The Great Stench

or

The Fool's Argument

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The eight weeks of the "Great Stench" in London in June–July 1858 had a lasting effect on the city. Today's embankments were planned then, and the huge oval brick sewers of London were designed and constructed as a direct result of the stench.

The event occurred before the bacteriological era, when fear of cholera caused by a miasma gripped the city. This article, through quotations from The Times, Punch, and the medical press, traces the various reactions to the stink and explores the reasons why there wasn't more of a public reaction to the plague threat.

The "Great Stench" could not be said to have started innocuously. The first formal warning in The London Times was graphic in its description of the state of the Thames and included all of the fearful aspects of the problem. It was of such a small scale, however, that no one could have predicted that the odor would eventually interfere with the proper functioning of both houses of Parliament and bring tears to the eyes of much of London.

The year was 1858, the exact date of The Times letter was June 15. The letter was brief and frightening:

Sir: The stinks of our once noble and respected father Thames are now too nauseous for endurance. I rowed on Saturday from Westminster to the Crabtree in Putney Reach and there was no intermittence—no cessation—one fatal, horrid, open, deadly cesspool. What is to be done? Signed, Oarsman [1].

Actually, The Times was rather late in identifying the problem. The British Medical Journal had carried two earlier items, under "Parliamentary Intelligence," one on June 5 and the other on June 12, about the "State of the Thames." It was not a new problem even in 1858. A select committee of the House of Commons had been appointed to consider the subject. Both of the British Medical Journal articles were reporting questions in the House to the Chief Commissioner of Works, the body entrusted with recommending a solution to the stench.

Three interesting themes appeared in these early reports, motifs that characterized much of the consideration of the problem for the two months it persisted and that would affect the eventual solution. First, how did this undesirable situation arise? Second, was there enough known about the problem to solve it? And third,
important because this was the very time when the miasma theory of disease causation was still in its ascendancy, what was perceived as the likely effect of the cloud of foul air on the health of London?

**WHAT CAUSED THE STENCH**

Most commentators on the stench of 1858 agree on the reasons why it arose that very year. The situation perfectly illustrates the observation that, more often than one would wish, today's health problem is the result of yesterday's solution. The theory is grounded on the observation that it is difficult to intervene in complex social interrelationships or in delicate environmental balances without doing harm or at least mischief in the future.

It was held, even among the non-professional observers, that the sad state of the Thames could be explained:

In the old days the sewers were merely the rivers, [Thames] tributaries covered over and these discharged their stinking contents into the river at low water. In 1847 cesspools were made illegal and all London's sewage was made to flow into the sewers and go into the river. Within a few years some two hundred thousand cesspools were abolished. The effects on the river were appalling, for it became the main-and-open-sewer of London [2].

A footnote in another history of the time states:

During the summer of 1858, which was exceptionally dry, so that the levels of water in the Thames became much lower than usual. In the middle of the year complaints of the nuisance arising from the River became widespread and there was general alarm in London about the danger to the public health [3].

Nor was the stench unpredictable. The condition of the Thames had been deteriorating for some years, but not enough attention had been paid to the hazards presented by its transformation into a sewer. In his very first report nine years earlier, John Simon, then Health Officer for London, stated:

But I can have no hesitation in stating it is a matter greatly to be desired in the city of London that the noble river which ebbs and flows beneath its dwellings should cease to be the drainpool of our vast metropolis [4].

The accounts of the "State of the Thames," as it was usually referred to at the time, recognized exactly what was happening and why. In spite of the marked discomfort, an air of optimism characterized many of the written reports. One of the typical lead articles was that appearing on August 7, 1858:

Of 1000 people in London, ten died unnatural deaths; let it be assumed for a moment—that three are killed by the poisonous emanations from cesspools, closets and sinks in dwelling houses, offices, workshops, that two die of diseases induced by the emanations from dirty streets or gullies, and one from the vapors around the Thames. Here evidently a great step is gained by the water system superceding the cesspool, as the noxious matter is projected into the sewers under the streets, and is partially oxidized. If the cesspools, therefore, are everywhere abolished, and the house is purified, the mortality on the above hypotheses will be reduced to the extent of 3 . . . . The progress of
sanitary measures in London has hitherto resulted in removing impurities from the dwelling houses into the sewers and the Thames and this enables us to understand how the mortality had declined as the Thames has grown fouler [5].

