

## **Sanitary by-laws / by Francis Vacher.**

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# SANITARY BY-LAWS.

BY

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MEDICAL OFFICER OF HEALTH FOR BIRKENHEAD.

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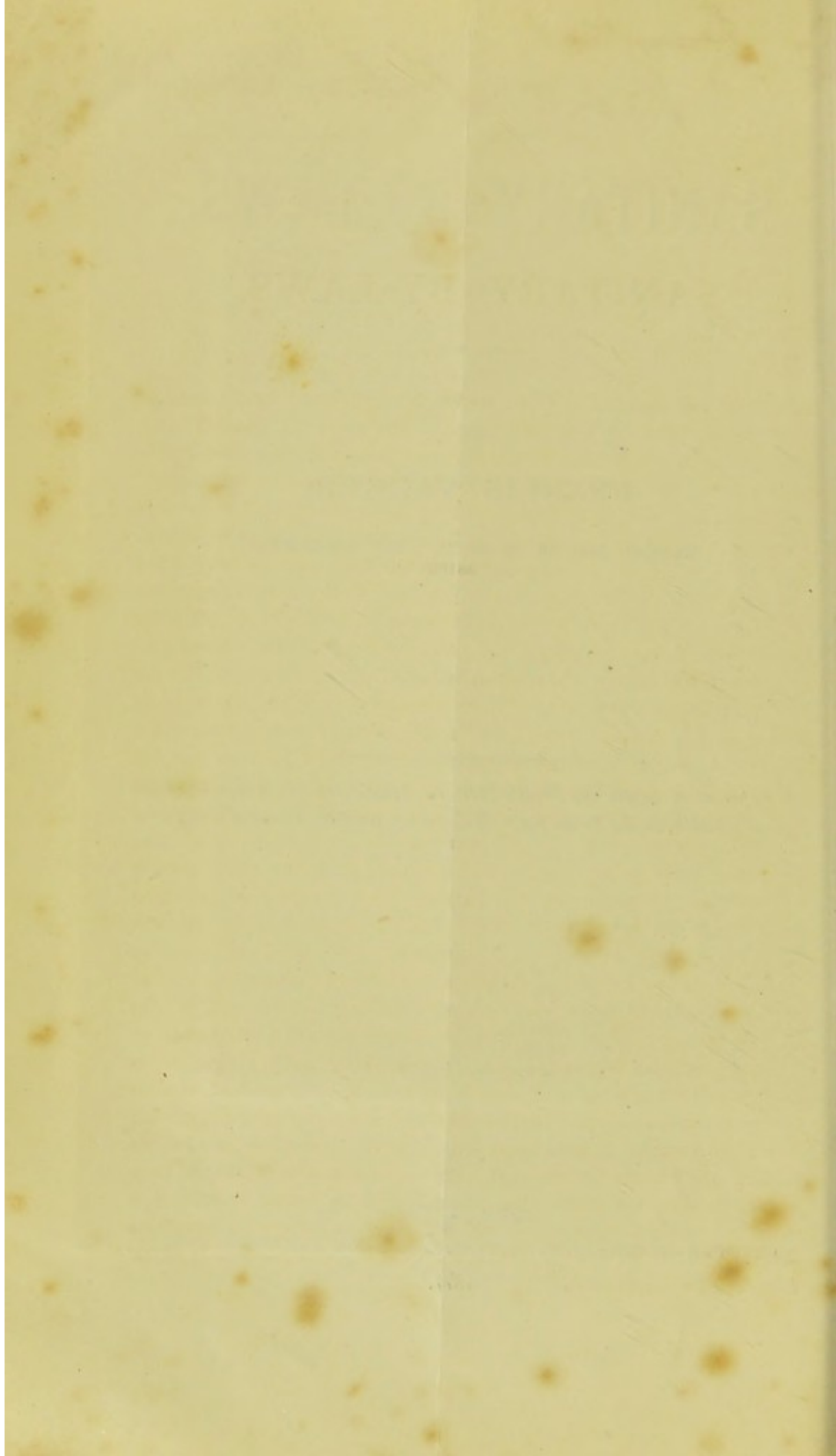
*A Paper read before the North-Western Association of Medical Officers  
of Health, at the Town Hall, Manchester, on December 22nd, 1876.*

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BIRKENHEAD :

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## SANITARY BY-LAWS.

