

An exposition of the dangers of interment in cities; illustrated by an account of the funeral rites and customs of the Hebrews, Greeks, Romans, and primitive Christians; by ancient and modern ecclesiastical canons, civil statutes, and municipal regulations; and by chemical and physical principles. Chiefly from the works of Vicq d'Azyr ... and Prof. Scipione Piattoli ... / with additons by Felix Pascalis.

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Publication/Creation

New York : W.B. Gilley, 1823.

Persistent URL

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AN EXPOSITION
OF THE
DANGERS OF INTERMENT
IN
CITIES :

ILLUSTRATED BY AN ACCOUNT OF

The Funeral Rites and Customs
OF
THE HEBREWS, GREEKS, ROMANS, AND PRIMITIVE CHRISTIANS ;

BY

ANCIENT AND MODERN ECCLESIASTICAL CANONS, CIVIL STATUTES,
AND MUNICIPAL REGULATIONS ;

AND BY

CHEMICAL AND PHYSICAL PRINCIPLES.

CHIEFLY FROM THE WORKS OF

VICQ D'AZYR of France, and Prof. SCIPIONE PIATTOLI, of Modena ;

WITH ADDITIONS

By FELIX PASCALIS, M.D. &c.

—◆—
NEW-YORK :

PUBLISHED BY W. B. GILLEY, BROADWAY
J. SEYMOUR, PRINTER.

1823.

Southern District of New-York, ss.

BE IT REMEMBERED, That on the eleventh day of July, in the forty-eighth year of the Independence of the United States of America, Felix Pascalis, M. D. of the said District, hath deposited in this office the title of a Book, the right whereof he claims as author and proprietor, in the words following. to wit:

"An Exposition of the dangers of Interment in Cities; illustrated by an account of the Funeral Rites and Customs of the Hebrews, Greeks, Romans, and Primitive Christians; by ancient and modern ecclesiastical canons, civil statutes, and municipal regulations; and by chemical and physical principles. Chiefly from the works of Vicq D'Azyr of France, and Prof. Scipione Piattoli, of Modena; with additions, by Felix Pascalis, M. D. &c."

In conformity to the Act of Congress of the United States, entitled, "An Act for the encouragement of Learning, by securing the copies of Maps, Charts, and Books, to the authors and proprietors of such copies, during the time therein mentioned." And also to an Act, entitled "an Act, supplementary to an Act, entitled an Act for the encouragement of Learning, by securing the copies of Maps, Charts, and Books, to the authors and proprietors of such copies, during the times therein mentioned, and extending the benefits thereof to the arts of designing, engraving, and etching historical and other prints."

JAMES DILL,

Clerk of the Southern District of New-York.

PREFACE.



WHEN I published last year some strong admonitory remarks on the insalubrious influence of our numerous places of interment, I did not presume to indulge the most distant expectation that I should see, before the return of another season, a legal prohibition of interment in the city, and that many other writers would engage their services in the cause of this salutary reform. Although I have not the honour of being the first (A) that deprecated a practice introduced by slow degrees, in the dark ages, through the superstition of the majority, against the better sense, the purer piety, and the repeated efforts of the more enlightened few, and which is now established among every class of society,—yet I was, at the time, rebuked very severely for supporting this doctrine, which was defined to be *as novel as it was false*.

The task of acquainting my fellow-citizens with the dangerous consequences of city interment, and of illustrating the subject by references to historical facts, civil and religious statutes, and to results drawn from the principles of natural philosophy, a task which I thought I might accomplish, with the assistance of the writings of Vicq d'Azyr and Scipio Piattoli, has proved a much more difficult one than I imagined it would be, from my previous acquaintance with those works. Much of the controversial matter

is in a canonic, legal, or technical form, or mixed with scholastic and Catholic questions, not very familiar nor intelligible to a protestant public. Those two writers having written at different periods, and in different languages, they often repeat the same arguments and quote the same authorities. There were two things continually demanding attention in the translation : the one, from the necessity of retrenching repetitions ; the other, from the erudite notes in elucidation of the text, which were of too great number and variety to be tested by any theological library in this city. A plan, susceptible of developement for the classification of the materials selected from those works, was therefore necessary, and was adopted.


The first chapters of the "Exposition," are condensed from a long dissertation on ancient modes of burial. The ninth, was partly abstracted from the preliminary discourse of Vicq d'Azyr. In the tenth are assembled together the legal acts scattered throughout the text of both writers. The eleventh is abridged from Piattoli. While I cannot trace an exact line between the translated and annexed matter in the work, I may say, that for the authorship of the four last chapters, I alone am responsible.

If translators and expositors of works on polemic subjects were to content themselves with the authority of the notes to the text, without giving them to the reader, their labours would be of small value ; even the compilations of Piattoli and Vicq d'Azyr, complete as they are, if they had not been warranted by the universal references that fill every page, would not have been handed down to us through a lapse of more than fifty years, as works of undeniable authority and unquestionable veracity. It would not have been doing them justice, to have divested this work entirely of these notes, although, in the main, they were intended for a Roman Catholic community, and were only applicable in a Roman

Catholic country. Such of them, however, as were absolutely requisite, have been placed in the Appendix, numerically arranged. The documents at the end of the work are chiefly of local import and interest.

I now beg leave to take this method of congratulating my fellow-citizens on the firm and wise plan of operations begun by our magistrates and the Board of Health. In endeavouring to rescue our city from the visitation of malignant fevers, they have scrupulously avoided enlisting themselves under the banners of this or that theorist on the origin of summer and fall fevers. With more prudence and philosophy, they strike at the root of every ostensible source of a calamity that more probably is the effect of a combination of several causes, than the effects of a single one. This procedure has been constituted one of their official duties by the legislature in 1813, which directed them "*to regulate or prevent the interment of the dead within the city.*" May they continue to prosecute their task successfully. Public officers are seldom rewarded with public approbation; and the testimony of upright intentions is too often their only recompense; but I hope, that these, more fortunate than the generality, will deservedly enjoy the perfect confidence of the community, and the harmonious concurrence of their fellow-citizens in their measures for the present emergency.

NEW-YORK, *July 11th, 1823.*



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EXPOSITION

OF THE

DANGERS OF INTERMENT, &c.

CHAPTER I.

A general view of the modes of Interment, or disposal of the dead, in ancient times.

THE necessity of interment at a distance from inhabited places, is founded on the dangerous nature of the exhalations proceeding from animal decomposition; and has been acknowledged by the general opinion of the most celebrated nations of antiquity, sanctioned by religious tenets in every age, and in our own has, in several instances, been countenanced by civil authority. Our inquiries, however, into the modes of burial, or destruction of the remains of the dead among ancient nations scarcely civilized, or among barbarian tribes, have presented to our view many superstitious and absurd or contradictory customs, that are of little use as precedents; especially as history teems with more uncertainty and obscurity the nearer we approach its early or fabulous

periods. It would be of little avail to follow Herodotus, Cicero, Lucian, and Spondanus, through relations, in which they inform us that some Asiatic nations feasted on the slain, and murdered and devoured the sick and the aged; that others threw the dead to the ferocious animals of the neighbouring forests; that others, on the borders of seas, lakes, and rivers, cast them into the current, or the deepest part of the water; that the Scythians buried them in snow; and that where forests afforded fuel, the survivors frequently disposed of the departed by means of fire. (1)

But in a more advanced stage of society, the voice of religion, reason, and policy, called for the careful interment of the dead. The Egyptians attached to public burial an idea of honour; they considered it a recompense for virtue, and an excitement to public emulation. The severe examination into the life of the deceased, on the verge of the gloomy lake where it was decided what character he should hold in the eyes of posterity, seemed to invest interment with mysterious importance, and rendered it a desirable object. Religion then, giving the consoling prospect of a future life, where the soul should still preserve a recollection of its earthly existence, excited a respect for the tombs of those who had lived virtuously. (2) It was a crime to disturb the repose of the dead in their last abode; and a high desire of becoming worthy of funeral obsequies, was universally cherished. A reverence for tombs thus became a part of religious worship; and to pay promptly the last du-

ties to the dead, was held as a sacred obligation. To pass a corpse on the road without strewing earth over it, was thought a monstrous impiety. To break open tombs, or graves, and to scatter here and there the disinterred bones, was an awful sacrilege. He who touched a dead body, was guilty of a profanation which only lustral water could wash away. In some places, those were accounted to have contracted an impurity who had trodden on a grave. They, therefore, would neither build houses, nor erect walls, nor construct temples, on grounds that had been used for inhumation, a precaution that tended to separate widely the dead from the living, and to restrict interment to the most distant situations.

The Assyrians, Medes, Parthians, Tyrians, Phœnicians, Ethiopians, the Egyptians also, and the Persians, had always vaults in particular places, destined for interment. The Chinese and the Peruvians, situated on the opposite sides of the globe, had the same practice. There are tombs of kings and great men of distant ages which are excavations in rocks, upon the most solitary mountains. Gyges, king of Lydia, was buried at the foot of mount Tmolus. The remains of the kings of Persia were entombed on the Royal Mountain, near the town of Persepolis; Silvius Aventinus was buried on the hill that bears his name; and king Dercennus was interred *within* a high mountain, as Virgil attests.—(*Virg. Æneid*, l. 11. 850.)

The ancient Russians transported the bodies of their deceased princes to the deep caverns along

the Boristhenes; travellers, led by curiosity, still visit them. The Danes constructed artificial hills for the sepulchres of their kings. (3)

The loss of a beloved object required to be replaced; and, doubtless, the art of delineation arose from the attempt to trace an outline of features, vividly impressed on the recollection. This desire, which, at the first thought, may have seemed of but little influence on the state of society at large, has, however, been turned to its advantage. But man is generally impelled by his passions beyond the bounds of reason. Instead of portraits, busts, or stamps, he wished to retain the very object itself. The affectionate zeal of an afflicted father, son, widow, or lover, invented at length the art of giving a species of perpetuity to the inanimate form; and the Egyptians *embalmed* the dead by drying, salting, varnishing with wax, smearing with honey and cedar dust, and by using every art capable of preventing the action of the air upon the stagnant humours, to preserve the body from corruption, and to secure it in such a manner that it might be kept without danger to the living. Self-love gave wide encouragement to this art; and it was thought that as long as the form remained entire, the soul hovered near the body to which it had formerly been united. This opinion was very favourable to embalming; the consequences of which seemed at length so dangerous as to determine the public authorities to abolish the custom. At first, the bodies embalmed were kept in distant districts, in vessels of glass or clay, placed

in some isolated cave, or in dry sand, or under sandstone impervious to water. But these customs at length degenerated so much, that houses were filled with these vessels; they were kept as a most precious family deposit, and the most sacred civil pledge. This superstitious practice, however, could only have been prevalent among the great and the rich. (4) The people, that is the greater number, were contented with simple inhumation; and there have been whole nations, among whom burial was practised generally and without interruption.

Contagious diseases that broke out in the midst of the Egyptians, and baffled every remedy, led them to remove all the embalmed to a distance. The great number of dead after the carnage of battle, obliged them to have recourse to burning, and preserving the ashes. These examples were carefully employed to destroy the too frequent custom of embalming, and succeeded the more easily as the reigning opinion regarded the latter practice as productive of disease. In a short time the face of things was entirely changed, and tombs and vases were used only for the ashes of the funeral pile. Even nations that till then had regularly practised burial, began to make use of fire to consume the dead. Long wars, frequent transmigrations, and the ruin or rebuilding of cities, had in the course of time, overturned whole countries; and bones confided for years to the dust, were unavoidably disturbed and exposed. The fear of this profanation determined the general adoption of burning the

dead ; a measure which, it was thought, could not but secure their repose.

They went still further, and even excluded these ashes, venerated as they were, from within the walls and precincts of cities ; and deposited the urns in the places consecrated to burial. The highways were, for a long while, bordered with tombs and slabs of marble covered with inscriptions. Thus the glorious deeds of his ancestry were continually before the eyes of the passenger ; and examples of excellence and subjects of emulation were presented to all indiscriminately. A glance on the graves of the great or the good, was a silent reproach to the unworthy. And more : in consequence of stationing the tombs upon the roads beyond the gates, towns attacked, were not as liable to slaughter, conflagration, and destruction ; the citizens felt constrained to leave their walls for the defence of those sacred relics, which it would have been base to abandon to the power of the enemy.

Then religion introduced new dogmas that favoured this custom. Philosophy theorized on the nature of spirits and the activity of fire, which, it said, would the most promptly disengage the soul from its cumbrous prison, purify it by delivering it from the burthen of a perishable body, and rapidly elevate and unite it to the soul of the universe. The industry of the Egyptians discovered a new means of preserving the ashes of the dead by the use of the incombustible amianthus. From the expensive nature, however, of the fune-

ral pile, with its accompaniments of rich drugs, spices and perfumes, we presume that the people in general never obtained that distinction. (B)

If we search through history, we will find that soldiers have been mostly employed to construct roads; and that subterranean cavities and excavations have always been made at a distance from cities. It is also certain that in several countries there have been public funds assigned for the erection of tombs; and for the maintenance of pyres that were in constant requisition in very populous states. Among so many customs, produced by caprice and the love of change under different circumstances, the natural sense of man, his religious doctrines, and his laws, have ever agreed in removing the dead from the living; and the motive for which tombs were located at a distance from cities, has been always kept in view.

We will now give a cursory summary of these rites among the three most interesting nations in history, the Jews or Hebrews, the Greeks, and the Romans. The elements of our own customs, in this particular, we will find in their funeral ceremonies.

CHAPTER II.

*Burial at a distance from dwellings practised among
the Hebrews.*

ALTHOUGH the primitive church drew her proselytes from Greece and Latium, the first foundations of Christianity were laid among the Jews. The traces of Judaic antiquity, preserved perfectly pure and inviolate, lead us back to the most ancient times in which inhumation was a general practice. Death was brought into the world by an awful crime. Cain, after having dared to raise his hand against his brother, thought to conceal the deed by covering the body of his victim with earth.--(*Joseph. Antiq.* book i. chap. 3.) It must have been from this example that the bodies of those who died were *inhumed*, whether in open fields or in inhabited places. The ridiculous traditions of the Rabbis, adopted by some of our historians, have accredited the story of the bones and skull of our first forefather having been scrupulously preserved by Noah until the deluge. Abraham bought from the Children of Heth the cave of Hebron, and deposited in it the corpse of Sarah. He himself was buried there, as was Isaac after him, and Rebecca and Leah also. The tomb of Rachel was placed aside of the road from Jerusalem to Ephrata.

Jacob bought likewise from the children of Schechem a piece of ground, where he had a tomb erected. He was buried there with much pomp, by his son Joseph, who had him transported thither from Egypt, where he died. Joseph and all his brethren received the honour of interment in the same place. (5) During the Egyptian captivity, the tombs of the Israelites were undoubtedly placed in some distant spot, according to the custom of the people in whose country they were. Their long wanderings through the desert served to give still more stability to this custom. Moses was interred, by the command of God himself, in the valley of Moab, over against Beth-peor; Miriam, his sister, at Kadesh; Aaron at Hor; and Eleazar the son of the latter, as well as Joshua, on the mountains of Ephraim. After the entrance of the Jews into the promised land, the establishment of the Judaic law, and the inauguration of the religious ceremonies it prescribed, they found that the commands of God forbade them to allow the dangerous vicinity of the dead. According to them, those who touched a corpse contracted a legal impurity, to efface which their clothes must undergo the cleansing of water. If the dead were buried in the houses of individuals, it rendered them unclean. This rule made them very attentive to remove the dead from their dwellings. They so dreaded any communication with them, that passengers and travellers were prohibited from treading on the graves which were marked by little pillars. They were also very careful

to paint the tombs white, and to renew the coating every year. They were, however, permitted to inter at their country-seats, and here was displayed all the luxury of the grandees of the nation. The nurse of Rebecca and Deborah was buried at the foot of a tree. The unfortunate Saul had the same fate. (6) The priests were buried on their own estates, and sometimes in the royal sepulchre.—(*II. Paralipom.* ch. 24 v. 16.) Vaults dug in the hill of Zion, under the foundations of the temple, and in the royal gardens, were destined for the last abodes of the kings of Judah. The course of time brought no great change in practice, although this people underwent such eventful vicissitudes. To judge by the three following passages of scripture, it would appear that only a few foreign customs, such as burning the dead (7) and embalming, were introduced among them. In *Paralipomenes*, and the books of *Jeremiah*, the ceremony of burning the dead is spoken of as a rite introduced in favour of the kings only. (8) Perhaps this custom was of short duration, and only peculiar to a few. The bodies of Saul and Jonathan were burnt to ashes by the people of Jabesh-gilead, to rescue them from the insults of the Philistines. (9) Some received the honours of embalming, certainly not on the same account. The fetid smell which exhaled from the body of Lazarus, four days after death, would lead us to conjecture that the gums, perfumes, and essences, poured upon the dead, were only intended to thicken

en the texture of the linen in which they were wrapped, to confine the disagreeable effluvia.

Thus we see, that caverns and fields were the places appropriated for interments. (*Calmet. Dict. Bibl. art. sepulchrum.*) Elijah was inhumed in a grotto where other bodies also were placed, among which was one that, according to the Holy Scriptures, miraculously recovered life as it touched the bones of the prophet. A grave for young Tobias was dug in the same field where the other unfortunate husbands of Sarah were deposited. The monument erected by Simeon at Medina in favour of the Maccabees is well known. They were carrying the son of the afflicted widow of Nain out of the city, to place him in the same spot with the rest of his family, when he was met by Jesus Christ. The maniac possessed with devils, whose name was Legion, (*St. Luke viii. 27*) and who had often broken his bands and fled to the wilderness, "abode not in any house, but in the tombs." Lazarus was buried at Bethany, fifteen furlongs from Jerusalem. Joseph of Arimathea, a man of high standing among the Jews, had had his tomb hewn out of stone in a garden near to Golgotha, and which became the sepulchre of Jesus Christ. Many holy persons, who were resuscitated at the death of our Saviour, were entombed out of Jerusalem; for it is written in the Scriptures, that as soon as they arose, they returned into that city. Each town always had a public cemetery beyond the walls. Some think, that that of Jerusalem was in the valley of Cedron, near which the

Pharisees bought the field of Vasaja as a burial-ground for strangers. A custom so steadily maintained, and faithfully pursued by a people who adopted it in obedience to the commands of God, should be an example of authority to Christians.

CHAPTER III.

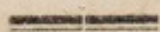
Burial rites of the Greeks.

THE most ancient custom among the Greeks was *inhumation*. Pausanias has left us an exact enumeration of the most remarkable graves in his time; but his account seems rather fabulous. He tells us they were situated in the open fields or along the sea-shore, at the foot of mountains or on their summits. In the end, the custom of burning the dead was introduced among them also. (10) They enclosed the urns which contained the ashes in private houses, within cities, and, sometimes, even in their temples. These examples were at first rare, and the distinction granted only to the chiefs of the administration, and generals who had saved their country. Inhumation was always more universal in Greece than any where else, and there, the salutary custom of committing the body to the earth beyond the limits of

cities, was never infringed. The Thebans, the Sicyons, the people of Delos and Megara, the Macedonians, the inhabitants of Chersonesus, and of almost all Greece, had the same customs in this respect. (11) The most celebrated legislators made it an interesting point of their codes. Cecrops of Athens wished that the dead should be transported beyond the walls; Solon adopted and re-established this wise regulation in all its vigour; and there was not at Athens, until the latter days of the Republic, but a small number of persons buried within the city; and this had only been allowed as an honourable distinction, in favour of some heroes. It was thus that they buried in the public walk of the Ceramicus, the bodies of those who had died in defence of their country. (12) Plato in his Republic would not even permit inhumation in fields fit for cultivation, but reserved for that purpose sandy, arid ground, that could not be applied to agricultural uses.

The same laws were in force in *Grecia Magna*. The Carthaginians found outside of Syracuse the tombs of the inhabitants of that city; and they met the same at Agrigentum. (13) With them, this custom was sanctioned by religion. (14) The holiness of tombs, many of which became the temples of certain deities, and which were viewed as sanctuaries to the unfortunate and the guilty, the respect shown to the memory and the ashes of their ancestors, the punishments with which the rules of their sacred institutions threatened the violators of these customs, the maledictions such

received from their priests, and in a word the whole religious doctrine and mythology of the Grecians, tended to support the laws that removed the bodies of the dead completely from the habitations of the living.—(*Arnob. l. 6. Marcel. c. 6.*)



CHAPTER IV.

Funeral Ceremonies of the Romans.

NOTHING is more interesting in the history of that celebrated nation, than the endless variety of rites, laws, and forms, which they scrupulously observed towards the dead. One half of the ruins or emblematical antiquities remaining, relate to this. Their great respect and religious observance originated in their firm belief that the souls of the *unburied* must wander a hundred years along the borders of the Styx, before they received their final award. If, therefore, the body was lost, the friends of the deceased would erect an empty monument, *tumulus inanis*, or *cenotaphium*, around which they would perform the usual solemnities—(*Vid. Æneid, iii. 304. vi. 326—605.*) Hence their practice of strewing a little earth over a neglected corpse, met by chance.—(*Horat. Ode 1. 28.*) They also held it criminal to deprive even a slain enemy of decent burial, or to disturb the contents, or the

silence of the grave. The spirit and intention of these practices were, of course, wholly incompatible with the profanation of the temples of the gods, with what they accounted unclean; no priest would have any connexion with funeral affairs, deeming it an act of impurity or contamination to touch or to look upon what belonged to the infernal regions and deities. (15) These are all subjects for the classic or literary critic, or the antiquary; but our inquiries into their causes and practical application will show, that they were occasioned and sanctioned by a wish for the promotion of the public welfare, and the preservation of health.

Numa Pompilius was buried on the Janiculine hill, not then enclosed within the walls. The succeeding kings were buried in the Campus Martius, a large plain along the Tiber. But these places, where many valiant and illustrious persons who had deserved the gratitude of the public had been deposited, were at a distance from the city, which then had only three or four gates. Valerius Publicola and Tubertus obtained the honour of interment in Rome; with the former of these it extended to his posterity: but no such distinction was afterwards granted except on account of great services rendered to the nation. It is well ascertained that ancient Rome permitted none of her citizens to be interred within her walls, save the vestal virgins, who enjoyed singular honours and privileges, unless they had violated their vows, in which case they were buried alive in the *Campus Sceleratus*, the field of execration.

In the course of time, great heroes, and chiefly military characters, were allowed the honours of interment within the walls, and wealthy patrician families found means to gratify their ambition and pride with the same privilege, which gave them the power of erecting, in some frequented situation, their splendid sepulchral monuments. This abuse, however, was abrogated at the commencement of the fourth century, by the law of the twelve tables, which was enacted by the decemviri; the seventh law prohibits the burial or burning of the dead within the city :

Hominem mortuum in urbe, ne sepelito, neve urito.