In fact, it almost seems as if some of the observers of the stench welcomed it. As one leader in The Times stated in the issue of the twenty-first of July: “That hot fortnight did for the sanitary administration of the metropolis what the Bengal mutinies did for the administration of India” [6].

WHAT MUST BE DONE

Although there was general agreement on the cause of the stench and even stronger agreement that something had to be done, there was no single, acceptable solution to the problem. There were variations of three approaches to rid London of the smelly miasma: narrow the river through the construction of embankments, treat the water with chemicals to precipitate the sewage, or build intercepting sewers parallel to the river to transport the water to a location outside London.

These three approaches were all considered in the light of the agency which would carry out the work and whether or not the “human guano” was to be used as fertilizer.

The Metropolitan Board of Works was at this time under critical examination, having only recently (1855) succeeded a Consolidated Commission for Sewers, unsuccessful in its seven-year attempt to solve the London sewage problem as exacerbated by the replacement of cesspools with Hopper closets connected to the old rivers that flowed into the Thames. Nevertheless, as is pointed out by Frazier:

Because of its unsatisfactory local government structure, London did not act as an example to the rest of the country in the effort towards sanitary improvement . . . Most of the sanitary duties of the Metropolis were performed by the vestries, and the Metropolitan Board of Works for some years after its founding in 1855 was only responsible for the main sewers and streets [7].

The British Medical Journal coverage of debates in Parliament reports:

Mr. Mangles [an M.P.] asked the Chief Commissioner of Works what steps he has taken or proposes to take to preserve the health of the two Houses of Parliament from being destroyed by the present pestilential condition of the River Thames? Mr. Mangles denounced the Metropolitan Board of Works as altogether inefficient for useful purposes [8].

The matter of using the human excrement for fertilizer was mainly discussed as a source of revenue to offset the enormous expense of any solution to the stench problem.

Trench and Hillman refer to a study, ordered in 1857 by the Government referees on the Main Drainage of the Metropolis, to look into this possibility. Two chemists, Messrs. Hoffman and Witt, recommended rejecting the idea of using the waste as manure on the basis that the Chinese who did so were

. . . a people numerous as ants, and who have to live in boats because the land is too crowded to hold them with any comfort, must be often at their wits end
to procure food, and are, therefore, no models for a well-to-do civilized nation to copy [9].

This same study (without its conclusion) was cited in the comprehensive leading article in *Lancet*, entitled “Report upon the Present Condition of the Thames,” July 10, 1858. The value Messrs. Hoffman and Witt placed on the annual worth of the sewage was £1,385,540. The Report concluded that “every effort should be made to utilize the sewage thus conveyed to a distance” [10].

It seems from the written evidence that the London medical establishment strongly supported the use of “human guano” as fertilizer. In the above-mentioned report of John Simon, he wrote that when the sewage was conveyed to some “distant destination, where instead of breeding sickness and mortality, it might become a source of agricultural increase and natural wealth” [11].

*The Medical Times and Gazette* was even more of an advocate of reuse in a leading article treating a proposal of a Mr. F.O. Ward, who held that “to throw away the ammonia and phospherum of London sewage is to throw away, virtually, bread” [12]. His scheme would have the outfall of sewage to be a suitable tract of land. The *Gazette* said that “Our opinion has always been, that no plan could be good which involved the entire loss of the London sewage” [13].

Even *Punch* wrote a paean to reuse:

So shall fat kine by thousands feed,  
On many a sewage watered mead,  
Whence from old crops will spring,  
And from sleek farmers well content,  
Ten pounds per acre extra rent  
Fields thus manured will bring [14].

