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at the convention of Undertakers, on Friday, June 9th, 1905

THE HYGIENE OF THE DEATH CHAMBER

Introduction

The subject is unusual. Papers, treatises, lectures, books on burial, cremation, and the disposal of the dead abound; but literature treating specially of the hygiene of the death chamber is scanty, fragmentary, and incidental. This is the more strange, for obviously the change that terminates one stage of our individuality - which most love to postpone, which none can hope to escape - is often productive of danger to those whose business, duty, or affection brings them into contact with the departed. That you, the representatives of that honourable caste who supervise and direct the last solemn rites, should have asked an hygienist to expound the scientific bearings and possibilities of funeral obsequies, is at once a sign of your desire to perfect or improve routine practice, and of the progressive spirit of the time.

The survivors in the majority of cases, regarding their dead with a passionate reverence - their senses and mental faculties dulled and numbed by the event - are neither capable nor likely (without direction) of paying attention to the minute details necessary for the keeping of the death chamber in a hygienic condition; they therefore naturally surrender the whole control to you, and the more intimate and extensive your knowledge may be, the better will be your assistance and advice.

What are the changes that occur after death?

However varied the malady, the actual death is simple. Life sits on a tripod ; heart, brain, and lung ; if any one of these supports gives way the rest follows - but in no single case is there death of the whole body at one and the same time. This is strikingly illustrated in the lower animals, the more especially the cold blooded, such as reptiles and fishes. The heart of the shark, or that of the tortoise, the frog, or the turtle, although taken right away from the body, and placed in a solution of common salt of a particular concentration, will go on regularly and systematically beating for quite a long time - hours - and if we look at the matter more minutely and regard the ultimate elements of the tissues, we find that all living organized bodies are composed of myriads of cells and living points, each living its individual life and each dying its individual death. Therefore, although when the heart ceases to tick, when the bellows cease to draw in and blow out air, and the brain loses its consciousness, we call it death, it is merely a fashion of speech, and no one can say at what precise moment the whole tissues of the body are equally dead. Very shortly, however - varying immensely according to the age, the habit of body, the temperature of the air, and cause of death - striking changes commence ; decomposition begins. This at first seldom takes place on the surface of the body, but within, the explanation of which is as follows : - All along the mucous membrane of the nose, mouth, throat, right away through the stomach and intestines to their termination, during life there are myriads of tiny microscopic bacteria, introduced in the first place through the food and the dust of the air, a vast number of which are capable of causing putrefaction. These are kept down during life by the living processes, and especially by certain antiseptic fluids secreted by various glands and organs. When these vital actions cease, no longer inhibited by hostile influences, the marvelous power of reproduction and increase, inherent in all lowly parasitic forms, are put forth, and according to the

temperature of the room, the bacteria commence more or less rapidly to invade the tissues, and by secreting themselves special solvent fluids, the tissues invaded ultimately become liquefied, with evolution of foul-smelling gases. During hot weather not only are the bacteria active in resolving the body into simpler elements, but there are a number of species of the insect world ever ready to attach - from the common blow-fly to various less evident beetles and carrion-devouring grubs - all processes repulsive to the eye and the nose, the reverse of aesthetic. Yet there are not wanting painters of the realistic school, and poets of the morbid school like Baudelaire,* who have been bold enough, the one to paint on canvas, the other to describe in words, the revolting details.

It is not until considerable progress is made in these decomposition processes that any offence, still less danger to the living, occurs.

Those to whom I am speaking well know that in ordinary weather in England bodies are retained in occupied rooms for a few days at all events, especially when enclosed in coffins, without obvious nuisance; but the useful practical thing is to discuss what is the best way to prevent any nuisance or annoyance at all, even under the most untoward circumstances and the most unfortunate environment.

The Coffin

As a chemist who has frequently to deal with offensive animal matter, I always feel that so far as odour is concerned the situation is mastered directly the stinking substances are transferred to retorts or flasks, although the process of doing this may be most unpleasant. Quite similarly, theoretically, when a corpse is bottled up in a coffin, there should be no emanations whatever; but this is far from always being the case if the ordinary wooden coffin is used. I have many times in following my friends to their last resting places experienced, even in the best ventilated churches and chapels, the faint but unmistakable cadaveric odour. The reason is obvious enough. Although ordinary shells or coffins are not very porous, it is difficult to make the joints gas-tight, and gases such as marsh gas, carbonic acid gas, and others, often exercise considerable pressure, let alone the process of mixing known as diffusion, the velocity of diffusion being inversely as the difference of the gravity. These gases, in themselves without any marked odour, carry with them organic vapours more or less offensive.

