

**www.e-rara.ch**

**An historical account of sub-ways in the british metropolis, for the flow  
of pure water and gas into the hoses of the inhabitants...**

**Williams, John**

**London, 1828**

**ETH-Bibliothek Zürich**

Shelf Mark: Rar 762

Persistent Link: <https://doi.org/10.3931/e-rara-9336>

One year's expenditure of the River Company in 1820.

---

**www.e-rara.ch**

Die Plattform e-rara.ch macht die in Schweizer Bibliotheken vorhandenen Drucke online verfügbar. Das Spektrum reicht von Büchern über Karten bis zu illustrierten Materialien – von den Anfängen des Buchdrucks bis ins 20. Jahrhundert.

e-rara.ch provides online access to rare books available in Swiss libraries. The holdings extend from books and maps to illustrated material – from the beginnings of printing to the 20th century.

e-rara.ch met en ligne des reproductions numériques d'imprimés conservés dans les bibliothèques de Suisse. L'éventail va des livres aux documents iconographiques en passant par les cartes – des débuts de l'imprimerie jusqu'au 20e siècle.

e-rara.ch mette a disposizione in rete le edizioni antiche conservate nelle biblioteche svizzere. La collezione comprende libri, carte geografiche e materiale illustrato che risalgono agli inizi della tipografia fino ad arrivare al XX secolo.

---

**Nutzungsbedingungen** Dieses Digitalisat kann kostenfrei heruntergeladen werden. Die Lizenzierungsart und die Nutzungsbedingungen sind individuell zu jedem Dokument in den Titelinformationen angegeben. Für weitere Informationen siehe auch [Link]

**Terms of Use** This digital copy can be downloaded free of charge. The type of licensing and the terms of use are indicated in the title information for each document individually. For further information please refer to the terms of use on [Link]

**Conditions d'utilisation** Ce document numérique peut être téléchargé gratuitement. Son statut juridique et ses conditions d'utilisation sont précisés dans sa notice détaillée. Pour de plus amples informations, voir [Link]

**Condizioni di utilizzo** Questo documento può essere scaricato gratuitamente. Il tipo di licenza e le condizioni di utilizzo sono indicate nella notizia bibliografica del singolo documento. Per ulteriori informazioni vedi anche [Link]

*One Year's Expenditure of the New River Company  
in 1820.*

Poundage .....	£3,300	Rents, &c.....	£3,500
Salaries .....	2,300	Taxes .....	4,500
Street expences .....	2,500	Committee.....	500
Pipe-yard .....	500	Incidents, including Law	500
Water-house.....	2,400		<u>27,000</u>
River.....	3,500	Reserve.....	3,700
Engine .....	300		<u>30,700</u>
Coals .....	900		
Stable .....	150	Deduct on Paving and	} 1,000
Paving .....	1,600	some other articles	
Plumbers .....	300		<u>£29,700</u>
Stationery, Printing, &c.	250		<u>£29,700</u>

Another important fact of the necessity of Sub-ways has been proved by the letter of the City Surveyor of Pavements to the Commissioners at Guildhall in September last.

*“ To the Committee of the Honourable Commissioners  
of Sewers for the City of London, and the  
Liberties thereof.*

Having been directed to report my opinion, whether, if additional Gas Companies were allowed to lay pipes in the City, any injury would be done to the pavement; and whether any additional expence to the Commission would ensue in consequence of such pipes being laid—

especially considering the present and future effect such proceeding would have upon the new pavement—I have given the subject my most serious consideration; and, although upon the broad statement that the whole City must be ploughed from end to end, it may as broadly be concluded that almost incalculable injury would be done to the interests of the Commission, I should be guilty of dereliction from my duty, did I not, as plainly as I can, describe the nature of that injury.

You are, Gentlemen, perfectly aware that the whole surface of the City has been raised above its former pavement, upon an average between three and four feet, with rubbish of all kinds, imperfectly crusted by the gravel used from time to time in paving.