The mode of destroying the dead by burning, had been introduced into Rome owing to the impossibility of interring all the human remains left exposed throughout the territory, during the many wars of the Republic and the incursions of the Barbarians. The entire neglect of these would have seemed impious to the superstitious Romans. Immemorial experience had taught them, that they could not with safety indulge in the interment of the dead among themselves and their dwellings. Effectually to protect the remains of their venerated chiefs or companions in arms, the funeral pyre was also adopted in imitation of the Greeks; (16) the various forms and ceremonies tending this rite, for the rich as well as the common people, composes a most interesting collection of facts, well worthy the study of the archeologist, and was the full amount of all their

religion could require to constitute a regular burial; even the ashes remaining were carefully collected by the friends of the deceased, enclosed in an urn, and deposited in a monument, or in the catacombs; some of which still exist with several ranges of niches for the reception of urns. We suppress many details in relation to the burials of the Romans, which only serve to prove that, in concert with the Egyptians and Grecians, their predecessors and contemporaries, they held every thing sacred and inviolable that had any reference to the dead; and felt besides a conviction of the danger and impropriety of crowding the dead into places of deposit among their habitations and temples; or, as one of the commentators of their laws eloquently expresses himself on the subject of the law of the twelve tables,—*Corpus in civitatem inferri non licet, ne funestentur sacra civitatis*. The emperors Diocletian and Maximian enacted the same prohibition in the Code, *lex. 12. on the places consecrated to the worship of the gods: Ne sanctum municipiorum jus polluatur. (Paulus lib. Sentent. Tit. 21. s. 2.)*

It appears that at the period of their conquests, the Romans neglected agricultural pursuits, because foreign countries supplied them plentifully with treasures and provisions.

The most illustrious houses, at that period, were in the habit of providing burial places and monuments for their families in their own lands, with certain portions of ground annexed to them; which, of course, remained uncultivated. Government.

therefore, perceiving the abuse and injury resulting from these appropriations, endeavoured to suppress the scattered vaults and grave-yards; those of the *Metelli*, the *Claudii*, the *Scipiones*, the *Servilii*, and the *Valerii*, were removed and located with their architectural ornaments, beside the public roads, at a short distance from the city. This ordinance could not fail becoming popular, because it increased the magnificence of Rome, even in the suburbs. From this measure originated the names of the roads, *Via Aurelia*, *V. Flaminia*, *V. Lucilia*, *V. Appia*, *V. Laviniana*, *V. Julia*, &c. Some graves were allowed on the summit of the *Collis Hortulorum* above the *Campus Martius*; and the plan became equally consonant with their religious principles, and their desire for the public good, of which the Republic never lost sight. Hence Cicero informs us (*de Lege*. l. 2.) that the law of the twelve tables against burials in the city, was fulfilled, without exposing the places of assemblies to any danger even on a religious pretext, "*quod iniquum esse putareant locum publicum privata religione obligari.*" Thus, in the course of years, from the great number who had been buried in the fields, and in the surrounding territory of Rome, that interesting result took place, which proves that their measures were actuated by a religious veneration for the dead, as well as motives of political expediency;—the family of the Gracchi after much labour, intrigue, and many party contentions, failed in their attempt to introduce the Agrarian law, through the popular dread

of committing a sacrilege, in giving the remains of so many Romans into the indiscriminate possession of any, whether worthy or unworthy, to keep the sacred deposit: the law for the division of lands was consequently rejected.—(*Vid. Elien. var. Hist. l. ii.*)

The people were also privileged to have their dead consumed in a place for the purpose called *ustrina*: their cemeteries were out of town; *Hoc miseræ plebi, stabat commune sepulchrum.* Horat. lib. i. ode 8. These were called *puticuli*, because they were like wells, into which their bodies were thrown; they were mostly on the Esquiline Hill; we are told also that *Gemellius Bebius*, and other wealthy citizens, in order to secure the votes, or favour of the people, gave them large tracts of land in the vicinity of Rome, to enlarge the public places of inhumation. From all these laws, customs, and usages of the Romans, in relation to their modes of burial, which, with few exceptions, continued in force until the reign of the Cæsars, it is evident that the immense city of Rome was better protected against the recurrence of epidemic diseases than many of our own capital cities. The burning of dead bodies was, however, entirely discontinued under the emperor Gratianus; probably because it had frequently occasioned fires; the *puteoli* also were closed, owing to a suspicion that they had become dangerous by their exhalations; instead of which, large catacombs were erected at different places, of which we will have occasion to speak in the following section. (16)

CHAPTER V.

Funeral Rites of the Early Christians.

THE three nations who concurred to form the primitive church, found inhumation already established among them by the dogmas of their religion and the laws of their country. It was only the noble and the rich that had adopted the custom of burning the dead; and burial beyond cities was equally obligatory on all. The exceptions were few in number, and never allowed to the great mass of the people, nor to any but such as died invested with some honourable station or dignity.

The most unjust, and most unmerited contempt, having at first been the portion of this holy and high religion, which in its rapid and miraculous progress has since enlightened nearly the whole earth, (17) the mode of burial of the first Christians, was that of the people, or of the least distinguished individuals. When they began to be a distinct and acknowledged body, they had their own peculiar funeral ceremonies, which were derived partly from the Jews and Gentiles. Inhumation thus became established among the Christians; this was the only practice of the Jews, the regulations of which did not interfere with their creed. If to these considerations we add their small number, their extreme poverty, the fear they were in

of the Jews, and their decided aversion for every thing resembling paganism, (18) we will easily accede to what has been already advanced,—that the burial of the Christians was that of the common people, of whom they were a part.

Ananias, of whom it is said, in the Acts of the Apostles, that he expired at the feet of St. Peter, was carried away by some Christians and placed in the earth; they buried beside him the body of Sapphira, his wife. The martyr Stephen was carefully buried by the Christians, who wept bitterly over his grave. We find mention of these two burials, without its being recorded where they took place. (19)

But the persecutions which the Christians were obliged to undergo in the Roman Empire, and the cruel slaughter, of which the barbarous Nero, set an example, and which has been often followed, increased the number of martyrs: the faithful were surrounded by their dead brethren, and exposed to the insults of the Pagans.

The most tender and grateful attachment, united with the voice of religion in an appeal to the survivors. The Christians resolved to seek for these bodies, that they might be concealed from the fury of their persecutors; they were hid at first, in the houses of individuals who carried them, under cover of night, to the public cemeteries. The greatest privacy and the most vigilant guard were necessary on these occasions. The catacombs, which some have wrongly confounded with the *puteoli* of the ancient Romans, appeared

well suited to secure the repose of these sacred remains. (20)

The Christians frequently assembled in these gloomy retreats for the celebration of their mysteries; and St. Jerome declares that the profound obscurity and horror of these sepulchral caverns, figured to his mind an image of hell. (21)

The awe in which the place was held, and the funeral ceremonies of the early Christians, contributed to render the catacombs of still greater sanctity. The dignity of their sacraments, the august ceremonies by which they consecrated themselves to their Creator, the participation of the sacrifices at the altar which were celebrated there, and the holy and irreproachable lives so common in those times of fervour, excited for the Christians a deep and deserved veneration. Particular places were set apart for the ashes of martyrs, and for all such as died in the odour of sanctity. No others of the faithful were interred in the same spot, lest the remains should become confounded. From that came the custom of distinguishing the bodies of martyrs by symbols, which designated what manner of death they had suffered.

Among the Jews, the religiously disposed erected synagogues and chapels near the tombs of those remarkable for virtuous lives, and repaired thither for prayer.—(*Basnage's History of the Jews*, l. 7. ch. 6.) The Grecians offered sacrifices beside graves; and it is a well-grounded opinion that the temples

of the deities of mythology sprung from tombs of ancient heroes, who were worshipped through gratitude. The Romans constructed over the *hipogæa*, or public vaults, halls, where they assembled to render the last services to the dead, and to go through the customary duties. They had also chapels and altars at which they sacrificed to the god Manes.

Following these examples, the early Christians undoubtedly built over the catacombs those retreats, so venerated by the lovers of antiquity, to which they resorted in crowds to perform the mysteries of their religion, and to attend the *agapes*, or collations, provided at funerals. They, therefore, erected altars over the graves of martyrs: these hallowed the ceremonies borrowed from the pagans, and gratified a feeling inspired by piety and devotion.

This eagerness for the preservation of remains, did not, however, prevent the Christians from endeavouring to anticipate the mischief which might have resulted from the vicinity of these bodies to their places of assemblage and worship; they carefully filled with earth, whatever places were left empty in different parts of the catacombs, (vide *Boldetti, Arringo, Marangoni, &c.* The numbers of the faithful were increasing daily, and the fiery sword of persecution was not yet sheathed; a truce seemed to have been granted for a while, only that this species of warfare might be recommenced with greater fury; the number of martyrs was surprising, and the places which had been

first appropriated for their burial were no longer sufficient to contain them.

Some citizens of Rome, who had joined the church, applied their wealth and lands for the purpose of forming burial grounds; and many patricians and Roman ladies also offered extensive tracts with the same pious intention. Such was the origin of Christian cemeteries. (22) In these places, altars were raised, and chapels constructed, which served as a shelter during the performance of the obsequies, and other religious solemnities.

The law of the twelve tables had by the gradual infringements of the great, become nearly obliterated, till it was restored by Adrian to its original vigour; and Antoninus Pius extended it to the whole empire. A new law, or a law just renewed, is always strictly observed. The dead must therefore have been then transported out of the city; but they soon began to evade the regulation, and a hundred and fifty years after, Diocletian and Maximian were obliged to strengthen it by new decrees.

In the three first ages of the Church, the circumstances and difficulties in which the Christians were involved, and their situation in relation to the government and legislation of the Cæsars, served to maintain the custom they had cherished from the birth of Christianity.

The horizon of the Church at length became calm and serene. Peace was restored to it by the conversion of Constantine. The temples of the idols were already out of favour, and were scarce-

ly resorted to; after having been purified, they were transferred to the worship of the true God. The same altars on which the holy mysteries had been celebrated in the obscurity or retirement of catacombs, or cemeteries, were transported into the cities, (23) and the places of the heathen deities were occupied by the relics of martyrs. By this revolution, religion substituted her heroes for those of the day. In each church there was but one service, and one altar; and the faithful would have thought that the unity of their religion was violated, had their attention, when assembled, been divided among choirs and chapels. (24)

They ornamented the cemeteries with great care, and each at length became the sites of consecrated temples. (25) After a short period, Pope Julius was obliged to construct three cemeteries along the same roads, where formerly were the tombs of the Roman families; others also have been laid out since, and the date of their establishment is indicated by inscriptions.

The wish of retaining the dead within cities seemed to increase even by impediments. It became regarded as an enviable privilege to be allowed to occupy after death the places where holy persons had been in the habit of offering their prayers to Heaven. And at length they carried their respect so far as to believe that there were emanations from the bodies of saints, of power to warm the hearts of the devotional, and to yield impressions capable of disposing to fervour and piety.

CHAPTER VI.

Introduction of Interments into Towns and Churches.

OWING to the belief in the efficacy of the ashes of saints and martyrs, the catacombs became crowded with the dead. Until this period, there had been no favour shown to priests, bishops, princes, nor even popes, unless they had been signally zealous in the cause of religion. When the body of the Emperor Constantine was allowed interment in the vestibule of the *Holy Apostles*, this concession was considered a testimony of the highest honour and distinction. Chrysostom speaks of the importance of such a favour, which added new lustre to the supreme dignity of the greatest earthly potentate. (26) Several successors of Constantine were distinguished in the like manner; but they had been great patrons of the Church. The same honour was afterwards granted to founders and benefactors of churches, who had liberally supplied the funds necessary for the ceremonies and the decorations of the altar. The resemblance between the regal dignity and the priesthood, was an argument in favour of an extension of the same privilege to the bishops: their holiness of life, and the eminence of their station, seemed to justify this innovation in the discipline of the Church. The motives that rendered this distinc-

tion valuable, were of too interesting a nature to be disregarded by the pious of any rank whatsoever; the first claims to it had been the exercise of priestly functions, or a life spent in the retirement of the cloister; but the laity having no such titles to the privilege, intrigued for others, by offering large gifts to the Church, and by giving alms liberally. (27)

This revolution was not general; many churches evinced a strong attachment to the ancient rules, while the relaxation of discipline was complete in others. The contradictory contemporaneous examples in ecclesiastical history, are owing to this circumstance. (28) The disposal of this favour being left entirely to the bishops, it is easy to comprehend that, in one diocess, rare piety or high and dignified stations, might be the only titles admissible, and in another, that any slight claim would be thought sufficient. Nevertheless, at this period, the public burial grounds were still located in distant places; and the number of those permitted to rest in churches was, as yet, inconsiderable.

The bodies of the profane, however, were not yet mingled with those of saints and martyrs. The tombs were arranged along the walls within and without churches. As the pious resorted there to pray for the dead, some covering was necessary to protect them from the inclemencies of the weather. (29) On this account they built vestibules and porticoes; and as the number of tombs and graves increased, cemeteries around the churches be-

came necessary. Some vestiges of antiquity in proof of this, still remain. Small subterranean chambers and arcades outside and along the walls of churches, called *exedrae*, were in existence during the time of Baluse.

It appears an incontestable fact that interments in Constantinople, and other cities of the empire, at one period became general; Theodosius the Great, a prince of exemplary piety and great zeal for the church, in concert with the emperors Gratian and Valentinian II. was obliged to renew the edicts of his predecessors. (30) His intention was to prevent the infection caused in the atmosphere by the dead being, as it were, heaped in crowds, among the living. He prohibited interment in towns; and ordained that the bodies, urns, and monuments, within the walls of Rome, should be removed to a distance; he wished that that city, should, under his administration, equal in this point, her ancient state. This law was soon in force over the whole Roman empire.

The first infractions of the law of the Justinian Code sometimes arose from pious motives; at others, from local circumstances. Monasteries and religious orders scrupulously adhered to the severity of the law, (St. Benedict himself receiving no distinction,) until Walfred, abbot of Palazzolo in Tuscany, desired that he should be interred in the cloister of his own Abbey. This innovation happened in the eighth, and was succeeded by others in the ninth century.

Previous to this, the question had been some

time agitated, whether the relics of holy martyrs had any peculiar power over those interred in their vicinity. St. Augustine on this account wrote on the nature of the duties due to the dead; his opinions were very different from those introduced in the middle or dark ages. The question was revived in the time of Gregory the Great; and was sharply contested under Nicholas I. who was consulted on this subject by the Bulgarians. From the answers of this pontiff it seems that he considered the fate of the deceased to depend on their conduct during life, and the fervent prayers of their fellow-christians.

The prohibition of Theodosius was respected for a long period. The dead were mostly deposited without the churches; and interment within, near the walls, was a great prerogative. These observations led to an important reflection. However the ideas of the Pagans and Christians may have differed with regard to a future state, however dissimilar may have been the customs, practices, and ceremonies introduced into the Christian Church, still, the most enlightened sovereigns have maintained or established laws, which had for their object, the preservation of the public health from the dangers of indiscriminate interment. The primitive canons, the bulls of the popes, and the authority of tradition, concurred to relieve cities from the fatal presence of the dead. (31) But superstitions daily arose that blinded the pious to their danger; and the flattering hope of participating in the merits of the just by being consigned to the

dust which had been consecrated by their ashes, and the honour it was to have been judged worthy of this favour, warmed the religious zeal of some, and excited the self-love of others, until the reigning custom was a total breach of the law. An honour, once the highest earthly distinction and reserved for emperors, became the portion of the lowest citizen, or rather a right common to all equally.

CHAPTER VII.

Acts of Councils against the privilege of Interments in Churches.

AFTER the sixth century, in which, as we have just seen, abuses of the privilege of interment had become very general in cities, not only synods but councils took them into consideration, and endeavoured to abolish them, and restore the ancient discipline of the church. The Portuguese Council, held at Brague, instituted one memorable canon, by which, not only interment in churches was prohibited, but also cities were declared to have a right to prevent burial within their limits. (32)

In the early ages of Christianity, the bodies of martyrs were allowed the exclusive possession of the places they occupied. The Council of Auxerre wished to prevent interment in the interior of *baptisteries*, either understanding by this name such edifices as were built near *basilicks* or metropolitan

churches, to administer baptism, or else designating the churches themselves, in the vestibules of which they then began to erect the baptismal font. (33) Gregory the Great often expresses himself in his works in such a manner as to give reason to believe that on this subject he did not think like the vulgar. He frequently complains that the privilege of interment in churches was obtained by bribing with offerings, styled, 'voluntary gifts.' Another century passed, and the barriers that restrained this custom became too weak: it was powerfully and widely diffused in the West, where it was almost universal, but was, as yet, hardly known in the East.

Fortunately for the Church, a new era fixed the attention of the bishops on this subject. Charlemagne, at the end of the eighth century, and beginning of the ninth, employed himself in restoring the arts and sciences, and the ancient ecclesiastical discipline. He assembled frequent councils throughout his kingdom, and from these resulted that body of public statutes so often mentioned in history.

Theodolphus, an Italian by birth, and bishop of Orleans, a man of eminence in those days, and much respected by Charlemagne, found the churches in France almost turned into catacombs. (34) He, therefore, made a regulation that neither priest nor layman should be buried in a church, unless remarkable for holiness of life. As for the tombs, he had them destroyed, and wished that for the future, they should never be

raised above the level of the ground: he added, that if this statute could not be fulfilled, the altar must be taken down and removed to some other place, leaving the church to be occupied as a cemetery only. (35) The statutes of Charlemagne, to put an end to the quarrels between Theodolphus and the other prelates of France, deprived laymen of the privilege of interment within churches, and afterwards forbade the same to all persons indiscriminately. The sixth council of Arles, (36) the council of Magouza, and the council of Meaux permitted only the interment of bishops, abbots, ecclesiastics, and laymen of the first distinction. Hincmar, archbishop of Rheims, undeniably the greatest man of his age, drew important information on this point from the works of Gregory; desirous of uprooting the evil at once, he obliged the bishops of his diocese to make oath that they would no longer exact a price for the privilege of interment; (37) and he ordered still more positively, that interment in churches should be most reservedly withheld.

The offerings of Christians were at first voluntary; custom soon rendered them necessary. Erard, archbishop of Tours, forbade in his diocese, any exaction or any remuneration for interment, no matter where it was granted.

The council of Nantz allowed tombs and monuments in the vestibule and porticoes, but rigorously prohibited them in the body of churches. (38)

The council of Tribur exhorted the nobles to rest satisfied with burial in the vicinity of their

cathedral, or near convents and monasteries. The favour, however, was dispensed among the Gauls only by bishops and curates. It appears by the answer of Nicholas I. to the Bulgarians, that in Italy (39) it was sufficient not to have totally lost all character to be a sharer in an honour, which in Gaul, was accorded only to signal piety.

Customs on this point were not less various in the Levant. From the verses attributed to St. Gregory of Naziance, it would seem that they buried within churches from the fourth century. He himself attests it by the case of his brother Cæsarius; and St. Gregory of Nice tells us that his sister Macrina was buried beside the holy martyrs, in the same church where his mother had already been interred.

Yet we see that during this period the emperors and other dignitaries of the kingdom were buried outside of temples. The tombs of Theodosius himself, of Arcadius and Honorius, his sons, of Theodosius the younger, of Eudocia and of Jovian, were located in the portico of the basilick of the Holy Apostles at Constantinople. (*Nicephor. d. 14. c. 58.*)

From time to time it was necessary to re-enact statutes against the intrusion of the dead into churches, as may clearly be seen from the letters of Balsamon, to Marcus, patriarch of Alexandria, to whom he says, that according to the ancient statutes, none were buried in churches consecrated by the bishop, or where the relics of saints and martyrs were deposited. So the law ordained,

as expressed in the following terms : *Nullus in ecclesiâ mortuus sepeliatur.* And the well-known canon, which so explicitly says : *Non licet quemquam sepelire in ecclesiâ, ubi scilicet corpus martyris depositum est.* (40)

The emperor Leo, surnamed the *Philosopher*, who finished the great work begun by his father Basil of Macedonia, the collection and publication of the Canons of the Church, erased in one of his statutes the old prohibition of burying in churches. The terms of his decree show that the prohibition must have fallen into complete discredit and disuse. He, therefore, chose rather to dispense with a law no longer observed, than to compromise his authority by useless endeavours to carry it into execution. (41)

Fortunately the new code of Leo had no force in the West, and was soon of little power in the East. Yet we must acknowledge that there was afterwards a great relaxation of discipline, although the Church, always animated with the same spirit, was continually striving to resume her pristine severity. In proof of this, we have the councils held from the tenth to the eighteenth century, in many Catholic countries : a council at Ravenna under Gilbert, and again under Silvester II. in 995 ; the sixth at Winchester in 1076 ; the famous synod of Toulouse in 1093, where it was determined that there should be two cemeteries, one for bishops and nobles, the other for the common people ; a council at London in 1107 ; one at Cognac, in 1255 and 1260 ; one at Buda in 1269 ; one at Nismes in 1284 ; one at Chester in 1292 ; one

at Avignon in 1326; one at Narbonne in 1551; one at Toledo in 1566; one at Malines in 1570; a committee of the clergy of France assembled at Melun in 1579; a synod at Rouen in 1581; one at Rheims in 1583; one at Bordeaux, and at Tours the same year; one at Bruges in 1584; one at Aix in 1585; one at Toulouse in 1590; and one at Narbonne, and another at Bordeaux in 1624: all of these have given on this subject the same precepts, and admitted the same doctrine. (42)

In the course of the several centuries which passed between the pontificate of Gregory and the Council of Trent, there was a continual struggle, to free the Church from the imputation of receiving remuneration for interment in temples. Exaction was always proscribed, but voluntary offerings were made, and accepted. The difficulty of prevailing on churches to give up this source of revenue, was always the greatest obstacle in the way of those bishops who were zealous for the ancient discipline. If on the one side, the spirit of interest could have been eradicated in persons attached to the Church, and, on the other, if the self-love of Christians could have been persuaded that the grave should level all distinctions, and that any spot was the same for their last home, the old custom of cemeteries might have been re-established. St. Charles, bishop of Milan, warmly desired such a restoration, and in his first council, he expressed a strong wish to that effect. (43) With this design in view, he openly attacked the ambition of the great, who maintained this abuse. He knew that

at first, graves had been chosen in the vicinage of churches through piety; that then the desire of peculiar favour had penetrated into the temple itself; that at length permission had been granted so generally, that the only means of distinction was the splendour, the magnificence, of the decorations of the mausoleum. This progress was foreseen by the holy canons, and they had always opposed it with all their power.

The wish of the Bishop of Milan was, that escutcheons, portraits, images, and all those ornaments which vanity had suggested, but which were only mockery over the dead, should be removed; and he himself set the example in his own cathedral. A beautiful monument, raised to the memory of one of his ancestors by Pius IV. bishop of Rome, was not spared. He excepted only what related to the glory of the throne, or the majesty of royal dignity. In his fourth council, this pontiff engaged his bishops anew to observe the excellent laws and usages of the earlier ages. This reform was somewhat generally adopted, and pope Pius V. forbade all splendour and pomp in the burial of Christians; but he permitted them to build marble monuments, provided they did not contain the bodies of those to whose memory they were erected. (44)

May we not conclude from all these authorities, that the actual custom of burying within and under churches, should be proscribed as contrary to the spirit of our religion? We will also undertake to show that it is equally repugnant to the principles of physics.

CHAPTER VIII.

*Ordinance of the Archbishop of Toulouse concerning
Interment in Churches.*

“*Stephen Charles de Lomenie de Brienne*, by the grace of God and the Holy Apostolic See, Archbishop of Toulouse, Counsellor of the King, &c., to all Ecclesiastics, secular or regular, and to all the laity of this diocess, sends greeting and blessing.

“Whereas, the venerable Prevost and Clergy of our Metropolitan Church have represented to us that in violation of the holy canons, interments in that church have increased exceedingly, and that the air is sensibly contaminated by fetid exhalations from vaults which are not deep, and are continually re-opened for the admission of fresh bodies.

“Similar complaints have been transmitted to us from several parts of this diocess; and although we have deferred any notice till now, yet our Dearly Beloved Brethren need not accuse us of neglect, delay, or indifference in this important affair. Wise ordinances require much time for consideration, and should be offered to minds prepared to receive them. Measures too prompt might have proved revolting to your sensibilities, or you might have thought such restrictions of your privileges sufficient, as had already been enforced by vanity,

or to which custom lent a justification. To secure your docility and compliance, 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.