The poorest waif in England is now provided with a coffin, but it was not always so. In the sixteenth century thousands of people each year were buried without coffins. For example, in one of the Southwark broadsheets (Mr. Rendle, "Old Southwark and its People," London, 1878) there is a picture of a body ready for burial, simply but neatly wrapped from head to foot in a cere cloth, and this practice is recognized by the scale of fees of the same period: - "In any churchyard next the church with a coffin as 2s 8d., without a coffin 20d.; for a child with a coffin 8d., without a coffin 4d." *Op.cit.*

The wooden coffin has been opposed on quite other grounds than those of its more or less permeability, viz, that it retards decomposition, and thus keeps in a cemetery a large amount of decaying matter, and prevents the return of "earth to earth." The chief opponent of any coffin is Mr. Seymour Haden, who exhibited, in 1875 wicker-work receptacles made of white or stained osiers with large open meshes. In certain cases he proposed that these wicker receptacles should be made with double walls, the space being filled with charcoal or some disinfectant material. It is difficult to keep the air of the death chamber in such a case pure or sweet, should there be delay in burial, save in

quite cold weather. Metallic boxes - as, for example, leaden shells - can and are made absolutely impervious. Once the body is in such a receptacle the air of the chamber will be no different to any other air; but the objection to lead is its great weight and the considerable expense - an expense which puts it entirely out of the question for the large section of the population occupying small houses or living in tenements.

Where expense is not a material consideration, such a substance as aluminium will give most of the advantages of lead, and aluminium coffins can certainly be made lighter. This metal, which is becoming cheaper each year, may ultimately be produced at so low a cost that aluminium coffins will prove a formidable competitor to the ordinary elm or oak coffin.

There is a patent metal coffin in successful use at the St. Marylebone mortuary which effectually prevents air contamination. It consists of a metal box, the lid of which has a deep flange loosely fitting into a large groove. This groove can be charged with water or a disinfectant fluid, and thus arranged makes an effectual "water seal." Any undue pressure of gas which would break the water seal is prevented by carrying a vent pipe, with rubber connection, from the coffin lid. The pipe may be led into a chimney, into a fire, or through a window into the open air. There is a window in the lid permitting inspection of the corpse. In detail the invention admits of improvement, but the principle is sound, viz., to have a absolutely impervious box, with a vent pipe from which gases may be led out of the room, or dealt with in a variety of ways.

Ventilation of the Death Chamber

In hot weather, decomposition may set in with great rapidity, and the only proper place in such a case for a corpse is, without doubt, a public mortuary. All local authorities throughout England have, however, not provided this accommodation, and there are many cases in which, under exceptionally difficult circumstances, provision in the house has to be made.

In order to prevent the diffusion of foul odours, and especially in the short or long interval as the case may be previous to the arrival of the shell or coffin, the first thing to do is to study the ventilation of the chamber by tracing the direction of the chief air currents. This is rapidly and easily done by the help of an ordinary candle or a piece of smouldering brown paper. As a rule it will be found that, whether a fire is alight or not, there is a draught up the chimney. If there is a down draught, by heating the chimney either by a small fire or a paraffin lamp, an up draught can be produced. It will then mostly be found that the column of air going up the chimney is supplied from the door and the window; that there is an in-current of air flowing under the bottom of the door and an out-flow of air from the room towards the passage and staircase; an inflow of air from the bottom of the window and an outflow of air at the top of the window. Close to the floor, and a foot or sometimes more above the floor, there will be streams of air converging to the fireplace; in the centre of the room the currents will mingle, and the conditions will become too complicated to trace them satisfactorily.

Obviously, then, any offensive material should be placed in such a position that as far as practicable all the air passing over it will go up the chimney, and this place in nine cases out of ten will be just in front of the fire-place, on the floor itself. The corpse should not be raised on a table or bedstead, and should not occupy the centre of the room. Even with a well-defined current of air there will be diffusion, and all chinks and crevices which may be shown to act as outlets into the passage and staircase should be stopped up with brown paper and paste or other material. Should the death

chamber have an ordinary lath and plaster partition dividing it from some other occupied room, the wall should be covered as far as possible with dry blankets or thick woollen curtains. These fabrics, when dry, have a wonderful property of absorbing both moisture and odours of any kind, foul or otherwise.

