculiar causes operate in the production of an excessive mortality, an excessive proportion of births is also observed;³ and an unhealthy and feeble population is thus retained, to be still more liable to be affected by the extensive causes of mortality.

But though excessive disease and death in an unhealthy community do not check the increase of population as might have been anticipated, they act very powerfully in depressing the physical condition and working ability of the survivors, in many cases rendering them premature burthens on public or private charities.

This is shown by the large amount of widowhood and orphanage, and by the number of persons in densely populated places, supported by the poor-rates and by charities, who are superannuated at ages which are considered fit for labour in a population possessing an average degree of health.

A large class of crimes, arising from intemperance and the indulgence of vicious

¹ Mr. Holland on Chorlton, App. First Report, p. 64.

² Returns from Leicester, App. First Report, p. 151.

³ Report upon York, App. First Report, p. 102, Table 8; Fifth Report of the Registrar-General, p. 234; Preston, *ibid.* p. 56; Nottingham, *ibid.* p. 142, table 3.

The rate of increase of births in proportion to the deaths may, perhaps, be distinctly seen if we take the two extreme counties in respect to infantile mortality,—Westmoreland, where it is the least, Lancashire, where it is the highest:—

	Annual Proportion per Cent. of Deaths of Children under 1 Year of Age to Total Births.	Proportion of Annual Deaths to each 10,000 of the Population.	Annual Proportion of Births to each 10,000 of the Population.	Assumed Natural Increase of the Population, from Births, per Cent., from 1831 to 1841.	Annual Proportion of Marriages to each 10,000 of the Population.	Proportion of Young Children alive under five Years of Age to each 10,000 of the Population.	Proportion of Persons alive above 50 Years of Age to each 10,000 of the Population.	Average Age of all who Die.
Westmoreland.	9.2	206.9	285.6	7.9	60.3	1255	1629	Yrs. Mon. 38 0
Lancashire.	17.7	279.2	370.5	9.1	89.3	1382	1068	22 10

See Table in the Supplement to this Report, p. 104.

CAUSES OF DISEASE.

propensities, is much fostered by the low state of physical comforts, which leads to the use of stimulating drinks and to other methods of imparting false strength to a reduced system. These act with the greatest intensity on the inhabitants of those places, where filth and the absence of facilities for its removal depress the energies, and engender disease and death.

In addition to other causes of disease generally prevalent among the poorer classes of large towns, the almost universal scarcity of supplies of water for domestic use has been urged upon our attention as contributing in a very great degree to increase the evils under which they labour. It is difficult to estimate with any accuracy the influence produced on the health of the poor from this serious defect; but all those evils which have their origin in want of cleanliness must be greatly aggravated by this cause. The great moral results consequent upon an increase in the means of cleanliness have not yet, we fear, received the attention which their importance merits; the domestic comfort of a poor man's abode, and his own self-respect, are mainly dependent upon this. We are convinced that their neglected condition is by no means the result of choice, although it may be the result of habit, produced by an unfortunate necessity. We shall have occasion, in a subsequent part of the Report, to cite proofs of the ready appreciation by the poor of this great benefit, and of the improvement among them consequent upon the introduction of a better supply of water.

It is not only for the more common description of household cleanliness that a better supply of water is required; its scarcity has hitherto prevented its use for many purposes, to which it can be most conveniently and economically applied.

In houses of the wealthier classes, water has long been introduced for the removal of the most offensive description of refuse; and we have no doubt that as the means are gradually afforded, the opportunity of relieving the scavengers of this duty will be gladly embraced. We shall subsequently shew that it is the cheapest, and we may add, the most efficient method.

Our attention has been particularly directed to the prevalence of a very injurious practice of administering opiates to young children, calculated to increase the effect of physical causes of disease already pressing with great severity on the infantile part of the population. The habit thus introduced has become to an alarming degree prevalent, especially in the manufacturing counties, although it also occurs to a considerable extent in rural districts, and is not confined to infants suffering from disease, but is also extended to those in a state of health, in order to ensure their more easy management, when the mothers are absent from home. The administration of these drugs is not confined to unlicensed practitioners alone, it is but too generally adopted by the parents themselves, and by those persons under whose care infants are left during the hours when the mothers are engaged in their daily avocations. To the Report on the Large Towns in Lancashire, there is appended the evidence of druggists on this point, showing clearly that the effects produced by the habitual use of such stimulants are well known, both to the vendors and to the parents, who administer them to their children. Physicians and surgeons in extensive practice in the manufacturing districts, give it as their decided opinion that this terrible practice is productive of much disease and death, and that the constitutions of those, who survive the effects of the narcotics are, in many cases, ruined, and that the mental capabilities of such persons are materially impaired. As soon as the physical causes producing irritation and constitutional disturbance, or disease, are removed, one of the great inducements to the use of these opiates will be diminished, and the moral evils lessened which now tend to the extension of the practice. Although an inquiry into this subject may not be considered to be strictly within the terms of our Commission, we feel that we should be remiss in our duty if we did not draw particular attention to the facts¹ that have been laid before us proving the existence of this very serious evil.

The considerations which we have adduced show that the absence of sanitary regulations in the various cities and towns in this kingdom, render it necessary that measures more decided and effectual than those now in force should be adopted to improve and preserve the health of your Majesty's subjects.

A laudable desire to effect the improvements in structural arrangements necessary to produce this end, has been shown in local Acts which have been passed for this purpose. These Acts appear, however, to have been framed without due knowledge of the evils existing, or of the means necessary for their removal, and

General deficiency in the supplies of water.

The practice of administering opiates to infants.

¹ Report on Preston, App. First Report, p. 46; Report on Ashton-under Lyne, App. First Report, p. 77; Report on Large Towns in Lancashire, App. Second Report.

REMEDIAL
MEASURES.

they are in general extremely defective, and in many instances are even inadequate to effect the purposes contemplated in their provisions.

Remedial measures

Having stated the causes, to which our investigations into the condition of the inhabitants of Large Towns and Populous Districts have led us to ascribe much of the prevalent disease and mortality, we proceed, in obedience to the instructions contained in Your Majesty's Commission, to offer recommendations for the amendment of the laws at present in force relating to the sanatory condition of your Majesty's subjects.

This part of our duty has been one of great difficulty, and has imposed great responsibility. Duly sensible of this we have exercised the greatest caution, and the most anxious attention, which the magnitude of the subject, the importance of the provisions, and the intricacy of some of the details, have demanded from us.

Before we could arrive at any satisfactory conclusion as to the amendment requisite in the existing laws relating to the public health, we found it necessary to institute an examination into the general provisions of the numerous local Acts now in operation.¹ The absence of any general law containing such provisions as are essentially necessary for the maintenance of the public health in large towns and populous districts, and the want of uniformity in the legal principles generally embodied in local Acts, has greatly extended this branch of our inquiry. The local Acts having generally been obtained at the instance of persons, who possessed, in common with others, but limited information on the subject, besides their legal defects, do not contain those provisions for the execution and adaptation of different works, which this and former inquiries have shown to be essential for the successful application and combination of sanatory improvements.

The connection of the house and main drains, and the dependence on a good supply of water for their efficient action, appear to be necessary parts of an efficient measure, and involve with many details, an inquiry into the general system of supplying water, and of combining it with the other duties usually entrusted to Commissioners under local Acts.

We have given due weight to the consideration that it must be a work of time to complete the extensive amelioration of the population of large towns, which the neglect of former years requires. Continued attention to this subject will rapidly induce further improvements in the structural arrangement of dwellings.

We now lay before your Majesty a short outline of the measures which appear to us to be necessary for this purpose; and then proceed more in detail to state our reasons and such observations as occur to us on each branch of the subject.

We are of opinion that, for the effectual correction of the evils above adverted to additional legislative measures are requisite.

It is necessary that the Crown should have power to inspect and supervise the execution of all general measures for the sanatory regulations of large towns and populous districts.

That the local authorities entrusted with the execution of such measures should be armed with additional powers, and that the districts placed under their jurisdiction should in many cases be enlarged, and made co-extensive with the natural areas for drainage.

We recommend that the necessary arrangement for drainage, paving, cleansing, and an ample supply of water (the most important matters conducive to health) should be placed under one administrative body.

We also urge the necessity of some general sanatory regulations relative to buildings and the width of streets, and that low lodging-houses should be placed under public inspection and control.

The mode in which we propose to carry out these objects is detailed in the Recommendations which are subsequently stated in this Report, with the reasons which have induced us to adopt them.

We have arranged the different branches of the subject in the following order:—

1. Drainage, including house and main drainage, and the drainage of any space not covered with houses, yet influencing the health of the inhabitants.
2. The paving of public streets, and courts and alleys.
3. Cleansing; comprising the removal of all refuse matter not carried off by drainage, and the removal of nuisances.

¹ Supplement to this Report, p. 106.

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4. A supply of water for public purposes and private use.
5. The construction and ventilation of buildings for promoting and securing the health of the inhabitants.

I.
Drainage.

I. Among the evils, which appear to operate with the greatest severity on the condition of all, and especially of the labouring classes, are those arising from the absence of a proper attention to drainage. They prevail almost universally, to an extent altogether incompatible with the maintenance of the public health; and even in those places where recent improvements have been effected, a desirable standard is far from having been attained, either in respect to the perfection of the necessary arrangements for drainage, or of economy in executing the works.

The want of efficient means for the immediate removal of all refuse and excessive moisture, is not only felt with regard to a large proportion of houses, but also prevails extensively in the streets and other public thoroughfares in towns, while the densest portions, which contain the poorest of the population, are in general altogether unprovided with underground drainage, particularly those parts which consist of courts and alleys, and other spaces not intersected by any leading thoroughfare.

The substance of the replies on this subject contained in the Appendix to our First Report,¹ showing the extent to which the towns visited are in want of legislative provisions for drainage, or in which such provisions are defective or inefficiently carried into execution, is equally applicable to other towns and populous districts.

In our investigations into the laws relating to drainage, we find that under the existing laws of sewers the Crown is invested with authority to determine the areas of jurisdictions for drainage, as well as to constitute the authorities who shall have power to act for the public protection within them. That no previous surveys or other means have hitherto been provided for the proper definition of drainage boundaries previously to the grant of local authority, by Commissions or under local Acts, may perhaps be accounted for from the attention of the Legislature not having been hitherto sufficiently directed to that part of the subject; and that, in the case of the earlier exercise of the authority of the Crown, the first applications for its intervention having been made probably with a view to the removal of surface waters of an extent visible to the eye, or the prevention of excessive floods.

It is, however, apparent on a review of the course of legislation on this subject, that most serious attention was given to works of drainage from the earliest periods of our constitutional history. The earliest fundamental provisions have been based upon the footing that such works, as well as measures for the maintenance of the free flow of running waters, were of general public and national, rather than of exclusively local, consideration. It is held, by the first legal authorities, to be one of the prerogatives of the Crown to issue commissions for the protection of the population, by the enforcement of proper works of drainage, and this prerogative appears to have been exercised by the issue of special commissions, as well after as before the passing of statutory provisions on the subject. The intervention of the Crown was often urgently sought for the public protection against the injurious encroachments of private interests upon the great public watercourses for mill power or for fishing-weirs. The xvth chapter of Magna Charta is a defence of the public rights against the growth of such encroachments. The fourth statute of the 25 Edw. III. c. 4, provides for the putting down of mills, weirs, dams, and other obstructions, and commissions appear to have been issued from time to time to see to the execution of the laws provided thereon.

The laws and customs of Romney Marsh appear to have been established at a very early period, as the principles, upon which all proceedings under these Commissions should be conducted. In these laws it is recited, that they were settled by a learned judge, Henry of Bathe, under a special commission from the Crown, in the reign of Henry III.

"By counsel of our Lord the King, it was provided, that there might be sent the justices of our Lord the King, to ordaine and depose that which should be meete to appease those strifes;" "so that Henry de Bathe was sent thither, and all the tenants of the said Marsh had summons of forty days," &c., &c.; "the said Henry having seene the walls and watercourses aforesaid, &c., "and the said

¹ First Report, App. p. 6.

State of the general laws relating to Drainage.

Early proceedings for issuing Commissions of inquiry and survey preparatory to the execution of measures of drainage.

Summary of measures recommended.

General division of the subject.

DRAINAGE.

Commissions of
Sewers.

Henry going in person to these parts ordained, &c." The tenor of other commissions, runs "*Assignavimus vos ad supervidendum wallias et fossata, etc., et ad inquirendum per quorum defecta hujus damnum contigit ibidem.*"

In illustration of the earlier commissions issued under the Crown, which were not confined to works of drainage only, or to a judicial intervention, but were extended to the formation of new roads, and the maintenance of old ones,¹ and other public works, we have found a Commission of the third year of Henry IV., for providing the means of conveying pure water to the inhabitants of Kingston-upon-Hull, as well as for draining that town, and removing impure sea or marsh water. The Commission recites, "that there appears to be need in those days of great charges and expenses for the protection of the same town against the force of the water aforesaid; and so, as well on account of charges and expenses of this kind there daily arising, to be sustained and supported, as that sweet water is not had, coming and flowing to that town, except only by boats, and at that sumptuous cost; whereby the poor inhabitants of the town aforesaid, in large numbers every year, during the summer time, of necessity, on account of the scarcity and dearth of water of this kind, depart from the same town, and renounce and avoid it, to the injury of the town aforesaid, and in process of time to the final destruction of the same, unless a suitable and speedy remedy in this matter be speedily applied," &c. The Commissioners' return specifies the particular works needed for the relief of the town, by proper supplies of fresh water, and the removal of the marsh water, for the execution of which works so recommended after this local examination and report, due sanction is required.

The practice of issuing Commissions for previous local inquiry and survey appears to have been discontinued, on the passing of an Act in the 6th year of the reign of Henry VI. to regulate the issue of Commissions. The provisions of this statute were subsequently embodied in an Act passed in the 23rd year of the reign of Henry VIII.; this statute, with some minor modifications by the stat. 3 & 4 Wm. IV. cap. 22, is still the chief subsisting law in force. Previously to the statute of Henry VIII., the Commissioners of Sewers were named direct by the Crown. By this statute, it was provided that they should be named by the Lord Chancellor, the two Chief Justices, and the Lord Treasurer. The Commissioners so named are to sit as a Court of Record, and in the execution of their duty they may proceed by jury, or upon their own view, and may take order for removal of any annoyances or nuisances, or for the safeguard and conservation of sewers, within their area of jurisdiction, as set forth in the Commission, at their discretion, according to the laws and customs of Romney Marsh as above recited. This statute, (under which a large portion of the Metropolis, and many rural districts—we believe, about 80 in number, comprising

¹ E. g.: Patent 51 Edw. III. m. 41. "Edwardus Dei gratia Rex Angliæ et Franciæ et dominus Hiberniæ, dilectis sibi Johanni Herlyngton, Radulpho Gamel, Willielmo Pechel, Waltero Pigge, Hugoni Feukson et Willielmo... de Yakesle salutem. Sciatis quod concessimus vobis in auxilium dictæ villæ et viarum eidem adjacentium paviandæ, quod a die confectionis præsentium usque ad finem trium annorum proximo sequentium plenarie completorum capiatis in dicta villa consuetudines subscriptas, videlicet, &c. Et ideo vobis mandamus quod prædictas consuetudines usque ad finem termini prædicti capiatis sicut prædictum est, completo autem termino dictorum trium annorum dictæ consuetudines penitus cassentur et deleantur."—Inquisition ad quod damnum, 12 Edw. II. Writ to inquire whether the causeway and bridges in the way called Longford, between Blecheleye and Newport, in the county of Salop, are so broken as to be dangerous, and if any certain persons are bound to repair them, and if they be not, whether it will be to the prejudice of the king or others, if he grant a frontage for the repair.—Patent Roll, 10 Edw. III., p. 1. Appointment of commissioners to survey the state of the walls, ditches, sewers, bridges, &c. on the sea coast in Leveryngam, Nenton, and Wysebech in co. Camb. (except the field called Rummere), and to inquire by whose default they have become ruinous, and to distrain persons holding lands, tenements, fisheries, &c., there to repair them.—Inq. ad quod. dam., 34 Edw. III. Writ to Henry Peverell, custos of Southampton, ordering him to inquire concerning defects, &c. in the walls of the town, and concerning porches and gardens made on the walls.—All goreses, mills, wears, stanks, stakes, and kiddels set up in great rivers, in the time of Edward I., and after, shall be pulled down, and sheriff shall do execution. (25 Edw. III.)—Agnes de Dunlegh prays the king to cause certain walls to be repaired, to restrain the overflow of the Thames, which he was bound to do in virtue of a purchase made by him of messuages, &c., in a place called La Rofere contre La Tour, in Southwark, (4 Edw. III.)—Petition for constraining the mayor, &c., of Cambridge, to cause the town ditch, &c., to be cleansed. (52 Hen. III.)—A confirmation of the statutes of levying and straitening wears, mills, stanks, stakes, kiddels, &c. (1 Hen. V.)—A general commission of sewers proposed and enacted. (2 Hen. VI.)—Dimes, &c., respite for two years to the inhabitants of Malberthorpe, co. Linc., on account of their charges to defend themselves from being inundated by the sea. (9 Hen. VI.)—Abbess of Denys, and the master of the hospital of Strode, prayed to answer for neglecting to embank their land near Rochester Bridge. (11 & 12 Hen. VI.)—From Collections of Records and Precedents, by T. Duffus Hardy, Esq.

Statute 23 Hen.
VIII. c. 5.

Sec. 1.

large tracts of country, are now drained,) recites "the great damages and losses which have happened by the influx of waters upon marsh grounds and other low places, heretofore through politic wisdom won and made profitable, for the great commonwealth of this realm, as also by occasion of land, waters, and other outiagious springs, in and upon meadows, pastures, and other low grounds adjoining to rivers, floods, and other watercourses; and over that, by and through mills, mill-drains, weirs, fish-garths, kedels, gores, gotes, floodgates, locks, and other impediments in and upon the same rivers and other watercourses, to the inestimable damages of the commonwealth of this realm, which daily is likely more and more to increase, unless speedy redress and remedy be in this behalf shortly provided."

It enacts, "that Commissioners of Sewers and other the premises shall be directed in all parts within this realm from time to time—

"Where and when need shall require, to such substantial and indifferent, *i. e.* impartial, persons as shall be named by the Lord Chancellor and Lord Treasurer of England, and the two Chief Justices for the time being, or by three of them, whereof the Lord Chancellor to be one.

In respect to the qualification of the Commissioners, it provides that no person shall be allowed to sit—

"Not having lands and tenements, or other hereditaments, in fee-simple, fee-tail, or for term of life, to the clear yearly value of forty marks, above all charges, to his own use, except he be—

"Resident, and free of any city, borough, or town corporate, and have moveable substance of the clear value of one hundred pounds; or else—

"Be learned in the laws of this realm in and concerning the same, that is to say, admitted in one of the four principal inns of court for an utter barister"

The Crown may confer on them powers of making "laws, acts, decrees, and ordinances;" these "laws, ordinances, and decrees to be made and ordained by the said Commissioners, or any six of them, by the authority of the said commission, shall bind as well the lands, tenements, and hereditaments of the King our Sovereign Lord, as all and every other person and persons, and their heirs for such their interest, as they shall fortune to have or may have in any lands, tenements, or hereditaments, or other casual profit or advantage, or commodity whatsoever they be," &c.

They are specially directed in their instructions to proceed as follows:

"By such ways and means, and in such manner and form as to you, or six of you, whereof the said A, B, and C, to be three, shall seem most convenient to be ordained and done for redress and reformation to be had in the premises; and also to reform, repair and amend the said walls, ditches, banks, gutters, sewers, gores, calcies, bridges, streams, and other the premises, in all places needful; and the same, as often, and where need shall be, to make new, and to cleanse, and purge the trenches, sewers and ditches, in all places necessary; and further to reform, amend, prostrate, and overthrow all such mills, streams, ponds, locks, fishgarths, hebbing-wears, and other impediments, and annoyances aforesaid, as shall be found, by inquisition or by your surveying and discretions, to be excessive or hurtful; and also to depute and assign, diligent, faithful, and true keepers, bailiffs, surveyors, collectors, expeditors, and other ministers and officers, for the safety, conservation, separation, reformation, and making of the premises."

Under the terms of the existing statutory provisions in respect to the levy of charges they are armed with most extensive powers.

If any person assessed, or taxed to any lot or charge, upon any lands, tenements or hereditaments, or copyhold, or customary lands, within the limits of any Commission of Sewers, do not pay the said lot or charge, according to the ordinance and assignment of the said Commissioners, and if, by reason thereof, it happen the Commissioners lack payment of such lot and charge, the Commissioners may, for the purpose of obtaining payment of such lot or charge, decree and ordain the same lands, tenements, and hereditaments, and copyhold or customary lands, from the owner or owners thereof, and their heirs respectively, to any person or persons for term of years, term of life in fee simple, or in tail, or in case of such copyhold or customary lands, for such estate and interest therein as the owners thereof, or any claiming in remainder under them, had in such copyhold or customary lands at the time of the decree being made, such decree and ordinance shall bind every person, who, at the time of the making of such decree, had any interest in such lands, tenements, and hereditaments, or copyhold, or customary lands, in use, possession, reversion, or remainder, their heirs and feoffees, and every of them. The statute provides that the Commissioners may otherwise punish the debtors and detainers of

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Statute 23 Hen.
VIII. c. 5.
Sec. 2.Qualification of
Commissioners of
Sewers.
Sec. 10.Powers to execute
works.Powers to levy
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any collection, tax, or assess, by fines, amerciaments, pains or other like means, after the good discretions of the Commissioners.

It is further provided, that the Crown may at its pleasure, by writ of *supersedeas*, at any time discharge "as well every such Commission as every Commissioner that shall be made or named by authority of this Act; after which discharge the said Commissioner shall have no power or authority to proceed in the execution of the Commission, nor in any thing by authority of this Act."

The prominent defect of the statute of sewers appears to be the departure from some of the earlier precedents of a previous local examination, survey, and plan of works by responsible officers, previous to the grant of authority for their execution; and the omission of practicable securities to owners or occupiers, or of an available appeal against the Commissioners' negligence, inefficiency, or waste, in respect to the works executed. The supervision and control of the superior courts of law has chiefly been directed to remedy defects in the technical procedure under Commissions. Had the principle of the previous determination of works, as well as of boundary, by a local examination, been carried out by any competent agency as a preliminary to the grant of any local Act, it is scarcely possible that such extensive evils as are described in the evidence we have received, could have arisen.¹ We have not found one provincial town in which any Commissions are now in force. But in the Metropolis it has been necessary, in the majority of cases, to have in addition, a special local Act to meet local contingencies.

General Turnpike Act, 3 Geo. 4, cap. 126.
General Highway Act, 5 and 6 Wm. 4, cap. 50.

The other general laws, which contain any provisions capable of application to the drainage of towns, are the general Turnpike and general Highway Acts. Clause 115 of the former Act contemplates the use of road drains for the drainage of the adjacent houses, and empowers justices, on the application of the trustees of any turnpike roads, to apportion the expense of their maintenance between the turnpike trust and the inhabitants using the drains. But this provision does not appear to have been adopted in any populous town or district; its operation being necessarily limited to those parts under the superintendence of turnpike trustees—usually the principal streets only, the drainage of the bye-streets and lanes is executed under the powers of the Highway Act. This Act is in force in many places of considerable population, and generally affords the only means for the drainage of the suburbs of the largest towns. It will therefore be necessary to state shortly the provisions contained in it, and to point out their inadequacy for the purposes of drainage, for which the provisions of this Act are frequently applied.

Sec. 6. The powers and authorities for the execution of it are entrusted to the parish vestry. By the sixth section, the vestry is required to elect annually one or more persons as surveyors, who must be qualified by estate, and are liable to a penalty of 20*l.* if they refuse to serve the office, unless they provide a sufficient substitute. Sec. 9. The vestry are also empowered to appoint annually a surveyor, with a salary: he is required to be a person of skill and experience.

Sec. 18. In parishes containing a population of 5000 persons, the vestry are authorized to elect annually not less than 5, or more than 20 householders to serve the office of surveyors, to form a Board for the repair of the highways, in whom all the powers granted to the vestry are transferred. They also have authority to appoint and pay an assistant-surveyor of "skill and experience," and other officers, and are required to present their accounts to the vestry annually.

Sec. 13. The Act also contains a power for the union of parishes into districts, and the appointment of a district surveyor under the authority of the magistrates of the division, but although the adoption of this power would afford the opportunity of obtaining the services of a better class of officers, by remunerating them at salaries worthy the acceptance of skilled and experienced men, we do not find that such districts have anywhere been formed.

Sec. 67. The 67th section relates to drainage, and empowers the surveyor to make and cleanse the necessary ditches, gutters, drains, and water-courses, and carry them into and through the adjoining lands, upon paying compensation to the owner. The next clause forbids the owners of the land from altering or obstructing such drains.

Defective powers for drainage of towns.

Although the powers for drainage contained in this Act were evidently intended only to provide the means of carrying off the surface-water from the streets and roads, yet the drains made under its provisions are frequently used for, and afford

¹ See p. 71, regarding the mode of arranging the boundaries of the Holborn and Finsbury districts in London.

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the only means of conveying away the refuse from the houses in many large towns, and still more frequently in suburban districts. The use of these drains for a purpose for which they were not originally intended, and are not constructed, is the cause of serious annoyance, felt in all parts of the town through which they pass.¹

Other of the provisions are defective, from the absence of a power to compel the surveyors to perform their duty. Under the provisions of a former Act, ^{54 Geo. III. cap. 109.} now repealed, the surveyors of the highways had power to require and compel the occupiers of the land adjoining to scour and cleanse the main sewers and drains, or to pay the expense of it. The General Highway Act now in force contains no such provision; it only empowers surveyors to scour, cleanse, and keep open all ditches, gutters, drains, or water-courses, adjoining or lying near to any highways, but it is not compulsory on them to do so. Hence, in many instances, the surveyors neglect this most important work, and in some cases, even when called upon to remedy the evil, they take no steps to remedy it. The magistrates have no jurisdiction under the Highway Act to compel them to remove the nuisance. The effects of such neglect are obvious, and clearly shown; the exhalations and offensive effluvia arising from the non-cleansing of such drains, producing fevers and other diseases, add to the miseries of the poorer inhabitants, and to the expenses, both of the parish and of individuals.²

The annual election of the executive officers greatly increases the difficulty of carrying out any systematic plan for drainage. All the surveyors and other officers retire from office at the end of each year; and, although re-eligible, are liable to be superseded by an entirely new set of officers, who, unacquainted with their duties, and the objects contemplated by their predecessors, may suspend improvements in progress, prevent the execution of many, or originate others in like manner to be superseded. This has been found to operate most prejudicially, and necessarily deters the existing officers from commencing works, which, owing to the limited sums annually applicable to these objects, can only be carried to perfection by a close adherence to a well considered plan during a series of years.³

Inconvenience of annual elections of officers.

The most serious deficiencies in drainage are found to exist in those towns, which have advanced within a brief period from the condition of villages, chiefly the seats of the pottery and iron manufactures in Staffordshire, and the mining districts in South Wales, Monmouthshire, and the north of England.

General want of legislative provision for drainage.

As an example of this description of towns, Merthyr Tydvil, at present containing above 37,000 inhabitants, presents the most lamentable instance of the total absence of all drainage.⁴

The rapidly increasing suburbs of large towns which are without the municipal boundary, or to which the jurisdiction of a local Act does not extend, present similar examples of neglect, and strongly exhibit the necessity of the establishment of an efficient local authority for such purposes.

In the examination of those local Acts which have been transmitted to us from several towns, we find that most of those of early date do not contain any provisions whatever for the drainage either of streets or houses; such towns are in the condition of the class to which we have above adverted, and, if drained at all, are subject only to the inadequate provisions of the Highway Act. The objects provided for in these local Acts are generally the paving, lighting, cleansing, and frequently the watching, of the respective towns; and the Acts appear to have been framed more with reference to the means of traffic in the streets and the general convenience of the inhabitants, than with any regard to their health.

Limited objects of the earlier local Improvement Acts.

An instance of the extent to which these deficiencies of legislative powers prevail, even in towns which have long been the resort of the wealthy and luxurious classes, is presented in the city of Bath.⁵ We there find that—

"The Commissioners for the outpart of the parish of Walcot have power, under a local Act, to order the construction of new sewers and the alteration and reparation of old ones when they see occasion: their power extends over about a fourth or fifth of the city. There is no such power vested in any body for the remainder of the city."

In the city of Gloucester, although there are three Acts of Parliament in force for the local government of that city, none of them apply to the sewerage or drainage,⁶ which is in a most neglected state.

¹ Report on Frome, App. Second Report.

² Evidence of Mr. Dean, Q. 6096.

³ Communication from Board of Surveyors of Bradford, Yorkshire, App. Second Report.

⁴ Report on Merthyr Tydvil, App. Second Report.

⁵ Evidence of the Town Clerk, Report on Bath, App. Second Report.

⁶ Replies of Mayor and Committee of Inhabitants, App. Second Report.

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We have thus brought under notice some examples of the serious evils explained in our First Report, and refer, as further evidence, to the replies received from the towns visited, and the several Reports of the Commissioners,

Necessity for the amendment of the law.

Review of the operation of local Acts, and efficiency of their administration.

Constitution of the existing local authorities.

Municipal Corporation Act, 5 and 6 Wm. 4, cap. 76.

Leeds.
5 and 6 Vict. cap. 104.

Liverpool.
11 Geo. 4, cap. 15;
5 and 6 Vict. cap. 26.

21 Geo. 2, cap. 24;
28 Geo. 3, cap. 13;
5 and 6 Vict. cap. 106.
5 and 6 Vict. cap. 44.

Inefficient administration of duties partly due to uncertain tenure of office.

To remedy evils of such magnitude and so extensively prevalent, we are of opinion—THAT NEW LEGISLATIVE MEASURES, APPLICABLE TO ALL TOWNS AND POPULOUS DISTRICTS, ARE REQUIRED, FOR THE INTRODUCTION AND MAINTENANCE—NOT ONLY OF AN EFFICIENT AND ECONOMICAL SYSTEM OF HOUSE DRAINAGE AND SEWERAGE, PAVING AND CLEANSING, IN ALL TOWNS AND POPULOUS DISTRICTS, BUT ALSO FOR PROVIDING AMPLE SUPPLIES OF WATER FOR PUBLIC AND PRIVATE PURPOSES, AND FOR THE ADOPTION OF OTHER MEANS FOR PROMOTING AND SECURING THE HEALTH AND COMFORT OF THE INHABITANTS.

In considering the principles upon which a measure such as we have just recommended should be based, it will be convenient, first, to review the operation of the existing local Acts for drainage, and the efficiency of the local authorities entrusted with their administration.

The powers given by local Improvement Acts are usually vested in a body of Commissioners, either elected by the rated inhabitants, or appointed by name in the Act, with a power to nominate their successors. The latter mode of appointment more frequently obtains in the older Acts of Parliament, the principle of legislation of the present day has caused the introduction of a system of representation of the rate-payers, which has been inserted in most of the recent Acts, modified in various respects. It is most commonly provided that the election of one-third of the Commissioners shall take place every year.

By the 75th section of the Act for the regulation of Municipal Corporations, Commissioners acting under any local improvement Acts are empowered to transfer their powers to the municipal body. The instances that have been brought under our notice, in which this power has been exercised, are extremely rare. We believe that Manchester and Newcastle-under-Lyme present almost the only examples. The powers of the Improvement Act for Swansea, 49 Geo. III., were transferred by virtue of this provision, but another Act was passed in the last Session of Parliament, vesting powers in the Corporation jointly with 12 Commissioners, appointed for life.

In a few instances, as at Leeds, the local improvement Acts vest the powers in the town council.

At Liverpool we find a variety of authorities entrusted with the administration of the local Acts for that town. The powers of the Acts for paving and sewerage are placed under a mixed body composed of 9 members of the Corporation, and 15 Commissioners, one-third of whom are elected annually. The provisions of these Acts do not however extend to the duty of cleansing the streets—a duty which is almost invariably found in other towns under the direction of the same authority, as the paving and sewerage. This is here performed by the Corporation, and is managed by a committee of that body, who derive their authority from three local Acts. The superintendence of buildings and the control over the width and drainage of courts and alleys are under the direction of a committee of the town council, which the Act requires to be appointed for that purpose. It will thus be seen that the duty of draining the streets is severed from that of draining the courts and alleys, and placed under the management of distinct bodies. It is unnecessary to point out the extreme inconvenience of such an arrangement.

With the exception of the Metropolis, we have not met with any other instance in which the duties of the above description are placed under independent authorities with a concurrent jurisdiction within the same district, and possessing powers of a very different and somewhat inconsistent character.

We have already pointed out some of the evils found to arise in the operation of the Highway Act, by the uncertainty of the continuance in office of the surveyors and the other executive officers. In the course of the investigations in the country, notice was frequently called to similar evils, arising from the frequent changes of the authorities entrusted with the execution of the powers under local Acts.

The Commissioners acting under these laws, although generally continued in office for the space of three years, have scarcely time to become acquainted with their duties, or to acquire a knowledge of the localities most demanding attention, before they are liable to be removed and their places filled by newly-elected members, who have to go through the same course of instruction. It can scarcely be expected that any public works requiring much time for their completion, and to be executed upon a combined system, such only as will render drainage effectual, can be safely undertaken, while they are exposed to the risk of sudden interruption

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partly to local influence.

from a change in the constituent members of the body having control over them. In addition to these impediments, necessarily inherent in bodies thus constituted, the divisions of local parties, and the petty hostilities and jealousies too often in active operation in small communities, create obstacles to improvement, which can only be overcome by the exercise of some competent and superior authority, for the protection of the general interests of the public.

