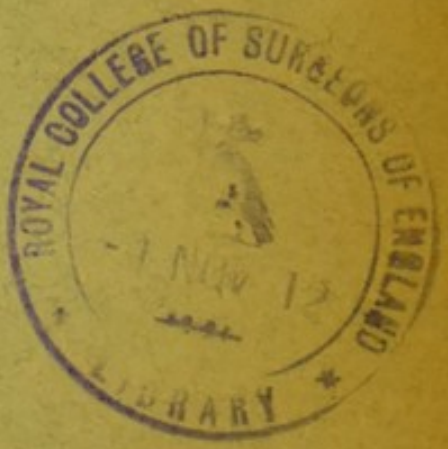
'Cremation' : a lecture delivered before the Warrington Literary and Philosophical Society, on March 20th, 1893 / by C.E. Richmond.



"CREMATION"

A Lecture delivered before the Warrington Literary and Philosophical Society, on March 20th, 1893,

BY

C. E. RICHMOND, F.R.C.S.,

Honorary Surgeon, Warrington Infirmary;
Honorary Surgeon, Ancoats Hospital, Manchester.

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CREMATION.

IN bringing this subject before your notice to-night I feel that I am treating one of the most important social problems ; one, indeed, inferior only to the question of over-population. It is not needful to discuss here the various modes of disposal of the dead which have been practised from prehistoric times down to our own era. This, though an interesting and instructive subject, as connected with our work to-night cannot be treated. Suffice it to say that hitherto earth burial is the method chiefly in vogue amongst civilized communities, and specially in our own over-crowded country. That this mode of disposal is in the abstract vicious, and is daily growing a more dangerous evil, are facts that of late years have greatly occupied the minds of some of our foremost thinkers. They have advanced the view that cremation offers a ready solution of these difficulties attending this question, being entirely free from the grave objections that exist to earth burial alike on social and sanitary grounds. To some of you no doubt the subject is a familiar one. To many others, however, it will be a matter with which they have a very superficial acquaintance as an item which has occasionally cropped up in the newspapers. I think, therefore, it would be better to place before you a short account of the rise of the practice in modern times —then to describe the process briefly—and then to

discuss the reasons for its adoption. It is impossible for anyone entering on this subject to say much that is new or original or that has not been treated by Sir Henry Thompson in his work on modern cremation. By him, and by many other eminent writers, the subject has been thoroughly discussed, and my aim to-night is merely to summarize the work of these pioneers and to endeavour to place it before you in a compact and convincing aspect.

It was in Italy that the proposal to adopt cremation as a substitute for burial was first made in recent times. In 1866 papers recommending the practice commenced to appear, and for several years these were followed by many experimenters, until in 1873 Professor Brunetti, of Padua, at the Vienna Exhibition exhibited and detailed the results of his labours. It was here that Sir Henry Thompson first became practically acquainted with the process. The methods of these earlier experimenters differed somewhat from those now used, but it is unnecessary to detail them. In 1874 Sir Henry Thompson commenced to advocate cremation by an article in the *Contemporary Review*, which aroused great public attention. A speedy outcome of this was the formation of the Cremation Society of England, with Sir Henry as its president. The first committee was drawn from men of eminence in many walks of life, and included two leading clergymen and one lady. The objects of the society were to disseminate information on the subject and to secure the best possible means of performing the process. After many disappointments a site for a crematorium was procured at Woking, and in 1879 the buildings, furnace,

&c., were erected from the designs and under the personal superintendence of Professor Gorini, of Lodi. A public experiment of the successful and complete cremation of the body of a horse demonstrated the practicability of the process and its entire freedom from effluvium or any objectionable detail. Strong opposition encountered at the Home Office, however, prevented the crematorium being opened to the public.

