

Report on the deoderisation of sewer emanations by means of sulphurous acid, &c.; With appendix, containing letter from engineer, and list of the sewer ventilations in which acids are used / by Henry E. Roscoe.

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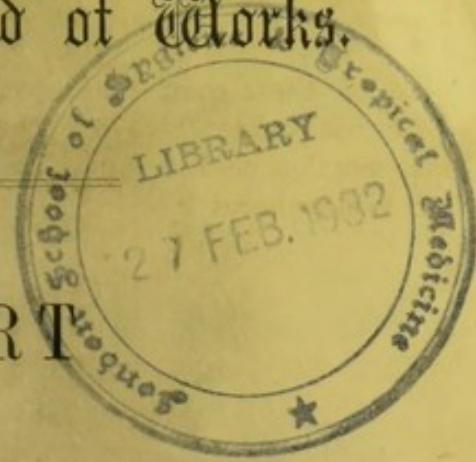
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Metropolitan Board of Works.



REPORT

ON THE

DEODORISATION OF SEWER EMANATIONS

BY MEANS OF

SULPHUROUS ACID, &c.

BY

Sir HENRY E. MOSCOE,

F.R.S., D.C.L., M.P.

(In continuation of Reports of 16th May and 10th June, 1887.)

With Appendix, containing Letter from Engineer, and List
of the Sewer Ventilators in which the Acids are used.

*Ordered to be printed by the Works and General Purposes Committee
(12th March, 1888), for circulation among the Members of
the Board only.*

(No. 1,280.)

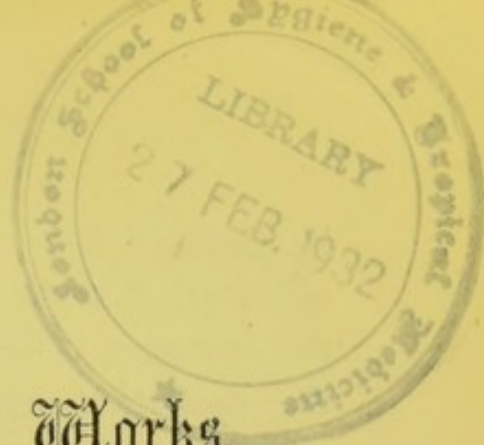
Philosophical Journal of Science

Vol. 1. No. 1. 1841.

Published by J. W. Smith.

Printed by J. W. Smith.

The first number of this journal contains a series of papers on the subject of the atmosphere, and the second number contains a series of papers on the subject of the earth's crust. The third number contains a series of papers on the subject of the human mind, and the fourth number contains a series of papers on the subject of the human body. The fifth number contains a series of papers on the subject of the human soul, and the sixth number contains a series of papers on the subject of the human spirit. The seventh number contains a series of papers on the subject of the human intellect, and the eighth number contains a series of papers on the subject of the human will. The ninth number contains a series of papers on the subject of the human emotions, and the tenth number contains a series of papers on the subject of the human passions. The eleventh number contains a series of papers on the subject of the human faculties, and the twelfth number contains a series of papers on the subject of the human powers. The thirteenth number contains a series of papers on the subject of the human senses, and the fourteenth number contains a series of papers on the subject of the human organs. The fifteenth number contains a series of papers on the subject of the human system, and the sixteenth number contains a series of papers on the subject of the human nature. The seventeenth number contains a series of papers on the subject of the human character, and the eighteenth number contains a series of papers on the subject of the human conduct. The nineteenth number contains a series of papers on the subject of the human life, and the twentieth number contains a series of papers on the subject of the human death.



Metropolitan Board of Works.

LONDON, *March 3rd*, 1888.

TO LORD MAGHERAMORNE,

Chairman of the Metropolitan Board of Works.

DEODORISATION OF SEWER EMANATIONS.

MY LORD,

In continuation of my reports on the above question, of May 16th and June 10th last, I have to state that experiments on the use of sulphurous acid for deodorising the emanations from sewers, have now been carried on for a sufficient length of time to enable me to judge to some extent of the efficacy of the process. The deodorising material has been applied at over 196 different stations in the Metropolitan area. A list of these is appended. Of these, 194 consist of stoneware jars filled with a gallon of saturated aqueous solution of sulphurous acid, which drops upon flannel, whilst 2 are glass bottles containing anhydrous acid, under a pressure of 4 atmospheres, which is allowed to escape slowly through a minute aperture.

The annual cost of the materials and maintenance of these is estimated by Sir Joseph Bazalgette to be about from £11 to £12 per station, or at £3,500 for the number hitherto at work.

It is difficult at present to give a definite opinion as to the chemical effects of the sulphurous acid on the emanations, but it would appear that the offensive smell from the sewers

is diminished by the use of sulphurous acid, as I am informed that the complaints have been less numerous from the occupiers of houses in the vicinity of the shafts in which the deodorant has been placed than was the case previously.