The terms used to disguise the material floating on the river also came under examination by *Punch*. In response to a statement by the Registrar General: “This country can never be satisfied until the water which is distributed through its dwellings carries away all the town guano to fertilize the land,” *Punch* composed a poem:

Just as rose by any other name,  
Would smell as sweet, so a nice title can no  
Fragrance impart to what will smell the same  
Though Mr. Registrar may call it guano [15].

The debate over the solution of choice was preempted by consideration of the bizarre observations and theories of William Odling, as translated into a proposal for solving the problem by Goldsworthy Gurney, a one-time surgeon and prominent inventor, whose steam-driven carriage may have been the first bus to travel the roads of England. Dr. Odling, referred to by the *British Medical Journal* as the Medical Officer of Health for Lambeth [16], but who identified himself as from Guy's Hospital [17], was in an enviable position when the stench came; he had been studying the problem over the previous nine months, issuing a report on the eleventh of March 1858. He had predicted the occurrence of the problem for the upcoming summer, and his solution was cheaper than those proposed by others.

His observation that he could find no sulfuretted hydrogen in the water of the
Thames due to its great oxidizing power was explained by a theory that the stench came from the mud along the banks of the river where some of the sewage was deposited and not from the river itself.

Mr. Goldsworthy Gurney then posited that the problem could be solved by narrowing the river with terraced solid embankments to get rid of the mud and digging two channels in the river, into which sewage would be dumped below the low-water line, thus hurrying its travel through London and out to sea. There was also the suggestion that the gases emanating from the now water-locked sewers should be burned in outlets (furnaces) in the streets.

The inquiry of the Select Committee appointed by the House of Commons to evaluate the Gurney proposal was thoroughly reported in *The Times* of Commons [18] and 9 [19]. The final conclusion appeared in *The Times* on July 21:

> Your committee cannot recommend the adoption of any part of Mr. Gurney's plan. Any plan which has for its object that all the sewage of London should, in the state which it comes down the sewers, be discharged into the stream of the Thames would tend to perpetuate and not to remedy the evils which are so widely felt and so loudly complained of [20].

Mr. Gurney was later knighted (in 1863) for improving the lighting and ventilation of the House of Commons.

Dr. Odling was treated rather roughly by his colleagues and by writers to *The Times*. The very first treatment of the stench recounted a question in the House of Commons directed toward Lord J. Manners, the first Commissioner of Works, about the findings of Dr. Odling. Lord Manners answered: "If Dr. Odling was unable to discover sulfuretted hydrogen in the Thames water, he would recommend the hon. gentleman to inquire whether he was equally unable to discover it in the Thames air" [21]. A letter to *The Times* was even more specific: "... perhaps the learned doctors will inform us what is the name for the abominable smell that does come from the Thames at the present time" [22].

The *British Medical Journal* became quite critical in its own later leading articles: "It is with extreme regret that we find a medical man thus attempting to make us disbelieve the evidence of our senses" [23]; and later: "That the Thames is in a dreadful condition, not withstanding the fine talk of Dr. Odling, there can be no doubt" [24]. The *Lancet*, while not mentioning Odling by name, states, "By several writers the whole of the mischief has been attributed to the mud which accumulates on both sides of the river. . . . this view is far from correct. . . . Statements like these inflict the greatest injury on science, and produce in the mind of the public great mistrust of its professors" [25].

One gets the impression that the chemical solution to the stench arose out of the fact that, during the period of high odor, the government was throwing about £1,500 per week worth of lime in the water of the Thames near the outlets of the main sewers [26].

The discussion of a chemical solution took on a peculiar slant. There was the story in *The Times* of the deodorizing and disinfection process as a cheaper alternative to the millions of pounds proposed to build intercepting sewers. The word "disinfecting" is interesting here, since there was as yet no infectious theory to require such a process. The term seems to be synonymous with “purifying” in a non-bacteriological
sense. *The Times* piece reported an experiment at “the chemical works” of the Messrs. Condy at Battersea, involving Condy’s “patent disinfecting fluid”:

Two large glasses were filled with sewage water emitting a most offensive odor, that in one of the glasses being subjected to the action of lime, while into the other a small quantity of the disinfecting fluid was poured. Both those substances operated effectively as precipitants, but it was alleged that, where as in the former deodorization simply had taken place, in the case of the latter actual disinfection had been produced, owing to the fact that the organic impurities contained in the water which had been subjected to its influence had undergone a process of combustion, and that the cause of the odor or putrification had in consequence been permanently removed [27].