In 1882 Captain Hanham, of Blandford, Dorset, being unable to obtain at Woking the cremation of two of his relatives (owing to the action of the Home Secretary), erected a crematorium of his own, and successfully carried out their wishes. Their bodies had been preserved in a mausoleum until this could be done owing to the perverse action of the authorities. Captain Hanham himself died a year later, and was also there cremated. No official notice was taken of these acts, but in Wales in 1883 a cremation was performed by Dr. Price on his dead child in defiance of the coroner's authority. This resulted in an assize trial in February, 1884, terminating in Mr. Justice Stephen declaring that cremation is a legal proceeding provided it be effected without nuisance to others. This stifled the senseless opposition hitherto encountered. I say senseless because there surely can be no reason for preventing the accomplishment of the wishes of a deceased person as to the disposal of his remains provided the doing so involves no hurt to the survivors. The above legal decision decided the society to throw open the crematorium to the public, and in March, 1885, the first cremation took place at Woking. This was followed by two others in the same year. In

1886 there were ten cremations, in 1887 there were thirteen, in 1888 twenty-eight, in 1889 forty-six, in 1890 fifty-four, in 1891, ninety-nine, and in 1892 one hundred and four. In January, 1891, the late Duke of Bedford was cremated in the small private crematorium he had erected at Woking for that purpose. I need only mention the influential and pecuniary support accorded to the society by the Duke of Westminster and many other eminent personages to show the strong hold the practice has obtained on public opinion. Of English towns Manchester has been the next to accept enlightened views, and after some vicissitudes a splendid crematorium has been erected and is now in full working order—having been opened by the Duke of Westminster in October last. Previously, however, it had already been privately used for two cremations. It is to this crematorium, the most modern and perfect in its construction, I shall presently allude more in detail.

I have now given you a very short account of the rise and progress of the practice in England. Let us momentarily glance at our neighbours. As usual, we are lagging in the field of scientific reform. In Germany, Italy, America, and France, the practice widely obtains: in the Crematorium at Pere la Chaise in Paris, the number of cremations reaches from 10 to 20 *daily!* The practice is ever increasing, and it can safely be predicted that each revolving year will mark the more universal adoption of this sensible and sanitary proceeding.

We may now turn to the actual process of cremation. As now practised, this means the combustion of a body in a closed receptacle or retort, so as to completely destroy

offensive products. It does not, as perhaps you might think, mean the open *burning* of a dead body—a process disgusting in many of its details, and attended with the formation of objectionable and malodorous compounds. The body is by mechanical contrivances drawn into a retort already intensely heated by a well-arranged system of stoves, to a temperature of from 1,800 degs. F. to 2,000 degs. F.—about the melting point of silver. This temperature is sufficient to effect the complete combustion of the body, leaving only the inorganic constituents, which remain in the form of ashes. These are reverently gathered up and placed in their urn, which, after careful sealing, may, according to the wishes of the relatives, be buried in a public or private place, or preserved in a niche in the Crematorium, or (following the practice of the ancients) in the family house.

To enter somewhat more into detail of the process, I shall describe shortly the Manchester Crematorium, opened in October last, which we may regard as the latest development of this branch of sanitary science. I will first describe the furnace arrangements. A stove is fed with pure coke, by means of hoppers. The combustion of the coke is (by regulating the amount of air admitted) so arranged as to be incomplete at first. The gas resulting from this partial combustion, viz., carbonic oxide, passes up through conduits, and at a point immediately below the actual chamber of cremation, meets with a current of atmospheric air already heated by a process unnecessary to describe. The contact of the heated air with the carbonic oxide completes the combustion of the carbon, and secures the maximum of heat at the point where it is

required, namely, in the Crematory Chamber, or retort where the body is placed. This intense heat is more than sufficient to secure the complete combustion of the body (and of the light coffin in which it is enclosed) in a remarkably short time—less than one hour. The very complete combustion of the coffin leaves no trace of its ash amongst the human remains. Nothing is left of the body except *literally* ashes—these chiefly from the bones—presenting a clean, purified aspect, and devoid of any odour. The amount of this ash resulting from the cremation of a single body is insufficient to fill one of the crematory urns which you see before you. I show you here the ashes of a cremated goat, so that you can judge for yourselves the relative proportion of the ash to the size of the body. The gases formed by the combustion of the organic part of the body pass out of the retort by lateral flues into the chimney and so out into the air. The combustion is most thoroughly effected, and the gas thus dissipated is odourless and pure. I want you to bear in mind this absolutely clean, pure, and unobjectionable process, as we shall presently unavoidably have to contrast it with the repulsive decomposition which is the sequel of earth burial. I have explained the actual process of cremation, let us now examine a few of the external details. Let me premise that any form of religious service required may be performed in the spacious and beautiful hall of the building. If that of the Established Church be used a very few verbal alterations will render the service equally appropriate to cremation or to earth burial. Here is a view of the exterior of the Crematorium—a handsome building in the Romanesque style,

similar to the Churches of Lombardy. The material used is terra cotta. The entrance door leads directly into the main hall, 50ft. long by 25ft. wide.