“Believe not, Dearly Beloved Brethren, that our solicitude and anxious care for the public health is the only motive that induces us to break silence. Such is the harmony always existing between religion and sound policy, that what is acknowledged as decorous and useful by the one, is also commanded and prescribed by the other. To the instinct of self-preservation, which calls loudly for a reformation of the present system of burial, we may add the commands of God, which direct us to be careful of our lives, that we may serve him and prepare for a happy eternity; and the orders of the Church, which have always reprobated as a profanation the general admission of the dead within consecrated walls and in places held sacred; and the dictates of our Christian duties, which require an assiduous attendance at the temple, all pretexts and pretences to the contrary notwithstanding. May our subsequent details and remarks enlighten your piety without enfeebling it; and without impairing the respect due to the memory of the dead, *confound that inconsistent vanity which follows them even into the grave.* (45)

“ This respect is a natural sentiment in every stage of society; and depraved indeed must those be that do not feel it. No social ties could unite us, if death were able instantly to extinguish affection in the hearts of survivors. He who feels no emotions of grief or pity beside the grave of a fellow-being, could have borne no love to that being during life. “ We respect,” says St. Augustine, “ every trifle that reminds us of a beloved object; the ring or the dress worn by a father are dear to his children.” How then can we other than respect the ashes of those who were dear to us; or how other than endeavour to prolong the existence of their frail remains? (*De Civitate Dei*, cap. 13.)

“ Religion renders this natural respect stronger, because it informs us that between the happiness of the just and the punishment of the reprobate, there is a middle state for those “ who die well-disposed, but have not yet satisfied divine justice; “ and that it is a holy and useful practice to pray for the dead that their sins may be forgiven them.” 2 Maccab. xii. 46: a sweet and precious doctrine to the dying sinner, and affording also to the afflicted, who have lost companions, friends, or relatives, the consoling task of contributing to their happiness by prayer.

“ It would then be an infraction of every law, as say Saint Augustine and Origenus, to neglect the burial of the dead, as if they were mere brutes; or to throw away bodies that have been the abodes of rational souls, and temples of the Holy Ghost. But these duties have legitimate limits.

While religion regulates all that can be conducive to the rest of the departed, and permits the indulgence of a natural sorrow, it forbids every expression that proceeds from pride and vanity. "*Why,*" says St. Jerome, (*in vitâ Pauli,*) "*does a desire for appearance exist amid mourning and tears? why should the dead be clothed in sumptuous vestments? Cannot the rich rot away unless in the same gorgeous apparel that decorated them when alive?*"—"Pompous funeral processions," adds St. Augustine, "*and expensive monuments, may perhaps console the living, but they cannot be of any use to the dead.*"—"Of what use to them are these idle distinctions?" exclaims St. Chrysostom. "Their memory and their worth, and not their perishable remains, should be honoured. Since then ye wish to give departed friends rational and Christian-like testimonies of esteem, love, and regret, *Do for them, and for yourselves, all that can contribute to the glory of God.* If they were virtuous, be so also; if vicious, correct the mischief they have done, and continue whatever good intentions they may have assumed. It is by the virtues of their children that parents are honoured in the grave, and these are their only worthy and acceptable obsequies.

"These principles naturally lead us to ascertain what place then should be appropriated to the disposal of our departed brethren. The custom of praying for them probably induced the early christians to deposit them near each other in the same ground; this was the origin of cemeteries. St. Chrysostom informs us, (*Hom. 84 in Math.*) that

cemeteries were not permitted in cities, because the presence or vicinity of the dead would not only contaminate pure air, but incommode the inhabitants by the stench they would occasion. *Nulum in civitate sepulchrum struitur.* If such, says a council (Hom. 74) is the privilege of cities, how evident it is that a church has a right to exclude interments from within her walls. In the council of Brague, burials in churches were forbidden, and the house of God was decreed to be open only to the relics of apostles and martyrs. *Nemo Apostolorum vel Martyrum sedem humanis corporibus æstimet esse concessam,* (in the year 563. Can. 18.) The bodies of even emperors were only admitted to the porticoes or chapels of temples. Constantine himself, to whom the church was so much indebted and so grateful, asked no higher favour than to be buried under the portico of the church of the Holy Apostles. (Vid. Eusebius, lib. 4. de vitâ Constanti. St. Chrysost. hom. 26, in Corinth.) Martyrs and Confessors only were admitted; because as St. Ambrosius remarks, it was “*just that those who had been victims to their faith should be deposited near the altar where was offered the sacrament of the sacrifice of their divine Lord and Master.*” Vid. St. Ambr. Epist. de Reliq. ss. Gervasii et Protasii.)

“Such was the primitive discipline in relation to interment; and what is more interesting in this statement, Dearly Beloved Brethren, is, that legitimate exceptions have been used as precedents for its infringement, so true it is, that the slightest compromise of a law leads finally to its destruction or total violation.

“Those who, by an exemplary life, had acquired a reputation for holiness, were allowed to partake of the privilege of martyrs; but this holiness was not as easily substantiated as the heroism of those who sealed their faith with their blood; and as the numbers of the Christians increased, proofs became still more difficult and obscure. Indulgence was then used; appearances soon assumed the place of reality, and equivocal signs of piety obtained prerogatives due only to genuine zeal.

“The clergy on account of their sacred functions, and the nobility whom their high rank made more desirous to shun the dishonour or scandal of vice, claimed to be interred within the temple. Founders of churches became invested with the same right, and transient benefactors required the same reward for their donations. The descendants of both claimed as a patrimony, that which had only been granted to individual merit. When the privilege was thus general, a refusal was an exception that threw an odium on the unsuccessful applicant. Where the admission of any one was a favour, none could be excluded who had any pretence to offer. In the early ages, burial in churches had been expressly forbidden, or even inhumation within cities. But by the gradual increase of a fatal condescension, the evil has arrived at a height that demands attention. 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.* (46) 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 of 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.

“The progress of this evil, Dearly Beloved Brethren, may be determined by the efforts of the Church to overcome it. Sometimes her prohibitions have been express; at other times they have been intended to restrict the favour to a few of the faithful. When she has permitted interment in the purlieus or porticoes of temples, (47) it was to prevent it in the church itself; when she has admitted all ecclesiastics, it is because they were presupposed to be all of holy lives; when founders were favoured, and even benefactors, it was to exclude by such an exception, all others. She permits exceptions without a view to their becoming hereditary, and tolerates unfounded rights to endow her ministers with greater power

for the adoption of measures for the prevention of the evil effects of her former condescension.

“The Gallican Church has shown much zeal in endeavouring to recall the ancient discipline upon this point; interment in churches is prohibited by almost every council held in this kingdom; (48) almost all our rituals and synodal statutes forbid it; and latterly, many bishops, and particularly those of this province, have done their best to correct this abuse. (49)

“But without derogating from the respect due to their wisdom and their labours, may we not say that this temporizing plan has rendered their whole work useless?

“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 of 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*? We are disposed, Dearly Beloved Brethren, to show all possible moderation in this necessary reformation;

though charged to be strict in the fulfilment of our pastoral duties, we are allowed a discretionary power, and can consult your habits, your opinions, and even your prejudices, and all that may conciliate your interests with the glory of God; but woe to us, if blinded by weakness, we lose sight of the experience of past ages, and suffer things still to continue, that have till now served, and can only serve, to perpetuate the disorder!

“The only real means of reform is to re-establish the ancient rules and observances, as did Pope Urban IV. when he wished to abolish the indecent custom, which had insensibly crept into the church of St. Peter at Rome, of burying together *the pious and the profane, the saint with the sinner, the just with the unjust*; and to unite to the detriment of Christians and the destruction of the respect due to the church, what God would eternally separate. And St. Charles Borromæus ordered that *the neglected custom of interring in cemeteries should be resumed entirely*. The same was done in the last century by the bishop of Senlis, and some few having appealed from the ordinance, it was confirmed by the Parliament of Paris. The civil law could not but agree on this point with our religious canons, because the preservation of the lives of the members of a community is a duty of the first magnitude; and it suffices to enter our churches, to be convinced of the baneful effects of the fetid exhalations in them.

“Some of our Dearly Beloved Brethren may blame the rigour of our ordinance; but can they

make any reasonable complaint? Churches were not intended for sepulchral monuments; and so little was such a use of them ever expected, that, according to the remark of a celebrated canonist, there is no prayer in the liturgy relating to such a ceremony, while there are some expressly intended for the benediction of burying grounds. And do you think that titles, *whose abuses would continually cry out against them*, are to prevail over the dignity of our temples and the sanctity of our altars?

“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?

“Would you say that we are depriving a holy life of its rewards and prerogatives? If the voice of the public testified to the sanctity of your career, how joyfully would we receive your bodies into our temples, as those of the martyrs were welcomed by the primitive church! But piety, while meriting and obtaining the honours reserved for the saints, is far from assuming them as her right; and while she feels that peculiar benedictions have been passed upon public burying grounds, she acknowledges that *the most magnificent obsequies are of no use to the sinner.*

“ Would you reproach us with depriving you of a right, bought by the donations of your ancestors? But do you think that those virtuous men, from whom you are proud to derive your descent, wished to leave to their posterity a right to disturb our holy mysteries, and to spread pestilence among their fellow-citizens? Then take back their gifts, if these are to be construed into titles in fee simple. Our rules for the future must not be violated; and the church will satisfy your avarice rather than your pride.

“ We will not suspect our worthy coadjutors in the clerical function of regretting the privilege so long granted to their holy habits. We are obliged daily to sacrifice ourselves for the happiness and weal of our people, and will therefore think the less of the renunciation of a gratification that might be harmful to them. Our most precious advantage is the power we enjoy of being examples to them in all that is useful and religious; and great indeed will be our pleasure, if our example engages others to allow without murmur or complaint, the re-establishment of a law equally necessary for the good of society, and of religion.

“ Ye whom the vows of the cloister have united under the yoke of the Lord! will you object to the retrenchment of your funds that this ordinance must produce! No; for you wish not to support existence at the expense of the lives of others. We will do all for you that just toleration will allow; but you yourselves would blame us, if rather than deprive you of a source of revenue, we were to

authorize your chapels to continue or to become, centres of infection and death. Render your temples, worthy of the presence of the deity ; gain the attendance of the faithful by assiduous and fervent prayer ; inspire confidence by the decorum of your conduct, and the purity of your manners, and you will find the gratitude of the pious lavish alms upon you to supply the loss you have cheerfully undergone for the public weal.

“ And you, right worthy magistrates, who are charged with the care of the laws, be assured that it is with no view to pass the bounds of our powers, that we revise our canons. We know that interment is a civil affair. We would direct nothing relating to it without your agreement and participation. Then let the perfect accordance of our measures, blend our united decrees into one authority ; and while we speak in the name of God, whose ministers we are, secure obedience to our mandates in the name of the king ; for this affair touches not only the credit of the church, but the interest of the people. We have investigated and examined the request of our venerable chapter ; the petitions from divers parts of our diocess ; the *proces-verbaux* of the inspection of many parishes, from which it appeared that the abuse of church-interment was carried to its height ; and finally the reports and opinions of physicians on the pernicious consequences of this custom ; And *therefore* we, as far as in our power lies, and in full confidence that the civil authorities will sanction our ordinance, have ordained and enacted, and do ordain and enact, &c.” (50)

CHAPTER IX.

Modern Statutes against Interment in Churches and Towns.

It may not be amiss to recapitulate what we have clearly proved in the preceding pages. The prohibition of inhumation in towns was established in the Roman law of the Twelve Tables enacted by the Decemviri; it continued to be incorporated in the laws of all the succeeding forms of government. The prohibition after Constantine was explicitly laid down in the code of Theodosius, A. D. 381; and the admission into churches of the bodies of even holy personages, was pointedly forbidden. The same was renewed in the Justinian code. At the commencement of the sixth century the Senate of Rome had not yet permitted any cemetery in or near the city of Rome. The *Capitularies* or civil and religious statutes of Charlemagne, forbid interment in churches. Though the discipline of the church after this, through the interested motives of individuals, became relaxed to an alarming degree, yet continual efforts were made to restore its pristine integrity by the decrees of more than twenty councils convened at different periods from the 8th to the 18th century. The Parliament of Paris, in 1765, took a decisive stand against the abuses of interment. It will not be unnecessary to observe that parliaments in

France had a portion of legislative and executive authority in their districts, and were thirteen in number. A court of Parliament was also an intermediary power between the people and the sovereign, whose orders remained without force until registered therein. Parliaments, in fine, were high courts of civil and criminal judicature, composed of many presidents, and about thirty privy counselors. The following decree (*arrêt*) of the Parliament of Paris is the more remarkable, because it was occasioned by an almost universal complaint from the inhabitants of parishes on the noisome and sickly influence of churches and cemeteries. It is asserted in the preamble, that "daily complaints are made on the infectious effect of the parish cemeteries, especially when the heats of summer have increased the exhalations; then the air is so corrupted, that the most necessary aliments will only keep a few hours in the neighbouring houses: this proceeds either from the soil being so completely saturated that it cannot retain or absorb any longer the putrescent dissolution, or from the too circumscribed extent of the ground for the number of dead annually interred. The same spot is repeatedly used; and by the carelessness of those who inter the dead, the graves are, perhaps, often re-opened too soon." The provisions of the act in nineteen articles are absolute, and admit of no exceptions.

1st. All cemeteries and churchyards in the city of Paris were to be closed, and to remain unoccu-

pied for the space of five years, or longer, if thought necessary by proper officers and physicians.

2d. Eight cemeteries were to be established forthwith at a distance from the suburbs; each to be of a size proportionate to the number of parishes to which it should belong, and to be fenced with a stone wall eight feet in height; an oratory chapel to be erected in the centre and a small dwelling for the keeper at the gate; the graves not to be marked by stones; and epitaphs, or inscriptions, to be placed on the walls.

3d. To facilitate the transportation of bodies, there was to be a conveniently situated house of deposit for every cemetery; the walls of it to be four feet high, with iron spikes on them; the building six feet high, surmounted with a dome, open at top: one or two rooms to be connected with each place of deposit, where clergymen, selected in rotation by the rector of the parish, might have charge of the bodies until removed.

4th. Every day at two o'clock in the morning from the 1st April to the 1st October, and from 4 A. M. from October 1st to April 1st, the bodies were to be carried from the deposit to the cemetery in a hearse covered with a pall, and drawn by two horses; and the hearse to be attended by one or more clergymen and some torch-bearers, who were to be grave-diggers. In this decree there were no regulations for proprietors of vaults, dignitaries of the church or public officers, except that for the sum of 2000 livres, paid to the parish, a body might be consigned to a family vault in a

church, if the coffin were of lead; and that the high ecclesiastics might have their burial in the same manner.

It was thought that the great and populous capital of France would by this decree be sufficiently protected against the dangers of city cemeteries and church vaults. But eleven years after, (September, 1774) the same authority was obliged to make another decree against opening vaults for the admission of bodies. On this occasion, the court, repeating in the preamble the words of the royal attorney, says, that "as the decrees of the court relating to burial in churches contain the motives which led to those decrees, it would be useless to repeat them, while reasons still more pressing daily call for a strict attention to the re-opening of vaults, the fatal consequences of which demand a general law to be put in force against all interment in churches whatever. This abuse introduced by pride and vanity, is now often laid aside by Christian humility, and the noblest have requested to be interred in cemeteries. This court will reinstate the ancient discipline of the church, and give a new sanction to the rescripts of those sovereigns who maintained it by their authority: the temples will then resume the decency and order of appearance which they cannot display while the opening of vaults is permitted; they will also be freed from the fetid smells which render the air in them insalubrious, and which are perhaps the principal cause of the distressing epidemics that have appeared in the pro-

vinces. The general complaint against the practice of church vaults is the strongest argument in favour of this decree. The bishops of such places as were afflicted by it, have issued ordinances, and laid them before this court for confirmation, which has been granted to some and solicited by others: pastors of the second degree have united with the higher dignitaries in petitioning for a civil regulation on this point. Medical men assure us, that the vapours exhaling from putrefaction fill the air with chemical compounds dangerous to health and productive of malignant diseases. The epidemics which prevail in the warm season confirm their assertion. We know, however, that this decree is against the wishes of a certain class, who found claims upon a possession in itself an abuse, or upon titles yielded through complaisance, or obtained without any legitimate grant, or upon a permission acquired by means of a small sum, which they imagine entails an hereditary right to burial within a church; as if possession were a right superior to justice, or that a prescriptive indulgence should be continued in despite of its injury to the public good; or that a certain sum of money were an equivalent for the health and life of their fellow-citizens. But these objections are of little moment, and must yield to considerations of the public weal; and, no doubt, those very individuals, if they can cast aside their erroneous prejudices and prepossessions, and look only to the advantage of their fellow-citizens, will join with the majority in applauding this decree. The ar-

ticles 13 and 14 of the ordinance of Francis I. may be cited on this subject; they run thus: "*We have ordained, that no one, of whatsoever quality or condition he may be, can pretend to a right, possession, prerogative, &c. in a church or temple, to &c. &c. &c. graves or vaults, &c. unless he be a patron or founder of the said church or temple, with letters of credence to that effect, or sentence legally pronounced in his favour, on these grounds.*" It is, moreover, an acceptable service in those intrusted with the power of watching over the welfare of their fellow-citizens, to extend their solicitude to the preservation of the public health, by using the most efficacious means for removing the causes of disease. This object alone, independent of any other, would have been sufficient to determine this court to institute the following requisitions," &c. The decree extends its prohibitions to all the churches within the jurisdictional district of the court; and reduces the right of burial to the ministry of those churches; to patrons, founders, lord chief justices; and such, in fine, as have titles, in good and due form justifying their possession, by inheritance, from concessions granted by the church in favour of great donations, &c.

These parliamentary acts prepared the way to a universal reformation of the abuses of interment, not only because they gradually weaned the spiritual and temporal lords, and the rich, from seeking so unstable a privilege as the right of burial in churches, but because they were enacted in accordance with public opinion. Louis XV. concurring entirely in the prohibition of city grave-

yards by the parliament of Paris, granted to the parish of St. Louis, at Versailles, 160 perches of land, (3600 square feet) in the forest of Satori, to be used as a cemetery in place of the old one. That king took a still more active part by a royal declaration, dated March, 1776, the preamble of which thus sets forth: that "the archbishops, bishops, and other ecclesiastics, in council assembled last year, in our good city of Paris, have represented to us, that for many years complaints have been made to them from different parts of their respective diocesses, on the frequent inhumations in churches, and also on the actual situation of their cemeteries, which are too near the said churches, and might be placed more advantageously if removed to a distance from cities, towns, and villages, in the several provinces of our kingdom: we have given to these representations more attention, because informed that our magistrates are convinced of the necessity of a reform in this part of the public police, and have long desired suitable laws in union with the rules of the Church, to provide for the purity of the air, without infringing, if possible, upon the rights of archbishops, bishops, curates, patrons, lords, founders, &c. in the churches of our kingdom: these wishes having reached us, we think it unnecessary to defer any longer making known our intentions, and we are persuaded that our subjects will receive with gratitude a regulation dictated by our zeal for their preservation."

The articles which follow, prohibit graveyards

in cities or towns, of which the Archbishop of Toulouse had already given an example in his diocess; and they permit no interment in churches, chapels, or cloisters, but for such persons as have been already mentioned in speaking of the decree of parliament; and ordain besides, that even those shall not be interred except under vaults covering a space of 72 square feet, built of stone, and flagged; the bodies to be placed six feet deep in the earth under the lower pavement of the vault: they also invest municipal corporations with the right to obtain and hold, in fee simple, any grounds for new cemeteries. Thus all that could be devised in point of legislation, to do away the evils of interment in churches and towns, was at length accomplished.

The practice of intermixing the dead with the living would never have grown to such an intolerable height, though aided by all the pride of the great, all the immorality of the rich, and the desire of distinction inherent to all ranks, if the reverence for the relics of saints, and the blind belief in the power of the Church over souls after death, had not rooted in the hearts of the people a strong conviction that a grave in the cloister, the galilee, the portico, the chapel or the aisle, was a strong hold for protection against the arch-enemy, and a passport to heaven. As this superstition declined, or became modified, the practice to which it had given rise still continued, and grew more and more immoveable the more it was habitual. It is the same in thousands of instances to this day, even where the original motive is forgotten, and

such is the force of custom, that it continues in cemeteries consecrated by the vicinity of particular churches to so great a degree, that the peace of the grave is continually violated to crowd new tenants into the spot hallowed to them in life by pious associations. In the year 1777, Mons. Lenoir, Minister of Police, devised the entire abolition of the cemetery of the Innocents, by clearing out its charnels and pits, and removing the remains into the catacombs, or quarries, which had been worked from time immemorial under the southern part of Paris. This great design was not prosecuted until ten years after; (51) it has, however, been fully accomplished, and the salubrity of Paris sensibly promoted. (C)

CHAPTER X.

Medical Inquiries into the Dangers of Interment, &c.

WHEN the learned work of Professor Scipione Piattoli of Modena, on the dangers of interment, was published in 1774, it was a great mortification to M. Vicq D'Azyr, Regent of the Faculty of Medicine of Paris, that a subject so long controverted in France, should be brought to a victorious issue through the labours of a stranger, who had undoubtedly been aided in his researches by several French

writers, although he had not made them acknowledgements for the materials they had afforded him in proof of the necessity of an entire reform of the modes of Christian interment.

The first of these writers was Dr. Haguénot, a professor in the University of Montpellier. He had long entertained a full conviction of the dangerous effects of the inhumations daily permitted in the city where he resided; and he would not have delayed pointing out the dangers to which his fellow-citizens were exposed by this practice, if the prejudices connected with it had not been so strong as to have deterred him.

A dreadful occurrence, however, forced him at length to raise his voice against the reigning abuse. It is the duty of those who by their profession or study, obtain a greater share of knowledge on some points than their fellow-citizens may possess, to remonstrate with them against practices that endanger their own safety, or which are contrary to the well-being of the community at large.

On the 17th of August, 1744, towards evening, the body of a layman was conveyed to a vault in the Parish of Notre Dame of Montpellier, attended by a numerous procession of the clergy and laity. No less than three men perished suddenly on this occasion; a fourth was with difficulty recovered from a state of asphyxiation; and a fifth was attacked with severe and alarming symptoms, which left him for a long while pale and feeble, and his recovery was, very properly, termed a *resurrection*. The catastrophe took place

in the following manner: While lowering the corpse, a man first went down to support the coffin, and fell senseless; another followed to assist him, and though drawn out in time, was afflicted with the severe illness just mentioned; the third, who had courage to proffer his services, descended with a rope around his waist, and had he not been drawn up immediately, would inevitably have died; the fourth, a strong and vigorous man, trusting to his robust constitution, and only hearkening to the call of humanity, dared the danger, and died as soon as he had entered the vault; the fifth came out once to recover strength, and returned the second time, staggered from the ladder, and fell dead. The bodies were at last drawn up with hooks. Such a tragical event filled all Montpellier with dismay; and the Intendant, Mons. Le Nain, ordered it to be investigated. Haguenot was commissioned for this purpose; and having had the vault re-opened, he made the following experiments. The philosophical reader will find them defective and insufficient; but chemical science was yet in its infancy fifty years ago: clearer investigation into a circumstance of the kind might be made with ease at the present day.

1st. The cadaverous fetor exhaled was so tenacious, as to adhere a long time to any substance which was left a few moments in the vault.