The major proponent of the chemical solution was Dr. A.J. Bernays, then at St. Mary’s, later a Professor of Chemistry and Dean at St. Thomas’s. In two long letters in the *Medical Times and Gazette* [28,29], Bernays sets the agenda for the chemical solution. He preferred the disinfectant of Messrs. Smith and MacDougal, rating that of Condy below chloride of lime. The Smith and MacDougal solution contained coal kresosote (carbonic acid). The problem with this approach was that the chemical had to be applied to the sewage before decomposition had set in, which was difficult unless it was done in the houses, and the total program was based on the ability to sell the guano once it had been disinfected.

In the end, the exact solution of choice was that suggested by the engineers to the Metropolitan Board of Works, Messrs. Bidder, Hawksley, and Bazalgette. Though their report did little to clarify the state of the Thames [30,31], their recommendations were accepted, i.e., that no sewage be permitted to pass into the river, that interceptory sewers parallel to the river must be laid, and that the embankments be built to narrow the river (and in one instance to contain one of the sewers) and provide vertical sides to it through its course above London Bridge [32].

The short-lived Derby Government proposed a bill, authored by Disraeli, the Chancellor of the Exchequer, that gave the Metropolitan Board of Works the funding and the authority to fix the stench. The bill was really a plan to raise three million pounds and did not address the solution at all. *Punch* promptly referred to the money as a “stinking fund” [33].

These decisions, though incomplete, were made with remarkable speed, seemingly fueled by the public concern about the stink rather than the perceived danger from the vapors arising from the river. What was fascinating about written evidence during the two months was the expressed ambivalence about the validity of the “miasma theory.” This theory held that epidemics were caused by noxious gases generated from rotting organic material in the ground. Gill traces the theory to Hippocrates, who “observing the sudden and almost simultaneous emergence of epidemics, should regard some generalized phenomenon of a celestial, terrestrial or telluric nature as a predominant influence in their causation” [34]. Indeed, he points out that the “miasmatic theory,” with only minor modifications, held the field for nearly 2,000 years. In England the theory was somewhat modified by Sydenham but was generally unchanged in its belief in the airborne communication of disease from the environment to man.

The “miasma theory” of disease causation was completely accepted in England at the time of the stench because it not only seemed to explain the why, when, and
where of the occurrence of those epidemics so frightening to the public, but it also served as a platform for social action. Ackerknecht wrote of the fascinating phenomenon of the nadir of the acceptability of the contagious theory of disease just before its ultimate victory with the publication of Lister in 1867 [35]. Additional insights into the conflict between the contagious and miasmic theories are presented by Tesh in "Nineteenth Century Debates" [36].

The important feature of the theory in 1858 was that it had been transformed from an explanatory concept which, as Tesh has characterized it, removed the blame for the cause of disease from any individual or controllable force, and transferred it to a theory serving as a basis for prevention. It was transformed to a concept that the miasma was generated by filth, and to prevent the threat of the miasma meant removing the filth [37]. As such, the theory served as the moving force of England's first General Board of Health under Chadwick and Dr. Southwood Smith. Winslow points out that the Sanitary Revolution occurred before the work of Lister, Pasteur, and Koch and that it was based on the miasma theory [38].

An example of the centrality of the miasma theory appeared early during the concern with the presence of the miasma (stench) in the air. In reporting another questioning in the House of Commons of the Chief Commissioner of Works as to whether

... in any consideration of the state of the water of the Thames, the whole question at issue was that of the effect on the purity of the air which might be produced by the liberation of gasses injurious to health from the water. Lord J. Manners said that he thought the questions of the honorable gentlemen was put rather with a view of stating a theory than of obtaining information [39].