Even where the necessity for improvements has been admitted, and the expense of obtaining a plan has been incurred, local influences have sometimes created an opposition and prevented its execution. The instance of the town of Derby¹ presents a forcible example of the inability of the present local authorities to overcome such obstacles, if left to their own unaided and uncontrolled action.

We have received similar statements from the town of Leeds, for the drainage of which place an extensive and well-considered plan was laid down more than two years ago by a gentleman of great professional skill and experience,² but we are informed that no general or systematic proceedings have yet been taken in accordance with it.

The reports and information which we have received from other towns, convince us that similar influences are generally in operation.

It is undoubtedly true that in many places a great part of the evils complained of arise from the insufficiency of the powers given by law for their removal, but we are unwilling to believe that the imperfect mode, and in some cases the absolute neglect of putting into execution those powers that exist, would be allowed to continue, where efficient laws are in force, if the local authorities had a more precise knowledge of the nature and magnitude of the injuries consequent upon their neglect, and were capable of applying the necessary remedies, the execution of which is too frequently impeded by the apathy of those in authority, the contentions of local parties, or thwarted by the opposition of interested individuals. In all the local investigations carried on under this Commission, an increasing opinion of the very special nature of the works under consideration, and of the special provisions required for their execution, was manifested. In several towns where the present constituted authorities have fully and fairly entered into the consideration of the means of relief from the more pressing evils in question, they have concluded by avowing their conviction of the necessity of special and distinct administrative arrangements to provide for them.

These defects in the administration of the duties entrusted to the local authorities, appear to have suggested to many of the witnesses who have been examined before us, and to others from whom we have received much valuable information in the country, the necessity of a superior authority for supervising the execution of all local Acts relating to drainage, paving, cleansing, and other sanitary objects.³

The importance of such a superior authority is also established by the concurrent testimony of all the visiting commissioners, proving how inefficiently the provisions of these Acts are carried into execution by the local authorities even where they exercise the powers entrusted to them. These defects are attributed generally to their imperfect knowledge of science, with reference to structural improvements, to the absence of the means of comparing, in point of execution and economy, works executed in their own vicinity with those in other parts of the kingdom, and to the opposition of party, and the supposed interests and prejudices of individuals with which they have to contend.

We therefore recommend, that in all cases the local administrative body appointed for the purpose have the special charge and direction of all the works required for sanitary purposes, but that the Crown possess a general power of supervision.

First Recommendation.

II. The first and most important step in providing for the efficient and economical execution of any plan of drainage, is the preparation of an accurate general survey, upon a large scale, of the area which it is proposed to drain. This

II. The importance of surveys for purposes of drainage.

¹ Evidence of Mr. Roe, First Report, Q. 5990.

² Evidence of Captain Vetch, 5762, *et seq.* Report on Leeds, App. Second Report.

³ First Report, Cubitt, 257; Hosking, 454; Austin, 848, 6042; Worrell, 4227; Williams, 5850; Arnott, 3900; Smith, 1025; First Report, App. 174, Corbett; p. 194, Holme; Second Report, App. Birmingham—Letter from the Mayor of Birmingham, suggesting the advantage of a controlling power in certain cases; Derby; Merthyr Tydvil.

DRAINAGE.
Surveys.

view is supported by a large mass of valuable and important testimony, proving it to be the necessary preliminary to any such work.¹ The extent of country to be comprised within the jurisdiction of any local authority, should be the entire natural area for drainage.

At present no such plans or surveys are accessible to builders or others engaged in works requiring a knowledge of the level of the adjacent lands. Hence serious losses have been entailed on the public by the construction of sewers and drains at improper levels, and of a capacity insufficient for the probable wants of a future population; and houses have been placed in situations regardless of the means of drainage. Great loss and inconvenience from this cause have very generally occurred, and even very lately it has become necessary to enlarge and deepen some of the sewers recently put in.²

The prevailing want of information among the surveyors and other officers having the charge of the drainage of towns, regarding the levels of the sewers, and frequently even the entire ignorance of their existence, may be traced to the absence of any proper survey. At Bristol the first attempt to form a complete map of the sewers was commenced during the inquiry of the visiting Commissioners, and in the town of Preston it was a work of several weeks to open the streets in order to ascertain the lines and the depths of the sewers. In some large towns, as Wigan, Rochdale, and Bolton, there is not the slightest knowledge of the plans of the sewers.

We obtained the permission of the Commissioners of your Majesty's Woods and Forests to have a portion of the plan for the drainage of Windsor lithographed, to which we refer as a specimen of the scale, as to size, on which similar plans should be made. That plan was executed to accompany a report for the drainage of that town. The Commission has had the advantage of the evidence of Captain Vetch, in explanation of the value and importance of such plans laid down, as that is, with contour lines, or lines of equal altitude for the guidance of engineers and others in the execution of works of improvement.³

The benefit of an authorized survey has already been demonstrated in devising a plan for supplying the city of Paris with water.⁴

It is manifest that no works can be executed on a system and with a proper attention to scientific arrangement, unless they are based upon a general survey, comprehending such levels as above described.

Builders of all classes have borne evidence of the great value of such a survey.⁵ The importance and the necessity of such surveys for the efficient execution of the usual works of improvement in towns is not confined to drainage. It extends to building, laying out and levelling streets, and laying down gas and water-pipes. At present, such surveys as exist having been generally executed under the direction of independent sets of surveyors and workmen, it necessarily happens that a survey made for the one purpose is either inapplicable for another, within the same district, or that the private interests of parties limit the use of it to those at whose instance it was made.⁶

The partial surveys hitherto made for the above limited purposes having been executed by private persons not acting under any public authority, possessing no authenticity as to accuracy, have been serviceable only for temporary purposes, and no steps have been taken to record the levels. The engineers examined by us have represented the importance of securing a permanent record of these levels, by the insertion of bolt or bench marks having reference to some common datum in the chief public buildings and other convenient places in towns, and in this we fully concur.

¹ First Report, Evidence of Stevens, 2039; Cresy, 2090; Hawksley, 5494; Vetch, 5763; Dawson, 5790; Williams, 5801.

² Second Report, Evidence of Mr. Aspinall, Q. 99.

³ First Report, Evidence of Captain Vetch, Q. 5764. The following is his description of the advantage of contour lines upon a plan—"The ground plan of a town shows the exact dimensions and relative distances of spaces, but it gives no knowledge of their absolute heights above a fixed common point, or datum, or the relative heights between any two sites on the plan, but when the horizontal plan exhibits these contour lines drawn, say at every four feet, and marked 0. 4. 8. 12. 16 feet, we see at one glance all the places situated at their respective elevations above datum, and know their relative heights above each other." "An engineer can therefore see without any trial levels the undulations and descent of each street from one contour line to another, and he knows the amount of cutting and filling to reduce the street to a level or regular incline."

Of the assistance that they would afford to builders, he states,—"If new streets be laid out, the engineer will perceive at once from such a plan, the declivity and aspect of the building ground, and the best line of drainage adapted for them."

⁴ First Report, Evidence of Mylne, 5743.

⁵ First Report, Evidence of Little, 2908; Cresy, 2090; Long, 3620; App. p. 171, Corbett.

For laying gas and water pipes.

Want of authenticity in existing surveys.

DRAINAGE.
Surveys.

Such bench marks might be inserted at distances of not more than 100 yards, and if placed at the corners of streets and in other convenient situations for the ready reference of builders and others, would be available for many of the purposes of more complete surveys, and would materially lessen the inconvenience stated to arise from their absence. The construction of all public works might be regulated by them, and the repetition of the process of levelling in most instances be dispensed with. But to insert these marks sufficiently close together so that they should be serviceable to unscientific workmen, it would be necessary to place them on many private as well as public buildings. And in order to obtain the general confidence of the inhabitants in the correctness of the surveys and the levels thus permanently marked, the work should be conducted under the superintendence of some disinterested authority, independent of all local conflicting interests.

In those parts of the northern counties of England, where the Ordnance survey is still in progress, there appears to be an opportunity of obtaining surveys for sanitary purposes, executed by public officers under a system of control and checks, calculated to ensure a degree of accuracy, which it is very difficult to attain in any other manner, and which will acquire for this work a permanent authenticity and confidence. We are more anxious to recommend that the services of these officers should be made available for such purposes in those districts, where the surveys for the Ordnance map are not yet completed, as, we believe, that independently of their accuracy, the work could be executed by them at a comparatively trifling cost, provided the additions to the plans of towns, necessary for sanitary purposes, be made while the surveys for the Ordnance map are in progress.

As an example of the difference in the cost of surveys, lately made under the provisions of the Tithe Commutation Act, on which the levels are not shown, as contrasted with the cost of those executed by the Ordnance, we would cite the evidence given to us by Captain Dawson,¹ who has the superintendence of the maps in the Tithe Office. He has informed us that the cost of the tithe survey for the parish of West Hackney, which comprises some rural districts, was at the rate of 16s. 6d. an acre, and that for St. Clement's Danes parish, which is exclusively urban, was at the rate of 5l. 13s. per acre. By the favour of the Master-General of the Ordnance, we have been furnished with a Table, which we appended to our First Report,² showing the estimated cost of surveys executed under the direction of that Board. From this it appears that the cost of surveying such a parish as St. Clements Danes, and laying down contour lines, with the sewer, gas, and water pipes, would not amount to more than 8s. per acre, but that if such additions were made while a survey for the Ordnance map was in progress, the extra cost would be reduced to 1s. 4d. per acre, or to 6d. only, if the levels merely are taken and bench marks inserted; the scale in that instance would be 60 inches to the mile, but it appears that the extent of the scale would scarcely make any appreciable difference in the cost.³

We have given the above examples to illustrate the economy that may be effected in the construction of a survey, when one upon the most complete scale is required either for a town or populous district. In many places it will be sufficient for future reference, that the levels taken be rendered permanent by the insertion of bolt or bench marks in proper and convenient situations in the manner already mentioned.

The amount of surveying required for the extensive arrangements, that may be commenced simultaneously in different parts of the kingdom, must render a much larger force necessary than the present corps of Royal Engineers can supply, should plans for improved drainage be introduced to an extent, even far inferior to that which the urgency of the case demands. Whatever expedients may be adopted for procuring local assistance, in which there appears to be no difficulty, we entertain a strong conviction that such surveys should be conducted, and their accuracy tested, by some competent and independent person nominated for that purpose.

The facilities that we have shown to exist for obtaining complete surveys for drainage and other sanitary purposes, at a very small charge upon the inhabitants of the district, through the medium of the Ordnance department, where the surveys

Surveys under the Board of Ordnance.

¹ First Report, Evidence of Captain Dawson, 5789.

² App. First Report, p. 214.

³ This cost would vary in a trifling degree, according to the density of the dwellings, and population in a given area, but it has been calculated that for laying down the levels an outlay of from 30l. to 40l. would be enough for the average size of towns containing 20,000 persons, from 100l. to 120l. for towns of 60,000; and from 200l. to 250l. for those of 120,000 inhabitants.

DRAINAGE.
Surveys.

are in progress, will, we trust, induce the local authorities in those districts, to take the proper steps to procure them without further delay. It does not appear that, with the exception of the plans for Leeds and Derby, to which we have already alluded, any surveys for the purposes of drainage have been made at the instance of the local authorities in any towns or populous districts in England and Wales.

If the recommendation that we shall presently submit, should be carried out, and a survey be conducted under the direction of an authorised person, independent of local interests, it would afford an opportunity of obtaining a report upon the state of the town, showing its condition in all respects relating to sanatory subjects, and whether the existing defects may be attributed to the deficiencies in the provisions of the general or local law, or to the negligent execution of it.

The necessity of
special Improve-
ment Acts.

Although we have previously recommended the enactment of a general measure for drainage and other purposes of local improvement in towns, we anticipate that peculiar circumstances will arise where it may become necessary to apply to Parliament for a local Act. In such cases a report of the kind stated ought to be the preliminary step, and would be a valuable aid both to the promoters of the measure itself, and to the members of the legislature, when called upon to decide upon its merits.

Second
Recommendation.

We therefore recommend, that before the adoption of any general measure for drainage a plan and survey upon a proper scale, including all necessary details, be obtained, and submitted for approval to a competent authority.

III.
Evils arising from
limited jurisdiction
for drainage.

III. In the course of our investigations in the country, frequent instances have been brought under our notice of the difficulties arising to a complete system of drainage by the impediments that exist, whether natural or artificial, beyond the present limits of the jurisdiction of the local authority. No means are at present provided for the gradual enlargement of the jurisdiction simultaneously with the extension and the increasing wants of the newly-built districts of towns.

If an extended district be included within the local Act, persons must be taxed for objects, unnecessary among a rural population; if the limits are confined to the existing town, as we find to be generally the case, the increasing suburbs are left without any provision for their drainage or other measures, concerning their sanatory improvement and regulation.

Such wants cannot now be supplied, without the expensive and uncertain process of an application to Parliament for a local Act in each case. All the evils apparent in the older parts of the town are consequently created anew in the suburbs, to be repaired, at some future period, at a considerable increase of cost, and frequently at some sacrifice of property.

The first obvious circumstance commonly presented on the examination of a badly drained town, is, that the boundaries of the districts, under the jurisdiction of the authorities charged with the execution of the drainage are so unsuitably assigned, as to prevent any such works being carried out systematically and effectually. All such works, to be executed economically as well as efficiently, it need scarcely be stated, must comprehend the whole of the masses of houses and buildings in the natural area for drainage in which that town may happen to be seated, and to this must be added the command over the natural outlets. Either from the want of means, or other causes, for ascertaining and defining the proper natural limits of the jurisdiction for drainage, previously to constituting the authorities and investing them with the necessary powers, it has generally been found that the boundaries adopted, actually comprehend only a part of the natural and therefore proper drainage area, and that the suburbs of towns containing a large proportion of the population, are excluded from any jurisdiction or regular provision whatsoever.

Drainage districts
often comprehend
only parts of the
houses of populous
districts;
At Bath.

Thus it is shown on the examination of the drainage of Bath,¹ that the only authority having powers for the construction of new or the reparation of old sewers, was constituted by a local Act, authorizing the appointment of Commissioners, whose powers were restricted to the parish of Walcot, containing about one-fourth or one-fifth of the whole population. Many towns might be mentioned in which the houses of the suburban portions, and even in the town itself, have, as in this instance, never been brought within any jurisdiction whatever, and which

¹ Appendix, Second Report, Report on Bath.

depend for such imperfect drainage, as they possess, upon the casual creation and exercise of imperfect authority under the General Highway Act to drain highways, cleanse ditches, and open water-courses. Examples of this defect prevail to a most lamentable extent in the Metropolis and its suburbs.

The case of the large village, or rather the small town of Tottenham, which has a population of about 9,000 inhabitants, will serve as a comparatively simple example of another large class of cases, where an insufficiency in the area included in the jurisdiction for drainage operates as a barrier almost insuperable to the execution of effectual works by the most competent officers.¹

Liverpool is surrounded with undrained tracts of land, over which the suburbs, with new habitations for the working classes, are in the course of extension; and new houses are being built beside stagnant pools beyond the jurisdiction of the town drainage. The interior of the proper area of drainage comprising the town itself is split into two districts, and those districts are placed under divided and imperfect authorities, so clashing with each other as to render systematic drainage impracticable.²

Much of the proper drainage district, within which the town of Manchester is situated, consists principally of clay, wet and overrun with rushes, and of partially drained land. The interior of the area containing the town itself is subdivided into jurisdictions, partly municipal and partly parochial, utterly inconsistent with any natural limits for drainage. The officers acting within these limits are invested with imperfect powers, and have no authority whatever over the river, which flows through the town, and is dammed up, giving off emanations to which the fever prevalent amongst the population resident on its banks is attributed. The chairman of the Committee of Sewers in Manchester complained that the proper drainage and improvement of the worst district in that town, inhabited by the poorest population, is prevented by the want of authority over the dams thrown across the river Medlock, which, in consequence of these dams, at times overflows the lower districts.²

It was found that one source of the insalubrity of the town of Bradford, which is situated in a valley between two hills, was traced to the emanations arising from the natural watercourse running between the hills, now dammed up for mill-power, and made the receptacle for all the drainage of the houses. The escape of gas from this source was stated to be at times so considerable as to discolour silver in the habitations or workshops near its banks. Over this outfall there was no proper authority possessed or exercised for the public protection.³

The outfall of the surplus water of the drainage of Halifax was found to be similarly dammed up.³

The inspection of Leeds,³ showed (as had been previously stated by Captain Vetch, the engineer called in by the local authorities to examine and report on the means of improving the health of that town) that the river Aire, which would in its natural state have had a strong and regular current, had been dammed up in several places for mill power, and for the purposes of an important water communication. These dams thus act as a series of catch-pits for the sewage of a population of 120,000 persons. In this case, also, the authorities having control over the town drainage, even if they had been so constituted as to have been competent to execute or maintain systematic works, would have no jurisdiction or control over the natural outfalls; and, in consequence of this original want of jurisdiction and care, rights have apparently been acquired, which can now only be fairly redeemed, for the relief of the town, by purchase. It may be observed, however, as a favourable circumstance, that at the present time the increasing cheapness and convenience of substituting steam power would in many localities, greatly facilitate the resumption of important public rights, and the extension of proper drainage jurisdictions over natural outfalls.

At Lancaster⁴ the upper portion of the drainage area, was found to be under the control of the authorities who have charge of the Castle, and who were endeavouring to improve its salubrity by a better drainage. In this they were obstructed by the officers having charge of the lower portion of the area, who refused to permit the authorities, having charge of the upper portion, to use the sewers forming the proper outfalls.

DRAINAGE.
Limited jurisdic-
tion.

And rarely comprehend more than parts of the natural area for drainage on which the houses are situate.

At Liverpool.

At Manchester.

At Bradford.

At Halifax.

At Leeds.

Consequence of original defect of jurisdiction over the natural drainage area.

At Lancaster.

¹ Evidence of Mr. Dean, First Report, Q. 6096, *et seq.*
² Report on Towns in Lancashire, App., Second Report.
³ Report on Towns in Yorkshire, App., Second Report.
⁴ Report on Lancaster, App., Second Report.

DRAINAGE.
At Nottingham.

The artificial drainage area under the care of the authorities having charge of the drainage of the town of Nottingham,¹ comprehends only a portion of the natural and proper area. One part of that area is above the site of the houses of the town, within the municipal jurisdiction, and another part comprehending the outfalls of the drainage of the uplands, and of the town itself, is beneath it, and partly without the municipal jurisdiction. This subdivision of the natural area is found to be attended, as it has been almost everywhere, by the creation of rival and clashing interests, and with mutual and general injury to the inhabitants, and to the houses and land within the natural area, or contiguous to it.

At Norwich.

At Norwich¹ a part only of the natural drainage area is held by the commissioners having charge of the drainage of the town. In the upper portions of the town there are stagnant pools of water, for which relief by the natural outfall, through the municipal jurisdiction, was refused by the city commissioners, the sewers for that portion of the area being ill constructed, on rude conceptions of what was deemed sufficient for that portion only of the district. It was considered by the commissioners that these sewers were insufficient for the reception of the additional upland drainage; and yet no alterations were proposed for the relief of the inhabitants of the upper portion of the area, it not being understood, or apparently not considered, that a lower district benefits by the increased rapidity in the force of the flush, for cleansing purposes, by all ordinary additions of upland waters.

At Leicester.

At Leicester¹ the natural water-course of the town is obstructed, dammed up, and converted into a sluggish receptacle of a large proportion of the sewage from the town, and in a great measure formed into a barrier to the effectual drainage of the low and flat site on which the chief part of the town is built.

At Coventry.

At Coventry¹ the drainage of the natural area is similarly obstructed by mill-dams within the city, and the effluvia from them have formed the subject of loud and just complaint for many years past, but no proper authority or available remedy is apparently provided.

Extended areas
requisite for the
outfalls, for the
removal and appli-
cation of the refuse
of towns.

In this class of cases the pernicious effects arising from the miasma generated in such stagnant waters would doubtless be much diminished by the conveyance to a distance and the application of the liquid manure, which is thrown into them and wasted; but, in the instances of surveys which have been made for the purpose, and have contained suggestions for the profitable disposal of the drainage water,² it has been ascertained that the outfalls for its conveyance in the most convenient direction for useful application, or probable demand, would generally be found to be even beyond the limits of any existing area of local jurisdiction.

In submitting these examples in illustration of the evils arising from the limited jurisdiction now granted to the local authorities entrusted with the charge of the drainage of towns, we do not undervalue the importance of several measures of immediate relief, in mitigation of existing evils, which may generally be taken within existing drainage districts, however imperfect. It will, however, be perceived that it is essential to the proper execution of all effective works of drainage, as well as of those for cleansing (as we shall afterwards show), and of the works for the supply of water, and of those connected with or dependent on drainage, that they should be laid down and connected with reference to well-defined natural boundaries, and that the system of sewerage must be based upon well arranged main lines.

Cases will arise when it will be necessary for the effectual drainage of a town to convey the sewers through private lands to a distant point of discharge, but it may not be just to charge the whole or any portion of the expenses on such lands; the powers required in such cases would be the same that are now granted by Parliament in most local improvement Acts, enabling the Commissioners to carry drains through private lands on paying compensation.

For the protection, however, of such interests, we contemplate, that, in each case, the necessity for an extension of jurisdiction, should become the object of a special inquiry made on the spot, under the direction of some competent and independent officer, not unduly influenced by local views or considerations. An inquiry conducted by an officer acting under the Crown, would be a means of providing a better security than even now exists, against a wanton and unnecessary invasion of private rights. The present mode of initiating and passing private Acts, and the expense that must be incurred by individuals, either in prosecuting

¹ Report on Nottingham and other Towns, App., Second Report.

² Evidence of Captain Vetch, R.E., First Report, Q. 5771; Mr. Roe, Q. 5989.

their own claims or in opposing those of others before Parliament, would be materially diminished by the intervention of a competent authority, to procure a preparatory report on the measure, and inquire into the claims to compensation and the equitable distribution of charges.¹

DRAINAGE.

As a remedy for these evils and to render unnecessary the frequent applications to Parliament for additional powers, and extension of jurisdiction, we recommend that the Crown be empowered to define and to enlarge from time to time the area for drainage included within the jurisdiction of the local administrative body.

Third
Recommendation.

IV. In the present system of local government, the administrative duties of local improvement Acts are frequently placed under the immediate direction of persons, who are seldom qualified by any professional education for the direction of scientific works. They are therefore dependent upon the acquirements of their officers for the necessary skill in the planning, and efficient execution of the works.

IV.
On the qualifica-
tions of officers, and
the power of the
Crown over their
appointment.

Before such extensive works of drainage, as we have shown to be requisite for the cure of the existing evils, are carried into execution, it will be necessary to provide some security for the appointment of officers of higher qualifications, than have hitherto been required of persons entrusted with these duties.

In the course of our observations on the operations of the Highway Act, we have already pointed out some defects, arising from the surveyors under that Act being subject to an annual election, an uncertainty in the tenure of office, which most materially interferes with its efficient execution. By the provisions of this Act, the office of surveyor is made compulsory, and the person elected by the vestry is rendered liable to a penalty of 20*l.* for refusing to undertake it. No qualifications of knowledge or especial skill can be required under such circumstances. We apprehend, however, that in populous parishes, advantage is sometimes, though but rarely, taken of the clause enabling the vestry to appoint a person of "skill and experience" whose services they have power to remunerate with a salary. But he also is only an annual officer. It is scarcely possible to obtain the services of an efficient and skilful officer, unless he be secured against a capricious removal from his office, and the annual election to which the Surveyors of Highways are now subject, naturally deters men of competent ability from aspiring to it. The most efficient men, finding ready occupation elsewhere, reject such employments. They are necessarily undertaken by men little qualified for the duties, who possibly, having been unfortunate in some other business, are glad to obtain, by the support of a numerous body of friends, any description of employment.²

Causes of the inefficiency of the existing class of officers.

The local Acts are uniformly more deficient than the Highway Act in requiring any qualifications; they do not advert to the necessity of "skill and experience," and many of them even omit to allude to the office of surveyor.

The importance of ensuring due qualifications of skill and experience, and rendering the officers sufficiently independent, has been strongly urged upon us by persons, who have had great experience of the present mode of appointment, and the insufficiency of the works executed by the present class of officers. The evidence produced before us affords ample proof of the correctness of these views.³

The construction of such works, being commonly considered as incapable of improvement by the application of scientific principles, is frequently entrusted to the most incompetent and inefficient persons. These, again, are under the control and direction of bodies equally unskilled, and constantly changing. The works are consequently executed without any attention to economy, and without the slightest regard for the future wants of the districts. The needless expenditure of money thus caused is afterwards exhibited by the alterations and amendments rendered necessary. All local works of improvement should be planned, and their execution superintended, by a person having a competent knowledge of engineering. New subjects, connected most closely with the general health of the community, are now constantly attracting the attention of persons engaged in works of construction. The importance of the questions of ventilation and warming, having

¹ First Report, Evidence of Mr. Hawksley, Q. 5488, *et seq.*; Mr. Dean, Q. 6127, *et seq.*

² Sheffield, App., Second Report; evidence of Mr. Dean, First Report, Q. 6097.

³ First Report, Evidence of Mr. Biers, Q. 1340; Mr. Stevens, Q. 2051; Mr. Bratt, Q. 3734; Mr. Freeth, Q. 3844; Mr. Hickson, Q. 6150, *et seq.*

DRAINAGE.
Appointment of
officers.

been fully established by recent investigations, particularly demands the attention of the architect and engineer. The important duties, which may in future devolve upon the officers charged with the construction of works, and the large discretionary power that must be vested in them, will undoubtedly render it necessary to establish some mode of testing the competency, and qualifications of persons offering themselves, as candidates to fill such situations. Some assurance should be given to the public that the persons entrusted with these responsible duties are properly qualified.¹

By the Act for regulating buildings in the Metropolis, candidates for the office of district surveyor are required to undergo an examination, and their appointments are subject to the approval of the Secretary of State. These appear to be principles that may be beneficially extended.

The duties are, however, all of a kind which calls for the same acquirements of professional knowledge, and an acquaintance with them would be found combined in any person properly educated in these respects. One such officer may, therefore, easily superintend the execution of the several duties to be placed under the direction of the local administrative body. Among other important advantages of such an arrangement, it will afford the opportunity of obtaining the services of efficient and experienced officers, who, as they will be entrusted with numerous important duties, may be remunerated (at least, in many of the towns and districts) on a scale of such liberality, that they may be persons of considerable professional skill and acquirements, and may fairly be required to give their entire services to the public. We feel assured that their suggestions will be more readily acquiesced in if they are independent of private practice within the district under their charge.²

Office of Auditor.

We are desirous of stating our opinion that an auditor should in all cases be appointed, and that especial attention should be paid in deciding upon the qualifications for that office. It is essential, for the efficient execution of his duties in checking fraud or profuseness of expenditure, that he should be perfectly independent of the body, whose accounts he is appointed to control.

Fourth
Recommendation.

We, therefore, recommend that the local administrative body appoint the executive and other officers under it; that the appointment and dismissal of the chief surveyor be subject to approval; that such officer produce proof of his qualification for the office, to which he shall be appointed, and, if required, be subject to an examination.

V.
On the compulsory
powers of the
Crown.

V. Having stated our views of the necessity that the Crown should exercise a power of supervision and direction over the local administrative bodies, in the execution of the laws for sanitary improvements, in cases where they are willing to exercise such new powers as may be granted to them, we now bring forward the mode of proceeding, which we recommend to be adopted in towns or populous districts, where grievous evils are proved to exist, and where the present authorities or future administrative bodies delay, or refuse to take measures for their removal.

Obstructions to
improvements from
conflicting local
interests.

There may be cases in which the local bodies will continue inactive. The contentions of parties and the influences of local interests frequently impose a serious obstacle to the adoption of sanitary measures attempted and brought forward, by the administrative body, or by the intelligent and influential inhabitants. A large class of persons is constantly prepared to act in opposition to any scheme of improvement, from the unfounded fear that their interests will be affected. Such persons frequently obtain great influence in the decision of questions in relation to any alterations, calculated to effect improvement in the condition of the working classes.³

The instances of the delay, if not the indefinite postponement of the execution of the plans for drainage, to which we have already adverted, afford an illustration of such impediments.⁴ The objections, that prevailed in these instances, appear to have been founded upon the amount of the immediate outlay required for the

¹ First Report, Evidence of Mr. Butler Williams, Q. 5851; Mr. Hosking, Q. 436; Mr. Austin, Q. 907.

² First Report, Evidence of Mr. Cresy, Q. 2205.

³ First Report, Evidence of Mr. Hawksley, Q. 5480, 5481.

⁴ Derby and Leeds, p. 13.

improvements. Statements of a similar tendency have been forwarded to us from other towns.

There can be no doubt that a complete and effectual cure for the wide spread evils cannot be accomplished without a considerable outlay. We shall presently show how the immediate pressure of the burthens may be lightened. The neglect of former years has produced a necessity for an accumulation of new works, which should have been long since executed by the past generation. Continued delay will only increase the difficulty.

Captain Vetch,¹ in his report upon the drainage of Leeds, presents an example of the rapidly increasing difficulty and expense of carrying into effect any extended measure of drainage in large towns. In that instance he found the proper courses for the drainage of some of the lower portions of the town still open and unobstructed, but the increase of buildings, and the formation of new streets, were rapidly extending across some of the low grounds, so as to cut such courses off from their natural outlets.

In all towns the same difficulties must be daily increasing, and ought alone to operate as a sufficient inducement to active and immediate exertion. But in addition to these mere arguments of economy, we may urge the much higher motives of duty. In the commencement of this Report we have stated facts, proving the enormous loss of life, besides the injury to health sustained by the continuance of the various evils, which might, in many instances, be removed by the zealous exercise of the powers at present existing, or to be granted by any future law.²

We rely with confidence on these arguments to prove the necessity for speedy improvement, and we offer it as our opinion, that it is necessary that strong and effectual measures should be adopted to ensure amendment. We are further confirmed in this view by the numerous instances, to which we shall presently more particularly refer, of neglect on the part of the local authorities to exercise the powers vested in them for the benefit of the inhabitants of their respective districts.

Deeply impressed with the importance of this necessity, we have given our most anxious consideration to the means of ensuring the execution of measures for improving the physical condition of the labouring classes, when the local authorities, having power for such purposes, neglect to put them into operation.

No power at present exists rendering any body liable to punishment for the non-execution of duties involving measures for promoting or securing the public health. It is made the duty of inhabitants of parishes to repair the highways, and they are liable to an indictment for neglect, but this responsibility has not yet been extended to any measure for securing the public health. The causes of disease are now sufficiently traced to prove that the means of removal of some of them are within reach, and may be attained by the active exercise of the authority already given. On these grounds, we are of opinion, that the public welfare requires that the inhabitants should be made responsible for the execution of the duties imposed upon them by law, for sanitary objects, on the same principle as they are now liable, for the public benefit, to repair the highways.

The grievance to be cured is a heavy one, and presses with most severity on the poorer classes, who have no means within their reach of remedying the evils under which they labour. It therefore becomes the duty of those who have the immediate local charge of the district to use the powers that the legislature has granted to them; and in case they neglect this duty, those still higher in authority are bound to see that it is performed, and if necessary to call upon the legislature for aid.

The conclusive facts that have now been made public by this and former inquiries, showing that extensive evils prevalent in all large towns are capable of removal, should induce all persons in authority to exercise with vigour and effect whatever power now exists, or that the Legislature may grant; but we should be remiss in our duty, if we did not express our firm conviction, that the same system of inaction and negligence that has hitherto so extensively prevailed, will recur, unless such a power to enforce the execution of the law, as we now recommend, shall be established.

¹ Captain Vetch, Q. 5767.

² First Report, Mr. Holland's Report, Chorlton-on-Medlock, App., p. 64; Mr. Hawksley's Report on Nottingham, App., p. 138; Mortality in Leicester, App., p. 151. Second Report, App., Report on Towns in Lancashire.

DRAINAGE.

Increasing difficulties arising from delay.

Want of responsibility on the part of local authorities for not executing the provisions of local Acts.

DRAINAGE.

Fifth
Recommendation.

On these grounds we recommend that, upon representation being made by the municipal or other authority, or by a certain number of the inhabitants of any town or district, or part thereof, setting forth defects in the condition of such place, as to drainage, sewerage, paving, cleansing, or other sanatory matters, the Crown direct a competent person to inspect and report upon the state of the defects, and, if satisfied of the necessity, have power to enforce upon the local administrative body the due execution of the law.

VI.
Powers and duties
of the local authorities.

VI. Having brought under review some of the most serious defects in the state of the existing laws, and of their execution, and offered such recommendations as appear to us adapted for their amendment, and to ensure their efficient operation, we proceed to state the powers and duties, which we propose should be vested in the local administrative bodies, to be appointed for carrying into execution the suggested measures.

We have already explained the necessity for a general survey of the natural area for drainage, for giving a power to extend under certain restrictions the jurisdictions, and for enlarging the limits, from time to time, of any district that may be defined under the proposed amendment and extension of the law.

Under that branch of the subject we had occasion to cite several instances of inconvenience, which were brought to our notice, arising either from the limited extent of jurisdiction, or from conflicting authorities in adjoining districts. We confined our observations to a statement of the advantages that the engineer would obtain by the extension of the jurisdiction, enabling him to carry the sewers to a distant outlet, where the peculiarity of the ground, or other circumstances, require it, and to diminish the impurity of streams, now so frequently polluted by the increasing quantity of house drainage.