The rapid putrefaction rendering such precautions necessary would, however, never occur if immediately the fact of death having taken place was ascertained as an absolute certainty it were the custom to use certain disinfecting substances. Now, although there are a large number of disinfectants, there are very few indeed which for this particular purpose are available.

The salts of zinc, lead, mercury, carbolic acid, arsenic, are all capable of preserving animal matter, but they are all poisons, and all cause a number of deaths each year. Obviously, then, to use as a matter of routine any substance which is a common cause of death, may produce complications and may conceal crime.

There is, however, one substance to be obtained everywhere - cheap, powerful, and efficient - to which no reasonable objection can be offered. I allude to formalin, a liquid much used in anatomical museums for the preservation of specimens. The preservative solution is made up as follows: - Dissolve one ounce of saltpeter and two ounces of acetate of potash in 35 ounces of water and add to this solution 14 fluid ounces of formalin.

If about a quart of this is injected by means of an ordinary enema syringe into the bowels, and also through the mouth into the stomach, and cotton wool soaked in the same solution is put into the mouth, a little of the soaked wool into each nostril, and the remainder of the fluid sponged over the whole body, there will be no putrefaction of any moment for many days, even in the hottest weather, also provided that the formalin solution is used early enough. Should decomposition have advanced so far that the tissues are invaded, the success will be but moderate, and the results may indeed be disappointing.

This proposal is a revival of an ancient process, for Herodotus states the Egyptians used a cheaper method of embalming for those who could not afford the more expensive : -

“They fill syringes with an unctuous liquor extracted from cedar. With this they inject the belly of the deceased, without making any incision and without extracting the intestines. When this liquor is introduced by the anus, it is stopped up to prevent the liquor from escaping. Afterwards the body is salted for the time prescribed (70 days). The last day they cause the injected liquor to issue from the bowels. This has so great power that it dissolves the stomach and bowels and brings them out with it. The natron consumes the flesh, and the skin and bones only of the dead person remain. When they have done this they return the dead without further work.”

Probably the most obviously insanitary use of the death-chamber is when it is devoted to the ordinary Irish wake, which may be shortly described as a festival held by the deceased's friends and relations in honour and in the presence of the corpse. A ceremony of this kind is not likely to be abolished by either reason or compulsion, and the best method of dealing practically with the situation is by adopting the disinfecting measures I have just recommended, which will both abate nuisance and, if properly performed, obviate danger.

The Law Respecting the Sanitary Disposal of the Dead

It is useful in this place to briefly consider the chief sections of the Sanitary Acts relating to the keeping or other wise of the dead in inhabited houses.

By the Public Health Act, 1875, sec.72, "The body of any person who has died from any dangerous infectious disease" is not to be kept for more than 48 hours, save under medical sanction, elsewhere than in a room not used at the time as a dwelling place, sleeping place, or workroom. Penalty, £5 or less.

Similarly, by sec.78, deaths in hospital from dangerous infectious disease are dealt with, and unless under medical sanction, the friends are not allowed to remove the body from the hospital, save for the purpose of burial.

Sec.74 prohibits the use of any public conveyance, save a hearse, for the removal of infectious bodies without the formal acquaintance of the owner or driver, and the owner or driver is obliged to see afterwards to the disinfection of the vehicle.

Special powers may be exercised by the Local Government Board under sec.134 of the Public Health Act, 1875, in cases of formidable epidemic for the speedy interment of the dead.

"Every sanitary authority shall provide and fit up a proper place for the reception of dead bodies before interment (in this Act called a mortuary), and may make bye-laws with respect to the management and charges for the use of the same; they may also provide for the decent and economical interment at charges to be fixed by such bye-laws of any body received into a mortuary."

