

**The fourth of a series of lectures delivered at the Mechanics' Institution, Southampton Buildings, Chancery Lane, August 13, 1847, on the actual condition of the metropolitan grave-yards / by Geo. Alfd. Walker.**

### **Contributors**

Walker, George Alfred, 1807-1884.  
Royal College of Physicians of Edinburgh

### **Publication/Creation**

London : Longman, Brown, Green, and Longmans, 1847.

### **Persistent URL**

<https://wellcomecollection.org/works/axeyn5n4>

### **Provider**

Royal College of Physicians Edinburgh

### **License and attribution**

This material has been provided by This material has been provided by the Royal College of Physicians of Edinburgh. The original may be consulted at the Royal College of Physicians of Edinburgh. where the originals may be consulted.

This work has been identified as being free of known restrictions under copyright law, including all related and neighbouring rights and is being made available under the Creative Commons, Public Domain Mark.

You can copy, modify, distribute and perform the work, even for commercial purposes, without asking permission.



Wellcome Collection  
183 Euston Road  
London NW1 2BE UK  
T +44 (0)20 7611 8722  
E [library@wellcomecollection.org](mailto:library@wellcomecollection.org)  
<https://wellcomecollection.org>

THE  
FOURTH OF A SERIES  
OF  
LECTURES  
DELIVERED AT THE MECHANICS' INSTITUTION, SOUTHAMPTON  
BUILDINGS, CHANCERY LANE, AUGUST 13, 1847,  
ON THE ACTUAL CONDITION OF THE  
METROPOLITAN GRAVE-YARDS.

---

BY GEO. ALFD. WALKER, Esq., SURGEON.

---

"No burying-places should be tolerated within cities or towns, much less in or about CHURCHES and CHAPELS. This custom is excessively injurious to the inhabitants, and especially to those who frequent public worship in such CHAPELS and CHURCHES. God, decency, and health forbid this shocking abomination." \* \* \* From long observation I can attest that CHURCHES and CHAPELS situated in grave-yards, and those especially within whose walls the dead are interred, are perfectly unwholesome; and many, by attending such places, are shortening their passage to the house appointed for the living. What increases the iniquity of this abominable and deadly work is, that the burying-grounds attached to many CHURCHES and CHAPELS are made a source of PRIVATE GAIN. The whole of this preposterous conduct is as indecorous and unhealthy as it is profane. Every man should know that the gas which is disengaged from putrid flesh, and particularly from a human body, is not only unfriendly to, but destructive of, animal life. Superstition first introduced a practice which self-interest and covetousness continue to maintain."—DR. ADAM CLARKE'S Commentary on Luke vii. v. 12-15.

---

LONDON:  
LONGMAN, BROWN, GREEN, AND LONGMANS, PATERNOSTER ROW;  
HIGHLEY, 32, FLEET STREET; AND ALL BOOKSELLERS.

---

1847.

228202

# METROPOLITAN GRAVE-YARDS

By GEO. ALFRED WALKER, Esq., Surgeon.

The following report is a summary of the results of a series of dissections made by the author, and is intended to show the extent of the disease, and the nature of the changes which take place in the lungs, and in the other organs of the body, in the various stages of the disease. It is the result of a series of dissections made by the author, and is intended to show the extent of the disease, and the nature of the changes which take place in the lungs, and in the other organs of the body, in the various stages of the disease.

V. 12-65

LONDON:  
Printed by J. G. & J. H. Smith, 15, Abchurch Lane, in the Strand.

JOHN H. SMITH, 15, Abchurch Lane, in the Strand, London, W.C.



THE  
FOURTH OF A SERIES  
OF  
LECTURES  
ON THE  
METROPOLITAN GRAVE-YARDS.

---

LADIES AND GENTLEMEN,

In my last Lecture, I endeavoured to lay before you, in plain and simple language, an account of the varied and numerous injuries inflicted on PUBLIC HEALTH and on PUBLIC MORALITY by the unwise custom of intra-mural sepulture. I explained to you the nature and action of morbid poisons. I showed in what manner these poisons may be introduced into the human body, and I brought forward numerous cases which incontestibly prove the fact—that the respiration of putrid exhalations from dead bodies, before burial, or from vaults and open graves, is highly injurious to the health of man and animals. My next duty will be to demonstrate that analogous effects are produced by the vapours which exhale from over-crowded burying-grounds. Here the disengagement of morbid matter is more gradual, the poison less concentrated, and persons are seldom directly exposed to its influence for any considerable length of time; it is, therefore, natural to expect that the relation of cause and effect will be less evident, less easy to establish. Yet when you shall have well weighed the evidence which I am about to produce, you will, I am satisfied, leave this room with the firm conviction that the saturated grave-yards of this Metropolis are centres of infection, producers of lingering disease or sudden death, and that such places should at once and for ever be removed from amongst us.

It is not my desire to pervert your judgments by exaggerated statements, or to excite your minds by imputing to others unworthy motives and unchristian practices; but it is my duty to expose before you, even in its utter nakedness, the baneful—the deadly—system of intra-mural sepulture, and from that duty I shall not shrink.



Here I may perhaps remark, that those who have no reverence for the human form in its humblest, its most suppliant, its most defenceless condition, can have no respect for the living. Yet are there numerous bodies of men—systematic mutilators—"MANAGERS" of the dead, daily—hourly employed in the horrible work of defacing God's image, and that for hire. A fearful, a tremendous, responsibility rests on the employers and the employed, although the poor needy wretches who commit the abominations at which their masters wink, are perhaps the least guilty.

I confess to you, that, having long seen and deeply regretted the gross, the scandalous, neglect of the sanitary condition of my countrymen, I have frequently denounced that discursive philanthropy which seeks out objects for the exercise of its maudlin sympathies on the banks of the Niger and elsewhere, whilst it has scarcely a thought to spare for your Bethnal Greens, your Whitechapels, and other places where masses—hundreds of thousands—of our town—aye, and of our village populations also, with wan looks, wasted forms, and outstretched hands, demand, in the name of God and their birthright, that they should be the first objects on whom the lion's share of our philanthropy should be bestowed. A reparation far too long deferred has, however, been commenced, and until the long arrears of duties neglected, and obligations undischarged, are atoned for, Science should (without derogating from her dignity, or impairing her efficiency) denounce—where reasonings, based on irrefragable facts, are contemptuously derided or affectedly despised.

The escape of noxious effluvia from the surface of grave-yards is under any circumstances inevitable, but so long as they are allowed to continue in the midst of crowded populations they are specially injurious. In hardly any instance is it possible to enlarge the extent of the burial-ground, while the population, and with it the rate of mortality, are daily increasing. Hence a time must arrive when the grave-yard becomes overcharged, and from that period it becomes a hot-bed of infection. The time has arrived for the closure of the great majority of the Metropolitan grave-yards. It is vain to deny that which is matter of the most simple calculation. It requires no logic to prove that it is impossible to lodge fifty individuals in a room 10 feet square; and common sense must tell you that it is equally impossible to inter in a safe and decent manner 3,000 dead bodies in an acre of ground which can only hold 136.

Upon this point, I must enter into a few details, for though infinitely disgraceful and disgusting, they are all-important. Calculations, for the correctness of which I pledge myself, show that an acre of ground which contains 43,560 square feet, or 4,840 square yards, will decently and safely inter about 1,361 adult bodies. As we have a right to presume that the dead body is committed to the grave, there to mingle with its parent earth, we



must allow ten years for this process; and hence the number of adult bodies that an acre of ground will *annually* receive is 136.

Accurate returns have been made of the superficial extent of the parochial and some other burial-grounds of the Metropolis, and of the numbers of bodies annually interred in each. The *annual* average number of burials per acre, for the seven descriptions of burying-places comprised in the intra-mural grounds, is stated by these official returns to be 2,271. Now, if we divide this by 7, we have the average for each, which gives 324 burials annually to the acre. From the total, we may fairly abstract the burial-places of the Jews, and those of the Society of Friends, which are well conducted. This will give us five species of grounds, with an annual average of 2,130 burials to the acre, or an average of 426 for each. The proper number, you will remember, is 136 to the acre; in Germany, the average is only 110 burials per acre per annum. Thus, at the first glance, it is evident that our parish grave-yards are made to receive every year three times as many bodies as they ought, and four times as many as are permitted by the laws of well-regulated Continental states. The inevitable crowding of our grave-yards may be illustrated in another way. The annual mortality of the Metropolis, at a low computation, is 50,000. Now, supposing the burials to be renewed every ten years (and this is the shortest period that should be allowed for the decomposition of the human body,) 444 acres would be required, whereas we have only 209. But this is not all. There are 182 parochial grave-yards in London. Of these, only 48 are confined within the proper limit of 136 burials to the acre; the rest exhibit various degrees of saturation, from 200 up to 3,000 per acre *annually*. This is scarcely credible, but official returns confirm the truth of what I assert. In very many the annual average per acre exceeds 1,000. I shall record them here:—

In St. Andrew's Undershaft, the average per acre is .....	1,278	
In Portugal Street burying-ground ditto .....	1,021	
St. Dunstan's, Fleet Street .....	ditto .....	1,182
St. Dunstan's in the East .....	ditto .....	1,210
St. John's, Clerkenwell .....	ditto .....	3,073
St. Mary at Hill .....	ditto .....	1,159
St. Olave, Tooley Street .....	ditto .....	1,257
St. Swithin's .....	ditto .....	1,760

So much for the capabilities and condition of parish burial-places.