Here, again, is a view of the interior of the main hall. In the centre of the wall opposite the entrance is the aperture leading to the furnace, carefully covered and decorated. In front of this aperture is a table or catafalque for the reception of the body, and when it is placed here the necessary services may be held. The catafalque and passage to the furnace may be decorated with floral or other offerings, according to the wishes of the relatives, but the coffin itself should be of pine or easily combustible wood, fastened together by pegs, not nails. It should not be painted, but may be covered with some thin woollen material. Heavy and expensive coffins, as hindering the process of combustion, are not permitted, thus effecting a material saving in the cost. At the proper time the coffin is, by hidden mechanical appliances, silently drawn through the door of the furnace ante-chamber and disappears, the combustion being effected as I have already described. The resulting ashes are sealed up in their urn, and disposed of according to the views of the relatives. A vestry, or record-room, a retiring-room, lavatories, &c., are connected with the main hall.

I have shortly, then, described the history and process of cremation; let us now turn to the ethics of the subject.

It will be advisable in our consideration of these questions to look at them from systematized view-points both to avoid repetition, and to place the merits or demerits of

this proposed innovation before you in a clear and succinct manner. Many of you have no doubt thought over and approved of cremation as an abstract principle long before it assumed a practicable form in this country. Many have not troubled themselves to think of these matters, whilst others treat the subject with unthinking levity, or even more or less coarse jocularity. Others may have fancied or real objections to cremation, and to these last I would specially address myself. We shall, I think, obtain the best view of our subject if we consider it under the following headings, viz., the Religious, the Sanitary, the Medico-Legal, the Economical, and the Emotional.

Of these headings, and the manner in which I propose to treat them, I venture to place before you a syllabus or schema so that you can easily follow the sections of the subject, and so facilitate the discussion which I hope will follow.

I.—Religious Aspect.

II.—Sanitary Aspect.

Constituents of human body.

Decomposition or resolution into original elements effected :—1. Slowly by earth burial.

2. Rapidly by cremation.

Processes Contrasted.

A.—Earth Burial.—

1. Filthy, disgusting, and occupying years.
2. Unsalutary.

Directly.—

a. From disturbance of previous disease foci and possible liberation of germs of disease.

b. From noxious emanations.

Indirectly.—

a. By storing up noxious germs which may become active at any time.

b. Contamination of water supplies.—

With putrescent organic matter.

With special germs of disease.

B.—Cremation.—

1. Pure, unobjectionable, and rapid.
2. Harmless, both directly and indirectly, in that the residue is pure ash only, and in that it destroys all disease germs.

III.—The Economic Aspect.

1. Actual economy of expenditure to survivors.
2. Affecting the social economy of the community.
   - *a.* By actual saving of useful land.
   - *b.* By promoting exchange of material between animal and vegetable kingdoms.

IV.—The Medico-Legal Aspect.

1. Suggested destruction of traces of crime.
2. Safeguards proposed and practised in cremation.
3. Certain statistics referring to the above.

V.—The Emotional Aspect.

Firstly, then, the Religious Aspect. I do not here presume to offer any of my own views or to suggest any controversial matter, being aware that the discussion of religious subjects is forbidden by the rules of our Society. I will merely lay before you a few of the utterances of some eminent divines, whose authority or earnestness there is no gainsaying. These I quote, not as raising any religious question, but merely to show that in the minds of these authorities there is no objection to cremation. Bishop Frazer, of great and good memory, said " No intelligent