By sec.89(i) whether "(a) the body of a person who has died of any infectious disease is retained in a room in which persons live or sleep; or (b) the body of a person who has died of any dangerous infectious disease is retained without the sanction of the medical officer of health, or any legally qualified medical practitioner, for more than 48 hours, else where than in a room not used at the time as a dwelling place or workroom ; or any dead body is retained in any house or room, so as to endanger the health of the inmates thereof, or of any adjoining or neighbouring house or building ; a justice may, on a certificate signed by a medical officer of health or other legally qualified practitioner, direct that the body be removed, at the cost of the sanitary authority, to any available mortuary, and be buried within the time limited by the justice ; and may, if it is the body of a person who has died of an infectious disease, or if he considers immediate burial necessary, direct that the body be buried immediately, without removal to the mortuary. Unless the friends or relations of the deceased undertake to bury and do bury within the time so limited, it shall be the duty of the relieving officer to bury such body, and any expense so incurred shall be paid in the first instance by the Board of Guardians of the poor law union, but may recovered by them in a summary manner from any person legally liable to pay the expenses of such burial. If any person obstructs the execution of any direction given by a justice under this section, he shall be liable to a fine not exceeding £5."

What are the infectious Diseases Contemplated by the Sanitary Acts?

To this question the reply must be - Those diseases which by law the medical attendant is bound to notify, and, in addition, any disease to which, by special regulation of the Local Government Board, the sections are applied.

The following is a list of the more common dangerous infectious diseases prevalent in this country: -

- (1) ERUPTIVE FEVERS, - Small-pox, scarlet fever, measles, typhus.
- (2) DISEASE AFFECTING THE NERVOUS SYSTEM, - Whooping cough
- (3) DISEASES AFFECTING THE RESPIRATORY ORGANS, - Influenza, pneumonia, tuberculosis.
- (4) DISEASES AFFECTING THE INTESTINAL CANAL, - Typhoid fever, cholera, diarrhea.
- (5) SEPTICAEMIC MALADIES, - Erysipelas, septicaemia, puerperal fever, plague, anthrax.

The law makes no distinction of degree - from a legal point of view it would seem that small-pox, typhoid fever, and whooping cough are, after death, equally dangerous. Experience has, however, shown that the bodies of those who die from various maladies of the classes enumerated vary immensely in danger to the living, and it may be said, in general terms, that usually the risk of infection is small ; there is, indeed, in some cases, absolutely no evidence whatever that the corpse is infectious.

This may be understood if the origin and cause of infectious maladies is for a moment considered. They all result from the effects of the enormous multiplication within the body of a specific and most minute parasite, the parasite secreting a poisonous fluid, which is the cause of the fever, eruption, inflammation, and so on. The powers of infection during life are, to a great degree, dependent upon the exact seat of the multiplication of the parasite. In small-pox, the chief seat is the skin; in typhoid fever, the bowels; in pneumonia, the lungs. Hence, supposing, for the sake of argument, we consider the contagious matter of these three diseases, if implanted in equal quantity into susceptible subjects, to possess equal virulence, yet as the contagious matter is in the one instance distributed over the considerable area of the skin, and in the other buried in the tissues of the lungs or the bowels, it can be easily understood that small-pox should be - and, in fact, is - far more easily disseminated than typhoid or pneumonia.

There are, again, cases of sudden death during all epidemics, which, without any external manifestation, such as skin eruption, are ascribed to an overpowering dose of the infection. These cases, again, seldom spread, because the harmful matter is retained within the body and does not escape.

Of all diseases small-pox is by far the most dangerous to those not immune, or protected artificially or naturally, who have anything to do with the corpse. Even the simple carrying of the coffin to the hearse has been known to spread the malady.

Scarlet fever is much less infectious; measles still less so. Typhus, of which epidemics are now rare, has always been believed to be dangerous after death, although there is but little real evidence, for those whose duties lead them into a typhus-stricken house, and become in consequence victims of typhus, can scarcely distinguish between other possible sources. If they have been in contact with a typhus corpse, they have also probably handled garments or clothes which have been in contact with the patient. One of the instances of infection is that of the late Dr. Murchison, who is believed to have caught typhus from dissecting, for several hours a day, "in a close room in which were many bodies of persons dead from typhus."