Amongst the burial-places of the Dissenters—

In Wickliffe chapel, Stepney, the average per acre is .....	1,210	
Enon Chapel, Woolwich .....	ditto .....	1,080
Parker Row, Dockhead.....	ditto .....	1,613
Moor Field's .....	ditto .....	1,210
Cannon Street Road .....	ditto .....	1,109



Finally, amongst the private establishments, New Bunhill Fields is distinguished by an average of 2,323.

Let me again remind you, that the proper average of burials is 136 *per acre* annually. This simple fact will give you an idea of what must take place when either cupidity, necessity, or neglect increases this average from 136 to 2,323. It is humiliating to think that a Metropolitan parochial ground, St. John's, Clerkenwell, stands at the head of these unchristian abominations,—unchristian, indecent, pestiferous in every respect, because when a proportion of 3,073 corpses are annually interred in an acre of land, it follows as an inevitable consequence that the bodies of the deceased can remain in the ground only five months instead of ten years. Hence the stacking of coffins in deep pits, the brutal dismemberment of bodies, the consumption of coffin wood in many localities, the absolute supersaturation of the soil, which can neither retain nor dissolve the putrescent matters with which it is loaded. Hence the daily scenes which outrage every moral and religious sentiment,—hence the danger to mourners from attending funerals in such places,—hence the insidious infection which (more especially in the warm season) poisons the atmosphere; and thus, by undermining health, or begetting disease, hurries thousands to an untimely end, again to become the subjects of fresh indignities, the centres of infection to survivors, the distributors of pestilential emanations, and the centralizers of disease.

But let us proceed to facts, for I promised you to establish every assertion which I make by incontrovertible facts. The injurious effects of emanations from grave-yards are demonstrable by showing that healthy persons, exposed to the atmosphere which surrounds these receptacles of the dead, may either contract *specific* diseases, or suffer those various derangements of the general health, which morbid poisons are known to produce. The effects are varied, both in kind and intensity, from mere headache or nausea to the most violent form of pestilential fever.

We learn from Haller, that a church was infected by the exhalations of a single body twelve years after burial, and that this corpse occasioned a very dangerous disease in a whole convent.

Raulin relates, that sensitive and nervous persons frequently became ill, and fainted, after having been attacked with cadavarous exhalations when walking along a cemetery.

Workmen were digging vaults in the church of St. Eustache, in Paris, which compelled them to displace some bodies, and to place those which came afterwards in a vault which had been long closed. Some children who went to catechism in the place were taken ill there; several adults also were similarly affected. Dr. Ferret, Regent of the Faculty of Paris, was directed to report upon it. He found the respiration of the patients difficult, the



action of the brain disordered, the heart beating irregularly, and, in some, convulsive movements of the arms and legs.

A place, upon which a convent for nuns of St. G  nevieve at Paris had been situated, was afterwards built upon and converted into shops. All those who lived in them first, especially very young persons, exhibited nearly the same symptoms as those above mentioned, which were attributed, with justice, to the exhalations of dead bodies interred in this ground.\*

Mr. Chadwick, in his report, mentions that in the case of the predominance of smell from a grave-yard, the immediate consequence ordinarily noted is a headache. A military officer stated to him, that when his men occupied as a barrack a building which opened over a crowded burial-ground in Liverpool, the smell from the ground was at times exceedingly offensive, and that he and his men suffered from dysentery. A gentleman who had resided near that same ground, stated also that he was convinced that his own health, and the health of his children, had suffered from it, and that he had removed to avoid further injury.

Diarrh  a and dysentery are frequent effects of the poison. Medical students, while dissecting, are generally attacked at one period or another with diarrh  a. Pringle, one of our most celebrated military surgeons, relates the case of a person attacked by severe dysentery from merely examining some putrid blood.

That typhus fever may be excited by the gases exhaled from the dead, in a concentrated form, we have abundant proof. Every medical man connected in practice with the poorer classes of this Metropolis, knows that typhus fever almost constantly prevails in the dwellings of the poor when crowded round saturated grave-yards. But lest it may be said that in such cases the fever arose from filth, ill ventilation, and bad food, I shall mention a case in which none of these predisposing circumstances existed,—where the fever was clearly traceable to the mephitic exhalation, and to nothing else. We are indebted for the following history to Dr. Copland, who stated it to the Committee:—

“About two years ago,” says Dr. Copland, “I was called, in the course of my profession, to see a gentleman, advanced in life, well known to many members of the House of Commons, and intimately known to the Speaker. This gentleman one Sunday went into a dissenting chapel, where the principal part of the hearers, as they died, were buried in the ground or vaults underneath. I was called to him on Tuesday evening, and I found him labouring under symptoms of malignant fever; either on that visit or the visit immediately following, on questioning him on the circumstances which could have given rise to this very malignant form of fever, for it was then so

---

\* Vide “Gatherings from Grave-yards,” p. 111.



malignant that its fatal issue was evident, he said that he had gone on the Sunday before (this being on the Tuesday afternoon) to this dissenting chapel, and on going up the steps to the chapel he felt a rush of foul air issuing from the grated openings existing on each side of the steps. The effect upon him was instantaneous; it produced a feeling of sinking, with nausea, and so great debility, that he scarcely could get into the chapel. He remained a short time, and finding this feeling increase, he went out, went home, was obliged to go to bed, and there he remained. When I saw him he had, up to the time of my ascertaining the origin of his complaint, slept with his wife; he died eight days afterwards; his wife caught the disease and died in eight days also, having experienced the same symptoms."\*

Mr. Hutchinson, surgeon, has recorded a case exactly similar to the one just mentioned. It was a case of highly malignant putrid fever, affecting a girl fourteen years of age, and generated in a church, situate in the centre of a small burial-ground in the city of London, which had been used for the interment of the dead for centuries, and was saturated with the remains of human corpses.

Now follows another case of typhus fever, furnished to me by a most respectable surgeon in Piccadilly.

A young lady, fifteen years of age, at school at — Square, was walking with other young ladies, accompanied by their school-mistress and governess, when a walking funeral passed them. The young lady immediately exclaimed, "What a dreadful stench there is from that coffin!" She complained of faintness, was sent home, and in two days had a severe attack of typhus.

We have plenty of other examples, which prove the generation of fever by putrid exhalations from the dead body. Take the following:— Mr. J. Irwin, a man whose exertions in this cause have been most praiseworthy, resides in the house, No. 32, Clement's Lane, which overlooks the grave-yard in Portugal Street, a nuisance which receives 1,021 bodies to the acre annually, instead of 136. Mr. Irwin's family had enjoyed good health until they came to reside in that neighbourhood. They have never enjoyed full health since. The wife of one of his lodgers, in comfortable circumstances, was attacked by typhus fever in the house, and removed to the hospital. The husband, who went to visit her, fell ill of the same disease and died in four days. Two other lodgers, named Rosamond, also had fever; the woman recovered, but the husband died and was interred in the grave-yard from which he met his death. I attended Mr. Irwin at this period, his health broken, his spirits depressed; he was fast merging into that low form of fever, of which this locality has furnished so many examples. On looking

---

\* Parliamentary Report, Effect of Interment of Bodies, p. 157.



into the "Green Ground" through the window of his room, I noticed a grave open within a few feet of the house; the sick man replied to my observations, "Ah, that grave is just made for a poor fellow who died in this house, in the room above me; *he* died of typhus fever, from which his wife has just recovered; *they have kept him twelve days*, and now they are going to put him under my nose, by way of warning to me."\*

I am happy to say that Mr. Irwin recovered, and that, from that period to the present, he has laboured diligently and efficiently in denouncing the abomination of intra-mural burial. One of his children, a fine boy six years of age, whom I attended, was cut off in a few days, by perhaps the most malignant form of fever I ever witnessed. This family, be it remarked, were healthy when they went to reside in this pestiferous locality; yet, within six weeks after their change of residence, they were all attacked.†

A fact of this kind, to which I would now direct your attention, is the recent outbreak of fever at Minchinhampton. The circumstances connected with this unfortunate event are most remarkable, and sustain to the fullest extent all that I have advanced on the connexion which exists between grave-yard emanations and the development of pestilential fever.

Minchinhampton is a small town, containing about 800 inhabitants. It is pleasantly and healthily situate on a declivity; *well drained, free from most of the local causes of disease, and has been remarkably exempt from fever*. Mr. D. Smith, a respectable surgeon, had practiced in the town for 14 years, without meeting with a single case of typhus fever.

The church and church-yard of Minchinhampton are very old; the latter has served as a burial-ground for the last 500 years, and is consequently densely crowded with dead bodies. In the autumn of 1843 the church was rebuilt, and it became necessary, or was thought expedient, to lower the surface of the grave-yard within a foot or two of the remains of those buried. Many bodies were disturbed during this process and re-interred. The earth so removed, of a dark colour,—saturated, in fact, with the products of human putrefaction, was, in a fatal hour, devoted to the purposes of agriculture. About one thousand cart loads were thus employed, some on a new piece of burial-ground, to make the grass grow quickly, some as manure on the neighbouring fields, some in the rector's garden, some in the patron's garden. The seeds of disease were thus widely sown, and the result any man of common sense might have predicted. The diffusion of a morbid poison was soon followed by an outbreak of fever in this previously healthy locality. The family of the rector, and the inhabitants of the street adjoining the church-yard, were the first attacked, and the greatest sufferers. The rector lost his wife, his daughter, and his gardener. The patron's gardener also,

---

\* Vide "Gatherings from Grave-Yards," p. 152.