Below the old line of pavement, the earth is in many places loose and hollow; and in the best, excepting in the few places where there is a thick stratum of hard gravel, the ground has not much strength in itself; but yet it has been so compressed, that if left undisturbed, it will probably not settle more.

If this earth were good, cutting one trench through it in favourable weather, were that trench carefully filled in, and well rammed, might not be permanently injurious; because there would

be a wall of earth on each side, and the pavement would also have comparatively strong abutments, so that probably twice relaying it might remedy the evil.

But if two or more are laid, and that in narrow ways, it is obvious the undisturbed ground will bear so small a proportion to that which has been removed, that the most careful filling in and ramming could scarcely prevent the whole pavement falling to pieces; for the untouched ground would be as it were the piers of a bridge, of which the trenches represent the water-way. The pavement over each is one of a series of extremely flat segment arches, mutually supporting, and supported by each other. If one fails, all fail necessarily; and that one or other will in this case fail, is almost a certainty.

For it is to be considered that, with reference to these piers of earth left untouched by new trenches, they are themselves unsound, being but the filling in over recently driven gas and water mains, trenched across also at every ten feet by more recent services, and which, although compressed into comparative solidity, cannot be considered in a state to stand by themselves.

Besides, that ground cannot in many situations be left to act even as piers or longitudinal

walls; for it will be necessary that the new pipes should be laid so as to avoid the old, which, it is to be recollected, run across the streets as well as lengthwise, and also so as to escape the gully holes and the openings into the sewers: and if we reflect that in most streets there are already four mains, it may readily be conceived how completely the earth must be ploughed up and pulverized, longitudinally and laterally, for new mains and services.

It is obvious that all pavement must depend either on the strength of its abutments, or upon the firmness of the sub-soil.

In narrow streets the foot-ways pressing against the houses, form good abutments; but in wider ways the curve is so very flat, that, form the stones how you will, and lay them how you will, the stability of pavement must result from the strength of the substratum. If that substratum should be destroyed, or merely injured, it must so necessarily follow that dislocation or destruction of the reposing pavement will ensue, that I should almost consider it an insult to the understanding of the Commissioners, to endeavour representing it in a clearer light.

But there is a species of injury resulting from such proceedings not comprised in the above statement.

You are well aware, Gentlemen, that some of the stone used in pavement has been originally ill dressed ; more of it has been so cut away as to be almost worn out.

But, in very many situations, such stone will, if unmoved, remain serviceable for years, resting upon the indurated earth beneath it, and reasonably good work may be made with such stone upon a good foundation ; yet, when the ground has been loosened, a very great portion of that stone must be rejected, because it cannot effectually be made to key in with the rest ; and, as a necessary consequence, new stone will have to be supplied.

It will follow, as an immediate effect, consequent upon such works being done, that the public must sustain all the inconvenience, and the Commissioners contend against increased expenditure for the first laying of the mains.

But the ill effect will not rest there.

If there should be any thing like vigorous competition between the Companies, before one or other is ruined, an evil more insidious in its nature, and worse in its consequences, will arise.

Renters will naturally be often, not to say constantly, changing from one Company to another, and small openings will be made.

These, if they fail, will cause short holes, which are far more dangerous than extensive depressions ; because, in the latter a carriage has a chance of sinking and rising easily, but in the former the jerk is sudden ; and with the most vigorous exertion of the most vigilant officers, it will be scarcely practicable to guard against grievous accidents: and the expence to the Commission will be great, because these Companies will, like all similar Companies, relay as little beyond the bare width of their trenches as they possibly can. Their neglect will naturally affect the Commission ; because it cannot be endured that life is to be endangered, while the officers are squabbling who is to do the work.

It has been suggested that, when the new mains are laid, borings may be made, and services inserted from the mains to the line of the houses, without disturbing the foot-ways.

