

The water question. Memoir addressed to the Commissioners appointed by His Majesty ... to inquire into the state of the supply of water to the Metropolis / [J. Wright].

Contributors

Wright, J. 1770?-1844.

Commissioners Appointed to Inquire Into the State of the Supply of Water in the Metropolis.

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The Water Question.

M E M O I R,

ADDRESSED TO

THE COMMISSIONERS

APPOINTED BY

HIS MAJESTY,

IN PURSUANCE OF THE

ADDRESSES OF BOTH HOUSES OF PARLIAMENT,

TO INQUIRE INTO THE

STATE OF THE SUPPLY OF WATER

TO

THE METROPOLIS,

BY J. WRIGHT.

Jan. 1828.

1851

THE GREAT CHURCH

M E M O I R S

THE COMMISSIONERS

HIS MAJESTY

ADDRESS OF THE COMMISSIONERS

TO THE HOUSE OF COMMONS

IN THE YEAR 1851

LONDON:

PRINTED BY J. L. COX, GREAT QUEEN STREET.

112, *Regent Street,*
January 12, 1828.

The following MEMOIR, it will be seen, was drawn up at Norwich, and forwarded from thence, to the Gentlemen to whom it is addressed.

Since my return to town, some important particulars, connected with the condition of the river Thames, between Chelsea Hospital and the Tower, having been communicated to me, I introduce them into the Memoir, with the full conviction, that a spot, so loaded with impurities of every description, is no where else to be found, and yet, from this very spot, one-half the inhabitants of this great Metropolis derive their daily supply of an element, designated by the great Mead, as “ THE VEHICLE OF ALL OUR NOURISHMENT !”

* * * All Communications connected with the subject of this Memoir are to be addressed, “ *To the Commissioners for Inquiry into the Supply of Water: to the care of Thomas Telford, Esq., 24, Abingdon Street, Westminster.*”

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MEMOIR,

&c. &c.

*St. Saviour's, Norwich,
December 16th, 1827.*

GENTLEMEN;

As attempts have been made, in certain journals devoted to science, between the appointment, by His Majesty, of the Commission to inquire into the state of the Supply of Water to the Metropolis, and the opening of its sittings, to under-rate the importance of the Inquiry, and thereby to lull the just apprehensions which have been excited on the subject; I have thought it to be my duty to draw up an Outline of the Question, as I consider it to stand at the present moment.

I herewith enclose you a copy thereof; and I accompany it with a List of the persons, whom it appears to me necessary to call before you, to substantiate the several Allegations contained in the Petition of the Inhabitants of the Western part of the Metropolis to both Houses of Parliament.

I greatly regret that the severe illness of a near relation should, at this moment, detain me in this city; but, in order that the question may not suffer from that circum-

stance, I shall send copies of this Memoir to the noblemen, gentlemen, and others, who have taken an active part in promoting the Inquiry, as well as to such professional and scientific men, as may be likely to throw additional light upon it.

I have the honour to be,

Gentlemen,

Your most obedient Servant,

J. WRIGHT.

*To the Commissioners for the
Supply of Water, &c. &c.*

ABOUT two years ago, my attention was directed, in the way which I shall presently have occasion to state to the Commissioners, to the bad quality of the Water furnished to the Western portion of the Metropolis, by one of the five Companies which had partitioned the town between them, and thereby virtually established a close Monopoly of an element of nature and prime necessary of life. The result of the inquiries which I was, in consequence, induced to make, was a strong conviction, that, owing to a variety of causes, partly arising out of that Monopoly, and partly out of the enormously increased size and population of the Metropolis, the Supply of Water thereto rested upon a very unsound foundation.

In the December of last year, I came to the determination of directing the attention of the Public to the subject; but, before I carried that determination into execution, I thought proper to address a letter to Sir Francis Burdett, in which I pointed out to him the evils which a Monopoly of so primary an article as Water had brought upon his constituents, and expressed a confident hope, that he would further the object I had in view,

by calling the attention of the House of Commons to so crying a Grievance. To this letter I received from Sir Francis an immediate reply, in which he stated, that he considered the subject to be one of great importance; that he would recommend a Public Meeting of the aggrieved Inhabitants, and a Petition to Parliament—and that he should be happy to lend a helping hand towards the overthrow of so mischievous and so unprincipled a Confederacy.

Thus encouraged to proceed, I set about collecting together my facts; and, on the 19th of March last, I published a small pamphlet, which I called "*The Dolphin*." I have been blamed for giving to it a title, which not one man out of a thousand would comprehend the meaning of: but, that very ignorance, on the part of the Inhabitants, was precisely my reason for selecting it. So immediately bound up are the health and comfort of every family with the supply of pure and wholesome Water to their habitations, that a knowledge of the qualities of that which they are daily using for domestic purposes, must, at all times, be an object of great importance. Self-evident, however, as this proposition appears, it is nevertheless fact, that, during the twelve-months' attention which I had paid to the subject, I had not met with half a dozen individuals, out of the many thousands interested in the present Inquiry, who could point out to me the *source*, whence the impure Water which they saw running into their cisterns was drawn.

Being anxious that such a state of things should no longer continue; but that every man, woman, and child, compelled, by monopoly, to drink the water supplied by the Grand Junction Company, should be aware of the *spot* from which it was taken, I determined on calling my publication "*The Dolphin*,"—that being the name given by the Water Companies to the small wooden erection, somewhat resembling a Martello tower, which they place

in the river, to enclose, and to indicate, the source or head, from which, by means of a steam-engine, their supply is obtained.

That I selected this title, I have no reason to regret; seeing that "The Dolphin," erected by the Grand Junction Company in the Thames, at the foot of Chelsea Hospital, and nearly adjoining to the mouth of the great Ranelagh Common Sewer, is now almost as well known and as much pointed at, by passengers going up and down the river, as the Royal Hospital itself. Indeed, the word, in the above acceptation, is become so familiar, that I have no doubt it will find its way into the next edition of Johnson's Dictionary.

On the 21st of April, two days after the appearance of my pamphlet, the Grand Junction Company put forth, in the "Times" newspaper, a long Statement, by way of advertisement; in which they *began* with pledging themselves to prove upon oath, "time and place fitting," that every one of my Charges were "as false as they were malignant"—denounced me as "an anonymous slanderer," and my book as "a most wicked publication"—threatened me with the terrors of a prosecution, and *ended* (as is not unusual in such matters) with "begging the public to suspend its judgment."

On the same day, in pursuance of his promise to do every thing in his power to further the object in view, Sir Francis Burdett went down to the House of Commons, and gave notice, that, shortly after the Easter recess, he would call the attention of the House to the "State of the Supply of Water in the western part of the metropolis."

Immediately upon this notice being given, the Chairman of the Grand Junction Company waited upon Sir Francis, and stated to him the readiness of the Directors "to afford the means of the fullest investigation of every point connected with the powers of Supply, or the Rates

charged by the Company." To this proposition the honourable Baronet did not, upon reflection, think it advisable to accede; and the Directors say, "they have neither the right nor the wish to complain of his determination."

But, although the Directors do not complain of Sir Francis Burdett's determination, one of their advocates has thought proper to do so. The folly, however, as well as the injustice, of such complaint, will at once be seen, by a reference to the words of his notice. An investigation of the Grand Junction Company's "powers of supply," and of the "rates" charged by them, would have left the great question of Monopoly untouched. Further than this—Sir Francis's non-acceptance of the invitation of the Directors, was accompanied with his distinct reasons, given in writing, for so doing. "Since I met you yesterday," said the honourable Baronet, "I have seen so many persons, and the Supply of the town with Water is so important, that as I get more information, I extend further my views. So much so, that I lose sight of one Company, and look to the whole System; and I plainly see, that no satisfaction can be given the Public, without an inquiry in the House of Commons. My intention, therefore, is to move for a Committee of Inquiry into the subject. I take the earliest opportunity of apprizing you of my intended mode of proceeding, that you may be prepared accordingly; and, in the mean time, take such steps, by prosecution or otherwise, as you may think your interests demand."

"The Dolphin" had not made its appearance many days, before it excited a good deal of attention at the West end of the town. Indeed, it has been charged against me as a crime, by the Grand Junction Company and by one of their advocates, that I "created a sensation approaching to a panic; and that I have, through malevolent and interested motives, endangered the very

existence of the Company. On the other hand, many noblemen, gentlemen, and tradesmen, called upon me to express their entire approbation of what I had done—their hope, that a Public Meeting would be immediately convened, to take into consideration the means of procuring a pure and wholesome supply of Water to the Western parts of the Metropolis—and their readiness to sign their names to a requisition for that purpose.

A Public Meeting accordingly took place, on the 9th of April. It was numerously attended; and the newspapers, one and all, agree in stating, that, for the rank of the persons composing it, it was one of the most respectable that had been held for a long time. The following is a copy of the Resolutions agreed to thereat:

SUPPLY OF WATER

TO THE WESTERN PORTION OF THE METROPOLIS.

At a public meeting, held on Monday, the 9th of April, 1827, at Willis's Great Room, St. James's, to take into consideration the Means of procuring a Supply of pure and wholesome Water to the Inhabitants of the Western Portion of the Metropolis,

PRESENT,

SIR FRANCIS BURDETT, BART., M.P., IN THE CHAIR.

The Marquis of Salisbury	C. Baring Wall, Esq. M.P.
The Earl of Jersey	Dr. Turner
The Earl of Tankerville	Dr. Paris
The Earl of Hardwicke	Dr. Macmichael
The Earl of Rosslyn	Dr. Robert Bree
The Earl of Sefton	Professor Brande
Lord Auckland	Samuel Rogers, Esq.
Lord Wharncliffe	John Murray, Esq.
Sir W. W. Wynn, Bart., M.P.	M. W. Andrews, Esq.
Sir Henry Halford, Bart.	H. Robson, Esq.
The Hon. Wm. Ponsonby, M.P.	Mr. Fores.
The Hon. Douglas Kinnaird	Mr. W. B. Stone,
John Cam Hobhouse, Esq. M.P.	&c. &c. &c.

“ RESOLVED :

“ 1st. That a constant Supply of pure and wholesome Water is essential to the Health and Comfort of the Inhabitants of this great and thickly-peopled Metropolis.

“ 2d. That the principle of the Acts of Parliament under which the several Companies supplying the Metropolis with Water were instituted, was to encourage Competition ; seeing that it is only from Competition, that a perfect security can be had for a good, a cheap, and a plentiful Supply.

“ 3d. That, nevertheless, by an Arrangement entered into, about the year 1817, between the several Companies supplying the Metropolis with Water, all Competition was put an end to, and a Monopoly of this Necessary of Life virtually established.

“ 4th. That the Water taken up from the River Thames, at Chelsea, for the use of the Inhabitants of the Western portion of the Metropolis, being charged with the contents of the great Common Sewers, the drainings from Dung-hills and Lay-stalls, the refuse of Hospitals, Slaughter-houses, Colour, Lead, and Soap-Works, Drug-Mills, and Manufactories, and with all sorts of decomposed animal and vegetable substances, rendering the said Water offensive, and destructive to Health, ought no longer to be taken up, by any of the Water Companies, from so foul a source.

“ 5th. That the Grand Junction Water-Works Company, having engaged to supply their Customers with Water of the purest and most wholesome Quality, to be drawn from the rivers Colne and Brent, and from an immense Reservoir of nearly one hundred acres, fed by the streams of the vale of Ruislip, have, nevertheless, since the month of September 1820, drawn their supply from the Thames, at the foot of Chelsea Hospital, and nearly adjoining to the mouth of the Great Ranelagh Common Sewer.

“ 6th. That the Water supplied by the Grand Junction Company, to more than Seven Thousand Families, has been pronounced by Professional Men of the first eminence, to be a filthy fluid, loaded with decayed vegetable matter and other substances equally deleterious to health, and unfit for domestic purposes.

“ 7th. That the Grand Junction Company, having promised to supply their Customers with Water, at a comparatively small charge, have, nevertheless, exacted an increased Rate,

equivalent, in no case, to less than fifty per cent., and extending, in most instances, to ninety and a hundred per cent.; and that they obtained, in May last, the sanction of the Legislature to a New Table of Rates, by which an addition of fifty per cent. may be levied on their customers.

“ 8th. That a Petition be presented to both Houses of Parliament, praying that a full Inquiry into the constitution and practices of the several Companies supplying the Metropolis with this all-important Necessary of Life, may be instituted; in order that the Nuisance complained of may be speedily abated, and the Supply of pure and wholesome Water to the Western portion of the Metropolis be henceforward placed on a sure and lasting foundation.

“ 9th. That a subscription be entered into to defray the expenses, which must be incurred in preparatory measures connected with the object of the present Meeting, and that the following Noblemen and Gentlemen be a Committee to receive and appropriate the same:—viz.,

The Marquis of Lansdown	Henry Brougham, Esq. M.P.
The Marquis of Salisbury	C. Baring Wall, Esq. M.P.
The Earl of Essex	W. J. Denison, Esq. M.P.
The Earl of Jersey	E. W. Pendarvis, Esq. M.P.
The Earl of Tankerville	John Marshall, Esq. M.P.
The Earl of Hardwicke	Joseph Birch, Esq. M.P.
Earl Grey	W. S. Poyntz, Esq. M.P.
The Earl of Rosslyn	R. Knight, Esq. M.P.
The Earl of Sefton	Dr. Turner
Lord Grantham	Dr. Robert Bree
Lord Auckland	Dr. Paris
Lord Wharncliffe	Dr. Hooper
Lord Francis Leveson Gower	Dr. Macmichael
Sir Francis Burdett, Bart. M.P.	Dr. Hume
Sir W. W. Wynn, Bart., M.P.	Dr. Kerrison
Sir Henry Halford, Bart.	Professor Brande
Sir Ronald Fergusson, M.P.	Robert Keate, Esq.
The Hon. G. A. Ellis, M.P.	Samuel Rogers, Esq.
The Hon. Wm. Ponsonby, M.P.	Richard Sharp, Esq.
The Hon. Douglas Kinnaird	R. Williams, Esq.
John Cam Hobhouse, Esq. M.P.	B. C. Brodie, Esq.

Alexander Rainy, Esq.
 Charles Dumergue, Esq.
 John Murray, Esq.
 E. Driver, Esq.
 Everard Brande, Esq.
 M. W. Andrews, Esq.
 Henry Colburn, Esq.
 H. Robson, Esq.

Joseph Kennerly, Esq.
 G. Squibb, Esq.
 Mr. William Stewart
 Mr. Fores
 Mr. James Ridgway
 Mr. W. B. Stone
 Mr. J. Wright
 with power to add to number.

“ 10th. That the thanks of this Meeting be given to Mr. Wright, of Regent Street, for having directed the public attention to this important subject.

“ 11th. That Sir Francis Burdett, Bart. and John Cam Hobhouse, Esq., our Representatives in Parliament, be instructed to support the prayer of the said Petition.

“ 12th. That the Thanks of this Meeting be given to Sir Francis Burdett, Bart., for his impartial conduct in the Chair.

(Signed) “FRANCIS BURDETT.”

On the 12th of April, the Committee appointed at the above Meeting, met at the Thatched House Tavern, the Earl of Sefton in the chair, and agreed to the following Petition:

“ *To the Honourable the Commons of the United Kingdom of Great Britain and Ireland, in Parliament assembled.*

“ The PETITION of the undersigned Inhabitants of the Western Portion of the Metropolis,

“ SHEWETH:

“ That your petitioners beg leave to submit to your honourable House, that the principle of the Acts of Parliament, under which the several Companies supplying the Metropolis with Water were instituted, was to encourage Competition; seeing that it is only from Competition, that a perfect security can be had for a good, a cheap, and a plentiful supply.

“ That, nevertheless, by an arrangement entered into, about the year one thousand eight hundred and seventeen, between the several Companies supplying the Metropolis with Water, all Competition was put an end to, and a Monopoly of this necessary of life virtually established.

“ That the Water taken up from the river Thames, at Chel-

sea, for the use of the Inhabitants of the Western portion of the Metropolis, being charged with the contents of the great Common Sewers, the Drainings from Dung-hills and Lay-stalls, the Refuse of Hospitals, Slaughter-houses, Colour, Lead, and Soap-works, Drug-mills, and Manufactories, and with all sorts of decomposed animal and vegetable substances, rendering the said Water offensive, and destructive to Health, ought no longer to be taken up, by any of the Water Companies, from so foul a source.

“ That the Grand Junction Water-works Company, having engaged to supply their Customers with Water of the purest and most wholesome quality, to be drawn from the rivers Colne and Brent, and from an immense Reservoir of nearly one hundred acres, fed by the streams of the Vale of Ruislip, have, nevertheless, since the month of September 1820, drawn their supply from the Thames, at the foot of Chelsea Hospital, and nearly adjoining to the mouth of the Great Ranelagh Common Sewer.

“ That the Water supplied by the Grand Junction Company, to more than Seven Thousand Families, has been pronounced, by Professional Men of the first eminence, to be a filthy fluid, loaded with decayed vegetable matter and other substances, equally deleterious to health, and unfit for domestic purposes.

“ That your Petitioners are convinced, that if an inquiry be instituted by your honourable House, the several allegations of this Petition will be satisfactorily established, and that means will be discovered for placing the Supply of Water to the Western portion of the Metropolis on a sure and lasting foundation.

“ Your Petitioners therefore humbly pray, that your honourable House will forthwith cause an inquiry to be made before a Committee of your honourable House.

“ And your Petitioners will ever pray.”

This Petition, and a similar one to the House of Lords, were, after they had been signed by the Members of the Committee present, and by a numerous body of Inhabitants, presented to both Houses: the former by Sir Francis Burdett, the latter by Lord Wharncliffe. The prayer of the Petition was, that an inquiry might be instituted by Parliament; but, owing to the adjournment

which immediately after took place, in consequence of the negotiations going on at that time for the formation of a new Administration, it was found, on the re-assembling of the two Houses, that a *Parliamentary* inquiry could not be satisfactorily gone into at that late period of the session, and it was thought proper to substitute for it a *Commission* to be appointed by the Crown.