So far, therefore, the results of the experiments have been satisfactory. It is, however, to be borne in mind that these experiments have been conducted during the cold months of the year, and that the process has yet to go through the ordeal of summer temperature. It is not until this has been accomplished that a complete proof of the efficacy or otherwise of the method can be obtained.

I beg, therefore, to recommend the Board to continue this system during the spring and summer months, careful record being kept of the working and of the cost, as well as of the complaints made in the neighbourhood of the stations, where the deodoriser is used.

I append a letter lately received by me from Sir Joseph Bazalgette on the subject, together with the list of stations above referred to.—I am, my Lord, yours faithfully,

HENRY E. ROSCOE.

APPENDIX.

ENGINEER'S DEPARTMENT,
SPRING GARDENS, S.W.,
28th February, 1888.

DEODORISATION.

DEAR SIR HENRY,

With reference to the first paragraph of your letter dated the 16th instant, I may state that, complaints having been received in December last from some of the residents at Highbury Hill, of unpleasant smells proceeding from a ventilating shaft there, which is about 100 feet in depth, a sulphurous acid jar was, with a view to remedying the evil, fixed in the shaft; but as this was found to be ineffectual a second jar was added. The complaints were, however, renewed whilst these jars were in operation, and thereupon a light wooden flap was fitted inside the shaft to prevent the escape of offensive odours (except when the flap might be lifted by a violent rush of air caused by a sudden flood in the sewer during the time of storm), and on the other side of the flap two sulphurous acid jars were placed, so as to act upon any escape of foul air that might occur outside the flap, either in ordinary or extraordinary occasions. Since this arrangement was adopted no further complaint respecting the shaft has been made.

Sulphurous acid jars were also put into five ventilating shafts, as follows, viz.: In Manor Road, near the coal depôt, Stoke Newington, and in Bethune Road, Lordship Lane; Mildmay Road; St. George's Street, London Docks, and

Chigwell Hill, St. George-in-the-East, and no recent complaints have been received from the inhabitants of these localities.

When the cold weather set in, the use of the sulphurous acid was discontinued in the Southern and North-Western parts of the Metropolis, and the Board has, speaking generally, been free from complaints relative to noxious smells ever since, so far as these districts are concerned.

I am, however, unable to ignore the fact, that, owing to the low temperature of the atmosphere, no reliable information can at present be obtained as to the efficacy of sulphurous acid as a deodorising agent.

I am, dear Sir Henry,

Yours faithfully,

J. W. BAZALGETTE.

Sir H. E. ROSCOE, M.P., F.R.S.,

10, Bramham Gardens, Wetherby Road, S.W.

LIST of the places at which Sulphurous Acid is being used
in sewer ventilators in the North-eastern District of
the Metropolis.

Phoenix Street, by Goldington Street, St. Pancras.

Opposite 7, Goldington Street.

In Goldington Crescent.

Opposite Crowndale Road, by Camden Street.

„ 28, Camden Street.

„ 64, Camden Street.

„ Georgiana Street, Camden Street.

By Camden Street, Camden Road.

„ Little Randolph Street, Camden Road.

„ Rochester Square.

Opposite 210, Camden Road.

„ Camden Park Road, Camden Road.

„ 388, Camden Road.

„ 426 Camden Road.

„ Congregational Church, Camden Road.

By Midland cab yard, Pancras Road.

„ Great Northern Hotel.

„ Belgrave Street, Euston Road.

„ Argyle Square.

„ Swinton Street, Gray's Inn Road.

„ Prospect Terrace, Gray's Inn Road.

„ Guildford Street, „ „

„ Chad's Place „ „

„ Free Hospital „ „

„ Wilson Street „ „

Opposite 270, Pentonville Road.

By Weller's Court, Pancras Road.

Opposite Lyme Street, Camden Road.

„ Northumberland Public house, King's Cross Road.

Opposite 167, Tachbrook Street, Pimlico.

* By Moreton Street, Tachbrook Street.

Opposite 170, Tachbrook Street.

„ 120, Tachbrook Street.

By Charlwood Street, Tachbrook Street.

Opposite 58, Tachbrook Street.

„ 22, „

„ 4, „

By Charlwood Street, Tachbrook Street.

„ Francis Street, Vauxhall Bridge Road.

Rear of Vauxhall Bridge Road.

* By „ „ „
By „Royal Standard,“ Victoria Street.
Opposite 169, Cleveland Street, Euston Road.
Old Ford Road, Bow.

„ „ by Milton Road.
Wallace Road, White Post Lane, by Glassblowers.
Old Ford Road, opposite Milton Road.

„ „ Albert Dwellings.
Globe Road, opposite 164.

„ „ Norfolk Street.
White Horse Lane, opposite Skidmore Street.

White Horse Street, opposite 71.

Halley Street, late Vincent Street, opposite 77.

Waterloo Place, Commercial Road, opposite 717.

Nightingale Lane, Limehouse, opposite 4.