faith can suppose that any Christian doctrine is affected by the manner in which, or the time in which, this mortal body of ours tumbles into dust." The present Bishop of Manchester, speaking at Blackpool, said "There could be no objection to cremation on religious grounds; and that the choice between cremation and interment had no connection with religious doctrine and did not involve anything further than public feeling. In this discussion the question of Christian doctrine ought not to enter. The public health and public convenience ought to determine between the two methods of interring the dead." Canon Liddon, from the pulpit of St. Paul's Cathedral, said "The question is not one of religious belief or faith, it is purely a sanitary question." The late Rev. J. Birkett, who was by his own desire cremated at Woking, wrote "The clergy should object least of all. How many martyrs have not been burnt?" That the clergy do not object is, I think, proved by the foregoing extracts and by the fact that numbers of them are members of Cremation Societies and hearty supporters of cremation. I could greatly multiply these extracts but for the fact that many introduce religious arguments in favour of cremation; these I am not entitled to quote. I should not have mentioned this aspect of the question had it not at times been urged as an objection to cremation. To meet such objection I think I am entitled to show that it is not entertained by some of our highest religious authorities. With these few remarks I will dismiss this portion of our subject and turn to its Sanitary Aspect.

SANITARY ASPECT.—In approaching this I feel very much

hampered by the enormous mass of material from which to select, and must express the opinion that if the whole time at our disposal were devoted to this one point it would even then be utterly inadequate to treat it satisfactorily. This must be my apology for the abrupt and incomplete nature of my remarks.

To follow the course of our syllabus we will consider first the structure and then the decomposition of the body. The human body, then, consists of many complex products, the nature of which we cannot here discuss. Suffice it to say that they are derivable from some dozen of the so-called "Elementary" substances—or those which by our present means cannot be reduced to any simpler form. Water in combination with other substances enters very largely into the bodily structure. Various so-called organic compounds, made up of carbon, hydrogen, oxygen, nitrogen, sulphur, phosphorus, &c., are the bases of the remainder. These are almost entirely capable of conversion into gases. In fact, we find that altogether 97 to 98 parts per cent. by weight are resolvable into gas, leaving only 2 to 3 per cent. of inorganic material which would remain as ash after combustion. This inorganic ash, therefore, is the only substance left after cremation. Now it is known to you all that as soon as life has departed, and the vital influence controlling the intricate phenomena of our existence has ceased to act, a great change sets in and effects a very rapid alteration in the tissues of the body. In other words, decomposition commences. This decomposition is inevitable sooner or later, no matter what means are adopted to prevent it. What is decomposition? Merely resolution of the body from its complex chemical compounds into

simpler and more elementary substances. These may be classified into two groups, viz.:—

I. Carbonic acid, water, and ammonia. These, in the form of gases, ultimately reach the atmosphere.

II. Mineral substances, as lime, phosphorus, iron, sulphur, magnesia, &c. These remain as solids until dissolved or washed into the earth by water.

Now whether this decomposition is effected by cremation or by earth burial *the results* are the same. The question then arises which process is the better from a sanitary point of view, and I think I shall be able to demonstrate that whilst cremation is unobjectionable, and offers solid advantages, earth burial is vicious in the extreme.

Let us first consider earth burial. I need not enter into any harrowing detail of the horrible process of decomposition which goes on beneath the earth. Though I am fully entitled to array these facts in support of my views, I fear that they would be very disgusting to the gentler portion of my audience, and in deference to them I will merely say that the process continues for years, and that it is horribly offensive to sight, to smell, and to touch. The noxious gases formed diffuse through the earth, contaminating it and giving it the malodorous properties common to all old graveyards. Other products in a transition state of decomposition (*i.e.*, not reduced to their simpler forms, but in a repulsive intermediate condition) gradually percolate the ground, possibly into springs, wells, and the like, and foul these dangerously.

Let us take these matters in detail as suggested in our scheme. I have already alluded to the filthy and protracted

nature of the process, I will now proceed to show that it is both directly and indirectly unsalutary.

Firstly, it is directly unsalutary from the noxious emanations already alluded to. A mass of evidence could be arrayed on this point, but I must content myself with but a few instances. Years ago Dr. Lyon Playfair reported that he had examined various churchyards and burial grounds with a view of ascertaining whether the layer of earth above the bodies is sufficient to absorb the putrid gases evolved. The slightest inspection showed that they were not thoroughly absorbed. He knew several churchyards from which most fœtid smells were evolved ; and gases of similar odour were emitted from the sides of sewers passing in the vicinity of churchyards, although they might be more than 30 feet from them. Any of you who have been in an old graveyard when the soil was being disturbed can testify to the unpleasant nature of its odour. That the air of vaults has often been found hurtful, and occasionally fatal, I have not space to do more than state as a fact which can be amply verified. I will only add that the report on extra-mural sepulture in 1850 distinctly asserted that the vapours given off from thickly crowded graveyards, if not actually productive of disease, do certainly increase the sick and death-rate of the immediate neighbourhood. That *à priori* we might expect this to be the case will be seen when we examine the statistics and note the enormous mass of animal material annually buried, and added to the already incalculable bulk of putrefying matter. The number of burials in England has now reached 580 *thousands* annually. Now, averaging the weight of the body at eight stone, which is, I