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THE Local Government Act, 1858 (section 34) empowered local boards to make by-laws respecting new buildings, etc. The power thus granted being permissive only, was, however, largely neglected, and while many local boards made use of it, the resulting codes of by-laws, inasmuch as they were drafted by different men and passed through different town councils, differ about as widely as it is possible for regulations having a common object in view to differ. One would have thought that as this was sufficiently notorious at the time of the framing of the Public Health Act, 1875, those who were responsible for the measure would have taken one of two courses; that is to say (1), made the passing of by-laws compulsory, the Local Government Board reserving to itself the right of revision of every code proposed, or (2), incorporated into the Act well-considered regulations such as might suitably be adopted by every town in the kingdom. As we all know, the Government in their wisdom did not see fit to attempt either of these reforms. The Public Health Act repealed the whole of the Local Government Act, 1858, and so far as regards section 34 of the repealed statute, reproduced it, though not without some significant additions. The powers to make by-laws respecting new buildings, etc., as they appear in clause 157, are therefore such as have been available for the past eighteen years, supplemented by such further powers as seventeen years' experience showed the need of. They appear to be fairly complete, and if taken advantage of to the full, might no doubt be made the means eventually of securing to the public safe and wholesome dwellings and streets. But while the powers conferred remain simply permissive, it is vain to hope for much good from them. It is obviously directly opposed to the interest of any urban authority to pass efficient by-laws, as vacant land in districts where good by-laws obtain is apt to be regarded as an ineligible investment, because cumbered with restrictions. Buyers are scared away, preferring to purchase sites in neighbouring districts, where the regulations are more lax, or where no building and sanitary by-laws exist. The individuals who combine to form so-called sanitary authorities being subject to ordinary human weaknesses, it is not reasonable to suppose they will deliberately take steps the immediate effect of which would be to depreciate the value of property owned by themselves or their constituents.



An opportunity of accomplishing a work of great importance as regards the health, comfort, and safety of the public has been suffered to pass, but another session will shortly commence, when another opportunity of doing all that is requisite will be afforded. If it be thought too soon to amend the Public Health Act, an Act entirely independent of this regulating the construction of new streets and buildings, their drainage, ventilation, etc., might be carried, and such an Act might be made to apply not only to all urban districts but to the whole country. The principles which should rule the laying out of streets, the construction of buildings, sewers, and drains, are surely now-a-days sufficiently understood, and it is monstrous to imagine that the Legislature, with all the skilled advice of the nation at command, could not draw up a code of regulations including all that is essential for architects and surveyors to observe. Nor do the circumstances of divers localities differ so intrinsically that what would be a just code as regards one district would be unfair to another. Nor need there be any apprehension that the establishment of one uniform code of by-laws or the passing of a general Act to supersede by-laws would have the effect of destroying the characteristic features of different towns, or producing any inartistic sameness in streets and buildings. A good code of universally applicable by-laws, or the provisions of an enactment designed to overrule by-laws, would only aim at requiring what experience has shown to be absolutely necessary for purposes of health, stability, and the prevention or limitation of fires, in other words, the code or Act would seek to establish a minimum standard. Is it not manifest that it would be better to leave the settling of such a standard to competent experts, than, as at present, allowing every petty local authority to set up a minimum for itself, an authority often competing with its neighbours which shall make its minimum lowest, and thus offer the most attractive bait to that foe to all sanitary reform, the jerry builder?