This, though feasible in conversation, will, I fear, be very difficult, if not impossible, in practice.

Buried stone may in some places repel them ; in others they may accidentally tap a water-service ; in others they may not hit exactly the point at which a wall is vulnerable, or where it is convenient for the supply to be received ; or conceding that none of these mischances would

occur, in wide pavements it will not be an everyday-man's task to kneel and bore a horizontal auger-hole twelve feet in length, and to insert a pipe twelve feet in length, from a trench two feet in width.

But, even granting that it may be done at first, I believe it will be admitted by the Gas Companies, that services will not upon an average last above three or four years without renewal. Of course, openings must be made for those exchanges—certainly in the carriage-way, and almost certainly in the foot-way.

So far as respects work done in the accustomed manner, these remarks are applicable; but with respect to the present more systematic conduct of the work, they have much greater strength.

Taking portions of the carriage-way of Fleet-street as supposed samples of good work:—

If two or four trenches, with the necessary services, were to be cut through the foundation which has been formed, can we form any opinion as to when it would, if ever it could, be put again into a good state?

The same system is being silently carried into effect in other streets, though, from the limited means of the Commission, it cannot be

at present done upon a broad scale ; but all the good which has been done, will, if this measure is adopted, be annihilated.

Adverting to the new pavement which has been laid for foot-ways, and which will be constantly taken up for exchange of services :—

If we consider that it is liable to have two trenches cut through it in front of every house, the one to take up the rejected Company's service (or merely a hole to cut it off), the other for the new supply ; and if there should be three or four Gas Companies in one street, together with one Water Company, each with a service-pipe used, or in preparation for use, by each house ; and if two or more occupants of separate floors of each house, should chuse to deal each with a different Company (for to such occurrences the Commissioners are liable) ; and if the houses are taken upon an average at twenty feet each, some idea may be formed of the devastation that will ensue.

It must also be borne in mind, that the Contractors are now bound to keep the new foot-ways in repair during their contracts.

They necessarily calculated upon having to encounter only the disadvantages of the present service-pipes ; but if the Commissioners do an act which in its consequences will subject

them to constantly recurring exchanges, they must in equity at least, if not in law, take the reparation upon themselves.

I am so convinced of the evils likely to result from such a competition—a competition which, advantageous or not to these Companies, will certainly be detrimental to the Commission—that, as your officer, I must, in discharge of my duty, declare that, should this rivalry be allowed, it would no longer be advisable to attempt completing the projected improvements; although I clearly see that even such a proceeding can save but little, because many stones of the old footways will decay; and no longer having good old stone to supply their place, probably as much new stone must be used for patchwork as would lay new foot-paths, and no commensurate advantage be derived.

Whereas, upon the present system, a whole street being laid with new stone, much of the old stone from that street is good enough when re-squared, to repair others of inferior importance.

Having thus stated my opinion upon the injuries likely to ensue from the works of additional Gas Companies, I beg leave to state, in corroboration of this opinion, practical facts which must, from their nature, be better than any reasoning.

First—Between the years 1813 and 1822, both inclusive, permission was granted for gas pipes to be laid in streets, whose aggregate length amounted to about thirty-one miles.

In most of these, double, and in some, treble mains were laid; and considering the various ramifications down courts and alleys, of which no lists were kept (all in one or more Wards at a time, and at length all that remained unoccupied being granted, but not enumerated), the quantity of main pipe laid cannot be considered less than one hundred miles lineal.

Second—Between the years 1815 and 1818, nearly all the New River Company's wooden mains were replaced with iron; and subsequent exchanges of the London Bridge mains have taken place.

Third—The average expenditure for pavior's work, taking the six years from 1809 to 1814, both inclusive, was, per annum, £7281.

And the average expenditure for pavior's work, taking the six years from 1818 to 1823, both inclusive, was, per annum, £10,718.

