

**Removal of excreta and household refuse. Report of the medical officer of health to the health committee.**

**Contributors**

Nottingham (England)  
Whitelegge, B. Arthur.  
London School of Hygiene and Tropical Medicine

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CORPORATION OF NOTTINGHAM.

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REMOVAL OF EXCRETA  
AND  
HOUSEHOLD REFUSE.

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REPORT  
OF THE  
MEDICAL OFFICER OF HEALTH  
TO THE  
HEALTH COMMITTEE.

*September, 1887.*



## REPORT TO THE HEALTH COMMITTEE.

As the Committee is aware, I recently addressed a circular letter to the Medical Officers of Health of the large towns in England, asking for information upon certain specified points regarding the mode of removal of excreta and household refuse. The objects of the enquiry were to learn how far the pail system is being adopted, retained, or abandoned in other towns: if any other modification of the pail system promises better results than our own: and if any alternative method, especially of water-carriage, has proved successful in cottage property in manufacturing towns.

I have also, accompanied by the Town Clerk, visited two towns (Leicester and Birmingham) which have recently made alterations in their policy of much practical importance to the present enquiry.

I have received returns from twenty towns, of which the following six have not adopted any form of the pail system:—

Bristol	Liverpool	South Shields
Hull	Preston	Walsall

The remaining fourteen towns, which have tried one or other variety of pail collection, are:—

Birmingham	Manchester	Salford
Derby	Newcastle	Sunderland
Halifax	Oldham	Wigan
Huddersfield	Rochdale	Wolverhampton
Leicester	St. Helen's	

In Manchester, Salford, Newcastle, Sunderland, and Wolverhampton more or less of the ashes and other household refuse are added to the excreta in the pails, as at Nottingham, but in the other nine towns the pails receive excreta only—a point of considerable importance in comparing the frequency or cost of collection in different towns. In Manchester and Salford only sifted ashes are added to the excreta. In Sunderland the pails are not changed when emptied, as in the other towns.

Of the thirteen towns in which a pail system has been tried Birmingham alone has entirely ceased to allow the construction of new closets of this type. In Leicester, extensions of the pail system are only permitted in houses below a certain rental; and in Sunderland only where the regulation ash-closet is in-



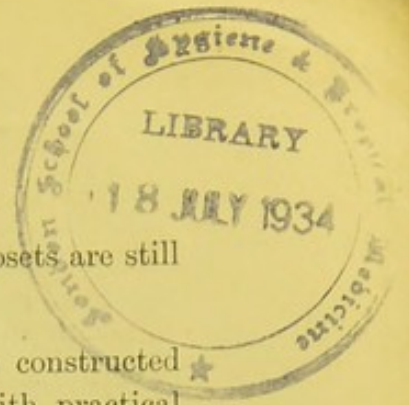
applicable. In Derby and Newcastle new pail closets are still sanctioned, though water closets are preferred.

Privies and middens, though still allowed to be constructed in Hull and in part of Salford, are condemned with practical unanimity on all hands, and are disappearing in most of the larger towns.

Sunderland and South Shields have special forms of ash-closets, which are said to work well, but the success of this system is dependent upon ready access by scavenging-carts to the back premises.

The trough system formerly tried in Liverpool has given place to single water closets. It does not appear that trough closets have been widely adopted by any town except as regards schools and factories. Bristol, Preston and Walsall require water closets of ordinary construction.

Birmingham has recently adopted a new form of flush closet devised by Dr. Hill, which deserves special attention. The closet, several of which are usually arranged in series, consists of a large glazed pipe 17 × 15 inches in diameter leading vertically downwards, without trap of any kind, to a pipe drain beneath. The drain, which is trapped by a syphon before joining the sewer, receives at its upper end the whole of the slop water and other superficial drainage collected from the houses which it serves. This accumulation of waste water is found in practice to be sufficient to wash away the whole of the excreta from the closets communicating with the drain. If however the drain serves only two or three houses, an automatic flush tank is employed in which the waste water accumulates until a volume sufficient for effective flushing is collected. A man-hole is provided for access to the terminal syphon, at which point alone obstruction can occur. To avoid up-draught through the closets, a ventilating shaft is attached to the highest point of the drain. It is desirable to place several closets upon the same common drain, in order to secure a better supply of waste water for flushing. The depth of the drain beneath the closet seems to be immaterial.