I propose now, taking the words of the empowering clause in the Public Health Act as fairly indicating in what matters laying down a hard and fast line is expedient, to point out where I would draw this line. My object is simply to show that there need be no insurmountable difficulty in arranging a code of by-laws such as that proposed. I do not expect or desire that my remarks should carry any weight; they are simply offered as suggestions. Many of the questions that arise in connection with this topic are questions of life and death, and may well engage the attention of the most skilled and learned.

Several years experience in a rapidly increasing town in which the construction of new streets and the erection of buildings may be said to be always in progress, and a study of the working of the by-laws regulating these operations, has, I trust, enabled me to form some conception of the demands which may be reasonably made of builders and surveyors in the interests of health and safety.



Under clause 157 of the Public Health Act, every urban authority may make by-laws with respect to the following matters, that is to say :

1. *With Respect to the Level Width and Construction of New Streets, and the Provisions for the Sewerage thereof.*—The minimum width of new streets allowed in Birkenhead is 30 feet ; but when the projected new street is in continuation of a street exceeding 30 feet in width already laid out (either in the direct line or within 60 feet of the line of such street), the new street must be made of the same width as the streets already laid out. This, of course, refers to streets having a carriage-road, and it is directed that three-fifths of the entire width shall be laid out for this purpose. New streets not intended to be used at any time as carriage-roads may be laid out 20 feet wide, but all such streets are required to be flagged and open at both ends for the full width, and not more than 100 feet in length. The width of a street is defined as meaning the whole space devoted to the public, exclusive of steps or projections, measured at right angles to the direction of such street. The level in each case is determined by the Commissioners as advised by their surveyor, and no new street may be commenced till the plan, mode of construction, and materials to be employed have been approved by the same. A by-law by which the Commissioners may in certain cases allow a reduction of these widths is, I think, objectionable, though I am not aware that it has ever been acted upon. In all other respects these regulations as to the level, width, and construction of new streets, appear to be perfectly just and sufficient. In some towns, I know, the minimum width for new street is fixed at 35 feet or even 40 feet ; but 30 feet seems to me enough, especially if, as in Birkenhead, the height of dwelling-houses be not allowed to exceed the distance from the front of such buildings to the opposite side of the street. The plan and section of a new street having been approved, the town surveyor specifies the depth, inclination, form, size, materials, and other particulars of the sewers and their appurtenances, and how the work of laying the sewers, etc., shall be carried out, the materials to be employed being also subject to approval ; and no building is permitted to be erected in or by the side of any new street until a sewer has been constructed in such street. The by-laws making these regulations I am not quite satisfied with. I think it would be better to provide that all sewers shall be constructed throughout by the local authority. This would give a town surveyor very little additional trouble, and speculative builders are not to be trusted to sewer a street even under the strictest surveillance. Then I think it not sufficient to order that no building be erected till the sewer into which it is to drain be constructed—the word ‘ commenced ’ should be substituted for ‘ erected.’

2. —*With Respect to the Structure of Walls, Foundations, Roofs and Chimneys of New Buildings, for Securing Stability and the Prevention of Fires, and for Purposes of Health.*—The only by-law passed by the urban authority I



serve distinctly bearing on foundations directs that the walls of 'every building hereafter built or rebuilt shall rest upon solid ground, or upon concrete, or other sufficient substructure.' This, it appears to me, is hardly sufficiently explicit, no definition of 'solid ground' being given. The chief object of a sanitary by-law as to foundation is to prevent the erection of dwellings on so-called 'made land,' *i.e.*, land brought up to the requisite level by having been used as a dust or rubbish-shoot, and which contains all sorts of decomposing animal and vegetable refuse. Any by-law on the subject should therefore specially prohibit the use of such foundations till the noxious material therein contained shall have perished by slow combustion. The time necessary for the completion of this process varies considerably, but under no circumstances should such land be built upon till ten years after the last deposit had been made.