Typhoid fever contagium is mostly expelled in the urine and in the intestinal discharges, but a body once cleansed from these discharges is scarcely dangerous after death. The same remarks apply to cholera. In this connection, Murchison's words are worth citing ("Continued Fevers," 1873): - "There is no proof that enteric fever can be communicated by the dead body. Petegnat was inclined to attribute his own attack to the autopsy of a fatal case. It is true that he was seized a few days after the autopsy, but he had attended both the patient and mother during their illness. Feron cites the instance of a woman who went a distance of two miles to lay out the body of a little girl who had died of the fever, and who was herself seized immediately after, but the circumstance is equally explicable on the supposition of some local cause in the house where the girl had died."

There are divers opinions as to the dangers from plague. In the olden time, plague-stricken bodies, dead or alive, were considered atrociously infectious. Witness, for example, Thomas Dekker's account of the Great Plague of London, 1603, in which, as a type of similar cases, he cites the case of one who, fleeing from London, was stricken by the plague forty miles out, was refused admittance everywhere, and ultimately died on a heap of straw in a field, "but the parson and clerk refused him burial, and he was laid in a hole where he had died." Modern experience, both in India and in Sydney (Australia), tends to show that the extreme views of danger with regard to plague-infected corpses are not sound. There may be, and there is, some risk, but it is more of an indirect than a direct nature. It is now believed that great factors in the dissemination of plague are small parasites, as fleas. These suck in the infected blood, whether of rats or human beings, forsake a dead host and transfer their attention to the living, and thus inoculate the plague.

With regard to infectious diseases generally, the rule is that directly death occurs, and decomposition commences, the putrefactive process begins to destroy the infection, and ultimately the infection entirely disappears. The idea that typhus or other fevers are likely to be propagated by a necessary exhumation is destitute of solid foundation. To this general rule there is a remarkable exception in the case of anthrax, or malignant pustule. It is rare in man, being chiefly confined to those who have the handling of hides, or horse-hair, and of unwashed wool. Anthrax is a parasite consisting of tiny rods, which are not at all resistant to either disinfectants or putrefaction. These rods, if freely exposed to the air on a nutrient medium, are apt to form spores, which are very difficult to destroy. Hence the contagium of anthrax, although it may, and probably does, decrease in quantity after death, increases in virulence. But here again the danger rather consists in a possible inoculation than an infection in the true sense of the word.

From this rapid résumé of the possible influence on health of a fatal infectious case, you will gather that - although I hold that the general principles of the English sanitary law are sound, and that the infectious dead should always be separated as far as possible, as completely as possible, and as speedily as practicable, from the living - infection itself, save in the case of small-pox, is not often conveyed in that way. Within the corpse there may be a large quantity of virulently infectious material; but in the absence of muscular movement, of secretion, of coughing, and other vital movements, the air and dust of the room are but little contaminated.

The Effect on Health of Putrid Odours

One of the possible causes of ill-health produced from decaying animal matter is a class of diseases which are called by the faculty the "septic" class, or in more common language are known as cases of "blood-poisoning."

Such diseases, as a class, are distinguished by suppuration, by diarrhoea, and not infrequently by jaundice and considerable depression. The most common method of contracting blood-poisoning is by actual inoculation. A person scratches his hand with an infected knife, or a dirty piece of glass, or a nail; the hand and arm swell, an abscess forms under the armpit, and general symptoms of bodily infection supervene. Less frequently blood-poisoning appears to be caused by breathing in some foul putrefactive odour.

It is certain that the continued breathing of foul animal odours does produce in certain persons symptoms of blood-poisoning, and this is what one would be prepared to expect as the possible effect of emanations from a body in a state of putrefaction. Blood-poisoning is more likely to be produced in persons unaccustomed to such odours, for those who constantly work in an atmosphere foul with stinking animal matter - such, for instance, as the atrociously-smelling trade of the gut-scraper - do not appear to be much affected by it.

Is an Undertaker's Occupation Unhealthy?

Dr. Wm. Farr stated his decided opinion (supplement to the 35th Annual Report of the Registrar-General) that the occupation of an undertaker is an unhealthy one, but it is by no means clear upon what statistical evidence this statement was based. In the first place, the word "undertaker" is used very loosely. It certainly includes a great number of persons who merely take orders, supply funeral goods, or exercise general supervision, but who have nothing whatever to do with laying out the body, and scarcely ever enter the death chamber.

In the next place, Dr. Ogle, the successor of Dr. Farr, in the supplement to the 45th Annual Report of the Registrar-General, 1885 (Table P, page lxi.), gives a list of industries with highest mortalities from certain selected causes, but the undertaker is not among them.