The advantages claimed for this form of closet are economy both in first cost and in working, freedom from nuisance, and impossibility of serious derangement even if carelessly used. After a careful inspection of several which have been in use for some time, I am of opinion that they have proved very satisfactory. Fifteen hundred have been constructed during the last two years, many of them in poor districts, and no new pail closets are now allowed. Where the fall to the sewer is slight, this system cannot be applied in its entirety, although it would usually be possible to employ automatic flush tanks fed by water from the main, leaving the waste water to be dealt with in the usual way.

In Birmingham, Huddersfield, Liverpool, Manchester and Salford the use of water closets is encouraged by making no charge for water supplied for that purpose.

	Water Closets.	Pail Closets.	Privies.	Special Forms
Birmingham ...	11,000	40,000	13,000	1,500 flush closets.
Bristol .....	40,000	0	0	
Derby .....	4,000	4,400	10,000	150 trough closets.
Halifax .....	3,800	8,970	700	
Huddersfield ...	2,000	11,000	1,500	
Hull .....	4,000	0	40,000	
Leicester.....	13,000	6,500	200	
Liverpool .....	88,000	0	4,400	3250 trough closets.
Manchester ...	11,000	66,000	4,000	
Newcastle .....	18,055	2,362	6,360	
Nottingham ...	7,500	35,590	?	
Oldham .....	620	19,975	4	100 trough closets.
Preston .....	?	0	20,000	
Rochdale .....	497	11,300	190	
Salford .....	5,821	7,965	29,755	
St. Helens .....	500	2,000	3,366	
South Shields	500	0	2,500	7000 ash closets.
Sunderland ...	?	2,500	17,000*	*Including new ash closets.
Walsall .....	1,000	0	11,000	
Wigan.....	613	5,453	900	
Wolverhampton	?	?	?	

The pail system was originally adopted by the Health Committee in Nottingham as a means of obviating the nuisance arising from the old middens, more especially in the crowded parts of the town. The experiment having proved successful, further powers with regard to the conversion of offensive privies into pail closets were obtained in 1882. Pail closets have also been constructed, in still larger numbers, for new houses and in cases where there was deficiency of closet accommodation.

It is not necessary to enumerate the defects of the old midden system, now happily almost obsolete. The gain in point of healthfulness in the older parts of the town by the substitution of pail closets is beyond doubt. Enteric fever has decreased 50 per cent. in Nottingham within the last twelve years, and it is difficult to avoid the conclusion that this reform, bringing with it purer air, purer subsoil, and more rapid removal of excreta and other refuse, has largely contributed to the result.

That the change from privies and ashpits to pail closets was a wise and beneficial one at the time is clear, but the point for present consideration is whether further advance cannot now be made, either in the direction of improving the pail system or superseding it in whole or part by other methods, and especially by some system of water carriage.

From these returns it appears that of the fourteen towns which have adopted a pail system, twelve are still so far satisfied with its working that they continue to sanction its extension, although in seven of them the absence of admixture with ashes renders the various stages more offensive than at Nottingham. In another town (Leicester) the same system is being still extended in houses tenanted by the poorer class. In the Nottingham form of the pail system, the admixture of ashes and household refuse with the excreta, while avoiding the expense of separate collections of ashes and excreta as practised in some towns, ensures a very considerable degree of deodorisation, and in great part obviates the defects of the alternative pail methods.



On the other hand, three towns (Bristol, Liverpool and Preston), which have not tried any pail system, contrive to adapt water-closets of ordinary construction to houses of all classes, even the poorest, and Birmingham has ceased to construct new pail-closets, having found a system which promises to combine many of the advantages of the pail and water methods of carriage. In Leicester water-closets are now as a rule required if the weekly rent exceeds about five shillings, and there are several in houses below that value, but I learn that the pail-closets are still preferred in the latter class, for reasons mentioned below.

Water carriage is in principle superior to any "dry" system, since the excreta are rapidly and completely removed from the premises. The chief difficulty which has stood in the way of its wider adoption in manufacturing towns has been the absolute necessity of reasonable care on the part of the persons using it, which reasonable care is rarely forthcoming among tenants of the poorest class.