believe, a fair estimate, we get the result that some 28,000 *tons* of human bodies are each year covered up to putrefy in the ground. When we consider that these are not evenly distributed over the ground, but aggregated into closely-packed graveyards and cemeteries, no doubt can remain as to the hurtfulness of these centres of rottenness. To emphasize this aggregation I will merely quote two cases out of very many. The Ardwick Cemetery in Manchester is 4½ acres in extent, and has been in use since 1836, and in that small area nearly 70,000 bodies have been buried. During ten years (from 1877) 17,148 interments were made. Taking two square yards as the area of a grave (certainly an under-estimate) we now find that the dead have been deposited *seven deep* and that each area of six square yards (an area 3 yds. long by 2 broad) overlies what represents more than a *ton* of putrefying corpses. The burial ground of St. Cuthbert's, Edinburgh, is even worse. Here in fifteen years 10,800 bodies were deposited in less than an acre and a half, and some of the graves were opened seven, eight, nine, and even eleven times. These are, as I said, two instances only out of a list which could be amplified *ad nauseam*, and for which instances could be furnished by almost every large town in the kingdom.

Earth burial, again, is directly unsalutary in that, each fresh interment disturbs the contaminated soil, and stirs up and tends to liberate the germs of disease there lurking. This will appear when we discuss, as we shall now proceed to do, the *indirect* hurtfulness of the practice. Firstly, it often ensures a permanent store of disease germs, which may, under favourable conditions,

become fatally active. In a paper I had the honour of reading before this Society a year or two ago, I endeavoured to explain to you the part played by germs, or so-called micro-organisms in disease. I commented strongly on the tenacious vitality displayed by many of them under adverse conditions, which remaining dormant for years needed only favourable circumstances to produce the disease of which their presence constituted the essential feature. With regard to the germ of anthrax (if I may be allowed to quote myself) I said—"You will see that nothing short of actual burning of the carcases of infected animals is a sufficient safeguard against the propagation of the disease. Burying them, which, I believe, is practised, is very likely to provide a permanent plague spot, which only needs opening up to spread the infection." I thought then, and I think now, that this applies equally to human bodies. It is also as true of many other diseases as it is of anthrax. Among the more common types of germ disease we may include all specific fevers (such as typhoid, small-pox, scarlatina, diphtheria, measles, whooping cough, &c., &c.), together with tubercle (consumption), cholera, and even possibly cancer and syphillis. The enormous number of persons dying from germ diseases is known to you, and you must see that each individual one may, if buried, prove a focus of disease which may prey on the survivors. Years ago the fact that cholera was unusually prevalent in the neighbourhood of London graveyards was placed on record, and recent researches all point to the equal liability of other pestilences arising from a similar source. That scourge of the human race, the tubercle bacillus, is only too likely to

be fostered and propagated by these means. I cannot too impressively assert that cremation, by destroying disease foci, will exert a markedly beneficial effect on the health of the community; just as earth burial, by preserving these foci, has exerted, and will exert, a baneful influence thereon.

Now, as to contamination of water supplies from this source. Here, again, the amount of evidence is overwhelming, and the embarrassment is only to curtail and select it so as to be within our limits. One or two instances will suffice. In 1874 an inquiry took place into the condition of Tooting Cemetery. It was shown that the cemetery drained entirely into a ditch which discharged into the River Wandle, from which many inhabitants of the district drew their water supply.