Ten years later again, Dr. Tatham, the successor of Dr. Ogle in the Registrar-General's office, gives an elaborate review of occupational mortality, but does not specifically mention the "undertaker." It might be thought that the high mortality of butchers, those who are constantly in the presence of animal death, and have the handling of dead matter practically identical with our own frames, would prove that contact with such matter was *per se* injurious. Dr. Tatham states (supplement to the 55th Report of the Registrar-General):-

"The census returns show that 90,944 butchers above fifteen years of age were enumerated in England and Wales in the year 1891, the number being increased by nearly one-fifth part since the previous census. The mortality in this occupation at ages under 25 years is remarkably low, being below even that of males in the selected healthy districts, but throughout the main working period of life the death rates are in excess of those of occupied males. The comparative mortality figure is 1,096, and is therefore higher than that of occupied males, generally by fifteen per cent. The mortality figure of butchers exceeds that of occupied males under almost every heading in Table IV. Their mortality - due, both directly and indirectly, to intemperance - is appalling, the figure for alcoholism being 35, and that for disease of the liver 56, against 13 and 27 respectively in the case of occupied males.

From this it will be seen that the high mortality of the butchers is not primarily due to their occupation, but to the butchers succumbing to temptations.

If the followers of any trade or calling drink more than is good for them, obviously the “comparative mortality” figure will be high, and the manner of death will suggest the reason.

The duties connected with the last rites can all be performed with knowledge, and precautions taken to render injury to health unlikely. Therefore the occupation of an undertaker need not be unhealthy, and a strict investigation will, I expect, show that it is about the average.

Special Points with Regard to Bodies which have to Remain Long Unburied

The necessity for keeping unburied bodies for a considerable time arises in the main among two classes of the community, the one at the top of the social ladder, such as the kings of the earth, and those eminent in war, poetry, or politics whom the nation honour by state funerals ; the other class at the bottom of the ladder, such as bodies recovered from gutter, ditch, river, and the world’s lone waste places, some starved, some self-sacrificed, some murdered, but all friendless and nameless. With regard to the first class, when it is remembered that a lying-in-state mostly means that a vast concourse of people file around the bier day after day, if the body is not to be hermetically sealed up in a metal shell the only practical means to minimize or actually prevent offence to the eye and nostril is some form of embalmment. As an instance of the length of time in the past during which the bodies of kings remained subject to a kind of post-mortem adulation, may be cited the funeral rites of Henry II. of France (1559), as described by that talented historian, Edith Sechel (“Catherine de Medici and the French Reformation”):-

“The embalmed body lay for eighteen days in an upper room before it was borne to a state bed in the Salle d’Honneur, which was hung with fresh tapestries for the occasion. Here it abode for six more days - the King’s waxen effigy, sumptuously clad, beneath it.

“The nobles entered one by one to sprinkle holy water on the corpse, and Mass was celebrated daily at various resplendent altars. Daily, too, his Majesty’s dinner was served as usual, the grandees waiting around the empty table; after which ghostly ceremony the meat was given to the poor. Twenty-four days being now over, the body was again moved on a high scaffolding to the next room – the Salle de Deuil – a vast hall of darkness hung with black, the light shut out by thick black curtains, and here among the shadows of death the prelates met next day for High Mass and received the new king from St. Germain in his mourning mantle of purple sown with fleur de lys. The reception was monotonous in its solemnities. When it was at last over the young king stepped forward to sprinkle holy water on his father’s form, followed first by his brothers, then by all the princes and peers, and last, two days later, by a throng of Government officials, presidents, provosts, and judges. The traditional thirty days had now come to an end, and the dead king was carried to Notre Dame in the midst of a winding procession - a shifting mass of gold and purple and scarlet against a black background, stopping in the Cathedral for the requiem (and also for the mourning princes’ dinner hard by), filing out and onwards to St. Ladre, and thence again to S. Denis.

“Funeral orations were in plenty, but we cannot help a feeling of relief when we read that the king who was no more, yet was still trammled by etiquette, was at length taken to his quiet grave. At one end sat Cardinal de Lorraine, at the other the Constable de Montmorency, dominating the situation to the end.