Others firmly believed in the theory; for instance, Alfred Smee, whose letter to The Times read:

It must now be regarded unsafe for man, woman or child to venture upon our river; for no medical man can predict who may be affected and we can only say that the putrid fermentation is liable in the higher degree to communicate its death producing influence. . . .

In August and the first week of September the air is stagnant and no breeze refreshes its inhabitants, the putrescence may endanger diseases of a contagious type such as fever or plague: and how great would be the panic if a few leading men in succession would fall a prey [40].

The medical press was only slightly more constrained in their treatment of the dangers of the stench. The British Medical Journal, in a leading article, asked "What is to become of us Londoners in the year of grace 1858? Are the terrible events of 1665 to be repeated and is this vast metropolis to be devastated by the plague?" [41]. The Medical Times and Review reported:

The "Thames" is becoming so unbearable that every one is crying out something must be done! . . . from the Dreadnought [a hulk used as a hospital ship anchored in the Thames] it is stated by the resident medical officer that during the last week the effluvium from the Thames water has been of the most sickening character . . . [42].

The Dreadnought was floated downstream to Greenwich, where the stink was less
obnoxious. The *Medical Times and Gazette* then suggested that consideration should be given to moving some of London's hospitals into rural sites [43].

*Lancet*, in rebuttal to those who did not hold the situation to be of immediate danger, opined:

> We know that the stench from the mud banks and from the water itself is so great, that strong and healthy become faint and even vomit, and that it produces fever . . . [44].

Discussion about recent findings in probable disease causality were limited. Even Farr's "elevation theory" was somewhat misinterpreted: "But it is shown by the tables of the Registrar General that elevation and good drainage have much more influence on the health of the population than proximity to the river" [45]. The study of the cholera epidemic was done in London where "elevations" were closely related to distance from the river, higher elevations being farther from the Thames [46]. Langmuir interprets Farr's figures as "an extraordinary epidemiological confirmation of the [miasma] hypothesis" [47].

What is a bit unusual about the documents covering the great stench is the occasional light and comic treatment of a problem considered to be serious and threatening. One would expect such treatment from *Punch*, which referred to the progress of the solution of the stench as "slow but-sewer" and "to the works of a Board that is nil." The "poem" referring to the Queen's trip on the river was an example of this type of coverage:

> The River's Perfume was so vile  
> The Sovereign, as she neared Dog's Isle,  
> Was fain to hold—nay do not smile—  
> A bouquet to her nose [48].

*Punch* did, however, publish two frightening cartoons on the stench; one depicted death as the oarsman, the other depicted Father Thames's children as cholera, scrofula, and diphtheria.

Even the *Lancet*, after publishing the most thorough analysis of the state of the Thames, wrote:

> . . . a proposition that does not command our unqualified assent. They assume that, granting the Thames to be the cloaca maxima of London, there is in this a great reproach to this mighty city [49].

The article then goes on to point out that Babylon had its Euphrates, Nineveh its Tigris, and Rome its Tiber, which were all used to wash the wastes of these great cities.

*The Times* reported the flight from the committee room of the House of Commons in a very humorous vein:

> . . . when a sudden rush from the room took place foremost among them being the Chancellor of the Exchequer [Disraeli] who with a mass of papers in one hand and with his pocket handkerchief clutched in the other and applied closely to his nose, with body half bent, hastened in dismay from the pestilential odor, followed closely by Sir James Graham who seemed to be
attacked by a sudden fit of expectoration; Mr. Gladstone also paid particular attention to his nose, while Mr. Cayley sought a solace and relief from the stench which prevailed in a cup of coffee [50].

The Lancet, when reporting this incident, was not at all sympathetic:

The utter selfishness of both Houses was never more clearly shown than in this instance. This great public question has hitherto been regarded by them simply as a great public nuisance; and now suddenly their own comfort is affected. . . . The architect hangs a sort of plague flag of distress at all the windows—matting steeped in chloride of lime [51].