Accordingly, on the 11th of June, Lord Wharncliffe moved, in the House of Lords, "That an humble address be presented to his Majesty, praying that his Majesty will be graciously pleased to order a Commission to be issued, to inquire into the Supply of Water in the Western parts of the Metropolis." The motion was agreed to without opposition; as was likewise a similar motion made in the House of Commons by Sir Francis Burdett: but, in consequence of the inhabitants of Lambeth and of the borough of Southwark having petitioned to be included in the Inquiry, the labours of the Commissioners were not confined to the Western parts of the town, but extended to the whole Metropolis.

A Commission was accordingly appointed by His Majesty; and, that no doubt should, by possibility, exist in the public mind, with regard to the impartiality of its proceedings, an assurance was given by Mr. Sturges Bourne, at that time Secretary of State for the Home Department, and also by the noble Marquis who at present holds the seals of that office, that "all persons should be excluded from the Commission, who had expressed a public opinion on the subject to be inquired into under its authority, and who were thereby open to the suspicion of having prejudged the question."

Such was the origin of the present Inquiry. That the Company which considered its "existence" endangered by my "most wicked publication," should remain passive spectators of what was going on, was not to be expected. Accordingly, sundry counter-statements were

put forth by the Directors and their friends, having in view the entire stultification of the Inquiry. I give, at the foot of this page, a list* of them; and I do so, because I shall have occasion to refer to them, and because I consider them as coming directly and strongly in aid of the cause which they were intended to overthrow.

In support of the Allegations contained in the foregoing Petition, I proceed to lay before the Commissioners, at the desire of many of the petitioners, the Facts which I have collected, and the Observations which appear to me necessary for their illustration. For the sake of distinctness, I arrange those Allegations under the following heads:

I.—“ That a constant Supply of pure and wholesome Water is essential to the Health and Comfort of the Inhabitants of this great and thickly-peopled Metropolis.

II.—“ That, although the principle of the Acts of Parliament, under which the several Companies supplying the metropolis with Water were established, was to encourage Competition, an Arrangement was entered into, about the year 1817, between five of the said Companies, by which all Competition was

* 1. Remarks upon the Resolutions passed at the Meeting held at Willis's Rooms, April 9th, 1827; addressed by the Directors of the Grand Junction Company to the Inhabitants of the District supplied by the Company. Not signed; but understood by the inhabitants, to be drawn up by Sir Gilbert Blane, M. D.

2. Petition of the Grand Junction Water-works Company to the House of Commons, June 14th 1827.

3. A Letter in “ The Times ” newspaper, of the 21st of March 1827; signed by the Secretary of the Grand Junction Company.

4. Two Letters in “ The John Bull ” newspaper, of the 29th of April, and 18th of May 1827; signed by the Secretary of the Grand Junction Company.

5. A Defence of the Wholesomeness of the Grand Junction Water. By R. Reece, M. D., Editor of the Gazette of Health.

6. A Review of “ The Dolphin ; ” contained in “ The Quarterly Journal of Science,” published July, 1827.

put an end to, and a Monopoly of a Necessary of Life was virtually established.

III.—“ That the Grand Junction Water-works Company, having engaged to supply their customers with Water of the purest and most wholesome quality, at a comparatively small charge, have not only exacted a greatly increased Rate, but have changed the Source of their Supply to a spot in the Thames, at the foot of Chelsea Hospital, and nearly adjoining to the mouth of the Great Ranelagh Common Sewer: and, that they now furnish to those customers Water, which has been pronounced, by professional men of the first eminence, to be a filthy fluid, loaded with decayed vegetable matter, and other substances equally deleterious to health, and unfit for domestic purposes.

IV.—“ That the Water taken up from the River Thames, between Chelsea Hospital and London Bridge, for the use of the Inhabitants of the Metropolis, being charged with the contents of more than a hundred and thirty public Common Sewers; with the drainings from Dunghills and Lay-stalls, the refuse of Hospitals, Slaughter-houses, Colour, Lead, Gas, and Soap-works, Drug-mills, and Manufactories; and with all sorts of decomposed animal and vegetable substances, rendering the said Water offensive, and destructive to Health, ought no longer to be taken up, by any of the Companies, from so foul a source.

V.—“ That it is the duty of the Legislature to deal with the Monopoly—to revise the Powers entrusted to the confederated Companies—and to devise means for placing the Supply of Water to this great Metropolis on a sure and lasting foundation.

I.

OF THE NECESSITY OF A PURE AND WHOLESOME SUPPLY OF WATER TO THE INHABITANTS OF THE METROPOLIS.

ALLEGATION.—“ *That a constant Supply of pure and wholesome Water is essential to the Health and Comfort of the Inhabitants of this great and thickly-peopled Metropolis.*”

The above Allegation, which, at the Public Meeting held at Willis's Rooms, was moved as a Resolution by Sir Henry Halford, and seconded by Lord Wharncliffe, has been sneered at by the defender of the Grand Junction Company, in the Quarterly Journal of Science, as if it were a truism, or proposition, too self-evident to require stating: but, the writer does not seem to be aware how powerfully it tells against that Company; for, if “ a constant supply of pure and wholesome Water” be essential to Health and Comfort, how criminal must those persons be who vend a necessary of life, “ loaded with all sorts of impurities, and unfit for domestic purposes !”

It was with this view that I endeavoured, in my little publication, by impressing my readers with the salutary properties of *good* Water, to make them alive to the dangerous consequences resulting from the use of *bad*: and I introduce some of my authorities into this Memoir—not assuredly for the information of the Commissioners—but to show them, that my opinions were not lightly formed, but were founded upon those of wise and eminent men. I ventured to lay it down as a principle, that “ without pure Air and pure Water, the inhabitants of large cities cannot enjoy a sound mind in a sound body :”

and the following are a few of my authorities for so thinking. First, as to Air—

Sir William Temple.—“The common ingredients of health and long life are great temperance, open air, easy labour, simplicity of diet, and pure water. The vigour of the mind decays with that of the body; and not only humour and invention, but even judgment and resolution, change and languish with ill constitution of body and of health.”

Dr. Trotter.—“The remote causes of nervous diseases are chiefly to be sought in populous cities. A pure air is of the first importance to sustain animal life in full health and perfection. High buildings and houses, narrow lanes, small apartments, huge warehouses, kitchens underground, consumption of fuel, and a dense population, are so many sources whence the air is contaminated. The ventilation of the upper parts of the building is imperfect: but the lower stories, particularly what is under ground, can receive no pure portion at all.”

Dr. James Johnson.—“The air is the great agent in the production of disease, both by its vicissitudes of temperature and by its noxious impregnations. If we examine the streets, the houses, the manufactories, the dormitories, &c. of great and crowded cities, we shall be astonished that the incalculable mass of exhalations of all kinds, which is constantly floating in the lower strata of a civic atmosphere, is not more detrimental to health than it is. Even the respiration of man and animals must, in some degree, deteriorate the air of large and populous cities. No man who has felt the exhilaration of the country air, and the depression of spirits which almost uniformly takes place on returning to town, can doubt, that a heavy tax is levied on the health of man in civic society. Its most visible effects are depicted in the complexion, which is pale and exanguious; and this uniformly obtains, whenever man is excluded from the pure breath of heaven.

There is every reason to believe, that scrofula first originated, and still continues to be produced, by the confined air, sedentary habits, irregularity of clothing, and derangement of the digestive organs, so prevalent in civic life."

Again—"It is scarcely possible to form an idea of the debility and relaxation which must be induced throughout the muscular systems of people congregated in large cities, cooped up in confined apartments, and employed in sedentary occupations, without adequate air or exercise. The physical effects resulting from these causes are so glaring and conspicuous, in every street through which we pass; in every house or manufactory which we enter; in almost every individual whom we contemplate, that the medical philosopher is struck with the enormity of the evil."

Sir John Sinclair.—"Fresh air is found as necessary for man, as clear water is to fishes; and thence the choice of good air is accounted by Hippocrates, a circumstance claiming the first rank in the regimen of health. This is particularly the case in regard to children; for it is a melancholy fact, that, in a great measure owing to the impurity of the air in London, *one-half* of the children born there die before they are two years old."

I am taken to task, by the writer in the "Quarterly Journal of Science," for introducing these instances of the injurious consequences of bad air in large cities. "As we are not indebted," says he, "to the Grand Junction Company for the supply of foul air as well as of foul water, we cannot see the fairness of mixing up these two inquiries." But, if the Scientific Reviewer "cannot see" the fairness of my thus mixing up the twin elements, the Commissioners will, I am satisfied, see the impossibility of their being, in this inquiry, separated: for, if such are the train of ills to which those persons are exposed, who have no leisure to take exercise, and whose daily occupations compel them to live pent up in

foul Air, surely a double duty devolves on the heads of families, to examine and see, that the other element of life, Water, is not sent into their cisterns, by those who have monopolized the sale of it, in an unsound state, to add to the sad catalogue!

Next, as to Water—

Hippocrates.—“ To distinguish that water which is wholesome, is of the first importance to health; for a train of evils are the consequence of the use of bad water.”

Encyclopædia Britannica.—“ Water, whether used pure, or mixed with wine, or taken in under the form of beer or ale, is the great diluter, vehicle, and menstruum, both of our food, and of the saline, earthy, and excrementitious parts of the animal juices: and it is more or less adapted to the performance of these offices, in proportion to its purity.”

Dr. Griffiths.—“ With regard to the water we use, we cannot be too scrupulous; the purity of this element being almost of equal importance to us with the air we breathe.”

Dr. Frederick Hoffman.—“ If there is in nature, a medicine that deserves the name of universal, it is, in my opinion, common water, of the best and purest kind. The use of this is so general, and so necessary to us all, that we can neither live, nor preserve our bodies sound and healthy, without it. For it guards against every disease, protects and defends the body from all kind of corruption that may prove fatal to life, and answers all possible intentions of cure; so that without it, no disorder, whether chronic or acute, can be happily and successfully removed. For confirmation of this opinion, I do not insist on the medicinal springs, but confine myself to common water—but, of the best and purest kind. If every physician would make it his practice carefully to examine into the quality of the water used in the houses

he visits, he might confidently hope to practise with more satisfaction to himself, and benefit to his patients."

If such are the salutary qualities of this element when used in a state of purity, its insidious and deadly attributes, when contaminated by animal and vegetable matters in a state of putrefaction, are, it will be seen, not less striking—

Dr. Mead.—"Thus much concerning poisonous exhalations and airs. I shall now make some remarks on the mischief of another fluid; which, as it is next in use to this we have been treating of, so the bad qualities of it, when it comes to be altered, must necessarily be almost equally fatal and dangerous. I mean water; which is of so constant service, not only for our drinks, but also in preparing of our flesh and bread, that it may justly be said to be the *vehicle* of all our nourishment; so that whenever this happens to put on other properties than are necessary to fit it for this purpose, it is no wonder if, in its passage through the body, these do make suitable impressions there."

Again—"A late author, by searching into the first accounts of the distemper we call the scurvy, finds that the origin of it was, in all times and places, charged upon the use of unwholesome water. He shews, that where the water is worst, there this malady is most rife. So that he has put it out of all doubt, that most of the complicated symptoms which are ranged under this one general name, if they do not entirely owe their birth to the malignity of this element, do, however, acknowledge it to be their main and principal cause."

Dr. Lind.—"The scurvy is to be seen chiefly among the poorer sort who inhabit low, damp parts of the provinces, and continue to live upon rancid pork, coarse bread, and are obliged to drink unwholesome water. Bad water is, next to bad air, a frequent cause of sickness, in places situated under the Torrid zone."

Encyclopédie Méthodique.—“ Vitruvius informs us, that the ancients inspected the livers of animals, in order to judge of the nature of the water of a country. The size and condition of the liver is a pretty sure indication of the deleterious quality of the water ; which, especially when it is stagnant, produces in cows, and particularly in sheep, fatal diseases; for instance, the rot, which frequently destroys whole flocks.”

Dr. Harrison.—“ The dry rot in sheep has its cause in the poisonous residuum of water. On a dry-limed lay, or fallow-ground, in Derbyshire, a flock of sheep will rot in one day; and, on some water meadows in that neighbourhood, when the weather is sultry, in half an hour.”

M. Cabanis. “ *Rapports du Physique et du Moral de l'Homme.*”—“ Water loaded with putrid vegetable matters, or with earthy substances, acts in a very pernicious manner on the stomach, and the other organs of digestion. The use of them produces different kinds of diseases, both acute and chronical ; all of them accompanied by a remarkable state of atony, and a great debility of the nervous system. They blunt the sensibility, enervate the muscular force, and dispose to all cold and slow diseases. It is well known, that in many countries, otherwise fertile and rich, the inhabitants are forced to use unwholesome water. The incommodities which they produce quickly extend their action to every point of the system.”

Mr. Abernethy.—“ It seems sufficiently ascertained, that diseases have been excited by water; and therefore it is necessary, that whatever is used should be as pure as possible.”

Dr. William Lambe.—“ It is the putrescent matter which is the most noxious principle of common water. It is a matter of common experience, that water, according to its different qualities, affects the stomach with a

peculiar feeling which we call weight; that the purest water feels the lightest, and what is reckoned the worst feels the heaviest on the stomach. In healthy persons this sensation is little regarded; but in disease it becomes very distinct, and is often very tormenting. Sometimes the stomach feels as if it would burst: sometimes the sensation is, as if a cord were tied round the middle of the body."

Again—"The peculiar noxious principle of bad waters is nothing but the corrupted animal and vegetable matters, with which they are impregnated. These matters are therefore poisonous. In consequence, they ought to be suspected, wherever they are found. In inquiring, therefore, into the salubrity of waters in general, or into that of any particular example, it is this impregnation, which ought to be the chief object of research. Simple earthy matter (though much has been said against it), has never been shewn to be particularly unfriendly to the human system. Metallic matter, of all kinds, is a more just object of suspicion. But, the putrid or putrescent matter, the animal or vegetable substances in a state of decomposition, is that which is actively mischievous. It is immediately and directly deleterious; and it is astonishing to consider, how greatly the influence of this matter has been overlooked, even by writers who were fully aware of the general importance of the subject."

II.

OF THE MONOPOLY.

ALLEGATION.—“ *That although the principle of the Acts of Parliament, under which the several Companies supplying the Metropolis with Water were instituted, was to encourage Competition, an Arrangement was entered into, about the year 1817, between five of the said Companies, by which all Competition was put an end to, and a Monopoly of a Necessary of Life virtually established.*”

THE Companies which have monopolized the Supply of Water to the Metropolis are five in number: 1. The New River. 2. The Chelsea. 3. The East London. 4. The West Middlesex. And, 5. The Grand Junction.

The history of the Arrangement above referred to, by which arrangement, a monopoly of the sale of a necessary of life was, to all intents and purposes, established, will be found in the Report of the Committee of the House of Commons, which sat in the months of February and March 1821, on the Supply of Water to the Metropolis: to which Report, as well as to the Minutes of Evidence taken before it, I beg leave to direct the attention of the Commissioners.

It therein appears, that the principle of the Acts of Parliament, under which the several Water Companies were instituted, was to encourage Competition; seeing that in this, as well as in other cases, it is only from competition, or the expectation of competition, that a perfect security can be had for a good, a cheap, and a plentiful supply.

By an arrangement, however, which took place between the five confederated Companies, all competition

was virtually put an end to. The scheme for partitioning the town, and establishing a close monopoly, was arranged towards the close of the year 1817, and carried into effect at Christmas, by the simultaneous retirement from each allotted district of all the Companies previously employed, except the individual Company which was thenceforward to be left in exclusive possession of the field.

The Companies gave no previous notice whatever of their intentions: and, in reply to the remonstrances of their customers, informed them, that, for the future, they could only be supplied by the one continuing Company; and those customers were also given to understand, that an increased rate would shortly be exacted. The indecency of the proceeding produced a temporary burst of indignation; but, so deadening are the effects of Monopoly, that the imposition was, after a slight struggle, submitted to, and the nefarious scheme brought to completion.

That a combination, bottomed in such a disregard for the public welfare, should exist for any long period, without producing the train of evils ever attendant on Monopoly, was not to be expected; but that, in the space of less than nine years, it should have given birth to the enormous Grievance which I am about to expose, could hardly have entered into the imagination.

III.

OF THE GRAND JUNCTION COMPANY.

ALLEGATION.—“*That the Grand Junction Water Works Company, having engaged to supply their customers with Water of the purest and most wholesome quality, at a comparatively small charge, have not only exacted a greatly increased Rate, but have changed the Source of their Supply to a spot in the Thames, at the foot of Chelsea Hospital, and nearly adjoining the mouth of the Great Ranelagh Common Sewer : and, that they now furnish to those customers, Water, which has been pronounced, by Professional Men of the first eminence, to be a filthy fluid, loaded with decayed vegetable matter and other substances, equally deleterious to health, and unfit for domestic purposes.*”

I. *Origin of the Grand Junction Company.*

In the year 1810, when the rage for wild speculations of every description was nearly as prevalent as it was during the disastrous year 1825, it so happened, that the Manchester Water-Works Company, then a new concern, had a Committee holding its sittings in London. Out of the brains of one of the gentlemen composing this Committee, started the Company whose doings I am about to lay before the Commissioners. He solicited several of his brother Committee-men to embark in a project, for supplying the inhabitants of Paddington and Marylebone, with cheaper and purer Water. Previously, however, to so doing, they dispatched their Secretary, for the purpose of obtaining information, as to the state of the supply in that quarter of the town. “I employed myself,” he says, in his evidence before the

Committee of the House of Commons, in February, 1821, p. 45—"I employed myself several days for that purpose; and I almost found, universally, that there was a deficiency in the supply of Water."

On receiving this report, the Manchester gentlemen considered it so satisfactory, that a Scheme for a New GRAND Water Company was forthwith issued. The Capital to be £225,000: the number of Shares 4,500, of £50 each. At one time these Shares fell down to £27; but, no sooner was this Company admitted a branch of the Monopoly, than matters took a favourable turn; so much so, that shares have been as high as £74.

Such was the origin of this Company. That the speculation has worked well for the original projectors of the scheme, there can be little doubt. How it has worked for the Inhabitants of the Metropolis, the Commissioners will now see.

2. *Original Engagements of the Grand Junction Company with the Public.*

The Grand Junction Company enticed the public to leave the old Companies, and to become their customers, by a series of promises and engagements, of the most solemn kind. The *first* proposal issued by the Company is dated the 15th of November, 1810, and is as follows:

"Grand Junction Water-Works.