The towns visited present but few instances of more than one set of Commissioners appointed under a local Act with powers for drainage; Birmingham, Manchester, and Liverpool, and a few other towns form exceptions. The local Acts, however, rarely comprise the whole district covered with buildings, &c., commonly known as the town, and it constantly happens that portions of every town are under the inefficient provisions of the General Highway Act.

The replies from Birmingham¹ made by the Mayor and a Committee of Inhabitants show that "for lighting, paving, cleansing, &c., the borough is under the management of three distinct bodies of Commissioners having jurisdiction under several local Acts of Parliament, and four distinct Boards of Surveyors." In the parish of Edgbaston, described as a most important part of the borough, there is no local Act, and "the three hamlets, besides the Commissioners under the local Acts of Parliament, have each a Board of Surveyors under the Highway Act." It is also stated that "there is no co-operation or uniformity of proceedings as to paving, lighting, cleansing, &c., between the eight local authorities within the borough."

At Manchester the several townships within the borough are under distinct jurisdictions, but only four have local Acts.² The powers under some of these Acts have been transferred to the Town Council under the provisions of the Municipal Corporation Act, and although such districts are governed by one body, they are still under different local laws, while the other townships in the borough remain under the general law, although they stand equally in need of special legislative provision.

At Liverpool³ we find the following bodies:—Commissioners appointed for the general sewerage and paving of the town, and the townships of Everton and Kirkdale; a Committee of the Town Council, acting under the 5 and 6 Vict., cap. 44, appointed for the sewerage and paving of courts exclusively; and another set of Commissioners for the extra-parochial district of Toxteth Park,⁴ now a part of the

¹ Parish of Birmingham; hamlets of Deritend, Burdesley, Duddleston, and Nechells; App., Second Report.

² Manchester, 11 Geo. IV. cap. 47; Chorlton, 2 and 3 Will. IV. cap. 90; Ardwick, 6 Geo. IV. cap. 5; Hulme, 5 Geo. IV., cap. 95. The powers under the Acts for Chorlton and Ardwick have been transferred to the Town Council of Manchester.

³ 2 Geo. IV. cap. 15; 5 and 6 Vict. cap. 26; 6 and 7 Vict. cap. 75; for supplying water for fire and streets only.

⁴ 5 and 6 Vict. cap. 105; 5 and 6 Vict. cap. 104; 6 and 7 Vict. cap. 105.

Inconvenience of
conflicting jurisdictions—

At Birmingham.

At Manchester.

At Liverpool.

borough. These Acts do not include the duties of scavenging, of superintending the erection of buildings, or of providing a supply of water for protection from fire. These duties are executed by the Town Council under three different Acts of Parliament. The inconvenience of these separate jurisdictions seems to have been felt in regard to the drainage of different parts of the borough and parts adjacent, as we find a provision in the Toxteth Park Act to enable the Commissioners for the town of Liverpool, to permit the drainage from the Toxteth Park district to be brought into the sewers under their jurisdiction. The same inconvenience appears also to have been experienced in other parts of the town. In the Act passed in the year 1843, empowering the Commissioners of Sewers to obtain a supply of water, a clause is inserted, professedly with the object of giving facilities for the extension of drainage in the neighbourhood of the town, and beyond the jurisdiction of the town Commissioners. By this clause the Commissioners are empowered to permit the owners and occupiers of property beyond the limits of the town to bring their sewers and drains into the public sewers on payment of a reasonable charge.¹

The several Commissioners at Liverpool have thus endeavoured to aid the drainage of the adjacent districts, by the introduction of these permissive clauses, but those in the lower districts cannot control the amount of water that will be delivered into their sewers, or calculate the quantity for which they must provide; neither have those in the upper parts any power over the levels of the sewers. It is evident that no efficient system of drainage can be carried out, so long as such impediments from artificial boundaries, and conflicting jurisdictions are allowed to continue.

We have previously stated that the power given by the General Highway Act for the formation of parishes into districts for the purposes of the Act, is but rarely adopted. The necessity of enforcing the formation of districts, without regard to parochial or municipal boundaries, so as to comprise the natural area for drainage, has been strongly pressed upon our attention. Such an enlargement of the jurisdiction will at the same time afford the further advantage of remunerating officers, at such a rate as to command the services of persons of higher qualifications, whose whole time should be devoted to the superintendence of this and the other duties to be entrusted to them.

For these reasons we recommend, that the management of the drainage of the entire area, as defined for each district, be placed under the jurisdiction of one body.

VII. We have already adverted to the serious injury to health, caused by the filthy condition of streams passing through large towns, and we cited as an example, the statement of Mr. Binney, describing the state of the streams at Manchester. That gentleman has prepared a map, which is appended to his report,² showing how largely these evils are aggravated by the numerous weirs and dams, which have been erected from time to time for manufacturing purposes, and which by interrupting the natural course of the streams, form a series of ponds highly charged with most offensive matter. The injury thus caused to health, as well as the obstructions to the natural drainage, have been fully described in the report on Manchester, to which we refer for the account of the extensive physical evils thus produced.

¹ TABLE showing the want of Consolidation, and inconsistent powers, of the various authorities appointed under the Local Acts for Liverpool.—Report on Large Towns in Lancashire.

CORPORATION.			COMMISSIONERS OF SEWERS.		TWO WATER COMPANIES.	TOXTETH PARK COMMISSIONERS.
1 Health Committee.	2 Cleansing Committee.	3 Fire Committee.	4 Water Department.	5 Sewerage and Paving.	6	7
Does not include the management of cleansing or sewerage streets, but interferes with authority No. 5 in paving and sewerage courts, and extend for this purpose over the district of Toxteth Park. Does not possess the natural connexion between authorities 2, 5, 6.	Has no connexion with sewerage or with watering the streets, and therefore is ineffective by interfering with, and being interfered by, authorities 1, 4, 5, 6.	Possesses charge over fire police, and yet has no charge over the water, brought in at an immense expense, for the extinction of fire. Is dependent, therefore, upon 4, a distinct and independent authority.	Water brought in to the town for extinction of fire and watering the streets; interferes, therefore, with authorities 2 and 3, and, if applied to public fountains, with duties of 1.	Confined to streets alone, but not extended to courts, and is, therefore, interfered with by authority No. 1. Possesses compulsory powers with regard to main drainage, but not with house drainage.	Both in opposition, compelling, from their supposed inefficiency, the introduction of new water (4) for the extinction of fire; and, from the inadequacy of domestic supply, prevents the proper action of sewers, and hence interferes with authorities 1, 2, 3, 5, 7.	Causes the expense of separate management for various offices which might be comprised under one or more of the previous authorities, by an extension of the existing natural area.

² Manchester, App. Second Report.

DRAINAGE.
Conflicting jurisdictions.

Clauses in the General Highway Act for forming districts not made available.

Sixth
Recommendation.

VII. On the injury arising from mill-dams, and the necessity for the purchase of water rights.

Obstructions to drainage at Manchester.

DRAINAGE.
At Coventry.

The city of Coventry presents another forcible example of this evil, to which our attention has been earnestly directed by the mayor and town council.¹ It appears that as long ago as the year 1831 a report was made by an eminent engineer, on the obstructions and the nuisances created by the mill dams in that city. Evils of this character prevail in many places, and obstruction will occasionally arise to the execution of a measure for drainage, unless provision is made to empower the local authority to raise for the purchase of the rights in those instances where they produce injury.²

As the execution of such a power will generally involve the outlay of a considerable sum of money, we propose that it should not be exercised without the sanction of the Crown.

We do not, however, disregard the consideration, that in many cases where the jurisdiction is sufficiently extended, the best and most efficient method will be to alter the course of the main sewers, so as to be independent of the streams, and relieve them of the present causes of pollution. Thus the purchase of mill rights may, in many cases, be rendered unnecessary, and the contents of the sewers may, at the same time, be conveyed to a distance for profitable use as manure.

Seventh
Recommendation.

With this view, we recommend that the local administrative body be empowered to raise money for purchasing the rights of mill-owners and others, where the mill dams or other obstructions injuriously affect the drainage of the district comprised within the area defined; inquiry in each case having been previously made by the proper officer into the necessity of the purchase, and the amount to be paid.

VIII.
Condition of sub-
urban districts of
towns.

VIII. The evidence that we have received, and the reports of the Commissioners, who have visited the several towns, are uniform in their representations of the lamentable condition, in which the suburban districts, and sometimes even the more crowded parts of large towns are generally found from the presence of open pools, and ditches of stagnant water. Patches of land, which the gradual encroachments of buildings have rendered useless for the purposes of cultivation, frequently lie unoccupied, and become receptacles for refuse of the most offensive description. If the soil be of a retentive nature, the evil is increased by the formation of stagnant pools, which constantly load the air with an excess of moisture, rendered most noxious to health by the effluvia arising from the decomposing animal and vegetable matter thrown into them. The extent of these evils at Liverpool is described by Mr. Holme.³

The account of the condition of a part of the township of Pendleton, a suburb of Salford, affords an example of the facility, by no means unfrequent, with which such evils may be remedied by a better division of jurisdiction.⁴

The replies to the questions on this subject are almost, without exception, of the same character; sometimes the pools are described as merely stagnant water, not receiving any drainage into them; but more frequently they assume the form of open ditches, and receive the contents of the sewers and drains of the surrounding houses. Evils of this kind are as frequent in the vicinity of the Metropolis as in any other part of the country.

These evils frequently exist as extensively in places with, as in those without local Acts. The provisions contained in local Acts, enabling the Commissioners to make drains and sewers, rarely apply to ground not built upon, and frequently limit the powers to streets where a certain portion, generally one half, of the houses of the street is built.⁵

It appears to us, therefore, that it should be incumbent upon the local authorities, and that they should be empowered and be bound, to drain any unoccupied

¹ Coventry, App. Second Report.

² Evidence of Mr. Dean, First Report, Q. 6123.

³ Replies by Mr. Holme, First Report, App. p. 187.

⁴ Many streets are unpaved, and there are many pools and lodgments of refuse and stagnant water. Near the boundary of Salford and Pendleton there is just now, at least an acre of ground overflowed, rendering impassable a public footpath, and coming to the very walls of many inhabited houses. Nothing would be easier than to remedy this, were there any authority capable of interference; it exists in the immediate vicinity of a sewer belonging to the town of Salford, with a short and excellent fall to the river. This pool is also described as a nuisance of 30 years' standing, and as having been often presented at the Court Leet without any effect.—*Replies by a Committee of the Inhabitants of Pendleton.*

⁵ Replies by Boroughreeve and Committee of Inhabitants of Salford.

ground in towns, and to require the owner to enclose it, so as to prevent it from becoming a nuisance, and a source of injury and disease to the neighbourhood. We find that such a power has already been introduced into Acts for the improvement of the towns of Leeds¹ and Southampton.² A clause in the latter Act requires the owner of the property to make the drains, under a penalty of 40s.; but as we propose that all the other drainage should be executed by the local authorities, it seems to us to be desirable, that this also should be done under the same direction, although the owner, in such circumstances, should be charged with the expense.

We are led to believe that the previous proper drainage of ground, intended for the erection of buildings, would eventually tend much to the benefit of the builders, and, subsequently, of the occupiers, by rendering the foundations dry and sound, and capable of being laid in at less expense.

We cannot but view the operation of the clauses, limiting the powers under local Acts to streets where less than one half of the buildings are complete, as offering a serious impediment to the due extension of drains. By excluding the authority of the Commissioners until half of a street is completed, houses may be standing for several years without any communication with a public sewer, and in the mean time the occupiers are compelled to have recourse to very objectionable modes of drainage. Under such a provision, the drainage cannot be made to precede the buildings, which a due attention to economy, as well as to health requires. When at last the sewer is made, and the drains laid in at a subsequent period, the work is executed at a considerable increase of expense, and always to the inconvenience and discomfort of the inhabitants as well as interruption to the traffic of the streets.

Strong objections are thus raised to the insertion of drains, and the word "drainage" becomes synonymous with trouble, inconvenience, and expense; and after having suffered this inconvenience, and not unfrequently the loss of trade from stoppage of the traffic, the occupier is called upon to pay a considerable sum of money, a portion only of which perhaps he is entitled to recover from his landlord, who reaps the permanent benefit.

These provisions, excluding the jurisdiction of the local authority, until a large portion of the streets is completed, sometimes occur in other local Improvement Acts; but they are more frequently applied to the paving, than to the drainage of towns.

Even such imperfect legislative provisions do, however, afford an ultimate prospect of improvement in the condition of the streets. There exists an authority which has the power eventually to compel proper attention to their drainage, if at least that authority efficiently exercises its powers.

We must express our extreme regret that the powers given by such Acts have not been always vigorously exercised. In the town of Salford, for instance, the Commissioners have power, under the 83rd section of the Act, to require "the owners or occupiers to pave, flag, drain, sough, and put into good order the streets, ways, courts, passages, and places." Yet we find it stated in the replies³ returned to us, that "as to the existing powers being efficiently exercised, the reply in reference to the past, and as regards the objects for which those powers were granted, and looking to the state of the drainage in a great number of the old as well as the new streets, must be in the negative." They further proceed to state some of the difficulties that they have experienced, chiefly on the ground of the expense, to which subject we shall presently have occasion to recur. But we are at a loss to understand how such a difficulty could have prevented their more active proceeding during the first 11 years after the passing of the Act (11 Geo. IV. cap. 8), as we find by their own statement that, during that period, 47 streets only were sewered, measuring 8983 yards, being at the rate of 4¼ streets, or 816 yards per annum, while during the last year alone, with no enlargement of their powers or alteration of their Act, they sewered, previous to the month of September, 21 streets, measuring 2630 yards, and had made arrangements for proceeding with 39 streets in the following spring.

We have no return before us of the actual number of streets, which are thus brought under the jurisdiction of the Commissioners of Salford, as compared with the remaining streets, to enable us to show the extent of the evil in that town, but it appears that in Manchester, where the powers are equally stringent, there

DRAINAGE.
Condition of
Suburban Districts.

Effect of excluding
the power of Com-
missioners until
streets are formed.

Defective execution
of local Act at
Salford.

At Manchester.

¹ 5 and 6 Vic., cap. 104, s. 256.

² 7 and 8 Vic., cap. 75, s. 269.

³ Replies by a Committee of Inhabitants of Salford.

DRAINAGE.

Want of jurisdiction over streets not highways.

Condition of courts, alleys, and narrow streets, not thoroughfares.

Consequences of the exclusion of courts and alleys from the jurisdiction of the local authorities.

At Liverpool.

Defective provisions in the Health of the Town Act.

are no less than 450 streets in which repairs have not yet been commenced by the authority appointed for such duties, and those being, for the most part, small back streets, require the greatest attention to their cleansing and drainage.¹

Since the above return was made to us, another Act of Parliament has been obtained for the town of Manchester, by authority of which the Town Council is enabled to require any part of a street (defined to include courts) that has been set out for building to be properly drained, paved, &c.; but this Act applies only to the town of Manchester.

Deplorable as the neglect has been with regard to streets, it sinks into insignificance, when compared with the state, in which we have generally found the courts, and those places not commonly considered thoroughfares. The clauses in those local Acts which contain any powers for making sewers, generally authorize their formation "in streets, lanes, ways, passages, and places." These words are generally construed as not applying to courts which are not thoroughfares. Although the property is almost universally rated for the purposes of the Acts, they are held to be private property, and not to be entitled to partake in the benefits which accrue to other portions of the town, from the expenditure of the funds raised under the local Act.

Considering this construction, so universally put upon the law with regard to courts, we are not surprised that they are in so miserable a condition. Unfortunately, too, they must be the last places to benefit from any improvement in drainage. The main sewers must be constructed before the minor branches can be made to communicate with them, and where, as in many towns, there is an entire want of systematic sewerage, some time must elapse before it can be carried out in all its details.

In the number and the undrained condition of courts, Liverpool appears to have an unhappy pre-eminence, and to surpass all other towns, bad as many of them are in this respect. Mr. Holme² states "There are thousands of houses and hundreds of courts in this town without a single drain of any description."

The return³ made in the year 1841 to the Town Council of Liverpool, by their surveyors, shows that at that time there were 2398 courts, containing a population of 68,345 persons. In these courts, 1272 cellars were occupied by 6290 persons, and of the number of cellars occupied in streets, 2848 were described as damp, and 140 as wet. As these places were subject to no local regulations whatever, until the year 1842⁴, their present condition cannot be a matter of surprise.

We may also refer to the report of Dr. Duncan,⁵ who traces a large amount of the mortality in Liverpool to the state of these undrained courts.

Although it has been stated to us that considerable progress has been made of late years in Liverpool in the extent of main sewers laid down (more than 21 miles having been constructed since 1830, and about the same length being now projected), some time must elapse before the great arrear of works can be recovered, and the proper means afforded for the drainage of these courts. We should, however, look with greater satisfaction on the exertions, which we believe are now being made by the authorities at Liverpool, if we could see that they were more impressed with the necessity of affording the means of a speedy removal of all superfluous moisture, and offensive refuse from the vicinity of the houses, and had obtained more efficient powers in the Act⁶ lately passed for regulating the drainage of courts. In this respect the Act is seriously defective. It does not require the Health Committee to make, or empower them to compel the owners to make, any but surface drains. And we are informed that considerable numbers of houses are now in the course of erection in courts, which, as respects the evils arising from the want of main and underground drainage, will be liable to become as fruitful sources of disease, as the older buildings have proved. The intended salutary provisions in the Act, appear to us to be accompanied with defects, which are calculated to lessen the expected benefit. To some of them we shall have occasion to recur under another branch of the subject.

The legislative provisions, that have been specially extended to courts at Liver-

¹ Replies by Mr. Francis, Superintendent of Paving, &c.

² Replies by Mr. Holme, First Report, App. p. 186.

³ Report on Liverpool, App. Second Report.

⁴ Replies by Mr. Holme, First Report, App. p. 188.

⁵ Report on Liverpool by Dr. Duncan, First Report, App. p. 28.

⁶ 5 and 6 Vict. cap. 44.

DRAINAGE.

Want of jurisdiction over courts and alleys.

Modern provisions for compelling the construction of house and main drainage.

Importance of placing the house and main drainage under one management.

The necessity of additional supplies of water for ensuring the proper cleansing of drains.

Power in an Act for Liverpool to prevent refuse from houses from flowing into the sewer.

pool, are now found in several late Acts for other towns. At Leeds, Rochdale, Southampton, and Manchester, the courts are placed upon the same footing in all matters of sewerage, paving, and cleansing, and are now entitled to the same care and protection, as the more public and frequented portions of the towns. Greater facilities are also afforded in all the later Acts, for making the newly laid out streets public highways, and for bringing them under the jurisdiction of the local authorities. In the great majority of towns, however, the law still requires alteration.

It appears to us that such a principle might be most beneficially extended. We are inclined to attribute some of the existing evils, of which we have pointed out a few examples, to the operation of those laws by which powers have been granted to enable only, and not to compel, all local authorities to take new streets and all courts and alleys under their charge.

In the later local Acts, to which we have just adverted, three¹ of which were passed in the last session of Parliament, the local authorities may require the owners of property in any street (which term by those Acts is defined to include a court) "to pave, flag, level, sewer, and drain it" to their satisfaction, and in case they shall refuse or neglect, are empowered to do it themselves after notice, and to recover the cost from the owner; such streets are ever afterwards to be repaired at the public expense. And with a view to enable the Commissioners to take these proceedings the owner is required to give two months' notice of his intention "to lay out any street, sewer, or drain, or the level thereof," specifying the situation. In the necessity and the principles of provisions, giving such a power to the local authorities to compel the drainage of all streets we fully concur, but we consider that it would be an important improvement if the work were executed by the authorities themselves, instead of being divided among several different persons. Each owner or occupier must make his separate bargain with different workmen, and although they may perform the work under the direction of a public officer, and are required to do it to his satisfaction, yet they cannot execute it either so cheaply or efficiently, as it would be done by an experienced workman, acting under the constant supervision and control of a responsible and competent officer.

The universal deficiency of main drains and sewers has hitherto rendered it impossible, to carry out an extensive system of minor drains for the proper conveyance of refuse from the houses. But a more frequent introduction of a system of main drains, and an improvement in the supplies of water have facilitated the use of the minor branches, as the cheapest and most effectual mode of removing all offensive matter from the interior of dwellings. The legislature has lately granted powers to local authorities to compel them to be made.

The earliest local Act brought under our notice that contains provisions for this purpose is that for the town of Leeds, passed in the year 1842. The Acts for Rochdale and Southampton contain the same power, and they all forbid the building of any houses, until a proper drain is provided, to the satisfaction of the authority, from the intended site to a sewer, if there is one within ten yards, but if not, to some cesspool not more than that distance.

But while we express our satisfaction with these isolated provisions, showing a great improvement in the legislative provisions relating to house drainage, we must call attention to the testimony of medical and other witnesses,² to which we adverted in our First Report stating the importance of a copious supply of water for the efficient action of house drains, and that "from the want of properly directed supplies of water, both house drains and sewers have been found to act only as extended cesspools." Until this want is fully supplied, the local authorities ought to exercise with discretion the powers that Parliament has vested in them, and before they put such powers into operation, should be careful to inquire into means available for ensuring the due action of the house drains.

We turn from these satisfactory proofs of improvement in the principles of legislation on the subject of the public health, to notice a most objectionable clause in an Act relating to Liverpool, passed in the year 1842, the same year, that the Act for Leeds, above-mentioned, containing a provision of exactly the opposite tendency, received the sanction of the legislature. The clause in question renders the owner of any house liable to a penalty of 10*l*. for permitting offensive matter

¹ Rochdale, Southampton, Manchester.

² First Report, Evidence of Dr. S. Smith, 995; Dr. Arnott, 3900; Mr. Roc, 5968; Mr. Austin, 791.

DRAINAGE.
House drains.

to flow from a privy or water-closet into any sewers, under the jurisdiction of the Commissioners.

The general policy that has hitherto been pursued with reference to private drains is exemplified by the clauses found in several local Acts, which appear to us to be adapted rather to prevent than to encourage their general introduction. At present, in most instances, the communication with a sewer is granted as a favour, not ceded as a right.

The substance of the clauses is usually as follows: It shall be lawful to empower any person to carry a drain into any common sewer, &c. according to the plan laid down, but any person carrying a drain without consent shall be liable to a penalty. We submit that it should rather be a matter of right for the owners of houses to carry such drains into the sewers, subject of course to the regulations laid down. This latter principle seems to have been adopted in the Act for Manchester, 11 Geo. IV. c. 47.

Necessity for compelling the construction of house drains.

We refer to the conclusive proofs that have been adduced from examples in the Metropolis, to show that it is necessary to make it compulsory on owners of houses to form drains in connection with the houses. No compulsory powers for this purpose exist in London. The surveyor of one of the districts of sewers, states, "that not more than one-third of the houses have communications with the sewers."¹ Other instances are mentioned,² showing that in sewers lately built very few drains have been inserted. The cause of neglecting these advantages is stated by these witnesses to arise from the charges which would be incurred, not only for the expense of making the drains, but as a contribution towards the expense of making the sewer. Many of these objections may be obviated by a better distribution of the charges.

We have received the statements of several witnesses of experience giving instances of the defective formation of house drains, and the nuisance arising from them, where the works have been executed separately by a common bricklayer, employed by each owner or occupier, independently of any general or systematic superintendence. Instances of the operation of the present practice occur frequently in the Metropolis. Persons of experience³ have stated their opinion of the necessity as well as the economy of placing the house drainage under one common management with the main drainage, as properly forming parts of one combined system.⁴

The practice which appears to obtain extensively in large towns for the working men to build their own houses,⁵ and their general inattention to the necessity of house drains and their careful construction, are submitted as additional reasons for placing the minor branches of house drainage, (which all the testimony on the subject proves may become the source of a foul nuisance, if not executed with due efficiency,) under one and the same jurisdiction and management with the main drainage.

Eighth
Recommendation.

We therefore recommend that the construction of sewers, branch sewers, and house drains, be entrusted to the local administrative body.

IX.
Review of principal
enactments for
rating.

IX. Having now stated the chief functions, which we recommend should be placed in the hands of such administrative bodies, as it may be thought fit to entrust with the local management of laws for sanitary purposes, we proceed to review the present system of rating property, and the other means adopted under the present Acts of Parliament for procuring the necessary funds to effect local improvements, and then to consider the mode of spreading the burthens more equally upon the different persons benefited.

The rates made under the provisions for that purpose are by most local Acts applicable to other objects besides drainage; paving, cleansing, and not unfrequently lighting and watching, are the duties usually associated with it.

The rates are almost invariably made on the basis of the poor rates, and generally limited to a certain annual amount in the pound, with a power, in a few local

¹ First Report, Evidence of Mr. Roe, Q. 5961.

² Mr. Roe, Q. 5996.

³ App. First Report, p. 177. Mr. Joseph Kaye, an extensive builder in the town of Huddersfield, when asked his opinion of the advantage of placing such works under the regulation of a public body, who would execute it on a large scale, replies, "I should think they might do it one-third cheaper, and certainly much better; all the little builders are quite strangers to such work."

⁴ First Report, Evidence of Mr. Cubitt, Q. 212; Mr. Austin, 6041.

⁵ Mr. Hertslet, Q. 2372.

Acts, to increase the amount, with the consent of the rate-payers. This is the case at Toxteth Park and Rochdale. At Leeds the town council have the power, with the consent of two-thirds of the body, to increase the rate for certain purposes.

Under these rating clauses we find almost every possible variety of provision for exempting different descriptions of property, from the liability to contribute its share to the local burthens. The peculiarities existing in some towns may, under certain circumstances, require the introduction of provisions specially applicable to their condition; but there are certain principles of rating, which justice demands should be uniformly established, and which no local circumstances ought to vary.

Lands, occupied and cultivated as farms and market gardens, are very commonly exempted, on the ground that they derive very little benefit from the operation of the Acts. At North Shields, however, they are assessed, but at a rate in the proportion of one-third less than the town property. Again, public buildings, places of worship, and schools, are frequently exempted, although they derive benefit from drainage in common with all other descriptions of house property. This is the case, among other places, at Sunderland, but in the neighbouring town of North Shields they are made the subject of a special enactment, and are required to be rated in a particular mode.

A power to excuse on the ground of poverty, sometimes vested in the Commissioners, sometimes in the Justices, is a very common provision, and we frequently find an absolute exemption for all houses under a certain rent, and in a few cases a graduated scale of rating is adopted, increasing with the amount of annual rent. The town of Salford presents an instance of an union of the two last principles. Houses, under the rent of 6*l.*, are there exempted; and those under 7*l.* are to be rated upon one-third of the annual rent; those under 9*l.* at one-half; and those under 10*l.* at two-thirds. But in Manchester, which is virtually the same town, and up to the time of the passing of the Acts under discussion, was subject to the same body of Commissioners, the limit for exemption is 4*l.* 10*s.*; and instead of a graduated scale, a power is given to the Commissioners to remit the rates on the ground of poverty, or to compound with the landlords at not less than one-half of the rates charged; and these inconsistent provisions are contained in Acts of Parliament passed in the same session (1830). A similar discrepancy is found in the three Acts governing the different districts of Birmingham. They all contain graduated scales for rating, but no two of them agree in the proportions to be charged according to the different rentals. These latter Acts were passed at considerable intervals of time; one of them in the year 1791, and the other two in the years 1828 and 1829.

With the above exceptions, the powers given for levying the rates may be stated generally, as extending over all descriptions of house property within the limits of the respective Acts, and as including within the liability to taxation all courts and alleys. These places by the limited construction generally put upon the words of the statutes, empowering the authorities to make sewers in streets, are for the most part excluded from any benefit in the expenditure of the money.

More attention seems to have been lately paid by the Legislature to the justice of exempting from rates those, who are not benefited by their expenditure, by prohibiting the taxation of their property, until the streets in which it is situated are lighted, paved, or sewered, as the case may be. By the Act passed in the last session of Parliament, for Southampton, separate rates are directed to be made, one for paving, and another for lighting and sewerage, but neither of them can be levied on any property not benefited, if it be lighted, and not sewered, it is to be liable only to two-thirds of the rates, and if sewered only to one-third of the rates. At Swansea, a similar provision is introduced, but one entire rate only is there made. At Manchester, property is not rendered liable to be rated, unless a lamp is erected within 100 yards, but that condition being fulfilled, it may then be charged with a rate, which is applicable to the other purposes of the Act—drainage, cleansing, and paving.

Our attention has been especially drawn to that class of exemptions which are so frequently found in all enactments relating to rating, and have their origin in the supposed claim of the occupants, and sometimes even the owners,¹ to freedom from taxation, on the ground of poverty. These are, the unconditional exemptions of houses under a certain annual rent, amounting sometimes to as much as 7*l.* per annum;—a graduated scale of rating, increasing with the rental of the property;—and a power of excusing from payment of the rates, on the ground of poverty.

DRAINAGE.
Enactments for
Rating.

Usual exemptions
in local Acts.

Exemption on the
ground of poverty.

DRAINAGE.
Enactments for
Rating.

This subject has been so frequently brought before the attention of the Legislature, and has so lately been treated at length, in a most elaborate Report upon Local Taxation,¹ drawn up under the direction of the Poor Law Commissioners, in which an alteration in the law is recommended, quite in accordance with our own views, that it is unnecessary to state our opinions upon this subject at length. That report fully establishes the conclusion, that the landlord is the person who, directly or indirectly, gains by these exemptions.² The same view was taken by a Select Committee of the House of Commons, who inquired into this subject in the year 1838.

The purposes to which such rates are applied appear, above all other objects of local taxation, to be most justly made a charge upon every description of house property. The occupiers benefit by the immediate improvements in their houses. The contamination of the atmosphere is diminished by the speedy removal of moisture and impurities from their vicinity, while, at the same time, the abodes are made more healthy, dry, and comfortable. The value of the landlords' property is permanently improved by the drainage, and the risk in losses by rent reduced by the increased ability of the poor to pay in consequence of their improved health. Mr. Little,³ the owner of small tenements in London, when asked, what are the chief causes of the loss of rent? says, "Loss of work first, then sickness and death, then frauds." He afterwards says, "Three out of five of the losses of rent that I now have are losses from the sickness of the tenants, who are working men." He adds, "I have decidedly found that rent is best paid in healthy houses." He is confirmed in this respect by Mr. Bratt,⁴ who has similar experience, as an owner of small houses.

Among other evil consequences of these exemptions are the direct inducements held out to landlords, for the construction of such an inferior description of houses that they will only obtain occupiers of a class whose poverty entitles them to the exemption. The amount of this exemption is paid to the landlord as rent, instead of to the public purse as rates, thus increasing the burthens on the other occupiers.

Injustice of such
exemptions to the
other ratepayers.

Great injustice also arises to the other rate-payers in the district, where land, hitherto contributing to its burthens, and not even requiring in return any outlay from the public, becomes occupied by houses of an inferior description, which not only abstract from the public purse the amount hitherto paid to it from that source, but at the same time, by the poverty of the new population, actually bring new charges upon it.⁵ We apprehend that these exemptions afford a constant argument with the local authorities, for refusing to expend the money entrusted to their charge upon property that does not contribute its share to the general burthen.

The principle of rendering the landlord liable for the rates on certain descriptions of property has already been introduced into several local Acts. In an Act passed for the improvement of Derby⁶ in 1825, we find that the limit is placed at 20%, but since that period reasons have arisen in reference to the parliamentary franchise for confining the amount to 10%. In two Acts for Southampton and Swansea, in the last Session, and in an earlier Act for Kingston-upon-Hull, the amount is fixed at the lower sum. In the two latter Acts we find clauses giving the Commissioners power to "reduce or remit the payment of any rate on account of the poverty of any owner or occupier, or any persons liable to the payment of the rate." This power of exempting the owner seems to us to be rather inconsistent with the former one, and if acted upon will defeat its beneficial operation.

Ninth
Recommendation.

On these grounds we recommend that the landlords of houses be rated for the purposes of the Act, when the houses are let in separate apartments, or when the rent is collected more frequently than once a quarter, or when the yearly rent is less than 10l., such a deduction being made from the gross amount of the rate, as may be considered a fair equivalent for the labour and losses incident to the collection of rents on such property.

X.
The usual mode of
charging for the
construction of
branch drains.

X. We have previously stated, that by most local Acts the Commissioners have a power of making main sewers out of the general rate, levied upon the whole dis-

¹ Report on Local Taxation, 1843, p. 94.

² Evidence of Mr. Hawksley, First Report, Q. 5253.

³ Evidence of Mr. Little, First Report, Q. 2867.

⁴ Evidence of Mr. Bratt, First Report, Q. 3784.

⁵ Replies from Norwich, App. Second Report.

⁶ Geo. IV. c. 132.

DRAINAGE.
Enactments for
Levying Charges.

trict, but we find that the minor branches are generally executed at the expense of the owners of the adjoining property, and when completed, are placed for the future under the charge of the public body. For this purpose the Commissioners are empowered to give notice to the owners or occupiers to do the necessary works, and in default of their compliance may execute such works themselves, and may levy the expense on the owners or occupiers. We find these powers in most of the Acts to which we have so frequently adverted,¹ and at Leeds and Southampton they are extended to house drains.

At Liverpool, however, no such compulsory power is given with regard to the streets either for paving or draining; but by the Health of the Town Act the Committee have authority to compel the owners of property in courts or passages to pave and drain them, subjecting them to the exercise of an authority, from which the owners of other property are exempt. The inequality of these provisions will appear more manifest, when we notice the fact, that they extend to the whole of the new borough, which includes the district of Toxteth Park. We have already stated that that district is under a separate local Act, and we find that the Commissioners are thereby empowered to contribute half the expense of paving footways in streets, so that for paving one description of property, the owners may be aided with half the expense from the general fund, for another, perhaps in the adjoining street, they may be compelled to bear the whole burthen.