Years ago (some five and twenty or thirty) Sir Henry Roscoe demonstrated the foulest contamination of adjacent water supplies by organic matter percolating into them from the graveyard of St. John's Church, off Deansgate, Manchester. Then, too, there is the instance of the famous Aldgate Pump, alluded to by Mr. Ernest Hart in his speech at the opening of the Manchester Crematorium. The water from this pump was in great demand for drinking purposes, and was sent for from all parts of London. Analysis showed that the water was badly polluted with organic matter and salts derived from decomposition of bodies in the adjoining graveyard. This gave it the saline flavour which was found so agreeable. In consequence of this analysis the well supply was shut off from the pump, which was then supplied by the water company's main. Oblivious of this fact, however, advo-

cates of earth burial had recently obtained analyses of this very water and quoted its purity as showing *absence of contamination* from the graveyard! As you see, the water was that from the main, and had no connection with the former contaminated pump water.

You can now see, I think, that not only are the noxious products of imperfect decomposition apt to foul our water supplies as so much direct organic poison, but also that the essential germs of disease are likely to be poured in along with the other matters. Statistics directly connecting outbreaks of disease with this fouling of water supplies are abundant, though time does not allow me to array them before you.

I have, then, endeavoured to point out to you the hurtfulness of earth burial—not, however, nearly as amply or as particularly as I could have wished. I must, with even greater brevity, glance at the advantages offered by cremation, which avoids all the objections existing to earth burial, while it secures many virtues the latter does not possess. For instance, the decomposition effected by cremation is rapid—an hour as opposed to years. It is clean and pure as opposed to the unmentionably filthy and disgusting processes resulting from earth burial. It is harmless to the community, both directly and indirectly. It evolves no noxious gases nor contaminates any water supply. It destroys at once and for ever the mass of disease germs which burial fosters and accumulates. With these remarks, which I feel to be very inadequate treatment of this most important branch of our subject, I must regretfully dismiss the discussion of sanitary details.

THE ECONOMIC ASPECT.—This is of necessity a plain practical view of the question, and must be treated outside "sentiment." As you see from our syllabus, we shall consider this subject from the dual view of how it affects the immediate economy of the funereal rites, and also how it affects the social economy of the community at large. The former, being of infinitely the lesser importance, we will clear the ground by considering it first. That vast sums are spent on funerals is a fact that hardly needs mentioning. It has been carefully calculated that (now) upwards of five million pounds per annum is spent on funerals in England and Wales alone. Sir Henry Thompson thinks that one-third of this sum would amply suffice for cremation. My own view is that this considerably over-estimates the cost of cremation even as it exists at present. When, as will inevitably occur, the practice of cremation becomes more general, the cost of the process will be very greatly reduced. It is quite certain that the enormous expenses I have named cannot benefit the dead, and are a distinct loss to the living. In this connexion attention may be directed to the fact that the money spent on the funerals of poor persons often absorbs many years' savings in burial or other clubs, and compared with the earnings during life of the deceased person represents an outlay as monstrous in its amount as it is in its absurdity. The present cost of cremation in Manchester is £5, which includes the cost of an ordinary urn. Beyond this the expense of transit and a plain wooden shell are very slight. There is no costly decorated coffin, no expensive grave, tombstone or monument—though, of course, these matters can be amplified to the fullest extent by those

minded for display, as also can the pompous dismal procession with its stipendiary and often alcoholic mourners. The actual cost of cremation can and will be materially lessened when sensible ideas prevail and it becomes adopted by the community. It is only a question of supply and demand. At Heidelberg, where the cremations are numerous, the charges are 25s. for a single cremation, and 10s. only for each subsequent one which is effected without allowing the furnace to cool. I could, did I wish it, give some items of personal experience which would amply illustrate the economy in actual expense effected by cremation.

In its economical effect on the community we approach a much larger and more important question. Firstly, there is the actual monetary saving I have just indicated, which, in the aggregate, would amount to some millions sterling (according to Sir Henry Thompson's estimate it would now reach about 3½ millions) annually diverted from purposes useful to the living. Again, were cremation practised, we should have no need of the areas now devoted to cemeteries and graveyards. The total loss to the community of land capable of cultivation or other useful purpose must altogether reach an enormous acreage, and this is not only useless but *hurtful.* In London alone, in 1890, upwards of 2,000 acres were occupied as cemeteries. The late Bishop Frazer, in consecrating a cemetery, remarked, "Here is another hundred acres of land withdrawn from the food producing area of this country for ever." "Cemeteries are not only becoming a difficulty, an expense, and an inconvenience, but an actual danger." "I hold that the earth was made not for the dead, but for

the living." When I tell you that a single acre of ground would be sufficient for the burial of *a million urns* (were such desired), you will be able to form some idea of the economy of space which would thereby be effected.