2d. Lighted tapers, chips, paper, and tarred ropes, when brought to the edge of the vault, were instantly extinguished, as completely as if dipped in water.

3d. Small animals, dogs and cats, became instantly convulsed, and died in a few minutes; but birds lived only a few seconds, because life in them is known to consume a comparatively greater quantity of air.

4th. The vapour, or gas, was caught in glass vessels, and, after being kept for six weeks, offered the same qualities, and produced the same effects. The whole of these were witnessed and certified by Dr. Haguenot and a committee of the faculty.

Hereupon we will confine our remarks to two points, which should always be kept in view, namely, that the decomposition of the bodies in the vault was rendered the more active by the temperature of the month of August, in a climate and latitude exactly similar to our own; and that the presence of the external air assisted the extrication of the gases and the elective affinities of *carbon, oxygen, hydrogen, phosphorus, and nitrogen*, and *volatile and fetid* oils connected with those elements, all deleterious or deadly.

Dr. Haguenot states the following, to illustrate further the dangers attending improper interment.

Beside the terrible effect of these vapours, when suddenly mingled with the air we respire, their more gradual or weaker evolution fills it with malign qualities, the germs of fatal or epidemic diseases, or they aggravate the symptoms of existing prevalences. In the neighbourhood of the church where the above calamity took place, the

small-pox broke out, and raged with great violence!

It is as erroneous to suppose that the stones and mortar of a vault can confine these gases entirely, and as fatal to trust to the small number of dead bodies within them, as to depend on a similar enclosure against the strength of a stream of water continually accumulating; the force of these gases depends in a measure upon their being pent up as they are formed. A single body may, therefore, cause all this mischief, when reduced to a perfect state of putrefaction.

Dr. Haguénót gives a historical summary of the laws and customs of the Egyptians, Grecians, Romans, and Asiatics, to show how, by embalming, burning, transporting to a distance, or erecting immense monumental piles, they endeavoured to protect themselves against the noisome and fatal effects of putrid exhalations: he does not omit the primitive Church canons, which so often endeavoured to suppress the practice of burial in towns and churches. This practice he ascribes to the interested views of those who had the power to retail false honours to princes and pontiffs, to pretended saints, and also to great sinners, who were encouraged in their wickedness by the hope of resting their bones in holy earth.

We owe to the same writer another interesting key to the explanation of some miracles at the tombs of saints, which were nothing more than natural causes operating in those sepulchral cham-

bers among human exuviae. Gregory of Tours relates that a thief, having for the sake of plunder, entered the tomb of St. Helius, the holy prelate miraculously detained him, and he died. A poor man, who wished to cover the grave of his dead son with a stone, attempted to steal one from the tomb of a holy personage, and was instantly struck blind, deaf, and dumb. (*Vid. Spondanus Cæmet. sacra.*) Josephus in his Antiquities, tells how the servants of King Herod, who broke open the tomb of David, were killed in the very act. These and similar occurrences may be attributed to the poisonous vapours of the grave.

Dr. Maret of Dijon, who published his work in 1773, is the next medical author noticed by Vicq D'Azyr. He appears to have treated the subject as extensively, though not perhaps as forcibly, as his predecessor and followers. To avoid repetition we will give such points of his inquiry as seem peculiarly his own. He, still more strongly than Haguenot, confirms the theory of epidemic diseases, being engendered or aggravated by the impure emanations from graves and vaults. A simple catarrhal affection, or influenza, existed in Saulieu, a populous town of Burgundy. Two persons who died with it were buried beside each other in graves dug under the pavement of the parish church of St. Saturnine, within an interval of twenty-three days. It appears that the coffin of the first, a very large subject, accidentally broke, and a quantity of putrid fluid was effused, which in an instant filled the whole building with a stench, in-

tolerable to the by-standers; out of 170 of these, no less than 140 were seized with a putrid malignant fever, which took the symptoms of the prevailing influenza, differing only in intensity and fatality, which was evidently caused by this temporary diffusion of impure air.

Another interesting circumstance mentioned in the Historical Researches of Maret, illustrates what has already been stated of the ancient canonic prohibitions of inhumation in churches or chapels and their annexed grounds. It was never permitted till after the year 509, in which Pope Marcellus obtained from the Roman Senate permission to found the first Christian cemetery that had existed in Rome. In the eighth century, a statute of Charlemagne renewed the prohibition which continued unimpaired until 1057, when a mausoleum was erected to Regnault I. Count of Burgundy, in the Portico of the church of St. Stephen at Besançon; and the body of Eudes I. Duke of Burgundy, was deposited in 1102 under the arch of the entrance of the Abbey of Citeaux, which he had founded.

Maret next calls our attention to a philosophical and useful speculation on the activity of what he terms, mephitic vapours. He considers the earth as permeable to gases and volatile materials; that the number of layers of it, does not intercept these effluvia wholly, but it changes their direction. He thinks these vapours are the less diffused the deeper that bodies are interred. He regards each corpse, in a given space, in a state of putrefaction, as a *focus* or *alembic*, emitting fumes that

diverge, as it were, like rays, and incline to the horizon. He fixes their probable extension to twenty-five or thirty feet, at which distance they may be perceptible; and thinks that every layer of earth, one foot in thickness, will shorten the ray of gas two or three feet; from which it would follow, that a corpse, deposited at the depth of seven feet, will project its exhalations above the surface five or six feet only. He adds, that it is probable the shortening or extension of the rays of infection depends also on the number of layers and their thickness; and that three feet of earth together, will have much more than triple the effect of one foot alone.

He next speaks of the refraction of these rays; he thinks it the greater, the thicker the layers are, through which the fumes must pass; if the stratum be of seven feet, the rays will be almost perpendicular, and parallel to each other; if it be of four feet, the rays but little refracted towards the perpendicular, will join with those of neighbouring graves, and augment the density of the vapours. From these principles he is led to believe, that graves four or five feet in depth should be four feet distant from each other on the sides, and two at the extremities; if they be six or seven feet deep, they need be only two feet apart, this being the extent of the horizontal line that meets a perpendicular one falling from the summit of the refracted ray.

After having given a succinct account of several other writings on the same subjects, Vicq D'Azyr

dwells upon the work of Navier, an eminent physician of Chalons, who wrote in 1775, after those already mentioned.

Navier more particularly confines his remarks to cemeteries, because the public mind was at that time satisfied of the danger and impropriety of interment in churches. He informs us that the confidence with which they are suffered to exist in large and populous cities is founded on the erroneous though popular belief, that bodies in the earth are very soon destroyed; but this is far from being the case. He ascertained that four years are not a sufficient period for this purpose; and relates, that having examined three bodies disinterred, the one after twenty, the second after eleven, the third after seven years, he found the bones were still invested with some flesh and integuments; from which it is certain that whatever receptacles of the dead are opened, there is unavoidably a contamination of the air, or some attacks of disease occasioned or increased: this, he says, he has often witnessed.

He justly exclaims against the practice of perpetuating cemeteries by the means of *charnel houses*, to which the remnants of carcasses, and bones still covered with flesh, are transported. He asks whether there would be any such abuses as these, if the selfish and unreasonable custom of burying the dead among the living, was not kept in operation by vanity, avarice, and superstition. This order of things is not peremptorily required by mourning kindred nor bereaved affection; for these, as

they surrender the lost to the earth, however dear, however precious their relics are, so would they yield up the remains of the beloved to the most distant graves, if only convinced of the urgent necessity of so doing.

Far from thinking that old cemeteries may be disturbed without danger, Dr. Navier lays it down as a maxim, that no old cemetery should be disturbed under ten years; and that a length of time should be allowed to pass with the view of giving undisturbed completion to the work of decomposition. He directs powdered quicklime to be strewn over the coffin when placed in the earth, as a check on the gases that are generated within; this remedy is powerful and cheap, and there is no excuse for the total neglect of it. Dr. Navier disapproves of the custom of planting trees in graveyards; their roots cause much trouble to the diggers, and sometimes break or loosen the soil so much, as to open a free passage for effluvia; and their branches obstruct the free renewal of the air, clogged with mischievous vapours. He wishes cemeteries to be open to every point of the compass. It is true, that, as Priestley says, vegetation absorbs much fixed air; but the surest and most complete purification of the atmosphere is its agitation by winds.

Such important truths as these, when skilfully inculcated in other nations, have occasioned an almost total change in the location of places of interment. They may still serve to convince the

prejudiced, satisfy the timid, and reconcile the mistakenly zealous, averse to the proposed reform.

Should further, or rather higher authority, be deemed requisite for the sanction of the doctrine here set forth, some of the most celebrated names in the annals of medicine can be produced in support of it.

CHAPTER XI.

*Facts and Observations to prove the Pernicious Effects of
Animal Decomposition.*

FERMENTATION is a property of vegetable and animal substances, which, as experience proves, degenerate to putrefaction as soon as an organic principle, the nature of which is unknown, ceases to operate.

As fermentation goes on, elementary air is disengaged; its free communication with atmospheric air, gives all its properties to the latter; as it rarifies, and extends itself, it diminishes the adherence of those parts of the substance, in which it is developed; and as it becomes disengaged, it carries with it the more subtle, oleaginous, or inflammable molecules, and suspends them in the atmosphere.

We all know the influence of the different modifications of the air on the animal economy and the health of man. This element always surrounds us within and without; it balances those fluids which would otherwise tend to become rarefied, or would be decomposed; it increases the resistance of the solids; it insinuates itself into our humours, whether mingled with our aliments, or penetrating by the pores of the membrane that lines the lungs, after blending with the secretion of the bronchiæ. It is also certain that the qualities of the atmosphere depend on a great number of causes, which more or less concur to maintain its natural properties, or to imbue it with extraneous ones; to render it light or dense, pure or charged with heterogeneous principles; elastic or rare, and expanded: the most minute insects, as well as the orbs above us; meteors, seasons, the temperature of different climates, the number of inhabitants in a country, the practice of the arts, the operations of commerce, all have an effect upon the air and induce in it, partial changes.

Among the many modifications of this fluid, there are some which more closely interest us, either because they affect more immediately our respiration and the emanations of bodies, or because they prepare our organs to receive in a more sensible manner the deleterious impression of certain pernicious causes, whose effects, although not always sudden, are not the less fatal. The atmosphere when hot and rarefied necessarily loses a portion of its elasticity; less heavy than elementa-

ry air, and at the same time more gross and thick on account of the heterogeneous matters that surcharge it, it becomes more suffocating. If humidity should then be joined to the other bad qualities of the air, it will gradually become more and more septic. The action of the air being no longer so strong upon the solids, their fibres relax, their resistance diminishes, their more volatile particles fly off, and the internal motion is accelerated. The internal moving or disorganizing force increases in the ratio of the diminution of the external force; and fermentation, inducing putridity, is the result.

When heated air acts upon dead bodies, that is to say, on bodies, which, being divested of their own caloric, are subject to the action of caloric from without, they soon increase in volume, the cellular tissue and the vessels swell; and decomposition rapidly supervenes.

Living bodies also are very susceptible to impressions from the air. They are even in danger of putrefaction, when heat and humidity act in concert to a very great height.

The air loaded with putrid emanations would of course become deadly, if there were not exhalations which corrected them, and winds to dissipate the principles of corruption. There is every thing to fear where infected air remains stagnant, where it is but little renewed, and especially if it has been breathed any length of time. Experience has often shown that infected air exposes us to imminent dangers, (52) and that diseases of the worst kind.

such as malignant, putrid, and exanthematous fevers, are sometimes the fatal consequences. (53)

Enlightened by these truths, we may easily comprehend why subterranean places, and low swampy spots, surrounded by mountains and thick forests, are so insalubrious; and why maladies are so frequent, and often even malignant, where the air is always impregnated with fetid particles. (54) The properties of air being thus known, we understand why certain trades give the artisan a pale complexion, and render him weak and unhealthy; and why army, hospital, and prison fevers, make such ravages where they appear.

Lancisi, in his work on the dangers of marshes, makes some reflections analogous to the subject here treated. Ramazzini assures us, that those who dig graves are not long lived; the vapours they inhale in them shorten their existence. (*Ramazz. de Morb. artif. cap. 17, &c. De nox. palud. effluv. passim.*) The same author in the well-known Treatise on the Diseases incidental to Artisans, speaks of the pernicious effects which the emptying of sewers has upon those employed in the operation. Ambrose Paré saw at Paris five robust young men fall dead in a ditch they were to clear out in the Fauxbourg Saint Honoré. George Hanneus relates a nearly similar fact which happened at Rendsburg in the Dutchy of Holstein; four persons died in a well which had been closed for some time, and in which the water was spoiled. (*Ephemer. Allem. an. 2; Coll. acad. tom. 6.*) A young child was suffocated at Florence in a pit of manure, in-

to which it had fallen; a person who tried to assist him perished; and a dog who was thrown in died also. (*Coll. acad. tom. 4.*) Sennert speaks of a disease, called *Febris Hungarica*, which broke out in the armies of the emperor, and spread like a contagious disorder, through all Europe. This sort of fever often happens in camps, when troops have remained for a long while in one place during the summer. (*Sennert, tom. 4. l. 4. Ramazz. de Morb. artif. Henr. Screta de Febr. castr. sect. i. c. 5.*) Dr. Pringle has observed the same in badly administered hospitals full of patients, as well as in prisons which were too crowded. Huxham relates a very interesting fact of this nature. At the Oxford Assizes, several prisoners brought out before the judges, communicated to those present a fatal disease, and depopulated the cells they passed through. (*Huxham Observ. de Morb. Epidem.*) The same happened again at Taunton, in 1730. Tissot, in his *Avis au Peuple*, has presented these objects in a striking point of view. (*Tom. 1. c. 1. s. 6.*) He complains of our dangerous custom of interring in the interior of churches.

When any part of the living subject tends to putrefaction, because the humours are stagnant, or leave the vessels destined to contain them, the gangrenous affection rapidly communicates itself to the neighbouring parts. The blood of a woman attacked with malignant fever, spread such a disagreeable effluvium, that the surgeons and all the assistants fainted. (*Vanswiet. ad aphor. 89.*) Ulcers of long standing, and cancers when they

are open, are not less pernicious. Diodorus of Sicily speaks of pestilences that were produced by the putrefaction of animal substances. St. Augustine makes mention of a great number of animals having been thrown upon the shore, where by their decay they caused an extensive plague. Egypt is ravaged almost every year by malignant fevers; and from that country the small-pox has spread over all the earth. The waters of the Nile, say some writers, leave with their slime an immense number of aquatic insects, which, as they corrupt, fill the air with pestilential miasmata. (*Vide Mead on the Plague.*) Forestus (*L. 6. Observ. 9.*) and John Wolf, (*Rer. mem. vol. 1. cent. 10.*) relate, that some fish thrown dead upon the shore, occasioned a great mortality. The swarms of dead locusts in Ethiopia generally create epidemic diseases. Those on the sea-coast suffer much from the putrefaction of whales thrown upon the beach. (*Diemerbr. de Pest. l. 1. c. 8.*) Paré tells us, that in his time, a circumstance of this nature produced an epidemic plague in Tuscany. And Lancisi writes, that the exhalations from a dead ox, killed an unfortunate traveller in the neighbourhood of Pessara. (*De Bovill. Pest. p. 1.*) Lucan speaks of the ravages of an epidemic in the army of Pompey, near Durazzo: it was caused by the carcasses of horses, killed and left upon the field. Ammianus Marcellinus informs us, that the camp of Constantine the Great was desolated in consequence of the same imprudence. And indeed, how often the corpses scattered over the field of

battle have been the source and origin of disease and death! Aristotle advised Alexander to proceed promptly from Arbela after the defeat of Darius, to avoid the pestilential influence of the slain. France suffered many severe epidemic visitations of the plague from the tenth to the seventeenth century; and during this period she was often visited by civil wars and famine. Extensive tracts sometimes remained uncultivated, and the distressed inhabitants, pressing in crowds to the cities, the sudden accession of population would occasion want of provision, and generate disease. Almost all long sieges in which much blood is shed, are accompanied by fevers and mortal diseases. The war of the Swedes, in the seventeenth century, occasioned a great pestilence in Poland. Long and obstinate wars had the same effect in Austria, in Syria, and in many other countries; and the same happened frequently in many parts of Asia. Paré relates, that in 1562, a pestilential fever spread for a circumference of ten leagues around Guienne: it was caused by the putrid exhalations of a pit filled with dead bodies two months before.

Emanations of this kind are very penetrating; they alter all the humours, and produce violent diseases, or render dangerous those which have already supervened, or to which persons are predisposed. Headaches, attacks of fever, nervous disorders, convulsions, and even miscarriages, are sometimes the consequences. Ramazzini informs us, that a sexton having descended into a grave to strip a fresh corpse, he was suffocated, and fell

dead upon the spot. At Riom, in Auvergne, they were moving the earth about an old burying ground which they intended to arrange for the embellishment of the city. A short time after, an epidemic disease carried off a great number of persons, particularly of the lower classes; the mortality was the most remarkable in the neighbourhood of the cemetery. The same event six years before gave rise to an epidemic in Ambert, a small town of the same province. This train of facts leaves no doubt of the infectious influence of decaying animal matter.

Air confined, heated and deprived of its elasticity, is dangerous in itself, even although expired from the most healthy lungs. If the perspiration of the sick, and exhalations from the dead can fill it with pernicious effluvia; if each of these can produce evil results, how dangerous must inhumation be in churches, where the air is modified in so peculiar a manner by the assemblage of almost every cause of infection?

The atmosphere is generally damp and heavy in churches; it acquires these qualities from the emanations of those who frequent them. The mixture of the sepulchral gases which necessarily penetrate through the layers of earth which cover the dead, cannot fail having great power in a place where all things conspire to concentrate mischievous vapours. Another cause which increases the badness of the air in churches, is the necessity of often opening vaults to inter new bodies, or to remove the old. In both cases, the

vaults are left open for some time ; and the atmosphere becomes loaded with gases, from half decayed, or perhaps recent bodies.

The only remedy for this evil would be to renew the air ; but, on the contrary, it is almost always stationary in churches : a part of this fluid may be put in motion, but the whole mass is but slowly or seldom displaced.

The expressions here used may appear exaggerated ; and seem dictated by the fear of an imaginary evil, of which there are no examples : the following authenticated facts may suffice to do away this impression.

We learn from Haller, that a church became infected from a single corpse, after twelve years' interment ; and that all the members of a convent were in consequence afflicted with a very dangerous malady.

Raulin relates, that the opening of a corpse at Leictoure occasioned a grievous epidemic in the plain of Armagnac. (*Raulin, Observ. de Med.*) Sensitive, nervous persons, have been often known to faint or fall into a swoon at cadaverous exhalations, while passing near burying-grounds. (*Habbermann. De optimo sepeliendi Usu. Thes. publ. propug. &c. Vindob. 1772.*)

While digging new vaults in the church of St. Eustache, in Paris, they were obliged to move some bodies, and to place those that came, into a vault that had been long closed. Some children who attended catechism at the place, were sensibly incommoded ; and the same symptoms showed

themselves on several adults. Doctor Ferret, re-
gent of the medical faculty of Paris, was employed
to investigate and report: he found the respiration
of the patients difficult, the brain disordered, the
heart throbbing irregularly, and in some instances
convulsive movements of the arms and legs.

Upon the site of the old cemetery of a convent of
nuns of Saint Genevieve at Paris, several shops
were erected, and all those who lived in them first,
especially the young, suffered nearly in the same
manner as is mentioned above. This was reason-
ably attributed to the impurities of the ground on
which the buildings were erected.

A physician of much discrimination, in seeking
to trace to its source an epidemic at Saulieu, and
scrupulously following the order of facts, demon-
strated that the disease originated from some bo-
dies buried in the parish of St. Saturnine. (*Vide*
Maret.)

But why seek so far for examples of what is
daily under our own eyes? If we should collect
the observations of all who have preceded us, we
would find innumerable proofs of what we advance.
Owing to the small number of the learned, or of
persons capable of transmitting to posterity a re-
cord of the fatal tendency of interment in towns
and churches, or rather on account of the respect
with which the custom of burying in temples has
been regarded, epidemics which have laid waste
whole cities, have often been attributed to other
causes. The smallest district preserves the re-
collection of some such event; and wherever they

have endeavoured to re-establish the plan of public cemeteries beyond towns, it, no doubt, has been from the strongest motives and the most imperious necessity.

We know that the inhabitants of Rome have the greatest repugnance to visit the church of S. Lorenzo in Lucina, in which there are daily burials and frequent disinterments. It is the same with several other extensive parishes in different quarters of the city.

About twenty years ago, there was an epidemic prevalence of the small-pox at Rome. The number of the dead was so considerable, that the secular and civil authorities united their endeavours to prevent interment in the parish churches; that of St. Mary in Cosmedin, at a distance from the city, became the general receptacle. All the dead were carried there, and when the epidemic was over, they repaved the church, renewing the plaster floor for a foot in depth; they ceased performing service there, until they thought the bodies were entirely consumed; and it was not until after such precautions that they re-commenced in that church the celebration of the holy offices.

It would be unjust to say that a government should wait till an evil was at hand before it adopted preventive measures or precautions at all times necessary. The dangerous effects of the effluvia of putrefaction show themselves more promptly upon individuals disposed for their reception; still they are never wholly innocuous to the animal economy. (55) Putrid and malignant fevers and

periodical diseases often make their appearance in populous cities, without any apparent cause. May not their cause, known to us only by its fatal results, be the common practice of interment in the very midst of our dwellings? We have said enough in demonstration of the indispensable necessity of placing public cemeteries beyond cities, to justify the wise dispositions of the administration on this subject, and to destroy completely those prejudices which had taken root in the credulity of the public: prejudices diametrically opposite to the interests of those who disseminate them, and who would cast them aside were they more enlightened, or more able to calculate and foresee what is detrimental to the health of their fellow-citizens. (56)

How indeed can we for a moment put in competition with the powerful suffrage of the universal custom of all ages and of the most polished nations, the slight, the transient murmurs of the few, interested in the continuance of the abuse, or whose minds are too prejudiced to be convinced by actual proof? It is necessary to anticipate here two objections, which would not fail to produce a great effect on some minds. An ill-directed piety complains that the dead will be forgotten when placed at a distance. But cemeteries on the new plan would not be so far from cities, as to deprive the inhabitants of the power of visiting them, and being led by the sight to good works and serious reflections. The recollection alone of Jerusalem and the temple, excited religious sentiments in the

captive Jews at Babylon. At Rome the catacombs were visited frequently, although many miles from the city, and at a great depth under ground.

But how will we persuade the proud and the wealthy to lay their ashes in a distant cemetery? The very idea is horror. What! they who were distinguished for family and fashion, to lie in the same earth with the base plebeian, whom death has made their equal! They shudder at the thought. Let sound philosophy reason as it will on this point, still we must allow that in every nation, the social institutions have separated even in the grave, the great from the humble, with as much pains as nature has taken to render them equal. High birth, valour, and sometimes learning and purity of life, have been distinguished in the most honourable manner, not only by funeral ceremonies, but also by the care and attention bestowed upon their last abode. The preserving of these merited distinctions would be no motive, however, against the establishment of a public cemetery. If roads, uncultivated fields, or the sea-beach, were thought sufficient for the heroes of antiquity, our hills and roads may offer asylums to the heroes of our own times.

The graves of great men will not be the less venerated by posterity, or the less gratefully respected, because placed in the midst of fields. The tomb of Achilles on the Sigeon promontory, excited a noble ardour in Alexander; and Cæsar shed

tears of emulation upon the grave of that young hero.