"By Act 38, Geo. 3, cap. 33, the Grand Junction Canal Company are empowered to make water-works to supply the parish of Paddington, and parishes and streets adjacent, with water. Pursuant to this act, works are now constructing, and reservoirs making, with powers to effect their purpose, far superior to any other in this kingdom, and calculated at once to give to the inhabitants of the parishes and streets to be supplied, an abundance of *pure* and *excellent* soft Water, even in the upper stories of their houses or other buildings.

"This the proprietors will be enabled to do at a comparatively small expense, from the abundance of their sources,

from the height of the ground whence the water will be taken being so much above the level of the Thames, and its being so contiguous to the parishes of Paddington, Mary-le-bone, St. George's, Hanover Square, &c., including all the new streets now making and intended to be made.

“The grand main at present casting is thirty inches in diameter, and will extend down Oxford Street, conveying a body of water unequalled in the metropolis, and affording an immense advantage in the cases of fire, to all the districts through which the pipes will pass.

“Great attention being necessary in the execution of an undertaking of such magnitude and public importance, the Grand Junction Canal Company have thought it for the *general good*, that it should be under a distinct and separate management from their other concerns: they have therefore entered into an agreement with certain gentlemen, for the purpose of carrying it into effect; in pursuance of which, and for the more effectual establishment of the undertaking, application will be made to Parliament, the ensuing session, praying to have the agreement confirmed, and to have the proprietors formed into a distinct Company.

“The water, in its present state, has been analyzed, and found *excellent for all culinary and domestic purposes*; it is also lighter, and contains less foreign matter, than the Thames water; besides which, the Grand Junction Company are now engaged in making additional reservoirs, and introducing other streams of water, which are of the *finest quality*, and which will enable them, not only to perform their engagement, of giving a supply for at least 40,000 houses, but also to meet the demand for water to any extent that may be required. Hence it is obvious, that the undertaking will be attended with great *public benefit*, and the proprietors trust they have reason to feel confident of the liberal support of the public.”

The Company's *second* engagement with the public was as follows:

“Grand Junction Water-Works Office.

“The proprietors have proved the absolute power of their works, the *excellence* of their water, and the certain success of their plan. On these grounds they solicit support to an undertaking, combining the *welfare of the public* with the Company's advantage.

“ Their level is ten feet above the highest street in Mary-le-bone, and (what has never before been effected) they give a supply so copious and regular, that the water is always on. This abundant supply of water is always *pure* in the pipes : it is constantly *fresh*, because it is always coming in.

“ Their powers, from height of situation and largeness of main, raise water above the highest house in London, without any interruption of service to the tenants ; and this economical accommodation is felt, not only in small houses, but in laundries, nurseries, &c., or upper stories, for which high service *no additional charge* is made.

“ Ravages of fire are increased by delay and scanty supply. No houses watered by this Company can suffer in these respects. Their water is never off ; their pipes are always full. The water being perfectly *clear*, would not, in case of fire, *tarnish the furniture !*”

“ The annexed Analyses show the water to be peculiarly adapted to *all domestic purposes*. It is drawn from two large filtering reservoirs, situated at Paddington ; the main supply to which is derived from the rivers Colne and Brent, and from an immense reservoir of nearly a hundred acres, fed by the streams of the vale of Ruislip ; and the water being taken at a considerable distance above the basin of the canal at Paddington, is consequently as *pure* as if it were drawn immediately from those permanent sources. It is laid on free of expense to the tenants.”

Analyses of the Water.

“ The Analysis I have made of the Grand Junction Water
“ is highly favourable to the opinion of its salubrity and excel-
“ lence for the important public object which it is intended to
“ fulfil.” (Signed) “ C. R. AIKIN.”

“ I have analysed the Grand Junction Water, and find it to
“ be excellent for all domestic purposes ; to be also lighter, and
“ to contain less foreign matter than the Thames water.”

(Signed) “ FREDERICK ACCUM.”

Their *third* engagement will be found in the following card, which was profusely distributed over the town :

“ The Grand Junction Water-Works Company have the plea-

sure to inform the Public, that since the opening of their Works, they have given universal satisfaction to their customers.

“ Advantage of situation and great powers of machinery ensure a constant supply, at the tops and in every story of the houses, and prevent the inconvenience of force-pumps, and expense attending them.

“ The same powers ensure to the Grand Junction customers a facility in extinguishing fires ; for, where a sufficient service is obtained, means will be established of playing upon the houses much more effectually than by the assistance of a fire-engine.

“ The Public are respectfully requested to observe, that a *daily* service is given. The water is collected from *a number of pure streams*, into a reservoir of near one hundred acres, and is of a *fine, soft quality, perfectly clear* ; which may be seen as it comes in from the pipes at the Company’s Office, or a reference given to the inhabitants that are served with it.—N.B. No *extra* charge is made for supplying the upper stories ; and water will be furnished *gratis* for watering the streets.”

Engagement the *fourth* was the following lure to that useful class of individuals, Laundresses :

“ The Grand Junction Water-Works Company give the advantage of a never-ceasing supply to the lower parts of the houses ; and the high service to the attics three times a week. The Company’s water is particularly soft and fit for *Laundresses*, and all domestic uses. The Company undertake to give all these advantages at a *moderate* charge.”

The *fifth* and last engagement soared at higher game, and was couched in the following very polite terms :

“ The *excellence* of the Grand Junction Water, and the great convenience afforded by its service to the tops of the houses, having already induced the greater part of the nobility and gentry in St. George’s parish to have it laid on to their houses, the Company beg to acquaint those inhabitants who do not take the Water, that their pipes are laid in every street in the parish.”

* * “ The Agent will have *the honour* to call to receive Orders.”

Such were the engagements entered into by the Company. A recapitulation will be useful.

1. *Quantity.*—"An abundance of pure and excellent water"—"a never-ceasing supply to the lower parts of the houses"—"the high-service to the attics three times a week"—"immense advantages in cases of fire"—"the water always on"—and "a daily service given."

2. *Price.*—"Expense comparatively small"—"pipes laid on free of expense to the tenants"—"no extra charge for high service"—and "water furnished gratis for watering the streets."

3. *Quality.* "The main supply derived from the rivers Colne and Brent, and from an immense reservoir, of nearly one hundred acres, fed by the streams of the vale of Ruislip"—"the water collected from a number of pure streams"—"of a fine quality"—"always pure"—"constantly fresh"—"perfectly clear"—"so clear as not to tarnish the furniture in cases of fire"—so soft as to be peculiarly fit for laundresses"—"excellent for all culinary and domestic purposes"—"lighter and containing less foreign matter than the Thames water"—"which may be seen as it comes in from the pipes at the Company's office."—And, as if these were not enough,— "the Company are engaged in introducing other streams of water, which are of the purest quality.

That flesh and blood should withstand these extravagant representations—representations which put far in the shade the mural productions of Blacking merchants and Quacks—was almost impossible. Accordingly, many of the inhabitants quitted the old Companies, and came over to the new. The York Buildings Company was actually annihilated, and thus was a competitor taken out of the market; while the Chelsea Company was left with so small a district, that it would undoubtedly have been extinguished, but for the Confederacy that was entered into.

3. *The Company diminish the Quantity, and advance the Price, of their Supply.*

The Commissioners have now before them the Engagements solemnly entered into by this Company. To what a frightful extent those engagements have been departed from, it now becomes my duty to point out.

If the obligation of promises is to be measured, as Dr. Paley says it ought to be measured, "by the expectation which the promisers voluntarily excited," then are the Grand Junctioners indeed culpable. In Price—in Quantity—in Quality, they will be found to have broken every engagement which they entered into; and to have sported with the comforts and the health of their customers, in a way that has rarely been exceeded.

No sooner was the Monopoly completely established, than the Company began to give proof of the mischief ever attendant upon the possession of exclusive powers. Instead of the promised "daily supply," it was sent into the houses of their customers only three days out of the seven. Instead of "immense advantages in cases of fire," after almost every fire that has broken out in the division, since the combination of the Companies, complaints have been made, in the public journals, of the much greater delay which has taken place, than was formerly known. Instead of selling the water at a "comparatively small charge," the Company exacted, in August 1819, an increased rate, equivalent, in no case, to less than 50, and extending, in numerous instances, to 90 and 100 per cent. Instead of making "no extra charge for high service," an advance, in some cases amounting to 100, 150, and even 200 per cent., was demanded. Instead of a supply being "furnished gratis for watering the streets," an express rate was levied for so doing.

As this extraordinary conduct naturally excited a considerable degree of irritation, the Company, in order to allay that irritation, circulated an immense number of

copies of a pamphlet, entitled "A Calm Address to the Housekeepers of St. James's and St. George's, Westminster, calculated to *settle* their Opinions on the Conduct of the Water Companies." It was left at the houses of the inhabitants by the servants of the Company, with a notice, that it was "to be returned" when read; and, as it was given out, that it came from the pen of Sir Gilbert Blane, "M.D. F.R.SS. Lond. Edin. Gottin. et Paris, First Phys. to the King," and a leading Director, it was received as an authorized statement of the Case of the Company.

It has been asserted—however much the assertion may appear like a reflection on the judgment of the inhabitants—that the "Calm Addresser's" sedative operated so powerfully on the majority of them, and so "*settled* their opinions," that they were thereby induced to comply with the exorbitant demands made upon them; and that, encouraged by that success, the Company proceeded to extort payment from many others, less easy or less willing to be duped.

That so contemptible a gallimaufry should have had any such effect on the householders of those enlightened parishes, appears highly improbable. Their compliance with the exaction demanded arose, I am convinced, from the natural reluctance of individuals to contend against the branch of a Monopoly, having a lawyer at its elbow, a banker at its back, and an interested "*Calm Addressing*" Director, ready to impute mercenary motives to those who might think it their duty to expose imposition.

4. *The Company change the Source of their Supply from the "rivers Colne and Brent, fed by the streams of the vale of Ruislip," to a spot in the Thames, at the foot of Chelsea Hospital, fed by the great Ranelagh Common Sewer."*

Having pointed out to the Commissioners what Monopoly has effected for the customers of the Grand Junc-

tion Company, as far as regards Quantity and Price, I come now to the most important point of all; namely, the Quality of the water supplied by this Company. That water was promised to be “pure”—“bright”—“soft”—“clear”—“so clear as not to tarnish the furniture in case of fire”—“fit for all domestic purposes”—“lighter, and containing less foreign matter, than the Thames water”—and “the main supply derived from the rivers Colne and Brent, and from an immense reservoir, of nearly a hundred acres, fed by the streams of the vale of Ruislip.”

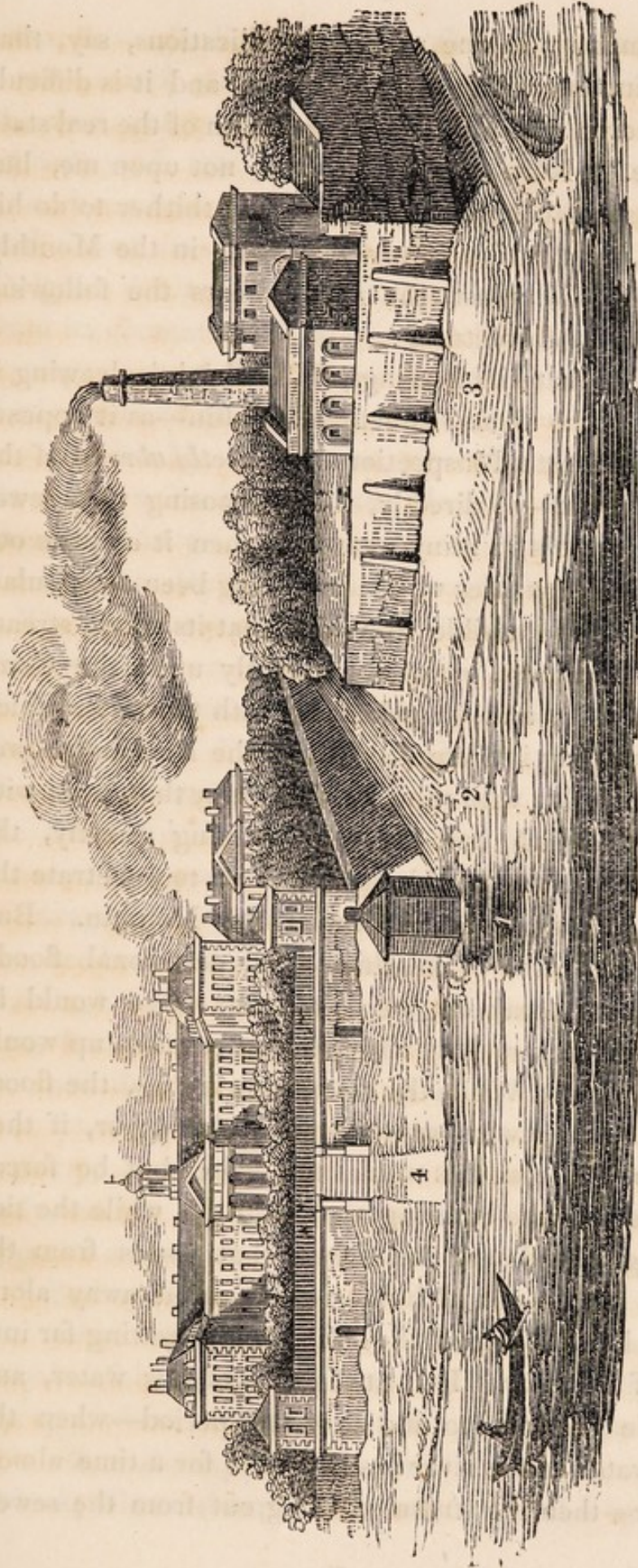
To read this description, every man of plain understanding would necessarily conclude, that the Company really had lands and reservoirs at a distance from the impurities of the metropolis. No such thing! Not an inch of ground did they purchase, excepting about two acres and a half, at Paddington, on which to erect their steam-engine, and build their reservoirs. Instead of the water coming in clear from the country, their supply was actually taken up at Paddington, out of the Grand Junction Canal. So that, instead of being supplied by a pure, running river, their customers were drenched with the noxious contents of a stagnant pool;—the waste of a canal, abounding with all sorts of impurities.

In this state of things, the Company, finding that it was not in their power to obtain good water—that their “Grand Scheme of Public Utility,” as Sir Gilbert Blane called it, had totally failed—ought to have walked off with their pipes and their engines, and abandoned the wretched concern.

Far different, however, was their view of the matter. It so happened, that just at this critical juncture, the Regent’s Canal Company had completed their works: and a discovery was, somehow or other, made, that it would be “*a matter of accommodation*” to the three Companies, for the Grand Junction Water Works Company to dis-

continue the supply of the pure ethereal streams of the Paddington Canal to their customers, and to give them, in lieu thereof, the water which the Regent's Canal Company had the power, by act of Parliament, of drawing from the river Thames;—water, not intended for the human stomach, but merely for the purpose of working their navigation. An Agreement to this effect was accordingly entered into between the parties, on the 26th of May 1819; and, in September 1820, the Company bade a lasting adieu to the Colne and the Brent, and planted their standard on the banks of the Thames—that Thames, the waters of which the said Company, in their original engagements, had passed a condemnation upon. To the Evidence of their Secretary, given before the Committee of the House of Commons, in 1821, p. 45, I call the particular attention of the Commissioners.

Without the consent, or even the knowledge, of their customers—without sending round to them an Analysis of the water—without, in the first instance, going to Parliament for powers to effect such an important change in the supply of a necessary of life to seven thousand families—did this Company, in their zeal for the “public welfare” and the “general good,” go and erect their Dolphin at the foot of Chelsea Hospital, and form a Grand Junction with the Ranelagh Common Sewer. From this spot do they send up into the metropolis, at the rate of thirty-six thousand hogsheads per day, to be used at the breakfast-table; in the composition of bread, pastry, soups, broths; and in the boiling of meats, poultry, and pulses, a fluid, which has been pronounced, by professional men of the first eminence, to be “loaded with decayed vegetable matter and other substances, equally deleterious to health, and unfit for domestic purposes.” The following is a correct representation of the scene.



No. 1, is the Dolphin, or spot from which the Company derive their Supply.

2, is the mouth of the great Ranelagh Common Sewer.

3, is the Company's Steam Engine, which draws up the daily supply.

4, is Chelsea Hospital. At low water, the Dolphin is about three yards from the shore.

The Company, in one of their publications, say, that the preceding engraving gives a “false, and it is difficult not to conceive, a wilfully false, impression of the real state of the case.” Now, this is an attack, not upon me, but upon a respectable artist, who was sent thither to do his duty; and, in a review of my pamphlet, in the Monthly Magazine for May last, the writer bears the following testimony to its correctness :

“In all its material bearings, Mr. Wright’s drawing is a fair one. The Grand Junction Dolphin—as it appeared to us, upon actual inspection—is *directly abreast* of the Ranelagh Sewer—so directly, that supposing that sewer to be full, as it is in rainy weather, when it empties out suddenly the impurities which have long been accumulating, it is hardly possible to doubt, that its whole stream of filth and foulness, *must* run directly upon the Company’s Dolphin, and be taken up with the water which may be pumping in from it. When the Ranelagh sewer is full and swollen with rain, we should say that, even with the river also full, and the tide running smartly, the rush from the sewer would be sufficient to penetrate the stream of the river, and to reach the Dolphin. But, besides these cases of mischief from occasional floods, upon ordinary occasions, we think that there would be two periods in every day, when the water taken up would also be impure. While the tide is flowing up, the flood-gates of all the sewers are of course closed; or, if they were open, the contents would not issue, but be forced backwards with the entering water. And, while the tide is running fast down, the stream that issues from the sewer—if small—would be at once carried away along the shore by the force of the ebb, without getting far into the bed of the river. But, at the time of low water, and for a while previous to and after that period—when the body of water in the river is small, and for a time almost stationary—then the stream pouring out from the sewer,

even although slight, being carried neither upwards nor downwards by any tide, would make its way directly into the river, and towards the Company's Dolphin; and if it so happened, that the stream from the sewer was copious at such a moment, the effect would go far beyond this; and almost the whole quantity of water taken up at the Dolphin, during the interval described, would be pumped from its contents. By a peculiar infelicitousness in the arrangements of the Company, their Dolphin stands perfectly in *a nest of sinks and drainage*: and there is another sewer which Mr. Wright entirely omits, which runs along the western boundary of the Hospital, and is so wide as to admit a barge, which must pour its stream down upon the Dolphin, during the whole time of the returning tide."