Another economic view presents itself in the balance and distribution of useful material. The phenomena that have attended the history of the earth have as their most important result the production of animal and vegetable life. The evolution of the former, being now the more active, to a large extent controls the latter, but the one being dependent on the other, it behoves us to consider how the question before us affects the balance of nature. An eloquent passage in Sir Henry Thompson's work describes this so vividly that I cannot do better than quote it. He says:—"If an animal be resolved into its ultimate constituents, those which assume the gaseous form mingle at once with the atmosphere and are taken up from it without delay by the ever open mouths of vegetable life. By a thousand pores in every leaf the carbonic acid, which renders the atmosphere unfit for animal life, is absorbed, the carbon being separated and assimilated to the form of vegetable fibre, which as wood makes and furnishes our houses and ships, is burned for our warmth, or stored up under pressure for coal. All this carbon has played its part—and many parts in its time—as animal existences from monad up to man. Our mahogany to-day has been many negroes in its turn, and before the African existed was integral portions of many a generation of extinct species. And when the table which has borne so well some twenty thousand dinners shall be broken up from pure debility and consigned to the fire, thence it will

issue into the atmosphere once more as carbonic acid, again to be devoured by the nearest troop of hungry vegetables—green peas or cabbages in a London market garden, say—to be daintily served on the table which now stands in that other table's place, and where they will speedily go to the making of the Lords of Creation. And so on again and again as long as the world lasts." I think it will be evident to you that this interchange is more readily and healthfully effected by cremation than by earth burial.

THE MEDICO-LEGAL ASPECT.—This resolves itself into the following question: If we at once volatilize the body as proposed; may we not occasionally obliterate all traces (if such existed) of secret poisoning or allied crime, which might possibly be detected by examination and analysis? At first sight this seems to be an objection of much weight; when, however, we come to examine it we shall find its value recede to a vanishing point. Nay further, I hope to show that cremation, instead of affording a loophole of immunity from detection, secures an additional bulwark for the public safety. Suspicious circumstances should be investigated and crime detected before either burial or cremation. Let us then examine what are our safeguards under our present system of certification and registration of deaths. For rich and poor it is alike. A simple certificate of death from the medical attendant is sufficient. This is booked by the registrar, who then issues his certificate authorizing burial. With a careless or ignorant medical man (and I grieve to say that such *do* exist) the cause of death may be incompletely and

inaccurately assigned and the body buried under circumstances of grave suspicion. With such slipshod carelessness is the whole thing conducted that I am, on excellent authority, informed that the following has occurred:—A death certificate has been torn from a doctor's book by a person waiting in his room. This person, wishful to sink his identity, has himself filled up the certificate with his own name and cause of death, and forging the doctor's signature has registered himself, and is still registered, as a dead person. Can anyone wonder, then, that these facilities for crime are from time to time seized upon—especially among the poorer classes, who are only too often ill attended medically, and in some cases not at all? That obsolete, and as at present constituted, thoroughly inefficient officer, the coroner, rarely has sufficient data (owing to the laxity of registration laws) to warrant his action, and even when he does act the results are most unsatisfactory. I have known inquests held in this very town of Warrington, where death presumably occurred from poisoning, and where no *post mortem* examination was made, and no medical evidence tendered as to the cause of death or the specific poison producing it. In cases of accident too, where at any rate the cause of death was obscure, no medical inquiry has been made. What evidence then had the jury to rely on for finding the *cause* of death? I have quoted these matters only to emphasize the inadequacy of our present system, and the sources of error even after an inquest. Our criminal trials show the inexactitude of evidence derived from analysis after exhumation. To prove this I must again quote Sir Henry Thompson's