But this mode of compelling improvements, while it causes great dissatisfaction from the arbitrary power necessarily exercised, does not appear in practice to be well adapted to carry on the works with expedition. The Health of the Town Committee at Liverpool, in their replies sent in to us, state with reference to the courts,—

Arbitrary clauses
for levying the ex-
penses of improve-
ments.

"But under the Act for the health of the borough these are gradually improving, but at the same time slowly, as the narrow means of many of the proprietors, and the tenure of property in parts of the town, forbid a hasty procedure in the desired improvements."

The character of the clauses contained in these local Acts, for recovering the expenses of works executed by the Commissioners, where the owner has made default, will readily illustrate the oppressive nature of this mode of effecting improvements. The Commissioners are empowered to levy immediately the whole expenses from the owner or occupier; and in case of refusal to pay, may proceed to recover the money by sale and distress. It is further provided, that in case the occupier pays the money, he shall be entitled to retain the amount from his rent, but he cannot be required to pay more than is due as rent. As an instance of the extent to which it is contemplated in some cases that these demands may be carried, we find a proviso in the Act for Manchester, "That no more costs, charges, or expenses be levied in any one year from any such occupier, not being an owner, than the fair annual value of such tenement."

In the endeavour to lessen the hardship occasioned by these charges, we find provisions introduced in a few places enabling the Commissioners to allow time for the repayment of these expenses, but with the exception of Rochdale, this period never exceeds three years. At that place the time is undefined. The Acts for Southampton and Leeds are altogether silent upon this subject.

We have felt it necessary to dwell at some length upon these various provisions, having found, in the course of our inquiries, that the amount of money required for carrying out improvements is so large, and the summary mode of levying the expenses creates so many objections, as to present most serious obstacles to their extension. We have therefore turned our attention to the best means of remedying these evils.

In the observations explanatory of the frequent inequality and oppression arising from the operation of the clauses of the Acts recited, we have confined ourselves as much as possible to the mere legal operation of the powers thereby granted.

The hardship arising from the present mode of recovering immediately the expenses is evidenced in the statement of Mr. Wroe,² who, as secretary of the paving and soughing committee, at Manchester, has had great experience of the operation of these clauses. The Committee of the Town Council having no authority to extend the time for payment, generally recover the money expended on sewerage and paving in about 12 months. These expenses frequently exceed the whole rent for

Operation of these
clauses at Man-
chester.

¹ Manchester, Salford, Leeds, Southampton, and Rochdale.

² Evidence of Mr. Wroe, First Report, App. p. 177.

DRAINAGE.
Levying of Charges.

a year. Mr. Wroe describes these immediate calls for the money as being most seriously oppressive, especially on persons solely dependent on such property, and without power to mortgage it. Artizans, who borrow money from building clubs for the erection of houses, the interest of which frequently absorbs the whole of the rent, find great difficulty in meeting the demands for these purposes.

The statements made by Mr. Alderman Hopkins,¹ the chairman of the same committee, further illustrates the practical difficulties that are experienced. This statement, although made with reference to Manchester, we find to be generally applicable to all towns, where similar laws are in force. He states that the committee have 10,000*l.* placed at their disposal for the paving and sewerage of those streets, which are not repaired by the public, but this sum is soon sunk in a small number of streets, and from the difficulty of recovering the cost from the owners, the progress of improvement has been so slow, that they have been unable to complete more than 20 or 30 streets in a year, although more than 500 streets are in a condition for enforcement of the provisions of the Act. He states that the power of extending the period of repayment had not been exercised, as the committee felt that it would soon lock up all the funds at their disposal, when their further proceedings would be arrested. He recommends that a further sum should be borrowed, perhaps 30,000*l.* in addition upon the security of the rates, and that they should have power to give 10 or 20 years credit for the repayment of the expenses.

At Salford.

At Salford, the Commissioners state that, in many cases, the payment of such heavy expenses, though for a permanent improvement, is attended with so much inconvenience and hardship, that they have been obliged to allow balances, arising from claims of this nature, to lie over for some years beyond the period limited by law. To lessen the difficulty of levying these large sums every year, they submit their opinion that loans should be made to them for these purposes, to be recovered from the owners of the properties benefited, by annual instalments in a period of 20 years.²

It appears, from the above statements, that the capital for the works is generally found by the public, and that the expenses are recovered immediately, and that the owners of property, either cannot or will not in the first instance execute the improvements at their own charges.

We have already stated our views of the advantage of placing the construction of such works, under the management of a public body; we are induced to hold the same opinion in respect to the pecuniary advantage, that it will afford facilities for raising the necessary funds, and, by distributing the repayment of the expenses over a series of years, will lighten the burthens for these permanent improvements, now charged immediately and exclusively upon the present owners.

Power in the Act for Manchester for tenants for life to charge the property with expenses of improvements.

It is obvious that such charges press with the greatest severity upon owners, who have only a life interest in the property, or a smaller interest than the fee. In the Act passed for Manchester, in the last session of Parliament, a clause is inserted, empowering tenants for life to charge their property with such a proportion of the expenses of the works, and of raising the money, "as any competent person, appointed by the council for that purpose, shall declare to be the fair share and proportion, which ought to be charged upon the reversion and inheritance of and in such houses and grounds." It is enacted that the interest shall be kept down by the tenant for life, but there is no provision for the annual repayment of a proportion of the debt. The clause also declares that this charge shall have priority over all other debts. The reversioner, on his accession to the property, may thus find it encumbered with the whole debt incurred for works, executed possibly 50 or 60 years before, and which are then beginning to require a further outlay for their renewal. We submit that such a provision, although very convenient for the tenants for life, may operate most unjustly upon the interests of the reversioners.

¹ Evidence of Mr. Hopkins, First Report, App. p. 176.

² The following table is given in the Report on Large Towns in Lancashire, as an example of the mode in which the present expenses may be reduced, and the pressure of them diminished by spreading the charges over a series of years.

	Old Charge.	Reduced Charges	Annual Addition to the Rent, at 5 per Cent. interest, and equal instalment of the principal.
House Drain	4 <i>l.</i> 7 <i>s.</i> 6 <i>d.</i> ; 30 feet at 2 <i>s.</i> 11 <i>d.</i> per foot.	Improved glazed pipe drains, 6 <i>d.</i> per foot, including repairs; total 15 <i>s.</i>	10 <i>½d.</i>

DRAINAGE.
Levying of Charges.

There is also the further objection to provisions of this nature, that each individual is put to the trouble, and each separate property charged with the expense of separate legal instruments for securing sums of money, which, though bearing a large proportion to the value of the property, may in each instance amount to an insignificant sum.

The justice of the principle of distributing charges incurred for the benefit of future owners, has already been acknowledged by high legal authority. In delivering judgment in a case where a question arose under the provisions of the London Building Act, as to the liability of the owner of the improved ground rent to pay the expense of rebuilding a party wall, Buller J. expressed the following opinion:—"As to the question whether the expense can be apportioned, that does not arise here; but if anything could be found to warrant an opinion thrown out by Lord Mansfield in *Stone v. Greenwell*,¹ that the parties might be liable to a rateable proportion in some cases, it would tend much to the advancement of justice. The building a party-wall is certainly a great improvement to the premises, and every person interested in the fee, and receiving a benefit, ought to contribute."²

But it is important to urge that this principle of distribution can only be safely applied generally, with precautions that will secure the execution of works of a durable and substantial character, otherwise acts of injustice and undue exactions on those who are living and present, and have the means of remonstrating, would only be avoided by incurring the danger of shifting the burthens upon reversioners or the absent. From the circumstance of so much property being held by persons having only short or transient interests, it follows as a general rule that every distribution of expenses over periods of 20 or 30 years, according to the usual duration of the work, in respect to which the distribution of charge is made, involves, in proportion to such extension of period, charges upon reversioners and absent parties.

We therefore recommend that the duty of providing the funds necessary be imposed upon the local administrative body, and that the cost of making the main and branch sewers be equitably distributed among the owners of the properties benefited; and that the expense of making the house-drains be charged upon the owners of the houses, to which the drains are attached. That the expense remain a charge upon the properties, to be levied by a special rate upon the occupiers, and recovered with interest by annual instalments within a certain number of years, unless the owners prefer to pay the cost in the first instance, and except in the cases mentioned in the ninth Recommendation.

Tenth Recommendation.

XI. For the purpose of assisting owners in meeting the expenses, cast upon them for the drainage of new houses, we propose that they should have the option of paying for the works immediately, or of allowing the cost to remain a charge upon the property for a period of years to be repaid annually with interest. The exact period to be allowed for the repayment of this loan (for such it would be) has been the subject of various suggestions from different witnesses, varying from 20 to 30 years. All, however, have agreed in the justice of spreading the charge for permanent works over a certain period, and they uniformly state their opinions that such assistance would most materially promote the extension of improvements.

XI. Powers for raising money on loan.

If the local administrative bodies are entrusted with the execution of these works in the manner proposed, it will be necessary that further funds should be placed at their disposal, and that they should have ample power for borrowing money, when necessary, upon security of the rates. Such powers are already given by many local Acts, but the amount is always limited, and necessarily bears a proportion to the probable exigencies of the towns with reference to their population and opulence. The money raised under these powers is generally applicable to other purposes, besides drainage and paving. Thus at Manchester authority is given to raise 150,000*l.*, but a large portion of that sum is absorbed in the capital necessary for

¹ Mich. T. 24 Geo. III. B. R. referred to in 3 T. R. 461.

² *Sangster v. Birkhead*, 2 Bos. and Pul. 303.

DRAINAGE.
Powers to borrow
money.

the establishment of gas works, which are there under the sole management of the corporation. Only 13,000*l.* a-year are appropriated to improvements in draining and paving,¹ and this sum is more in the character of a loan, and used as capital for the cost of the works, which is recovered every year from the owner of the properties benefited. At Leeds 100,000*l.* may be raised, but that money can be applied to other objects, such as building markets, and repairing and widening certain bridges. No portion of those funds has yet been appropriated to sanitary improvements. At Liverpool the Commissioners have power to borrow only 30,000*l.*, but they are there aided with an annual contribution from the borough fund to the amount of 5500*l.* At Rochdale, where the rate for lighting is required to be made separately from that for paving and sewerage, the Commissioners have power to raise 48,500*l.* upon the security of the former, but none on the latter rate. In other towns the amount varies considerably. At Southampton it is 25,000*l.*, at Swansea, 15,000*l.*, and at Carlisle only 500*l.* But these powers, if exercised at all, do not appear to have been often applied for the improvement of the sewerage and paving. These sums are generally secured upon the rates, for the amount of which a limit is always fixed in the Acts, usually varying from 1*s.* to 2*s.* in the pound. At Leeds it is limited to 4*d.* in the pound, and at Norwich reaches as high as 5*s.*, but these are rare exceptions. These powers are seldom accompanied with any provision for the gradual liquidation of the debts. At Manchester and Portsmouth we find clauses for this purpose, requiring that, under certain circumstances, not less than 5*l.* per cent. shall be paid off annually.

In providing for the above objects in a general Act, it will not be practicable, from the varying circumstances of each town, to fix any limit to the amount of money which the local authorities should be empowered to borrow, this should be subject to the control of the Crown.

In all such cases an inquiry should be instituted into the amount of the population and of the rateable property within the district, and a knowledge of these circumstances, coupled with the information upon the sanitary condition of the district, acquired at the same time, would show the extent of works necessary, and become the best criterion for deciding on the proper amount to be levied or borrowed.

Before we pass from this subject of rating, we are desirous of calling attention to an instance of a consolidated collection of all local rates, and general taxes, which has been brought under our notice, as having been adopted with great public convenience at Hull. Besides saving much of the expense now incurred for this purpose, it appears to us to afford the means of obviating many of the objections that are raised to the frequent and uncertain periods, at which such rates are collected, when placed in the hands of different officers. There is scarcely a town, however small, in which a large saving might not be effected, and a better security obtained, by the employment of a person who is not engaged in trade, and who is therefore not open to the temptation of employing the money in his hands to his own private purposes. We cannot too strongly recommend this improved system of collection for general introduction, wherever circumstances may admit of its application.²

Eleventh
Recommendation.

We therefore recommend that some restriction be placed on the proportionate rates in the pound to be levied in each year, but if the local administrative body finds that there is need for larger funds, for the immediate execution of works for sanitary measures, than can be provided by such rates, it be empowered to raise, by loan on security of the rates, subject to the approval of the Crown, such sums as may be requisite for effecting the objects in view.

We further recommend, that provision always be made for the gradual liquidation of such debts, within a limited number of years.

XII.
Paving.

XII. The good arrangement of the surfaces of streets, and their proper inclinations for the speedy discharge of the surface-water, is a subject of considerable im-

¹ Evidence of Mr. Hopkins, First Report, App. p. 176.
² Evidence of Mr. Fox, App., First Report, p. 182.

portance, as affecting the health and condition of the inhabitants of towns,¹ and deserving much more attention than has hitherto been paid to it. We have already adverted to the neglected condition of many of the streets, inhabited by the labouring classes in all large towns from want of under-ground drainage. These evils are most seriously aggravated by the condition of the surface; this is frequently left without any pavement or harder substance for its protection, than what the natural soil affords. In this condition it remains, the inequalities of the surface gradually increasing, and forming larger basins for the reception not only of the rain and refuse water, but of much of the refuse from the adjoining houses; and although the inhabitants are liable to pay rates, no local Commissioners are bound to repair the street, until it has been once put into good condition by the owner, and has been accepted by them as a public highway. If the district is under the Highway Act there is no authority to compel the owner to do this duty; and if such a power is given by a local Act, the Commissioners do not always adequately enforce it.

Few local Acts, even those of earlier date, are entirely without provisions, either enabling the Commissioners to compel the owners to pave the streets, or to do so themselves at the charge of the general rate. But we regret to have occasion for observing the very frequent instances of the neglect of these powers. The town of Wolverhampton has been under a local Act since the year 1814, by which the owners of property in new streets are required to pave them, as soon as three-fourths of the houses are completed, "in such manner as the Commissioners direct;" and in return the owners have the privilege of an exemption from rates for 10 years. Yet we are informed, on the authority of a Committee of Inhabitants, that the new streets are not paved nor laid out with proper inclinations for the discharge of surface-water, and they add, that there are pools and open ditches in some of the streets.² This neglected condition of the streets is attributed by them to the want of a controlling power before the houses are built. At Derby, by an Act passed in 1825, the Commissioners are empowered to pave all present and new streets; but the reply on this subject from a Committee of the Inhabitants states, that many new streets require paving and draining.³ We could multiply these instances by a repetition of the examples before given by us with respect to drainage. But except in places where the jurisdiction of Commissioners is excluded, as at Salford, and a few other towns, until the streets are more than half formed, there is less excuse for this neglect, the powers for this purpose being generally more stringent, and more frequently found in the local Acts; the jurisdiction of the local authorities is, however, equally excluded from the courts and alleys. The same disregard to their condition is also exhibited in respect to the paving, that we have above shown to exist with regard to the drainage.

In those towns which have legislative provisions for paving and draining these duties are placed under the same authority, with co-extensive jurisdictions. As the two duties combine the surface and the under-ground drainage, and require similar qualifications in the superintending officers, it appears to us to be the most convenient arrangement, that could be adopted. There are, however, a few instances where separate jurisdictions for paving exist within the same town without any authority over the drainage. This is the case at Bath, where, as we have before stated, four local Acts are in force, but one only contains a power for making sewers. In the report upon that city, it is stated as an instance of the effect of such subdivisions of jurisdiction, that in York-street, near the Abbey, one-half of the street was paved (longitudinally) and the other half was Macadamised. These two divisions of the street were not on the same level. At Manchester we find that although the streets are formed in the first instance by the town council under the local Act, they are subsequently repaired by the surveyors of the Highway Board.

A jurisdiction is now generally given by the later local Acts over the owners of property and builders laying out new streets. They are generally required to give notice of their intention to build, and to conform, as to the levels, to the regulations laid down by the ruling authority.

We have already noticed the opinions given by Mr. Lee⁴ in his observations upon the operation of the Highway Act at Sheffield, that the jurisdiction of the sewers

PAVING.

Connexion between
paving and drain-
age.

Neglect in execut-
ing the powers
granted by local
Acts.

Condition of courts
and places not
thoroughfares.

Combination of
duties of sewerage
and paving.

Exception at Bath.

¹ First Report, App. p. 63. Report on Towns in Lancashire, App. Second Report.
² Replies from Wolverhampton, App. Second Report.
³ Replies from Derby, App. Second Report.
⁴ Report by the Surveyor of the Highways at Sheffield, App. Second Report.

PAVING.

and the roads should be under the same authority, and that large districts should be formed, as was intended by the powers given in that Act, in order to enable the employment of competent officers, and prevent the inconvenience of conflicting jurisdictions. We fully concur in the soundness of these views, which are entitled to great weight, as being conclusions derived from a practical acquaintance with the operation of the present system of subdivision of districts. It is also most essential that the duties in relation to paving and drainage, that is the surface and the under-ground drainage, should be combined and placed under one jurisdiction.

Twelfth Recommendation.

We therefore recommend that the whole of the paving, and the construction of the surface of all streets, courts, and alleys be placed under the management of the same authority as the drainage, and that the limits of jurisdiction for both purposes, wherever practicable, be co-extensive.

We also recommend that the principle above submitted in respect to the cost of making drains and sewers, and the equitable distribution of the expense, be adhered to in the case of laying out, levelling, and paving of streets, courts, and alleys; but for the purpose of ensuring the greatest efficiency and economy in the execution of the work, it be performed by the local public officers.

XIII. Cleansing.

XIII. The condition of the cleansing in all the large towns visited, and the speedy removal of all refuse, that is not carried off by water, has been the subject of frequent observation in the reports of the Commissioners. The effect which a due attention to this important branch of the good government of towns, may produce on the physical condition of a population, is second only to sewerage.¹ The generally defective state of the drainage undoubtedly increases the necessity for constant attention to this duty; unlike the two former subjects brought under notice, it is effected with a small outlay of capital, and may be executed piecemeal, each street without reference to those adjoining, while labourers, remunerated at the lowest rate of wages, are usually employed. It might have been expected that the power, with which the local authorities are invariably invested by their local Acts, had been exercised freely, as the best compensation that could be made for deficiencies in other respects. The fact is exactly the reverse of what it ought to be. This we believe to be universally the case, and in no degree confined only to the towns, that have been visited; small as well as large towns are in this particular alike.

General condition of streets in the towns visited.

The reports of the visiting Commissioners, and the replies generally made under the authority of the Commissioners under local Acts, or by influential inhabitants, will show the state of the towns in this respect, and that while the public streets receive some share of attention from the scavenger, many small streets are utterly neglected, as well as the courts and alleys, which are treated as private property, and therefore out of the jurisdiction of the Commissioners. In the report on the towns in Lancashire, the arrangements for scavenging in ten of the largest towns, are given in a tabular form.² This table shows that the courts and alleys are universally neglected, and in two instances only is any attention paid to the streets, not dedicated to the public, which are not considered subject to the authority of the local bodies. This return is an illustration of the evil of the present system of considering, that such courts and streets are not within the province of the public scavenger. Both Dr. Duncan and Mr. Holme,³ describe the smaller streets of Liverpool, also as being in a very filthy state. As an illustration of the magnitude of this evil, we may state that in Liverpool there were in the year 1841, 2398 courts, containing 68,365 persons, besides streets, not under the public charge, of which we have no return before us. All these courts, and their numerous inhabitants, are considered to be excluded from the jurisdiction of the Scavenging Committee. Since that time the number of the courts has been increasing, and we regret that we cannot find in the Health of the

¹ Evidence of Dr. Arnott, First Report, Q. 3900.

² Report on the Large Towns in Lancashire, App. Second Report.

³ App. First Report, pp. 31, 186.

Town Act, any provision for placing these courts under the same regulations for cleansing, as the other parts of the town. An Act, passed a few days after that here alluded to (July 16, 1842), extends the jurisdiction of the Scavenging Committee over courts, but from the replies received from the authorities, dated September, 1843, it appears that courts are still considered as private property, and cleansed, if at all, only by the occupiers. The same disinclination to exercise any jurisdiction over courts is found to prevail at Leeds. The power contained in the improvement Act in that town for bringing the courts under the jurisdiction of the Town Council, appears to be of little avail, and such places are described to be "as much neglected as ever." Nor can we see on what principle of justice, the owners of these places are denied the advantage, which the regulated visits of the scavenger would afford them, since they have been rendered liable to the taxation, which may at any time be imposed for putting their property into good condition.

CLEANSING.
Condition of the courts and alleys.

At Leeds,

The report, in reference to Birmingham,¹ discloses a similar extent of evil. The courts in the parish of Birmingham, alone are above 2000 in number, and their inhabitants exceed 50,000, besides many in the adjoining parish of Aston. The description common to many of these places shows that they stand greatly in need of regulations for their cleansing. The atmosphere, which is necessarily close and confined, is often further deteriorated by the presence of open privies, close to which there is often one or more pigsties, tubs full of hogswash, and heaps of offensive manure. These courts are frequently unpaved, and the open channel for dirty water ill-defined, so that stagnant puddles are the consequence.

At Birmingham.

Similar evils prevail in all towns, varying in their intensity, in proportion to the number of the courts and streets, excluded from the jurisdiction of the local authority. The effect of this want of a general and systematic superintendence, is well illustrated by the statement of a gentleman at Norwich,² who ascribes the neglected condition of the courts to their having "three or four proprietors, who cannot agree on the point of having them kept clean."

The earliest local acts imposed the duties of cleansing the streets upon the occupiers, usually requiring them to cleanse before their respective houses, and to heap up the dirt and soil in preparation for the scavengers. We find such duties prescribed in a very early Act for Liverpool (21st George II. cap. 24.) It is thereby enacted that the occupiers shall sweep their portion of the streets at least twice a-week, on Monday and Thursday, or oftener if required, and that the scavengers shall attend every Tuesday and Friday, "or oftener if occasion be." It appears, however, that although the provisions of this Act, positively directing the scavengers to cleanse all the streets twice a-week, were in force up to the year 1842, it was the practice to cleanse the minor streets only once a-week, and the others, where there was less traffic, when required.³

Review of the legislative provisions.

The inconvenience of such sub-divisions of labour, seems to have led to the enactments generally found in the present local Acts, by which the Commissioners are empowered to cleanse the streets, and to remove the dirt, ashes, and rubbish, from any house or premises, except such as shall be reserved by the occupiers for their own use. But with regard to the footways, the old principle of requiring every occupier to sweep before his door daily, is generally retained in the modern Acts.

The economical as well as the other advantages to be derived from a well-established system of scavenging, conducted under the direction of active and intelligent officers, armed with ample powers, are exhibited in the information obtained from Mr. Alexander Ramsay,⁴ inspector of police at Edinburgh. He shows that the daily cleansing of that city, and of its innermost courts and closes, is not unattainable on account of the heavy expense, and that the charge upon the public amounts to about 2000*l.* a-year.

Example of the daily cleansing the streets at Edinburgh.

To this instance we may add that of Aberdeen, where the local Act requires

¹ Report on Birmingham, App. Second Report. ² Replies from Norwich, App. Second Report.

³ Report on Liverpool, App. Second Report.

⁴ App. First Report, p. 203. Every street, court, and alley, is cleansed every day, and some parts twice a day. The expense of the cleansing department is about 12,000*l.*, and the receipts from sale of manure about 10,000 a-year.

Carts taking grain and other farm produce into Edinburgh frequently return laden with this manure.

In the small town of Dalkeith, containing about 5,200 inhabitants, every street, court, and alley is regularly cleansed thoroughly every week-day, and on Saturdays twice (morning and evening); the sale of the manure produces a sufficient sum to defray the whole of the expense, and leaves a balance of about 100*l.* a-year.

CLEANSING.

At Aberdeen.

Example at Hull.

the appointed scavengers to cleanse the foot pavements and the whole of the streets, closes, courts, &c., every day, under a penalty. This work is done at a profit of 600% a-year to the city, and in other towns in Scotland similar examples are found.

We are not aware of any instance of such a frequent and systematic execution of these duties, in any town in England under the direction of the local authorities; but as a further and more convincing proof, if any were wanting, that such a frequent removal of the refuse can be conducted with economy, we would refer to the account given in regard to Hull. It appears that the inhabitants have there found out, that they can profitably dispose of, and the farmers that they can profitably collect, with great regularity, the refuse from the houses, even in the courts and alleys, which are inaccessible to carts. This is carted away without any aid on the part of the local authority. The courts and small streets are described as bearing a marked appearance of cleanliness.

The principle that may be deduced from the practice at Edinburgh and Aberdeen, is, that all parts of the town require cleansing every day, and the portions inhabited by the poor more frequently than those occupied by the rich. At Hull, the regular removal of the refuse is an accident, and, as far as the authorities are concerned, the poor are as much neglected as elsewhere.

The law which the legislature has made so stringent at Aberdeen, and which has been carried into execution there and at Edinburgh, may with equal advantage be applied generally to all parts of Great Britain.¹

Further economical advantages of a frequent cleansing of roads and streets by the speedy removal of the surface mud and moisture, and consequent improvement of the roads, is shown in the statement of Mr. Whitworth,² the inventor of the street-sweeping machine, which is now in successful operation at Manchester, and part of London. This machine will execute for the same price twice the work that can be performed by hand labour.

Existing provisions for the removal of refuse from houses.

The other duties of the local authorities, with regard to cleansing, are extended by modern Acts to the removal of "the dirt, ashes, and rubbish from all houses and premises." The occupiers are permitted to reserve them for their own use as manure, provided that "they shall not be a nuisance to any inhabitant within the limits;" and they are liable to penalties for obstructing scavengers in the removal of such refuse as the scavengers are authorized to take away, and other persons than the appointed scavengers, are forbidden, under a penalty, from carrying away any dirt, &c. This class of clauses is generally found, repeated almost verbatim, in later Acts. They would appear by implication to vest in the Commissioners the right of property in these articles, to the exclusion of the occupier, and to give them the power of entering houses to remove them, under the condition above stated.

Clauses granting these powers appear to have been inserted at an early period especially in the local Acts for the government of the different districts in London, and to have been gradually copied into the laws for other large towns. The convenience resulting from the certain removal of these matters without trouble or expense to the occupiers, although involving the necessity of interference with the rights of private property, has produced, on the part of the inhabitants of places where it has been in force, a ready acquiescence in the exercise of that power, and an acknowledgment of its utility. An instance of this is found in the case of Aberdeen. Before the passing of the Act for that town, great objections were raised to the enactment vesting the entire right to the dung in the Commissioners, and the commencement of this right was postponed in certain districts of the city for 15 years. That period expired in May last; but before that time many persons were glad to take advantage of this public convenience, and voluntarily admitted the scavengers to carry off the refuse from their premises.

But it must not be supposed that this power given to the local authority to deprive the occupiers of all property in such refuse, can be justified on the ground that it is relieving them of a worthless article, for in the Metropolis, where these powers have been long in force, the ashes, which form the great bulk of the

¹ In the Report on the Towns in Lancashire (App. Second Report.) will be found a statement of the expense incurred in some of those towns for this service, as compared with the cost in the towns instanced in Scotland. The advantage in favour of the latter may probably be partly attributed to the local authorities having the exclusive right to the more valuable manure from the privies.

² App. First Report, p. 207.

refuse collected, are an article of considerable trade. The contractors are in the habit of paying large sums of money to the parishes for the right to collect them, and the large parishes frequently make a considerable profit from the exercise of this right, which goes to the diminution of the rates, after paying the expense of cleansing (in the mode considered sufficient by them) all the streets and roads in the parish. The advantage which a public body possesses in collecting such refuse, and in disposing of it in large quantities, undoubtedly renders it more valuable in their hands. It is, however, a matter of some surprise that a public body should have been invested with such powers on the ground that the accumulation of such matters, comparatively inoffensive, might create a nuisance to the inhabitants, if their regular removal was not provided for, and yet the duty should not have been extended to the carrying away other refuse, far more noxious and injurious to health, however small the quantity accumulated may be. We have not met with any local Act in England or Wales giving powers to local authorities to empty and cleanse privies by their own officers. By the Health of Town Act at Liverpool, the Health Committee have power to require the owners and occupiers to cleanse and keep in repair the privies in courts, but they have no authority to execute it, in case of neglect, by any of their own officers. Beyond the courts, no jurisdiction is given in this respect at Liverpool.

CLEANSING.
Powers under existing Acts.

Want of regulation for the proper cleansing of privies.

The want of some general regulations for the cleansing of privies of the poorer classes has been witnessed in every town visited by the Commissioners. The filthy condition of many of the courts, from the absence of the public scavenger, and the neglect of the drainage and paving, is rendered still more disgusting by the abominable state of the necessaries. They are frequently open to view, having no protection whatever from the public eye, and from the number of persons resorting to them soon become full, and not uncommonly run over. In addition to the foetid exhalations from the overflowing privies, there are found in many towns, open middens, or cesspools, which receive the ashes, night-soil, and all other refuse, both animal and vegetable, from the adjoining houses. The infrequency of the scavenging has partly created the necessity for these receptacles. These places are entirely open, and their contents allowed to remain in a state of putrefaction, until a sufficient quantity is collected in one spot to form a waggon load.

We think it unnecessary to enter into further details upon this topic. The information appended to this Report contains ample evidence of the general want of regulations throughout all towns, and the same evils resulting from it. We shall have occasion presently, in speaking of the structural arrangements of houses, to recur to this subject, and to show the deplorable deficiencies of accommodation in this respect. The statements that we shall there present will fully establish the conclusion that the deficient number of privies in the poorer quarters of towns, and the large number of inhabitants resorting to them, deprives them of any right to be considered private, and renders it absolutely necessary for the safety of the public health, that some alteration should be made in the law regarding them. That they should be in the condition generally described is not surprising, when we state that in one district in Manchester there were found to be only 33 necessaries for 7095 persons, or 1 to 215 inhabitants. Throughout the whole town of Sunderland² the proportion is only 1 to 76 persons. We have also met with an instance of only 1 necessary to 30 families³; and it appears that throughout the courts in Liverpool⁴ the proportion is generally about 2 to 80 persons. The town of Merthyr Tydvil presents even worse instances. These are quoted as instances of the general deficiency, and not as isolated cases.

In some parts of Scotland, however, very ample powers are given for such purposes. By the local Acts for Edinburgh and Aberdeen, we find that the entire right to the refuse of all the houses, including the night soil, is vested in the Police Commissioners; and at the latter place the right of the police is so complete, that the owner of a private pit, wishing to secure its contents for the use of his own lands, must pay a composition to the police for its reservation; and such a permission can be granted, only in case the pit is quite private and secluded. The Police Commissioners are required to make and publish regulations for the removal of what is vested, as well as what is not vested in them, and to prevent its accumulation in places and quantities, or for a length of time "such as may occasion

¹ Evidence of Mr. W. Thorn, Q. 4636.

² Report on Sunderland, App. Second Report.

³ Report on Ashton-under-Lyne, App. First Report, p. 84.

⁴ Report on Liverpool, App. Second Report.

CLEANSING.

or give reasonable cause to fear consequences, injurious to the health or comfort of the neighbourhood or of individuals."

It is unnecessary to quote the powers granted by Parliament to the Commissioners at Aberdeen for the purpose of showing the recognition of the principle, that it is a public duty to establish some authority for the regulation of all matters which may be injurious to health; but the objections that arise to any proposal for granting additional powers, make us anxious to show precedents of powers that have been frequently granted by Parliament, and exercised with great public advantage.

Thirteenth Recommendation.

For these reasons we recommend that the provisions in local Acts, vesting the right to all the dust, ashes, and street refuse in the local administrative body, be made general; and that the cleansing of all privies and cesspools at proper times, and on due notice, be exclusively entrusted to it.

XIV. Prevalence of other nuisances.

XIV. Our attention has been called to the frequent existence of other nuisances, from which great injury arises to the neighbouring population, and of which the present state of the law affords no summary means for the removal. Collections of dung, frequently kept for sale, pigsties in the most densely populated situations, the various noxious matters from manufactories, and above all, the animal refuse that is almost invariably to be found in the vicinity of slaughter-houses, all contribute in their several degrees to increase the impurity of the atmosphere, and to lower the physical condition of the population. In addition to these causes of disease, which ought not to exist in a well ordered town, we have the injury from the smoke of steam-engines as well as other offensive emanations from manufactories, to which we shall refer in their proper order.

Middensteads and dung-heaps.

In a very full report made by a Committee of the Inhabitants of Sunderland, in reply to the questions issued by us, the extent of the nuisances created by the dealers in manure is strongly illustrated. It appears that there are no less than 182 public middensteads, receptacles for filth of all kinds, which are stated to constitute one of the greatest nuisances within the borough. They are generally situated in the close narrow streets and lanes inhabited by the poorer classes, and are frequently resorted to by them. In some cases the Committee adds, "These middensteads are actually in the basement floor of a dwelling-house, the upper stories of which are occupied as bed-rooms, &c." The contents of these middensteads are afterwards conveyed to large depôts, of which there are two in the parish, "one very lately advertised as containing 1000 tons for sale." This belonged to the borough. It is on the Town Moor, closely adjoining to the most densely populated part of the town. We shall presently state the powers vested in the Town Council for the abatement of such nuisances.