The Company say, that this Ranelagh Common Sewer "is not a sewer at all, or only in a very minute degree." And their ingenious advocate, Dr. Reece, (Med. Hal. Piccadil. Lond. First Phys. et Obstet. to the late Johan. Southcote), instructs the world, that it "merely receives the filth of a thousand houses, and is only the common sewer of *Battersea*, and two or three other places." The extravagance of the first assertion, and the ludicrous ignorance betrayed in the last, are alike palpable. The Ranelagh sewer receives the drainage, of every description, from Brompton and a great part of Chelsea; and it has recently been deepened, at a large expence, in order that its daily increasing contents may slide, with greater rapidity, into the Thames. As to *Battersea*, every body, except Dr. Reece, knows it to be situated on the opposite side of the river, and in another county!

"Perhaps it may be thought," say the Company, "that the waters of the Ranelagh Common Sewer are not so very baleful, when it is known, that within fifty yards of the spot where it enters the Thames, Chelsea Hospital now takes its supply of water." This is, indeed, an unlucky illustration; for I state, upon the authority of

Sir Everard Home, that the condition of the water supplied to that Royal establishment, has recently attracted the attention of those, to whom the health of its veteran inmates is confided.

I beg leave, in this place, to notice a few of the assertions contained in the Company's Defence.

1. "The *truth* is," say the Directors, "that until the Company ceased to take their supply from the Grand Junction Canal, frequent complaints were made of the quality of the water." Now, if such be "the *truth*," what becomes of their former assurances, that "they had proved the absolute power of their works and the certain success of their plan;" and had given "universal satisfaction to their customers?"

2. "In *fact*," continue the Directors, "such complaints were not without reasonable ground. The waters of the Brent, and of the Ruislip reservoir, were discovered to be so *foul*, that it was necessary to prevent their entering the Canal; the supply from both those sources proving unfit for the use of the water works." What! the water of the boasted Brent, and the pure streams of the vale of Ruislip, which was "to be seen running perfectly clear, as it came from the pipes, at the Company's office," so *foul* as to be unfit for use! Their Secretary, on being asked, by the Committee of the House of Commons, in 1821,—“When you took your water from the Thames instead of the Canal, was it not in consequence of the water of the Brent being foul”—answered, “No; we had got rid of that altogether! Now, both these statements cannot by possibility be “*fact*.” And yet the Company say, they are prepared to prove all their assertions “upon oath!”

3. "If, when the Dolphin was first placed in its present situation," continue the Directors, "it had been supposed, that the supply of the Company could be affected by it, is it credible that men of sound mind would

have permitted it to be so placed?" There is something extremely disingenuous in this question. The spot was, years before, selected by the Regent's Canal Company, merely as a source from whence to draw up a supply to work the barges on their canal. It was left for a Company, whose Directors say "they considered it a high *moral duty* to take care that the water they supplied should be the *best*," to divert the filthy fluid from the aforesaid Canal, to the stomachs of their customers.

4. "But," add the Directors, "a yet greater inducement for the Company to fix their Dolphin in its present situation existed in the *unlimited* supply which might be obtained from the Thames; which the constantly increasing wants of the public rendered necessary." Now, on referring to the act passed in May 1826, the Commissioners will find, that, instead of being *unlimited*, the supply is expressly *limited* to forty thousand tons in every twenty-four hours.

5. In conclusion—what is the Company's own description of that supply?—"We will admit frankly, and at once, that, during a certain period of the year, the water of the Thames is not such as ought to be delivered to the inhabitants of the metropolis." What an admission is here, on the part of a Joint Stock Company, which raised itself into existence, by denouncing and impugning the water of the Thames, and by promising to give a better supply than that noble river can afford!

The Company's whole Defence is a tissue of inconsistencies and misrepresentations—a series of contradictions and self-condemnations.

5. *Analysis of the Grand Junction Water.*

When, as I have already observed, the Company were soliciting customers, and enticing them away from the old Companies, the better to effect their purpose, they caused the water to be analysed by two eminent chemists; thereby

obtaining a testimony, or certificate, of its pure and salubrious qualities. But, when they exchanged that water for the puddle at the foot of Chelsea Hospital, they did not come forward with any such Analysis. I, however, have had it analysed for them. As soon as I had made up my mind to call the attention of the public to the subject, I caused a quantity of the water, just as it ran from the Company's pipes, to be sealed up, *in the presence of one of their own Directors*, and I sent it to the successor of Mr. Accum, with the following Letter :

“ January 4, 1827.

“ SIR: I request you to analyse the water herewith sent,
 “ with a view to ascertain its specific nature and quality ; and
 “ that, when you have so done, you will have the goodness to
 “ say, whether you consider it to be ‘ clear,’—‘ pure ’—‘ free
 “ from foreign matter ’—and ‘ excellent for all domestic and
 “ culinary purposes.’

“ I am, &c.

“ J. WRIGHT.”

The Answer was as follows :

“ SIR: The water sent for assay was found to be loaded
 “ with decomposed vegetable matter ; and in such quantity, as
 “ to be unfit for use, without tedious purifications.

“ I am, Sir, yours, &c.

Compton Street.

(Signed) “ F. JOYCE.”

6. *Opinions of Professional Men, with regard to the Quality of the Grand Junction Water.*

That water, which was so loaded with filth and decomposed vegetable matter, as to be unfit for ablution, could not be fit for other domestic purposes, was evident to common sense ; but, in order that the families who were constantly using it, might be aware of the full measure of their danger, I thought it right to address the following Letter to a few of our eminent professional men, and to wait upon them, with a specimen of the said water :

112, Regent Street.

“ SIR: For the last twelve months, I have been strongly impressed with a conviction, that more than seven thousand families at the west end of the town are supplied, by one of the Water Companies who have partitioned the metropolis between them, with a necessary of life, loaded with filth and all sorts of impurities; and I am about to make an effort to awaken such of the inhabitants of Westminster and its suburbs as are served with it to a sense of their danger.

“ The water which the said Company *engaged* to supply to their customers was to be of the purest quality, perfectly clear, fit for all culinary and domestic purposes; and it was to be ‘ derived from the rivers Colne and Brent, and from an immense reservoir of nearly a hundred acres, fed by the streams of the vale of Ruislip;’ and, furthermore, it was ‘ to be lighter, and to contain less foul matter, than the Thames water.’

“ The water which they *actually* supply, and of which I herewith send you a specimen, is drawn, at the rate of thirty-six thousand hogsheads per day, *from* the river Thames, at the foot of Chelsea Hospital, and within a few yards of a great Common Sewer.

“ Now, Sir, you would much oblige me, and, I think, benefit the public, if you would inform me, whether you consider this water to be ‘ of the purest quality,’ and ‘ fit for all culinary and domestic purposes:’ in other words, whether you consider it fit for the breakfast table, and to be used in the making of bread, puddings, broths, soups, &c.; and in the boiling of meats and vegetables. Or whether, on the contrary, you do not consider, that the daily use of such water has a direct and positive tendency to engender those diseases, to which the inhabitants of so thickly a peopled city as Westminster are especially liable.

“ I have the honour to be, Sir, Yours, &c.

“ J. WRIGHT.”

The following are twelve out of the Answers which I received.

1. *Dr. William Lambe.*

“ SIR: Having considered the foregoing statement, and observed the great impurity of the specimen of water shewn to me, I cannot doubt, that this water is loaded with noxious matter; much of which is obvious to the eye, and much, no

doubt, is contained in solution. I have no hesitation in saying, that such water, used as an article of diet, *must* be unwholesome.

“ WILLIAM LAMBE, M.D.”

2. *Mr. Thomas.*

“ Leicester Place, Feb. 17, 1827.

“ SIR: I have examined, with great care, the specimen of water you sent for my inspection.

“ On the first view, it presents a fluid loaded with impurities; and, upon a more minute analysis, is found saturated with decayed vegetable matter, and other substances equally deleterious, which must be very prejudicial to the health of those who are obliged to employ it in the common purposes of domestic life.

“ That such is the fact may, I presume, be readily ascertained by inquiries amongst the inhabitants of the districts who are supplied with water from the same source.

“ With my best wishes for the successful termination of your laudable undertaking, I remain, Sir, very truly yours,

(Signed) “ H. LEIGH THOMAS.”

3. *Dr. Hooper.*

“ Saville Row, Feb. 12, 1827.

“ SIR: I lament I have not had it in my power to acknowledge the receipt of, and to answer, your letter before.

“ I beg to inform you, that I have been aware of the very impure nature of the water supplied by the Grand Junction Company, ever since it came to my house. At one time, it was not only filthy in appearance, but had an unwholesome smell.

“ Until my supply of water came from the Grand Junction Company, that which I had was excellent: but now scarcely a week passes, that I am not presented with a leech; a shrimp-like skipping insect, near an inch in length; a small, red, delicate worm, which I believe is the *lumbricus fluviatilis*, or some other animalcula; and the water is mostly opaline, muddy, or otherwise impure.

“ That the daily use of impure water has a tendency to produce, or is a cause of many diseases, there cannot be any doubt; and it is a question of much importance, whether such matters in the stomach do not greatly contribute to the production of that state of faulty digestion, and impurity of blood,

of which the inhabitants of this and other large cities are constantly complaining.

“ I am, Sir, your obedient servant,
(Signed) “ R. HOOPER.”

4. *Mr. Brodie.*

“ 16, Saville Row, Feb. 24, 1827.

“ SIR: The water which you have shewn me corresponds in appearance with that which is supplied to my own house by the Grand Junction Water Company.

“ It is manifestly very impure; and, from the quantity of foreign matters which it contains, must, I conceive, be unwholesome, and altogether unfit for culinary purposes.

“ I am, Sir, your obedient servant,
(Signed) “ B. C. BRODIE.”

5. *Dr. Paris.*

“ Dover Street, Feb. 15, 1827.

“ SIR: In reply to your letter, I feel no difficulty in stating, as a Housekeeper, that the water with which I am supplied is extremely impure and unwholesome.

“ As a Physician, who has devoted much attention to the subject, I cannot find terms sufficiently expressive of the awful effects it may be likely to produce upon the health, and even lives, of the inhabitants of the metropolis.

“ I am most anxious, that you should pursue some plan to obtain redress from the Legislature.

“ I remain, Sir, your humble servant,
(Signed) “ J. A. PARIS,”

6. *Mr. Keate.*

“ Albemarle Street, March 1, 1827.

“ SIR: In reply to your letter of the 27th ultimo, which I have this day received, I may observe, in the first place, that I had no occasion for the specimens which you sent me of the New River and Grand Junction Waters, and that I have never ceased to regret the effect of that Combination, which deprived me of the former, and compelled me to pay dearly for the latter.

“ I can have no hesitation in avowing my opinion, that the Water supplied by the Grand Junction Company is so filthy and impure, as to be unfit for the breakfast table, or for culi-

nary purposes; and that it adds so much to the other impure and unwholesome constituents of bread, as to render every meal injurious to the health of thousands.

“ It is well known, that Thames water is unfit for domestic purposes, until it has undergone a process somewhat analogous to fermentation; after which, it is pure, and capable of being preserved in a state of purity for a long period: but, where the tanks, or reservoirs, are disturbed every day, by the accession of fresh supplies, this process cannot take place: and I doubt whether the experiment has ever been tried with the water pumped up from the *débouche* of a Common Sewer.

“ I am myself obliged to send out for spring water to a considerable distance from my house, for most purposes; and, by the aid of filtering machines and a steam kitchen, I endeavour to avert from my family the mischiefs and dangers, which I should otherwise apprehend from the use of the sad compound which is laid into my house.

“ I cannot conclude without expressing to you my thanks, for the attempt which you appear to be making in the cause of humanity; for many must be the sufferers from this cause.

“ I have the honour to be, Sir, &c.

(Signed) “ ROBERT KEATE.”

7. *Sir Henry Halford.*

“ Curzon Street, March 1, 1827.

“ SIR: I have been disgusted, for some time past, by the filthy fluid which has been served to my house by the Grand Junction Water Company; and, although I am not prepared to prove that its influence on the health of the inhabitants of the west end of the town *has* been deleterious, I conceive it *likely to become so*, if it continue to be supplied in the same foul and muddy condition, in which it comes into our houses at present.

“ I must add, Sir, that I think the Public is under great obligations to you, for bringing this subject of the supply of Water to the Metropolis to the notice of Parliament.

“ I am, Sir, your's truly,

(Signed) “ HENRY HALFORD.”

8. *Dr. Turner.*

“ Curzon Street, March 3, 1827.

“ SIR: In reply to your letter respecting the water supplied by the Grand Junction Company, I should say, that it is, at no season of the year, fit for culinary purposes, and that after

rain it is generally mixed with so large a quantity of filth, as to render it unfit even for washing, or any other domestic use. During the hot weather of last summer, the water in my cisterns frequently became quite putrid; though they were repeatedly cleaned out by my direction.

“ Whether this impure state of the water has any influence on the health of the inhabitants of Westminster, is a question that would admit of much controversy. I therefore pass it over; but must express to you, Sir, my sincere thanks for the trouble you are taking for the public good.

“ I am, Sir, your faithful servant,

(Signed) “ THOMAS TURNER.”

9. *Dr. Hume.*

“ 9, Curzon Street, 5th March, 1827.

“ SIR: In reply to your question, I have no hesitation in stating, that the water supplied to this house by the Grand Junction Water Company, ever since I have resided in it, which is now nearly five years, has been so loaded with mud and all sorts of impurities, that I have never been able to use it for any purpose whatever, except that of ablution; and, even for washing, it has been almost always, in winter, so foul and dirty, and in the dry hot weather of summer, so filled with animacula, that it has been necessary to filter or boil it, before it could be used without disgust.

“ I have been supplied with water from a spring in the neighbourhood, for tea and all culinary purposes, in consequence of the dirtiness of the water served by the Grand Junction Water Company; but, I am not able to assert, that this water has been prejudicial to the health of the Inhabitants in the west-end of the town; although I have no doubt of a continued use of such water, without filtering or depuration, being, in the end, capable of producing deleterious effects. I have the honour to be, Sir,

“ Your very obedient servant,

(Signed) “ J. R. HUME.”

10. *Dr. Macmichael.*

“ Half-Moon Street, March 10, 1827.

“ SIR: The specimen of water you have shewn me, and some specimens which I have frequently seen in my own house (which is supplied by the Grand Junction Water Company), are certainly very filthy; and I should think no other argument

could be required, than the consideration of the disgusting source from which this impure water is obtained, to prove how desirable it would be to procure a wholesome supply from a more pure source.

“ The public is certainly obliged to you for taking the trouble of calling the attention of parliament to this very important subject. I am, Sir, your most obedient servant,

(Signed) “ W. MACMICHAEL.”

11. *Dr. Robert Bree.*

“ 17, George Street, Hanover Square, March 14, 1827.

“ SIR: The statement you have done me the favour of sending for my opinion, carries the testimony of a strong and culpable breach of faith on the part of the Company which supplies my house with water.

“ I have been convinced, by experience, of the impurity of their water, and have had water from a spring in Hanover Square for constant use as a drink, and for particular uses.

“ I think it obvious, that the Company has deceived the public, and not less plain, that an impure water must be deleterious to the health; and that the necessity of filtering, or of subjecting water to the action of heat, for the purpose of rendering it innocuous, is a shameful imposition on the inhabitants, which in equity, should make the contract with the Company void; or set up a charge of expense against their rates.

“ I wish you success in your endeavour to develop this public abuse, and am sensible of the debt which the inhabitants of Westminster must owe to your exertions. I am, Sir,

“ Very truly yours,

(Signed) “ ROBERT BREE.”

12. *Dr. James Johnson.*

“ Suffolk Place, Pall-Mall East, Feb. 13, 1827.

“ SIR: I have always looked upon the water used in London, and taken up in or near the metropolis, as most disgusting to the imagination, and deleterious to health. But, as I have publicly stated my sentiments nearly twelve months ago, in the *Medico-Chirurgical Review* (which I herewith send you), on the subject of the water taken up at Chelsea, I need not now re-state them here.

“ I am, Sir, your most obedient servant,

(Signed) “ J. JOHNSON.”

The following is the Extract from the Medico-Chirurgical Review, vol. iv. p. 207, to which Dr. James Johnson refers. It is brief; but it embraces the grand question which the Commissioners have to decide upon:

“We sneer at the delicacy of the Hindoo, who slakes his thirst at the same tank where his neighbour is sacrificing to Cloacina; but, what shall we say to the delicate citizens of Westminster, who fill their tanks, and stomachs, with water from the Thames, at that very spot into which one hundred thousand cloacæ, containing every species of filth, and all unutterable things, are daily disgorging their hideous and abominable contents.

“It is absolutely astonishing that, in these days of refinement, and in a metropolis whose inhabitants pride themselves on delicacy and cleanliness, a practice should obtain, at which posterity will shudder, if they can credit it. We do not believe that a parallel instance of bestial dirtiness can be cited from any part of the globe.

“A time *must* come, when the people of London will open their eyes to this scene of corruption, veiled and concealed as it is, by iron tubes and stone pavements. We are not among the idolators of the ancients; but, we do admire the delicacy of their taste, in expending so much labour and wealth in commanding abundant supplies of pure and salubrious water for the everlasting city.

“The New River and the Hampstead Waters are ethereal streams, compared with those of Chelsea. It is difficult to say, how far health may be affected, by drinking from such a polluted source; but, surely such deleterious substances, however minutely divided, cannot be salubrious. It is therefore probable, that part of the insalubrity of the city, as compared with the country, may be owing to this cause.”

Such were the Answers which I received to my Letter. In general, the first question put to me was, as to the motives which had induced me to take up the subject; and, on finding that I was totally unconnected with any of the Water Companies, and had no object in view, but a public one, they entered into my views with a liberality,

and with a spirit of perfect independence, that do honour to the profession.