† Parliamentary Report, Effect of Interment of Bodies,



who had been employed in the unseemly occupation of dressing flower beds with human manure, was attacked. In short, *wherever the earth had been taken, fever followed.* The children who attended the Sunday-school caught fever as they passed the up-turned surface of the grave-yard, went home, and died; but they did not communicate the disease to those near them, nor did it arise in any who were not exposed to the cause of its development. Mr. Smith informs me that since its commencement seventeen deaths have occurred from fever.

In a communication subsequently received from the above gentleman, he says, "your remarks much confirm my previous suspicions. We have had nearly 200 cases of scarlet fever and measles, with anomalous eruptions, all no doubt from the same cause." Thus you will perceive that the poison that produces typhus fever in the adult engenders measles and scarlatina in the child. I consider this a most important fact, because it proves in the clearest possible manner, that the diseases generally believed to be incidental to childhood, indeed, almost inseparable from it, might be annihilated. Now, so long as burials are permitted within the walls and towns of the empire, so long as the present miserable, immoral, and wretched system is permitted to continue, so long must disease and death, and immeasurable mischiefs, walk hand in hand, destroying in some cases instantly, in others silently and slowly—yet always surely, their too often unconscious victims.

Here is another striking and most remarkable case:—

"We beg (says the Editor of the *Somerset Gazette* for the month of January, 1847) to call the attention of the authorities and of the inhabitants generally to a circumstance of great importance, and which demands immediate attention. The presence of fever in the town has scarcely ever been remembered before a recent occasion, and we are in possession of a fact which may tend, if not to throw some light upon the cause of that affliction, at least to afford grounds for strong suspicion. At all events, the matter should not be allowed to escape investigation. Public attention is now much occupied with the sanitary condition of Michinhampton. The circumstances to which we allude are similar in character to those which have occurred in that town, but perhaps to a less extent. Like the church-yard of Michinhampton, that of Axminster is a very old and crowded one—not an inch is there to be found untenanted by the decaying remains of humanity, and in a parish containing a population of 3,000 it may be easily supposed that scarcely a week passes without this already too-crowded ground being re-opened for the reception of other bodies. It seems, then, to have been a custom for some time past to apply the superfluous earth taken *from these re-opened graves as manure in the neighbouring gardens.* The act itself is shocking to our best feelings, but leaving out every consideration of this kind, it surely cannot require the talents of a Dr. Smith to conceive the injurious effects on human health of this exposure, during a burning summer, of a substance so deleteriously impregnated as old church-yard earth must be. We believe the 'authorities' are not cognizant of these proceed-



ings, and we are well aware that there are very few inhabitants of the town in a different position. Nor do we lay *blame* to any party. No doubt the earth must be *got rid of* in some way or other ; and we do not believe that any one connected with the church-yard would allow any considerations of gain to induce them to dispose of it in a way so prejudicial to health as that which we have described, if they were aware of the consequences. The subject deserves immediate attention. It will be easy to decide what *ought* to be done, and that decision once arrived at, we have no doubt of its being promptly carried into effect."

In addition to the above facts, I may here quote the following letter :—

" Axminster, March 17, 1847.

" DEAR SIR,—A fever of a malignant character has been prevailing here, and it certainly first showed itself soon after the removal of a large quantity of earth from our church-yard, which was sold (as manure) for some neighbouring gardens by the sexton. Our church-yard is much overloaded. There is great difference of opinion among medical men here, but I really cannot help looking at this fact, that our town was in a healthy state ; that a large vault is made in the church-yard, by which a large quantity of earth is dug up ; this is sold and applied to some neighbouring gardens, shortly after which, a malignant typhus fever rages through the whole town, scarcely a house in which some of the inmates are not infected. Now, one really cannot but believe that the cause may be traced to the circumstance before mentioned. I do not think more than six or eight died, but very few have entirely recovered even now. In haste,

" I remain, dear Sir, yours very faithfully,

" PHILLIP HAYMAN, Surgeon.

" To Geo. Alfd. Walker, Esq."

I have already mentioned to you, that even when a well-known exciting cause of disease exists, it does not always produce its effects on persons exposed to its influence. In like manner, it is not absolutely necessary for a church-yard to be over-crowded in order to act injuriously on the health of those who dwell in its immediate vicinity. We have an illustration of this in certain facts connected with St. George's, Bloomsbury. According to the official report, the condition of this church-yard is comparatively excellent, the annual average of interments to the acre not exceeding 120 ; yet we have the clearest evidence that the exhalation of the gaseous products from its surface, or from its vaults, has been attended by results the most injurious to the surrounding inhabitants. Mr. Coates, a respectable medical practitioner, residing at No. 43, Hart Street, close to St. George's church, in the spring of the year 1844 noticed the existence of a most disagreeable, and almost insufferable odour ; and soon afterwards several members of his own family, and many of his patients who resided in the vicinity of the church-yard, were attacked by putrid fever. Mr. Thomas Taylor, the pupil and assistant of Mr. Coates, suffered dangerously in this way,—so much so, that he was unable to bear even removal to the country before the expiration of three months. Mr. Jones, another assistant of Mr. Coates', became so alarmed at the uncomfortable sensations which he experienced, and at the spread of fever, that, if not persuaded



by Mr. Coates, he would have left, not only the house, but the Metropolis altogether. A female servant of Mr. Coates' was seized with low fever, remained ill four or five months, and has never since perfectly recovered her health. Finally, two of Mr. Coates' children and his sister-in-law, then on a visit with him, likewise suffered from a most malignant form of typhus fever, from which, after three months' suffering, the sister-in-law recovered with the greatest possible difficulty. At No. 39, Hart Street, was a juvenile school, containing from twenty to thirty children, and kept by two sisters. Both ladies were attacked by the fever; one was confined for five or six weeks to bed, the other recovered at an earlier period, but their prospects were destroyed by the calamity. The little school was broken up, the children dispersed, and Mr. Coates attended many of them for measles, scarlatina, and other forms of eruptive fever.

A family, named Rummins, residing at No. 46, Museum Street, were also seriously injured from the same cause. Mrs. Rummins, attended by Mr. Coates, had typhoid fever, which confined her to her room during fourteen days. Her two children, aged respectively five and three years, had scarlatina of a malignant character at the same time. Another child, living in the same house, about two years old, had also scarlet fever of a malignant character, with great enlargement of the glands of the neck, the jaw, and those situated under the tongue.

The cause of this extensive spread of fever naturally excited inquiry, and was soon revealed. It came to light that many of the coffins, about 600 in number, contained in the vaults underneath the church, were unsound, that is, incapable of retaining within the lead the products of human decomposition. Nearly 100 coffins were in this condition; 40 were repaired, about 60 bricked up, and many bodies were re-enclosed in new leaden coffins. Six men were engaged in this work; and all, save one, were seriously injured in health. One man was seized with vomiting and looseness, with purging of blood; he died about twelve months since, having at the time prophetically exclaimed that, "he was done for." Another man, named Fox, employed by Mr. Jackson, the plumber, was seized with sickness, trembling, and diarrhœa; he has never been well since, and declared to Mr. Coates that nothing should induce him ever again to undertake a similar employment.

You have now a solution of the cause of sickness and fever which prevailed in St. George's, Bloomsbury, in 1844; it arose from the disturbance of a comparatively small number of human remains; and the evidence which I have adduced from the testimony of Mr. Coates himself, will, I believe, strike you as most decisive of the question.

Mr. Whitby, tailor, now of 21, Bovenden Street, East Road, Hoxton New Town, left Islington some time since to reside in the City. His family, consisting of himself, his wife, and four children, were in perfect health up to their removal. They had not required the attendance of a medical man from their



birth until they had resided from ten to twelve months in the immediate neighbourhood of a city church, whose vaults, containing many dead bodies, were frequently opened for the purpose of ventilation. The health of their children declined gradually; from being most healthy, they became most unhealthy. The medical man was constantly in the house. The son is now a cripple—ruined for life, perfectly unable to fill any situation in consequence of his deformity. The daughter's health, when I saw her some time since, was irremediably lost, and the mother informs me, that she lost a fine boy, whose bowels were diseased from the same cause.

The evidence of Valentine Haycock, a grave-digger at New Bunhill Fields, Dover Road, examined before the Parliamentary Committee, is likewise valuable. This unfortunate young man, since cut off in the prime of life, proved that he was constantly ill during the time of his employment as grave-digger. I attended him during some months previous to his death. He repeatedly affirmed in the presence of other medical men who examined him with me, that his occupation had utterly ruined his health. He assured me that when he commenced grave-digging in that ground, that he was in excellent health, and capable of lifting great weights, but that degree by degree his health failed, and when he came under my care he was in confirmed and irremediable consumption. The miracle is, that under such constant exposure a man primarily in the possession of good health, should have lived so long, not that he was at length cut down. He left his occupation too late, however, and made another victim for another grave-yard. Haycock stated before the Committee, that numbers of persons who attended the funerals of deceased relatives were struck by the exhalations from the carcases there deposited in incredible numbers, and rapidly destroyed. "I have known them," said he, "follow their friends on one Sunday, and brought themselves the next." This was a common remark of the undertakers,—“Dear me, the poor creatures followed a friend here last Sunday, and I am come to bury them this; they followed as well as I followed myself.”\*

Mr. Barnett, surgeon to the Stepney Union, informs us that the vaults and burial-ground attached to Brunswick Chapel, Limehouse, are much crowded with dead, and from the accounts of individuals residing in the adjoining houses, it would appear that the stench arising therefrom, particularly when a grave happens to be opened during the summer months, is most noxious. In one case it is described to have produced instant nausea and vomiting, and attacks of illness are frequently imputed to it. Some say they have never had a day's good health since they have resided so near the chapel ground, which, I may remark, is about five feet above the level of the sur-

---

\* Parliamentary Report, page 50.



rounding yards, and very muddy, so much so, that pumps are frequently used to expel the water from the vaults into the streets.\*

Similar effects are produced wherever the poison is brought to bear in a concentrated form on persons immediately exposed to it.