Water-closets, though apparently successful in Liverpool and Bristol, have in many instances failed when tried experimentally among this class in Nottingham and other towns, and have been superseded by pail-closets. The usual causes of failure are repeated obstruction of the drains by bulky objects improperly thrown down the closets, neglect of flushing, and injury to the apparatus. In such cases the advantages of the pail-closet have been conspicuous, viz.: systematic and complete removal of all refuse, at short intervals, by mechanism so simple that nothing short of wilful destruction can derange it. Moreover the frequent visits of the scavengers ensure at least a certain degree of cleanliness. None of the older forms of trough-closet or water-closet meet this difficulty so well as the Nottingham pail-closet; but the Birmingham flush closet is now being tried in some of the poorest parts of that town, with apparent prospect of ultimate success.

As regards artizans' dwellings the case is different. It is probable that a water-carriage system, with approved apparatus



might work well apart from any extraordinary degree of supervision or serious liability to derangement. Here also the Birmingham flush-closets offer the advantages of simplicity and economy both in first cost and in working, with minimum possibility of getting out of order and maximum facility for remedying any accidents that may occur.

For houses of a superior class there is little to be said in defence of pail-closets.

It must not be forgotten that any water-carriage system entails a somewhat greater cost of construction, and a constant outlay for flushing water, except as regards the Birmingham closet. The present house drains are in very many cases not fitted to receive the additional water from closets, and new drains would be required. A more important consideration is that a supplementary system of regular and frequent removal of dry household refuse would still be required, so that the saving in cost of scavenging would be only partial.

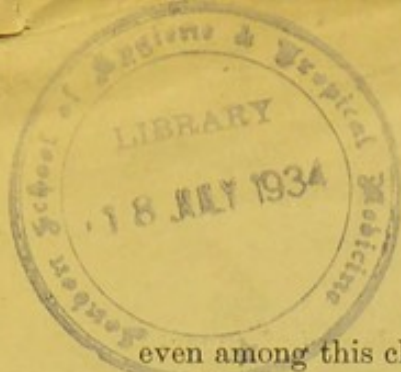
The local conditions in Nottingham are favourable to water-carriage, except in the districts subject to floods. The water supply is abundant, the town is now well sewered, and I understand that the Sewage Farm is capable of dealing with any reasonable amount of additional sewage. If however the Birmingham system of utilising slop-water proved successful and were adopted upon a large scale, there would be little addition to the bulk of sewage. Possibly a larger flow of liquid might be of advantage in flushing the sewers. It seems to be an established fact that the chemical composition of sewage is substantially the same whether water-closets are used or not.

The conclusions to which these considerations lead me are as follows:—

1. The pail system in force in Nottingham, viz.: admixture of ashes and household refuse with excreta, is preferable to any of the other forms of pail collection.

2. In houses of the poorest class it gives better results than water-closets or trough-closets of ordinary construction. But





even among this class it is desirable that trial should be made, as at Leicester and Birmingham, of water-carriage in suitable cases.

3. In houses *not* of the poorest class water-carriage is preferable, supplemented by at least weekly collection of household refuse.

I would suggest therefore :—

1. That for houses below a certain rough standard of rental or rateable value the pail system should be continued for the present, and extended so far as to meet the requirements of such houses, whether arising from abolition of privies and ashpits, or from originally deficient closet accommodation. No doubt it would occasionally be necessary to deviate from this standard, in either direction, according to the special circumstances of each case.

An annual rateable value of £10 might be a suitable limit for this purpose. To attempt to enforce water-carriage at present in houses below that value would lead to many failures and would needlessly endanger the credit of the system. It would be necessary to make exception where the only access to the closet is through the house.

2. That some system of water-carriage should be required in all new houses having access to a sewer.

3. That (in the absence of special reasons for exception) new pail closets should not be constructed in houses above the adopted limit of value, nor in factories, workshops, or schools.

Those now in use should be gradually replaced by some approved form of water-carriage.

4. In certain cases where the amount of waste-water available is insufficient for flushing the closets upon the Birmingham plan, water might be supplied for that purpose at a reduced cost, or gratuitously, as at Manchester, Salford, Liverpool and Birmingham.

*Benjamin*  
B. ARTHUR WHITELEGGE,

MEDICAL OFFICER OF HEALTH.

September 16th, 1887.