The Grecians were not less desirous than we, of teaching posterity the deeds of its predecessors; this duty they fulfilled otherwise than by crowding their cities with graves. To generals who had conquered, or soldiers who had died for their country, monuments were erected upon the field of their glory. The memory of the three hundred Spartans who died at Thermopylæ, was never lost in Greece; and the trophies of Mithridates, on the plains of Marathon, disturbed the dreams of Themistocles. Lysander, who secured to Sparta a superiority over her rival Athens, was buried in a field near Haliartus. Aristides the just, was interred on the plains of Faleria; and Homer, upon the sea-shore. The body of Pindar was consigned to a hippodrome, and that of Archimedes, the terror of the Romans and the defender of Syracuse, to the open fields; his tomb was covered with symbolic figures, by which Cicero afterwards discovered it: this proves that some persons always were distinguished by a separate interment, although all were alike excluded from cities. It was often necessary to repress by law, the excessive magnificence lavished upon mausoleums by the Greeks and Romans. All historians remark their splendour and extravagance in this matter, and of which there are still in existence some admirable remains.

May not the place of tombs in cities be supplied by paintings, inscriptions, or cenotaphs? The Greeks and Romans had many monuments of this

nature, which, in both nations, were regarded with as much respect as those that actually contained the deceased. Such a practice would at once fulfil the views of religion and policy. (57) Lycurgus forbade epitaphs or monuments for any but soldiers slain in battle for their country, or women who had died in giving birth to a son.

If the great will desire their names to be transmitted to posterity, they should remember that it is only great actions that confer immortality. If they wish to gratify their ostentation, what place can be more appropriate than a public cemetery, where they may, without restraint, display their wealth and taste, and erect monuments unrivalled in splendour? These reflections are laid before our fellow-citizens at a time when they may be useful, and under institutions which freedom of opinion gives us liberty to approve or condemn; and where the enjoyment of the rights of reason strengthens the judgment against the prejudices that might overwhelm it under less favourable auspices.

We have before us the examples of several European nations who have resumed the plan of public cemeteries apart from towns, and which leads us to hope that the adoption of the same in this country, will not meet with an entire opposition. To plead in favour of what may be called an innovation, but which, in reality, is only an old custom revived, we have brought forward facts in proof of the propriety and necessity of

distant interment, and the general assent of antiquity in its favour.

To frame a system of laws for a nation, requires policy and courage; but to bring back wise customs in despite of the obstacles which the interested oppose, or the partialities of deep-rooted attachment to present habits, is a labour that demands much wisdom and great firmness. In both cases the depositories of public authority, must shut their ears against the partial voice of interest or prejudice. Their duty is to do good to their fellow-beings, whether their efforts be appreciated or not; and above all, they must not turn aside for light and frivolous applause. They must proceed in their endeavours; and their only aim must be, *to deserve the gratitude of their country.*

The extracts from the valuable works of professor Piattoli, and his translator, Vicq d'Azyr, Regent of the Faculty of Medicine of Paris, terminate here. To explain why the arrangement of the materials has, in some instances, been altered, and a slight change in the plan of the work adopted, in transferring it into another idiom, we give the preface of Vicq d'Azyr to his translation of the Italian work, entitled, Saggio in Torno al Luogo del Sepelire.

“The Italian Essay on the dangers of interment, was handed to me by M. d'Alembert. Through his solicitations, and those of the Abbé Contrit, Minister of his Highness the Duke of Modena, by whose order it was printed, I was induced to publish my translation. The importance of the subject, and the desire of doing some-

thing to further the removal of cemeteries from Paris, lightened a labour otherwise far from pleasing. To render the account more useful, I thought it advisable to give with it, the decrees and ordinances, and an abstract of the late works, on the same subject. I have taken the liberty of making some alterations in the Italian Essay : I have made some divisions which the subject required, and which are not in the original ; I have retrenched some superfluities, and added a few notes. The work is written in very pure, and even elegant Italian ; at least, so several men of letters have expressed themselves," &c.

CHAPTER XII.

Chemical Explanation of the Causes that Infect the Atmosphere.

THE ways of creation are wonderful, and yet they are simple in their operation ; and their ultimate result, that of nurturing and fostering our lives, is palpably apparent. For the support of life, nothing is required but food from the productions of the earth, and pure air from above. Without the latter, we cannot live an instant ; without the former, animated beings can exist but a short time : in the infinity of nature, however, there are some, which are said to need no other sustenance than air.

The subject under consideration, is one of the most complex in natural philosophy; but can be divested of its abstractedness, reduced to a simple catechism of nature, and rendered evident to the comprehension of any reflecting mind, whether scientific or uncultivated.

The atmosphere, therefore, which it is calculated, extends above every point of the surface of the earth to a height not well defined, perhaps fifty miles, is fitted in its lower stratum for the purposes of respiration; this is the first function of animal life; it impels the apparently still-born infant to cry; and must be continued without interruption till the last moment of existence. Free and healthy breathing is so necessary, that imperfections or defects in it lead to disease and sudden death.

The atmosphere, which is respirable from pole to pole, as long as no impure emanations from the earth contaminate it, is never known to be so far vitiated as to endanger life in general; yet vicissitudes of weather, diversity of climate, and the changes of the seasons, may make some sections of the atmosphere undergo alterations in their composition. None of these prove fatal to life; but they contribute to occasion different shades of colour, degrees of proportion, and powers of mind in the human race, or dispose its members to dissimilar physical energies. With such an admirable provision for our preservation, known and understood by the wise and enlightened of different ages and nations, it is surprising that the elements of which the atmosphere is compounded, and which

serve to maintain it pure, or render it deleterious, have never been ascertained till lately. To this ignorance must be attributed the numerous prevalences of pestilence that have so often visited, and to this day prevail in populous districts, where the true means of promoting public health have not yet engaged the attention of the civil or religious authorities.

The rulers of mankind have not devoted much consideration to the investigation of the causes which might so far corrupt the atmosphere, as to create mortal diseases during marked periods of time, or why these plagues should always appear in the vicinity of stagnant waters; shallow ponds; marshes; low and muddy lands; receptacles of dead animals, or vegetable substances; in the neighbourhood of the slain after battle; in cities ravaged by famine and conflagration: why columns of air have been rendered so noxious, that the very birds that attempted to fly through them fell and perished: why the winds, disseminating their aerial poison, transported the breath of pestilence into rich, fertile, and thickly inhabited districts. With the story of such terrible devastations the pages of history are filled; and they have been accounted for as the result of divine anger, as the wrath of heaven against conquerors, or even as a provision of Providence to rid the earth of a superfluous population!

Less extensive and more familiar events have long taught us, that impure air may be generated where numbers are crowded together, and create

diseases; as in ships, barracks, camps, jails, and hospitals: medical science has drawn abundant materials for study and information from the fatal fevers endemical in those places. We have also learned, that from caves, vaults, wells, pits, &c. the confined vapour that issues when they are opened, will extinguish lights, and prove fatal to those who unguardedly are exposed to it.

Two hundred years ago, a few chemists attempted to explain these facts on rational principles. The celebrated Mayou of London, nearly discovered the great mysteries of the air; (58) but it seems that he wanted an analytical and technical language; this deficiency was supplied thirty years ago by the French chemists, who, with the labours of Priestley, formed at length a new science on air and invisible substances, by the help of which we can understand wherefore atmospheric air is so important and necessary to life, and also by what means pernicious gases are produced from animal and vegetable substances undergoing decomposition; and mingle with the air we breathe, to the detriment of health and life.

Atmospheric air contains two necessary component parts with heat; and when it enters into the air-cells of the lungs, these are separated from each other for highly essential purposes. It is calculated, that at each inspiration, the lungs receive about twelve cubic inches of atmospheric air; one fourth part of this is oxygen, which at each inspiration dispenses two thermometric degrees of caloric to the blood, unites with its expelled car-

bonous gas, and forms aqueous vapour with the hydrogen thrown out at each expiration; the other part is azote, which remains as a component part of the blood. Any little variation in this distribution is insalubrious, but rarely sufficient to constitute disease, or become absolutely mortal.

Heat, or caloric, exists in the circumambient air in an *absolute* and in a *relative* state. In the first, it is chemically united to oxygen, and so completely, as to be imperceptible until separated by the decomposition of the air. In about the same proportion as it is lost from our bodies, it is again supplied to us by the action of the lungs. That caloric is *relative*, which is loosely diffused according to the temperature; it has no material effect upon us, except when in excessive quantity; it then diminishes the elasticity of the air, and makes our respiration heavy and less active than is requisite for health and comfort.

Another attribute of the atmosphere, which must be noticed for a more perfect comprehension of the causes which eventually may render the air impure, is its gravity or pressure upon the surface of our planet. Its height calculated to be from 40 to 50 miles in diameter, is an assemblage of substances, which, however minute, or transparent, are subjected to an attraction which draws them towards the centre of the earth, and which, to bodies that resist or interpose, gives the sensation of weight. The estimate of the weight of the air has been prosecuted by accurate experiments, from which it appears, that the atmosphere exercises a

pressure of 2232 pounds on every square foot of the earth's surface. To explain in what manner we endure such an immense weight without hindrance to our motions, is not our object at present; suffice it to remark, that we are suitably formed to meet all the exigencies of the earth on which we live, and of the air in which we are immersed.

We will now proceed to inquire into the causes that may substitute in the air elements unfit for life, in place of those which are each moment provided to renew our strength, and maintain our existence.

That part of the atmosphere immediately surrounding us, may become injurious to our health in two different ways: 1st. by aggregation; 2d. by specific gases. Thus the air receives and contains by *aggregation*, the odoriferous essences, perfumes, and aromatics, with which some people love to stimulate their olfactory organs, and which others dislike and carefully avoid; the disagreeable and unclean matters which are diluted and mixed with the air, or raised in it by the expansion of heat, or by their own volatile nature; and the effluvia from marshy grounds, which may not be perceived by the sense of smell, and yet are unwholesome, induce debility, and gradually undermine the constitution.

Medical observers in the ancient and modern schools of physic, of respectable authority, have contended that several complaints, generated by the vitiation of the air, as typhus fever, dysentery, cholera, &c. become contagious, so as to be com-

municable from the patient to a healthy person who has not been within the reach of an infecting spot. Whether this be so or not, is a point difficult to decide. Some strong proofs have been produced in favour of the affirmative in typhus and dysentery, as strong, at least, as that the small pox, which is a highly contagious disease, has originated from the uncleanness of the Arabs and Saracens. These facts are mentioned by no means to excite contention, but only to impress our readers with a conviction that filth, in populous places, during warm weather, is not only injurious to public health, but may entail upon mankind severe and mortal diseases.

Another cause of the alteration of the air, which unfits it for the maintenance of health, is the admixture of *specific fluids, chemical compounds, or gases*, which, under certain circumstances, arise from animal or vegetable substances in a state of putrid fermentation. The word *gas* is used in relation to airs, simple or compound, chemically considered; we say *fluid compounds*, because a gas of a simple element, *oxygen* or *hydrogen*, for instance, when it is the product of fermentation, is almost always found united, according to the power of its affinities, with some other element; thus, *carbonic acid gas* or fixed air, so abundant in dead matter undergoing decomposition, is a *chemical compound* of *carbonous gas* and *oxygen*. Such a compound is moreover a permanently elastic *fluid*; this attribute should not be confounded with the fluidity of water, or of other liquids in nature. The word *fermentation* is appli-

ed to that action by which some substances, with the help of heat and humidity, are decomposed, and changed into new and entirely different compounds—thus some vegetable substances, by a particular process, are turned into alcohol or *spirit of wine*; and both vegetable and animal substances, with heat and moisture, at the temperature of 72° , are converted in a little time into a great variety of gases, *carbonous, carbonic acid, carburetted, sulphuretted, phosphuretted, hydrogenous gases*, with much *azote, or nitrogen*, and more or less *oxygen*; all of which are deleterious, or deadly. Hence carcasses cannot be long exposed to heated air, without becoming offensive and hurtful to persons in the vicinity of them, not only by the aggregation in the air of their fetid particles and volatile oil, but also by specific gases, which in their relative gravity, can reach a certain height in the air and be introduced into the organs of respiration, in lieu of pure air, so incessantly needed for the purposes of life. It may be supposed, that provided a thick or heavy layer of earth be interposed between the dead material and the external air, no such gases can reach us to do any injury; also, that these gases are more heavy than atmospheric air, and never can rise more than a few feet above the surface of the earth; and finally, that they cannot exist long in their specific nature, but must be soon absorbed, or decomposed and destroyed. But a moment's reflection will serve to convince us that layers of earth, even to seven feet in depth, can no more intercept the trans-

mission of a gas into the atmosphere than they can preclude by their density the filtration of water. The power of the one is to ascend, and of the other to descend through a permeable medium: water descends by its weight and affinity or cohesion; gas ascends by a double power; firstly, by the impulsion given to each column of it in the focus of fermentation from which it is evolved, with such force and elasticity, that it requires a thick covering of lead and wood to check it in vaults; and secondly by the atmospheric pressure, the action of which, upon the surface of a grave of 32 square feet, is equal in round numbers to a weight of 71424 pounds. The only advantage derived from the depth of a grave, is that of rendering septic fermentation more slow, on account of the slow diffusion of heat through a deep ground, but the want of it is soon replaced in proportion to plentiful casual rains. We do not deny the gravity of the gases under consideration, and that they do not rise in the air to a great height, but this is not a sufficient protection against them: admitting that they do not rise when the air is still, yet winds will raise and transport them until they reach the height of a man; moisture is dangerous; aqueous vapour, for which gases have a great affinity, unites with them readily, and by the expansion of heat raises them to the height of our houses, or where clouds are formed. All the aerial compounds of a deleterious nature, may continue in this state until the air is changed, or renewed by winds, or by change of temperature.

After this exposition, we may be expected to state facts concerning epidemic occurrences, in proof that their sources and causes, are as already described. But where is the city, village, or neighbourhood, that has been exempt from spring, summer, or autumnal, if not pestilential and malignant fevers, where such causes of alteration and contamination of the air were suffered to exist? And where these exist in abundance, should we wonder that the lapse of a few years, with the increase of population, and the assistance of such auxiliaries as heat and moisture, should bring around the many epidemic visitations of mortality that afflict our cities, and have been so severe upon New-York? (D)

CHAPTER XIII.

Topography of the City of New-York in relation to Public Health.

IN adverting to the topography of this populous and increasing city, we would notice its salubrious site, in one of the finest bays in the world, and at the junction of a great river to an arm of the sea, with sufficient declivity of surface to preserve, with some local improvements, a general cleanliness. These advantages are in a measure counterbalanced by unsafe appropriations of the soil, and neglected opportunities of melioration, so that the city is

not free, as it might be, from impure exhalations, and its inhabitants are liable in the summer and autumnal months to dangerous diseases. "The city," says Dr. Samuel Akerly, in his valuable *Geology of the Hudson*, "is built upon an alluvial bottom, based upon the primitive gneiss, which shows itself above the surface in the suburbs of the city, and at the Battery, at the south-west end of the island." This tract of alluvion is composed of sand mixed with rounded stones and petrifications, and sometimes clay at a great depth. No part of the island, therefore, can be subject to the exhalations arising from rich masses of vegetable earth, or of bog, morass, or mud deposited by stagnant water. Sand and gravel is the only alluvion. There is a gradual descent of sixty feet from the most elevated part of the city to the rivers on both sides. In tempestuous weather, and extraordinary tides, only the lowest quays and wharves are overflowed.

The old city, which covers a space of about half a mile on the east side of the island, was formerly composed of many irregular, narrow, and confined streets; these have by degrees been in a great measure corrected within the last fifteen years; some have been opened, others widened, and the pavement carefully regulated for the easier escape of the water. The long central sewer, called the Canal, which empties into Hudson River, has been completed, and offers, at present, less cause of complaint than formerly.

The new city, which in extent is more than three-fourths of the whole, is regularly composed of parallel streets, generally intersecting each other at right angles, and from 40 to 80 feet in width. Beyond the line of fire-proof buildings, the houses are more frequently built of brick than of wood; and marble and stone are employed. Dwellings are mostly provided with yards or gardens, which often occupy more space than the house. This wholesome custom has, however, been unfortunately disregarded in the old and new city, where lots have been let out on a long lease; for the sake of profit they are too often covered with small frame buildings, for the accommodation of individuals of the lowest class, as some, for instance, in Augustus, Cross, and Bancker-streets, and the upper part of the east side of the town. No reflection is intended upon the disposal of property, but in a climate, the temperature of which frequently rises to 94° and 96° of heat, regulations should be in force against such an appropriation of it.

Water is obtained from wells placed at convenient distances. Water, on a narrow strip of ground like the island of Manhattan, where there cannot exist many sources of it, will not certainly be as pure, nor in as great a quantity, as could be wished. The Manhattan water-works, afford neither an agreeable nor certain supply; winding as it does through long and multiplied channels, it is necessarily warm in summer, and liable to be frozen in winter; but it is of great utility for domestic purposes, and the concern has answered the intentions

of its original establishment. Houses are generally provided with cisterns for the collection of rain-water. Much remains to be done for the improvement in quantity and quality, of the water required for the necessities of so large and so increasing a population; but whatever may be the defects of the present supply, they can have contributed but little to bring upon us the pestilential fevers that have often invaded our city. This will appear more evident when we call to mind the fact, that in winter and spring, although the supply of water at those seasons is neither augmented nor improved, the citizens are remarkably healthy.

To account for the sickly periods with which we are sometimes visited, many local nuisances have been cited by those who deny the existence of contagion in the fever which has been our worst scourge, and who, consequently, disbelieve that it can be imported to taint the atmosphere of a whole city. We will not discuss here what degree of confidence is to be given to a contrary opinion, as entertained by some of our fellow-citizens. Suffice it to inform the reader, that, the writer of this article, would cheerfully lay aside the opinion, he is known to entertain, and allow that there was an equal degree of probability in importation and domestic origin, if in a single instance, an epidemic yellow-fever prevalence had been traced to a foreign sickly vessel, by well attested facts; or if the same disease existing in one town of the United States, had by inland communication been carried to another seaport, or other cities and neigh-

bourhoods. This simple result having never taken place, inquiry must discover some more possible and certain source of the disease.

The principal nuisance that has been complained of during the hot months of the year, is the *slips* in both rivers; they are receptacles of immense quantities of filth, which, as the water in them does not circulate, is neither removed by the current nor the tides. Their poisonous effluvia are rendered more intense by the sewers which empty into them between high and low water. (E) The piers and wharves about them are constructed of logs of wood, in the interstices of which, corruptible substances accumulate, which are daily exposed to the action of the sun. The noxious condition of the slips is palpable to the senses, and would be intolerable were they not often scraped by the scows. The pernicious nature of such a locality was remarkably evinced in the yellow-fever of 1819 at Old-Slip; the disease could not be traced to any sickly or foreign vessel whatever, and no instance of its contagious communication was discovered. (59) This source of disease is active at one time, and insufficient at another; it cannot always be the exclusively operating cause, since in 1801 the fever broke out at a distance from the water-side, in the upper part of East-Rutgers street. "On the east side of this street there was an alley or recess, containing seven houses, remarkable for their moral and physical uncleanness. In June the excrementitious matters collected in the houses, tenements, and yards situated there, began to

be offensive to the neighbours. Some complaints and expostulations were made with the occupants touching their removal. But it was soon discovered that neither the landlords nor the tenants would incur the expense of carrying away the poisonous nuisance of overflowing privies and corrupting offal. During the contention on this point, the hot season came on; and, at last, application was made to the street commissioners, to procure the scouring of this alley, &c.—“more than half remained untouched”—“sickness began to appear among them in the month of September”—“a considerable proportion of the deaths which happened there were of vagrant females”—“the scenes of human woe in this alley, were diversified with a shocking variety of forms. From this place, as from a local centre, the atmosphere received a poisonous impregnation, and several of the steady and valuable inhabitants were thrown by it into yellow fever, and died with symptoms of great malignity.”—(*Vid. Med. Repos. Hexade* 1. vol. v. p. 223.)

As dreadful a formation of malignant fever took place in 1820 in the central and elevated part of Bancker-street, and caused a great mortality. It was so evidently of local origin, that those who would not recognise it by the name of yellow fever, termed it a fever of a highly malignant grade, produced by the filth in that quarter of the city. No nuisances, of this kind, were apprehended to exist in that part of the city which was infected last year. The only cause on which suspicion could rest, was

the cemetery of Trinity Church, containing so many thousands of the dead. Of these and other places of interment in the City of New-York, we will now give a short topographical description.

The first cemetery in ascending the city is that of the large South Reformed Dutch Church rebuilt of late years. Garden-street, where it is situated, is narrow and confined; it covers a space of about 25,000 square feet, and contains a number of vaults.

The next is in Wall-street, and belongs to the First Presbyterian Congregation, which, with the building, covers 20,000 square feet. Nearly the whole of it must have been excavated for vaults, since about eight or ten years ago they were obliged to construct an additional range under the foot-way of the street.

About a hundred yards to the left of this, across Broadway, is the largest cemetery in the city, that of Trinity Church. (F) It is nearly two acres in extent; comprising 86,400 square feet, since the year 1703, when the Corporation made a grant to that church of all the open space north of it, for the use of the city. This ground is filled. The vaults on the south side are very numerous, and of late years many new family vaults have been erected south and west of the church. A few circumstances particularly deserve notice: one is, the elevation of this cemetery above the streets on the west, it being 27 feet at least above the water line; and the other is its level surface, affording no means of escape for water, which of

course gives rise to springs. There is here a charnel-house; and for further particulars see Document A.

Between Pine and Cedar-streets lie the burying-grounds of the French Protestant and Associate Reformed Churches. That of the French Protestant has about 7500 square feet, and has not been much used since the Revolutionary war; that of the Associate Reformed contains a number of vaults.

The Middle Dutch Church cemetery is a very considerable place of interment, and seems entirely appropriated to vaults. Some remarks on it may be found in the annexed documents. (G)

Leaving two places of interment, one in Ann-street, the other in Gold-street, and proceeding further in the city, on one side we meet St. Paul's, and in Fulton-street, the North Dutch churchyard. The former is in a very open situation, and has been much used, if we may judge from the number of monuments in the enclosure; it comprises 68,000 square feet, more than an acre and a half. Next we reach the cemetery of the Brick meeting, a piece of ground now entirely filled, and of about 12,000 square feet. Large vaults have been excavated for the use of the church under the street called Park; and during the last year, lateral and central vaults have been made under the building. The Lutheran Swamp Church, the two cemeteries belonging to it, and the ground of St. Peter's, are not large, are full, and are now rarely, if ever, disturbed.

Omitting the enumeration of many burial-grounds of less account, or more recently established, there is, as all know, at the slightest computation, 10 acres, or 500,000 square feet of ground in the city, exclusively appropriated to interments in graves or vaults, without counting the suburbs and the village of Greenwich, where perhaps twenty acres are divided between the Episcopalian, Catholic, Dutch, Presbyterian, Quaker, Methodist, and Jewish congregations, besides Potter's Field. We will take the subject in another point of view, to ascertain whether the space thus employed may endanger the health of the inhabitants. On the authority of observation and experience, it has been elsewhere stated in this work, that it takes more than ten years for the entire decay of the human frame in graves, and much longer than that, in vaults.

The following is drawn from the yearly bills of mortality, at the City Inspector's office, for the last eleven years :—

1812	-	-	-	2505
1813	-	-	-	2339
1814	-	-	-	1974
1815	-	-	-	2507
1816	-	-	-	2739
1817	-	-	-	3527
1818	-	-	-	3265
1819	-	-	-	3176
1820	-	-	-	3515
1821	-	-	-	3542
1822	-	-	-	3231
Allowing for more than one half of } 1823	-	-	-	1625
				<hr/> 33,945

We have here, then, a total of 33,945, dead bodies dispersed and accumulated within an area of three miles, during eleven years and a half; all still under the decomposing operation of nature, and diffusing, in the warm season, their volatile exhalations in the air we must respire !