Putrid emanations from the bodies of animals have produced fever. M. de Lassour gives the history of a malignant epidemic fever, accompanied by violent cholic and dysentery, which attacked the children in a large school near Paris. On inquiry, it was discovered that a great number of cows, destroyed by an epidemic disease then prevalent, had been buried close to the school, and their carcasses covered with a slight layer of earth. The fever was confined to the persons in the immediate vicinity of the infected ground, and it ceased as soon as the latter was covered by a large quantity of earth mixed with lime. †

A still more striking example of the pernicious influence of the poison, when furnished in large quantities at a time, has been recorded by Sir James M'Gregor, the present Director General of the Army Medical Department. After the siege of Ciudad Rodrigo, in Spain, no less than 20,000 bodies were interred about the camp within the period of two or three months. The effect on the health of the soldiers, as you may suppose, was anything but beneficial; for many months afterwards they were attacked by low fevers, by dysentery, and by febrile disorders, which frequently put on a dysenteric character. ‡

Let us take another instance. At Valladolid, during the war in Spain, the palace of the "Holy Inquisition" was appointed for the barracks of a British regiment. Under the colonnade was a well, from which water could be drawn into the uppermost stories. This water had a sweetish decayed taste, but for the want of better the soldiers used it both for drinking and cooking. No other regiment in the garrison was so unhealthy, *and the prevailing disease was putrid fever, of which there was not the slightest symptom in any of the other regiments.* At last the reason was discovered; skeletons were found in the well, and several were observed with pieces of flesh adhering to the bones.§

Miss Crews resided during eight years in the house No. 58, Drury Lane. The house stands in the burying-ground, the wall, in fact, divides the living from the dead. Miss Crews, during the whole term of her residence there, complained of a coppery taste in the mouth, of head-ache, nausea, weariness, and absence of sleep. Her appetite was irregular, capricious, and very deficient. The wall of the house

\* Vide Mr. Chadwick's Report.

† Mem. de la Soc. Roy. de Medicine (1776).

‡ Parliamentary Report, Effect of Interment of Bodies, page 156.

§ Vide Gatherings from Grave-yards, page 159.



on the burying-ground side was *always* in a moist, filthy, and most offensive condition. Miss Crews always distinguished the smell more particularly after having been out in the open air. It was of a faint, earthy, deadly character. A young person who resided with her during some years was affected in a similar manner. Both these young persons, who have for some time been under my treatment for most serious maladies, I do not hesitate to declare have been slowly poisoned from their residence there, and I very much question whether they will ever recover their health. I may remark, that this place many years since was below the level of the street; now it has an elevation of several feet *above* it, produced by successive additions of corpses.

Mr. F. Mackrill, whose house, No. 7, abuts upon the burial-ground of St. Mary-le-Strand, in Russell Court, Drury Lane, and who has had to complain repeatedly of a liquid sanies running through and extending up the wall of his house, and over the stairs, from the bodies buried close to it, informed me that on Friday, the 16th October, ult., he saw, in conjunction with Mr. May, who resides in the same house, an old man and another collecting portions of human bones, which they deposited on an old iron tea-tray, and carried out of the graveyard, doubtless for sale. Mr. Mackrill, his wife, and three children, entered this house in good, firm health. Since they have resided therein, they have never been well. The sewerage is good—unexceptionable, the water-closet being trapped, and the fall excellent.

In every quarter of the globe we find the same effects arising from the same cause. The frightful mortality which so often decimates our troops in foreign climates is generally attributed to the malarious influence of decaying **VEGETABLE** matter; but there is no doubt that it is often occasioned by putrid exhalations from the **ANIMAL** body, and I feel convinced that we should have to record a greater number of examples, were they not purposely suppressed from motives of prudence or expediency. We are all too familiar with the mortality of the British troops in Scinde. I have been informed by a brave and distinguished officer, well acquainted with India, who commanded a regiment during the war in Scinde, that he was able clearly to trace a connection between the exhalations from **DEAD BODIES** and the malignant fever by which our soldiers have so often been rendered powerless for purposes of offence or defence.

The burial-places of the Musselmen at Sukkur, a place that has immolated thousands of our bravest soldiers, are situated on hillocks, some artificial, others formed by nature. These hillocks being above the level and out of the reach of the annual inundations of the river Indus, which overflows the whole country in August and September, (the most deadly periods of the year), have been chosen from time immemorial by the Musselmen sayads (saints) and priests as resting-places for their dead. When the British army first entered Scinde in 1839, Sukkur and the fort of Bukkur were selected by the chief military authorities as depôts for magazine purposes and commissariat stores, and were subsequently



formed into a cantonment. The political agent, Mr. Ross Bell, now dead, was petitioned by the sayads and priests to stop the excavations then going on for the purpose of building the barracks for the soldiers and the bungalows (houses) of the officers. In spite of the most urgent remonstrances the work was proceeded with, and the consequent mortality was frequently instanced by these so-called heathens, as a punishment for the certainly unchristian desecration of their burial-place. Immense numbers of bodies were disturbed and mutilated. The earth being saturated with animal matter, the emanations of course passed off from the upturned and upturning earth into the atmosphere. Vast numbers of tombs and graves were destroyed, and their bricks employed as building material for government and other purposes.

Sukkur is a small town formerly containing probably three or four thousand inhabitants. The principal city approximating to Sukkur is Roré, which is situated on the opposite bank of the Indus, on an elevated, and as circumstances demonstrate, more eligible site for a cantonment, as it is out of the reach of the inundations, is much more salubrious than Sukkur, and was employed as a convalescent station in 1844-5, when her Majesty's 78th Highland regiment was almost annihilated from the pestilential emanations from the soil.

These brave men, who with their wives and children were swept off in hundreds by a most malignant putrid fever, which annihilated existence in a very few hours, were deposited in shallow graves, hurriedly excavated in the Christian burial-ground, outside the cantonment, and some distance from it, yet within reach of the inundations. It frequently happened that the soldiers employed in carrying their dead comrades to their last home, staggered, fell to the ground, and within a few hours were tenants of the same earth themselves.

The following extract of a letter from a correspondent in the 78th regiment, to a friend in Glasgow, dated Hyderabad, January 14, 1845, confirms in part the statements I have made to you:—

“Here we are in Hyderabad, the right wing having arrived about three weeks ago, and the left a few days after us. We came down the Indus in small covered-in boats, the banks of the river being strewn all the way down with our poor fellows. We spent Christmas on the banks of the river; my occupation that day was sewing up one of our company in his bedding, with the assistance of four natives, preparatory to burying him; for, as the lines on Sir J. Moore say, ‘No useless coffin enclosed his breast,’ so it was with our poor comrades. Since we marched from Kurachee, our loss has been 365 men, 39 women, 132 children, two officers, and one officer's child, making in all 535 souls. There are thirty other men who, the doctor says, will never see India again. The rest of the men are very much improved, and will soon be all right again. Twelve only out of 1,000 have escaped the Sukkur plague, that is, exclusive of women and children. We hope to move to better quarters by the first of March, and to be all ready for field service in a year hence, should it be required.”



Now, we have, in my opinion, a clear, easily explicable, cause for the mortality that swept, like the destroying angel, these brave, these lion-hearted, men from the ranks of the living.

The burial-places of which I have spoken, comprising an immense surface of hillock and plain, have from time immemorial been employed by the various sects of Musselmen for many miles around as a favoured site for burial. Many thousands of bodies have been deposited there, and I am assured by the gentleman who enables me to bring before you these facts, that the horrible stench and poisonous effluvia proceeding therefrom was, more especially during the evening, most intolerable, oppressive, and disgusting, producing faintness, and an indescribable sensation of oppression and nausea.

HEAT and MOISTURE, as I have already informed you, are the absolute essentials in producing putrefaction, and consequently the two grand agents in eliminating the *poisonous gases* and ANIMAL compounds of which I have endeavoured to give you a short but I hope effective history.

Now, the two agents, MOISTURE and HEAT, more especially the latter, exist in Scinde in an unmitigated and irremediable form. Little rain, it is true, falls in Scinde, but the sudden irruption of torrents of water from the upper country, washing the already upturned grave-yard earth, the half exposed bodies, and filling deep and extensive excavations from which earth had been taken for building purposes, not only carried with it what it met with in its course, but constituted *literally a solution of dead bodies*.

These pools of human corruption remained some time after the subsidence of the surface water, gave out their fluid material to the thirsty and fissured earth in every direction, whilst the sun, operating on the surface of these stagnant reservoirs, at a temperature ranging from 120 to 130 degrees, produced the most deadly exhalations. Hence it is that an error in judgment is so disastrous in result; hence it is that the lion in the field, the unyielding in battle, must take counsel from the votaries of science, the conservators of health; hence it is that Englishmen who have rushed upon *visible* danger, who have braved the bullet and the bayonet, who have sternly defied the iron shower or breasted the murderous grape and canister; who have made in far distant lands the name of their country at once great and terrible, have perished miserably—ignobly; have fallen in the prime of their days, victims to a lamentable ignorance, or an utterly mistaken policy.