“Then there sounded a cry of ‘Rois d’Armes venez faire votre office,’ and the Knights of Arms and the Heralds advanced slowly, bowing low to the open grave, and taking off their hats and breast-

plates, which they laid within it. The flags and spears of other officers handed to the Rois d'Armes were put beside the armour, the Maitres d'Hotel followed with their bâtons, which they themselves dropped into the trench, and the crown and the Main de Justice made up the sum of the funeral offerings. The Constable rose from his seat, and 'Le Roi est mort' he called out; the Rois d'Arms next took three steps and shouted, 'Le Roi est mort; priez Dieu vous pour von âme!' Whereat the surging crowd knelt down and prayed 'for the space of three Paternosters,' after which the Constable withdrew his bâton from the grave. 'Vive le Roi!' he cried, 'Vive le Roi!' repeated the Rois d'Armes and the princes; there was a sudden burst of music from drums and fifes; and Henri II was left to sleep in peace. For his heart, which was embalmed, there was a separate funeral."

Though our own ceremonies are not of so painful a length, they are yet of sufficient duration, and necessitate special measures, and the best and only method is some form of embalmment.

Embalmment

The idea of the great embalmers of Egypt was to preserve the form, the hue of the face, the hair – all, in fact – not for a day, but for thousands and thousands of years. For this purpose all the easily decomposable parts were removed; the brain, with laborious and painful ingenuity, was scooped out with special instruments through the nose the intestines were removed, nothing much was left save the case of skin and muscle covering in the bones. Aided by the hot dry air of Egypt, this was thoroughly saturated with what we should call disinfecting substances, wrapped in many wrappings, and painted in some semblance of life. If the preservation of a dry wrinkled discoloured skin, of the hair, and grim caricature of the features is success, the Egyptians have been successful ; but if their aim was to resist "decay's effacing fingers," and to preserve form and features as in life, the failure has been complete. Much nonsense has been talked about their skill, but the fact is they had neither the anatomical, still less the chemical, knowledge of the present day. Personally I have no doubt that the twentieth century embalmers of this country are able to produce, by more scientific means, far better, more life-like, and more enduring results.

Whatever views we may possess as to the propriety of embalmment, there can be no doubt as to its absolute necessity and its great utility in a number of instances similar to those cited. It is decidedly a hygienic measure which renders the body absolutely innocuous.

Public Mortuaries

The mortuary is the public death chamber, a building built for the specific purpose of the reception of the dead, and, as such, is usually constructed on approved sanitary principles. To preserve the hygiene of such a place presents no difficulty. One of the best examples of an up-to-date mortuary is that of St. Marylebone in Paddington Street. It is in the form of a chapel. The religious idea can never be dissociated from funeral ceremonial. The architecture of all mortuaries should be of the ecclesiastical type. In this mortuary chapel any sect - the Established Churchman, the Nonconformists of various views, the Roman Catholic, the Buddhist - can house their dead and perform any rites they please. The walls are clothed half-way with glazed tiles, and the whole internal structure can be readily cleansed. It is simply ventilated and well lighted.

In London - or, as for that, in the British Isles - we have no institution like that of the Morgue in Paris, where corpses are kept for many months for the purpose of identification. In cases of crime, obviously the first step to be taken is to ascertain the individuality of the victim. That remaining

unknown, it is difficult, if not impossible, to obtain a clue to the identity of the assassin. The managers of the Morgue mainly trust to a low temperature to preserve the remains. The power of intense cold to prevent putrefaction for indefinite periods is well exemplified in the pre-historic forms of huge animals which have been recovered from the sands of Siberia. These have had muscles, eyes, organs, and general form in a perfect state of preservation, yet it is probable that the mammoth had ceased to exist long before the Pyramids were built.

The great success of the Paris Morgue in leading to the identification of the dead suggests that it would be well if there existed in London and other large cities a similar institution, to which, after inquest, all unidentified bodies could be conveyed and kept for a certain time, say three or six months. If cases were restricted to simply those requiring identification, the expense of construction and maintenance should not be great.

Conclusion

The comfort and health of the living must always be the final consideration, but a strict attention to the hygiene of the death chamber interferes not with the manifestation of grief, takes not away from reverence, diminishes not respect.

The public will expect the individual members of your Society to put into practice the most approved principles of sanitary science in conducting the last rites, whether those rites are of a simple character or accompanied by pomp and circumstance.