The state of the slaughter-houses is an almost constant source of complaint. They are very rarely placed under any regulations with regard to the constant removal of the animal refuse, their proper ventilation, or a sufficient supply of water to ensure due cleanliness. The improper situations in which these places are found, sometimes even under dwelling-houses, and the effect produced upon the health of the inhabitants, is described in the report on the towns of Lancashire.¹

The effluvia arising from the blood and the entrails of animals, where recently slaughtered, renders the carrying on of such business in the precincts of large towns incompatible with due sanitary regulations, even when the offal and filth is speedily and effectually removed. In scarcely one instance, however, in which shambles or slaughter-houses have come under the observation of the Commissioners, either in the Metropolis or in provincial cities and towns, have there been found in force any regulations or authoritative supervision to compel the speedy and regular removal of offal from, or the efficient cleansing of such places. They have, on the

¹ "Slaughter-houses are found below dwelling-houses, the smell in which was most insufferable. In many of these cases, the inhabitants looked pale and sickly, and diarrhoea frequently prevailed, although absent from the courts contiguous. Yet the state of the law prevents any interference with the manner in which these slaughter-houses are conducted. True it is that aggrieved parties may indict the occupiers of the premises, but they being labouring men, can neither afford the time or money to pursue such indictment, nor do they belong to a class aware of the pernicious effects arising from the presence of decomposing refuse. The uncertainty of the result, moreover, is alone sufficient to deter even those who have both the means and the inclination to suppress them."—*Report on Towns in Lancashire*, App. Second Report.

contrary, been found to be, almost without exception, centres of the diffusion of noisome influences, affecting, with more or less intensity, the immediate vicinity, deteriorating the sanitary condition of the surrounding population, commonly poor and dense, as recorded in the local reports of the Commissioners, and in a more remote degree vitiating the general atmosphere of the town, and thus becoming a nuisance to the inhabitants at large.¹

A second evil and nuisance, necessarily contingent upon the locality of slaughter-houses, however stringently supervised and regulated, in the midst of large and populous towns, is the quantity of animal ordure deposited upon the public streets and thoroughfares leading to such slaughter-houses, which, besides forming a most offensive addition to the ordinary surface-filth, excites and accelerates its decomposition. This evil is augmented in the ratio of the size of the town, and where, as in London, most of the surface-filth of the streets is washed down into the sewers, the continual passage of cattle, sheep, and pigs, in the neighbourhood of the intramural slaughter-houses, must materially increase the amount of that decomposing matter, the emanations of which are constantly escaping from the untrapped gully-holes to infect the atmosphere of the Metropolis. Nor ought the occasionally fatal injuries, and the constant peril of life and limb incurred by the inhabitants of large towns, the streets of which are so frequently traversed by goaded and over-driven cattle, to be overlooked in an enumeration of the inevitable evils of slaughter-houses, situated in the crowded parts of towns, and as strengthening the more general sanitary grounds for urging upon the Legislature the expediency of abolishing them and of establishing properly constructed and efficiently-regulated places for slaughtering cattle in the suburbs.

Next to the nuisance of slaughter-houses, we may mention the evils arising from the practice of keeping pigs, commonly in the most confined places. The Committee at Sunderland complain that during the prevalence of the cholera in 1831, these were the spots most visited by that scourge.

The existence of similar evils are shown to be equally prevalent in other towns. There are more than 1600 pig-sties within the parish of Birmingham.² The state of the pig-sties and of the dung-hills in parts of Manchester, has drawn complaints from the authorities that they are not armed with sufficient power to abate them.

Evils from these causes and from the accumulations of offensive substances, in such masses as to amount to a dangerous nuisance, attracted the general attention of the members of this Commission in the course of their investigations. In many instances the local authorities or their officers appeared to be unaware of their existence, but in a far greater number of places this knowledge was admitted, and the continuance of the evils excused on the ground of want of power to abate them. It does not appear to us that this plea is in all cases admissible.

The existence of these nuisances has been the subject of frequent complaints on the part of the inhabitants in many districts, and it is with much regret that we feel it our duty to state, that the apathy and neglect, exhibited by the local authorities in not duly exercising their powers, has in many instances given just grounds for such complaints. A clause in the Act for amendment of the corporations in England and Wales empowers the Town Council to frame bye-laws for the suppression of any nuisances that are not made an offence by any Act in force within the borough. The later local Acts generally contain provisions for the suppression of nuisances from the causes above described. It thus appears that either under the general or local Acts such a power may be obtained or is possessed in every corporate borough. The bye-laws made under the provisions of the above Act must be laid before one of your Majesty's Secretaries of State before they can be carried into execution. We find that bye-laws in several towns have received this sanction, and that many of them are so framed, as to give very ample powers to the town councils to suppress many of the nuisances which are subjects of complaint.³ Thus at Sunderland the keeping of any collection of manure or offensive matter of any kind "in any open or uncovered place whatever, surrounded by a wall or not," so as to be a common nuisance, is made the subject of a penalty. A similar law is found at Newcastle-upon-Tyne,⁴ and yet we have received from thence the complaints of nuisances similar to those above shown to exist at Sunderland. At Norwich a law for pre-

NUISANCES.
Slaughter-houses.

Nuisances from pig-sties.

Existing provisions for the removal of refuse from houses.

Bye-laws under 5 and 6 Wm. 4, cap. 76, sec. 90.

¹ Report on Bristol, App. Second Report; Sunderland, App. Second Report; Derby, App. Second Report; Norwich, App. Second Report.

² Report on Birmingham, App. Second Report.

³ List of Boroughs, Supplement, p. 109.

⁴ Replies from Newcastle, App. Second Report.

NUISANCES.

Summary powers
for their prevention.

venting offensive matter flowing from slaughter-houses or pig-sties seems, by the statements of the nuisances from these sources, to be disregarded. At Liverpool, besides provisions directly enacted by law, the bye-laws include a vast number of petty offences, and if properly enforced, would produce great public benefit. They contain regulations for the internal cleansing of slaughter-houses and the removal of offensive matter within them.

We apprehend that by the active exercise of summary powers many of the most frequent nuisances might be materially abated if not totally suppressed, and the innumerable evils arising from the filthy state of the privies might be prevented in all places, where they are exposed to public view, or are in such situations as to be public nuisances.

The execution of such powers is placed in the hands of persons who are themselves not unfrequently interested parties, and are generally made the sole judges of what should be deemed a nuisance. They are seldom assisted by the services of officers appointed to bring under their notice such matters of complaint, and to proceed, if necessary, against the offenders, while the poor, ignorant of the injury that they are suffering, or perhaps dependent for their daily bread upon the owners of such nuisances, are silent. This unwillingness to become a public prosecutor is exemplified in the statement of Mr. Neal, superintendent of nuisances at Manchester, who, in speaking of the proceedings for the prevention of nuisances at the court leet, says—"That it has been found difficult to support the indictment, in consequence of the inhabitants who have complained not attending to give evidence; and that at the court leet, held in October, 1840, 14 cases of public nuisances were dismissed from want of evidence."

If the duty of taking such proceedings were imposed on a public officer, such failure of justice could scarcely occur.

Common law
remedies.

The common law remedy of proceeding by indictment for the prevention of this class of nuisances appears to be rarely resorted to. It is far too expensive and uncertain a process for any private individual to commence, but in a few towns a power is given in the local Acts to enable the authorities to pay the costs of prosecution out of the rates. Provisions to this effect are found in the Acts for Manchester, Salford, Leeds, and Rochdale; but we are not aware that they have ever been exercised.

Inefficiency of the
powers of the
courts leet.

The old established power vested in the courts leet is in a few towns still resorted to, for the abatement of the minor nuisances. Mr. Neal states, that at Manchester, since the year 1840, 35 cases have been presented, and penalties have been inflicted varying from 5*l.* to 100*l.* Mr. Coulthart¹ gives a detailed description of the various objects, which have been taken cognizance of by the leet juries at Ashton-under-Lyne, as he states, with beneficial effect. The exercise of these powers, however, has in most places fallen into desuetude even where the courts continue to be held, and the infrequency of their meetings, usually once a year, renders them ill adapted to afford an efficient remedy, by the speedy removal of any nuisance. Upon this ground, Mr. Hawksley² describes the proceedings of these courts at Nottingham as utterly inefficient for the purpose of enforcing any regulations of a sanatory character.

For suppression of
private nuisances.

But the class of nuisances requiring most attention generally occur in the courts and alleys that are not thoroughfares. Although injury may be inflicted on a large number of inhabitants, doubts have arisen, whether annoyances arising in such places can be taken cognizance of under the authority of the courts leet, as public nuisances. This is the construction put upon the law by the steward who holds the courts for the lord of the manor at Manchester.³

Different construe-
of the authority of
leet juries at Man-
chester.
At Ashton-under-
Lyne.

A very different practice appears to prevail at Ashton-under-Lyne, where leet juries amerce the owners of houses for not providing sufficient necessaries, and fix the number proper to be erected.

Provisions for pre-
vention of nuisances
in local Acts.

The clauses⁴ for the prevention of nuisances now usually inserted in local Acts are scarcely calculated to reach many of the existing evils, while the enactments are

¹ First Report, App. p. 72.² First Report, App. p. 132.

³ Report on Manchester, App. Second Report:—"In a case of public nuisance presented at the court leet held in September, 1842, the chairman made a strict inquiry as to whether or not the smell was perceivable on the public highway, as he said that court had only power to interfere in such cases as were proved to be annoyances to the public generally, and that except where existing in or adjoining to public thoroughfares, the nuisances must be remedied by action on the part of the parties aggrieved."

⁴ "That if any foundry, candle-house, melting-house, melting-place, or soap-house, hereafter to be erected or made, or any slaughter-house, boiling-house for offal, hogsty, uninclined or uncovered yard,

sometimes clogged with provisions, which must render them practically inoperative.

NUISANCES.

Summary powers
for their prevention.

The operation of these clauses for the prevention of nuisances tends to drive them into the closest and worst ventilated districts, where the evils are multiplied tenfold. The powers to abate them being usually limited to the vicinity of streets, they are easily placed in situations, where they are beyond the jurisdiction of any authority. The evils of many of these nuisances do not consist in their publicity or unsightly appearance, but in the injury caused to the atmosphere; this will occur wherever the nuisances are situated, and the more completely they are screened from public view the greater will be the accumulations of filth. These evils cannot be prevented, unless the nuisances be absolutely forbidden.

The penalty for disobedience of the order of the Commissioners is generally 5*l.* per diem during the continuance of the nuisance. It will be seen that to give the Commissioners jurisdiction to act, a complaint must be made of an existing nuisance and any inhabitant may be the complainant. But by the clause in the Act for Southampton proceedings can only be commenced on the complaint of "six inhabitants ratepayers in the vicinity thereof," and the Commissioners are not authorized even to enquire into the existence of the nuisance until such a complaint is laid before them; so that any number of persons, not ratepayers, however severely they may be suffering, are entirely deprived of the beneficial operation of this clause, unless they can get six ratepayers in the vicinity to make a complaint in their behalf. We may further observe as an objectionable feature of the provisions for these purposes, in all the statutes now under review, that the Commissioners are made the sole judges of the offence, and although the penalties, if any are incurred, can only be recovered before a Justice of the Peace, we apprehend that, provided the proceedings are conducted with proper regularity, it is compulsory upon him to issue the necessary process for levying the penalty. The defendant has the protection of, and is entitled to, the right to an appeal to the quarter sessions against such an order of the Commissioners. We do not, however, understand what advantage arises from investing the Commissioners with such powers to the exclusion of the magistrates, the functionaries usually entrusted with the authority of punishing offences of this description. All these Acts contain other clauses giving the magistrates power to inflict penalties for offences of exactly the like nature, viz., for permitting any offensive matter to run into any street from any manufactory, slaughter-house, or dunghill; keeping any pigs near a street or dwelling; burning any rags or offensive matter within one hundred yards of a dwelling house, or keeping any offensive matter within that distance, so as in any of these cases to be a nuisance to any inhabitant. If the magistrates form a competent tribunal for the decision of such questions, they may, we apprehend, be safely entrusted with the power now given to the Commissioners of ordering the abatement of nuisances.

At Southampton.

By the introduction of better regulations on the subjects which we have now been noticing, it is to be hoped that the occasions for any interference of this kind will become less frequent, but as the most constant attention is required for the punctual enforcement of any laws or regulations, we are of opinion that an officer should be appointed in each town, who, in addition to other duties that may be placed under his charge, should be required to report upon any neglect on the part of the scavengers, or any infringement of rules for the prevention of nuisances, or of any other matter affecting the health of the inhabitants, and if necessary to commence proceedings in his own name, and as an informer on the part of the public, for the punishment of offenders before the magistrates. Such an officer would receive much valuable assistance in the execution of his duties, and the public would be checked in their infringement of the law, if the police were directed to report upon any breach or neglect of it. These public servants, now generally a numerous and efficient body in each large town, although the constant witnesses of such offences, are not charged with the duty of reporting them to their

or place for the depositing or sifting of lime, necessary houses, dung-heap, manure-heap, or other offensive building, place, or matter, in or near any street, within the limits of this Act, shall be a nuisance to any inhabitant, it shall be lawful for the Commissioners, upon complaint made by any inhabitant, to inquire into the matter of such complaint, and if the Commissioners shall consider such building, place, or matter, of which such complaint shall be made, to be a nuisance, it shall be lawful for them, by notice in writing, to order the person by or on whose behalf such nuisance is carried on, kept, or made, to discontinue or remedy the same."

NUISANCES.

Summary powers
for their prevention.

superiors, or any officer empowered to correct them. It has been represented to us that this duty could be most efficiently and conveniently executed by the police, without any serious addition to their labours, or increase of expense to the inhabitants.

We have given a most attentive consideration to the necessity for any further amendments of the common law and statutory provisions for the prevention of nuisances, and we are not at present prepared to recommend that any alteration should be made in the tribunals of this country, as at present constituted for the trial of offences of this nature, or that further powers be granted to any authorities to suppress, without compensation, any nuisances for the abatement of which the Legislature has not hitherto given a summary jurisdiction. It may, however, be convenient for the abatement of some of the more serious evils, to empower the local administrative body to direct that legal proceedings be taken for their suppression.

The statutory provisions, such as are contained in the clauses above recited, may however, be generally extended with great public advantage, and we are of opinion that some of them should be so far altered as to make certain acts absolutely illegal. Some local Acts, and amongst others the statute 57 Geo. III. cap. 29, sec. 68, for the Metropolis, forbids the keeping of pigs within 40 yards of any street or public place. Such a provision virtually prevents the keeping of these animals, as few premises are so extensive as to be beyond the reach of this enactment. It appears to us that it would be a great improvement in the law if the keeping of them were absolutely forbidden, at least within the most crowded districts of towns, the limits of which might be defined in each case.

All public middensteads, or collections of dung within towns should also be absolutely forbidden, unless they be placed under proper regulations to ensure the speedy removal of the refuse. We think it would be advisable to place all the collections of the refuse of slaughter-houses under similar regulations, and for this purpose to render slaughter-houses subject to a system of inspection by properly authorised officers, as is already required at Rochdale and other places, as long at least as they are permitted to remain within the crowded parts of towns. In the Act for regulating buildings in the Metropolis, it is provided that no new slaughter-houses shall be established within 50 feet of any dwelling-house and those at present existing shall be removed at the end of a certain period. It appears to us that these provisions may be most beneficially extended.

The authorities at present constituted under the local Acts for the cleansing of streets and prevention of nuisances are, we believe, with the exception only of the Metropolis and Liverpool, always the same body, as the Sewerage and Paving Commissioners. We recommend that the combined duties be still executed by them, subject to such modifications, as to extent of jurisdiction, as local circumstances may render necessary.

Fourteenth
Recommendation.

We therefore recommend that many of the more common nuisances which prevail within towns, such as large collections of dung, be declared nuisances, and be summarily abated.

XV.
Nuisances from
smoke.

Next to the evils arising from defective drainage and cleansing, none appears so generally offensive, or to produce so large an amount of discomfort and expense to the inhabitants of towns generally, as that arising from the dense black smoke of manufactories.¹ Its influence upon health,² however, is not so apparent as upon cleanliness.

Special legislative enactments have been occasionally introduced into local acts for a long series of years past, requiring the owners of furnaces "to use the best practicable means for preventing or counteracting the annoyance from smoke." Notwithstanding these special provisions and the further liability of such nuisances to prosecution and indictment, the evil continues to increase, especially in districts, whose rise and progress has been mainly dependent on manufacturing establishments.

In one case more particularly, the daily increasing injurious effects that arise from steam-engine boilers, the smoke may in general be greatly lessened by judicious and careful stoking, by the adoption of special arrangements, or by the use of

¹ Evidence of Mr. Cubitt, First Report, Q. 250, *et seq.*; Mr. Austin, Q. 849; Report on Preston, App. First Report, p. 52; Report on Ashton-under-Lyne, p. 88.

² Report by Mr. Leigh, Manchester; Second Report, Appendix.

smokeless fuel, it appears to us desirable that the attention of the Legislature should be directed to this point, and all similar cases where no peculiar chemical process is carried on. The principle of interference on this subject has already been acknowledged. The use of any but smokeless fuel is forbidden on many railroads, and it would be a great improvement if this was extended to steam-boats navigating rivers.

We therefore recommend, that, after such a period as it may be deemed advisable to fix, the provisions in local Acts for preventing the escape of dense black smoke from furnaces and steam-engines in towns, be made general. We also recommend that these provisions be applied, so far as it is practicable, to steam-boats usually plying within the limits of any city or town subject to the operation of such Act.

NUISANCES.
Smoke.Fifteenth
Recommendation.

In respect to other nuisances from manufactories, they produce too great injury to health, independently of their effect upon property, and are too difficult of control by the present state of the law, to admit of their being passed over in silence in this Report. Noxious products evolved in manufacturing operations may be dispersed by chemical and other means now well known. Too much importance has hitherto been attached to the mere influence of lofty chimneys in removing to a distance, and diluting the noxious fumes which many manufactories evolve. In themselves, they in no way destroy the emanations which are conveyed into them: these are discharged as much as before into the external atmosphere, and experience has proved that even very lofty chimneys, on which large sums have been expended, do not necessarily insure that amount of admixture with the common air, which is essential to prevent the most injurious consequences on their deposition even at very considerable distances. The extent to which nauseous, acrid, and other noxious fumes from manufactories, often destroy the atmosphere in numerous dwellings, and sometimes of whole streets, is abundantly explained in the Reports of the Commissioners.

XVI.
Other nuisances
from manufacto-
ries.

We have been induced to submit a recommendation for the prevention of these sources of injury under the conviction that great evils do arise from factories, that may influence at times a whole population, while the difficulties that attend the demonstration of the fact are often so great that it is permitted to continue for years without any person being willing to undertake the expense of proving the case. The adoption, however, of the course now indicated will enable such difficulties to be overcome, and there appears to be no good reason, if a private dwelling be made subject to inspection under circumstances affecting, or supposed to affect the public health, why manufactories, which induce such evils to a much greater extent, should not be subject to the general cognizance of the local administrative body, who should be empowered in certain cases to take the necessary legal proceedings for the abatement of such nuisances.

The same power that advances the chemistry of the arts and manufactures has multiplied the means of controlling and destroying offensive and injurious products from chemical operations. Taking, therefore, into consideration the facilities that now exist for preventing such noxious emanations, we feel convinced that much advantage will accrue both to the manufactory and to those who dwell in its vicinity, by the right application and more careful investigation of the means, which have already been put into successful operation for abating similar evils.

We therefore recommend, that in cases where complaints shall be substantiated that the inhabitants of any house, street, or district, in towns, are injuriously affected by the noxious exhalations of any factory, power be given to the local administrative body to ascertain the cause of such exhalations, and to take legal proceedings for the abatement of the evils, in the event of such evils not being removed on due representation.

Sixteenth
Recommendation.

XVII. The importance of an ample supply of good water, accessible at a price within the reach of the poorest classes of society, and in far greater quantities than have hitherto been furnished, is a subject worthy of the greatest attention. The result of our inquiries has convinced us that much disease and many of the

XVII.
Supply of Water.

SUPPLY OF WATER.

Its general deficiency.

inconveniences under which the poorer classes labour, may be alleviated by a plentiful supply of this great necessary of life. All medical men unite in opinion of the great advantages that a better supply of water will effect in the health of the working classes.

The general and great deficiency in the supplies of water, and the consequent state of filth which the abodes of the poorer classes so constantly exhibit, has, we fear, produced a very general impression, that they are not capable of appreciating the advantages and comfort either of personal or domestic cleanliness. The information derived from the investigations of the Commissioners, and the evidence obtained through other channels, has convinced us that this is a most erroneous view of the feelings and wants of those persons, and we are most desirous to correct this impression, which, if it were well founded, would form a barrier to any prospect of improvement, and would render nugatory the recommendations, that we may subsequently make for facilitating increased supplies of water. The general habits of the poor with regard to cleanliness must not be compared with a high standard; their daily occupations, and the nature of their employments, are such as frequently render constant personal cleanliness comparatively unattainable, and unless every possible facility is afforded for this end, they soon become insensible to its importance. The present difficulty and the labour, after a hard day's work, of obtaining water, has a very great effect on their economy, their habits, and their health. The obstacles to the maintenance of domestic or personal cleanliness soon produce habits of personal carelessness, which rapidly lower both the moral and physical condition of a whole population.

Ready appreciation by the poor of the value of copious supplies of water.

At the same time a very satisfactory proof of the readiness of the poorer classes to pay for a more convenient and abundant supply is given by Mr. Toynbee.¹ He states that his patients have warmly expressed their willingness to pay for a better supply.

An example is given by Mr. Liddle² of a considerably increased rental being obtained for some small houses in Whitechapel after a supply of water had been laid on to each of them.

Further examples of the advantages both to the owners as well as to the occupiers of houses have been found in other towns. Mr. Smith,³ an owner of cottages at Preston, states that his tenants agreed to pay him 2*l.* a-week for a constant supply laid on to their dwellings, but that he has not charged it to them, as he found that he was sufficiently repaid by the improved demand for his houses. Mr. Ashton,⁴ of Hyde, gives similar testimony, and both state that a marked improvement was evident in the cleanliness as well as the health of the people. The improvement in the habits of the labouring classes observed at Nottingham after a supply was introduced into the houses is thus stated by Mr. Hawksley⁵: "The increase of personal cleanliness was at first very marked indeed, it was obvious in the streets. The medical men reported that the increase of cleanliness was very great in the houses, and that there was less disease." These examples, with others that might be adduced, establish the conclusion, that the physical condition of the poor would be most materially improved by an enlarged supply of water, and that they are most ready and anxious to avail themselves of the opportunity of obtaining it, even at an expense which to them must be considerable. This view is fully borne out by the experience of the visiting Commissioners, from their observation of the condition of the poorer population, in regard both to their persons and their dwellings, in towns well supplied with water, as compared with those, where the quantity is limited.

The necessity of a supply of water for drainage, and for purposes of health.

The importance of a plentiful supply of water to populous places becomes still more apparent, when in addition to the domestic purposes for which it is necessary, we bear in mind that a copious supply is essential to a good system of drainage, as well as being indispensable for the proper prevention of fire.

Legislative provisions for the supply of water.

The legislative provisions for regulating the supply of water to towns for the most part stand on a very different footing from those, that we have already noticed in relation to drainage, paving and cleansing. There is no general law applicable to the subject, and it does not appear to be a generally recognized principle, that it should form part of the duty of the body entrusted with the local government of a town to enforce or to provide an adequate supply of water. Unlike

the other duties generally provided for in local improvement Acts, the supplying of water to the inhabitants of a town has afforded an opportunity, which enterprising persons have seized, for the investment of capital in the erection of works for its collection and distribution, not so much to provide for the wants of the population but as a good speculation. Water has thus become an article of trade in almost every town, where there is any public supply, and is generally provided for by a separate Act of Parliament. No powers have been given by any general law, enabling any body of persons to furnish a supply, as the increase of the towns gradually deprives the inhabitants of water from its natural sources, and renders them dependent on artificial means for its introduction. There is often no sufficient inducement for the establishment of a Company by the prospect of a return for the capital invested, until a large demand is created, and in the mean time the community contract habits of uncleanness, engendered by the scarcity of this necessary. It is in towns thus circumstanced, that we have found the worst examples of want of cleanliness in the people, and in their habitations. In all cases, and especially in the smaller towns, the difficulty in the delay and cost of obtaining an Act of Parliament forms the great obstacle to procuring a public supply.

A few instances have been brought before us, where the supply of water is placed under the management of Commissioners, not being a trading Company, acting either exclusively for that purpose, or entrusted with the other duties, usually combined in local improvement Acts. Of the former, we find an instance at Huddersfield, and of the latter at Brecon and Halifax, and Hull. The Act for supplying the town of Brecon was passed nearly seventy years ago, and its powers, which were very limited in the first instance, having never been extended, are quite inadequate to the wants of the present inhabitants. Only 170 out of 1500 houses are now supplied under its provisions.

The larger towns are, however, most frequently supplied by a Joint Stock Company generally incorporated under an Act of Parliament. The affairs of these companies are usually managed exclusively by directors, elected by the shareholders, but in a few instances, as at Leeds, and the Harrington Water Works at Liverpool, a certain number of the corporate body are united with them. At Leeds the members of the Town Council bear an equal proportion to the other directors; at Liverpool only three members of the Corporation are chosen; nine are elected by the shareholders.

These Companies having been formed by individuals anxious for a profitable investment, dispose of it only to those persons who are willing to buy it at such rates, and on such conditions, as they are pleased to impose, subject to the restrictions laid down by the Acts of Parliament. The limits as to price are, however, rarely reached, as the Companies almost invariably find it their interest to charge lower rates than those defined by their Acts. Powers are granted to them to make the necessary works, usually described in the Acts, and to lay down pipes in the streets, and sometimes through certain private grounds, but no authority is given to rate any persons except the purchasers of the water. In return for these privileges, Parliament in the later Acts has imposed liabilities to fix fire-plugs in the mains for general use in case of fire, and to permit the water to be used on such occasions without charge, and to furnish on demand, upon being remunerated for it, a supply of water for domestic purposes to every dwelling-house where their pipes are laid.

There are defects in these provisions. As they are now inserted in the Acts lately passed, for the town of Leeds (1837) and Hull (1843), they do not lay down any rule for limiting the distance at which the fire-plugs should be inserted, nor do they require that the mains should be kept constantly full of water, without which little security will be afforded against the extension of fires. At Preston, by an Act passed in the year 1832, the Improvement Commissioners are empowered to fix the distance, provided they be not more frequent than 100 yards. In the earlier Acts these provisions are generally wanting.

The other clauses imposing duties upon the Company are intended to secure a supply for domestic purposes, but they are coupled with two provisos, which appear calculated to defeat their beneficial object. The right to demand a supply only arises where pipes are laid, upon payment of water-dues leviable in such cases under the Act, and then only if the supply can be given without diminishing that to the existing customers. But as there is no obligation, and often no sufficient inducement for the Company to extend their pipes into the smaller streets and

SUPPLY OF WATER.

Absence of any general provisions.

Supplies of water by other than trading Companies.

Supplies by Joint Stock Companies.

Powers and liabilities of Water Companies.

Defective provisions for securing supplies of water for the prevention of fire.

For domestic purposes.

¹ First Report, Q. 5553.

² First Report, Q. 5690.

³ App. First Report, p. 161.

⁴ First Report, Q. 5512.

⁵ First Report, Q. 5242.

SUPPLY OF WATER.

Defects in the present system.

General deficiency of domestic supply.

Supplies by individuals.

Natural advantages at Bath.

courts, this provision affords no security to the inhabitants of such places. Being a trading body they naturally carry their pipes into those parts of the town, where they can get the largest and best customers, and if the supply for the whole town is limited, the inhabitants of poorer districts, where water is most required for the purposes of cleanliness and health, are quite neglected, and are without any redress whatever.

From the returns that we have received from the fifty towns visited, it appears that 26 only are supplied with water under the provisions of any Act of Parliament. The supply in these towns is very deficient, and in many of them is only extended to a part of the town, the poorest and most populous portions deriving little or no benefit. In some of the larger towns the proportion of the houses that receive a separate supply is extremely small. Thus at Birmingham only 8000 out of 40,000 houses are stated to be separately supplied; and, at Newcastle-upon-Tyne, it is stated that the Company supply about one-twelfth only of the dwelling-houses, and that very few of those have either tanks or tubs. The Committee of Inhabitants, who drew up replies to our questions, do not offer any explanation of this circumstance, but they state that many complaints have been made of the quality of the water, which they ascribe to the injudicious position of the Company's works. There are stated to be "situated so near the town that the water is sometimes contaminated with the discharge of the excrementitious and other matters from the common sewers."¹

In other towns not supplied by any public Company or under any local Act, the inhabitants sometimes have the advantage of a supply by pipes from ancient springs belonging to the corporation or some private individual; but the supplies are generally inadequate to the demands of the population, in many instances arising from the defective system of distribution. Thus, at Coventry, the springs on one side of the town, which are described as being sufficient to afford the means of giving a cheap and abundant supply, are now under lease to an individual, and only between 300 and 400 houses out of 7200 receive a supply. The Town Council is stated to have a supply of water under their command; but it is let.² At Norwich, where about one-fourth only of the houses are supplied, the water-works are in the hands of four persons under lease from the corporation. Complaints are here made of the deficiency of water, and that the poorer classes often steal the water from the pipes belonging to other estates.³

These instances of deficient quantities of water do not, however, always occur where the supply is under the management of private individuals. At Longton, a town in the Pottery districts, containing 2000 houses, it appears that nearly all of them have a separate and a constant supply.⁴ The city of Bath also affords an instance of a town generally well supplied with water, without any legislative provisions for the purpose. The facility with which water is obtained at Bath, without any expense of pumping, and requiring only the outlay necessary for its distribution, appears to have induced the landlords of the several properties to lay down pipes for the supply of their own houses; but it is stated that "none of them are protected by Act of Parliament, and are not able to extend their pipes into any neighbouring district, and thereby create a competition."⁵ About 3000 out of 8000 houses in the city are supplied by the corporation. From this a revenue is derived of about 3000*l.* a-year. The remainder of the city is supplied by seven other companies, as they are termed; but they are in fact landlords supplying their own tenants. The height of the reservoir, 157 feet above the river Avon, where the water belonging to the corporation is collected, affords the means of distributing it over the city without any expense of pumping, and giving a supply at a very low rate; but we find that the charge, considered to be very low by the authorities, is at the rate of 10*s.* a-year for 40 gallons per diem, and that it increases to 2*l.* 10*s.*, for which sum two hogsheads are allowed. At Nottingham, where the water is pumped up from the river, at a heavy expense, and afterwards filtered, the charge is only 4*s.* 4*d.*, or 1*d.* per week, for the same quantity; and the highest charge, for an unlimited quantity, is 10*s.* a-year. The corporation

¹ Report on Newcastle. App. Second Report.

² Communication from the Directors of the Poor at Coventry, App. Second Report.

³ Replies from Norwich, App., Second Report.

⁴ The inhabitants of this town are indebted to his Grace the Duke of Sutherland for this supply.

⁵ Report on Bath, App. Second Report.

SUPPLY OF WATER.

Operation of the present system as it affects the poor.

Deficiency of the supply at Bristol.

The mode of supplying the poor usually adopted by Water Companies.

System at Newcastle-upon-Tyne.

Sunderland.

Quantities and charges for water supplied in different towns.

Objections to supplying the poor by common stand-pipes.

of Bath supply gratuitously six public conduits in some of the poorer districts; but from these the water can be drawn during five hours only in the morning. We shall presently show that if the duty of obtaining a supply of water was vested in one body, a large quantity of water that is at present allowed to run to waste in Bath might be most beneficially applied to the use of the poor in the worst districts of this city.

The neighbouring city of Bristol, containing, with Clifton, 130,000 inhabitants, is not supplied with water under the provisions of any Act of Parliament, and the supply is most inadequate, probably more so than in any town of equal size in England. It is estimated that not more than 5000 persons,¹ constituting the most wealthy families in Bristol and Clifton, are supplied with water by pipes laid on to their houses; the remainder are dependent on public and private wells. These are very numerous; but the water is frequently unfit for use, being tainted with the feculent matter from the cesspools, which oozes through the porous soil and intermingles with the water. The extremely filthy condition of the habitations of the poor at Bristol is attributed by the medical men, whose statements are cited in the report on that city, to the great deficiency and the difficulty of obtaining water.

The system most commonly adopted for supplying the poorer classes with water is by stand-pipes or public wells. It appears to be susceptible of great improvement, and at present in many places produces results prejudicial both to the purchaser and seller of the water. A striking instance of the injurious operation of this system is found at Newcastle-upon-Tyne. The poor there obtain water either from public fountains supplied by the Water Company, and paid for by the Corporation, or from "sale-pants," or stand-pipes, at which the water is sold at the rate of one farthing a skeel, a vessel containing five gallons. This charge is more than four times the rate charged for a private supply to a house, and is the same sum that the water companies in some other towns² charge for 79 gallons delivered in the house, and always at command. It is estimated that 7,000,000 gallons, producing 104*l.*, are annually sold in this manner. Of this sum, one-third (34*l.*) is paid to the persons in attendance on the pants. The mischievous operation of this system, both upon the interests of the Company and the public, will be better understood when it is stated that, at the first erection of a sale pant, and until the customers are numerous, the superintendent is paid two-thirds of the gross receipts. The eagerness to obtain water is, however, so great, that the payment has been soon reduced to one-third; and notwithstanding the cost and the difficulty of obtaining the water, it is stated that a great improvement in the condition of the neighbourhood has always followed the introduction of a sale pant. The expense of a superintendent naturally prevents the establishment of a pant until the customers are certain to be numerous. A similar system prevails in the neighbouring town of Sunderland.