The views which I have endeavoured to inculcate are, however, making progress, as the following extracts quoted in *Allen's Indian Mail*, of Sept. 8, 1846, will prove:—

#### “BURIAL OF THE DEAD.

“MR. EDITOR,—During the present terrible visitation of that pest, cholera, I observe that the native servants and followers carry their dead directly to wind-



ward of the camp, or in the direction of the native town. Surely, Mr. Editor, the townspeople are dying sufficiently fast to find occupation for the old burying-grounds near their own residences; but whether or not, I consider, as many others do, that those dying within the precincts of the camp should be interred to the leeward of it. The unfortunate Europeans dead are so, why not the natives? Another point. The Hindoo followers of the camp are buried so close to the horse-artillery lines that the odour of the consuming remnants of mortality can be distinctly recognized by the dwellers therein. This should not be.

(Signed)

“ONE OF THE LIVING.”

And again—

#### “THE POLICE AND BURYING-GROUNDS.

“Considerable sensation has been created amongst the Mahomedan population for the last day or two, in consequence of the interference of the police with the burying-grounds. There can be no doubt but the removal of the burying-grounds to a distance from human habitations is most desirable; yet, possibly, at a moment like the present, when we are visited by such a calamity, some excuse may present itself for the feeling of discontent manifested by that part of the community who consider their religious rights interfered with. We understand that an appeal has been made to the Governor, and the result is, that the prohibition for the present is not to be enforced. We hope, however, that so soon as the visitation has passed over us, measures will be taken to prevent burials near the town.”—IBID.

The Editor of the *Kurrachee Advertiser*, for July 1, 1846, says—

#### “DECREASE OF THE DISEASE.

“We are happy to learn that the disease is on the decrease. *The dreadful effect of burial so near human habitations is, however, now beginning to manifest itself.* The air is perfectly loaded with the pestiferous effluvia of the decomposing, ill-buried, and half-burned dead; and we sincerely trust, that those in authority will now put a stop to practices which must necessarily lead to more sickness.

“Yesterday the effluvia all along the road leading from the Bunder to the camp was almost insupportable; and, again, in nearing camp (the wind setting in from that direction) the air was most offensive.”

During the disease upwards of 100 soldiers of the 86th died in three days. In nine days there died 895 Europeans; or, of native or European troops together, 1,410. \* \* \* \* \* The *Advertiser* says, that 7,200 inhabitants were cut off, not counting camp followers.

I have spoken of one principal cause of these terrible inflictions; that cause is, the burial of the Dead in the midst of the Living. If further confirmation of these statements be required, you will find it in the *Times* of November 21, 1846, and in the number for September 24, 1846.



The *Bombay Times*, quoted in *Allen's Indian Mail*, observes, that "As every dead man must be replaced, and as each European soldier sent out to India costs from 80*l.* to 100*l.* ere he has joined his regiment and is fit for service, some idea may be formed of the pecuniary sacrifices which require to be made to supply the casualties occurring in '*Young Golgotha.*'" The editor further observes, "That at the healthiest station in Scinde, cholera has in ten days carried off one-fourth of the troops and one-half of the inhabitants, hurrying some 8,000 beings into eternity. This, though an unusually severe manifestation of disease, is not the less periodical in its descents, having afflicted us triennially ever since we set foot in the country. It is singular how little interest the home community feel in relations of this nature, however interesting or important."

The sickness and mortality amongst our troops on certain stations in China have been attributed by many intelligent witnesses to the same cause. At Chusan, the mortality of 1841 was attributed to the bad quality of the water, but persons on the spot were of opinion that it was much aggravated, if not entirely occasioned, by local circumstances connected with the burial of the dead. The Chinese method of interment is extremely inefficient, in a sanitary point of view. The coffin is merely placed on the ground, and over it is constructed a slender tomb, composed of bamboos and matting. On the right of the town of Chusan there is a hill, which the Chinese used as a burial-ground. It was considered necessary to fortify this hill in 1841, and the dead bodies removed from the grave-yard were burned. The stench from the upturning of the bodies and the burning was most intolerable, and the mortality, which I contend may rationally be attributed to this palpable cause, was so great that the intention of fortifying the place was abandoned.

As we extend our inquiries to other quarters of the globe, we obtain additional proofs. Thus, in the end of the year 1841, and beginning of 1842, fever raged violently amongst the European troops quartered at Port Royal, Fort Augusta, up Park Camp, and Stony Hill, situated on the southern side of the island of Jamaica. Stony Hill, situated nine miles from the town of Kingston, up the mountain, had, up to the period of the breaking out of the fever, been considered particularly healthy. The military labourers (natives) could not be induced to make graves in the burial-place; the stench was so overpowering, that they affirmed they would drop dead themselves. They made, however, merely shallow graves, close to the public road, under the drunken excitement of brandy and rum. The lady who furnished me with this account states, that she has seen, during the rainy season, (when this mortality occurred), the earth crack under the influence of the sun's heat, and a smoke issue therefrom, thicker than a London fog. During such periods it was impossible to pass the church-yard in consequence of the intolerable stench; indeed, many persons would go miles out of their way in order to avoid it. There was a forge in the immediate vicinity of



this burial-ground, and it was well known that every person who worked, or was in any way employed therein (at that time) were seized with fever, and the majority died! So fatal were the consequences of this proximity to the grave-yard that the forge was shut up.

I may add, the 82nd and 60th regiments suffered most. The former lost five officers, their Lieutenant-Colonel and doctor amongst the number. The latter regiment lost two officers.

As we extend our inquiries to other quarters of the globe we obtain additional proofs. I have already (in a previous Lecture) mentioned the fact of plague having been developed on a particular occasion, near Cairo, by the disturbance of a grave-yard. The Commission sent to Egypt by the French Government in 1828, to inquire into the cause of the plague, were forced to the conclusion, *that the development of this dreadful malady mainly depends on the constitution of the GRAVE-YARDS*, and on the mode of sepulture employed in that country. The observations made by M. Pariset, President of the Commission, are so interesting and important, so well calculated to confirm the opinions which have been advocated in these Lectures, that I must ask permission to lay them before you at some length.

In ancient Egypt the plague was unknown. Although densely populated, the health of the inhabitants was preserved by strict attention to sanitary regulations. But with time came on change, and that change was in man. The serene climate, the enriching river, the fruitful soil remained; but when the experience of 2,000 years was set at nought; when the precautions previously adopted for preserving the soil from accumulated impurities were neglected; when the sepulchral rites of civilized Egypt were exchanged for the modern, but barbarous practices of interment; when the land of mummies became, as it now is, one vast charnel-house, the seed which was sown brought forth its bitter fruit, and from dangerous innovations came the most deadly pestilence.

The plague first appeared in Egypt in the year 542, two hundred years after the change had been made from the ancient to the modern mode of sepulture; and every one at all acquainted with the actual condition of Egypt will at once recognise in the soil more than sufficient to account for the dreadful malady which constantly afflicts the people. Without dwelling on the filth of the habitations and miserable poverty of the inhabitants, the want of drainage, the impure water, and the thousands of animal carcasses putrefying under a burning sun, and corrupting the air with noisome exhalations, let us consider the state of the burying-grounds, as described by M. Pariset.

In almost every case the graves are quite superficial. In most of the villages the grave is constructed on the surface of the earth, with a few loose bricks or stones, held together with a little mortar or mud. Each common grave is a long parallelogram, in which the dead bodies are arranged almost naked, and side by



side, like loaves in an oven. At Cairo, Alexandria, and other large towns, a different mode is adopted. A grave, from fifteen to eighteen inches, is dug; here the body is placed, with its face to the east; over the body is thrown a layer of small pebbles some four inches thick, and the grave is then partially covered-in with tiles, which run slantingly up from the bottom to the edge of the excavation, thus leaving an open space of five or six inches. In many cases the body is merely covered with a dusting of sand. The result of this culpable neglect is evident. The frail constructions are soon shaken and destroyed by the wind or rain; even the dew itself is enough to wash away the miserable covering of light soil, and the heat soon develops the most noisome exhalations. Millions of insects buz around them all day long, and when saturated with their filthy food, often deposit a portion on the vestments or persons of the passers by. Pestilential buboes, even the plague, has been communicated by this strange species of inoculation.

During the night thousands of hyenas and dogs are employed in devastating these frail receptacles of the dead; and each annual overflowing of the Nile adds immeasurably to the disturbance of the decomposing bodies.

In all the large towns of Egypt the burying-places are intra-mural. In Cairo, M. Pariset counted thirty-five, all surrounded by a dense population, all with superficial graves dilapidated by the wind and rain, and devastated by the dogs. But this is not all; the very houses are receptacles of the dead. The quarter of the town inhabited by the Copts is composed of about 300 houses, divided, like all those in Cairo, by narrow, dirty, ill-ventilated streets, saturated with every variety of putrid exhalations.