Regulations as to walls—requiring that they shall be built of good sound well-burnt bricks or good sound stone, properly bonded and set in good mortar or cement, and that the mortar or cement shall be well compounded of one part of good fresh-burnt lime or cement, and three parts of clean sharp sand—are all set forth in a private Act (6 Vic., cap 13) a schedule annexed to which specifies the thickness of walls, chimney backs, etc.; and the Commissioners have also passed special by-laws with reference to the thickness of party and division-walls. For example, every brick party-wall in all buildings exceeding three storeys in height, above the level of the ground floor, is required to be at least fourteen inches in thickness for its entire height, and every brick party-wall in all buildings not exceeding three storeys in height has to be not less than fourteen inches in thickness from the foundations to the undersides of the joists of the ground floor, and not less than nine inches in thickness from the ground floor upwards, an attic floor for the purposes of these by-laws being considered a storey. And every stone party-wall is required to be one-fourth more in thickness than if such wall were built of brick. Regulations such as these are doubtless equal to securing stability, indeed as far as they go they are particularly satisfactory, but there is a matter in connection with this subject which, in the interests of health, should not be neglected. Walls designed as party walls are frequently to all intents and purposes external walls. Thus a man builds a house which he intends to be one of a row, but which at the time of building is wholly detached, and remains so, perhaps, as long as the house lasts. Is such a house to have the wall on one side, perhaps both sides, below the regulation thickness for external walls because it is theoretically a party-wall? House walls of insufficient thickness are sure to be damp and consequently prejudicial to the health of the tenant. I would suggest that all so-called party-walls not built up to at the time of the erection of the house of which they form a part come under the same regulations as ordinary external walls; or a by-law requiring such walls to be slate-hung, so as to exclude damp, might meet the justice of the case. I



should not omit to mention that we have a by-law requiring a damp course in all walls three inches above the footings.

It is very important that every house should be roofed with incombustible material. This is secured in Birkenhead by the Act just referred to, which provides that 'every outer part of every flat gutter, roof, turret, dormer, and lantern light, or other similar erection, in or on any building,' shall be covered with incombustible material. A by-law also directs that every external, party, or division-wall of a new building shall be carried up close to the underside of the roof covering, in every part, and that the laths and outside covering of slates shall be securely bedded in mortar thereon. These regulations appear to me to be fairly efficient; but it would be well to require that roofing material should be impervious to water as well as incombustible. I have heard it suggested that all party-walls should be taken through the roof. This would afford some additional security against the spread of fire from house to house, but every wall so carried up through the roof would be almost certainly damp.

As regards chimneys and fire-places, the chief desiderata are that all wood-work shall be kept a reasonable distance from them, and that they have sufficiently thick backs to be safe. To this end we require that no flue or fire-place shall be nearer than  $4\frac{1}{2}$  inches to the centre of the thickness of any wall (giving a back of 9 inches) and that no timber be laid in a wall nearer than 6 inches to any chimney-opening, back or flue, and that no timber be laid underneath the jambs or openings in any chimney-board, and that every chimney-opening shall have before it a slab of incombustible material, one foot larger than the opening when finished. It is also required that the inside of every chimney-opening and flue to be built shall be pargeted throughout with mortar properly prepared for such purpose. But a rule or by-law to this effect should define what is meant by 'properly prepared,' as in the absence of such definition, ordinary mortar is used, which does not stand the heat and cracks off. Probably mortar, however made, is unsuitable for the purpose. The special regulations requisite in respect of ovens, furnaces, etc., is too large a subject for me even to refer to here, but I do think that as one of the principal objects sought in constructing factory chimneys is that they shall not cause a nuisance, this matter should not be lost sight of in dealing with regulations for domestic chimneys. It has occurred to me that all house chimneys should be required to be built to a definite scale of capacity. Half the smoky chimneys which are a cause of so much loss and annoyance, owe their bad habits simply to their being too small.