The extravagant price that the poor thus pay for water, and the barrier placed upon its more liberal use, will be better estimated by reference to the quantities consumed by the poorer classes in towns, which have the advantage of an abundant and well distributed supply. Mr. Hawksley states, that the supply at Nottingham amounts to 40 gallons to each family per diem; at Preston, it is 45 gallons. And Mr. Thom, an engineer, who has had great experience in supplying water to towns in Scotland uses the word "supply" as meaning two cubic feet, or 13 gallons per diem for every individual of the population. At this rate of consumption, the cost at Newcastle or Sunderland would amount to 2*d.* per diem for each family, or twice the amount for a day's supply that is charged at Nottingham, Preston, and Ashton-under-Lyne, for a week's consumption. But it cannot be supposed, that under such circumstances so large a quantity of water would be consumed; the mere labour of conveying nearly 300 gallons of water a-week would alone create a sufficient obstacle to its liberal use, even if the water could be obtained gratuitously.

Other objections deserving of consideration have been raised against the mode of supplying the poor by common stand-pipes, whether the water is supplied gratuitously, or at the expense of the landlords, the system in practice at Leeds and other places. These objections apply with greater force when the supply is given at intermittent periods. The system of supplying water usually adopted by Companies, is to turn it on to the several districts of the town at certain periods of the day, generally two or three hours three times a-week. The houses of the

¹ Report on Bristol, App. Second Report.

² Preston, Ashton, Nottingham.

SUPPLY OF WATER.

Operation of the present system as it affects the poor.

wealthier portions of the community are furnished with cisterns to receive and retain the water until the period of supply recurs, but among the poorer classes the expense of erecting a cistern, forming a serious addition to the cost of a small house, is dispensed with, and they are obliged to retain the water in such vessels, as they happen to possess. It is obvious that they must watch their opportunity of collecting water during the period that it is turned on, and those who are engaged in occupations from home, necessarily lose their chance of getting a supply. This inconvenience is particularly felt in districts where women and children have much employment. When pipes are not laid on to each house much labour is expended in fetching the water, and time is lost in waiting for their turns to fill their vessels. Where many persons are collected, as frequently happens, quarrelling naturally ensues for precedence, while serious injury is often inflicted upon the morals of the better portions of the population. These evils are described by Mr. Hawksley¹ and Mr. Quick.² Mr. Ashton, of Hyde,³ near Manchester, who has lately had experience of a change of system, corroborates these statements, and bears testimony to the benefit derived by an alteration from a casual supply obtained from a distance, to a constant supply to each house.

He also states, that the system of stand-pipes and intermittent supply is being gradually abandoned in his neighbourhood,⁴ and the introduction of the water into the houses of the labouring classes is proceeding voluntarily. He also gives his reason for the opinion that the waste of water is less under the system of constant supply.

Advantages of giving a constant supply of water.

The advantages of giving a constant supply introduced into all houses, so as to be available for use at any period of day or night, as adopted in several towns,⁵ are fully detailed in the evidence of Mr. Hawksley and Mr. Anderton. We have received information, that the Directors of the Company now supplying the towns of Manchester and Salford with water, have determined, with the consent of the proprietors to apply to Parliament, for an extension of their powers, to enable them to afford the inhabitants of those towns the advantage of a supply on an equally liberal scale.

The system of constant supply offers advantages for the introduction of water into all houses, which are unattainable by any other mode. Receptacles which are necessary for the retention of water, if delivered at intermittent periods, under this system are not required, and the original cost of erecting tanks or cisterns in each house can thus be saved. In the account which Mr. Smith⁶ gives of the improvement effected by him in laying on water to a number of cottages at Preston, he states, that he would not have incurred the expense of putting up cisterns to each house, and that the tenants could not have remunerated him for the outlay. The cost of erecting cisterns with ball-cocks would have amounted to 180⁷, the sum actually expended by him was only 24⁸, or 6s. for each house.

The economy thus effected in the original cost of making the necessary preparations for receiving a supply of water in each house, affords a strong reason for the general introduction of this mode of supply. No supply, however abundant, will effectually promote habits of cleanliness amongst a population, unless it is readily accessible at all times, without trouble.

Considerations for placing the supply of water under the management of a disinterested body.

We now proceed to consider how this object may best be attained with the least cost to the inhabitants, and at the same time with a due regard to the interests of the existing Water Companies, so as not to require an additional outlay of capital without affording a sufficient prospect of a just return.

It appears to be generally admitted by witnesses⁹ examined before us, who being themselves connected with existing Water Companies, have had every opportunity of observing the effect of the opposing interests of the Companies and their customers, that a copious supply of pure water cannot be secured to the poorer classes of the community, unless the duty of providing it is placed under the management of some independent and disinterested body. It should be the duty of the local administrative body not only to secure a sufficient supply for all the inhabitants, but by contracting with or purchasing it of the Water Companies, to

¹ Evidence of Mr. Hawksley, First Report, Q. 5418.

² Evidence of Mr. Quick, Q. 5898.

³ Evidence of Mr. Ashton, First Report, Q. 5507.

⁴ See also the Evidence of Mr. Mylne, First Report, Q. 5718.

⁵ Nottingham, Preston, Ashton, Oldham, Bury, Rochdale; see also Report on Large Towns in Lancashire; App. Second Report.

⁶ App. First Report, p. 161, Q. 5.

⁷ Mr. Anderton, App. First Report, pp. 158—9, Q. 9.

⁸ First Report, Evidence of Mr. Thom, Q. 172; Mr. Wicksteed, Q. 4483; Mr. Quick, Q. 5954.

ensure its regular distribution at a fair remunerating price. The want of such an obligation is strongly exhibited in the case of Bath, to which we have already alluded. It is stated by Mr. Little,¹ the agent to one of the Water Companies, that the surplus water from the Circus would be sufficient during seven months of the year to supply the poor inhabitants of Avon and Milk streets, and that for want of the necessary pipes it now runs to waste under the very houses, in which it is so much needed. A very small outlay would secure the useful application of this water.

But such instances of abundance are unfortunately of rare occurrence. The supply of water is commonly too scanty at its source, or doled out with too sparing a hand to admit of any surplus. We have already shown that the system of distribution adopted at Newcastle-upon-Tyne and Sunderland deprives the poor of the full benefits of the supply at the command of the Companies in those towns, and that in other towns, as at Coventry, the supply at the source is ample, but that no means are adopted to introduce it generally into all parts of the town. In all places, however, the present system of supplying and charging for water operates most prejudicially to the interests of the poor. The deficiencies in the supplies to this class of the population appear to be partly attributable to the want of a sufficient security to the Water Companies for a certain return, upon the capital invested in the pipes and mains for conveying water into the poorer districts. The Directors of such Companies naturally hesitate to carry their pipes into districts, where the returns for the money expended are so precarious; and they seldom consent to supply the houses of the poor unless the landlords become responsible for the payment of the water rates.

The Companies, looking only to a profitable return for the capital invested, and the higher the dividend the better for them, whether it is in the shape of interest upon the money advanced, or as a bonus to each shareholder. They can have no interest in extending their pipes except in such a manner, and under such circumstances as will give to them the largest return. Every improvement involves the outlay of additional capital, and the risk of a reduction in the dividend: these considerations operate as a serious check to the extension of the supply.

In towns where no Water Company is at present established, the object of obtaining a better supply, may, perhaps, be most conveniently accomplished by granting sufficient powers to the bodies, entrusted with the drainage and sewerage, to raise the funds requisite to construct the necessary works or to contract with others, and to levy certain rates for that purpose. We apprehend that it would be proper to provide that such powers should only be exercised under the permission of the control, vested in the Crown. We are assured² that any facilities, thus afforded for obtaining a good supply of water, would be most acceptable in those towns, where the population is not large enough to ensure a sufficient return to private speculators for the capital invested, coupled with the charges consequent upon obtaining a special Act of Parliament. This opinion is strengthened by our observations of the beneficial effect of the provisions of the General Lighting Act.³ The power, given by that statute, to rate the inhabitants for lighting towns, by insuring a certain demand of gas for the public lights, has induced individuals to establish gas-works, on a very small scale, for the supply of towns containing, in some instances, a population only of 2000 persons.

In large towns also we have little doubt that any legislative measure, containing such provisions, will be frequently adopted. But in such places the variety of interests to be considered, and the intricacy and value of the property to be purchased, and the distance that the water must often be conveyed, will frequently render a private Act necessary to aid and enlarge, whatever powers may be granted by a general law.⁴ In large towns, moreover, there is less difficulty in forming Companies, while the expense of obtaining an Act of Parliament bears a smaller proportion to the capital invested in the works.

In those places where the supply of water is not now under the management of the local authorities, it will be necessary that power should be given for them to contract with the Water Companies for a sufficient supply for all purposes, public as well as private; and that in case of refusal by the Company, they should be

SUPPLY OF WATER.

Defects in the present system.

Means for obtaining better supplies of water where no Companies are at present established.

Where Water Companies are established.

¹ Report on Bath, App. Second Report.

² 3 and 4 Will. IV. c. 90.

³ Evidence of Mr. Hawksley, First Report, Q. 5469.

⁴ Evidence of Mr. Hawksley, First Report, Q. 5499.

SUPPLY OF WATER.

Establishment of an authority to provide water.

enabled to obtain an independent supply, and to lay down the necessary pipes for its distribution.

As the natural facilities, and the expense of obtaining water in each town, necessarily vary with their local peculiarities, the terms, upon which the quantities required, ought to be supplied, must be arranged to suit the circumstances of each case. In calculating the charge to be made for the water, the amount of capital invested in the erection of the works, the current expenses of the establishment, and other items of expenditure, must be taken into consideration, so as to afford the proprietors of the Company a fair return for the money advanced by them. In estimating the quantity of water for domestic supply, we think that in all cases where an ample supply can be procured it ought not to be calculated at a less rate than 12 gallons per diem for each individual of the population. The quantity required for public purposes will vary according to the situations, and other peculiarities of the towns. The water necessary for flushing the sewers will diminish as the natural advantages of drainage are greater; and the quantity used for watering the streets will vary according to the materials of which they are constructed. A more abundant supply may lead to the adoption of a system of washing the dirt from the foot pavements, and other roads, which are constructed of such materials as will admit of this mode of cleansing.¹

Seventeenth Recommendation.

With the view of ensuring a sufficient supply and proper distribution of water to all classes, we recommend that it be rendered imperative on the local administrative body, charged with the management of the sewerage and drainage, to procure a supply of water in sufficient quantities not only for the domestic wants of the inhabitants, but also for cleansing the streets, scouring the sewers and drains, and the extinction of fire. For this purpose we recommend that the said body have power to contract with Companies or other parties, or make other necessary arrangements.

XVIII. The necessity of placing the supply of water under one management.

XVIII. We have already explained our views of the importance of vesting in the body charged with the administration of the other local works, the duty of obtaining supplies of water for the use of the inhabitants generally, and especially of the poorer classes; but there are other economical advantages in combining under one management the works for the supply of water within the same district.

Effect of competition between Water Companies.

In the great majority of towns, at present supplied by Joint Stock Companies, there is only one establishment for managing the supply of water. To this rule the towns of Liverpool and Nottingham form the only exceptions. We cannot, however, present these as affording examples of the beneficial operation of a system of competition, at once remunerative to the Companies, and satisfactory to the public.

At Liverpool and Nottingham.

At Liverpool, the system of supply produces great complaints on the part of the consumers, while the proprietors of the two Companies, who by an understanding between themselves have practically a monopoly, are receiving a large dividend on the capital originally subscribed, as appears by the statement of Mr. Holme.² On the other hand, at Nottingham, where the competition between the two Companies is in active operation, and water is supplied on a most liberal scale, the one is receiving only an interest of 5l. per cent., while the other, an old established Company, has been without any dividend for nearly 20 years.³ The rivalry here has improved and cheapened the supply of water at the expense of the proprietors; at Liverpool the want of a competition has enhanced the cost, and stinted the quantity to the great benefit of the shareholders and injury of the inhabitants. The rapid increase of the population of this town has afforded sufficient scope for the profitable investment of the capital of more than one Company. But where the population is more limited, the demand for water supplied under the present system, tending to prohibit its liberal use amongst

¹ Evidence of Mr. Hawksley, First Report, Q. 5369; Mr. Quick, Q. 5946; Replies from Newcastle-on Tyne, App. Second Report.

² Report on Large Towns in Lancashire, App. Second Report; App. First Report, p. 189, Q. 26, p. 192; Evidence of Mr. Aspinall, Second Report, Q. 1357.

³ The Commissioners have lately been informed that arrangements are now in progress for making an application to Parliament to effect the consolidation of these two companies.

SUPPLY OF WATER.

Effect of competition between Companies.

the poorest and most numerous classes, is scarcely sufficient to give the shareholders a fair return for the capital laid out in the works. This appears to be the condition of many of the Companies at present established. But by the introduction of a better system of rating household property for these purposes masses of the population will become consumers of water, adding largely to the rental of the Water Companies, and probably so far increasing their dividends, as to attract for the first time the attention of another Company, anxious to share in such a profitable mode of investing capital. Our attention has been earnestly drawn to the waste consequent upon such a competition generally resulting in a loss to all the parties interested in the scheme, and seldom producing any benefit to the public.

The investment of a second capital, in the same field, brings with it the necessity of maintaining separate establishments, each with its own staff of officers for the superintendence and management of works, even in the same streets, and the causes of leakage of water, and other losses from wear and tear, are multiplied in the same proportion. The mains and pipes, the great source of expence, when once laid down, are irremovable, except at a further cost. By the introduction of a competition this fixed capital either becomes totally unproductive, or the returns are diminished by a reduction in the number of consumers. A large portion of the capital invested is thus superfluous, and great exertions, by reduction of price and liberality of supply, must be made to obtain public patronage. The dividends of the competing Companies are proportionably decreased, and when both probably are on the verge of ruin an arrangement is made to withdraw from the competition. The public is thus deprived of the expected advantages, and is again exposed to the high charges generally accompanying a monopoly.

The operation of the existing laws in those respects is well illustrated in the evidence of Mr. Hawksley¹ and Mr. Quick,² and in the memorial which has been forwarded to us from two of the Water Companies in London.³ The former witness has furnished us with a table, showing the rate at which the expenses of the establishment, and the charges for maintaining the works of the Water Company, at Nottingham, decrease in proportion to the quantity of water supplied. From this statement it appears, that the cost of supplying 1000 gallons, exclusive of the interest on capital, amounts to 1.42d., or little less than 1½d., and with the interest on capital it is only 3d.; the charges, which increase with the quantity supplied, (being those connected with the pumping machines,) bear a proportion of one-third only, and the remaining two-thirds (comprising the salaries of officers, the general cost of the establishment, and the repairs of buildings and works) will diminish, though in different ratios, as the quantity of water supplied is increased. The same principle is exemplified even more strongly in the case of establishments for the supply of gas.⁴

In considering the best mode of insuring a cheap and abundant supply of water it is most essential to bear in mind that a great waste, both in the original outlay, and in the current expenses, which fall ultimately on the public, necessarily accompanies the multiplication of works and establishments. For these reasons, the number of enterprises of this kind may easily be extended beyond what is either beneficial to the public, or to the proprietors themselves.

At the same time the exposure to the risk of competition frequently imposes a salutary check on the conduct of the managers of Companies, and the power of creating a rival establishment, affords a valuable protection against the continuance of existing, or the creation of new monopolies.

We have, however, reason to believe, that many instances occur, where the want of a sufficient security against the introduction of rivals prevents the original establishment of works, or deters the adventurers from hazarding further advances of money, to meet increasing demands upon them.

It becomes therefore a question for consideration, whether some better guarantee than now exists, could not be given for insuring a fair and just return for money advanced for the establishment of Water Companies, which will, at the same time, provide a security to the public.

¹ Evidence of Mr. Hawksley, First Report, Q. 5950.

² Evidence of Mr. Quick, First Report, Q. 5256, *et seq.*

³ Supplement to this Report, p. 116.

⁴ Evidence of Mr. Hawksley, First Report, Q. 5474.

SUPPLY OF WATER,

Effect of Competition between Companies.

Want of sufficient security in Acts of Parliament for due performance of the duties imposed.

The Acts of Parliament, at present existing, rarely contain the provisions necessary for insuring a due compliance with the obligations imposed by them, and no competent authority exists to require the fulfilment of the objects. On the other hand, the Companies are not restricted in the amount of dividend to be shared, or the minimum quantity of water to be supplied. The value of the shares may be increased to any amount,¹ and the price of water unduly enhanced without any means of redress. The only remedy to which the public can now have recourse is a further application to Parliament for the creation of a new and competing Company. Such an application cannot be made without a considerable expenditure of money, and if successful, will probably produce a result, such as we have already pointed out.

Cases have lately occurred where even that resource has failed. The instance here alluded to is that of the two Water Companies at Liverpool. Restrictive clauses were introduced into an Act of Parliament passed in the Session of 1843, to prevent the Corporation from applying to domestic purposes the water, which it was thereby empowered to procure and supply for the extinction of fire, and other public objects.

We feel that it is a matter of some delicacy to offer any recommendations affecting the pecuniary interests, which are involved in such undertakings. In the absence of any law requiring a public body to provide a supply of water, individuals have been induced, by a just expectation of profit, to risk their money, and they are fairly entitled to the due advantages resulting from their enterprise. We apprehend, however, that it will not be difficult to afford a better protection to the public in future, and at the same time to give a due encouragement for the investment of money in water-works, so as to ensure a general improvement in the supply of water.

In an Act passed in the year 1837, for supplying water to the town of Leeds, it is provided, that the Town Council should have power to raise the necessary funds for purchasing the shares after the lapse of twelve years, at a rate of 6 per cent.; a limit is, also, placed on the amount of profit. These are examples, which, it appears to us, ought to be extended to all cases.

We anticipate that the powers vested in the local administrative body, (which we propose should only be exercised under the control of the Crown,) by providing the means of obtaining a good supply would prevent those complaints, now only to be remedied by threats of appealing to the Legislature, for the establishment of new schemes. It would thus become the interest of the existing bodies to submit to the conditions and regulations imposed upon them: in return for which they would be entitled to claim support to prevent the intrusion of a new and competing Company. We are convinced that the existence of a satisfactory understanding between the Companies and these bodies, who may at any time become their largest customer, will mainly contribute to this object; and, by ensuring a good supply of water, will justify the exclusion of competition, without incurring the risk of establishing an injurious monopoly.

Eighteenth Recommendation.

We therefore recommend, that where any independent body has the management of the supply of water, it be liable to comply with the demand of the local administrative body on equitable terms; and that, further, the local administrative body be empowered to purchase the interest in water-works, subject to the control of the Crown, whenever the proprietors are willing to dispose of them.

We further recommend, that on the establishment of new Companies, it be made a condition, that the local administrative body be enabled to purchase the works after the lapse of a certain number of years, upon certain terms, and upon a rate of interest to be fixed; and that with a view to economy, competition between Water Companies be discouraged as far as practicable.

XIX. Powers for the recovery of water-rates.

XIX. The Water Companies are now generally vested with very full powers for

¹ Replies by Mr. Holme, Appendix, First Report, p. 192.

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the recovery of the rates due to them. They have the power of levying by sale and distress of the goods of the person liable, in the same manner as a landlord may distress for rent; and they are further armed with the summary power of cutting off the supply of water, in cases of nonpayment. But even these powers do not secure them from losses. In those poor districts, where the landlord is liable for the rates, the remedy by distress will be unavailing, if he does not live on the spot, and the Company can then only secure themselves from further loss by discontinuing the supply to the houses. This power, where it is put in force, falls upon the most helpless, and the poorest classes of the community. It is unnecessary for us to dwell on the prejudicial operation of this system to all parties. Besides the injury to the poor, the Company increase their loss not only of the rent, but of the capital expended in laying down the pipes, now become unserviceable. A constant expense is also incurred by the liability to parochial rates on these pipes, which, although ceasing to produce a profit, are still charged for the local burthens. These losses to the Companies could not occur if the supply for such houses were placed under the management of the local administrative body, as we have above suggested. In addition to the security for the payment of their rates, they would be certain of a large increase in the number of their consumers, as it would be the duty of the local body to ensure a supply to the inhabitants of every house.

We anticipate that the arrangements proposed for obtaining large supplies of water from the Companies through the medium of the local administrative bodies, will be of great advantage to the Companies. It will give them the opportunity of disposing of the water to one extensive and responsible customer, who will pay for it under one agreement, and in one gross sum. They would be saved the trouble, and consequently the expense of making separate bargains, and levying separate rates on a large number of small consumers, in the collection of which, whether from tenants or landlords, many disputes and losses constantly occur.

We therefore recommend that as soon as pipes are laid down, and a supply of water can be afforded to the inhabitants, all dwelling-houses capable of benefiting by such supply, be rated in the same way as for sewerage, and other local purposes; and the owners of small tenements be made liable to pay the rates for water, as we have already recommended in respect to drainage.

Nineteenth Recommendation.

XX. Besides the public purposes above mentioned to which the local administrative body may apply the water placed at their disposal, we are of opinion that a very great benefit will accrue to the poorer classes, if some portion of it be appropriated for baths, and for affording other facilities for cleanliness, which the confined dwellings of the poor now prevent them from enjoying. Public attention has lately been very generally attracted to the importance of this subject. The success of the baths and laundries erected at Liverpool,¹ by the liberality of the Corporation, has stimulated private individuals in other towns to pursue this example. The proposal for the establishment of public baths at Edinburgh was first commenced by the working classes; affording a strong and a gratifying proof of their eagerness to obtain the means of greater cleanliness, and their due appreciation of its advantages.

XX. Supply of water for public baths and laundries.

A power has been given in an Act for improving the township of Birkenhead,² for the Commissioners to erect baths on the land to be purchased by them for public parks.

We, therefore, recommend that every facility be afforded to furnish ample supplies of water to public baths and washhouses that may be established for the use of the poorer classes.

Twentieth Recommendation.

XXI. We have already adverted to the legislative enactments relating to the supply of water for the extinction of fire, and we there intimated our opinion that the Water Companies should be required, under a penalty, to keep the mains constantly full of water, and that the distances between the fire-plugs should be limited. The present general arrangements in towns, both on the part of the Water Companies in providing ample supplies of water, and on the part of the other authorities in furnishing the means for its speedy and effectual application vary from the

XXI. Arrangements for the supply of water for the prevention of fire.

¹ Report from Liverpool, App. First Report, p. 195.

² 6 Vic., c. 13.

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At Nottingham, Preston, and Oldham.

highest degree of efficiency to a total want of that preparation, which prudence and foresight requires. At Nottingham, Preston, and Oldham, the practice of keeping the water constantly on in the mains and pipes under a high pressure, affords the opportunity of applying it rapidly on the first outbreak of fire. The constant pressure maintained at the works of the Companies, enable them in most instances to throw a jet of water to the tops of houses without the aid of a fire-engine. The facilities,¹ thus given for the extinction of fire, has caused the gradual introduction of fire-plugs upon each story of large buildings; and we are assured that the efficiency and the rapidity of this mode of applying the water has, on more than one occasion, successfully prevented any extensive damage. In extensive fires this system may not supersede the necessity of using fire-engines, but we cannot too strongly recommend its adoption where circumstances afford opportunity for its application.

At Bath.

At Bath new mains have lately been laid down so as to supply water on this principle, but they do not extend beyond the district supplied by the corporation. Other portions of the city are left without the advantage of such protection, although their position would admit of such a mode throughout nearly the whole of the city.

The system of supply at constant pressure affords peculiar facilities for the especial protection of large and public buildings from fire; but the requisite arrangements, by inserting a sufficient number of fire-plugs, appear to be rarely made. We are of opinion that it would be an important advantage if the owners of such buildings were empowered to have inserted, at their own expense, a sufficient number of fire-plugs in the mains of the Water Companies under proper regulations.

At Liverpool.

With the exception of Liverpool, we have not found in any town a separate supply of water introduced for the distinct purpose of protecting property from fire. The enormous destruction of property that has occurred in that town from this cause, the extent of which has been chiefly attributed to the difficulty of obtaining a sufficiency of water, compelled the authorities to seek for a better supply, than could be procured from the existing Water Companies. The losses sustained at Liverpool are not, however, confined to actual destruction of property from fire, the increased charges for insurance are the source of a serious and constantly additional expense. The premium upon insurance, always high in that town, has been raised from 8s. to 35s. per cent.,² while the rates for similar risks in London vary from 2s. 6d. to 5s. The diminution of the losses from fire, as well as the saving in the charges for insurance, produced by the introduction of an improved supply, is also further illustrated in the evidence contained in the replies from Philadelphia and New York.³ At the latter city the reduction in the charge for insurance has been 25l. per cent. since the formation of the Croton aqueduct.

Establishment of fire-engines and police.

The arrangements for the establishment of a proper service of fire-engines, and the necessary accompaniment of officers and men, are, for the most part, very defective. In any but the largest towns fires are happily not sufficiently frequent to give constant and exclusive occupation for a body of firemen, but this deficiency might be in some degree amended, if a portion of the police were regularly trained to undertake this duty, under the care of an efficient superintendent. Such a body might be entrusted with the charge of all the fire-engines in the town, which, when brought under one united management, would be rendered much more efficient than they are now described to be. They are now generally the property of the fire insurance offices, the corporate bodies, or parishes, and sometimes of private individuals. The introduction of a regulation requiring the establishment of a proper number of engines placed under the care of competent men, would be a most important improvement both in respect to security of property, and in the economy of the expense of maintaining the existing separate establishments. It does not appear that any system of rewards for the discovery of fires and early arrival of the engines, similar to that adopted in the Metropolis, is generally in force. We believe that it has been found most beneficial in stimulating the exertions of firemen, and might be usefully extended.

Inquiry into the causes of fires.

In many cases it appears to us, that the causes of fires are not sufficiently investigated in places where accidents from fire frequently occur, and that much valuable information would be acquired and generally diffused were the causes of all fires

¹ Mr. Anderton, First Report, App., p. 160, Q. 26.

² Evidence of Mr. Braidwood, First Report, Q. 1240.

³ Replies from New York and Philadelphia, First Report, App., p. 155, Q. 16.

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thoroughly investigated. No regular inquiry is now instituted to ascertain the origin of fires, unless they are attended with circumstances leading to the suspicion that they have been caused wilfully. It may therefore be worthy of consideration whether such a duty should not be imposed on some existing authority.¹

We therefore recommend, that for increasing the protection of property from fire, in all cases the supply of water in the mains be not only constant, but also at as high a pressure as circumstances will permit, and that fire-plugs be inserted in the mains at short intervals.

Twenty-first Recommendation.

Having now submitted recommendations for the adoption of the measures that require the largest outlays for their execution, viz. the works of drainage and the supply of water, we may here conveniently state the provisions which we think will be necessary to secure the proper application of any new expenditure requisite for the achievement of the several objects in question.

Advantage of executing work by contract.

In addition to the securities for efficiency and economy on which we have already given our opinions, namely, the determination by surveys of areas for efficient works of drainage, the examination or preparation of plans of new works by competent engineers before any new works are undertaken, the execution and maintenance of those works by properly qualified officers,—we have to recommend as another and important security, a provision requiring that all such works should be executed by contract upon open tenders, as far as practicable.² An additional security will be given if such works, especially those constructed for the supply of water, be maintained and kept in good repair for terms of years on contract by the parties by whom they may have been executed, whose interest would thus lead them to make good and sufficient works in the first instance.

Thus in contracts for the supply of water to houses, an eligible form of contract would be for the maintenance of a given rate of supply for a term of years, leaving to the contractor the choice of apparatus. If the contractors have a fair liberty, as to the means, and a share of the first benefits of new improvements, such improvements will be soon made and rapidly carried into execution to the public advantage. Many of the works are, however, too large for single contractors, and it appears desirable to give facilities for the execution and maintenance of such works by public companies, as lessees or contractors for terms of years, with liberty of redemption by the public upon terms previously settled. We are informed that such works would frequently be executed and maintained, and all risks undertaken, upon such terms as a guaranteed profit of 6 per cent. on the outlay. When money has been borrowed, the usual market rate of interest for such investments has hitherto been 4½ or 5 per cent. An addition of 1½ per cent., for which a company would often undertake the maintenance and execution of such work, would be cheap, as compared with the risk of mismanagement by local boards, composed of persons having no professional skill, and liable to be misled as to the materials and magnitude of the proposed works, as well as to the numbers of officers requisite to maintain them. It might be difficult to ensure that a local body should be so constituted as to give the same constant attention to economy in the expenditure of other people's money that contractors would do in the expenditure and management of their own.

XXII. The Legislature has hitherto sanctioned but few local Acts, containing provisions for regulating the disposition of land as regards the width of streets, and the space to be allotted for houses, and restrictions are rarely placed upon the mode of constructing houses, either with a view to prevent the extension of fire, or to provide the occupants with those comforts and conveniences, which are now considered necessary parts of every dwelling.

XXII. Regulations for buildings.

The extent to which the motives of self-interest may induce builders, when unrestrained by law, to construct houses upon such a defective scale, and crowded together upon such small spaces, as to render them insalubrious, has now long been

¹ Evidence of Mr. Braidwood, First Report, Q. 1301.

² Evidence of Mr. Hawksley, First Report, Q. 5487.

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Width of streets.

proved. The consequence of the absence of any general regulations relating to the width of streets, and the construction of houses is exhibited in the narrowness of many of the streets and courts in the most populous towns, where the increase of population has rendered the ground most valuable.

The most extreme examples of excessive density of population that have been brought under our notice occur at Nottingham¹ and Liverpool.²

There are perhaps few towns, that would not present in some limited district similar instances of a dense population crowded into narrow streets, and blind courts and alleys, but they appear to occur not only most frequently, but in the greatest proportion in towns where the increase of population has been most rapid.

An example of the want of proper regulations, to prevent the erection of houses in close and confined courts, is exhibited in Liverpool. The occupiers of houses in such places comprise the poorest classes of the population, who from various causes contribute in the greatest degree to increase the high rates of mortality, exhibited by the mortuary registers at Liverpool. But the close investigation made by Dr. Duncan² into the rates of mortality in the different districts shows, that the greatest amount of fever is found in those localities, where the narrowest and worst ventilated courts are most numerous and the population most dense. In one district, one in every 10 inhabitants was, on the average of 5 years, attacked with fever. The tables contained in the report of Mr. Hawksley, on the mortality of Nottingham, exhibit similar results of the unhealthiness of a population living in closely built and ill-ventilated districts.

The same evils arising from the confinement, and consequent impurity of the air in the close courts pervade all towns, but we have not received any return of the number of courts, or of their inhabitants from other places than Liverpool and Birmingham. At the latter place they amount to nearly 2000, and are stated to contain about 50,000 persons, bearing a larger proportion to the population than at Liverpool, but the absence of cellar dwellings at Birmingham, as well as the dry soil on which the town is situated, lessens the intensity of the evils, to which the poor are there exposed.

Neglected condition of courts attributable to the absence of thoroughfares through them.

We have already described the general neglect, in regard to courts and alleys, and we are inclined to attribute this neglect, in a great degree, to the general absence of thoroughfare through them. While the exclusion of the public passengers has afforded an excuse to the local authorities for not exercising any jurisdiction over them, it has contributed to prevent the exposure of their disgracefully filthy condition. The neighbouring inhabitants, whose business might have led them to pass through them, had they been thoroughfares, would not have tolerated the continuance of the heaps of filth and ordure, now so frequently found there, injuriously affecting the atmosphere, and becoming the sources of disease to the surrounding neighbourhood.

The courts are now usually constructed with only one entrance, commonly more narrow than the passage between the rows of houses, and forming an archway under another house. The remaining space is included within houses frequently so lofty as to exclude the direct action of air or light, and some portion of it being generally occupied with privies, and not unfrequently with pigsties, the whole forms a reservoir for foul and fetid air, rarely renovated, except in highly disturbed states of the atmosphere. The proportion of courts at Liverpool, which are open at the front and back, so as to admit a free current of air through them, is shown by the report of the surveyors to be only 693 out of 2398.

Provisions in local Acts for compulsory purchase of property.

Few local Acts are now passed, that do not contain clauses empowering the compulsory purchases of property especially named in the Acts, and giving facilities for the acquisition of other property, where the owners are willing to dispose of it. These powers, however, are usually confined to the improvement of the means of traffic in the main streets, and although large sums of money have been expended for these objects, no instance has come under our notice, where the public money has yet been applied to the purposes now under consideration. Extensive improvements have been made at Manchester by the aid of the profits arising from the public gas works, but hitherto the poorer districts have derived little or no benefit from the large funds at the disposal of the authorities from this source. Measures have, however, lately been taken into consideration to effect

¹ Report on Nottingham, App. First Report, p. 138.

² On Liverpool, *ibid.* p. 28.

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these objects, but there is reason to fear that in this as in other places, they cannot be extensively carried out without recourse to the Legislature for a power to compel the sale of the property necessary to be removed.

A power to expend the rates in the purchase of property for the above purposes should be executed only under the sanction of the control of the Crown. But even such a restricted power will afford great facilities for improvements, and will often obviate the necessity of procuring special Acts for each separate occasion.