Every house contains within it a kind of burying-ground. M. Pariset counted as many as eight superficial vaults in one house, each vault or case containing eighty dead bodies, which were opened every two or three months, for the purpose of receiving new tenants. These vaults are usually in a large court, but M. Pariset saw one which contained thirty bodies immediately underneath the floor of an inhabited room, from which it was separated by nothing but planks. Under the stair-case of five or six steps leading to this horrid abode, were concealed the bodies of eleven children.\*

Can we wonder, then, that the inhabitants of this region resemble in appearance the carcases with whom they dwell; can we hesitate to account for the constant development of a pestilence, when we reflect that by day and by night, for twelve centuries, the soil on which Cairo stands, its crowded courts and narrow streets have been inundated by the filthy excretions of animals and of man; that day and night, for centuries, the earth has been imbibing the putrid sanies from the bodies of thousands of animals, permitted to rot over its surface; that day and night, for centuries, it has been imbibing the fluid contents of imperfect cloacæ, and the poisonous exhalations of its half-buried inhabitants, until the sub-soil has become one vast hot-bed of pestilential infection.

---

\* *Annales d'Hygiène*, t. 6.



Now, the burial-places in this kingdom have little to boast of over those of Egypt. There is this distinction, however, to be drawn. In the latter country, the system employed is at once recognised and permitted. In England, men pay "funeral dues," under the impression that their dead fulfil their destiny—return "ashes to ashes, dust to dust." Whether they gain more by their purchase than a "solemn plausibility," those who have heard these Lectures or perused what I have written, can determine for themselves.

The condition of the burial-places in Ireland seems to be even worse than those in other portions of the United Kingdom, although they are almost universally in a most disgusting and dangerous condition. In the neighbourhood of Castle Island and Ballylongford, in the above country, from the imperfect covering thrown over the recent dead, troops of dogs prey from day to day on the bodies. Violent madness is the result, which has led these rabid animals not only to attack one another, but the cattle in the fields.

Methinks our boasted civilization, expansive as it is, may clothe itself in sackcloth and ashes—it should hide its head for very shame. That man, the image of his God, the heir of immortality, trampled upon during life, hideous in death, should again be made the victim of well-deserved punishment to his survivors, is a fearful reflection for those who see in the present the foreboding of a more terrible future.

That the neglect of proper sanitary regulations with respect to the dead, or the results, perhaps unavoidable, of epidemics which have suddenly swept off vast numbers of human beings, may give rise to widely spreading disease amongst the survivors, we have further proof in what happened after the great plague of London. Within a few months, that is, between the latter end of 1665 and the beginning of 1666, no less than 100,000 bodies of persons destroyed by the plague were hastily committed to the earth, and that, be it remembered, at a time when the sanitary condition of London, in other respects, was anything but satisfactory. For the three following years a putrid or malignant fever prevailed in London, and cut off numbers of those whom the pestilence had spared; and for three years more, subsequent to this latter period, as the water became tainted by the morbid percolations, fevers, accompanied by dysentery, were extremely prevalent.\*

Finally, to prove to you not only the danger of exhalations from grave-yards, but the fact which some medical men deny, that the *dead body* is capable of communicating specific disease, I shall relate what happened during the great plague of Marseilles. During that awful visitation the office of burying the dead became so dangerous, that the free inhabitants soon refused to undertake it. The galley-slaves were then employed. They were sent out in divisions of twenty-six each.

---

\* Parliamentary Report, Effect of Interment of Bodies, p. 157.



The first twenty-six were all attacked in two days ; and by the time that 130, or five divisions, had been called out, the slaves thus employed were all either dead or labouring under the plague, so that the Government officers refused to send out any more.\*

I trust that sufficient has now been said to prove in the clearest manner that exhalations from the dead are injurious to health, and capable of generating malignant disease, which may, and often does, terminate rapidly in death. This proof I have endeavoured to deduce from a chain of reasoning—from a series of facts—as strong and as conclusive as any that can be brought forward to support propositions which have received the universal consent of mankind.

I have shown you, in the first place, that the inoculation of putrid animal matter, during dissection for example, often gives rise to a putrid disease which terminates in death. I next proved that bodies, *before* they are interred, may either communicate to the living specific diseases, such as the plague, typhus fever, &c., or cause serious derangement to the health from the ordinary products of decomposition. I then traced the same fatal agency to the dead body *after* interment, showing that sudden death or grievous maladies have been produced by the poisonous emanations from vaults or open graves ; and arriving at what ought to be a last resting-place for the dead—the grave-yard, I demonstrated to you that the emanations from such places are injurious in the highest degree, and that more especially where ignorance, cupidity, or insolent immorality have insulted the remains of the dead, the punishment has in some cases been instant and unmistakable. I proved, beyond the possibility of cavil, that with limited spaces of burial in the midst of an ever increasing population, such necessity must not only exist, but become more urgent every day. The abominations connected with intra-mural sepulture must continue, they must assume a more dangerous and more disgusting character every day, because with a rapidly increasing population we have no means of extending the narrow limits assigned to its defunct integers.

With these broad facts staring us in the face, you will be prepared to believe that the wise and the good in every country have been warm advocates of the only remedy which suggests itself. If it be dangerous, if it give rise to indecent and unchristian abominations to bury the dead in the midst of the living,—if, as has been proved, there are men who have grossly abused the trust reposed in them, abolish the practice at once and for ever ; remove your burial-places beyond the walls of your cities and towns, apart from the habitations of man.

The nation that has pledged itself, in the late sessions only, to advance about thirty millions for speculating in railways, should neither snarl over the dead bones of its ancestry, nor wink at practices that poison earth, air, and water, nor permit the bodies of those who pre-decease them to be dismembered and treated

---

\* See History of the Plague of Marseilles and Cyclop. of Pract. Med. Article Plague.



with indignities that would (as I have said and again repeat) disgrace, if not disgust, the savage or the cannibal.

The early Christian emperors, without exception, condemned the custom of interment in cities, and published various edicts against it. From time to time the voices of bishops and other dignitaries of the Catholic Church were raised against the disgusting and deadly custom. Amongst others, the celebrated ordinance of the eloquent and honest Archbishop of Toulouse offers a severe but well merited castigation to those who have made no effort to abolish the custom in this country.

“To secure your docility and compliance,” says the Archbishop, “it was necessary that your eyes should be opened to your danger by repeated accidents, sudden deaths, and frequent epidemics. It was necessary that your own wishes, impelled by sad experience, should compel our interference, and that the excess of the evil should call, in a manner, for an excess of precautionary measures.”

\* \* \* \* \*

The learned dignitary thus continues :—“It suffices to enter our churches to be convinced of the baneful effects of the fetid exhalations in them. Cemeteries, instead of being beyond our walls, are among our habitations, and spread a fetid odour even into the neighbouring houses. The very churches have become cemeteries—the burial of Christians in an open place set apart for the purpose, is considered a disgrace ; and neither the interruption of the holy offices, occasioned by the repeated interments, nor the smell of the earth, imbued with putrescence, and so often moved, nor the indecent state of the pavement of our churches, which is not even as solid as the public street, nor our repugnance to consign to the house of the Lord the impure bodies of men worn out with vice and crimes, can check the vanity of the great, whose empty titles and escutcheons must be hung on our pillars for the sake of their empty distinctions, or the commonalty, who must ape the great. Death at least should level all men, but its lessons are lost, and the dearest of interests, self-preservation, must yield to the reigning foible.\*\*\* If inhumation around churches is to be allowed, can cities be perfectly salubrious ? If priests and laymen, distinguished for piety, are to be buried within, who shall judge of this piety, or who presume to refuse their testimony ? If the quality of founder or benefactor is a title, what rate shall fix the privilege ? If the right is hereditary, must not time multiply the evil to excess, and will not our churches at length be crowded as now, beyond endurance ? If distinctions in ranks are to exist after death, can vanity know any limitation, or judge ? If these distinctions are to be procured for money, will not vanity lavish riches to procure them ? And would it be proper for the Church to prostitute to wealth an honour only due to such as have been rendered worthy by the grace of God ? \* \* \* Would you insist for this privilege, on account of the standing, the offices, the rank you hold in society ? We have every reason to believe that those who have the greatest



right to the distinction will be the least eager to obtain it. Exceptions are odious, and multiply pretences and objections. Who will dare to complain when the law is general, and what law can more justly be general than one that relates to the grave?"\*

In 1765, the Parliament of Paris published its celebrated edict for the closure of all cemeteries and church-yards within the city, and for the establishment of eight cemeteries at a distance from the suburbs. This wise example has since then been gradually followed by all the principal States of Europe.†

In 1806, the Board of Health of New York declared "that interments of dead bodies within the city ought to be prohibited."‡

And, finally, after a protracted struggle on the part of the corruptionists, our own Parliamentary Committee of 1842 having carefully considered the vast mass of facts which I had the honour of submitting to it during fourteen days of gratuitous attendance on my part, came unanimously to the conclusion, "that the nuisance of interments in large towns, and the INJURY arising to the HEALTH of the community from the practice were fully proved.§

To the solemnly recorded opinions of public bodies, we may add the testimony of eminent scientific individuals. To cite a few from amongst the multitude, I may mention to you that Sir Benjamin Brodie, Dr. Chambers, Dr. James Copland, and Dr. Prout, expressed their decided conviction, to the Parliamentary Committee, that grave yard exhalations produce a low fever, which is generally of a putrid or typhoid character. And why should not this be the case? I have shown you by facts of my own collection, many of which are of such *positive* and unmistakable character, as to defy all jesuitical cavilling, that to the grave-yards of this metropolis have been traced the origin of malignant deadly disease, protracted suffering, and premature death.