3. *With Respect to the Sufficiency of the Space about Buildings to Secure a Free Circulation of Air, and with Respect to the Ventilation of Buildings.*—The regulations as to the minimum width of streets provide for a sufficiency of space in front of buildings; but under this heading there remains to be considered what yard space it is desirable to insist on. This is a very vexed



question, and has been variously answered by different local boards. My own experience is that there is no single requirement more distasteful to builders than that which obtains with reference to yard space; yet I do not think that in Birkenhead we draw the line a fraction too high. The bye-law passed by the Commissioners on the subject provides that every building to be erected and used as a dwelling-house shall have, in the rear, or at the side thereof, an open space exclusively belonging thereto, to the extent of not less than 150 square feet, free from any erection thereon other than an ashpit and W.C.; and the distance across such open space between every such building and the opposite property at the rear or side, exclusive of any common passage, shall be not less than 10 ft. If such building be two storeys in height above the level of such open space, the distance across shall be not less than 15ft.; if three storeys, not less than 20ft.; if more than three storeys, not less than 25 ft. An attic-floor is to be considered a storey for the purposes of this by-law. These regulations would, to my mind, be perfect, but for an unfortunate tag at the end of them, which permits of their being 'modified in special cases at the discretion of the Commissioners.' Architects pay more attention to the tag than to the rest of the by-law, always of course being prepared to prove that the case they submit is special, and that the regulation yard-space should be modified in their behalf. The minimum width for passages is fixed at 4 ft., and for passages at the backs of houses, used for access to yards and ashpits, 5 ft.

In the matter of ventilation, I am sorry to say that our by-laws are sadly deficient. A by-law provides that new public buildings shall have proper means for free ventilation; and another that every habitable room hereafter to be built of less area than 100 superficial feet, and without a fireplace, shall have special means of ventilation, by air-shaft, or otherwise; a third, that space under the ground floor of any dwelling-house, to be erected without a cellar, shall be properly ventilated. These three are the only regulations. I need not point out that due provision for the ventilation of all rooms in dwelling-houses should be made, as the evil of leaving rooms to ventilate themselves as best they may is obvious. Sometimes in cottages, inhabited by tenants who do not like fresh air, the windows, through being so long closed, resist all attempts to open them, and the narrow chimneys are almost choked with soot. It is expedient also that a minimum space under all floors should be insisted on, and that such space should communicate with the external air by means of a grating or gratings.

4. *With Respect to the Drainage of Buildings, to Water-closets, Earth-closets, Privies, Ashpits, and Cesspools in Connection with Buildings, and to the Closing of Buildings or Parts of Buildings unfit for Human Habitation, and to Prohibition of their Use for such Habitation.*—The bye-laws regulating the drainage of buildings in Birkenhead are not very stringent. They require



that the mode of drainage of houses, and the materials to be used, shall be subject to the approval of the Commissioners, that due provision shall be made for carrying rainwater from the roofs, that the subsoil of premises shall be drained whenever necessary, and that all private drains, and watercourses used for drains, in the case of tenancies for a shorter period than a year, and of unoccupied premises, shall be cleaned and repaired by the owners or agents. The by-law referring to the construction of drains, considering the great importance of the subject, is not all that I could wish. It directs that the drains of all buildings shall consist of glazed stoneware pipes, or other equally suitable material, and shall be connected with the sewers in such manner as the surveyor may direct; that they shall be laid with watertight joints and when carried beneath houses embedded in and surrounded with puddled clay; that no right-angle junction shall be formed, and all inlets shall be properly trapped; and that no drain in course of construction shall be covered over until it has been inspected and approved. I may state that under no circumstances are rubble drains or drains of brick and slate permitted to be constructed, and that without exception glazed pipes, of the dimensions fixed by the surveyor, are used for house drains. Still the by-law on the face of it bears evidence of not having been revised during the last ten years. It is now universally taught that no drains should be carried beneath houses when it is possible to avoid it, and that when pipes are carried beneath houses they should be laid on a bed of concrete and surrounded with the same material, and that they should be ventilated externally, each at the point of exit. I think, too, that a by-law on the construction of house drains might fix the minimum inclination allowable, say, not less than one in a hundred and twenty. Again, there would be no great hardship in requiring builders to put in small arches over pipes when carrying them through walls to avoid all risk of the settling of the walls causing a fracture.