Straight-forward as was the way in which I sought to obtain the above Opinions, I am, nevertheless, charged by the Directors of the Grand Junction Company with having resorted to "miserably unfair means," in order to procure them. The Opinions, also, are declared to have been given "*hastily*." A moment's reference to them will at once show the looseness of this assertion. Dr. Hooper says, he "had been aware of the very impure nature of the water ever since it came to his house"—Dr. Paris, that "the water with which he was supplied was extremely impure and unwholesome"—Mr. Keate, that "it was so filthy and impure, as to be unfit for the breakfast-table." Sir Henry Halford is "disgusted by the filthy fluid sent to his house."—Dr. Turner says, that "during the hot weather the water in his cisterns became quite putrid"—Dr. Robert Bree was "convinced by experience of its impurity"—and Dr. Hume declares, that the "water supplied to his house had, for *five* years, been loaded with all sorts of impurities." So much for "*hasty*" opinions!

The reviewer in the "Quarterly Journal of Science," who, to do him justice, labours hard for the Company, thinks that "little weight can be attached to the opinions of the medical men, for they are but *opinions* after all." And he adds, that he himself "could easily obtain a similar number of equally respectable certificates, in favour of the water, as are here so formidably arrayed against it." I hope he *will* obtain them; and that he will subjoin the following certificate of the quality of the Company's water, which he himself gave, in only the preceding number of his Journal:

"Three letters have reached us, upon the subject of the Grand Junction Water Company's supplies. We

quite agree with the writers, as to the state of the liquid furnished, but have had no time to inquire into its cause. It certainly has, at times, ‘ a most ancient and fish-like smell.’ ”

7. *The Company's New Table of Rates.*

The Commissioners have seen, that, in August 1819, the Grand Junction Company exacted an increased Rate, equivalent in no case to less than 50 per cent. and extending, in most instances, to 90 and 100 per cent. As, however, they had, between that period and the year 1826, done so much for the “ Public Good,” they began to think it but fair to do a little for themselves. Accordingly, a *private* Bill—so private, that none of the members for Westminster or Middlesex even knew of its existence—was brought into the House of Commons, and received the royal assent, on the 31st of May 1826, being the last day of the session; by which Bill the Company obtained the sanction of the Legislature to a new Table of Rates, by which, in the words of the Petitioners, “ an addition, generally, of 50 per cent. and, in numerous instances, of 100, 150, and 200 per cent., may be levied upon them.” The following is a copy of the Clause :

“ Provided always, and be it further enacted, that the said Grand Junction Water-works Company shall be obliged, by means of any leaden or other pipe or pipes, to be provided and laid at the costs of the persons requiring the same, to furnish a sufficient supply of water, at a height not exceeding six feet above the flag pavement, to the house of every inhabitant occupying a private dwelling-house in any square, place, street, or lane, where the pipes of the said Company shall be laid, for the use of his or her own family, at the following rates per annum, that is to say :

“ Where the rent of such dwelling-house shall not exceed £20 per annum, at a rate not exceeding $7\frac{1}{2}$ per cent. ;

“ And where such rent shall be above £20, and not exceeding £40 per annum, at a rate not exceeding 7 per cent. ;

“ And where such rent shall be above £40, and not exceeding £60 per annum, at a rate not exceeding $6\frac{1}{2}$ per cent. ;

“ And where such rent shall be above £60, and not exceeding £80 per annum, at a rate not exceeding 6 per cent. ;

“ And where such rent shall be above £80 per annum, and not exceeding £100 per annum, at a rate not exceeding $5\frac{1}{2}$ per cent. ;

“ And where such rent shall be above £100 per annum, at a rate not exceeding 5 per cent. ;

“ And every such rate shall be payable according to the actual amount of the rent, where the same can be ascertained ; and where the same cannot be ascertained, according to the actual amount or annual value upon which the assessment to the poor's rate is computed in the parish or district where the house is situate : provided nevertheless, that the said Company shall not be entitled to receive from any such inhabitant as aforesaid more than the sum of £20 in any one year for such supply ; nor shall the said Company be obliged to furnish such supply to any such inhabitant as aforesaid for less than twelve shillings in any one year, unless they shall think fit so to do.

“ Provided also, that in case of manufacturers, dyers, printers, bleachers, brewers, inn-keepers, alehouse-keepers, vintners, or other persons requiring a supply of water for other purposes than those of his or her own family consumption, or in case of persons requiring a supply of water for hotels, public chambers, clubs, or subscription houses, baths, fountains, closets, water-closets (such closets or water-closets being supplied from any other cistern than a cistern for domestic purposes, situated within six feet of the flag pavement), or stables, or for washing carriages, or for cows or horses, or for the purposes of any trade or business whatsoever ; such supply shall be so furnished by the same Company in such cases, at such rate as shall be settled by and between the Directors and such persons respectively.”

The following Scale will make the intended increase still clearer :

Where the Rent of the House is

£20	the yearly charge may be	£1	10	0
30	.....	2	2	0
40	.....	2	16	0

Where the Rent of the House is

£50	the yearly charge may be	£3	5	0
60	.....	3	18	0
70	.....	4	4	0
80	.....	4	16	0
90	.....	4	19	0
100	.....	5	10	0
120	.....	6	0	0
150	.....	7	10	0
200	.....	10	0	0
300	.....	15	0	0
400	.....	20	0	0

By looking at the above Scale, the Commissioners will at once see what an enormous increase is meditated by the Company—"time and place fitting." A tradesman residing in Regent Street, for instance, who occupies a house, the rent of which is £200 a year, and who now pays three guineas a year, may be called on to pay *ten pounds*; independently of the charge for high service. Again—a poor man living on the west side of the Haymarket, inhabiting a house of £60 a year rent, may be compelled, by this Company, to pay £3.18s. for *bad* water, while his neighbour, on the east side of the same street, can procure *good*, from the New River Company, for twenty or thirty shillings.

That such would be the consequence of the fatal Monopoly, was foreseen by the Committee of the House of Commons, which sat in 1821.

"The public," say the Committee, in their Report, p. 8, "is at present without any protection, even against a further indefinite extension of demand. In cases of dispute, there is no tribunal but the boards of the Companies themselves, to which individuals can appeal: there are no regulations but such as the Companies may have voluntarily imposed upon themselves, and may therefore at any time revoke, for the continuance of the supply in its present state, or for defining the cases in which it may be

withdrawn from the householder. All these points, and others of the same nature, indispensably require legislative regulation, where the subject-matter is an article of the first necessity, and the supply thereof has, from peculiar circumstances, got into such a course, that it is not under the operation of those principles which govern supply and demand in other cases."

But, although the above points were considered, by the Committee of 1821, "indispensably to require legislative regulation," nothing has, up to the present hour, been done. If the recommendation of the Committee had been attended to, a bill, levying a heavy and a partial tax upon more than seven thousand families, without their knowledge or consent, never could have passed the House of Commons. It went into that house as a *private* bill, "for confirming certain articles of agreement," &c. and it thereby escaped the vigilance of members, and of the public press; but, by a clause appended to it, it is "further enacted, that this act shall be deemed and taken to be a *public* act, and shall be judicially taken notice of as such, by all judges, justices, and others, without being especially pleaded."

That the attention of Parliament should, through the Commissioners, be called to the mode in which a bill, not merely levying a new tax, but "confirming the Grand Junction Company a company in perpetuity for supplying water from the river Thames, at or near Chelsea," was carried so privately, is the earnest wish of the Petitioners. Of the immense value of the bill to the Company, some notion may be formed from the fact, that, on the 8th day of June, that is to say, just one week after it had passed into a law, a General Assembly of the Company came to a resolution, to raise the sum of fifty thousand pounds, by issuing a thousand new shares of £50 each.

8. *The Company's Reservoirs—Clarification—Filtration.*

The Grand Junction Company—as if all their former broken engagements had created no distrust, have again come forward with an entirely new and truly “Grand Scheme of Public Utility;” by which they promise to “give such a supply of pure and bright water, at all seasons, as has never yet been equalled, or, they might say, even approached, in ancient or modern times.”

The attention of the Directors has, say they, been, for three years, “sedulously directed to the improvement of their supply.” Now, by the word “improvement,” they do not mean that they have gone in quest of a purer source; but that they have devised certain means of transforming the supply taken up at the impure source, at the mouth of the aforesaid Common Sewer, into water “such as has never been equalled, or even approached, in ancient or modern times.”

This “*grand desideratum*,” as their advocate of the Quarterly Journal of Science calls it, is to be arrived at by means of reservoirs. “The Company,” say the Directors, “now possess, at Paddington, three reservoirs of eight acres, and are about to make three additional ones at Chelsea, of four acres.” And, with these half-dozen reservoirs, they contemplate to effect that by Art, which has hitherto been left to the operations of Nature.

The following extract from the second edition of Dr. Arnott’s “Elements of Physics,” places the matter in a striking point of view:—

“The supply and distribution of water in a large city, since the steam engine was added to the apparatus, approaches closely to the perfection of Nature’s own work, in the circulation of blood through the animal body. From the great pumps, or a high reservoir, a few main pipes issue to the chief divisions of the town: these send suitable branches to every street; and the branches again divide for the lanes and alleys; while, at last, into every house a small leaden conduit rises, and, if required, carries its precious freight into the separate apartments,

and yields it to the turning of a cock. A corresponding arrangement of drains and sewers, constructed with the greatest exactness, in obedience to the law of level, carries the water away again, when it has answered its purposes ; and sends it to be purified in the great laboratory of the Ocean."

But, instead of allowing their water to proceed to be " purified in the great laboratory of the Ocean," the Grand Junction Company arrest it in its progress thither—force the filthy fluid from their Dolphin at Chelsea, up to their reservoirs at Paddington, there to undergo a sort of clarification—and, after having thereby given to it the *semblance* of pure water, send it into the houses of their customers, to be used for all culinary and domestic purposes.

That a large portion of the inhabitants of such a metropolis should, in this way, be supplied with a necessary of life, as it were at second-hand, and be then told, that it is " such water as has never yet been equalled, or even approached, in ancient or modern times," is a gross indignity. To every person who has witnessed the slow progress of filtration, the notion of cleansing daily, six and thirty thousand hogsheads of water, which has been declared by eminent professional men, to be a filthy fluid, " loaded with decayed vegetable matter and other substances alike deleterious to health, and unfit for domestic purposes," carries its own absurdity along with it.

The following judicious observations I have found in a small pamphlet, published a few years ago:—

" On the subject of depositing and filtering water, it may not be unnecessary to say a few words ; because, the purity and brilliancy of the water to be furnished by depositing and filtering, have been very much insisted on. When Mr. Dodd projected the South London Water-works, he fixed upon a spot, at the back of the Vauxhall road, to excavate reservoirs, one of which was to be filled by the side through Vauxhall Creek, there to remain in a state of rest, to settle and grow pure, and then to be pumped into a higher reservoir, there to settle again ;

and then, in its utmost purity, it was to be furnished to the inhabitants. This method of providing pure and brilliant water was adopted by the West Middlesex Company; to which the Grand Junction Company have added filtering.

“The absurdity of expecting to procure wholesome and useful water, by the means above stated, it is wonderful that none or all of the schemers in water should not have perceived. Every waiter, cook, and scullion, know that stale water is not adapted to drinking, boiling, or scouring. Do we not say to a servant, if he places a decanter of water before us, which has stood on the sideboard since yesterday, ‘Get some fresh water?’ Does not every body know, that water, in a state of rest, becomes vapid, tasteless, and at last offensive? Where, then, can be the comparison in favour of water in reservoirs; which, though it may have lost all impurities to the eye, is either contracting, or has contracted, those of putrefaction?”

“Water in a state of motion is always the best water; and in rivers, that water is the best which is taken from the middle of the stream; and particularly so in the Thames. Yet, the Grand Junction Company talk of filtering their water! and they say that they raise six and thirty thousand hogsheads a day. Now, most people know what the operation and progress of filtering water is; and, therefore, it is left to the judgment of those who will take the trouble to reflect on the subject, what kind of machine this Company must use for their filtration.

“But, for argument’s sake, let it be granted that they can filter this quantity of water. Will that filtration take off the vapidness, or cure the offensiveness, or restore the spirit, of the water? The answer is obvious. The circumstances attending the Grand Junction Company, however, render it necessary, that they should resort to the use of reservoirs, or decline becoming a Company.”

At the public meeting which took place at Willis’s Rooms, on the 9th of April, in answer to the assertion of a gentleman, who had formerly been a Director of the Company, that the new reservoirs would give the water time to settle and deposit the particles of filth with which it was saturated, Dr. Paris observed, that “the gentleman appeared to be totally ignorant of the causes of the evil, and of the nature of the remedy, or he would not have

talked of the water filtering in the reservoirs, and there depositing the particles of filth. The impurity of the water, which so greatly injured the health of the inhabitants, arose, not from particles of matter floating in the fluid, but from the quantities of matter which were held in chemical solution. These could be separated by no mechanical means whatever. He would therefore maintain, that the reservoirs of the Grand Junction Company would be no redress whatever of the evil, of which the inhabitants so justly complained. Would any man in London be satisfied with an arrangement, by which the most filthy water, from a spot adjoining a common sewer, was to be supplied for his beverage, on condition of its being allowed previously to settle, and deposit such of its grosser particles, as could, in a few hours, be deposited by their gravity? What was to become of the vast quantity of filth which was held in chemical solution? No filtration could remove this species of impurity; and the remedy spoken of, on behalf of the Grand Junction Company, was altogether delusive."

Such is Dr. Paris's opinion with regard to the Filtration system; and such, I am prepared to prove, is the opinion of numerous members of the profession; who maintain, with him, that all this clarification and filtration—these attempts to scrub the blackamoor white—will not restore the filthy and unsound fluid to a healthful condition. And, in this conviction they are fortified by the assurance of the proprietors of the great club-houses, coffee-houses, hotels, baths, &c.; who say, that the filtered water of the Grand Junction Company will not *keep*, but becomes offensive to the smell and to the taste, shortly after it has been subjected to heat.

The Company, however, are not without their Defenders. Besides their steady, and redoubtable champion, the calm-addressing Sir Gilbert Blane,—Dr. Reece of the "Monthly Gazette of Health," [cui non dictus Hylas?]

and the reviewer in the "Quarterly Journal of Science," have stepped forward, under the banners of Chemistry, in the cause of Filtration and Clarification.

Dr. Reece defends the "ancient fish-like smell" of the Company's water, by reminding us—and none so fit!—that, "if all articles are to be condemned as unwholesome, which have unpleasant smells, most of the articles of an apothecary's shop would fall under that denomination:" and, in spite of the said smell, he boldly maintains, that the water taken up at the Company's Dolphin, is, after being cleansed, "*the purest river water in the kingdom!*"

The Reviewer in the "Quarterly Journal of Science" counsels the Company, "never to send in their water loaded with mechanical impurities;" but, by means of Reservoirs, to "supply such only as has completely clarified itself by deposition." This "*grand desideratum*," adds he, "we are happy to say the Company promise to effect. The result of several experiments upon their water leads us to believe, that it is not objectionable, when its mechanical impurities have been separated: we have found none of the abundance of animal and vegetable matter, which we had been led to expect." On the subject of "a certain ancient and fish-like smell," which this same Reviewer, in only his preceding number, stated the Grand Junction water to possess, he is, very prudently, silent. *What* was the month of the year—*what* the state of the weather and of the tide—at *what* spot the water analyzed was taken up—of all these points the Reviewer keeps us in total ignorance. But, before he pronounced so decided an opinion, on a question, deeply affecting the health, the comforts, and the habits, of the people of the metropolis, surely he might have prolonged his experiments, and suspended his judgment, until the season of the year had arrived, in which the Company themselves acknowledge—[what a frightful acknowledgment!]*]*—that the water, which they

sell at so dear a rate, “ IS NOT SUCH AS OUGHT TO BE DELIVERED TO THE INHABITANTS OF LONDON ! ! ”

That three grave Philosophers—men who set themselves up for Lights of the World—should labour thus industriously to strangle in its birth an Inquiry, which has for its object the bettering the supply of a necessary of life to the Metropolis; and to make the world believe, that by skimming off its mechanical impurities, and otherwise clarifying it, foul and putrid water may again be made pure, bright, fresh, and wholesome, is a proposition so extravagant, that I know not how treat it—

“ To laugh were want of goodness, want of grace ;

“ And to be grave exceeds all power of face.”

Their conduct is a direct imitation of the Professor of Chemistry in Swift’s Grand Academy of Lagado, “ whose employment, from his first coming into the academy, was an operation to reduce human excrement to its original food, by separating the several parts, removing the tincture which it receives from the gall, making the ordure exhale, and skimming off the saliva.” The projector of this “ Grand Scheme of Public Utility ” was rewarded, we are told, by a weekly allowance from the Society, of a vessel filled with ordure, about the bigness of a Bristol barrel. What reward Messrs. Blane, Reece, and Co. deserve, for their notable discovery, I shall not stop to inquire. Little did Swift imagine, that what he was picturing to his fancy, as the *ne plus ultra* of human folly, in 1727, would, in 1827, become matter of sober history !

That I am not singular in thinking, that the object and the tendency of the article in the Quarterly Journal of Science was to crush the present Inquiry, the following letters, from Dr. William Lambe to the editor of a daily paper, will show :

To the Editor of the Times.

“ SIR ;—The first article of the last number of the *Quarterly*

Review of Science professes to be a review of the little work called *The Dolphin*, which has directed the public attention to the important consideration of the salubrity of the water, supplied to the inhabitants of Westminster by the Grand Junction Water Company; and the obvious intention and spirit of the article is, to underrate the importance of the inquiry, and lull the apprehensions which have been excited on this subject. It would be unseasonable at present, when a regular investigation of the facts is about to take place, to discuss the general question. But, as the above-mentioned article contains a statement which I believe to be entirely erroneous, I think it right thus publicly to point out this error.

“ The statement to which I allude is in the last page of the article, and is as follows :—‘ The result of several experiments upon the Grand Junction Water, leads us to believe, that it is not objectionable, when its mechanical impurities have been separated; we have found none of that abundance of animal and vegetable matter, which the said chemists had led us to anticipate. Carbonic acid, carbonate of lime, a little sulphate of lime, and some common salt, are the leading ingredients which we have detected, and these in no alarming relative proportions to the whole mass: a pint of the water yielding upon an average a grain and a half of soluble matter, and always less than two grains.’