We do not anticipate that a very rapid improvement will be effected in the most densely crowded districts by the execution of powers to be given in pursuance of the recommendation that we shall presently submit. The high value of property in such districts will frequently render the extension of thoroughfares impracticable, on such a scale as would be desirable, while at the same time great caution should be exercised, lest by the removal of large numbers of the poorer classes, equally injurious effects may be produced in other parts by the overcrowding of houses, before sufficient accommodation had been provided for the disturbed population. It will, however, frequently be practicable to effect a considerable improvement in the ventilation of close and confined courts by alterations on a small scale, and at a comparatively trifling expense. The removal of a single house or a dead wall may sometimes effect the object, and a free circulation of air admitted by erecting open iron rails in their stead.

We therefore recommend that, subject to proper control, the local administrative body be empowered to raise money for the purchase of property for the purpose of opening thoroughfares, and widening streets, courts, and alleys, so as to improve the ventilation of the densely crowded districts of towns, as well as to increase the general convenience of traffic.

Twenty-second Recommendation.

XXIII. It will, however, be comparatively easy to prevent the recurrence of similar evils in future. Provisions for regulating the width of courts and alleys have now frequently received the sanction of Parliament, and clauses have been introduced in Acts relating to Leeds, Liverpool, Manchester, and London, limiting the width at which courts may be built. Such limitations have long since been made with reference to the width of streets, where the public traffic is affected; but it is only lately that such regulations have been applied to places that are not thoroughfares, or not adapted for the passage of carriages.

XXIII. Provisions in local Acts for regulating the width of courts.

The clauses containing these restrictions in the Liverpool Act have been so framed, that the builders have found the means of evading their beneficial object. The Act provides "that it shall not be lawful to build any house in any court which shall not be open for the space of 15 feet at the least from the ground upwards at one end of such court." The courts have been constructed with a proper regard as to width, but in some cases by being curved and branching off in several directions, entirely prevent a free current of air from passing along them¹. The evil may be further increased by an objectionable power contained in the Act to permit the narrowing the entrance of courts by erection of privies, provided that they do not reduce the width to less than six feet, so that the air passing through this channel carries with it the putrid emanations from these buildings through the entire court. The Health Committee are fortunately entrusted with the power of preventing these evils, and have hitherto very properly exercised it. But the clauses in this Act, and in that for Leeds and Manchester, do not provide for the increase of the width of the courts in proportion to the height of the adjacent houses. It is obvious that without a restriction of this kind the erection of lofty houses will completely defeat the intention of such provisions.²

In the course of our investigations our attention has been frequently drawn to the propriety of recommending the adoption of regulations to prevent the erection of houses back to back so as to obstruct their due ventilation. We have taken every opportunity of ascertaining the opinions of practical men upon this subject, and we have endeavoured to trace any particular evil effects upon the health of inhabitants of houses so situated. The results of our inquiries do not convince us that the evils arising from such a mode of constructing houses are so marked as to call for

¹ Evidence of Mr. Aspinall, Second Report, Q. 59.

² Evidence of Mr. Cubitt, First Report, Q. 174, 199; Mr. Hosking, First Report, Q. 266, 321.

REGULATIONS
FOR BUILDINGS.

Width of streets.

any special enactment, and the testimony of builders, while they confirm this opinion tends to the conclusion that means may be provided for their efficient ventilation. The mere provision that an open space shall be left at the back, as well as the front of a house, affords little security for a due supply of fresh air in the interior, while the addition of another outer wall, besides enhancing the cost of the building, increases the surface exposed to the damp and cold, which readily penetrates through the scantily constructed walls of inferior houses.

We are unwilling, therefore, to suggest any alterations in the law calculated to interfere with the internal structure of dwelling-houses, which we are not quite satisfied are necessary for the due security to the health of the inhabitants. However prudently any regulations may be carried into execution, they must eventually increase the expense of construction, and cause an addition to the rent.

There are, however, some respects in which regulations are urgently required to compel a certain amount of attention to the structure of houses, and to prevent the habitation of dwellings so badly constructed as to be detrimental to health.

Twenty-third
Recommendation.

With the view therefore of ensuring better external ventilation, we recommend that courts and alleys be not built of a less width than twenty feet, and that they have an opening of not less than ten feet from the ground upwards at each end; the width of the court being in proportion to the height of the houses.

XXIV.
Necessity for regu-
lations relating to
the occupation of
cellars as dwellings.

XXIV. The extent to which the practice of living in cellars prevails in some large towns has caused the enactment of local laws for their regulation. We have already adverted to the number and the miserable condition of the inhabitants of cellars, as well as of the abodes themselves, in Liverpool. At Manchester the number of inhabitants of cellars is computed at 18,000. At Preston also the proportion of persons living in these abodes is high, when compared with the whole population. In those towns, however, where these abodes prevail they present similar scenes of misery and wretchedness, and afford frequent instances of the occupation of dwellings totally unfit for the residence of human beings. Examples are given by Dr. Duncan and Mr. Holme of their want of drainage in Liverpool; and in a range of cellars in Clitheroe, it is stated that the beds were found raised on bricks to keep them out of contact with the water.²

The causes of mortality, which the researches of Dr. Duncan have enabled him to trace to the vitiated state of the air surrounding these wretched abodes in Liverpool, apply equally to other towns.³

Local Acts have already been passed for Liverpool, Leeds, and London, prohibiting the use of cellars as dwellings, unless they are so constructed as to provide protection against the existence of such evils as we have just pointed out.

Twenty-fourth
Recommendation.

We recommend that such provisions be made general, and that after a limited period the use of cellars as dwellings be prohibited, unless the rooms are of certain dimensions, are provided with a fire-place and window, of sufficient size, and made to open, and have an open space in front; and that the foundations be properly drained.

¹ Evidence of Mr. Hosking, First Report, Q. 286; Second Report, p. 101.

² Report on Large Towns in Lancashire.

³ TABLE showing the Rate of Sickness in Children attending certain Schools in Manchester, according to the Class of their Dwellings, from the Report on Large Towns in Lancashire.

Name of School.	Scholars living in Houses in Streets.	Scholars living in Houses in Courts.	Scholars living in Cellars.	Scholars in Houses frequently absent from Sickness.	Scholars in Courts frequently absent from Sickness.	Scholars in Cellars frequently absent from Sickness.	Per Centage of Sickness of those living in Streets.	Per Centage of Sickness of those living in Courts.	Per Centage of Sickness of those living in Cellars.
Lancasterian, Boys'	564	..	56	44	..	17	7.8	..	30.7
Girls'	119	..	9	26	..	6	13.4	..	66.6
L. Mosley Street	80	25	13	9	4	9	11	16	69
Infant School									
Travis Street Infant	186	6	14	14	..	6	7.5	..	42.8
St. John's, Boys'	142	3	11	14	1	5	9.8	..	45.4
New Jerusalem	184	18	12	35	13	4	19	72.2	33.3
Total	1,275	52	15	142	18	47	11	4.6	40.8

REGULATIONS
FOR BUILDINGS.XXV.
Deficiency in the
number of privies.

XXV. We have already adverted to the lamentable deficiency found to exist in all towns, in the proper supply of necessaries for the use of the poorer classes of the population. The extent to which this defect prevails in some of the larger towns is almost inconceivable. At Nottingham¹ it is stated that under the most favourable circumstances houses under a rent of 10l. have only about one necessary to four or five houses, and frequently the inhabitants of eight or nine houses must resort to one place. In one part of Manchester² the wants of upwards of 7000 inhabitants are supplied by 33 necessities only; and in Ashton,³ Mr. Coulthart alludes to a locality, where there are only two privies for 50 families. This want of privies is also described as being one of the marked characteristics of the town of Merthyr Tydvil,⁴ and in parts even of the Metropolis the deficiency is equally great. The cellar dwellings are almost of necessity unfurnished with these conveniences, and the inhabitants carry out the filth to the nearest channel, without regard to the injury or nuisance that it may cause to the neighbourhood, while in many cases the doorways, passages, and pavements are defiled. Similar want of regulations prevail in all towns, and may be found in parts of the Metropolis.

It is unnecessary to dwell upon the extensive injury to health, decency, and morals, which such defective arrangements inevitably entail. The large numbers resorting to these places deprive them of all privacy. To save the space occupied by a privy in each house, a number of them for the use of the entire population of a court are commonly crowded together in one corner, and not unfrequently placed under other dwelling-houses. This is especially the case at Nottingham,⁵ and in some parts of Manchester. These places being resorted to by great numbers, and under no regulations as to cleansing, are constantly in the most disgusting state of filth, and are the causes of as great injury to the health of the inhabitants in their immediate vicinity, as any of the numerous influences, that we have already brought under notice.

But the injury is not alone confined to the health of the occupants, the owners of the houses also suffer great losses. Many instances occur where the walls of the adjoining houses are constantly wet with fetid fluid, which frequently affects the atmosphere of the rooms so as to render it impossible to keep food for one single night without its becoming tainted.⁶ The walls of the houses receive considerable damage, and the foundations are completely saturated with the foul water that percolates through from the cesspools. The deterioration of property from this cause is very considerable. Added to this, a constant loss is incurred by the inability of tenants to pay their rents, from sickness, and not unfrequently from the impossibility of finding persons, reduced so low in the scale of society, as to occupy such abodes.

It is difficult to form any estimate of the actual losses entailed, both upon the landlord and the tenant, by this neglect of common cleanliness and decency. There can be no doubt that it is a most false economy. It is commonly alleged that it is useless to improve the houses inhabited by the poorer classes, because there are no public regulations to enforce attention to their constant cleanliness, and that in the absence of such arrangements they would soon recur to their former condition. It is moreover stated that the occupiers have not the means of remunerating the owners for the outlay.

These allegations have probably been drawn from the fact of such large numbers of the poorer classes being found to exist in their present miserable abodes, where they are obliged to tolerate the scenes of filth around them, to which they become inured by habit, and continue to live among, from the difficulty of finding better residences. It is certain, that under such circumstances, better habits cannot be acquired, nor if in existence are they likely to be retained. It cannot be denied that the poorest classes would most readily appreciate any improvement, which affords the means of speedily removing the present accumulations of filth from the vicinity of their houses, and which would free them from their injurious consequences. Such amelioration of their dwellings by improving their health, and enabling them to follow their employments with fewer interruptions from sickness, would also increase the means at their disposal for paying their rents, and meeting other demands upon them.

We have already shown the economy with which the introduction of systematic

Losses experienced
by the landlords.Readiness of the
poor to appreciate
improvements.

¹ App. First Report, p. 131.

² App. First Report, p. 84.

³ App. First Report, p. 143.

⁴ Report on Large Towns in Lancashire, App. Second Report.

⁵ Report on Merthyr Tydvil, App. Second Report.

⁶ Report on Large Towns in Lancashire, App. Second Report.

REGULATIONS
FOR BUILDINGS.

Internal structure.

Improvements in
the internal ar-
rangement for the
speedy removal of
refuse.Legislative pro-
visions for these
purposes.Twenty-fifth
Recommendation.XXVI.
Structure of
buildings for pro-
tection against
fire, and for ven-
tilation.

regulations for the due cleansing of privies is attended, as exhibited in the cities of Edinburgh and Aberdeen. Even with the present defective structural arrangements, a greater security might be given against the existence of the present evils by increasing the number of the conveniences for the poor, and by requiring that all cesspools (as long as they are permitted to be continued) should be constructed of such materials, and in such manner, as to prevent the percolation of moisture into the adjoining soil, as well as offensive emanations. At present they are very commonly open to the air, and discharge all their effluvia in such a manner, that it must be inhaled by the inhabitants. The general introduction of sewers and drains, accompanied by a reduction in the cost of their construction, will afford the means of gradually extending to the habitations of the poorer classes a system of removing all such refuse by the application of water, at once the cheapest and most effectual method. This system, which is now rapidly extending, has already been introduced into the houses of some of the labouring classes in parts of London.¹ A reduction in cost will arise from the use of more cheaply constructed drains than have hitherto usually been adopted. We have had before us specimens of earthenware pipe drains, capable of bearing any pressure that they can in practice ever be subjected to, which appear to us to be well calculated for the construction of the smaller description of drains. If properly glazed inside, they would be impermeable, and having fewer joints than brickwork, would offer less resistance by friction to the water to be conveyed away, and be less apt to allow the escape of the foul emanations, which are a common cause of complaint with the present description of drains.

We have deemed it proper to draw attention to the economical improvements that may be effected by the application of water for the speedy and cleanly removal of refuse from the interior of houses. We must express our opinion that the present objectionable system of privies and cesspools should be superseded, whenever the more general introduction of sewers and drains, combined with a better supply of water, will permit.

A few local Acts contain clauses, empowering the authorities to compel the erection of privies. Those for Salford, Liverpool, and Leeds, have such provisions. The Acts for the two latter places were passed in 1842. At Liverpool, the powers are enforced with regard to all newly erected houses in courts, but no provision has been made for the removal of the refuse. The old system of cesspools is continued, and they are in some instances so placed, that they cannot be emptied without carrying their contents through the houses. It is, however, required that they be furnished with a flue to carry off the foul air. The Act for Salford has been in force since the year 1830, but we fear that there is still a lamentable deficiency in the proper number of conveniences for the poorer classes in that town.

But we hesitate to propose, as a fixed rule, that such an addition shall be made to all existing houses. In the most densely crowded and narrow courts it would be impracticable to find sufficient space for them without compelling their erection in the interior of houses, an arrangement under their present defective construction scarcely desirable. We would, therefore, prefer that the local authority should be entrusted with the discretionary power of compelling their erection, where circumstances permit, and in all cases, that they should require them to be kept in decent order, and properly screened from view.² In many places it would be a great accommodation were public necessities erected, provided with a sufficiency of water, and placed under special regulations for their maintenance and cleanliness.

We therefore recommend that the provisions above referred to be made general, and that all new houses be provided with proper necessities for the accommodation of the inmates.

XXVI. In the course of our inquiries, we have collected the opinions of men in practice as builders, and especially those engaged in the erection of houses

¹ The ordinary expense of cleansing cesspools is stated in the Metropolis to be 1*l.* per annum (Q. 4568, 5889). It is stated that Water Companies could construct and maintain in repair an apparatus in the nature of a water-closet or soil-pan, and house-drains for the removal of all refuse and waste water, for a rental of from 5*s.* to 6*s.* per tenement per annum, or a weekly charge of 1½*d.* per house.

² Evidence of Mr. Cubitt, First Report, Q. 191.—7 and 8 Vic., cap. lxxxiv. s. 51.

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FOR BUILDINGS.

Internal structure.

Infrequency of
fires in the tene-
ments of the poor.

Ventilation.

for the occupation of the labouring classes, with the view of ascertaining the effect of regulations restraining the mode of constructing houses, either for increasing their stability, or for protection from fire. The tendency of the evidence has led us to the conclusion that any general interference with the minute details of buildings for the poorer classes in the great majority of towns in England and Wales is unnecessary. The peculiar circumstances of one or two towns appear to have called for the interference of the Legislature for the correction of evils there prevalent. In addition to the Metropolis, Liverpool and Bristol are the only towns under the operation of a Building Act. They have both been passed within the last few years; sufficient time has therefore scarcely elapsed to enable us to trace with certainty the results produced by the operation of these laws. The Act for Liverpool is one of peculiar stringency, and contains clauses, regulating the size of the timbers of buildings, with many details, which have not yet been applied to any other town.

The results of the inquiries into the number of fires among houses of the poorer classes show, that if the buildings are constructed and covered with incombustible materials, fires are not more frequent or more destructive, when they do occur in towns, where there are no legislative regulations for the building of party walls,¹ or for other securities against fire, than in the Metropolis² where such regulations have long been in force. The comparative infrequency of fires that occur in this class of tenements is ascribed partly to the rooms of the poor being rarely left unoccupied, and partly to the small quantity of firing generally in use. Out of 5774 fires that took place in the Metropolis between the years 1833—1843, only 142 occurred in houses built for, and occupied by the labouring classes, and of these, six only extended to the adjoining houses. Mr. Braidwood observes that "the intensity of a fire, and the chances of its spreading, depends upon the cubical contents and the quality of the material, but that is very trifling in a house built for labourers, containing from four to six rooms." He states, that anything in the shape of a brick wall will prevent the extension of fire in such tenements, even a nine inch wall, provided it goes through the roof. In this opinion that "party walls" are unnecessary for small houses, he is confirmed by Mr. Ramsay, the Surveyor for an Insurance Office, resident in Lancashire. At Liverpool, where the losses from fires have been most extensive, no fires appear to have communicated to adjacent houses from absence of party walls. It is stated by the Secretary of the Fire Police Committee, that "there are no houses without a wall separating them, but although this is generally very thin, it is sufficient to prevent the extension of fire."³

At other places fires are comparatively so rare in the dwellings of the labouring classes, that the present risk of fire originating and extending among the houses occupied by them, does not appear, from the results of our inquiries, to be sufficiently great to require an extraordinary precaution for security against such accidents.⁴ After a careful consideration of the facts and opinions adduced before us, on this subject, we have arrived at the conclusion that it is not requisite to introduce into a general measure, relating chiefly to the improvement of the dwellings of the poorer classes, stringent regulations, which would necessarily increase the cost of construction, solely to provide against risks from fire, proved so rarely to occur in that description of tenements.

The proper ventilation of buildings has not, until recently, received that share of attention on the part of the public, that its serious influence upon health deserves; and architects and builders rarely make any provision in buildings constructed by them for a regular supply of fresh, or the removal of vitiated air, beyond what is afforded by the windows, doors, and open chimneys. The improvements in the construction of buildings, by closing all crevices, through which, in old and ill-built houses, a large supply of fresh air was constantly admitted, have partly contri-

¹ The term "party-walls" is generally understood among builders as meaning a wall between two houses, built for the purposes of preventing the extension of fires, more substantially than is necessary for the stability of the buildings.

² Evidence of Mr. Braidwood, First Report, Q. 1270.

³ Replies from the Police Committee, Liverpool, App. Second Report.

⁴ Evidence of Mr. Kaye, App. First Report, p. 178; Mr. Thorp, p. 179; Mr. Corbet, Q. 13, p. 172. These witnesses concur in opinion, that the money that would be required for a party wall, might be much more advantageously applied in laying on pipes and other conveniences for a supply of water.

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FOR BUILDINGS.

Ventilation.

buted to the necessity for more systematic ventilation, while the advanced state of medical inquiry has led to a conviction of the vast evils consequent upon breathing vitiated air.

It is now well ascertained that living in such impure atmospheres as generally surround the poor in their habitations, as well as in factories and workshops,¹ induces consumption, renders the constitution more prone to, and less able to resist the attacks of diseases of various kinds, especially fever, and by depressing the physical energies causes a resort to stimulants, resulting in habits of intemperance. The application of a sufficient remedy for the serious evils arising from this cause in the interior of houses would, we are convinced, contribute largely to promote the health of the poorer classes.

Objects to be attained to secure good ventilation.

The object in devising any mode for the effectual ventilation of dwellings, is to be attained by producing so gradual a movement of the air, introduced in sufficient quantity, and at a proper temperature, that while it constantly replaces the vitiated air and keeps up a pure supply, its ingress shall be imperceptible to the occupants of the apartments. If the movement is too sluggish, the ventilation is ineffectual, if too rapid, the current becomes perceptible, and is complained of as offensive, and the further admission of air is certainly prevented by closing the aperture, when within control of the inmates. The poor, when badly fed and clothed, and ill supplied with firing, are particularly sensitive to currents of air; and, ignorant of the effects of breathing an impure atmosphere, prefer the warmth of air vitiated by respiration.

Notwithstanding the apparent difficulties with which the ventilation of private dwellings is surrounded, a minute examination of the circumstances of the case has assured us that no field of improvement holds out a more promising result, than that which may be anticipated in future from the more successful ventilation, even of the humblest dwellings. The progress of science has explained its nature and importance. Sanatory measures for draining and cleansing will effect at least one-half the remedy by removing those impurities that have hitherto so largely polluted the atmosphere in towns, more especially in the habitations of the poor. Less air is requisite for ventilation in proportion to its purity, and, consequently, the risk of offence from currents must be diminished where adequate ventilation is provided.

These considerations give us great confidence, in the expectation that ventilation will be much improved in proportion as its nature and importance is better known; more especially when plans for warming and ventilation shall be minutely studied, and incorporated in original designs, instead of being merely applied, as is too often the case at present, to buildings already constructed or designed, without reference to this important object. This is the great and paramount object that should be pressed upon the attention of architects and builders.² If structural arrangements are provided in public buildings and private dwellings, ventilation will then attain that facility and economy of execution, without which its general introduction cannot be anticipated to the extent that its importance requires. But exclusively of such systematic improvements as may justly be anticipated in new buildings, where this subject is fully considered, we have reason to look forward to additional improvement in this department. The very simple fact, that vitiated air always rises, under ordinary circumstances, shows that if two apertures be provided in every apartment, one below, and another above, and valves be arranged so that they may be adjusted with facility and accuracy to the circumstances of the moment, the natural laws that regulate the movement of vitiated air will induce a perpetual change, and prevent that extreme contamination which is so often observed. Extended systematic ventilation, with all its peculiarities and powers of adaptation, can only be obtained and is only required in public buildings or other large establishments; but it cannot be too strongly pointed out, that many just objections to ventilation, as it is at present effected, arise from the fact that the feet principally are subjected to a cold current, in ordinary apartments, while the head may be in a hot stagnant atmosphere loaded with vitiated air, and saturated with moisture, produced by the breath, by combustion from lamps and candles, and from other sources. A superior aperture, and the most moderate attention to the point selected for its introduction, will secure the admission of fresh air without

¹ Evidence of Mr. Toynbee, First Report, Q. 5526, *et seq.*; Dr. Guy, 5592.
² Report on Newcastle and other Towns, App. Second Report.

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FOR BUILDINGS.

Ventilation.

the current being perceptible to the human frame, and prevent it from attaining that condition where by long continuance in a heated atmosphere, slight movements of air become offensive.

Several plans of a very simple kind have been laid before us, both for introducing fresh and removing the vitiated air. Mr. Hosking¹ and Mr. Holme have recommended the introduction of an aperture at the top of every room to carry off the vitiated air by a flue passing up by the side of the chimney. This is the principle which Dr. Arnott² considers indispensable for proper ventilation. Mr. Toynbee³ has also carried this principle into successful practice by inserting into the windows plates of pierced zinc for the admission of fresh air. A marked improvement has followed their introduction, which has been gratefully acknowledged by those, who have benefited from it.

Although some of the witnesses have urged upon us the propriety of enforcing the introduction of a system of ventilation in private dwellings, the general balance of opinion is adverse to that view. In this conclusion we concur; and although attaching the utmost importance to the introduction of some means of purifying the air in the abodes of the poor, we cannot recommend the adoption of compulsory provisions for this purpose, which, even if capable of enforcement, must lead to an interference with the privacy of domestic life, most objectionable. The application of proper principles must be the result of a more general acquaintance with the subject on the part of individuals.

Sufficient attention has not hitherto been paid to the proper ventilation of places intended for public resort, such as churches, courts of justice, concert and assembly rooms, theatres, and places of the like description, in all cases where houses or rooms are licensed, it may be possible to make proper ventilation one of the conditions in such license.

In regard also to schools, the greatest injury is experienced by the young children, whose tender age makes them especially susceptible of injury from the constant respiration of a vitiated atmosphere. The facts disclosed show the extent of inattention to this subject, especially among the private schools not connected with or supported by funds raised by any public body. At the same time they fully establish the importance of providing a sufficiency of pure air for the respiration of those children, who are subject, during the remaining periods of the day, to the depressing influences of the vitiated air in their own dwellings.⁴

These internal evils are greatly aggravated by the unhealthy sites of a large proportion of schools, especially of those known under the name of "dame schools." Their sites appear to be rarely chosen with proper regard to the facilities for external ventilation, or reservation of space for the recreation of the scholars. The schools kept in private houses, however, exhibit the worst evils of this kind. They abound in all large towns;⁵ and are described as frequently situated in courts and dirty lanes, and surrounded by and often containing filth of every description.

We have deemed it right to draw especial attention to this subject, which has been forcibly brought under the notice of the Commissioners in the course of their recent investigations; and it appears to us to be well worthy of consideration whether some means should not be adopted for placing the ventilation and cleansing of public schools, and especially those known by the name of dame schools, under some effective regulation. We, however, have the satisfaction of reporting, that in schools under the management of intelligent masters a great anxiety is generally evinced for improvement in their ventilation, and we have reason to believe that they are receiving constant aid from the suggestions given by the inspectors of schools, appointed under the Board of Education of your Majesty's Privy Council. From these observations we must, however, except the dame or private schools.

We therefore recommend that measures be adopted for promoting a proper system of ventilation in all edifices for public assemblage and resort, especially those for the education of youth.

Twenty-sixth Recommendation.

XXVII. But while we hesitate to recommend the introduction of any provisions for regulating by law the ventilation of private dwellings on the ground of the

XXVII.
On the cleansing of dwellings.

¹ Evidence, First Report, Q. 296.

² Q. 3913.

³ Evidence, First Report, Q. 5531.

⁴ Report on Large Towns in Lancashire, App. Second Report.

⁵ Ibid.: Evidence of Dr. Arnott, First Report, Q. 4104; Mr. Toynbee, Q. 5537; Report on Durham, App. Second Report.

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HOUSES.2 and 3 Vict. cap.
71.

objections that may justly be raised to the intrusion of public officers necessary for enforcing it, we feel that there are some points on which the public safety demands the exercise of a power on the part of a public authority to compel attention to the internal condition of houses so as to prevent their continuance in such a filthy and unwholesome state as to endanger the health of the public.

Dr. Southwood Smith¹ mentions an instance which has come under his notice in the Metropolis, where no less than 10 persons were lying ill of fever at one time in the same house. It was proved that fever had prevailed there for six weeks, and had previously attacked other occupants, some of whom had died. A provision has since been introduced into the Metropolitan Police Act, enabling a magistrate, on complaint of the parish authorities and medical officer, to order the whitewashing and cleaning of houses, when in such a filthy condition as to lead to the fear that they are injurious to health. This enactment is represented as defective from the want of a power to recover the expences from the landlord.² At present the occupiers only are liable, who are frequently unable to pay even this small expense.

The communication from Mr. Ramsay³ shows the extent to which this practice has been carried out in the metropolis of Scotland. The extreme prevalence of epidemic disorders induced the police authorities to take active measures to check their extension; and although not vested with legal authority to enter houses for the purpose, by the judicious management of their officers they have contrived, at a very small expense, to give the advantage of cleansing to a large number of poor, who now gratefully acknowledge the benefit, and readily admit the servants of the authorities employed in the work. We believe that these and other salutary powers were first exercised during the visitation of the cholera in the year 1832.

Similar powers were exercised at the same period in England with equally beneficial results. A temporary Act of Parliament empowered the Lords of the Privy Council to issue rules for enforcing sufficient cleanliness in the interior as well as the exterior of dwellings. Since this Act expired, no general laws have been in force for such purpose, and we believe that there is now no Act except that above adverted to, for regulating the police courts of the Metropolis, and the local Act for the improvement of the town of Leeds, containing any similar provisions. We have received ample testimony that such a power is much needed.

The clause in the Metropolitan Police Act does not authorize the interference of the parish authorities until after the lapse of seven days. During the prevalence of any epidemic disorder we apprehend that diseases may be most extensively spread in this time, and we have therefore proposed that the period be more limited.

Twenty-seventh
Recommendation.

On these grounds we recommend that, on complaint of the parish medical or other authorized officer, that any house or premises are in such a filthy and unwholesome state as to endanger the health of the public, and an infectious disorder exists therein, the local administrative body have power to require the landlord to cleanse it properly, without delay; and in case of his neglect, or inability, to do so by its own officers, and recover the expense from the landlord.

XXVIII.
Regulations for
lodging-houses.

XXVIII. The absence of all provisions for the proper regulation of common lodging-houses has been a most frequent subject of complaint in the several towns visited. They are represented invariably to be the places where many infectious disorders originate, and whence they are spread over the whole country by the numerous vagrants there exposed to the risk of infection. No provision is ever made for their ventilation, and the evils arising from its absence are largely increased by the numbers nightly crowded together, in spaces quite incompatible with decency, or with the maintenance of a healthy atmosphere. There are, however, many places occupied as lodging-houses, which from their confined situation are quite incapable of any ventilation, and are in other respects totally unfit for the abode of man.⁴

Instances occur frequently where the beds are placed in tiers one above the

¹ Evidence, First Report, Q. 1009.² Evidence of Mr. James, First Report, Q. 4255.³ App. First Report, p. 199.⁴ Report by Dr. Duncan on Liverpool, App. First Report, pp. 16, 31; on Large Towns in Lancashire, App. Second Report.REGULATIONS
FOR LODGING-
HOUSES.

other. Dr. Howard, who has had great experience from his connection with the fever wards of the hospital at Manchester, states that he considers the lodging-houses as the most frequent source of infectious fevers in Manchester, and he ascribes the permanence of the infection to the want of cleanliness in the beds, which are rarely purified, even after having been occupied by patients suffering from fever.

No regulations exist to provide for the removal of a patient attacked with fever and no precautions are taken to prevent the extension of infection. A lamentable proof of the frequency and rapid spread of such disorders, in the absence of all provisions for their prevention, is given in the Report on Manchester.¹

Although no provisions have yet been made by law, as far as we are aware, for the regulation of lodging-houses in any part of England and Wales, such powers have been granted for some places in Scotland, where they have been exercised with great advantage. The Commissioners of Police for the borough of Calton, which forms part of the city of Glasgow, have power to license all the lodging-houses, and to issue regulations for their proper management.² Under these provisions they place a limit on the number of persons to be accommodated in each house licensed, they require that the house shall be whitewashed periodically, and that in other respects due attention shall be paid to cleanliness, and above all, that immediate notice shall be given of the occurrence of any case of sickness. Under these regulations many ill-conducted lodging-houses, the common resort of the infamous of both sexes, have been suppressed, while those now remaining, being licensed, are under the more direct control of the Commissioners,

For these reasons we recommend that Magistrates have power to license and to issue rules, to be approved of by the Crown, for the regulation of lodging-houses for the reception of vagrants, trampers, and other such wayfarers.

Twenty-eighth
Recommendation.

XXIX. The most eminent medical witnesses concur in declaring, that it is by the careful observation of the causes of disease and mortality operating upon large classes of the community, that the mode and extent of their operation may be ascertained, and the power of diminishing and preventing them be acquired. For this purpose the appointment of an officer, whose duty it would be to direct his undivided attention to such causes, would in our opinion be a public benefit, more especially to the poorer classes, and might be advantageously employed in making investigations into matters affecting the sanitary condition of the district under his charge.

XXIX.
Appointment of
Medical Officer of
Inquiry.

We therefore recommend that the local administrative body have power to appoint, subject to the approval of the Crown, a medical officer properly qualified to inspect and report periodically upon the sanitary condition of the town or district, to ascertain the true causes of disease and death, more especially of epidemics, increasing the rates of mortality, and the circumstances which originate and maintain such diseases, and injuriously affect the public health of such town or populous district.

Twenty-ninth
Recommendation.

XXX. In the course of our inquiries into the sanitary state of large towns and populous districts, where a high rate of mortality and much disease is prevalent, we have noticed the general want of any public walks, which might enable the middle and poorer classes to have the advantage of fresh air and exercise in their occasional hours of leisure. With regard to all open spaces, especially well-ordered squares ornamented by trees or gardens, which already exist in the Metropolis and large towns, we strongly recommend their preservation from any encroachment by public or private buildings. Although not open to the public, they contribute largely to the general salubrity of a town; and it has too commonly happened that, as population has increased, almost every open space has been enclosed; thus at the same time excluding the people from their former places of exercise and recreation, and preventing that ventilation which would otherwise have been preserved.

We have found this state of things very generally lamented by the inhabitants

XXX.
The advantage of
establishing public
walks.¹ Report on Large Towns in Lancashire, App. Second Report.² Supplement to this Report, p. 115.

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WALKS.

of large towns, and a very prevalent desire existing in many of them, and shared by benevolent persons of the more opulent classes elsewhere, to repair this deficiency.

The great towns of Liverpool, Manchester, Birmingham, Leeds, and very many others, have at present no public walks. Shrewsbury, Newcastle-under-Lyme, Derby, and a few more possess them.

The Metropolis, except at the west and north-west, where the different parks minister so much to the comfort and health of the people, have no public walks, though the Victoria Park, now in progress, will supply this want towards the east.

The large population of Southwark and Lambeth, to the south of the Thames, are yet without such a source of enjoyment and salubrity.

This subject was considered by a Select Committee of the House of Commons in 1833, who strongly recommended steps should be taken to supply the want. In 1840 the sum of 10,000*l.* was voted by Parliament to assist local efforts for this purpose in provincial towns; and a few places have had grants from that sum for this purpose.

In any attempt to carry out these objects we do not anticipate so much difficulty as has by many been apprehended. It sometimes happens that there is a common or waste lands in the vicinity, which, by an alteration of the law, and proper compensation given, might be made available for this purpose. The formation of a public walk would, in such case, at the same time minister to the comfort and improve the health of the inhabitants by a proper drainage of the lands in their vicinity. In many cases, local exertion and munificence would accomplish the object, if some moderate assistance was given.

Thirtieth
Recommendation.

We therefore recommend that, for the purpose of aiding the establishment of public walks, in addition to the legal facilities adverted to, the local administrative body be empowered, to raise the necessary funds for the management and care of the walks when established.

Interments in
Towns.

Among other causes of the deterioration of the atmosphere in towns, our attention was called to that arising from the practice of interring the dead in the midst of densely populated districts; but as the whole question of interments in towns was under separate investigation at the period of the appointment of this Commission, and was not referred to us, we have not entered into any special inquiry on this subject. Instances, however, have been brought under the notice of the Commissioners of the great evils arising from the condition of the grave-yards in several large towns, and we deem it right to draw attention to the existence of such complaints.¹

Distinction in the
legislative provisions for drainage,
&c. in the Metropolis,
as compared
with the provincial
towns.