Shortly after this report, both The Times and the Lancet reported on sumptuous dinners at the Ships Hotel in Greenwich “to demonstrate that, however noxious the state of the Thames might be in London, Greenwich enjoys an immunity from the nuisance,” and it was said the whitebait fish caught there were very tasty [52,53].

However frightening the threat of the miasma was stated to be, there was not, according to the contemporary references, a flight from London, though the sense of danger was quite palpable. It can be inferred from the documented descriptions that there were three reasons for the absence of panic: first, there appeared a believable study of the effect of the stench; second, evidence seemed to point to attenuation in the belief of the miasma theory; and, last, the presence of a warning system allowed a more measured reaction to the possibility of real dangers.

On the ninth of July, William M. Ord, M.D., surgical registrar of St. Thomas’s, then located on the south side of London Bridge, reported on a two-week study of the effects of the stench on lightermen, dock laborers, watermen, and others employed upon or about the Thames. The unexpected results were the absence of diseases with diarrhea.

Ord claimed personally to have questioned nearly 200 such men and described symptoms of poisoning by foul exhalations. These were new conditions, not present before the stench. Most of these symptoms seemed to be located in the central nervous system and were identified as languor, nausea, and headache. After a time, giddiness was experienced, along with disturbances of vision, and often mental confusion [54].

The results of the study were reported in the British Medical Journal, and emphasis was again given to the absence of diarrheal diseases [55]. The disease that most threatened the fearful writers was cholera. It hadn’t been too long before (1853–1854) that there had been an epidemic of that disease in the areas of London near the river.

Both Ackerknecht and Rosen, while insisting that the miasmatic theory was the “official” one, point out that there were some “contingent contagionists” in leading positions of authority at the time of the stench; John Simon, Health Officer for the Privy Council, held such views. In his second Report to the Privy Council in 1859, he addressed the problem of diarrheal disease, stating:

The excess of mortality (from these diseases) has in all places been consistent with one or the other of two definite local circumstances; the tainting of the atmosphere with the products of organic decomposition especially of human excrement,—or the habitual drinking of impure water [56].
Simon was thus trying to strike a compromise between the miasma theory and the recent findings of John Snow and his own paper later, examining the cholera epidemics of 1848 and 1853, where the disease was traced to the water supply [57].

Snow's work was mentioned only once in the review of commentaries about the stench, and that was a reference to the studies of the high mortality in the 1853 epidemic of those who obtained their water from the Southwick and Vauxhall Company, and that perhaps the reason everyone escaped cholera thus far in 1858 was because Thames water taken near the bridge was not then supplied by any of the London water companies [58].

There are several references to a similar contingent theory, that an epidemic could only be caused by the miasma and the presence of a few cases of cholera at the same time. An example of this point of view is the letter of John Challot, M.D., the Health Officer of Lambeth:

Slow but certain poisoning going on of the portion of the London population dwelling on the banks or near to the Thames. . . . Fortunately or providentially, we are at present free from epidemic cholera. Its presence now would in all human probability be unprecedented disastrous to life [59].

Many others held similar contingent views. William Farr, for example, explained the rise and fall of such an epidemic on the presence or absence of "chlorine," the specific zyme of cholera. One might suspect that some of the concern about sulphuretted hydrogen was an attempt to fractionate the miasma into component parts and thus demythicize it.

Parliament's solution to the stench was not the only piece of legislation of concern to the medical establishment during the session of 1858. Two bills, one vitally affecting the medical profession, the other marking a major shift in the administration of the public health services, were proposed by the Derby conservative government during the time of the stench. The Medical Act of 1858 established legal definitions of medical practitioners, and created a medical register and a General Medical Council of Education to supervise professional morals and education [60]. The new Public Health Bill did away with the General Board of Health altogether and placed its Medical Officer (John Simon) under the Privy Council; thus began the official attenuation of the miasma theory and the forced sanitary reforms committed in its name. As Lambert stated, after 1858

John Simon realized that health administration must itself wait upon scientific certitude. Instead of belligerent dogmatism there must be incessant socioepidemiological research of the strictest scientific integrity. Instead of an engineering monomania, and administrative impetuosity there must be a wide diversity of approaches and almost an excessive caution in devising and imposing practical solutions [61].