“ Here then, we have the broad assertion, published under the authority of a celebrated chemist (Mr. Brande), that the Thames water, taken up as it is near a public sewer, contains little or no animal or vegetable matter in solution, but merely minute portions of innocuous saline matter. If this be true, the whole inquiry, it is obvious, is frivolous, and the alarms which it has been attempted to excite are groundless. To this assertion, however, I beg to oppose the following facts and considerations.

“ It is well known, and can be attested by numbers, that this water in warm weather becomes quickly offensive.

“ All voyagers agree that the Thames water, when carried into a warm climate, undergoes a species of fermentation, and emits a large quantity of fetid inflammable gas. Neither of these circumstances could happen, except from some animal or vegetable matter held in solution by the water.

“ But, to come to more direct proofs of the same fact. It is

now more than two-and-twenty years since I pointed out (and was, I believe, the first to point out and publish) a very simple chemical process, by which this organized matter may be detected and separated from water. It consists merely in adding to the water a salt of lead, nitrate, or acetate (sugar) of lead, in solution, collecting the precipitate, and fusing it in contact with a fixed alkali—as common carbonate of potash. This may be done in a tobacco-pipe. By the process it will be found, that a portion of lead will be formed reduced to its metallic state. This, the merest tyro in chemistry knows could not happen, unless an inflammable substance—that is to say, some animal or vegetable matter—had entered into the composition of the precipitate.

“ To this observation of mine, Dr. Thomson, author of the *System of Chemistry*, some years afterwards, added the remark, that this precipitate, when formed from the Thames water, is soluble in nitric acid—an observation which I find to be correct. He acknowledged it as a test of the presence of animal or vegetable matter in solution; and added, that he feared it was not favourable to the salubrity of the water.

“ Let us not hear, then, of the product of a pint of this water by evaporation, to determine its true constituents and active principles. Let the writer of this article, whoever he may be, controvert these facts, or show that erroneous conclusions are drawn from them, if he can. If he cannot, the public, no doubt, will award its well-merited approbation to the spirited individual, who has directed their attention to this momentous question.

“ I am, Sir, your humble servant,

“ July 24.” “ WILLIAM LAMBE.”

“ *To the Editor of the Times.*

“ SIR: I believe that I had never applied the simple process described in my letter of the 24th ult., for the discovery of organized matter dissolved in water, to the particular case of the Thames water. It may afford satisfaction to a portion of your readers to know, that I have since done so, and that the result of the experiment has been as has been described in my former letter. I used no more than a pint of water; the precipitate did not, I conjecture, weigh a grain. I would recommend, therefore, to those who wish to satisfy themselves by repeating the process, to operate upon larger quantities.

“ Had the writer in the *Quarterly Journal of Science* used this very easy process, he could not have doubted of the existence of putrescent matter in solution, in the water delivered by the Grand Junction Company, by a very small expenditure of trouble, and the most trifling possession of chemical skill.

“ I am, Sir, your obedient servant,

“ August 7.”

“ WILLIAM LAMBE.”

The Scientific Reviewer complains, that I have not adduced one actual instance of the *poisonous* and mischievous qualities of the Grand Junction Company's water, thus taken up at the mouth of a Common Sewer, or even hinted at it. Certainly not. I never conceived it to be necessary to withhold my opinion of the quality of that water, until a coroner's inquest had actually sat upon the body of a human being, who had been poisoned by drinking it. I did however state, that one eminent physician had assured me, that the drinking of this water had had a deleterious effect upon the health of his daughter—that another had told me, that it constantly disagreed with him, and that he had been principally induced to change his residence, in order to get out of the reach of the mischief:—and, that a third had sent me the following interesting extract, from Dr. J. Cheyne's “ Medical Report on Dysentery :”

“ Several years ago, when the dysentery raged violently in the old barracks at Cork, the care of the sick was, in the absence of the regimental surgeon, entrusted to the late Mr. Bell, surgeon of that city. At the period in question, the troops were supplied with water from the river Lee, which, in passing through the city, is rendered unfit for drinking, from the influx of the contents of sewers from the houses, and likewise is brackish, from the tide which ascends into their channels. Mr. Bell, suspecting that the water might have caused the dysentery, upon assuming the care of the sick, had a number of water-carts engaged to bring water for the troops, from a spring called the Lady's Well ; at the same time, they were no longer permitted to drink the water from the river. From this

simple, but judicious arrangement, the dysentery very shortly disappeared among the troops."

Although this enormous metropolis may, at the present moment, be, generally speaking, in a healthy condition, does it therefore follow, that it will always remain so? The Grand Junction Company's water has been declared, by professional men, to be "loaded with decayed vegetable matter, and other substances, equally deleterious to health." And, how much an unusually sultry summer, or one of those great droughts with which countries are at times visited, may add to its unwholesomeness, are points which it would be presumptuous in me to attempt to solve.

For the above, as well as for other reasons, I did not consider it necessary to delay my exposure, until I had proof positive of a fellow-creature having been actually poisoned by the use of this water: and, I am borne out in having so done, by no less a man than Dr. Mead: "As we before took notice concerning Airs," says the doctor, "so it may be observed of Waters, that there are some alterations of them, which, though not properly *poisonous*, yet are of so great consequence in their effects, that they may well deserve to be regarded."

Never, certainly, was cause so damnified by its advocates, as that of the Grand Junction Company has been! The following admission of its Scientific defender establishes, I submit, the case of the Petitioners, as far as the quality of the water is concerned:—

"It must be admitted, that the water of the Grand Junction Company is frequently sent into the houses in a very objectionable state. The diffused mud gradually subsiding, fouls the cisterns; in which, if not repeatedly cleared, it soon constitutes a most annoying deposit. It is necessarily stirred up and diffused, whenever the water

comes in, and often putrifies, rendering the whole contents of the cistern fetid and unwholesome."

Now, did this advocate ever hear of the water of the *New River Company*, "often putrifying and rendering the whole contents of the cistern fetid and unwholesome?" Nevertheless, that Company—the name of whose founder is deservedly held in perpetual veneration—do not find it necessary to resort to filtration; and, though they supply nearly seventy thousand families, the whole of their Reservoirs stand upon five acres of ground.

The system of Filtering Reservoirs, as a means of converting bad water into good, for the supply of the inhabitants of such a metropolis, appears to me one of the most useless, as well as disgusting projects, that ever entered into the mind of man. And it is rendered still more so, by the attempts of scientific men to set up Chemistry against Common Sense—

————— "the best boon of Heaven,
"And though no *Science*, fairly worth the seven."

But, supposing, for a moment, the Grand Junction Company's water *not* to be deleterious to Health—is there nothing to be said, on the score of Comfort and of Cleanliness? Is there nothing offensive to the senses, in the use of this doctored water? Has it not an inevitable tendency to change the habits of Englishmen—to lower our notions of propriety—to make us a filthy race?

Cleanliness, we are told, is next to godliness. "The different nations of the world are as much distinguished," observes Mr. Addison, "by their cleanliness, as by their arts and sciences: the more any country is civilized, the more they consult this virtue." Dr. Forsyth says, that "cleanliness is a subject, the value of which must be obvious to every mind capable of the least reflection, whether estimated in a medical or a moral point of view. Cleanliness in person, and in all concerned with it, is a principal duty of man. It is better to wash twenty times a day, than to allow a dirty spot to remain on the skin."

“ I recommend,” says Dr. Adair, “ as a habit conducive to general health, the washing of the whole head every morning, on first rising, with cold water. Children should be encouraged to dip the face into a basin of cold water, *keeping the mouth and eyes open* until they require a fresh breath, and repeat this thrice every morning. This practice strengthens the eyes and gums, preserves the teeth, and acts, in some measure, as a cold bath, by sympathy on the whole body.”

But, bold indeed, must be the man, and much more bold the child, who can muster up resolution enough to plunge his head, and to dip his face, “ *keeping his mouth and eyes open,*” in a fluid, which, though it may have had its mechanical impurities skimmed away, still holds, we are assured, all its noxious particles in chemical solution.

The contending parties are now before the Commissioners—on one side, the PURISTS, who maintain, that a supply of pure water, as it comes unsophisticated out of the hand of nature, is essential to the health and comfort of the inhabitants of the metropolis—on the other side, the SEWERISTS, who would have those inhabitants believe, that foul water, taken up at the contiguity of a great common sewer, will, after undergoing a certain clarifying process, become as “ good as the purest river water in the kingdom.”

Such is the Case of the Petitioners, as far as the Grand Junction Company is separately concerned. In the outset of this Memoir, I promised to state the way in which my attention was directed to the subject; and this appears to me the proper place for so doing. I am charged by the Company, with having “ excited the public mind.” I shall, therefore, I trust, be excused for showing how my own mind was originally excited.

And here I cannot help making one observation. In

the case of an ordinary tradesman—a butcher, for instance—if an individual were to step forward to show his fellow citizen, that the article with which they were supplied was of bad quality, and sold, at a high price, in a state of putridity, the butcher, upon conviction, would withdraw himself, as well as he could, from public indignation, and the parties served with the unsound meat, would go elsewhere, in quest of a wholesome article.

Not so in the case of Monopoly! There the public are compelled to put up with the bad article; and the individual who ventures to point out the grievance is loaded with abuse, for making the exposure; and threatened with the terrors of the law, for his pains.

That I, therefore, should escape, I was not so weak as to expect. For I well remembered, that, in 1819, when a powerful stand was made, by Mr. Weale, of the Office of Woods and Forests, against the advance of price, at that time meditated, a series of scurrilous pamphlets—all from the goose-quill of the “Calm Addresser,”—were circulated by the Grand Junction Company; stigmatizing, in the coarsest manner, the motives of that gentleman, and of all those who had had the temerity to enter the lists against Monopoly.

Accordingly, I have come in for my share of abuse. My motives, also, have been impugned. I have been called a “wicked libeller;” a “base exciter of the passions of the public, for sordid and selfish objects;” and, moreover, I have been threatened with a prosecution. Thus far, the abuse of the Company has been matter for contempt; and it has, accordingly, been so treated by the public press.

“The public,” says the Morning Herald, “but especially the inhabitants of Westminster, are greatly indebted to the gentleman who has, with so much zeal and ability, drawn their attention to the source from which the Grand Junction Water Company derive their supply.

If the fact were not established beyond a doubt, and were not, indeed, open to the evidence of every one's senses, one could hardly imagine, that any thing so stupid and iniquitous could take place, as their placing their Dolphin, as it is called, at the mouth of a common sewer; or that such a thing should have existed nine days, instead of years, without exciting observation. The Company have put forth a long tirade, in the shape of answer to their accuser; but which, instead of being such, is, from first to last, a mere tissue of personal abuse against the gentleman who has brought this affair before the public. These people must be singularly dead to common sense and right feeling, if they imagine that such a line of proceeding can have any other effect with the public, than that of impressing them with the truth of Mr. Wright's charges. Neither individuals, nor societies in general, have recourse to personal abuse of their opponents, until every other mode of defence has failed them."

But, the most extraordinary of all the charges adduced against me, by the Grand Junction Company, remains behind. They allege, that, in bringing forward this question, I have been guilty of "*the blackest ingratitude!*" They say, that, being upon terms of intimacy with the late Richard Bateman Robson, Esq., a Director of the Company, and being in the habit of seeing him frequently, I nevertheless concealed from him the fact, that I was engaged in writing a pamphlet, the tendency of which was to lessen the value of the Shares which he held in the concern.

To this charge the Company have, in a public advertisement, signed by their secretary, twice called on me to reply. As the folly and the falsehood of it were equally known to all my friends, I did not, at the time, consider it deserving of an answer: but, as that answer has a direct tendency to strengthen, I might say to establish, the case of the Petitioners, I now give it.

So far, then, from concealing from Mr. Robson the fact that I was writing a pamphlet, the tendency of which was to lessen the value of his Shares in the concern, *it was this very Mr. Robson* who first called my attention to the conduct of the Grand Junction Company. I well knew that the water sent by them into the house in which I resided was of infamous quality; but, where their "Dolphin" was erected, or what was meant by the word, as applied by Water Companies, I had to learn from that gentleman.

Mr. Robson was a kind-hearted and a good man, and greatly esteemed by all who knew him. He was, for many years, a member of parliament, but he had retired from public life. About two years ago, he called on me, for the purpose, he said, of unburthening his mind to me, on a subject which weighed much upon it, and with the hope that he should succeed in inducing me to make myself master of it.

He, at that time, detailed to me the several notorious breaches of faith on the part of the Company; but more especially the grand breach of faith, in promising good water and giving bad. "We promised," exclaimed he, "the *best*, and we give the *worst*!" He had, he said, induced many of his friends, and especially the numerous tenants of his brother, Mr. Holland, the architect, in and about Sloane Street, to leave the Company that supplied them, and to take this water; and, for so doing, he told me he "was afraid God would never forgive him."

He afterwards brought me copies of the several Engagements of the Company, the Acts of Parliament relating to it, the Report of the Committee of the House of Commons in 1821, and all Sir Gilbert Blane's famous pamphlets for *settling* the Public Opinion on the Conduct of the Water Companies. At his entreaty, I went repeatedly to see the Company's Dolphin; and had samples of their water, as it came into Regent Street, taken from

their pipes, and sealed up, *in his presence*. I was rallied by my friends, for devoting so much of my time to the worthy man's complaints and regrets; but, I found every thing he told me to be so correct, and all he did bore such evident marks of sincerity—I might say of death-bed earnestness—that I became, by degrees, as earnest as Mr. Robson himself; and, at last, he obtained from me a promise, that I would call the attention of the public to the subject.

Not satisfied with the visits I had already paid to the Dolphin at Chelsea, he called on me, about the end of January or beginning of February last, and took me once more to the spot; as he was fearful, he said, that I was not sufficiently impressed with the impossibility of good water being derived from so nasty a source. At parting, he repeated his sincere regret at having been a party in such a concern, and made me renew the promise I had given to him. Two days after this visit he took to his bed; and in the month following he died.

In bringing this question forward, I am, therefore, fulfilling a promise made to a dying man: and, if ever relatives owed a debt of gratitude, that debt is due from the relatives of Mr. Robson to myself. I have, nevertheless, been told, by persons who once called him their dear friend, that “none but a fool or a madman would have urged me to do that, which had a tendency to depreciate the Shares of a concern, in which he had embarked two thousand pounds.” To such persons I reply, that it is not every man who fancies, with the Roman emperor, who levied a tax on an article very germane to the present matter, that “the smell of gain is good, let it be drawn from whatever source it may.”

This statement has been dragged from me by the Grand Junction Company; and they cannot gainsay it. The documents pressed on me by Mr. Robson are all at the service of the Commissioners. The witnesses who were

present at our interviews in Regent Street, are ready to substantiate every tittle of it. The invention of the charge of "*black ingratitude*," and the giving currency to it through the public papers, would, in common life, be considered highly dishonourable. And why it should not be considered alike dishonourable when proceeding from a Company, I cannot explain, except upon the axiom, laid down by that pearl of authors, Sir Gilbert Blane, in p. 55, of his memorable "Calm Address:"—

"*Those*," says the doctor, "*who have any knowledge of the secret workings of the human mind, or observation of the ways of the world, are well aware, that, A MAN WILL DO, IN HIS CORPORATE CAPACITY, WHAT HE WOULD SHRINK FROM, WITH SHAME AND REMORSE, IN HIS INDIVIDUAL CAPACITY.*"

By this axiom, the Company appear throughout to have been guided, as by their polar star. And, when I say "the Company," I wish to guard myself against the preposterous artifice of those, who would represent an attack upon a Company, as an attack upon its individual members—as if no public question could be treated of, without giving personal offence.

What, however, in the teeth of all this low abuse of me, is the present state of this great question? It is this:

1. The Company are to remove their Dolphin.
2. They have not dared to levy the New Rate.
3. They rarely pump the filthy water direct into the houses of the great squares and streets, at the west end of the town; but first send it to Paddington, for the purpose of having the more palpable impurities taken away.
4. The erection of the three new Reservoirs of stagnant filth at Chelsea is suspended.

And, 5, a Commission has been appointed, not merely to inquire into the conduct of the Grand Junction Company, but into the State of the Supply of Water to the whole Metropolis.

IV.

OF THE RIVER THAMES, BETWEEN CHELSEA HOSPITAL AND LONDON BRIDGE, CONSIDERED AS A SOURCE FOR THE SUPPLY OF WATER TO THE INHABITANTS OF THE METROPOLIS.

ALLEGATION.—“ *That the water taken up from the River
 “ Thames, between Chelsea Hospital and London Bridge,
 “ for the use of the Inhabitants of the Metropolis, being
 “ charged with the Contents of more than a hundred and
 “ thirty public Common Sewers, the drainings from Dung-
 “ hills and Lay-stalls, the refuse of Hospitals, Slaughter-
 “ houses, Colour, Lead, Gas, and Soap-works, Drug-
 “ mills, and Manufactories ; and with all sorts of de-
 “ composed animal and vegetable substances, rendering the
 “ said water offensive, and destructive to health, ought
 “ no longer to be taken up, by any of the Companies, from
 “ so foul a Source.”*

The broad proposition here laid down by the Petitioners goes, as the Commissioners will perceive, to affect two out of the five Companies which supply London and Westminster with water ; as well as to affect all the Companies supplying the Borough of Southwark, and Lambeth. It should, however, always be borne in mind, that, while the Grand Junction Company have, with their eyes open, gone down to the nuisance, that nuisance has, in the progress of time, reached up to the Chelsea Company ; Chelsea being, at the period of its incorporation, in 1723, a mere village, at the distance of two miles from London.

In its actual condition, this enormous Metropolis is said to present a spectacle, to which the history of ancient and modern civilization affords no parallel. Within the limits of that civilization, there is reason to believe, that

so large a mass of human beings never before congregated on so small a space of ground. New buildings rise up before us, with almost the rapidity of an oriental vision, of every form of architectural design, spreading north, south, east, and west. In the neighbourhood of Chelsea, scarcely a blade of grass has been left growing in the extensive range between the rear of Grosvenor Place and Sloane Street; and a mass of buildings are springing up west of Grosvenor Place, consisting of squares and streets of the first order, and comprising houses fit to be the residences of the most wealthy.