The Bishop of London, in his examination, says, "he still must think that the actual evils (which have resulted from the practice of interments in towns, especially in the Metropolis) have been considerably exaggerated."||

Now, with great respect for his Lordship's opinion, I would suggest that as it is utterly impossible to calculate the mischiefs resulting from the practice of intra-mural burial, it is as possible to underrate as to overrate them. This view of the question is one which I would most earnestly impress upon you. Remember, that the instances of sudden death, and the more serious forms of injury to health which I have brought before you are only so far valuable as they prove the terrible power of grave-yard and vault poisons when in a concentrated form.

\* Gatherings from Grave-yards, page 63, *et seq.*

† Gatherings from Grave-yards, page 77.

‡ L. C., page 90.

§ Parliamentary Report, 1842, Effect of Interment of Bodies.

|| Parliamentary Report, Effect of Interment of Bodies, page 184.



Twelve-thirteenths of every dead body must dissipate, that is, become incorporated with the earth, or pass off in the form of a most offensive and deadly gas, many thousand times the bulk of the body which produces it. It is impossible to prevent these exhalations, which are, more or less, always passing off by day and night into the atmosphere, from entering into our lungs, and consequently corrupting our blood. I insist, therefore, that as they have produced the consequences which I have related to you, that the inevitable result (where sudden death is not induced) must be a gradual lowering of the vitality of every living thing exposed to their diluted influence, or in other and plainer words, they produce disease, discomfort, and lingering death. Who shall pretend that the poisonous exhalations from grave-yards are confined to the source whence they spring. In the West Indies vessels have been infected at a distance of 9,000 feet from the coast.

Who shall then attempt to measure the secret workings of these poisons, when once they have escaped from their producing agency? Who shall trace their consequences in men, women, and children, smitten by them, who, having passed by or been drawn within those centres of infection, vaults or over-gorged grave-yards, like the bird wounded by the fowler, have sought their homes, and become candidates for what are called graves, in earth that has long since become incapable of retaining or absorbing the putrescent dissolution.

I have so often and publicly expressed my opinion on the system of grave-digging in earth utterly unfit for the purpose, that it seems superfluous to repeat it? However, I will once more protest against the deadly practice of turning up ground which is literally supersaturated with human remains—a practice that desecrates the remains of the dead, and destroys the health of the living. A compound mischief, I repeat, is thus perpetrated, irreparable injuries are inflicted on the living, and insults, the most brutal, offered to the dead; whilst the mourners who attend the remains of their deceased friends to these places are always exposed to the most imminent danger, and others, as you have seen, to certain destruction.

An attempt has been made to throw discredit on the facts adduced by us, or rather to invalidate our reasoning, by an allusion to the various effects which result from the respiration of putrid exhalations. It has been said, “if these poisons be as injurious as you say they are, they must produce certain specific effects on the human body. Show us these effects, above all, show us that they are invariable.” This is an argument more specious than solid, and easily overthrown.

The action of putrid morbid poisons on the living economy is, as I have shown you, variable, and nothing is better understood by medical men than that the same poison, even when specific, will produce different effects on different individuals. I have adduced irrefragable proofs of these positions. When the poison has passed into the blood it circulates with it through



every organ of the body, and there is no organ or structure which is exempt from its influence.

This is the case with small-pox, typhus fever, the eruptive disorders, measles and scarlatina, and others, which are called specific.

Sometimes the chief force of the disease is expended on the lungs, sometimes on the abdominal organs, sometimes on the head; often it attacks the eye chiefly, producing blindness; at other times, the ear. But even if no particular disease were produced, the deterioration of the air we breathe, by the admixture of such gases, is sufficient to excite and promote the development of various diseases, which but for such agency might have remained dormant.

This fact is admitted on all hands, and of itself is decisive of the question. Why, then, should the dangerous and deadly system, whose consequences are so clearly demonstrable, be longer permitted,—why should we still blindly persist in heaping up in the midst of the living population of this Metropolis, and indeed in all the large towns, and in very many villages of the United Kingdom, the materials for a terrible visitation, which though long mercifully deferred, may, and most probably will, overtake us at last.

In conclusion, I may remark, that although the strong and full-grown may live (although they cannot know the pleasures of existence) in a deteriorated atmosphere, the young and weakly perish by thousands. It is a fact well known to botanists, that various delicate plants, especially those of the fern tribe, will not grow in the air of London. It is also well known that in crowded cities one-half of the children born are cut off before they attain the age of five years. The same cause, I am firmly convinced, destroys the tender child as the tender plant.

Children breathe nearly twice as quickly as the adult, the heart beats nearly twice as often; the deleterious atmosphere which they respire is, therefore, presented to their lungs twice as often; their blood receives a double dose of the poison, whilst their powers of resistance are weaker, and their nervous susceptibility is much greater than that of their parents. A child's blood is in a constant state of change,—perhaps more frequently than that of an adult; and for the simple reason, that the body is in a state of perpetual progressive development. This, in conjunction with the circumstances which I have detailed to you, and the inspiration of a specific poison suspended in the lower strata of the atmosphere will, in my opinion, fully account for the fact which I have years since demonstrated, that children are the truest (barometrical) indices of the sanatory condition of crowded neighbourhoods; that the acute exanthemata (namely, scarlatina, measles, &c.), the stock diseases of ALL SUCH LOCALITIES, in the present shamefully neglected condition of the earth's surface and sub-surface, find in them the earliest, the most interesting, and the most suffering victims.\*

---

\* Vide "Lancet," Nov. 28, 1843.



Hence would I call on you, not only as Englishmen and as Christians, but as parents, as you love your offspring, as you desire to leave behind those whom God has given to you for the continuance of your race; as you value health and its inappreciable blessings yourselves, to cast from you at once and for ever that prolific cause of premature destruction,—the practice of the interment of the DEAD in the neighbourhood of the LIVING.

END OF THE FOURTH LECTURE.

---

The following Form of Petition, which may be copied on a sheet of foolscap paper, is recommended by the Committee of the National Society for the Abolition of Burials in Towns. It is advisable that the names and addresses of those signing should be written at length; and the more numerous the petitions are signed the better—although, if the name and address of a single individual be attached, it is admissible for presentation by any Member of the House of Commons. Petitions, if forwarded to the Honorary Secretary, will be entrusted to those Members of the House of Commons who have expressed their concurrence in the objects of the Society. Forms of Petition and every information will be afforded on application to the Secretary :—

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

SHEWETH,

That your Petitioners have, during many years, had just cause for complaint, arising not only from the number, but the overcharged state of the Metropolitan and other burial-places.

That your Petitioners have a firm conviction, that the numerous and incalculable evils inseparable from a state of things at once destructive to health, degrading to religion, and insulting to humanity, will never be remedied unless your Honourable House interpose its authority.

That your Petitioners desire to express their unfeigned satisfaction that this national grievance was the subject of inquiry by a Committee of your Honourable House in the year 1842, who reported, that “*after a long and patient investigation, your Committee cannot arrive at any other conclusion than that the nuisance of interments in large towns, and the injury arising to the health of the community from the practice, are fully proved.*” That, from the evidence adduced before the Committee, and many subsequent exposures of the terrible consequences resulting and necessarily arising from the present system of interment, your Petitioners venture to express their earnest desire, that the burial of the dead in the midst of the living may be instantly and for ever prohibited, by the closing of all burial-places in cities and towns, and by the adoption of such measures as may secure the public from the injurious and debasing practices at present existing.

And your Petitioners will ever pray.



NATIONAL SOCIETY  
FOR THE  
**ABOLITION OF BURIALS IN TOWNS,**

17, NEW BRIDGE STREET, BLACKFRIARS, LONDON.

(ESTABLISHED 1845).

---

**Committee.**

J. C. ATKINSON, Esq., Wandsworth Road.  
JOHN ATKINSON, Esq., The Grove, Hackney.  
RICHARD ATKINSON, Esq., 6, Portland Place, Clapham Road.  
JAMES ANDERTON, Esq., New Bridge Street.  
RICHARD A. ALLNATT, Esq., M.D., F.S.A., B.A., Suffolk Place, Pall Mall  
RICHARD BEAMISH, Esq., Belgrave Cottage, Belgrave Street.  
A. W. BEAUCLERK, Esq., 61, Chester Square.  
H. BENNET, Esq., Cambridge Square, Hyde Park.  
ISAAC BOYD, Esq., 20, Spital Square.  
THOS. BUCK, Esq., M.D., Prince's Place, Kennington Road.  
PATK. BURKE, Esq., 13, Upper Montague Street, Montague Square.  
Mr. GEORGE CHAMBERS, 205, Upper Thames Street.  
NATH. H. CLIFTON, Esq., Cross Street, Islington.  
CHARLES COCHRANE, Esq., Devonshire Place.  
Mr. WM. DENNIS, 2, Exeter Street, Strand.  
THOMAS S. DUNCOMBE, Esq., M.P., Spring Gardens.  
Col. DANIEL, 45, Baker Street, Portman Square.  
Major DANIEL, Coldstream Guards.  
Right Hon. Lord DUDLEY COUTTS STUART, M. P.  
EDWARD EAGLETON, Esq., Blackheath.  
WILLIAM EVERINGTON, Esq., 1, Gloucester Terrace, Regent's Park.  
THOMAS EVANS, Esq., M.D., Rumsey House, Calne, Wilts.  
The Hon. WILLIAM GORE, Wilton Crescent.  
Capt. TWISLETON GRAVES, Army and Navy Club, St. James's.  
ARTHUR GILLOTT, Esq., Surgeon, Jermyn Street.  
GEORGE GODWIN, Esq., F.R.S., F.S.A., Pelham Crescent, Brompton.  
THOMAS HAMBER, Esq., Barnsbury Park.  
Mr. CHARLES HARTUNG, 47, Warwick Street, Regent Street.  
EDWARD JOHNSON, Esq., M.D., 42, Carnaby Street, Regent Street.  
JOHN HUNTER, Esq., Surgeon, Hart Street, Bloomsbury.