Although our preceding observations and recommendations apply equally to the Metropolis and other places, we think it desirable to make some remarks on those distinctions that exist between the local laws generally in operation in the provincial towns, and those that are in force in the Metropolis.

The districts of the Metropolis inhabited by the wealthier portion of the community, have received more attention in regard to regulations for promoting the health and comfort of the inhabitants, than any of the provincial towns examined. This excellence only marks more strongly the contrast with the condition of the poorer districts; many of them are quite unprovided with sewers and drains, the supplies of water are scanty and ill-distributed, and the duties of the scavenger are in general greatly neglected.

Condition of the
wealthy and poor
districts compared.

This contrast is attested in a striking manner by the annual returns of mortality for different large districts, showing a number of deaths equal to 3.5, 3.3, and 3.2 per cent. in the population of the poor and comparatively neglected districts of St. Andrew Holborn, Mile End New Town Whitechapel, and St. Luke's City Road; while in the more improved and richer districts the mortality scarcely exceeds one-half of that rate.²

¹ South Shields, Sunderland, Coventry, Ashton-under-Lyne, Chester, York.
² Fifth Report of the Registrar-General.

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It will not escape observation that the rate of mortality exhibited in the unhealthy London districts enumerated, exceeds or equals in amount that of the worst and most neglected of the great provincial towns;¹ and there can be no doubt that the mass of suffering bears a similar proportion. We must, however, bear in mind that the population of the metropolitan districts enumerated is much less than that of the provincial towns referred to.

The system which we have found almost universal in the provincial towns, of combining under one management the duties of sewerage, paving, and cleansing, that is the union of the surface cleansing and drainage, with the underground drainage, does not obtain in the Metropolis. These duties, which cannot be severed with convenience to their economical execution, are here placed under the management of distinct bodies, except in two districts only, viz., one within the municipal boundary of the Corporation of London, and the other a narrow district under the jurisdiction of Commissioners, appointed by a Local Act for the Drainage and Paving of the Regent's Park and Regent's Street. Of these we shall presently have occasion to speak more in detail.

Want of consolidation between the boards for draining and paving.

The drainage of the remainder of the Metropolis is placed under the control of five different bodies of Commissioners of Sewers. The country to the north of the Thames is divided into four districts,—the Westminster, the Holborn and Finsbury, the Tower Hamlets, and the Poplar Marsh division; the district to the south of the river is under the management of one body only. These districts contain upwards of 2,000,000 of persons.²

Authorities for the management of the drainage of the Metropolis.

Commissions for these districts are issued under the authority of the statute of Henry VIII., the general provisions of which were previously described. Although they were applied at a very early period to the drainage and sewerage of London,³ they do not appear to be conveniently adapted, or to have been intended for the more intricate drainage of towns, where attention is requisite, not only for the discharge of the superfluous waters from the high as well as from the low grounds, but for the removal of all refuse matter, capable of being carried off by water. This inconvenience seems to have been felt as early as the reign of James I., when an Act⁴ was passed to remove the doubts that had been raised as to the jurisdiction of the Commissioners over such sewers. This Statute declares that "all sewers, &c., within the limits of two miles from the city of London, whose waters have their course and fall into the river of Thames, shall be as fully subject to the Commissions of Sewers as if the same places had been specially named in the statute of sewers, and that therein the waters had ebbed and flowed, and therein free passage with boats and barges to the sea had been heretofore used." This statute placed beyond all doubt the power of the Commissioners over the existing sewers within the two miles; but it conferred no fresh power to construct new sewers. At a subsequent period, doubts appear to have been renewed with regard to the jurisdiction of the Commissioners over new sewers, and to have caused the insertion of a clause in a statute passed in the second year of the reign of William and Mary. This Act, introduced in consequence of some doubt whether such new sewers were within the jurisdiction of the laws of sewers, after reciting that many new sewers had been made, which were much neglected, and had become noisome to the inhabitants, enacted, that all new sewers made since the twelfth year of the reign of Charles II., should be under the control of the Commissioners.

Commissions issued under statute of Henry VIII.

Since this period, no general Act increasing the powers of any Commissioners having jurisdiction in the Metropolis appears to have been passed, and doubts, as to the powers to construct new sewers, are still maintained in some of the districts. A clause, s. 61, in the Act of 3 and 4 Will. IV., cap 22, a statute for amending the laws relating to sewers, expressly excludes the Metropolitan Commissioners from the operation of its provisions, many of which might have been most beneficially applied in aid of the existing defective laws. The several statutes that have been passed and the legal decisions that have from time to time taken place upon their construction, seem to have placed beyond doubt the question of the jurisdiction of the Commissioners over all existing sewers, if their maintenance be for the advancement of commerce, or, the benefit of society at large.

¹ In Liverpool the annual mortality is 3.5 per cent.; in Manchester 3.2 per cent.; and in Bristol 3.1 per cent.

² See the map accompanying this Report.

³ The earliest Commission for the Westminster district is dated in the year 1659, for Holborn and Finsbury 1683, and for the Tower Hamlets 1686. For the Surrey and Kent division the first Commission bears date in the 23rd year of Edw. I. (1295.)

⁴ 3 James I. cap. 14.

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Defective powers
for the construction
of new Sewers, in
the Westminster,
Tower Hamlets,

and Poplar Marsh
districts.

Local Acts for the
City of London,
Holborn, and Fins-
bury, and Surrey
and Kent divisions.

Expensive and pro-
hibitive regulations.

Several local Acts, relating to districts in the Metropolis, have been passed to amend and enlarge the powers conferred by the statute of Henry VIII.; but two important districts, the Westminster and Tower Hamlets, are still without any additional powers enabling the Commissioners to build new sewers. In these districts opposite constructions have been put upon the law, the Commissioners in the former district holding that it does not empower them to make new sewers, while in the latter, the law is so interpreted, that a considerable extent of new works has been executed within the last few years. We abstain from offering any opinion upon the correctness of these various views; but it is obvious that laws capable of such opposite interpretations require immediate amendment.

The Poplar district of sewers is also without any local Act; but, being almost exclusively a marsh district, it comes within that description of low grounds which it was the object of the statute of sewers to defend from "outrageous springs." The works, chiefly river walls, are, for the most part, executed by the owners of the adjoining lands. Buildings are, however, gradually increasing in this district, and already require further legislative provision for their drainage.

The local Acts for the City of London, for the Holborn and Finsbury, and the Surrey and Kent divisions, all contain powers more or less efficient for the construction of new sewers; but their provisions are more defective with regard to the minor drainage, than many of the local Acts now in force for drainage in the provincial towns. They do not contemplate the proper combination of a system of house and main drainage, and the necessity of a supply of water for their efficient action, and they contain no powers to compel the owners of houses to construct branch drains in connection with the sewers. This is a deficiency that pervades the whole of the Metropolis; and it appears in evidence that even where new sewers have been constructed, a large proportion of the houses are still without drains,² while in some districts the owners of houses have, until lately, been forbidden from allowing the waste from privies to flow into the sewers. The old drains and cesspools still remain frequently below the levels of the sewers, and are liable to become as fruitful a source of inconvenience and disease as ever. Nor have the Commissioners any power to prevent cesspools being sunk below the levels of the sewers.

This neglect to make drains into new sewers is attributed by the witnesses, partly to the expense rendered necessary by the regulations of the Commissioners relating to the size of the drains and mode of construction, and partly to the operation of the system of charging the whole cost on the present owner, however short his interest in the property may be.

The system of charging for the cost of new sewers tends further to prohibit their use. In the older portions of the town they are usually made, in the first instance, at the general expense of the district; and for these expenses, and the cost of their repairs, all property within the level is taxed, whether receiving any direct benefit or not. But the owner of any house, who wishes to carry a drain into them is required, besides paying the cost of the drain, often unnecessarily large and expensive, to pay a proportion of the expense of the sewer, according to the frontage of his house, a mode of charging the cost bearing very unequally upon different descriptions of property, especially upon houses at the corners of streets. An additional inducement is thus held out for a refusal to use the sewer, as, by abstaining from its use, these heavy charges are not incurred. The hardship which we have previously mentioned as arising at Manchester and other places, from the power given to the authorities to recover the expenses of such work immediately, does not occur in the Metropolis. This defect has been partially remedied by the Act passed in the last session of Parliament for amending the laws for regulating the buildings of the Metropolis.³ That Act requires proper drains to be made previous to the erection of any new house; but its effect is prospective. The object of the Act has necessarily limited its operation to the construction of house-drains, and no provisions are inserted for the building of sewers, while the frequent absence of these means of removing refuse from houses, rendered it impossible to enact that cesspools should be forbidden. In the Metropolis, as elsewhere, the more general introduction of a system of sewers and drains will afford the opportunity of prohibiting these different sources of nuisance and disease. The evidence laid before us has led us to the conclusion that all the principles, which we have recommended

¹ The Local Acts that have been passed for this division are 47 Geo. III., cap. vii., 52 Geo. III., cap. xlviii., and 4 and 5 Wm. IV., cap. xcvi. None of them contain sufficient authority to make new sewers.

² Evidence of Mr. Hertslet, App. First Report, Q. 2539. Mr. Beek, Q. 1562. Col. Gant, Q. 2982.

³ 7 and 8 Vict. cap. 84, s. 51.

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Necessity for pro-
viding further secu-
rity for the efficient
execution of works.

Inconvenience of
the numerous at-
tendance at meet-
ings.

Obstacles to drain-
age created by the
subdivisions of the
natural areas.

The Surrey and
Kent.

The Westminster.

Holborn and
Finsbury.

as applicable to the provincial towns, relating to the construction of sewers and drains, and the mode of charging the expenses, are capable of being and might be advantageously adapted to the Metropolis.

But whether the execution of these works be still intrusted to the existing bodies or any new establishment be formed, it is necessary that before any new powers be given, due security be afforded to the public, that officers should be appointed possessing the necessary scientific attainments, and otherwise properly qualified for their duties, and that the works should be executed under fewer restrictive regulations, and upon such principles of construction as the existing state of science points out as the most durable, and at the same time most effective and economical.

Various examples have been presented to us in evidence to which we refer, illustrating the condition of the drainage under the system at present in operation in the Metropolis. The large number of persons now appointed in the Commissions, render it almost impossible to insure that they shall all be such "indifferent" persons¹ as the statute of Henry VIII. requires. The names of more than 700 persons are now comprised in the several Commissions of sewers. Of this number less than one-half have qualified; but the number is still unnecessarily large, and is represented as being the frequent cause of obstruction to business.² In the Westminster division, the average attendance is stated to be about 30, although 150 Commissioners are regularly summoned; the number is nearly the same in the Surrey and Kent district, and in the Tower Hamlets it is about 40.³

We have stated that the Metropolis is sub-divided into several districts, for the purposes of drainage. That portion situated to the south of the Thames calls for little further notice; it appears to comprise the entire natural area for drainage, and, although the features of the country present some difficulties, the extent included within the limits of the Commission gives the proper command over the natural outlet for the waters, without interruption from any other jurisdiction. The limits of the commission extend from East Moulsey to Ravensbourne; but jurisdiction is rarely exercised in any parts higher up the river than Battersea. Thus the towns of Kingston and Richmond, and the populous parishes of Putney and other places, derive no benefit whatever from this Commission.⁴

In the Westminster district where the Commission extends from the boundary of the city, as far up the Thames as Hampton, active jurisdiction is exercised only within the narrower limits, bounded to the westward by the stream that divides Chelsea from Fulham.⁵ These were the limits fixed in an Act passed in the 47th year of Geo. III., extending the powers of the Commissioners over the erection of all sewers, and intended to authorize the building of new sewers, but for this object its powers are stated to be defective. The districts of Hammersmith, Fulham, Brentford, are practically not under the management of the Commissioners.

The drainage of two other districts to the north of the Thames is seriously interrupted by the want of the command over the natural outlets. The Holborn and Finsbury district, which extends over much land that is difficult of drainage, requiring every assistance that engineering science, unfettered by the interference of artificial boundaries, can afford, is cut off from the natural outlet, and is dependent for the means of discharging its waters upon three other districts, the city of London, the Westminster, and the Tower Hamlets divisions. The latter district is again prevented from obtaining the natural outfall by the intervention of the jurisdiction of the Commissioners for Poplar Marsh.

As an instance of the inattention to the necessity of making the boundaries for drainage co-extensive with the natural area, we may state that the limits of the boundary between the Westminster, and the Holborn and Finsbury districts, instead of being well marked by the natural features of the ground, were found so intricate, that, in the year 1815, the Commissioners of the two divisions of sewers settled the limits by a private arrangement independent of the authority of the Lord Chancellor.⁶

The inconvenience as well as the enormous loss incurred by these defective arrangements is fully detailed in the evidence contained in the First Report. The

¹ Evidence of Mr. Leslie, Second Report, Q. 203, 207, 241, 265.

² Evidence of Mr. Hertslet, First Report, Q. 2304, *et seq.* Mr. Leslie, Q. 2801, 2810, 2811.

³ As to the charge entailed upon the rates by these attendances, see the evidence of Mr. Leslie, App. First Report, Q. 2835-43; of Col. Castle Gant, First Report, Q. 3015; of Mr. Daw, First Report, Q. 3177-81.

⁴ Evidence of Mr. Drew, First Report, Q. 2670.

⁵ Evidence of Mr. Donaldson, First Report, Q. 3984-6.

⁶ Supplement to this Report, p. 114.

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sewers within the limits of the City having been laid in at levels, and of a capacity insufficient to convey away the sullage brought down from the higher district, it became necessary to lower and enlarge those sewers, at an enormous expenditure. Large sums have also been expended in the Holborn and Finsbury district, to take advantage of this improvement.¹

The existence of these evils may in a great degree be traced to the absence of a proper survey, such as we have previously recommended as a necessary preliminary for efficient drainage. No survey has yet been made of the Metropolis, and it appears to us that such a guide is even especially essential in the large district comprised within the jurisdiction of the Metropolitan Commissions of Sewers. A new arrangement of the districts could not be effectually carried out without that information, which can be obtained only by such means.

Want of drainage
in the suburban
districts.

Although some of these districts are very extensive, the increase of buildings within them has rendered their further enlargement necessary, and the same evils that have been found to prevail in the suburban districts of the provincial towns are increasing still more rapidly in the neighbourhood of the Metropolis.

We have received numerous statements of such evils from the parish of Hackney, where the Hackney brook, formerly a pure stream, has now become a foul, open sewer. From the higher portions of the parish of Lambeth and the parish of Norwood similar complaints have reached us. In parts of the parish of Kensington, and in Battersea, within a few hundred yards from the Thames, the most disgraceful nuisances are found from open ditches, that receive the drainage from houses. In the crowded districts of the borough of Southwark, within a very short distance of London Bridge, numerous open sewers occur. These are evils of exactly the same character that we have already pointed out as found in other towns, and capable of remedy by the application of the same alterations in the law, that we have previously recommended for other populous districts.

City of London and
Regent Street dis-
tricts.

53 Geo. III. c. 62.

We have already stated that in the Metropolis the paving and draining the surface of streets is placed under the management of distinct bodies from those which superintend the underground drainage, with the exception only of the city of London and a district under Commissioners for draining and paving the Regent's Park and Regent Street.

11 Geo. III. c. 29.
33 Geo. III. c. 75.
18 Geo. III. c. 66.
4 Geo. IV. c. 94.

These combined duties are now executed in the city of London under the powers of an Act passed in the 11th of Geo. III., amended by several subsequent Acts. The powers are vested in the Lord Mayor, commonalty, and citizens, and are to be executed by such persons as the common council shall appoint, at present they amount to about 90. The Recorder and Common Serjeant are made members *ex officio*. The Act grants to them the powers of Commissioners of Sewers, appointed under the general law of sewers.

The other district is now governed by Commissioners appointed by an Act of the 5th Geo. IV. cap. 100, consisting of the Lord High Treasurer, the Commissioners of the Treasury, and of the Woods and Forests, and such other Commissioners as shall be appointed by these officers. The sewers under their jurisdiction, after draining the houses in the Regent's Park, pass to the southward, under Portland Place, (the houses of which street are not drained by them,) then commencing again at the north end of Regent Street, take the drainage of the houses in that street, and, passing through Pall Mall and Cockspur Street, finally deliver their contents into the river at Scotland Yard. Some detached parts in the vicinity of Whitehall, the property of the Crown, are also under the same jurisdiction; but Portland Place and Pall Mall are under separate jurisdictions: the drainage of both these streets is subject to the Commissioners of the Westminster Sewers, and the paving is under the bodies intrusted with that duty in the respective parishes.

Subdivisions of dis-
tricts for paving ju-
risdictions.

With these exceptions only, the paving of the remainder of the Metropolis is under the management of separate bodies of Commissioners, and is split up into no less than 84 different jurisdictions, for the government of which at least 129 Acts of Parliament have been passed within the present century.² These Acts relate to many other objects besides paving, and we therefore abstain from any remarks upon other matters than those immediately connected with sanitary subjects. Many of the districts are necessarily of very limited extent, and have been formed generally with regard to the boundaries of particular properties, for the government of which separate local Acts have from time to time been obtained. The parish of St. Pancras presents the most remarkable instance of this subdivision

¹ Evidence of Mr. Roe, First Report, Q. 5977.² Supplement to this Report, p. 110.LAW FOR
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of jurisdictions, being divided into 16 different districts: the limits are not co-extensive with any known or acknowledged boundary of a parish or other legal division, and can only be ascertained by close local inquiry, or by reference to the maps required to be deposited under some of the Acts with the Clerk of the Peace. Scarcely two of the local Acts agree in the mode of appointing the Commissioners or in the description of qualification that they are required to possess, and they define various offences punishable in various ways: nor do they fulfil those public purposes which the wants of a crowded town require, the Commissioners acting under them being quite unconnected with, and having no means of co-operating with, the managers of any of the adjacent districts. Some of these, however, comprise a large area, as the parish of Marylebone, but the preceding observations apply equally to them, so far as regards the want of uniformity in their provisions and of deficient powers of combination with the adjacent districts, for objects equally important to both.

But while these numberless isolated jurisdictions, by the unnecessary multiplication of officers and establishments, increase the expense of the works, for the execution of which the Commissioners are specially appointed, they also add to the number of officers to whom reference must be made, previous to the construction of any building or any sewer or drain. The variety of officers to be consulted on such occasions, and the different rules in force in the several districts, has been represented to us as a serious inconvenience and loss. The District Surveyors, the Commissioners of Sewers, and the Commissioners of Paving, all to a certain degree acting independently of each other, must be referred to; and, if water or gas is laid on, the servants of two other independent bodies, both having powers to interfere with the pavements must likewise be called into operation. The District Surveyor is now required to inspect the construction of drains of new buildings; but he has no power over the main sewers, with which those drains are to be connected, nor can he insure to the builder of a house that there shall be a sewer to carry off the contents of the drains, which are now required to be made. In the same way, the Commissioners of Pavement drain the surface of the street with little or no control over the sewers into which the water flows, and in some districts the gratings and the gully-shoots are the property of the Commissioners of Pavement, in others of the Commissioners of Sewers. One officer would be capable of inspecting the erection of buildings, the construction of the drains, both for the houses and the streets, and the formation and management of the pavements, and we cannot too strongly express our opinion of the important benefits that would accrue to the public by a consolidation of these duties in each district under one officer and one administrative body.¹

Unnecessary mul-
tiplication of offi-
cers.

To remedy some of the defects arising from the insufficient provisions of many of these local Acts, a general Act (57 Geo. III. cap. 29) was passed for the whole of the Metropolis, comprising the bills of mortality, and the parishes of St. Pancras and St. Mary-le-bone. This Act extends the powers of any existing Commissioners, and enables them to pave, drain, and improve the streets by widening them, and to prevent nuisances and obstructions therein. Among other useful powers conferred by this Act, the Commissioners of Paving are enabled to contribute, from the rates raised by them, towards the repair or erection of sewers. This provision might have been most beneficially applied in those districts of sewers where the Commissioners are without power to raise money for the construction of new sewers; but it does not appear that advantage has ever been taken of this provision.

But among the numerous functionaries above enumerated, exercising a supervision over works of construction, no body of persons is intrusted with the charge of securing a supply of water for domestic purposes. The mode of supply in the Metropolis is open to the same objections that we have previously pointed out in other towns, while the defects in the system of distribution and charging is frequently more striking. Although there is no portion of the town into which the mains and pipes of some water companies are not carried, yet we find large numbers of the houses of the poorer classes receive no supply. In the district supplied by the New River Company, containing about 900,000 persons, about one-third are unsupplied; and in the district of the Southwark Company, 30,000 persons have no supply; although the pipes of more than one Company are carried

Want of authority
for regulating the
supply of water.¹ Evidence of Mr. Kelsey, App. First Report, Q. 3541-3572. Evidence of Mr. Foden, *ibid.* Q. 5667. Evidence of Mr. Austin, *ibid.* Q. 6042. Mr. Butler Williams, *ibid.* Q. 5850. Mr. Worrell, *ibid.* Q. 4227-8.

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into some parts.¹ A still greater proportion can obtain water only from stand pipes, common to a large number of persons, and supplied only at intermittent periods.² We have already pointed out the evils of this system, and we have no reason to believe them to be less injurious in London than elsewhere. They are attributable to the same causes,—the natural reluctance of the companies to supply the poor except through the medium of the landlord, and the expense of a separate cistern or water-butt for each house necessarily entailed by the system of intermittent supply.

As a remedy for these evils we think that the same principles of legislation above recommended for other large towns, are equally applicable to the Metropolis, with such modifications as the varied circumstances of the localities may suggest in the constitution of any administrative body for the control and direction of local works.

Contamination of
water by soakage
from cesspools and
gas-pipes.

Our attention has been especially called in the Metropolis to the necessity of securing a liberal supply of pure water to the poorer classes by pipes, and rendering them independent of pumps and wells. The practice, hitherto almost universal, of retaining all refuse in cesspools beneath houses has, in many parts of the Metropolis, so entirely saturated the soil with injurious matter, as to render unfit for use the water obtained from pumps and wells. To this cause of injury may also be added the pollution from the escape of gas: this is not, however, confined to the wells; the water in pipes does not escape contamination from this cause. Mr. Mylne³ presents instances of such evils, and gives an example of the number of gas-pipes, belonging to competing companies, that are frequently found traversing the same streets. He states that the whole of the soil is in some streets so completely saturated with gas, that if the boxes of the fire-plugs are covered for a few hours, the coal-gas collects so abundantly within them, as to ignite on the application of a light. This effect has been witnessed by members of this Commission. We are not prepared to offer an opinion how far this nuisance may be lessened by additional care in forming the joints of the pipes; but the facts adduced before us appear to afford reasons for consideration whether some means should not be adopted for regulating the number of gas-pipes to be laid in any one street. Most of the gas companies are already liable to be placed under regulations with regard to the mode of their supply.⁴ In the Acts for the establishment of gas as well as water companies, clauses are usually inserted to prevent the laying down of gas-pipes within four feet of the water-pipes, and making other provisions for security against the contamination of water. A system of constant supply, to which we have so frequently adverted, by keeping the water-pipes continually full would materially contribute to prevent the indraught of the gas.

Effect of competi-
tion among the
Water Companies
in the Metropolis.

Before we conclude our remarks upon those points which appear to require especial notice in the Metropolis, we wish to call attention to a Memorial⁵ presented to us on behalf of two out of the three water companies at present supplying the district to the south of the Thames with water. The facts disclosed in this document, which had been partially stated to us in evidence,⁶ present a forcible example of the ruinous consequences of excessive competition, and similar instances may be adduced from all the water companies in the northern part of London.⁶ The competition that occurred among these companies in the year 1812 and subsequent years having reduced them to the verge of ruin, ultimately caused them to make an arrangement for the division of the whole of the north London into several districts. The reduction in the rates charged, and the expense incurred for laying down pipes, had left the proprietors for several years without a dividend, and without the means of making alterations in their works for improving the supplies. Since that period, great improvements have been effected by several of the companies.

¹ Evidence of Mr. Mylne, First Report, Q. 5717-5760. Evidence of Mr. Quick, First Report, Q. 5875.

² Evidence of Mr. Mylne, First Report, Q. 5718; Q. 5741.

³ In the Acts relating to the seven Gas Companies in London we find it enacted that the stations and works of the Company shall be open to the inspection of any persons appointed by the Secretary of State for the Home Department, and that the Company shall conform to such regulations as the Secretary of State shall consider necessary and proper, and shall direct to be adopted for the more effectually lighting the several parts of the Metropolis, and for securing a proper supply of gas for the public lamps, and for such other purposes as to the Secretary of State shall seem meet and proper for the advantage of the public. Supplement to this Report, p. 115.

⁴ Supplement to this Report, p. 116.

⁵ Evidence of Mr. Quick, First Report, Q. 5948.

⁶ The Companies supplying the North of London are,—the Chelsea, the Grand Junction, the West Middlesex, the Hampstead, the New River, and the East London. Those on the South, are the South-wark, the Vauxhall, and the Lambeth. See the Map accompanying this Report.

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But, although the cessation of the competition has enabled the companies to effect such improvements, the dividends are necessarily sacrificed for the purpose; neither do their arrangements to confine themselves within certain limits secure them from the risk of further competition. In order to improve the operation of the present system it would appear to be necessary that the Legislature should enable the Water Companies to raise additional funds for the improvement and extension of their works, and, as far as practicable, protect them from ruinous competition; and, on the part of the public, it may be fairly required that the system of supply should be greatly improved, and a more regular and liberal supply ensured to the poorer classes. A consolidation of some of the existing establishments leading generally to a diminution of the cost of management, and of works, would afford large means of economy. We entertain a confident expectation from all the facts of the case and the best opinions we have been enabled to consult upon this important subject, that by the application of the principles of improvement developed in the course of this inquiry, ample supplies of pure water may be conveyed to every tenement of the poorest class at low rates of charge, whilst a saving of existing expenses, combined with an amended system of levying the water-rates, will afford a good remunerative rate of profit upon any additional capital that may be required.

The principles, which we have recommended for adoption for the regulation of the supply of water in the provincial towns, were many years since suggested in relation to the Metropolis. The Committee of the House of Commons that inquired into the subject of the supply of water to the Metropolis in the year 1821, reported its opinion that the system of the supply of water was not subject to the operation of the usual laws which govern supply and demand, and that it "indispensably required legislative regulation." We find that in the same Session of Parliament a Bill was introduced, (we understand with the concurrence of some of the Water Companies,) by which it was proposed to establish referees to decide any questions of dispute that might arise between the public and the Companies. It is much to be regretted that this measure was not passed into a law; we hope that the proposal now made on the part of the Companies supplying so large a portion of the Metropolis to enter into arrangements to regulate the present system, will lead to the establishment of an authority for that purpose. We are confident, that, by placing the management of the supply of water under such a regulation, the greatest benefit will ensue both to the public and the Companies themselves, and that such an arrangement will afford the best security against the risk of injurious competition.

We have now brought under review all those points relating to the Metropolis which appear to us to require a distinct notice. Some of the subjects already considered in the former portion of this Report are now provided for in special Acts relating to the Metropolis. Provision has lately been made for the regulation of buildings, the width of courts and alleys, the prevention of many nuisances, and the construction of house-drains for all new houses. Further legislative enactments are required to improve the laws relating to sewers and the construction of drains to existing houses, to combine the duties of the underground with the surface drainage, to improve the cleansing of small streets, courts, and alleys, and to insure a more liberal and better distributed supply of water.

In submitting to your Majesty the measures we recommend for ameliorating the physical condition of the population inhabiting large towns and populous districts by improvements in drainage, cleansing, ventilation, and the supply of water, we must again express our deep conviction of the extent, importance, and difficulty of the subject—a conviction strengthened by the continuance of our investigations. The most important evils affecting the public health throughout England and Wales are characterized by little variety, and it is only in the degree of their intensity that the towns exhibit the worst examples of such evils. Villages and clusters of houses inhabited by the poor are often under the influence of the same causes of disease, though their effect in such situations may be frequently rendered comparatively slight from the more free circulation of the external air. The vitiation of the atmosphere from over-crowding, and the absence of proper ventilation in individual apartments produces in the rural districts the same diseases, that arise from the same causes in a town population.

Though we venture to consider that the recommendations, we now lay before your Majesty, will, if sanctioned by the Legislature, tend to diminish the evils, into

General Conclu-
sion.

LAWS FOR
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POLIS.

which it has been our duty to inquire, we cannot conceal from ourselves, that in many cases a considerable time must elapse, before permanent structural arrangements can be placed on that footing, which their importance requires. Though those, who may be specially entrusted with the execution of the legislative powers recommended, will be enabled by an earnest discharge of their duties to accomplish great good, we still look to the co-operation of the public for important aid in the removal of those causes of disease, to which the poorer classes of your Majesty's subjects are more peculiarly exposed; we do this the more confidently from the interest that has been recently manifested so generally on this important subject, and from the extent to which causes affecting public health have been made known through so many different channels, leading to the introduction of simple, economical, and highly beneficial improvements even in the humblest dwellings. With such co-operation, we have the greatest confidence that vast physical benefits will ensue, and that they will be accompanied by a corresponding improvement in the moral and social condition of the poorer inhabitants of large towns and populous districts. All which we humbly certify to your Majesty.

(Signed)	BUCCLEUCH.	(L.S.)
	LINCOLN.	(L.S.)
	ROBT. A. SLANEY.	(L.S.)
	GEORGE GRAHAM.	(L.S.)
	H. T. DE LA BECHE.	(L.S.)
	LYON PLAYFAIR.	(L.S.)
	D. B. REID.	(L.S.)
	RICH ^d . OWEN.	(L.S.)
	W. DENISON, CAPT. R ^L . ENG ^{RS} .	(L.S.)
	J. R. MARTIN.	(L.S.)
	JAMES SMITH.	(L.S.)
	ROBT. STEPHENSON.	(L.S.)
	W. CUBITT.	(L.S.)

Gwydyr House, Whitehall;
February 3rd, 1845.

MINUTES OF EVIDENCE,

Taken before the COMMISSIONERS appointed to inquire into the STATE of LARGE TOWNS and POPULOUS DISTRICTS in ENGLAND and WALES, with reference to the CAUSES of DISEASE among the INHABITANTS.

James Aspinall, Esq., examined.

Jas. Aspinall, Esq.

1. Are you chairman of a Committee appointed under the Liverpool Health of Town and Buildings Regulation Act, passed in 1842?—I am.
2. Is this Committee connected in any way with other Boards of improvement, such as the sewerage and scavenging, or the parish authorities?—No, it is independent of the Highway Board and of the Parish Board. The Highway Board and the Sewerage Board are the same.
3. Do you consider that this absence of connexion with Boards so intimately connected with matters relating to health renders the operations of your Health Committee less effective than they might otherwise be?—I think not; I think they are better separated.
4. The sewerage and the supplies of water and the scavenging being so intimately connected with health, and all those being points which must tend to render the population healthy or diseased, according to the mode in which the measures are carried out, do you think that a Health Committee, having for its object the preservation of the health of the town, can operate efficiently without being connected with such Boards?—My own private opinion is that we are better separate, because we are differently constituted. The Health of Town Committee is under the Corporation, and the Highway Board and Commissioners of Sewers are under a particular Act. The qualification is totally different.
5. Do you think it advisable that they should be under different authorities? Would it not be better if they were under one authority under the Corporation, so that they should be all connected together?—I should think they are better separated.
6. Have your Committee any authority over the proceedings of the body who manage the drainage?—No, certainly not.
7. How are you enabled to carry out any recommendation you may make with respect to alterations or improvements of the drainage, which bears upon the health of the humbler classes, if you have no authority upon that subject?—We have no power to compel any drainage from the humbler class of houses in any Act we have.
8. Then your Committee has no power to carry out any alteration which they may suggest in the drainage?—Certainly not. We have the power of compelling upper drainage, by putting channels in courts, but we have no power over the under-drainage; that is entirely in the hands of the Highway Boards and Commissioners of Sewers.
9. The powers under the Health of Town Act apply chiefly to buildings, the width of courts, the flagging and paving, and the management of the surface?—And the channelling of the courts; everything relating to the upper drainage.
10. It is an open drainage?—It is.
11. Supposing that the cleansing is very defective in any one of those courts or in any one of those narrow places in Liverpool, and that the Health of Town Committee, seeing that to be the case, are desirous to have it amended, have you any authority to enforce your wishes?—Yes, we have the power of making bye-laws which are not in operation now, but we are waiting for the Metropolitan Act, and what may appear from this Board, before we carry those bye-laws into operation. We have the power of compelling the people to cleanse the courts under a penalty.
12. But you have no power over the Commissioners for Cleansing?—No.
13. You have no power of enforcing your wishes through them?—No; the Watch Board are the scavengers of the town, which is also a Board under the Corporation.
14. Their authority does not go into the close courts at all, does it?—Not at all. There are four Boards,—the Watch Board, which has the scavenging, and the Highway Board, which has the management of the Sewerage, and the Health of the Town is a different Board.
15. The authority of the Scavenging Board does not go into those close courts, so that there is no authority for cleansing those close courts?—Except the bye-laws we shall make.
16. And then the cleansing will be done through the medium of the people themselves?—Yes.
17. You say that you think these various Boards had better be separated, because they are differently constituted. Supposing they were not differently constituted, and that they were so constituted as to act in combination together, do you think that would be an improvement?—My reason is this, that the Highway Board, generally speaking, is a Board that acts