figures In 20 years the total number of exhumations ordered was 102—or say 5 annually—in England and Wales. The average number of exhumations was one in 6,100 inquests. Of these 102 exhumations thirteen only resulted in a verdict of "wilful murder," but 57 (!) in "death from natural causes"—surely here "somebody had blundered." Had certification been more carefully scrutinized, the country would have been spared the cost and horror of these exhumations and investigations. In this connexion one cannot but allude to that human monster, Neill Cream. But for the laxity of our registration practices, this fiend could never have perpetrated his series of horrible crimes. A criminally careless—if not worse—medical man certifies to the cause of death of a woman he had never seen in her illness—though this was one absolutely *compelling* suspicion—and this certificate is accepted in due course and the woman buried. All trace of the crime would have been lost but for the revelations attending murders later in the series. What, too, shall we say of the fact that thousands are buried annually without any certificate whatever? It must be apparent to you that radical reforms are necessary, though this discussion again is beyond our present scope. I can only repeat that crime should be detected before the dissolution of the body commences. There are fallacies surrounding the evidence obtainable from exhumation—at any rate as regards "organic" poisons—which mar the certainty of deductions therefrom and may possibly leave a loophole for undetected crime—or worse still, the punishment of the innocent. The safeguards offered at present by cremation, are evidenced in the careful scrutiny

exercised in all cases submitted to the Society. No certificate is accepted unless it gives ample particulars of the cause of death, signed by the medical attendant and countersigned by an independent practitioner, either in attendance on the patient or acquainted with the circumstances of decease. Even then the Society secures the services of an expert, to whom all certificates are submitted, and according to his dictum cremation is performed or withheld. I do not advance this as an ideal system, but I do aver that it eliminates the risks to which our ordinary certification practice is liable, and that it practically cancels the objection as to the risk of destruction of evidence of crime. With the safeguards which it is proposed to introduce, but which we cannot now discuss, the objection will be absolutely eliminated.

THE EMOTIONAL ASPECT.—It must be admitted that this should receive some consideration at our hands to-night. Let us inquire, then, whether the respect and love we have for our lost ones receives its better fulfilment in earth burial or in cremation. We will again first consider earth burial. Many, perhaps, imagine that the final rest has been secured in some picturesque spot, and indulge in thoughts of the beautiful dreamless sleep of the departed. Is this true? A few words will show the contrary. The sentimental surroundings serve only as a cloak for the horrid rottenness beneath. Does the body even remain there undisturbed? Very often not. Disturbances of graves and unceremonious chucking about of human remains are very frequent, and I have myself witnessed

this on more than one occasion. I can assure you that the evidence on this point is as complete as it is repulsive. I will but quote one instance, that of the Church of St. Cuthbert's, Edinburgh, before alluded to. Within 20 years the *whole* of this cemetery had been trenched three times over for burials, and some of the graves had, as I said, within fifteen years been opened seven, eight, nine, and even eleven times! In the common ground the graves were opened once in every seven years in the case of adults, and once in every three-and-a half years in the case of children, to abstract the uppermost one or two coffins which were removed to find room for a fresh interment.

We must, however, turn to more objectionable features, though as I said we will touch them as lightly as possible. I have already alluded to the abhorrent decomposition attending earth burial. The once loved form rapidly becomes transformed into a putrid mass, which incorporates with and contaminates the surrounding soil. The ghastly repulsiveness of the process exceeds the powers of description, and were it visible would be the strongest argument that could be urged in favour of cremation. The idols of our affection turn loathsome to our senses and become a source of danger to their survivors. On the contrary, contemplate cremation. The process can in no way offend the prejudices of the nearest and dearest relations. The *purity* of the body is maintained throughout—nothing is left but clean, inoffensive ashes—ashes of our loved ones to symbolize the ashes of our love! The process of burial has always been a repulsive one to me, both in its immediate surroundings and in the reflections

of what would occur as soon as the earth covered the coffin. On the other hand, I have been present at the cremation of two of the very nearest and dearest to me. No chord of affection has been jarred nor any regret present but that of their irreparable loss. I have been very glad to think that no foul decomposition ever touched them, and that their end was as their lives had been—pure and innocuous to their fellow creatures.

I hope I have not wearied you. The subject is a large one and difficult to treat within our limits. I have endeavoured to place before you, and to advocate as strongly as I can, the advantages of cremation, because I am unable to see one single radical objection to it, or one single point in favour of earth burial, which, on the contrary, is open to most weighty objections. It is my firm conviction that whilst cremation does not in any respect contravene religious sentiment it offers solid sanitary and economic advantages, and will be a valuable aid in the stamping out of many disease scourges. In that it prevents any contamination and loathsome decay, I contend that it is the ideal way of disposing of our loved ones who are "not lost, but gone before."