The stench had very little to do with the adoption of these two pieces of legislation—except indirectly—by limiting debate. Punch, in an attempt to puncture the satisfaction felt by the Derby Government at the end of the parliamentary session, projects in verse Father Thames appearing at the celebration (a Greenwich whitebait dinner) attended by the ministers:
Quoth he, "such visitors I hail:
My Lords and Commons, how d'ye do,
If any gratitude were here,
You should have asked me to your feast,
Of all your motley friends this year,
Thames has not been the last or least.
I lurked behind your terrace wall,
I breathed athwart your window blind,
Up through your chimneys I would crawl,
Or through your air shafts entrance find,
Thanks most to me, the Session's done,
Your foes have fled: tiz me they fear,
Mine are the triumphs you have won,
Yet uninvited I stand here" [62].

There was, then, enough doubt that the miasma of the stench would cause a plague in that summer of 1858 to recommend an active preventative stance while examining the effect of the stench on the population. Such a course of action was proposed by the *Lancet*, which advised:

> Every hygienic precaution should be taken by individuals, by householders, by persons in authority and by medical officers of health. Without sounding any untimely note of alarm, we may assert that there is sufficient ground to call for the closest attention on the part of all, to those measures of sanitary care which avert or diminish zymotic disease [63].

The main thrust of the article was to urge everyone to scan the weekly bills of mortality, up to the hot, dry summer “carelessly unread,” and indeed all three medical publications and *The Times* printed articles on the “State of the Public’s Health” or “The Health of London” in almost every issue. The Registrar General’s Reports were published as often as the letters complaining about the odors. A careful review of these reports fails to reveal any notable increase in mortality in London during the weeks of the stench.

And nothing terrible happened to the population of London. *Punch*, in an article, “Sunned-out Doctors,” claimed that “owing to the long continued fine weather, many practitioners have been thrown wholly out of employment notwithstanding the state of the Thames in London and the general neglect of sanitary arrangements in Town and Country.” *Punch* was concerned that these practitioners would not be able to pay the fee of two guineas imposed on them by the new Medical Act.

The Great Stench disappeared in the last part of July [65], with a drop in the temperature and a fall of rain.

**THE FOOL’S ARGUMENT**

The Great Stench is a paradigm for policy analysis dealing with a long-standing unhealthful environment caused by previous solutions to other health-threatening practices. For some time, the poor and unenfranchised were especially at risk.
A crisis occurred which affected all strata of society, with some selection of the politically powerful. The situation was so dramatic that there was unanimity in the realization that something must be done—now. Several solutions were put forward—one was selected, but only after resources and political will were committed to the choice, the latter factor as important as the former. As is usual with such processes, the only unanimity was to something—not what was proposed.

Taken altogether, the debate of Monday evening was a good expression of the actual conditions attending the great metropolitan drainage question. Most people can find objections to the measure proposed, nobody feels quite satisfied, in most quarters there are strong misgivings and yet in the end the Bill is read a second time without so much as a division. The truth is that this happens to be a case where the fool's argument that "something must be done," is really applicable [66].

And so the great brick sewers of London were planned and built; over a hundred miles of interceptory sewers were laid between 1859 and 1865. It is said that 318 million bricks were required "carrying the contents of some 450 miles of main sewers which are themselves served by 13,000 miles of smaller local sewers" [67], and the price of bricks in London rose by 50 percent [68]. The embankments were a big success; they not only narrowed the river, but also served as locations for some of the interceptory sewers as well as subway lines. Joseph Bazalgette, the engineer and designer of both, was knighted, and near the Embankment station of the District line on the Victoria Embankment his relief is mounted in a commemorative plaque. The stench did not recur, but the sewage reentered the river 14 miles downstream. Industrial wastes rather than human wastes soon repolluted the river [69].

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