CHAPTER XIV.

*Refutation of the Objections raised against the Prohibition of
Interment in the City.*

THIS prohibition has caused some contention, and created a great opposition. Many motives have conduced to this excitement ; and to one, the distress of kindred and relatives, who, by this law, must be denied the satisfaction of knowing that their dust shall mingle with that of their deceased friends, no language can do justice. Their sorrow springs from the best feelings of the heart ; it should be respected and held sacred ; and plans that may be proposed in relation to the burying grounds now within the city, should be adopted with the greatest delicacy, and conducted with due solemnity. As far as may be gleaned from the daily papers and private discussion, the prohibition has been by some called illegal, and is objected to on three grounds.

1st. Because the right of interment, obtained by

purchase or inheritance, is, by the statute, as unalienable a property as any other.

2d. That medical men deny the supposed pernicious effects of places of interment.

3d. That it would be difficult, expensive, and inexpedient to transport the dead to a distance.

It will not require much knowlege of the practice of the law to allege in answer to this, that the possession of a part of a piece of ground solely appropriated to interment, differs from other kinds of fee simple or tenure, inasmuch as it is defined *qualified property*, while others are *absolute property*.

He who purchases or inherits a vault, or a place for interment in a burying ground, is to employ it for no other purpose than interment, it being presupposed that interment is an allowable use of the property, and in this supposition he is restricted to that use of it. Should this *qualification*, originating from the agreement or understanding of the contracting parties, be removed for the sake of the public health by municipal power, the property is then converted into *absolute property*, and the fee simple remains unvalidated: if the municipal authorities, considering the continuance of the *qualification* improper, should wish to withdraw it, the right of the proprietors in fee simple, can no more be a hinderance to their carrying their wishes into effect, than the fact of a house or lot's being absolute property, is to prevent them from taking possession of such house or lot for the public use and convenience. When the benefit of the community is a sufficient plea to overpower the right

of fee simple, in one case, it cannot be denied that, for the same motive, the *use* to which a property is devoted may be disallowed in another. For *absolute property* that is taken for the benefit of the public, the amount of the real value is given in exchange; but where the *qualification* or *use* of the property is a *nuisance*, the prohibition of that qualification, or use, is in no instance accompanied by remuneration to the proprietor for the loss he may sustain.

The legality of the measure of the Corporation is therefore founded on the fact, that interment in cities *is, or may be a nuisance*. Those who desire the location of burial places without the city, do not contend that they are *positively nuisances at every season of the year*; but they assert and prove that there are degrees and circumstances in such things, which, in a large community, may, and have grown to an alarming height; and that it is the duty of magistrates and the guardians of the public health to arrest their further progress by decisive measures.

The example of the long, reiterated, and useless efforts of the councils, from the ninth century to the time of the able and energetic archbishop of Toulouse, may serve to show how little reliance is to be placed on plans, that instead of remedying the evil by a safe and thorough reform, trim their cautious, hesitating, and middle course between conviction of the necessity of a change, and fears of the difficulty of the execution.

To illustrate further the right of depriving individuals of the privilege of interring in vaults in the centre of the city, let us make the following supposition. If the ground about the Magazine at the upper end of the town, by some local or adventitious circumstances were to become so fashionable or eligible, as to be covered in a short time with dwellings according to the regulations of the street inspector, the safety of the individuals and of the property in the neighbourhood, would require the removal of the powder to some other establishment; and if that Magazine were private property, the proprietor would be put to the expense and inconvenience of doing so, without presuming to demand a compensation for his loss and trouble.

Among the complainants against the present law, there is no proprietor of a grave or vault, in fee simple, or by personal tenure, that can bring an action to vindicate his right of interment; perhaps legal proceedings would be as unsuccessful on the part of the wardens of incorporated congregations. The present plan, therefore, stands the best, if rigorously enforced. Not long since, certain acts, that were subject only to civil damages, were construed by the legislature into acts of misdemeanour. Such a legislative improvement, and the vigilance of an active police, would render an infraction of the law almost impracticable. At any rate, as a caution to the dissatisfied, it may not be useless to remark, that in a civil action, the *merit* of the law is nothing to a jury, as they in such cases, decide only of the *fact*.

The second objection is founded on a medical opinion, authenticated by six signatures, and presented to the Honourable Board of the Corporation, purporting that cemeteries and vaults for interment within the city, are not dangerous. No matter which side of the question were embraced by the six medical gentlemen selected for the occasion, their opinion should not have been set aside, as it was, on the ground of their previously having disagreed, with other members of their profession, on the immediate causes of yellow fever. Their diversity of opinion on a controverted subject, was not a sufficient reason that their judgment on matters connected with the elements or institutes of medicine, should be considered unworthy of regard. It is mentioned in the civil and ecclesiastical decrees from high authority in the preceding pages, that medical decision corroborated the prevailing opinion of the dangers of interment; it would have been strange, indeed, if this medical testimony had been rejected, because those who gave it differed on some other points from their professional brethren.

Two of the six physicians, Drs. Hosack and Barrow, fully acknowledge the danger of graves. The latter even says, "that they are saturated with materials hostile to human life." The innoxiousness of vaults, which they both advocate, may be admitted in certain circumstances, but cannot be depended on always; decay, accidents, or neglect, are continually at hand to undermine their boast-

ed safety, and the danger still impends over us, like the sword of Dionysius.

The four other gentlemen, Drs. Post, Moore, Onderdonk, and Watts, declare that their "reflection or observation would not warrant the belief that places of interment have in any instance given rise to any form of disease." But, by recorded facts, it is perfectly ascertained, that church-yards, graves, and vaults, have occasioned sudden deaths and malignant diseases in their vicinity.

The dangers of anatomical labours and autopsic examinations, familiar to all who dissect, may be brought forward in confirmation of the poisonous nature of decaying animal matter, with the more propriety, that several celebrated anatomists have been the victims of their incautious researches.

As the four last physicians alluded to, advocate the domestic origin of yellow fever, it may be inferred, that to a certain extent they admit the pernicious influence of full and extensive grave-yards.

Further remark on this professional decision would be superfluous, as it has been made public by those who advocate interment within the city, without any counterbalancing declarations arrayed against it, to cross-examine, if the term may be used, a testimony expressive of opinions, rather than a plain enumeration of facts. Medical evidence not appearing actually necessary to the comprehension of the dangers in question, no inquiry of that kind has been solicited, and such as was offered has not excited controversy.

The testimony of the sextons of several churches in this city, who have enjoyed uninterrupted health in the discharge of their duty, has had much weight with some; but without calling in question the veracity and candour of any one, it may be pertinently said, that they who attempt to prove too much, prove nothing; as for instance, some have been heard to express a doubt, even that there was a cadaverous *fætor* exhaled from receptacles of the dead. A number of authenticated facts in the Appendix, (D) will not only invalidate this evidence, but convince the impartial, that the danger of re-opening vaults and graves, is in proportion to the temperature; from the combinations of which, the slow or rapid disengagement of deleterious gases, or even their intensity, depends. If the precaution be used, of throwing in lime or water, which are both powerful absorbents, the danger is promptly removed, especially for those who are habituated to exposure. Sextons, and the labourers they employ, well know that graves should not be re-opened without trying the ground with a borer.

The third objection is the difficulty, expense, and inexpedience of transporting the dead to a distance.

The difficulties in this matter, are not insurmountable. The plan organized in Paris, fifty years ago, has been found suitable and efficient, and no improvement of it necessary, except that an imperial decree, in 1811, divided funeral expenses into six classes, for the several ranks of society, from those

who could afford to bestow nearly a thousand dollars on the pomp of obsequies and religious solemnities, to those whose want of means restricted the expenditure to twenty shillings.

This plan provides houses of deposit, to which funeral processions move, and where bodies are left in the charge of a clergyman, until the general removal to the cemetery takes place at night. (Vide page 59.)

There are no difficulties to encounter in this arrangement; half measures, it is true, and incomplete provisions, making a medley of new customs and old practices, interment at a distance, and no mid stations for processions, the fatigue and consumption of time, or the expense of transportation attendant on following the remains to the grave, are inconveniences, and must be felt keenly.

In New-Haven they have already arrived at the important improvement of interment at a distance. With provident wisdom they have moved the dead from the centre of their neat and elegant town; and strangers admire the solemn and picturesque appearance of their public cemetery.

From a work, styled the "Family Receipt Book," and printed by Howe, Spalding, and Wadsworth, in that city, we extract the following wholesome precept, or rule, for the preservation of health. "Avoid as much as much as possible living near churchyards. The putrid emanations arising from churchyards are very dangerous; and parish churches, in which many corpses are interred, become impregnated with an air so corrupt-

ed, especially in spring, when the ground begins to grow warm, that it is prudent to avoid this evil, as it may be, and in some cases, has been, one of the chief sources of putrid fevers, which are so prevalent at that season."

This doctrine is either true or false. Experience inclines us to the former mode of belief; and until its falsity be demonstrated by arguments as forcible and cogent as those that have rendered its truth apparent, we must be contented to guard against a probable evil, of such magnitude as the unhealthiness of cemeteries, by every means in our power. Expense and inexpedience may be comprised under the same head. Neither objection can be applied to interment at a distance, if it be kept in mind, that a new system would be executed under city regulations, with an established rate of prices, and with all possible deference to the observance of religious rites, even under the inspection of the clergy, who would unquestionably be the best guardians of the dead, until deposited in the grave. For this duty, young clergymen might be employed by their several congregations, and compensated accordingly. Such an order of things would be in consonance with the liberal feelings of a Christian community, which is surpassed by none in the number and dignity of its religious establishments.

CHAPTER XV.

Plan and description of a General Cemetery or Polyandrium.

THEBES, of Egypt, had her Necropolis, or city of the dead, and ancient Rome her Appian Way. London boasts a Westminster; and the Catacombs, Pantheon, and Cemetery of Père La Chaise, are the pride of Paris. By such monuments as these, the past generations are kept alive in the memory of the living, and the former pitch of pre-eminence of a nation, stands chronicled in brass and marble, to warm the patriotism or excite the emulation of her sons. On the other hand, a feeling almost inseparable from our nature, attaches a degree of sacredness to the spot where a fellow being is laid to rest. A plan, therefore, by which a large community like ours would be provided with a place of interment, to which each of its members would have the right of admission, without risk of being disturbed for want of room or for the sake of a new tenant; a plan that would protect the dead without endangering the health of the living; and by which a place might be established where the names and actions of public benefactors would be recorded for the instruction of posterity: such a plan would unquestionably meet the wishes, and receive the applause of the citizens.

Some remarks on the site and extent of a new cemetery, on its enclosure, distribution, keeping, and other general regulations, may be acceptable to the reader, and in unison with the intent of the present work.

It must be obvious at the first thought, that a public cemetery must be open to every citizen alike, except such as belong to public charities and prisons. There may be exceptions for these, however, as well as for respectable strangers.

All who have written on this subject, agree that an elevated site with a declivity to the north or northwest, is the most proper for a place of interment. Such an exposure naturally affords a more complete play to the wind, which powerfully scatters and disunites the component parts of exhalations. There are three other conditions requisite. 1st. The soil should not be interspersed with those rocky materials so abundant in the island of New-York; 2d. Springs of water, unless very near the limits and running off; and 3d, inequalities of surface, forming ponds in time of rain, and too considerable to be filled up at a reasonable expense, will defeat the main purpose of its appropriation.

The Cemetery should be enclosed with a high, strong, and solid stone wall, for two important motives. It is a lamentable fact, that receptacles of the dead in populous cities are, for various reasons, too often violated. "Many tons of human bones every year," says the Quarterly Review, No. xlii. p. 380, "are sent from London to the

north, where they are crushed in mills contrived for the purpose, and used as manure." Similar testimony may be derived from other nations and writers. The *Polyandrium* should be equally inaccessible to the contrivances of avarice, the intruding researches of the anatomist, the dark concealment of murder, and the opportunity of suicide to the melancholy maniac. (60)

A second motive for recommending a strong, high, solid wall, is for the location of the vaults. Magistrates must be aware that in this establishment, they cannot refuse a citizen the privilege of building a family vault. But unless restricted by some means or other, this civil right will become a great encroachment; the body of an adult will cover up only twelve square feet, while a vault will take at least seventy-two square feet. The irregularity with which the vaults might be laid out, and some other such arbitrary causes would, in the course of time, obstruct or impede a correct distribution of the ground, of which we will speak hereafter. It may therefore be admissible to adopt regulations for the prevention of this evil. For instance, let a space along the wall, eight or ten feet broad, be all that is allowed for vaults, and these should be built under the following rules.

1st. That the vault shall be under ground, built along the wall, of brick or stone, and six feet deep, and no more than seventy-two square feet in extent.

2d. That it be paved with flag-stones, in order that bodies be deposited three feet deep in the earth under said pavement.

3d. That the proprietor of each vault be bound to build, or to pay for the building of an arch of masonry, to extend from the main outside wall to an inner wall, confining the space appropriated to vaults; which inner wall shall have arched passages through it, along the whole of its length, the passages to be three feet apart. This will form around the enclosure, an arched open gallery, lofty and substantial; securing the vaults, and giving solemnity and durability to the establishment.

4th. That against, or upon the inner side of the main wall, inscriptions or monumental devices are to be placed; and must be on marble, iron, brass, or such lasting materials, and never altered.

5th. That the proprietor of a vault is to have the right to transport to it at a proper season, the remains in former family vaults, or graves belonging to him. (61)

The extent of this public cemetery is the next thing to be considered. The speculative views of Maret, whose work is analyzed page 70, may assist our calculation. He thinks that the extent of cemeteries should be determined by the time known to be necessary for the total destruction of the inhumed, and by the square space occupied by each body. That writer means by total destruction, the dissolution of the integuments, leaving the bones dry and entire; in that state, according to the European custom, they are taken up to clear the ground and perpetuate the cemetery. He thinks three years sufficient to decompose a body in a grave four or five feet deep; at a

depth of six feet, it will take a longer time, because pressure retards putrefaction; the ground therefore, should be so apportioned as to contain three times the mortality of a year, if the graves are four or five feet deep; if six or seven feet deep, it should contain four times that amount.

The grave of an adult requires thirty-one square feet, according to Maret, who thinks that a distance between graves, is beneficial and necessary: multiplying the yearly mortality by 31, and the product by 3 or 4, the number of years for the destruction of the bodies, we find the sum of square feet requisite for a general cemetery.

By this plan, the mortality of New-York, about 3100 annually, would require in three years, only six acres and a half. This may suit in theory; but as it is not contemplated to clear the ground every four or five years; and as the time allowed in Europe for the decomposition of the dead would not be sufficient in our climate, where we experience very cold, long winters, the calculation of Maret would not answer for us; the extent of our general burial place should be regulated by the annual mortality, by the square space necessary for each grave, and by the number of years sufficient for the bones themselves to be reduced to dust, by which it will appear, that a mortality of 3000 a year, taking 31 square feet for each grave, would require an area of 25 acres, which would allow each grave to remain undisturbed for twelve years. Two or three cemeteries, therefore, might, in succession of time, perfectly secure

the return of earth to earth, ashes to ashes, dust to dust.

In the distribution of the ground, the sections should be regular, so as to be conveniently intersected by paths sufficiently wide for a hearse to arrive at any section without being obliged to cross another; parallelograms, or squares of about an acre in length, will answer this purpose, and may be divided and subdivided into partitions for religious denominations, with walks between them three feet wide, branching from the principal gates or avenues. It would be no obstacle to the proposed division, if the area of the cemetery is not a perfect square; the irregular parts may be retrenched, and left in subsidiary sections.

The good and proper keeping of such an establishment, would be best insured by uniform regulations from the city authorities, maintained by officers, appointed by the corporation for the purpose, who should attend to the construction of vaults, the opening of graves, the clearing of the ground, and other matters of internal police. It would be an affair of some moment to determine whether monumental work should be permitted over the graves; and if so, whether there should not be some rules to exclude the vain display of pride, wealth, and tasteless or incongruous ornaments, that are painful to the serious and thoughtful feelings of the pious or afflicted visitor of the *city of the dead*.

The reader has already been made acquainted with the opinion of an eminent French physician,

Navier, (page 74) disapprobatory of the custom of planting trees in graveyards; his remarks are judicious; but in as extensive a cemetery as the one now projected, and in a climate more boisterous than the temperate regions from which Navier drew his conclusions, a range of trees along the inner wall of the *Polyandrium* would be little or no impediment to the circulation of the air; and would be a suitable memorial to mark the spot consecrated to the rest of the grave, and the solitary quiet of the tombs.

As the new system of interment requires transportation to a distance, one or more places of deposit, or *Luctuaries*, (62) should be erected, and stationed conveniently on the way to the cemetery: to these the procession of friends and acquaintances would move, and there confide the body to the care of the appointed clergyman, or particular friends, that the individuals concerned may have thought proper to fix upon; the clergyman is to have the charge and keeping of the bodies left at the deposit, accompanied (if there be any who wish to remain with the bodies) by the friends of the deceased, until he sees them finally laid in the earth, as has been the method adopted in Paris for more than fifty years.

A regular and uniform plan of interment should be carried into effect, therefore,

1st. No interment should take place except with and under the inspection of the Sexton of a responsible religious congregation.

2d. Before a body is conveyed to the deposit or

Luctuary, notice should be given to the City Inspector.

3d. A regular sexton, or the clergyman appointed, should be constantly with the body, from the time it be placed in the deposit, until it is interred.

4th. The expenses for transportation to be paid to the sexton.

The cemeteries in town call for attention; but they should not be disturbed for ten or fifteen years; after which, for the benefit of the proprietors, or the churches to which they belong, and for the improvement of the salubrity of the city, they may be converted into ornamental and healthy squares. At present, the following conditions and precautions are requisite to diminish their injurious effects.

Burying grounds in the city, or suburbs, should be absolutely closed against interment or disinterment; they should, however, be, as usual, under the superintendence of the proprietors. Family vaults should not be entered except during winter, and then, remains in them might be transported by the owners to their new vaults in the *Polyandrium*; after being emptied, they should be closed up and be unemployed for any purpose, for the term of ten years. Such vaults as would not be emptied in three years by their proprietors or claimants, should be entered by inspectors appointed, and the contents conveyed to a general vault prepared in the *Polyandrium*. To the public part of Trinity churchyard a declivity of sur-

face should be given, a layer of clay three inches in depth spread over it, the grave-stones laid flat, and the whole paved with flag-stones. There should be a regular inspector to attend to the enforcement of these rules, and the act of disinterment, of opening vaults at an unlawful time, or of breaking the ground for a grave, should be held a misdemeanor.

The institution of a general cemetery, or polyandrium, has been commenced by a firm and prudent council, that are capable of conducting the plan to a wise and beneficial result. The only remark that remains to be made, is, that this subject is neither a political, medical, nor religious question, but one that interests alike every member of society; that temporary rules will not effectually promote the public health; they will be inconvenient to the citizens, will lead to discontent on their part, and will be a vexation to those in authority.

They who have opposed distant interment with fair and honourable argumentation, will find, on inquiry, that they have entered the lists against principles and results of experience, which will challenge the severest investigation, and defy the most ingeniously captious disputant. Yet in a community like ours, opposition will be afloat, if not among enlightened classes, among those the most under the influence of custom, habit, and prejudice. If the reverend clergy, who have from the pulpit so fine an opportunity of instructing their hearers on moral and physical evils,

would advocate the contemplated improvement, and place it in a proper point of view, their congregations, most probably, would more readily consent to abandon city interment. There are many motives to lead to their concurrence. Protestantism rejects the doctrine of the efficacy of holy ground, of prayer for the dead, and the power of relics over them, by which the Church of Rome extended her temporal dominion over the grave; it therefore holds out no inducement to the appropriation of the purlieus of the church to interment; and moreover, can a pecuniary loss be a sufficient reason for allowing a monstrous evil to continue and increase to the detriment of health and life? In the history of the Eastern and Western Church, it is gratifying to remark, that while superstition and cupidity were slowly introducing the practice of interment in cities and churches, it was the clergy, then the depositories of knowledge and science, that were strenuously endeavouring to abolish the custom by efforts in councils, in synods, and from the episcopal chair; while France owes her reformation in that particular to the energy of an archbishop. The exertions of the clergy for this reform, may certainly be expected with propriety, since, while free from civic charges and incumbrance, their profession makes it their duty, charitably to further the public good.

Such is the harmony, said a great Prelate, always existing between religion and sound policy, that what is acknowledged as decorous and useful by the one, is also

commended and prescribed by the other. (pag. 46) This remark is well worthy the attention of ministers of all Christian denominations. One sect already, and not the least in rank, on account of the austerity of its principles and purity of its doctrine, scrupulously prohibits city interment; this is the society of Friends, called Quakers. They are not known to have vaults in their religious places of meeting, or burial grounds. Their dead are always transported to a distance from the habitations of the living. The respect they pay to the remains of their friends, is evinced by the great depth and space they allot for each grave. It is but justice to infer, that they wish to avoid annoying the public by the dangers of grave-yards, as they are indifferent to the praise or attention which the world gives to funeral pomp or showy devices, and monumental stones, which they reject. May all Christians imitate them in their wise regulations of interment, and then we may emphatically exclaim, not in the meaning of *sin*, which the power of God only can check, but, in that of *sinful* evils, which we have accumulated around us under the control of the law, (H)

“ O Death ! where is thy sting ?

O Grave ! where is thy victory !

NOTES.

CHAPTER I.

(1) The customs of different nations have varied greatly with regard to the disposal of the dead. According to Spondanus, (*Cæmet. Sacra*, p. 20, 21.) the Syrcanians flung their dead to the dogs ; some Indians left them to the vultures ; the Garamantians covered them with sand ; the Celts took from them the bony scalp of the cranium, which they set in gold for goblets. The inhabitants of Colchis and Phrygia, say some historians, hung them on the branches of trees. The Lacedemonians and Scythians embalmed their kings in honey. The islanders of Delos buried their dead in the neighbouring islands ; and the Megarians in the island of Salamines. The Grecians and Romans never allowed the bodies of children to be burnt : they believed that the principle of resurrection was in the teeth, which in children were too tender to resist the action of fire. Many Jewish rabbis still believe that there is in the skeleton a bone called *luz* ; they place it somewhere in the spine, and consider it indestructible. (See Diemerbroek, *Treatise on Anatomy*.)

(2) The Egyptians underwent after death a public examination into their conduct during life, on the borders of a marshy lake, Acherusa, whither they were carried for that purpose. The bodies of virtuous and worthy citizens were placed by order of the judges in a bark, which transported them to the other side of the lake, where the public cemetery was established in a delightful situation. Those considered unworthy were deprived of this honour, and cast into a loathsome pit, which pro-

bably took the name of Tartarus, from the use to which it was destined. This gave rise to the fables of the river Lethe—Charon the boatman—of the three judges of hell—and the hundred years of wandering on the Stygian shores. (*Diod. Sic.* l. 7.)

(3) In some countries the earth has the power of consuming more rapidly the bodies inhumed in it; this has been observed in Troas, Lycia, and some other countries of the east. (*Pliny*, l. 36. c. 17.)

There are two churches at Toulouse, and one at Bordeaux, where the process of exsiccation in the vaults is complete, the flesh turning into a dry, friable, and spongy substance.