Although it is now impracticable to ascertain what expence was incurred in direct consequence of pipes being laid, and what belonged to

the usual wear and tear of the pavement ; yet the naked fact that the expenditure has been increased 50 per cent. per annum, upon the pavior's work alone, since the commencement of the Gas and Water Companies' operations, almost necessarily leads to the conclusion that they were the causes of that increase.

To strengthen this conclusion, it may be deemed not irrelevant to say it has been distinctly stated, in the enquiry laid before Parliament into the conduct of the Dublin Paving Board, that their expenditure has doubled itself in consequence of similar works.

With regard to the expences the Commissioners may have to meet, if the prayer of the new Gas Companies is assented to, I am unable to state any sum which could be relied on ; but if in Dublin their expences were doubled, and if your own expences were increased 50 per cent., it may fairly be assumed that now the cost, which must ultimately fall upon the Commissioners, will be equally great in proportion, especially when it is considered that stone, which some years back was barely fit for use, must now be considerably worse.

As I presume the Commissioners intend, whenever their funds allow it, to proceed with putting a sound foundation in all the streets,

and laying a better pavement than heretofore used, I beg to observe that any intention of that kind must be deferred until the whole of the new mains are laid, and the ground consolidated; or such new foundation will be almost irreparably destroyed, and the expence of restoring the pavements be nearly equal to that of its first formation.

SAMUEL ACTON, Surveyor.

September, 1827."

The impossibility of having the streets perfectly paved without Sub-ways, is here clearly exhibited. One would almost suppose the foregoing to be the statement of the Author of this work, rather than that of an executive Officer of the Paving Commission; so strongly does it corroborate his views, as well as all the other extracts on the subject of the paving in the metropolis that have been introduced. They all authenticate the existence of a crying evil—an evil that, instead of diminishing, must rapidly and annually increase—And are the public to forego the advantages of the remedies? If they were compensated by the possession of any pecuniary equivalent, this might induce them to endure it; though such a feeling would ill accord with the liberality and magnificence of the English People!

The King's Commission, then, appears to be the most suitable for this great undertaking—

under Commissioners of adequate capacity for the work, who shall lay their proceedings before the House of Commons every Session.

Respecting the existing Water Companies, with the monopoly they have taken among themselves, which the Legislature never contemplated or authorized, and in defiance of the preamble of their local Acts, which were to encourage competition, their property in these establishments should not be sacrificed. The purchase of them is indispensable to national justice: they have been greatly beneficial to the public for a long period, and it should be handsomely acknowledged, even though it might be necessary to state in the preamble of the Act for abolishing Water Companies in the metropolis, as was done in that for removing the London Bridge Water-works lately, that they "had become a nuisance."

That Act, also, has become a precedent for the mode of valuing this description of property; and, together with the sale of the York Buildings Water Company, is at once a basis for the value of these Water establishments.

They must, however, remain for a few years longer, until the Sub-ways reach those places they supply; when their pipes, and other property, may be removed, and pure water substi-

tuted by the Commissioners under the new Act of Parliament.

There is a precedent also for the advance of the capital necessary for this national work :—the New Street Commission for forming a street from Pall Mall to the Regent's Park, have powers granted them for that purpose ; and this, like that undertaking, will repay the cost in abundant interest for the capital.

There are also other Acts of Parliament for advancing capital to Commissioners for the erection of public works :—the Caledonian Canal—the Breakwater at Plymouth—and the building of Palaces—and Churches.

I cannot conclude this Volume without referring to the opinion so frequently expressed by the Secretary of State, during the late enquiry into the state of the water in the metropolis, that other Companies should be established, to correct the defects of the existing ones. Opinions, however, are nothing when opposed to facts ; and abundant evidence is shewn in this work, that the latest and newest Water establishments have done the most mischief. No effectual remedy of private subscriptions for another Water Society can abate the nuisance :—His Majesty alone, with the advice of his Parliament, has the power to effect it.

---