B. W. LAROCHE, Esq., 4, Clarence Terrace, Albion Road, Stoke Newington.  
 JOHN LODGE, Esq., 40, Somerset Street, Portman Square.  
 Col. MOSELEY, C.B., Upper Gloucester Street, Dorset Square.  
 JOHN MURDOCH, Esq., 11, Furnival's Inn.  
 Rev. ADAM NELSON, M.A., Rector of Snarford, Lincolnshire.  
 DUCKWORTH NELSON, Esq., Surgeon, St. John's Wood.  
 JOHN PERCIVAL, Esq., Campden Villa, Kensington.  
 NICHOLAS PARKER, Esq., M.D., Finsbury Square.  
 Mr. BENJAMIN PERKINS, 64, Cannon Street, City.  
 H. H. POOLE, Esq., 11, Furnival's Inn.  
 JOHN SMITH, Esq., The Grange, Shepherd's Bush.  
 D. SMITH, Esq., Minchinhampton.  
 Mr. Alderman SIDNEY, Ludgate Hill.  
 WILLIAM SIMPSON, Esq., Surgeon, High Street, Bloomsbury.  
 JOHN THURSTON, Esq., Catherine Street, Strand.  
 JAMES THOMPSON, Esq., *Chronicle* Office, Leicester.  
 RICHARD THOMAS, Esq., Sydenham.  
 Mr. THOMAS TOMBLESON, 4, Warwick Street, Regent Street.  
 Capt. TOWNSEND, R. N.  
 GEORGE ALFRED WALKER, Esq., St. James's Place, St. James's.  
 Mr. ROBERT WATT, Exmouth Street, Spa Fields.  
 CHARLES WITT, Esq., Surgeon, Spring Gardens.  
 JAMES WYATT, Esq., *Bedford Times* Office, Bedford.

(WITH POWER TO ADD TO THEIR NUMBER).

---

#### ADDRESS OF THE SOCIETY.

THIS Society has been established for the purpose of demonstrating to the public the necessity of speedily abolishing or restricting within the narrowest limits the immoral and pernicious custom of burying in towns.

Although a vast mass of very important facts is on record, a great majority of the public is not yet roused to a sense of its danger. The Society, therefore, proposes by a plain statement of facts to extend the knowledge of the injuries inflicted upon the LIVING, and the insults offered to the DEAD. The Society also will press upon the attention of those who have the power of remedy, first, the *actual* condition of the receptacles for the dead in the Metropolis; secondly, the disgusting and immoral practices inevitably resulting therefrom; thirdly, the injuries inflicted on the PUBLIC HEALTH by the corruption of the atmosphere from the exhalations of the dead; fourthly, they will direct their attention to the state of the receptacles for the dead in the Provinces.

The Committee have ample reason to believe, from the assurances they have received, that they will meet with the hearty co-operation and assistance of many



who have long taken a deep interest in this most important question, affecting as it does, directly or indirectly, every member of the human family.

The sanatory condition of the people, neglected for centuries, has at length excited some degree of attention. Yet one of the most important subjects connected with the health of the inhabitants of large towns has been unaccountably overlooked. No one presumes to deny the poisonous effects of decaying *animal* substances; more powerful, more dangerous, more deadly, than *vegetable* exhalations, they manifest their agency in the production of sudden death—in the development of disease which too often baffles medical skill—and in the slow but certain destruction of those who are more constantly exposed to their influence.

Is it necessary to state that the overcharged grave-yards which exist in the midst of this crowded Metropolis, and in all large towns throughout the empire, are a chief source of these animal exhalations? Is it necessary to reaffirm that the MORAL and PHYSICAL evils connected with the practice of intra-mural sepulture must *inevitably* continue—so long as we continue to inter *unlimited numbers of dead bodies* in LIMITED spaces of ground?

It may be demonstrated that an acre of earth is capable of affording decent interment every year to 136 bodies, or thereabouts. In many of the parochial and other burial-grounds, EACH ACRE of land is compelled to receive, ANNUALLY, more than ONE THOUSAND bodies, some even TWO OR THREE THOUSAND EVERY YEAR!

It is manifest that the custom of thus perpetually interring large numbers of bodies in spaces utterly inadequate to receive them must give rise to a process of displacement, in other words, to desecration of what ought to be considered the most sacred of all deposits—the DEAD committed to the custody of the LIVING. That such desecration, accompanied by the most revolting outrages to decency and morality, is of every day occurrence—that bodies are disinterred to make room for others, and then shot as *rubbish* to fill up a pathway in the streets of London, or an inequality in a field in the suburbs,—that coffins are used by the officials of some grave-yards, and given away by others to the poor as ordinary fuel—that the bones of the dead are made matter of sale and traffic; in a word, that the resting-places of the departed have, by a strange and horrid process, been converted into sources of disgusting profit to careless officials and unprincipled speculators, are statements which admit of no denial; they have been demonstrated beyond a shadow of doubt.

When we reflect that the annual mortality of the United Kingdom falls little short of 700,000, we may form some idea of the extent to which the practices now alluded to must of *necessity* be followed; and this for the simple reason, that as the appropriated spaces are totally inadequate to the reception of the dead, a constant disturbance of their bodies in every state of decomposition is the inevitable consequence. It is time that a state of things at once so injurious to PUBLIC HEALTH and so disgraceful to our national character should cease.

But to insure reform we must obtain a decided expression of public opinion. The aid, therefore, of the wise, the benevolent, and the good is earnestly solicited in this great work. Feeling that this question comes home to “every man’s business and bosom,” that it appeals in the strongest possible manner to our sympathies, that the instinct of self-preservation urges us to remove those plague-spots, the GRAVE-YARDS in crowded cities, the Committee of the NATIONAL



**SOCIETY FOR THE ABOLITION OF BURIALS IN TOWNS**, with the full and confident expectation that the end which they propose to accomplish must ere long be obtained, solicit your assistance and co-operation; for, if indiscriminate mutilation and disturbance of previous deposits, and consequent desecration of the last resting-places of those who have preceded us are still to be permitted; if the ashes of our fellow-countrymen are entitled to, or obtain too frequently, under the present order of things, no respect; if the ties of relationship and affection, and the best feelings of the heart, are to be outraged by a trading sexton, or a brutal grave-digger; if a system has too long been, and continues to this hour, in operation, which most unequivocally tends to brutalize, to unchristianize, the officials who execute the disgusting work, and the crowds of people exposed to such scenes; if our very beautiful burial-service has been too often disgraced by the acts perpetrated previously or subsequently to its performance,—it is more than time that such an evil were crushed, and for ever! It degrades religion, brings its ministers into contempt, tends to lower the standard of morality, and is a foul blot upon our boasted civilization.

---

*At a very numerous and respectable Meeting held in the Great Room at the Crown and Anchor Tavern, Strand, on Wednesday the 15th of September (BENJAMIN BOND CABELL, Esq., M.P., F.R.S., in the Chair), the following Resolutions were unanimously adopted:—*

1. *Moved by MR. G. A. WALKER*—That the burial of the dead in the midst of the living has, in many instances, led to the systematic violation of the feelings of our common humanity; and that this custom has originated and maintained practices which have brought dishonour and disgrace on the national character, degraded religion, corrupted public morals, and inflicted incalculable injury on the public health.—*Seconded by MR. CHARLES SHAW.*

2. *Moved by SIR C. ALDIS*—That the evils resulting from intra-mural interments have increased to an alarming extent; and that a rigid and immediate supervision of burial-places is imperatively demanded; and that the petition now read be adopted; and that the Chairman of this meeting, B. B. CABELL, Esq., be respectfully requested to present it to the House of Commons, and to support the prayer thereof.—*Seconded by MR. STEVENS.*

3. *Moved by MR. G. ROSS*—That the disinterested exertions, the sacrifice of time and money, and the overwhelming evidence brought to bear on society by G. A. WALKER, Esq., (who has for years stood almost alone in his labours on this subject) entitle him and the NATIONAL SOCIETY FOR THE ABOLITION OF BURIALS IN TOWNS to our sincerest respect and gratitude, and we pledge ourselves to render them our unbounded support, until the pestilential and disgusting system of burying the dead in the midst of the living shall be abolished.—*Seconded by MR. RICHARD TAYLOR.*

4. *Moved by MR. J. ROGERS*—That, for the purposes of carrying out the objects of the Petition, and of obtaining full and legislative support, a fund be immediately raised by subscriptions and donations, which will be received by the Honorary Secretary, MR. CHARLES JAMES THICKE, 17, New Bridge Street; by any Member of the Committee; and by the following Bankers:—MESSRS. COUTTS & Co., Strand; MESSRS. MASTERMAN, PETERS, MILDRED, & Co., 35, Nicholas Lane; MESSRS. SPOONER, ATTWOOD, & Co., Gracechurch Street; and the COMMERCIAL BANK, Lothbury.—*Seconded by MR. JOSEPH GEORGE.*

*A List of Donations and Subscriptions will shortly be announced.*