The preservation of the mummies of the Guanchios,* at Teneriffe, is remarkable: the bodies were daubed with balsamic ointments, soaked in ley, dried in stoves, and sewed up in goat-skins; they are arranged in caves, some standing, others lying on beds of wood hardened by a peculiar art. Most of these bodies are entire, the features perfect, and beard and hair preserved. While the bodies in the caves of Teneriffe are so entire, those in the caves of Canaria, though fixed also in sacks, are consumed. (*Med. Repos.* vol. iii. p. 156.)

The phenomenon of the drying of dead bodies in vaults, or in the earth, is probably owing to the absorbing quality of the surrounding materials, and is as certain a fact, as the transformation of human substance into *adipocire*, or fat resembling spermaceti. These surprising effects, or the like, have been noticed in cold as well as in hot climates. There are extensive regions in Asia, and in South America, where the high but uniform temperature consumes corruptible materials, and where epidemic, malignant, or pestilential diseases have never, or very rarely occurred.

(4) Nothing impure was allowed to contaminate these ceremonies. They made use of no woollen stuffs, but only linen. Small figures in copper, marble, or clay, of Osiris or Pluto, Isis or Proserpine, have been found in the mummies. Precious

* A people inhabiting the Canaries before the arrival of the Spaniards.

vessels, or large sums of money were enclosed with the dead. The Spaniards in the West Indies found graves filled with gold and valuable articles. The Jews buried heaps of treasure with the dead. Plutarch and Strabo relate that the kings of Persia and Macedonia ordered their treasure to be deposited in their tombs. This custom was frequent among the Romans, and is of the highest antiquity. The pagans always put in the mouths of the deceased a piece of money, which they called *obolum* or *trientem*. Virgil therefore often calls the dead *inopem turbam*. (*Spond.* p. 59. 61. 70. & 111.)

CHAPTER II.

(5) It is believed, as commentators declare, that the remains of all the illustrious patriarchs above mentioned were assembled in the Cave of Hebron with the bones of Abraham. (*Vid. Calmet. ad. Act. Apost. c. 7—16. & ibid.*)

(6) He was buried under a tree at Jabesh-gilead (1. *Samuel* c. xxxi. v. 13.) From there David carried his remains, or his bones burnt to ashes, to the sepulchre of Kish, the father of Saul, in the country of Benjamin. (2 *Samuel* c. xxi. v. 14.)

(7) According to Spondanus, (*Caemet. Sacra.* p. 153) the Hebrews burned perfumes upon the dead; this was called *Combustio*, from which, he says, it has been wrongly concluded that they burned the bodies also.

(8) A continual fire, that consumed carcasses and all the filth of the city, burned always in the deep pit of 'Topheth, in the valley of the children of Hinnom. (*Isaiah* c. xxx. v. 33.) This tradition has furnished the name and the idea of what is called *geeuna* or *gehenna*. (*Calmet Dict. Bibl. art. Cedron.*)

(9) Necessity at the moment obliged them to follow this course. (1. *Samuel* xxxi. 13.) That kings and the great were interred at their country-seats, see *Kings, passim*.

CHAPTER III.

(10) Some traced back the origin of this custom to Hercules, who wished to carry to king Licinius, the last remains of his son Argivus, slain in battle. (*Hom. Scoliaſt. Iliad.*) The greater number think that this custom dates from the war of Troy, where the horrid carnage, and the example of the Phrygians determined the Grecians to assume this mode as the most simple. (*Vid. Potter, Archæology, book 4. chap. 6.*)

(11) Lycurgus was the only one who permitted tombs in cities, in the temples, and in the public places frequented by the people. He did this, wishing to accustom the Spartan youth to bravery and courage by familiarizing them to the idea of death. It seems that this end might have been as well attained by following, in what related to the rites of burial, the customs adopted by the rest of Greece. (*Vid. Instit. Polit. book i. c. 1. § 13.*)

(12) Towards the close of the government of Athens, Sophocles found none buried in that city, although it was besieged by the Spartans ; and Sulpitius, at a still later period, could not obtain a permission to inter Marcellus there.

(13) The Tarentines followed the same customs. On some occasion of their consulting the oracle, they received for answer that they should be much happier, *si cum pluribus habitarent*. *Polyb. book 8.* The true sense of the oracle, was, that they should use means for the increase of their population ; mistaking the manner of doing this, they thenceforward allowed the dead to be buried within their walls.

(14) No nation was ever more jealous than that of Greece for the honours of burial. The Athenians often neglected opportunities of gaining splendid victories, to fulfil this duty. And they often, even when victorious, sacrificed excellent generals because they had not shown themselves sufficiently attentive to the burial of soldiers slain during the action. Those who vio-

lated tombs, were looked upon as victims irrevocably devoted to the wrath of the Gods. The auguries, prayers, and vows they made upon graves, show how deeply the depositaries of the precepts of their religion had impressed upon their minds a respect for the dead. The Grecian writers, especially the poets, have left us interesting details on this subject. (*Vid. Anthol. and Brodæus. Epigr. gr.*) It may be added that oaths for the most solemn occasions were as sacred when pronounced over a tomb or grave as at the altar. All know how Alexander, before undertaking the Asiatic war, sacrificed upon the grave of Achilles.

CHAPTER IV.

(15) The respect shown by the Romans to places of burial is undeniable. They consecrated them by very solemn ceremonies. Those who stole any thing from the sacred place of interment, were capitally punished; and all thoroughfare and idle assemblage about it were prohibited. A body that had been interred could not be exhumed and placed elsewhere without the consent of the priests; and in the provinces, without the consent of the magistrates. (*Hein, Ant. Rom.*)

(16) Many of the most illustrious Roman families did not adopt this custom. The Cornelian family, for instance, buried its members till the time of Sylla, who ordered, by his will, that his body should be burned, which he is supposed to have done, lest any one should dig up his body, and dissipate his remains, as he did those of Marius. (*Cic. Plin. Varr. ubi Scalig. & Turneb.*)

CHAPTER V.

(17) Those who had expired under the infliction of punishment for any crime, were denied burial by the Roman law. The place to which their body was dragged, and from which it was thrown, was called *Scalæ gemoniæ*, and was looked upon as infamous. (*L. 48. ff. tit. 24. de Cadav. Punit.*) The political and

religious system of the Greeks must have rendered the privation of burial the severest of punishment. (*Vid. Homer. Odys. v. 66.*) Their most bitter imprecation was to hope that the corpse of an enemy might be left exposed. Of course, the greatest culprits, those who had committed sacrilege or desertion, were punished in this manner. (*Potter, Archæolog. Grec. b. 4. c. 1.*)

Among the Grecians and Romans, interment was thought so sacred a duty, that after battle they were particular to bury their enemy's dead, as well as their own; and when the generals wished to encourage their soldiers, they promised them, if they fell, an honourable funeral.

The respect in which the Egyptians always held the last abodes of mortality, furnished them with a means of vengeance against their enemies. The greatest outrage they could inflict upon them, was to disinter their dead and beat them with rods. (*Sp. p. 450.*)

The customs of the Jews were dissimilar. In the ordinary course of justice, no crime deprived the culprit of burial. But this rigorous punishment was sometimes put in practice against the *uncircumcised*, those irreconcilable enemies of the Israelites. Joshua threw into the cave of Makkedah, five kings together. (*Jos. x. 24.*) Joram, and Jezebel, in compliance with divine command, (*2 Kings ix. 26. 36.*) This was intended as the greatest possible punishment. (*Jer. viii. 2. Eccl. vi. 3.*) Some authors assert that the valley of Topheth was to the Jews what the *Scala gemoniæ* was to the Romans.

(18) Tertullian gives another motive, which to some appears more likely and proper. They believed that the soul, or at least a part of it, remained with the body, and they considered it their duty to take care of the precious remains. (*Propterea nec ignibus funerandum aiunt, parcentes superfluo animæ. De. An. 51.*)

(19) It is most probable from the text of St. Luke, that he was buried in the same spot where he was stoned, that is to say, out of the city.

(20) Pomponius Festus speaks of them in *de Interpretati*. The catacombs were excavations in the neighbourhood of Rome, for the use, as some say, of the pagans, who afterwards abandoned them. The name is derived from the Greek, and means a place dug to a depth. The catacombs should not be confounded with the cemeteries; each of these words has its own signification, and the most celebrated church writers, have always used them distinctively.

(21) St. Jerome says that every Sabbath he visited the catacombs. "When I found myself," says he, "in that dense night, I used to think the words of the Psalmist were verified to me, *Descendit in infernum vivens*." (Hieron. in Ezech. chap. 4. Greg. Turon. l. 1. H. Fr. chap. 39.)

(22) In the environs of ancient Rome there were as many as forty cemeteries. Ecclesiastical history has preserved their names. (*Vide Baron, ad an. 226. Panv. Hospin.*) and Prud. gives a fine description of them, hymn 11.

(23) In the second century the Christians began to have churches; the sites of these have been determined, but we are ignorant of their construction and appearance. The church of Antioch, which the emperor Diocletian destroyed, was erected in the third century. The altars therefore were not always raised upon the relics of martyrs. It was not until the Church had been long and peaceably established, that they were transferred to cities.

(24) (*Ignat. ad Philadelph. Euseb. H. E. l. 10. c. 4.*) This was the origin of basilicks, and principal churches on which others depended. The Christians of one district acknowledged but one altar, and one service, at which one bishop officiated. There were chapels in the suburbs, which depended on some principal church.

(25) The sites of graves often became those of temples even

among the pagans ; from which the words *temple* and *sepulchre* have been sometimes used synonymously ; so Virgil :

Prætereà fuit in tectis de marmore templum,
Conjugis antiqui miro quod honore colebat.

CHAPTER VI.

(26) *Constantinum Magnum filius ingenti honore se adfecturum existimavit, si eum in Piscatoris vestibulo conderet ; quodque imperatoribus sunt in aulis janitores, hoc in sepulcro Piscatoribus sunt imperatores. Atque illi quidem veluti domini interiores loci partes obtinent ; hi autem veluti accolæ, et vicini præclare secum ægi putant ; si ipsis vestibuli janua adsignetur.* (Hom. 26 in II. Epist. Cor.)

(27) Thomassin assigns this as the commencement of relaxation in the discipline opposed to interment in churches. (Part 3. l. 1. c. 65. § 2. and also St. Greg.)

(28) These were exceptions in favour of exemplary piety ; but the admission of the laity was on the whole an innovation. Muratori demonstrates that the custom was not introduced by the cupidity and superstition of the priesthood, in the time of Pope Gregory, as Kepler pretends. The most ancient instances he produces, and which are of the fourth or fifth century, are all of persons remarkable for their piety. Many bishops, who with holy humility thought themselves unworthy of such an honour, declined making use of their prerogative. (*Vid. Muratori Anecd. l. 1. disq. 11. & t. 2. disq. 3.*)

(29) This was the origin of chapels. The pious resorted to them to meditate or to pray over the dead. At first these small buildings were separate from the church, but were at length united to it by the porticoes and arcades built adjoining to the additions at the sides ; they were sometimes covered in entirely, and thus incorporated into the body of the church ; the tombs in them became altars. (*Thomassin. l. 3. c. 66. 5.*)

(30) This law is dated A. D. 381.—*Omnia quæ supra terram urnis clausa vel sarcophagis corpora detinentur, extra urbem delata ponantur, ut et humanitatis instar exhibeant, et relinquant incolarum domicilio sanctitatem.* He speaks in particular of the church of the Holy Apostles at Constantinople; and of the small edifices erected in towns to the honour of holy martyrs, lest they should serve as a pretext to vanity or ambition to elude the law. Some think that these last mentioned monuments were an exception to the law; but the text will prove the contrary. *Ac ne alicujus fallax et arguta solertia ab hujus se præcepti intentione subducatur, atque apostolorum vel martyrum sedem humanis corporibus existimet esse concessam, ab his quoque ita ut à reliquo civitatis noverint se atque intelligant esse submotos.* (Code Theod. l. 9. tit. 17.) From this the law of Justinian was derived. *Nemo apostolorum et martyrum sedem humanis corporibus existimet esse concessam.* (Cod. Justinian. l. 9. tit. 17. c. 6.)

(31) The Venerable Bede, H. l. 2. c. 3. gives us ample testimony that indiscriminate and general interment in churches was not permitted in his time. St. Austin, the apostle of England, was interred under the portico of his own cathedral. All those prelates who succeeded to him in the see of Canterbury were buried in the same place, until at last, for want of room, their sepulchres were constructed in the interior of the church.

CHAPTER VII.—NOTES TO THE ACTS OF COUNCILS.

(32) The councils and synods have not only forbidden burial in cities, but regulated the mode and manner of interment, and the order of funeral ceremonies.—Vid. Synod Colliour. *Eo quod sub obtentu orationis scelera latenter committerent.* (canon 35.)

An. Christi. 563. concil. Bracar. can. 18. *Firmissimum usque nunc retinent hoc privilegium civitates Gallie, et nullo modo intra ambitum murorum civitatum cujuslibet defuncti corpus sit humatum.....Placuit....corpora defunctorum nullo modo intra ba-*

silicam S. sepeliantur; sed si necesse est, deforis circa murum basilicæ usque adeò non abhorret.

(33) An. Christi. 585. c. 15. *Non licet in baptisterio corpora sepelire.* At the same council it was forbidden to lay one corpse over another, that is to say, over one not entirely consumed. Fleur. ad. h. A.

L. 7. ep. 4. conf. Thomassin, l. c. These are the very words of the pontiff Gregory, ep. 56. *Si quando aliquem in ecclesiâ vestrâ sepeliri conceditis, siquidem parentes ipsius, proximi, vel hæredes pro luminaribus sponte quid offerre voluerint, accipere non vetamus; peti verò, aut aliquid exigi omninò prohibemus, ne, quod valdè irreligiosum est, aut venalis fortassè, quod absit, dicatur Ecclesiâ, aut vos de humanis videamini mortibus gratulari, si eorum cadaveribus studeatis quærere quolibet modo compendium.*

(34) An. Chr. 794. The following are the words in Theodolph. cap. ad Par. c. 9. *Loca divino cultui mancipata et ad offerendas hostias præparata, cæmeteria, sive polyandria facta sunt; undè volumus ut ab hac re deinceps abstineatur, et nemo in ecclesiâ sepeliatur, nisi fortè talis sit persona sacerdotis aut cujuslibet justì hominis, quæ per vitæ meritum talem vivendo suo corpori defuncto locum adquisivit.* If this law had been exactly followed, there would not have been much danger to be apprehended; but self-love soon endeavoured to usurp what in reality was only due to a few of the virtuous: an event to be expected, when opinion decides upon prerogatives. *Corpora verò, continues Theodolphus, quæ antiquitus in ecclesiis sepulta sunt nequaquam projiciantur, sed tumuli qui adparent profundius in terram mittantur, et pavimento de super facto, nullo tumulorum vestigio adparente, ecclesiæ reverentia conservetur. Ubi verò est tanta cadaverum multitudo, ut hoc facere difficile sit, locus ille pro cæmeterio habeatur, ablato indè altari, et in eo loco constructo ubi religiosè et purè Deo sacrificium offerre valeat,*

(35) According to St. Chrysostom, burying grounds were always located beyond the gates of cities.

This is the statute of Charlemagne. An. 797, l. 1. c. 159. & l. 5. c. 48. *Nullus deinceps in ecclesiâ mortuus sepeliatur.*

(36) An. 813. can. 21. *de sepeliendis in basilicis mortuis constitutio illa servetur quæ antiquis patribus constituta est.*

Ann. eod. conc. Mog. c. 20.

An. 845. Concil. Meld. ann. eod. c. 72.

Conc. Meld. ann. eod. c. 72.

(37) Hincmar prohibited and abolished hereditary tombs, and gave curates power to make regulations accordingly. *Nemo Christianorum presumat, quasi hereditario jure, de sepulturâ contendere, sed in sacerdotis providentia sit.*

(38) This took place at the end of the ninth century, though others place it two centuries further back. The words of this council deserve to be recorded here. *Prohibendum est etiam secundum majorum instituta, ut in ecclesiâ nullatenus sepeliantur sed in atrio aut in porticis, aut in exedris ecclesiæ. Intrâ ecclesiam vero et propè altare ubi corpus Domini et sanguis conficiuntur, nullatenus sepeliantur.* (Labbé, t. 9. conc.) All councils agree in wishing tradition to be followed; that is to say, that the prohibition should be strictly obeyed. The decrees of the Council of Arles are the same.

(39) 366, a short while before the two councils just cited.

(40) Basilic. l. 5. t. 1, c. 2. l. 6. Code Theodo. *de Sep. Viol.*

If in the facts here brought forward, there are some apparently contradictory, this proves only that there were laws and occasionally exceptions to these laws; but the Church has been always actuated by the same spirit.

(41) An. Ch. 386. nov. 53. *Ne igitur ullo modo inter similes leges hæc lex censeatur sancimus; quin potius ut à consuetudine certè contemnitur, sic etiam decreto nostro prorsus reprobatur.* At the same time he gives two reasons for its falling into disrepute. The first was the distress of people to see the bodies of

their relatives carried so far from them ; and the second was the expense of transportation, a great vexation to the poor.

(42) It would be unnecessary to set down here the canons of all these councils entire. Some refer directly to the subject here treated, others indirectly. Several forbid selling the privilege of interment. Many will admit church interment only for bishops, curates, patrons, &c. to the exclusion of all who have not a permit from their bishop, &c.

(43) An. Chr. 1565. *Morem restituendum curent (episcopi) in cæmeteriis sepeliendi.* c. 61.

(44) Thus the Romans called a tomb or monument, raised in honour of an individual who had by any chance been deprived of interment, *cenotaphium*.

CHAPTER VIII.—NOTES TO THE ORDINANCE.

(45) *Hæc porro dico, non ut sepulturam tollam, absit ; sed ut luxum et intempestivam ambitionem succidam.* (S. Chrys. Hom. 84 in Joann.)

(46) *Loca divino cultui mancipata ad offerendas hostias, cæmeteria, sive Polyandria facta sunt.* (Theodolph. Auvel. cap. 9.)

(47) De Sinodo Cicestr. ann. 1292. tit. 5. Conc. Labb. tom. 1. part 2.

Ex statut. eccles. trec. 1. ann. 374. thes. anecd. tit. 4. col. 1125.

Concil. Labb. tom. 8. col. 586.

Concil. Labb. tit. 11. part. col. 752.

These are simple references to the motives by which the church had been induced at different times to admit some exceptions against interment.

(48) The statutes, called *Capitularies*, established by the con-

currence of civil and ecclesiastical authorities, expressly declare : *Nullus deinceps in ecclesiâ mortuus sepeliatur.*

(49) The following French bishops and archbishops have at the affixed dates, promulgated in their sees, ordinances against interment in towns or in churches :—De Pericard, Bishop of Avranches, A. D. 1600. Le Commandeur, Bishop of St. Malo, A. D. 1620 ; De Matignon, Bishop of Lizieux, A. D. 1650 ; De la Guibourgere, first Bishop of La Rochelle, A. D. 1655 ; Vialart, Bishop of Chalons, A. D. 1661 ; Faur, Bishop of Amiens, A. D. 1662 ; D'Elbeur, Bishop of Orleans, A. D. 1664 ; De Pavillon, Bishop of Aleth, A. D. 1670 ; Sevin, Bishop of Cahors, A. D. 1673 ; De Villeserin, Bishop of Senez, A. D. 1672—78 ; Cardinal Le Camus, Bishop of Grenoble, A. D. 1690 ; De Clermont, Bishop of Noyon, A. D. 1691 ; De Sillery, Bishop of Soissons, A. D. 1700 ; De Beson, Archbishop of Rouen, A. D. 1721 ; and the same year, the Bishop of Evreux and the Archbishop of Auch.

(50) The provisions of the ordinance against interment in the city of Toulouse, are contained in fifteen articles, confirmed in toto, and were sanctioned the ensuing year, by the parliaments in France and by the king ; the eloquent prelate was shortly afterwards raised by pope Pius VI. to the dignity of Cardinal.

CHAPTER IX.

(51) On the subject of burying grounds, and the poisonous effluvia arising from dead bodies, no better authority can be cited than Fourcroy. His two memoirs on the disinterment of the burying ground of the Innocents in Paris, in 1786 and 1787, may be found in the *Annals de Chemie*, (*Annals of Chemistry*) vol. 5, page 154, and vol. 8, page 17. The following is translated from his first memoir, page 174.

“ We had a strong desire to satisfy ourselves, by experiment, what was the nature of the destructive air emitted from corrupt

ing bodies. But we had no opportunity, in consequence of there having been no burials there for three preceding years ; and the last deposit in 1782, had gone beyond the term when the septic explosion is made from the abdomen. In vain we attempted to engage the diggers to procure us an examination of this elastic fluid in other burying grounds. But they uniformly refused, declaring that it was only by an unlucky accident they interfered with corpses in that dangerous state. The horrible odour and the poisonous activity of this fluid announce to us that if it is mingled, as there is no reason to doubt, with hydrogenous and azotic gas holding sulphur and phosphorus in solution, ordinary and known products of putrefaction, it may contain also another deleterious vapour, whose nature has hitherto escaped philosophical research, while its terrible action upon life is too strikingly evinced. Perhaps it belongs to another order of bodies, to a substance more attenuated and fugacious than the bases of the known elastic fluids ; and that in this view the constituent matter of this dangerous gas operates. Be this as it may, the diggers know, that there is nothing in the burying grounds really dangerous for them but the vapour disengaged from the abdomen of carcasses when that cavity bursts. They have further remarked that this vapour does not always strike them with asphyxia ; for if they are at some distance from the carcass which emits it, it affects them only with a slight vertigo ; a feeling of a disagreeable kind, and weakness, and nauseas, which are of several hours duration. These symptoms are followed by loss of appetite, debility, and trembling, all in consequence of a subtle poison, that fortunately is developed in only one stage of decomposition. May it not be credited, that to this septic miasma is owing the diseases to which persons are exposed who live in the neighbourhood of burying grounds, sewers, and in short, all places where animal substances in heaps undergo spontaneous decomposition ? May we not be permitted to suppose that a poison so terrible as to cause the sudden extinction of animal life, when it escapes pure and concentrated from its focus, or place of production, may, when received and diluted in the atmosphere, retain activity enough to produce on the nervous and sensible solids of animals, an operation capable of benumbing

their functions and deranging their motions? Since we have witnessed the terror which this dangerous poison excites among the labourers in cemeteries; since we have seen in a great number of them a paleness of face, and all the symptoms of a slow poison; it would be more unsafe to deny the effects of these exhalations upon the neighbouring inhabitants, than to multiply and exaggerate complaints as has been done, by an abusive application of the discoveries by physics upon air and other elastic fluids."

CHAPTER XI.

(52) *Haud aliud vitium exitialis est, inquit Gaubius, Instit. pathol, quam quod diuturnâ stagnatione in locis undique occlusis contrahit aer, cum nullâ ventilatione renovatur. Torpore enim veluti putrescens, qui vitæ cibus fuerat, velox fit venenum, vitæ non minus quam flammæ inimicissimum.*

(53) The Abbe Rozier, in his *Observations de Physique*, relates, that at Marseilles, an individual wished to have a piece of ground dug up to plant it with trees; but during the plague of 1720, many had been buried there, and the labourers had but just begun their work, when three were suffocated, and the others were saved with difficulty.