New Street, Limehouse, opposite Board School.

Lance Street, opposite 16.

West Ferry Road, opposite 470.

Corner of Union Road and West Ferry Road.

New Road, Mile End, corner of Nelson Street.

Cannon Street Road, corner of Lower Chapman Street.

Old Gravel Lane, opposite 39.

High Street, Shadwell, opposite Church.

„ „ „ „The Bell“ Public-house.
Jamaica Street, opposite Mardell's baker's shop, 122.

Havering Street, by butcher's shop, 420.

Prusom Street, opposite Infirmary.

Green Bank, corner of Red Lion Street.

„ by Viles, carman.

Great Hermitage Street, opposite „Sugar Loaf“ Public-house.

At the corner of Mr. Seward's, carman's yard.

Lower East Smithfield, opposite brewhouse.

At the corner of Tredegar Square.

Mile End Road, opposite 544.

„ „ „ Assembly Passage.
St. Paul's Road, opposite 61.

Upper North Street, opposite 25.

Emmett Street, opposite 21.

Garford Street, corner of Bridge Road.

Penstocks, opposite Union Wharf.

Ropemakers' Fields, opposite Walker's Brewery.

Ben Jonson Road, opposite 52.

St. George's Street, opposite 139.

Morning Lane, Hackney, opposite Bridge Street.

 " " by Stockmar Road.

Mare Street, " by Town Hall.

 " " opposite Ellingfort Road.

 " " " Chapel—Baptist.

 " " " Triangle.

 " " " 132.

 " " near Canal Bridge.

Cambridge Road " opposite Palestine Place.

 " " " Museum.

 " " " Madhouses.

 " " " Three Colt Lane.

Old Bethnal Green Road, " Church.

 " " " feather factory.

Wellington Row, Bethnal Green.

Great Cambridge Street. opposite Boot Factory, by Hackney Road

Queen's Road, opposite Pownall Road.

 " " Albion Road.

 " " Shrubland Road.

 " " greengrocer's.

 " " Victoria Place.

Sandringham Road, opposite St. Mark's Church.

John Campbell Road, " bakers shop, 23.

Mildmay Road, " 37.

Ferntower Road, " butcher's shop.

Highbury New Park, " No. 80.

Tollington Road, " Jones Brothers.

Holloway Road, near Hercules Road.

 " opposite 562.

 " " 472.

 " near Midland Railway.

Upper Holloway, by St. John's Villas.

Highbury Hill, opposite Church.

Bacon Street, Bethnal Green, at end by Swan Street.

 " " on crossing by Edward Street.

Baker's Row, Whitechapel. by Infirmary.

Barnsbury Street, Islington, by School, Gibson Square.

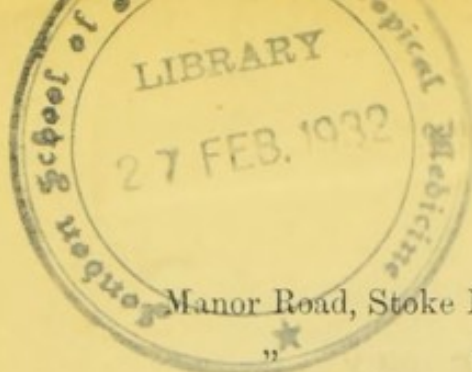
New Road, Whitechapel, opposite 103.

Liverpool Road, Islington, opposite Barford Street.

 " " " 103.

Leman Street, Whitechapel, opposite farrier's shop, No. 14.

 " " " Prescott Street.



Manor Road, Stoke Newington, opposite coal depôt.

" " " Bethune Road.
" " " by Lordship Lane.

126 of these consist of stoneware gallon jars, filled with dilute sulphurous acid, which drops upon flannel; and two, marked *, are glass bottles, containing anhydrous acid, under a pressure of about four atmospheres.

LIST of the places at which the sulphurous acid was applied in the Southern and North-Western Districts of the Metropolis, viz. :—

	Nos.
Albany Road, Camberwell...	5
Grange Road, Bermondsey...	2
Spa Road " ...	1
St. Mark's Road ...	2
Battersea Park Road ...	7
York Road, Battersea ...	2
Balham Road ...	1
York Road, Wandsworth ...	2
Old Kent Road ...	4
Rotherhithe New Road ...	5
Deptford Lower Road ...	6
High Street, Deptford ...	2
Church Street, Deptford ...	1
Trafalgar Road, Greenwich ...	3
Dennett Road, New Cross...	1
Lordship Lane, Dulwich ...	1
Southwark Park Road ...	2
Raymouth Road, Bermondsey ...	1
Millman Street and Park Walk ...	4
Church Street Sewer ...	4
Sewer Outlets, Chelsea Embankment ...	3
Lots Road, Penstock Chamber ...	1
Lots Road, Countess Creek ...	1
The Grove, Hammersmith ...	4
Dalling and Paddenswick Roads ...	3
Total ...	68