In such a state of things, and at a time when the improvement of the Metropolis is become so much the order of the day, it cannot, I think, but be useful, to ascertain whether, from a multiplicity of causes, certain spots, or positions, in the river Thames, running parallel with the habitations of more than a million of human beings, may not have become so changed, and the water drawn up from it so deteriorated, as to render it no longer a fit source, for the supply of a necessary of life to any considerable portion of the inhabitants.

That the Water, in that direction, has become so deteriorated, is the opinion of the Petitioners; and, in support of that opinion, I beg leave to lay before the Commissioners a few facts and observations.

1. With regard to the water of the river Thames, taken up at London, two or three popular errors appear to me to prevail.

The ground upon which those persons proceed, who maintain, that the Thames water, so taken up, is the best of all possible waters, arises out of a notion, picked up from some old book of history or medicine, that it possesses a certain power of self-purification, not possessed by any other river. They tell us, that, in the course of a long voyage, it will, after a month or two tossing about

on the ocean, "work and ferment like liquor, and become remarkably fine." And hence it is concluded, most logically, that the water taken up by the Grand Junction Company, near a common sewer, will, by making a short voyage from Chelsea to Paddington, and remaining a day or two stagnant in reservoirs, in like manner ferment, and become remarkably fine. That the water of any other river, if equally loaded with filth, would purify itself in the same manner, if subjected to the same operation, there can be no doubt. In its excessive impurity must we look for the phenomenon.

Another popular error, proceeding apparently upon the old maxim, that "what will not kill will fatten," is very prevalent throughout the country; namely, that, to the rich and unctious quality of the Thames water, in the aforesaid direction, and not to the virtues of hops and malt, the country is indebted for its far-famed London porter. The fact, however, is, that the water of the Thames is not used in the manufacture of this national beverage; seeing that the great houses of Barclay, Hanbury, Calvert, &c. have, at vast expense, sunk wells of an immense depth, and have thereby obtained an abundant supply of pure and soft water.

The third error which appears to me to prevail, is, that the impurities of the Thames are all carried away, and swept into the ocean, with every ebb of the tide. The fallacy of this notion was shown at the public meeting, at Willis's Rooms, by Mr. Mills. That gentleman observed, that, as an engineer, he would maintain, that it was not in the power of any Company, let its capital, its intelligence, and its disposition, be what they might, to find a supply of pure water, in the direction pointed out in the allegation. "The contents of the Sewers, and the mass of other filth with which the river was loaded, were," he said, "carried about thirty miles by every ebb tide. The same water came back by the flood; and

thus, let the supply of London be taken how it might, if it was not derived out of the reach of this flux and reflux of filth, it would, of necessity, be impure: if the filth emptied into the Thames at the ebb were not brought back by the flood, it was evident that we should have salt water at London."

2. The following descriptions of the Thames water, as taken up at London, will, I have no doubt, be found the true ones:

"No water carried to sea," says Dr. Trotter, "becomes sooner putrid. When a cask is opened after being kept a month or two, a quantity of inflammable air escapes, and the water is so black and offensive as scarcely to be borne. Upon racking it off into large earthen vessels, and exposing it to the air, it gradually deposits a quantity of black, slimy mud, and becomes clear."

Mr. Newton says, that "in a still of five and twenty or thirty gallons, the first three gallons distilled should be thrown away; because the water taken up from the Thames at London is charged with so much septic matter, that the fluid which first runs off in distilling will not keep many days: three or four gallons must likewise be left at the bottom of the still, on account of the residuum of filth which they contain."

Mr. Ralph Dodd, the engineer, says, that "the water of the river Thames is excellent until it comes to London, where it receives, not only the filth which is discharged from the common sewers, but also matters of a nature very pernicious to human life."

3. If such was the foul condition of the river Thames, between Chelsea and London Bridge, when the above descriptions were written, it must inevitably be so, at the present moment, in a greatly increased degree. Formerly, it was considered necessary, for the sake of the

health of the Metropolis, to preserve the river in the greatest possible state of purity. Orders were, from time to time, issued by the Corporation of London, forbidding all persons from casting any soil or filth whatever into it, to the great annoyance and hurt of the said river: and, so far back as the year 1535, an act was passed, in the reign of Henry the Eighth, in which it was enacted, "That if any person or persons do, or procure any thing to be done, in the annoying of the stream of the river Thames, by casting of dung or rubbish, or other things, in the said river, he shall forfeit, for so offending, a hundred shillings." But this was not considered enough: "If any person or persons, in great rains, sweep their soilage or filth off their houses, into the channels, and the same afterwards is conveyed into the Thames, every person so offending shall forfeit, for every such offence, one shilling and eight-pence."

4. Within the last few years, a total and entire change, in this respect, has taken place, in the municipal regulations of the Metropolis. That which, three centuries ago, was considered an offence, to be visited with penalties, the inhabitants are now exhorted to perform as a duty. "The drains and sewers," says Sir Gilbert Blane, who is high authority in these matters, "are now kept in a state of cleanness never before known. The Commissioners of Sewers not only permit the inhabitants, but *exhort* them, to let all the soil and filth drop into the drains, instead of accumulating it in cess-pools, to be removed by the nightmen as formerly, to the infinite annoyance of the senses."

The exhortation has not been unattended to. The race of men last-mentioned by Sir Gilbert are nearly extinct—their "occupation's gone." And, this being the case, is it in the nature of things, if the enormous mass of pollution which was formerly taken away in waggons, and distributed over the land as manure, is now permitted

to find its way into the Thames, through the common sewers, that the water taken up near the mouth of those common sewers can be otherwise than what professional men have declared it to be? namely, “a filthy fluid, loaded with decayed vegetable matter, and other substances equally deleterious to health, and unfit for domestic purposes.”

5. Sir Gilbert Blane, in his dilatation on Common Sewers, observes, that “those stupendous works, the *Cloacæ*”—[his friend, Dr. Reece, calls them the *Cloacinæ*]—“of ancient Rome, were accounted one of the wonders of the world;” and that “the excavations were so enormous, that a waggon, loaded with hay, could pass through them, and vessels sailed in them: the *Cloaca Maxima* being formed by Tarquinius Superbus.” That the metropolis of Old England was not outdone in the number, and in the size, of its Common Sewers, by the metropolis of ancient Rome, I trust I shall be able to shew. The number of Common Sewers, on the north side of the river Thames, between Chelsea and the Tower of London, will, I believe, be found to be nearly as follows. As the Commissioners, I trust, will put the matter beyond doubt, by directing an accurate Survey of the river to be taken, I can be corrected, if I have inadvertently fallen into error:

From Chelsea to Vauxhall Bridge	17
— Vauxhall Bridge to Westminster Bridge . . .	11
— Westminster Bridge to Waterloo Bridge ..	30
— Waterloo Bridge to Blackfriars Bridge	10
— Blackfriars Bridge to Southwark Bridge ..	6
— Southwark Bridge to London Bridge	7

To which may be added,	81
From London Bridge to the Tower	7
— the Tower to the river Lea	10
Southwark side of the river	41

Total number 139

to say nothing of the refuse of Colour, Lead, Gas, and Soap-works, Drug-mills, and Manufactories of various descriptions.

Thus are there nearly one hundred and forty Common Sewers, daily and nightly disgorging their horrid contents into the Thames, in that very direction in which certain Water Companies draw up the supply for half the inhabitants of the metropolis. Sir Gilbert Blane boasts of the *Cloaca Maxima* of ancient Rome, through which a waggon, loaded with hay, might pass. Why! disguise the fact as we may, the whole river Thames, from Chelsea to the Tower, is neither more nor less than one enormous common sewer—the *Cloaca Maxima* of London—containing the impurities of a million of human beings, and forming a mass of filth, pollution, and putridity, in a state of constant agitation to and fro, such as never before was, or could be, collected together in so small a space. This is the undisguised state of the case: and, in a matter which concerns the Public Health, it would be worse than affectation not to speak out.

6. Accounts are constantly appearing in the newspapers, confirming the allegations of the Petition, and establishing beyond doubt the great impurity of the Thames water taken up at London. The Commissioners of Sewers have endeavoured to prevent the refuse of the Gas-works from escaping into the river; but, from the immense quantity now used, it inevitably finds its way thither. I am assured, that the refuse water discharged into the Fleet Ditch sewer at Battle-Bridge, which runs into the Thames, is equal to that of a gutter on a rainy day; forming a perpetual stream of poisoned fluid, and depositing a green sediment upon the stones over which it passes. Not long ago it was proved, upon a trial, that a horse was actually poisoned by drinking water, impregnated with the refuse of the Gas-works, in the Horse-ferry Road.

Clear water, we are told, is as necessary to fishes, as

fresh air to man. That the fish, therefore, should have deserted the spot which I have just described is only natural. Nearly all descriptions have disappeared; and the few which remain are said to have generally a sickly, unwholesome, appearance. The lesson hereby afforded us by the finny tribe, is, I submit, a striking one.

I copy the following paragraph from the "Times" newspaper, of the 20th of August last: "The Thames, on Saturday morning, was covered with a film of an oily nature, which has proved destructive to the river fish, to a very great degree. An immense quantity of eels and flounders are brought to Billingsgate every morning. On Saturday morning, shoals were found dead; supposed to have been killed by some deleterious drug in the water. The Dutch eels, which are brought alive in vessels with holes in the bottoms, died immediately on entering that part of the river where the oily fluid appeared."

That the water in the London, West India, and other Docks, is in an excessively foul, and even poisonous condition, principally from the number of vessels with copper bottoms, has been stated to me by various persons; and I find the following article in the newspapers of the 28th of August—"An inquest was held at Poplar, before Mr. Unwin, Coroner, on the body of William Nurse, aged fourteen years, son of Mr. Nurse, of Charles Street, Westminster; who fell into the West-India Export Dock. By the evidence of four witnesses, he was in the water only three minutes, but was quite dead when taken out; owing to the numerous vessels with copper bottoms, causing the water to be full of copperas.—*Coroner.* 'Is not the Dock water very bad?'—'It is.' The father said, that his son was poisoned by the foul water, and strongly advised that the flood-gates should be opened at certain times of the tide."

It has been stated to me, by several Watermen, that

the composition used by them for the preservation of the bottoms of their boats, which formerly preserved them for months, now undergoes decomposition in the course of a few days. Will the chemists say, that this decomposition would take place, if the water was pure?

7. In a letter which I received at this place, on the 29th of October, from an intelligent person, who can give the Commissioners much useful information, as to the state of the river, there is this passage: "On Monday morning last, about half an hour past high water, I saw the foul contents of the great sewer at Blackfriars Bridge running out, in quantity sufficient to discolour the whole of the Thames water under the first arch of the bridge, and as far as I could see towards the Southwark Bridge. I observed the same foul appearance of the river at Broken Wharf, London Bridge, and Billingsgate."

The Broken Wharf here spoken of, is situated in Thames Street, at nearly an equal distance between the Fleet Ditch and the Walbrook great Common Sewers. A more filthy spot it is scarcely possible to imagine. Yet, at this spot the New River Company have erected a steam-engine; by which, during the excessive heat of the summer, when their own good supply falls short, they add thereto the foul water taken up at the foot of this wharf. If that water be sent up into their reservoirs, it must injure the usual supply: if it be sent into the houses of their customers, it must, I submit, have a tendency to affect the health of the city. I do not mean to insinuate, that even *such* water as this is not better than none; but I do consider it to be a strong proof, that the supply of good water is not commensurate with the greatly increased size of the metropolis; and therefore it is, that I call the particular attention of the Commissioners to the fact.

8. That the poisonous refuse of the Gas Works should not find its way into the Thames is impossible. The

following article appeared in the daily papers, of the 28th of November :

“ Last night, between seven and eight o'clock, the inhabitants of College Street, Wood Street, and Cowley Street, Westminster, were greatly alarmed by several violent explosions in the sewers leading from the gas works in Great Peter Street. One vast body of flame was seen coming from the grating of the sewer opposite the door of the Bull's Head public-house in Wood Street; and also a discharge of a barrow-full of mud, accompanied with ignited air, struck a man that was coming out of the public-house, with such force as to stun him, and drove him back into the passage. The violence of the shocks extinguished several of the gas lights. One of the gas lighters, who lives in Little College Street, was aroused from his chair, and he, with other men connected with the gas works in Great Peter Street, commenced an investigation, to ascertain whether the explosions resulted from any defects in their works. They reported, that they could find nothing wrong in them, and that the explosions were from gas collected in the great sewer, which is in a line with Great Peter Street and Wood Street, passing the wharf of Messrs. Hatchard and Dike *into the Thames.*”

The person to whom I have already alluded has sent me the following striking particulars :—

“ November 29.—I saw this morning, in company with Mr. Hatchard, the whole front of the wharf covered with the blue film, that was coming out of the said sewer, No. 49; and I saw great quantities of it carried by the rising tide, past Mill-Bank into Chelsea Reach. On my return, I saw much foul water coming from gutters on each side of the Penitentiary House gate into the moat, and from thence into the Thames.

“ Dec. 13. I took a walk to the Ranelagh common sewer, and found it discharging a stream of black, foul water, deep enough to float a wherry, in a channel about twenty-five feet wide, and issuing to the Grand Junction Company's Dolphin.”

The Commissioners will have the goodness to bear in mind, that this is the Common Sewer, which the Directors tell their customers “ is not a sewer at all, or only in a very minute degree !” Now, I do not assert, that, like

the Cloaca Maxima of ancient Rome, a waggon loaded with hay could pass through it, but I do believe, that Sir Gilbert Blane and Dr. Reece would find it wide enough to admit their carriages.

To return to my intelligent, and I may add, venturous correspondent—

“ Dec. 23. I and my son stood in the mouth of the sewer, No. 49, about five minutes ; during which time we saw the gas bursting in the sewer three times, and each time it rose from the mud at the bottom, and floated on the surface, expanding itself the breadth of the sewer, and shewing green, blue, and yellow tints. It proceeded slowly into the Thames ; a portion of it adhering to the mud-beds on each side. The stench was so great, that we were afraid to stay more than five minutes.

“ Dec. 27. This day, at three o'clock, I saw the great common sewer at Dowgate Wharf pouring out filth as black as ink, and with such force as to turn a skiff about ten yards out of her course, up towards Southwark Bridge. At five o'clock I saw the large black stream from Fleet Ditch extend beyond the second arch, and greatly impede a wherry coming through the third arch of the bridge.

“ Dec. 30. I and my son saw the same foul black streams at the above sewers, and with this addition—floating gas was coming from Dorset Wharf, with the filth of privies ; and a piece of horse's lights, about three pounds weight, came out of the Fleet Ditch sewer, quite putrid. This I consider a proof, that the filth of the Slaughter-houses find their way, through the common sewers, into the Thames.”

I shall close this part of the subject with the following paragraph, which has appeared in all the daily papers :

Dec. 27. “ Mansion House.—Yesterday, the Lord Mayor issued directions to the proper officers to inquire into the extent of a nuisance, which has become so serious of late, as to excite apprehensions for the health of numbers of the inhabitants of London. It appears that, for some time past, the authorities at the Tower, in consequence of the overflow of the large Ditch round that building, have been obliged to let the contents empty themselves into the river. The governors of the Trinity House expostulated against this practice, as calculated

to raise impediments in the river, to the prejudice of the navigation ; but the evacuations still took place, and they proved to be excessively offensive. In fact, the common sewers emptied themselves into the Ditch, from various parts of the metropolis, so copiously, that it often became necessary to turn the contents into the Thames. The water of the immediate neighbourhood became, of course, very impure, on account of the vast accumulation of filth from that very populous part of the town. Some years ago, it was the practice of nightmen to drive their cart-loads into the country to be used as manure. This plan had been, however, in a great measure discontinued, and the nightmen emptied their carts into the common sewers, *so that the Thames was sure to receive all manner of offensive matter.* This was quite enough to raise fears for the health of those who drank of water subject to such pollution—an objection which was certainly much greater than the other, that of the obstruction to the navigation, although the latter was in itself sufficient to demand investigation. The authorities at the Tower insist upon their right to empty the Ditch into the Thames, as the common sewers are emptied into their Ditch instead of the Thames direct ; and they intend to persevere in this course, in opposition to the Trinity House and the Corporation.”

9. In the city of Paris there are, I believe, more than a hundred Public Fountains ; and it has been proposed to add similar fountains to the numerous embellishments, and beneficial improvements, now going on in our own metropolis. A communication, upon this subject, has been forwarded to me, from which I extract the following passage :

“ It is not a little remarkable, that there should be one species of ornamental structure in which foreign cities abound, combining both utility and beauty, of which the British islands scarcely afford a single public specimen. I mean Fountains. Eustace observes, that ‘ it is surprising that London should be destitute of such decorations, when we consider the torrents that now roll under its pavements.’ It may be said, that such structures are ill-suited to our northern latitude ; but the Fountains of Paris are not the less useful or ornamental, though its climate differs but little from our own : and who has not, in tra-

versing the Boulevards, admired the Fountain of St. Martin, or has hesitated to prefer it to any of our leaden pumps? May I suggest this addition to the proposed improvements of the metropolis; especially of its western quarter? How beautiful would be the effect of such an ornament on the vacant site of Carlton House, terminating the grand perspective of Regent Street; its sparkling waters backed by the groves of St. James's! Or, where could a similar structure appear to greater advantage, than in the grand area before St. Paul's; should that Cathedral be thrown open, as has been suggested?"

It becomes, however, a matter for serious consideration, *where* the immense supplies of "sparkling water," for any number of fountains, can be obtained; seeing that the supply of good water, required for the domestic consumption of the metropolis, is, at times, already so deficient: for as to the idea of tossing into the air, columns of filth, taken up, during the dog-days, between Broken Wharf and the Chelsea Dolphin, that I should have considered to be too preposterous, but for the statement which I am about to make.