The Birkenhead code of by-laws contains three with reference to water-closets, privies, ashpits, and cesspools. One directs that no dwelling-house shall be occupied till a water-closet or privy and an ashpit have been provided; another that no cesspool shall be allowed, except when unavoidable, and that in any case it shall be water tight, covered over, and ventilated; and a third gives rules for the construction of water-closets, privies, and ashpits. Much of this last is obsolete, as we now require every new dwelling-house, no matter how small its dimensions, to be furnished with a water-closet, and the regulations as regards ashpits have been of late years considerably modified. The present regulations as regards ashpits are that no ashpit shall be in front of any dwelling-house, or adjoining any dwelling-house or building having a cellar, that the bottom of such ashpit shall be paved or flagged, of not less dimensions than fifteen superficial feet, and in no case below the level of the



ground adjoining, that the walls shall be not less than 9 in. thick if of brick, and one-fourth more if of stone, that each ashpit shall be provided with a slanting roof of flagstone or other suitable material, with an aperture near the top for putting ashes in, and an aperture guarded by an iron door, the bottom of which shall be on a level with the passage of access, for discharging. Ashpits constructed on this pattern, though better than sunk pits, are, I am bound to say, not altogether satisfactory. Rag pickers open the iron doors and rake out the contents of the ashpits into the common passages, and cottagers empty their slops into the ashpits. A model dry ashpit fitted for cottage property has yet to be designed. The details of construction as regards water-closets I cannot here enter upon. I will merely say that all water-closets have to be constructed to the satisfaction of the local authority; and the rule for some time past has been that all new cottages shall be accommodated with extern closets. Some of these are tumbler closets, a few trough closets on the Liverpool pattern, but most are ordinary hopper closets situated in the yards of the cottages they serve.

Closing of buildings unfit for human habitation, and prohibiting their use for such habitation is provided for in a single by-law. On receipt of a certificate of unfitness from the medical officer of health, town surveyor, inspector of nuisances, or any two medical practitioners in respect of any building or part of a building, the Commissioners may by their order conspicuously affixed to the building or part of building declare the same is not fit for human habitation, and that it shall not, after a date to be specified in the order, be inhabited. Any person after the date mentioned letting, or occupying, or knowingly suffering to be occupied, such building, becomes liable to a penalty not exceeding twenty shillings for every day during which the building is so let or occupied; provided that, if at any time after the order has been made the Commissioners shall be satisfied such building has been rendered fit for human habitation, they may revoke their order and it shall thenceforth cease to operate.

The clause of the Public Health Act which I have used as a text for these remarks empowers urban authorities to provide for the observance of the by-laws they may make by enacting therein such provisions as they think necessary in respect of the giving of notices, the deposit of plans and sections, etc. Powers of this character, being matters which concern law-clerks and town surveyors rather than medical officers, I have not touched upon.

The few observations I have ventured to submit for your consideration are necessarily fragmentary. They may, however, prove suggestive to medical officers in charge of districts where the passing or revision of by-laws is in contemplation.

All of you will not possibly think with me that a uniform code of by-laws, or a general enactment dealing with matters now commonly regulated by by-laws, would be practicable ; yet all, I doubt not, will hold that the powers conferred on local authorities to make by-laws should be compulsory rather than permissive, and that drafts of proposed by-laws would be all the better for being revised by the central board where a little more uniformity could be infused into them than is likely to obtain while every local authority compiles its own by-laws simply in accordance with its own sweet will.

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