10. From going, for a supply of water, to the mouth of a common Sewer, the next step is to resort to the Sewer itself. As it had been declared, by chemists who had "experimented" upon it, that the *former* was excellent for the human stomach, it was very natural for those whom it concerned, to conclude, that the *latter* was sufficiently good for watering the streets and roads of the metropolis in sultry weather. That certain economical purveyors for the public have accordingly profited by the hint, will be seen by the following paragraphs, which appeared in "The Times," of the 2d and 3d of August last:

Aug. 2d. "In Whitechapel, the putrid mixture of gore and excrementitious matters, proceeding from the animals slaughtered there, is dispersed over the surface of the streets. The putrifying miasmata exhaled from this, under the influence of a scorching sun, and wafted down the close and narrow lanes,

by the sultry breezes of summer, is, and must be, a most productive cause of typhus fever, and other putrid diseases. Were human imagination taxed to compound a malaria of concentrated power, none more deadly could be imagined."

Aug. 3d. "When we yesterday stated, that, in Whitechapel, the putrid mixture of gore and excrementitious matters, proceeding from the animals slaughtered there, was dispersed over the surface of the streets, we were not aware that the practice was delicacy, compared with one which has obtained in another part of the town. Incredible as the abomination may appear, it is, nevertheless, as true as it is revolting, that, in the direction of the Fever and Small-Pox Hospitals, there may be seen three pumps—that is to say, one at Battle-bridge, one opposite to the Elephant and Castle leading to Camden Town, and one nearly opposite to the Southampton Arms at Camden Town—which said pumps have, during the late sultry weather, been at work, in pumping up, for the purpose of watering the roads, the putrid contents of the great Common Sewer, which receives the filth of all the hospitals, gas-works, and what not, in that quarter. The residences of several hundred respectable families have, at times, been rendered scarcely habitable, in consequence of this nuisance: and some have actually abandoned them in consequence. 'By this abominable practice,' say they, in a petition to the noble Marquis at the head of the Home Department, 'our health has been injured, our lives endangered, and our property rendered less valuable.' We are confident that a scandal of such magnitude will, as soon as it shall be known to the noble Secretary, be instantly put a stop to. But this will not be enough. The men who have dared to sport in this way with the lives of their fellow creatures, ought to be called to a strict account. Had a knot of devils clubbed their heads together, to devise the surest mode of creating a plague in the metropolis, they could not have hit upon a better."

The above statement is enough to make a man shudder. I can vouch for the truth of every part of it. I have seen the pumps, and conversed with the poor creatures employed in working them. "We are not," said they, "the men we were: our health is gone: we can drink like fishes; but we can eat little or nothing."

I do not adduce these facts in the way of accusation;

but I do infer from them, and I have a right to infer from them, that if the supply of this necessary of life was as cheap and as abundant as it ought to be, such an abomination could never have entered into the mind of man.

11. I have now presented the Commissioners with a faint picture of the present state of the river Thames between Chelsea and the Tower of London. It will be for them to decide, whether the supply of water to the Metropolis ought any longer to be taken up in that direction. How far the health of its inhabitants has, hitherto, been injured thereby, it is not for me to say. It is sufficient, for the case of the petitioners, to know, that men of high professional reputation state it to be their opinion, that the most awful effects are likely to be produced by the continued use of it.

It should also be borne in mind, that the evil is constantly *on the increase*. In cases of unhealthy seasons, the sewers, and consequently the Thames, must partake of that unhealthiness; and thus, at the moment when the best and purest water is imperiously called for, at that very moment will it be in the worst and most impure condition.

The Grand Junction Company, as I have already stated, were about to erect three reservoirs in the marshes of Chelsea. The works, however, have happily been suspended, until the result of the present Inquiry shall be known. How far it may be safe to establish a body of standing filth, on a spot which has been called the Walcharen of Middlesex, appears to be matter for serious consideration. "Great exhalations," says Dr. Griffiths, "are unfriendly to the human race, when they proceed from pure water only, occasioning intermittent fevers, &c.; but, when exhaled moisture is impregnated with noxious particles, communicated to it by putrid vegetable and animal matter, fevers of a more pernicious tendency may be looked for."

The public mind has recently been directed to this important part of the question, by Dr. M'Culloch's Treatise on Malaria. From the many articles which have appeared in the public papers, I select the following:

To the Editor of the Courier.

“SIR: I have noticed in your Paper different statements respecting the bad quality of the water supplied by the Grand Junction Company, and the number and quality of the persons concerned in these remonstrances leave us little reason to doubt, that they are well grounded; but, whatever other evils may arise from the use of bad water, that is, of water containing animal and vegetable matters, whether offending the smell or not, there is one which I do not perceive noticed by those who have discussed this subject, and which yet seems to me to be one of those which demand a very principal attention. In all the hotter climates it has been often remarked, that the use of such waters produces fevers, as well as dysenteries; but the latter, perhaps, more commonly than the former. These fevers are sometimes called typhus; but they are the proper remittent, or marsh fever, the same disease which is so notorious in Italy, and which is especially produced by the Pontine Marshes. I need not inform you how severe a disease this is; while the fact is, that such water as your paper has condemned, generates these fevers, on exactly the same principle as a marsh does, namely, by producing malaria. In reality, malaria, whether arising from a marsh, or from whatever other situation of an analogous nature, is produced from the solution of vegetable matters in water, or from the decomposition of fragments of this nature, acted on by water; so that it is indifferent what the circumstances are, provided these fundamental elements are present; and when it has been amply proved in Germany, Holland, France, and Italy, that the steeping of flax and hemp produces some of the most epidemic fevers of those countries, amounting, in fact, to absolute pestilences, it is proof enough of the injurious qualities of water of this nature, as it must needs be indifferent what the decomposing vegetable is. Further, to prove that putrid water—a water containing vegetable matters in solution—can, and does, generate fevers, it is only necessary to adduce the instance of bilge water on board of ships, the common cause, as it has often been proved, of the

fevers which break out in these circumstances among the seamen. And, to prove that vegetable matter can thus act, even if invisible or inorganic, it is sufficient to mention the vessels in the West-India trade, in which the bilge water produced from the leakage of sugar, has long been notorious for producing the very worst fevers, rendering such ships particularly subject to these disorders.

“ Whether the malaria extricated from the water in these cases, enters by means of the air, and through the lungs, or whether it acts on the stomach, by being drunk, is a point which physicians are not agreed on ; though I perceive that Dr. M’Culloch, in his Treatise on Malaria, considers the former to be the road. This, however, is of little consequence, as to the question in hand. It is sufficient if this water can produce fever, as the proofs which I have just given shew ; while to those might easily be added numerous others. And while it is the heat of the summer which is the great assisting cause in this case, by increasing the decomposition of vegetable matters, or facilitating putrefaction, it is plain that the remedies ought not to be delayed. I therefore hope, that your efforts assisting those of the respectable Committee, will compel this Water Company, before many weeks have passed away, to do that justice to its customers, which the circumstances so imperiously demand.

“ I am, yours, &c.

“ W. D.”

The preceding facts and observations show, I submit, how intimately the health of the metropolis is bound up with the present inquiry ; and that, by timely precaution, the direst calamity that can befall a populous city, may, by possibility, be averted.

V.

OF THE REMEDY.

ALLEGATION.—“ *That it is the duty of the Legislature to*
“ deal with the Monopoly—to revise the Powers entrusted
“ to the confederated Companies—and to devise Means
“ for placing the Supply of Water to this great Metropolis
“ on a sure and lasting foundation.”

I am taunted, by the writer in the Quarterly Journal of Science, with having suggested nothing plausible, in the way of remedy. Nothing plausible in the way of remedy! Why, the very remedy that I did suggest is, at this moment, in full progress. “That pure and wholesome water can be obtained in abundance, there is,” I observed, “no doubt. Let, then, the people of Westminster, in the words of Sir Francis Burdett, ‘have a Meeting, and prepare a Petition.’ What might not be effected by a Committee, which should invite men of science and knowledge to step forward! In whatever way I view the subject, I see Hope—‘*Spem bonam certamque domum reporto.*’ Let the inhabitants come to the resolution to have good water, and good water they will assuredly obtain.”

A Meeting of the people of Westminster has taken place—a Petition, signed by all ranks and descriptions of persons, from the first duke in the land down to the humblest tradesman, has been presented to Parliament—a Commission of Inquiry has been appointed by his Majesty;—and, that that Commission will invite men of science and knowledge to step forward with plans for the removal of the evil, *I have no doubt.* The daily and weekly press have taken up the subject, with the una-

nimity of one man; and—strange to say!—the only attempts to damp the just wishes and expectations of the people, have emanated from a monthly gazette devoted to “Health;” and a quarterly journal devoted to “Science!” If, therefore, I saw hope in the outset, that hope has settled down into conviction. All that remains for me to do, is to throw out a few hints, on the three points contained in the above allegation of the Petitioners.

That Parliament is perfectly competent to deal with the Monopoly—to revise the powers granted to the several Companies—and, upon proof of bad faith with the public, to revoke all the rights and privileges granted under acts of parliament, there can be no doubt. The evils that have arisen out of this Monopoly were foretold by the Earl of Lauderdale, in the year 1818.

“The object of Parliament,” said the noble Earl, “in passing the different bills for supplying the metropolis with water, with a view to competition, has been, by these companies, completely defeated, and a monopoly substituted. They have combined to divide the town between them. They have effected, by their own private arrangement, that which Parliament refused to allow them to do. The consequence of this conduct, is not merely increased price to the consumer, but bad water. While there were rival companies, there was some security, that the public would not be imposed upon; but as the matter now stands, a monopoly has been established. If ever there was a case proper for the deliberation of Parliament, this is one.”

“If,” said Lord Chancellor Eldon, in the House of Peers, nine years ago, “the objects of the Legislature, in passing the different bills for the supply of water to the metropolis, which must be supposed to have been that of competition, have been defeated, by the different Companies joining together to establish a monopoly, I

trust your Lordships will not separate, without its being distinctly understood, that it is perfectly within the competence of Parliament to set that matter right."

Upon the question of the Water Monopoly, the following just observations have appeared in "The Globe" evening paper:

"The subject of the Supply of Water to the Metropolis is now put in a train of inquiry, by Addresses to the King for a Commission by both Houses. This is one of the cases to which the benefits of competition, on which so much stress is justly laid in other kinds of business, do not apply. Company after company may be formed, in the hope of creating competition; but the number that can exist with any hope of success, is so small, and the obstacles to the establishment of new ones so great, that, from obvious regard to its own interests, each new company, which begins in the character of a competitor, ends by becoming a member of the existing combination. We shall not yet hazard an opinion, whether the supply of Water ought to be put under the management of the Government, or a Special Commission of the Inhabitants; but it is evident, that a monopoly and combination may, under the present system, annoy the people *to any extent*, and that there will be no security afforded by the formation of a New Company, having itself all the seeds of abuse, which have germinated in the former ones."

To the whole of the Evidence, given before the Committee of the House of Commons, in 1821, by Mr. Weale, of the office of Woods and Forests—a gentleman to whom the public are under the greatest obligation, for the noble stand made by him, at that time, against this monopoly—I beg leave to call the particular attention of the Commissioners.

"The defects," said that gentleman, "to which I allude, are involved in the fact, that the supply is vested in the hands of trading Joint-Stock Companies. Now, the supply of a large city with water cannot be assimilated, I conceive, to a trade in grain or other commodities. Water must be considered as one of the elements necessary to existence, the same as light and

air ; and not merely as an article of subsistence like corn, nor of convenience like coal ; and therefore, its artificial supply to a great city ought not to be the subject of free trade, nor of any kind of trade.

“ The supply ought not to be limited to the ordinary wants of domestic consumption ; nor ought that consumption to be kept down by the artificial checks which a high price to be paid for it, or any price to be paid for it, by the poor and needy, would produce ; but, on the contrary, the supply ought to be profuse, rather than merely sufficient—and gratuitous to the poor.

“ The costs of the works required to provide the supply, and the expenses attending the delivery of it, should be defrayed out of a local revenue, in the same manner as the expenses of the pavements, drains, police, &c. are, raised by an equitable assessment on the property of the district ; and the management of such an establishment should be placed in the hands of local commissioners, under the like regulations as the commissioners of sewers, and other similar bodies.”

That the inhabitants of the metropolis *are not safe* in the hands of this Monopoly, I have, I trust, fully established. Whether the supply ought to be placed under the management of the Government, or entrusted to a Special Commission of the Inhabitants, it will be for the Commissioners to consider.

That the establishment of a New Company, which would bring an additional supply of good water to the town, would be an essential benefit, there can be no doubt ; but, that the establishment of New Companies would remedy the evil of monopoly is highly doubtful. If that monopoly be to be grappled with, and broken up, it can, I submit, only be effected by one of the two modes above alluded to.

One objection that has been urged against the formation of New Companies is, that the streets would be in an impassable condition, from the constantly breaking up of the pavement. But this evil, I beg to suggest, might be entirely avoided, if the Government of the Country would

take upon itself the task of bringing the good water to the metropolis, and making the proprietors of the pipes now laid down, pay a certain sum for the use of it.

That an abundant supply of pure and wholesome water can be obtained, no individual has stepped forward to deny. I know, indeed, that men of science, and engineers of eminence, are prepared to submit Plans for the consideration of the Commissioners.

As nothing, therefore, but an entire falsification and overthrow of the facts that I have adduced, and am further prepared to adduce, in proof of the badness of the water supplied by certain of the Companies, ought to induce the inhabitants to submit to the imposition; so nothing but a joint declaration, signed by the most eminent engineers in the country, that a better article can nowhere be procured, ought to deter those inhabitants from going in quest of it.

The reviewer in the Quarterly Journal of Science—who, it would seem, is engineer as well as chemist—has calculated, that it would require “an outlay of a million” to bring the purest water to London, from a distance of thirteen or fourteen miles. He does not, however, favour us with the data, on which he founds his ingenious calculation. I, on the contrary, have been assured, from other quarters, that the one-half of that sum would not be required. Be it, however, a million!—would not the overthrow of a grinding Monopoly of an element of life, and the “establishment,” in the words of the Petitioners, “of the supply of pure and wholesome water on a sure and lasting foundation,” be cheaply purchased at any price? We expend a million on a Bridge to carry us over the Thames, and more than a fourth part of a million on a Tunnel to carry us under it—but, we submit to the disgrace of drinking the water of that very river, in a state of pollution, and hesitate to move up to a purer source! If the Government of the country would but

become the dispenser of the blessing, I confidently state, from what I have witnessed of the feelings of the nobility, gentry, and tradesmen, having established residencies at the West end of the town, that a loan, for the accomplishment of so god-like an object, would be filled up in the space of four and twenty hours.

The immense works undertaken, in various ages, by the Governments of different countries, to supply the inhabitants of large towns and cities with water, and thereby to provide for one of the most important necessities of life, have always been objects of great interest.

The Romans, during more than four hundred years, were contented with the yellow turbid water of the Tiber: but, in the fifth century from the foundation of Rome, their magistrates brought from the adjacent mountains, at a great expense, the waters of copious springs, and even whole rivers. Aqueducts were afterwards constructed, at an enormous charge, and carried through rocks and mountains, and over vallies, conveying, from a distance of sixty, and even a hundred miles, five hundred thousand hogsheads of pure water daily to ancient Rome.

Two centuries ago, previous to the discovery of the steam engine, and when the population of this metropolis was not a fourth part so great as it is at present, bills were passed, "For bringing in a pure stream of running water to the north part of the city of London;" and our own countryman, the public-spirited and noble-minded Sir Hugh Middleton,—at immense toil and expense, and in spite of innumerable hindrances, on the part of the Corporation of that city, on which he was about to confer such an inestimable blessing—succeeded in uniting two streams in Hertfordshire, and in bringing them, through various soils, for a course of forty miles, to the metropolis.

In 1802, Buonaparte issued a decree, consisting of two lines, for bringing the water of the Ourcq, during a course of twenty-four leagues, to Paris—"Il sera ouvert

un Canal de dérivation de la rivière d'Ourcq, qui amenera cette rivière dans un bassin près de la Villette." The municipal body of Paris were afterwards authorized, by a special law, to borrow seven millions of franks to finish the Canal. It is now on the eve of completion, and it promises to afford *tenfold* the quantity of water to Paris previously supplied.

To look nearer home. The city of Edinburgh receives a supply of excellent water, from a distance of eight or ten miles. Under the able direction of the late Mr. Rennie, Mr. Telford, and Mr. Jardine, and at an expense of only £175,000, the most magnificent works of the kind in Great Britain have been completed. The water is excellent; and the quantity to each inhabitant is nineteen gallons per day; and not less than 280,000 gallons are daily permitted to run to waste. In real utility, they rival the boasted aqueducts of ancient Rome, and are the admiration of all scientific strangers.

If such mighty works, then, have been accomplished in former times, and, recently, in the capital of a branch of the united kingdom, what is there in the features of the present age, that should deter the inhabitants of the richest, largest, most populous city in the world—the seat of a more opulent body of nobility and gentry, than is to be found in any other metropolis—from attempting to remove from that city *a national disgrace!*

Emperors, we are told, have founded their chief glory on the encouragement which they had given to similar works; and the splendid and useful improvements, that have been effected in this metropolis, under the auspices of his present Majesty, warrant the conclusion, that he would delight to patronize an undertaking, which has for its sole object the security of the health and the comfort of a million of his subjects.

It is generally admitted, that London, with respect to architectural improvement, has made greater advances,

since the Peace, than in the entire century which preceded that event. If so, never was moment more favourable!—never had those upon whom has devolved the duty of watching over these improvements, and of directing the Public Taste, a more useful field opened to them!—never could men be addressed in language so appropriate, as that in which a noble patron of the useful arts was, nearly a century ago, addressed, by our great poet, in his inimitable Epistle, on the proper objects of magnificence and expense, and the public works which become a Prince!—

“ You too proceed ! make falling Arts your care,
Erect new wonders, and the old repair ;
Till Kings call forth the Ideas of your mind,
(Proud to accomplish what such hands designed) ;
Bid Harbours open, Public Ways extend,
Bid Temples, worthier of the God, ascend ;
Bid the broad Arch the dangerous flood contain,
The Mole projected break the roaring main ;
Back to his bounds their subject Sea command,
AND ROLL OBEDIENT RIVERS THROUGH THE LAND.”

The Poet adds—

“ These honours Peace to happy Britain brings :
These are Imperial Works, and worthy Kings.”

J. WRIGHT.

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