(54) The Romans obliged a certain class of workmen to build their shops beyond the walls, or at the extremities of the city. *Zacch. Quæst. med. Leg. l. 5. t. 4. § 7.*

(55) *Subitò necat idem (vapor quem cadaverum putredo generat) (dicit Haller op. cit.) quando aperto sepulcro, hominem percellit, Nisi necat, morbos excitat periculosos et corpora putrefacit. Labat. Voyage d'Italie, Suavages, Effets de l'Air, &c.*

(56) What has been said of churches, applies of course to cemeteries in cities. The danger is the same in both cases. For the elevation of the houses and churches, and the narrow limits

of streets, must prevent the dispersion of the fetid particles infallibly arising. Cemeteries in towns are always very damp; the vapours from them are often perceptible to the smell, and penetrate the neighbouring houses, and the springs of water that pass through them cannot, certainly, be either pure or agreeable. (*Scip. Piattoli.*)

(57) Those who have purchased a right to interment in a church, will say that their right of property is invaded. But let them look to the evil effects of their rights upon their fellow-citizens, and they will sacrifice with pleasure a slight advantage and an imaginary possession.

At Vienna, there are no cemeteries around the churches. The Empress Maria Theresa had a public cemetery established beyond the capital. *Habberm. de opt. sepel usu.*

CHAPTER XII.

(58) John Mayou, a provincial physician of England; his works were published in Oxford in the year 1674.

CHAPTER XIII.

(59) *Old Slip*, as it is called, does not appear to be as bad as many others in the upper range on the East River; but its situation is more southerly, and it is closed against N. and N. W. winds by the higher adjacent streets. It is situated at the lower end of a space, anciently called *Rotten-Row*, where long and contested claims between the Corporation and the estates of some private individuals, prevented the ordinary improvements, which might have purified or renewed the ground. This place has always been the common receptacle of the whole filth of the city. The two narrow lanes, *Gouverneur's* and *Jones's*, afford an exemplification of the unhealthy disposition of the streets. It may be safely presumed, that the soil in this vicinity is very impure, or composed of perishing and fermenting materials. The

slip is shallow, and its sides, like many others, are composed of piles of wood, thick, uncovered, and now rotten, worm-eaten, and coated with black mud ; and it is throughout the receptacle of animal exuviae and decayed matter, emitting in warm weather an offensive smell, and, no doubt, also, deleterious miasmata. A sewer empties into this slip, which originates from a private house or houses. How much filth this may contain and discharge, and in what state it may be in its course from Sloat Lane, I have not been able to ascertain, but be it more or less, it is a nuisance near to the surface of the ground. (*Vid. statement of the yellow-fever in New-York, during 1819, by Felix Pascalis, M. D.*)

CHAPTER XV.

(60) Murders and suicides, have, in many instances, been committed, and apparently encouraged by opportunities of concealing the victim in a burying ground. Of the first, there are instances related in the *Causes Célèbres* ; and of the last, a remarkable instance occurred in a patient of mine, who was under my care for an accidental indisposition. He was the father of a family, embarrassed in his domestic circumstances, and of an apparently gay, but really melancholy disposition. At his last attendance in my office, he declared himself very well, and thanked me for my services. On the ensuing day, early in the morning, he was seen by some one at a distance, seated on the brink of a grave, in Pottersfield, untying his neckhandkerchief, and cutting his throat with a razor. The beholder had not time to prevent the fatal deed !

(61) In the establishment of a General Cemetery, or Polyandrium, under the strict prohibition of interment in the city, every citizen becomes entitled to a right of burial in the same. This would, therefore, be no favour nor grant to those who are now proprietors of graves or vaults. It has been surmised, as a matter of compensation, that room might be allowed for such, along the great wall of the cemetery under the proposed cloister or gallery.

Whether this work must be made at the expense of these individuals or of the corporation, remains to be decided by higher authority. This is a matter by which every member of the community, and heads of families especially, are to be highly benefited. If the corporation will but make a beginning by building one side of the gallery with a number of vaults to be immediately granted to whoever engages to have the remains of his deceased friends disinterred during the proper season, and removed to the new vault, the example would soon be followed; and pecuniary settlement between the public and the churches, between these and their members, might be postponed until the time at which the present places of interment are turned to public use.

One more provision is desirable, and which would be in conformity to a good, at least to a most justifiable principle. A space in the middle of the Polyandrium, or an area of 100 feet in diameter, should be reserved for the purpose of the Pyre. This expeditious method of restoring the clay tenement to its kindred earth, may eventually be the choice of some members of the community. The necessary fuel should be provided by private and not public means. As yet, only one notable instance of such a disposal has occurred in this country; that was the case of Laurens, the president of the first American congress. It is probable that many might choose the same, if a place for a funeral pyre, marked by an iron column, was prepared there as a permit for such a mode of destruction of the dead; a mode which requires but little space, time, and care.

(62) *A Luctuary* is a house of mourning, where the dead are deposited in the way to the place of interment; and where the friends and relations are supposed or expected to attend, to leave their last, silent farewell. This place of deposit is much to be recommended for another purpose; it may be the means of preventing a premature burial; shocking instances of which have but too often occurred among populous nations. We are told that it is an approved practice among the society of friends, called Quakers, to have a place of deposit for the dead, in which they are for several days placed, under observation.

APPENDIX.

(A) The Board of Health, in 1806, appointed Dr. Edward Miller, John Pintard, Esq. and Mr. Winant Van Zandt, a committee to report on measures necessary to secure the health of the city of New-York. The following is an extract from the report drawn up by Dr. Miller :

" The Committse of the Board of Health, &c. &c.

REPORT :

" That interments of dead bodies within the city ought to be prohibited. A vast mass of decaying animal matter, produced by the superstition of interring dead bodies near the churches, and which has been accumulating for a long lapse of time, is now deposited in many of the most populous parts of the city. It is impossible that such a quantity of these animal remains, even if placed at the greatest depth of interment commonly practised, should continue to be inoffensive and safe. It is difficult, if not impracticable, to determine to what distance around, the matter extricated during the progress of putrefaction, may spread ; and by pervading the ground, tainting the waters, and perhaps emitting noxious exhalations into the atmosphere, do great mischief. But if it should be decided still to persist in the practice of interments within the city, it ought to be judged necessary to order the envelopement of the bodies in some species of calcareous earth, either quick-lime or chalk. The present burial-grounds might serve extremely well for plantations of grove and forest trees, and thereby, instead of remaining receptacles of putrefying matter and hot-beds of miasmata, might be rendered useful and ornamental to the city. This growing evil must be correct-

ed at some period, for it is increasing and extending by daily aggregation to a mass already very large ; and the sooner it is arrested, the less violence will be done to the feeling and habits of our fellow-citizens."

From the Commercial Advertiser, August 17th, 1822.

PUBLIC CEMETERIES.

The dangers to be apprehended to the health of the living, from these receptacles of the dead, have undergone different estimates. Some have considered them as harmless, although in the centre of populous communities, because many generations had passed away from the time they were first employed, without their having apparently caused any evil effects. But others again, and with reason, have supposed that such repositories might be not prejudicial at first ; and yet must eventually become so, when the accumulation of putrescent exuvix, attaining a considerable extent, should be acted upon by such concurring circumstances as must excite deleterious exhalations. Awful visitations of mortality, within the last half century, have awakened the minds of at least one nation on this point, and have given rise throughout France to a rigorous law, at the same time prohibiting the inhumation of bodies within the limits of cities, and fixing cemeteries in open and uninhabited situations. Neither is the pride or devotion of families allowed to crowd the churches, no vaults being permitted in these unless eight feet square ; and the structure of their coffins in England, where, among the wealthy ranks, they generally use their churches for burial, seems well adapted to prevent the evils otherwise arising from their imprudent fashion of entombing corpses in the interior of churches : coffins of lead, soldered, lined, and cased in mahogany or walnut, and again in oak, and over all covered with cloth or velvet, may be more secure against pestiferous vapours.

Among us, let it be remembered, that the dangers of cemeteries filled with strata of putrefaction, are increased to an alarming degree, by our manner of interring the dead. We

place them in coffins of slender materials, under a few feet of loose earth, on every square foot of which, the atmosphere continually exerts a pressure of 2300 pounds. This enormous weight, aided by the decaying influence of the ambient moisture of the ground, soon breaks down the frail cases which contain the remnants of mortality. Transmitting to them a heat averaging 72 deg. the point at which putrid fermentation commences, and assisted by the porous nature of the soil, it disengages from them an immense volume of malignant effluvia. These gases are often visible on warm dark nights, playing with a phosphoric and lambent flame over the graves, and have more than once been taken for the spirit of the deceased, hovering over its neglected remains.

Should we unfortunately content ourselves with the idea that animal dissolution is not attended by the pernicious effects attributed to the decomposition of vegetable matter, we need but consult the pages of history to be satisfied to the contrary. We shall there find that desolating wars have been universally followed by pestilence; that the successful sieges of cities, carried sword in hand by the extermination of the inhabitants, have been fatal to the conquerors who have tarried in them, and that the best devised military operations have been defeated, even by the very slaughter they were intended to promote. And in Egypt, termed sometimes the cradle of the plague, that scourge has been frequently traced by learned observers to swarms of locusts, swept by winds into the Nile, and left in myriads upon the shores.

From analogy we may conclude that burying-grounds in populous cities cannot always remain innocuous. Peculiarly aggravating circumstances call our attention to the state of the cemetery of Trinity Church, now suspected to be the cause of the mortality in its vicinity. The first is, that its area, of more than two acres, although on a level with Broadway, yet at its western extremity is elevated ten feet and upwards above the ground plan of Lumber-street, while Greenwich-street is again ten feet below Lumber-street, and Washington perhaps five feet below Greenwich. It results, therefore, that this body of earth, the surface of which has no declivity to carry off the rains, and

which is held in and encompassed by a massy wall is like a great reservoir of contaminating fluids, suspended above the adjacent streets. As a proof of this, we may state, that in a house in Thames-street, springs of water pouring in from that ground, occasioned the removal of the tenants, by their exceeding fetidness and impurity.

The second circumstance is the number of bodies interred; more than a century ago, this ground, by corporation charter, having been assigned as a public burial-place for the inhabitants of New-York. If we only advert to the deaths in our city during the two last years, in 1820—3515, and in 1821—3510, we may easily calculate what a considerable proportion of these, must have been deposited there, since the Episcopalian denomination is the most numerous of all, and that cemetery is also the privileged receptacle of strangers, or those who do not belong to any particular sect. We know also, that to satisfy the demand for room, a charnel-house has been found necessary, to clear off the remains disinterred, for new occupants.

A third circumstance is the continual digging of graves, thus opening to their very sources, vents for the gases that must be produced in an enclosure, where no space for a new grave can be fixed upon, until an iron sound is forced through the earth to discover an old coffin decayed enough to allow of the removal of its contents to the charnel-house. This opening of the graves creates an intolerable stench, often complained of, and at present testified to before the Board of Health by persons residing in the neighbourhood.

Let us hope, that the situation of this cemetery, which at present excites our fears, will be speedily corrected by the example of a sister city, who, some years ago, converted a like place of interment into a healthy and ornamental square.

F. P.

“It is not long, indeed, since we have seen in this populous city, the mangled remains of the dead, transported from one burying ground into the other. We have also seen two church-yards opened, and deeply broken over an extensive surface, leaving exposed to our reluctant and pensive curiosity, shattered limbs

of corpses and their decayed coffins, until they were closed again by a range of brick vaults! These extend now, a great way into the streets, far from what may be called the *consecrated* ground of the church, and literally under the pressure of a thousand horses, carts, and carriages. An earthquake might in an instant throw up, from under our feet, the slings of death, the poison of human putrefaction, and create unexpectedly, horrid scenes and cruel contrasts—to punish the present generation for not having removed afar off these fetid cells of human decomposition, in which they themselves will not be better protected against the overturning hand of time, and other natural causes.

“It is well known that our large cities having within a few years, extended much beyond their former suburbs, it has been necessary, in many instances, to build on what was formerly a burying-ground, to expel as it were the dead, for the accommodation of the living. And by what other alterations or improvements, future generations may, in the progress of time, violate or destroy the existing vaults, is very obvious to any reflecting mind, who must be convinced of the vanity of choosing a resting place, the habitation of their dust, in the middle of a crowded city, rather than in a distant and appropriate spot of ground.

“To the authorities and arguments offered against the evils and dangers of our mode of sepulture, many more might be added from other learned writers, who have professedly and impressively inquired into this subject. One only we will mention, and the most recent work of the celebrated Vicq-D’Azyr, of Paris, physician to the late Queen of France, and the translator of the Italian Essay by Scipion Piattoli, already quoted. We find in this production, the eloquent pastoral address of the Archbishop of Toulouse, against the same practice, which that Prelate deprecates with the authority of many ancient fathers of the church, of Christian Roman Emperors, of Councils, of Popes, and many other ecclesiastical regulations. We feel it our duty to recommend a reading of that instructive piece to those who might not be averse to the abolition of sepulture in populous cities, were they not withheld by piety, or by a cherished sense of union hereafter, with their fore-fathers, their friends, with

the blessings and prayers of their church ! The book of Vicq-d'Azyr is in our Hospital library." (*Med. Repos. N. S. Vol. i. p. 144.*)

(B) From a late work by the learned orientalist, Joseph Morenas, styled *Les Castes des Indes*, accompanied by a critique on the Hindoo customs mentioned in the *Paria*, a tragedy by De la Vigne, we extract the following note.

"Au lache, au meurtrier, qui n'ont point de tombeaux."

"This description cannot apply to a nation that has not the custom of burying the dead. Public utility is the aim of all the institutions of India ; and no doubt the legislators of that country, judging that the remains of the past generation are of no import to the present, have considered it unjust to devote to them ground, care, and expense. To these moral considerations have been joined a conviction of the danger of keeping, in the midst of the living, a perpetual centre of putrefying materials, tending to infect the air, and to produce epidemic diseases.

"With the exception of a very small number of individuals, belonging to some particular professions, the bodies of the Hindoos are burned after death, and their ashes scattered to the winds."

(C) Vicq D'Azyr and Piattoli inform us, that the prohibition of city interment had taken place in Denmark and in Ireland. We were much at a loss to make out the truth of this remark, at least for the latter country ; and while we were in despair of realizing it, we at last found that a pestilential fever raged in Dublin during the summer of 1740, which was traced to the exhalations from church-yards, which by authority were removed out of the city.

"In large towns in England, and more especially in the metropolis, it has become more difficult to find room for the dead than for the living. The Commissioners for the Improvements in Westminster reported to Parliament in 1814, that St. Margaret's churchyard could not, consistently with the health of the neighbourhood, be used much longer as a burying-ground, 'for that it was with the greatest difficulty a vacant place could at any time be found for strangers ; the family graves generally would

not admit of more than one interment ; and many of them were then too full, for the reception of any member of the family to which they belonged.' There are many churchyards in which the soil has been raised several feet above the level of the adjoining street, by the continual accumulation of mortal matter ; and there are others, in which the ground is actually probed with a borer before a grave is opened ! In these things the most barbarous savages might reasonably be shocked at our barbarity." — *Quarterly Review*, Sept. 1819, p. 380.

(D) The Carthaginians seem to have been destined to suffer many defeats from pestilential diseases in their most promising enterprises in Sicily. These have been investigated by Dr. Elihu H. Smith. Vid. *Medical Repository*, vol. ii. pag. 337.

When Hannibal, the predecessor of Himilco, laid siege to the city of Agrigentum, (Girgenti) in the south-western part of Sicily, for the purpose of raising a wall without, which should overlook and command the city walls, he collected all the materials within his reach ; and among the rest, destroyed, and converted to this use, the tombs standing around a city very ancient and populous, and then containing 200,000 inhabitants. From the uncovering and disturbing of so many dead bodies arose a terrible pestilence, which carried off immense numbers of the Carthaginians, and the general himself. Afflicted at this dreadful mortality, the besiegers attributed it, with the superstition of the age, to the vengeance of the gods, incensed against them for violating the repose of the dead. The healthiness of the situation, the season, and the thorough appointment and supplies of the Carthaginian army, leave no room to doubt as to the real cause of the sickness, which gradually disappeared ; but two remarks of some importance are suggested by it—

1. The folly of modern nations, especially in warm climates, in suffering the interment of the dead within their cities.
2. The wisdom of some ancient nations in having a *dead* as well as a *living* town.

Extract from a " *Tour through Germany, by the Rev. Dr. Render.* "

No. 2. How pernicious the burying in churches is to a congrega-

gation, will appear from the following serious instance of the consequences resulting from it.

My readers will I hope permit me to suppress the real names of the clergyman and the place where this event took place. In the month of July, 17—, a very corpulent lady died at ——. Before her death, she begged, as a particular favour, to be buried in the parochial church. She had died on the Wednesday, and on the following Saturday was buried, according to her desire. The weather at the time was very hot, and a great drought had prevailed. The succeeding Sunday, a week after the lady had been buried, the Protestant clergyman had a very full congregation, upwards of nine hundred persons attending, that being the day for administering the holy sacrament. It is the custom in Germany, that when people wish to receive the sacrament, they neither eat nor drink until the ceremony is over. The clergyman consecrated the bread and wine, which is uncovered during the ceremony. There were about one hundred and eighty communicants. A quarter of an hour after the ceremony, before they had quitted the church, more than sixty of the communicants were taken ill : several died in the most violent agonies ; others of a more vigorous constitution survived by the help of medical assistance ; a most violent consternation prevailed among the whole congregation, and throughout the town. It was concluded that the wine had been poisoned. The sacristan, and several others belonging to the vestry, were put in irons. The persons accused underwent very great hardships : during the space of a week they were confined in a dungeon, and some of them were put to the torture : but they persisted in their innocence.

On the Sunday following the magistrate ordered that a chalice of wine uncovered should be placed, for the space of an hour, upon the altar ; the hour had scarcely elapsed, when they beheld the wine filled with myriads of insects—by tracing whence they came, it was perceived, by the rays of the sun, that they issued from the grave of the lady who had been buried the preceding fortnight. The people not belonging to the vestry were dismissed, and four men were employed to open the vault and the coffin ; in doing this, two of them dropped down and expired

on the spot, the other two were only saved by the utmost exertions of medical talents. It is beyond the power of words to describe the horrid appearance of the corpse when the coffin was opened. The whole was an entire mass of putrefaction : and it was now clearly perceived that the numerous insects, together with the effluvia which had issued from the body, had caused the pestilential infection which was a week before attributed to poison. It is but justice to add, that on this discovery, the accused persons were liberated and every atonement made by the magistrates and clergyman for their misguided conduct.—*Gazette of Health, No. 1, p. 2.*

No. 3. The sepulchral vaults of the principal church of Dijon, having been entirely filled, in consequence of the winter of 1773, which froze the ground of the common cemetery to such a depth that it could not be opened ; orders were given to remove the bodies from these subterraneous repositories. It was conceived, that sufficient precaution had been taken by throwing in some quick lime, without even furnishing a vent for the putrid effluvia, or suspecting, what ought to have been anticipated from the experiments of Macbride, that lime, though it prevents the process of putrefaction, tends only, when employed at a certain stage of that process, to accelerate the evolution of its products. The infection of the air soon became so insupportable, that it was found necessary to shut up the church.

Several attempts were made to purify the air, by the detonation of nitre ; by fumigations of vinegar ; by burning a variety of perfumes, storax, benzoin, &c. &c., and by sprinkling the pavement with a large quantity of *anti-pestilential vinegar*, known by the name of "*vinegar of the four thieves*." The odour of the putrid effluvia was merely masked for a moment by these operations, and soon re-appeared with its former activity, spreading to the neighbourhood, where the symptoms of a contagious fever began to appear. At this period I was consulted on the means of destroying the source of the distemper. (*Treatise on the means of purifying infected air, &c. By L. B. Guyton de Morveau, pag. 25.*)

Newburgh, July 7, 1823.

(No. 4.) DEAR SIR,

“ I have received your favour of the 28th ult. You ask me for a statement of the facts I mentioned to you relating to the Dutch Churchyard, corner of Liberty and Nassau-streets. During the summers of 1816 and 1817, I resided at No. 39 Liberty-street, directly opposite the churchyard. In the hot months, whenever a vault was opened on the side of the yard next to my residence, a very offensive stench was emitted from the vault, to such a degree, that we were compelled to shut the door and windows looking into the yard. Being frequently annoyed with this nuisance, I remonstrated with the sexton against his opening the vaults in the morning, and permitting them to remain open during the day, to the annoyance of the neighbourhood. His reply was, ‘ that it would be as much as his life was worth to go into the vault until it had stood open sometime to air.’ I applied to the mayor to correct the proceeding. He said it was a subject of so much feeling with the citizens, that the corporation would not interfere to regulate interments.

In the summer of one of the years I have mentioned, but which I do not recollect, the trustees of this church made some repairs to it, and built a porch to each of the eastern doors next to Liberty-street. In digging for the foundation of the south-east porch next to the sugar-house, they came upon the great grave, in which had been buried those who died in this sugar-house, while it was occupied as a prison during a period of the revolution. The grave was deep and spacious, and it became necessary, in order to get at the solid earth for the foundation of the porch, to disinter a great quantity of the remains of those who had been buried there. Several cart loads were taken up and carried away. During this operation, the air in the churchyard and its vicinity swarmed with myriads of little black flies, very troublesome. They filled our house, covering the side-board, furniture, and every article on which they could alight; even closing the doors and windows did not entirely relieve us from their annoyance.

These, sir, are the facts I stated to you in conversation last fall.

I am very respectfully,

Your obedient serv't,

JONATHAN FISK.

DOCTOR SAMUEL AKERLY:

No. 5. "Coincident with these reflections, and corroborative of this opinion, is the narrative of Mr. Henry Griffin, who on the 19th of August, 1810, when the thermometer stood at 88°, returned from attending the funeral of a Mr. Patten, whose body was deposited in the public vault of the Middle or New Dutch church. He declared he was never so sensible of a cadaverous fœtor. So offensive was the effluvia extricated from the dead bodies, that he with many others, were obliged to retreat from its mouth. In depositing a corpse in one of the vaults of the Presbyterian church in Beekman-street, the sexton gave to the attendants this friendly caution: "Stand on one side, you are not accustomed to such smells." We have the testimony of Mr. De Groot, sexton of the Dutch church, who has frequently remarked, that in descending into vaults, candles lose their lustre, and that the air was so *sour* and pungent, that it stung his nose like pepper dust. This being the case with all vaults where dead bodies are deposited, and subject to be opened at all seasons, this method of disposing of the remains of our friends, is, at the best, an unpleasant and certainly a dangerous one. A few bodies, nay a single one, is sufficient to produce those deleterious and destructive vapours, which may bring instant death, and sickness to hundreds. The consignment of a single body to a deep pit covered with earth, is more rational and less dangerous. Even the accumulation of dead bodies in this way, in large cities, has been a frequent source of pestilence. This fact is of the greatest notoriety.—*Med. Repos. Vol. I. New Series, pag. 139.*

Dr. Pascalis to Dr. Akerly.

New-York, 20th July, 1823.

(No. 6.) DEAR SIR,

My exposition from Vicq D'Azyr and Piattoli, which you have seen, is ready for the press, and will shortly be published. You have written something on the danger of interments in cities; and it occurs to me that I have heard of some well written observations said to have been published in the Evening Post of last autumn, addressed to you. If there is any thing in these observations which requires a reply or comment, and you

can throw any light upon the subject of interments, will you be pleased to communicate it?

I am, &c.

FELIX PASCALIS.

Dr. Akerly to Dr. Pascalis, in reply.

New-York, 21st July, 1823.

DEAR SIR,

The communication to which you refer was published in the Evening Post of the 25th November, 1822, over the signature N. It was said to have been written by a distinguished m***** of the Episcopal Church in this city; and although I was pleased with the moderation of the writer, I did not reply to the observations, because, though informed that the —— was the author, it was not acknowledged as his, and I did not choose to enter into a controversy with an anonymous writer, who called upon me to answer certain queries. Herewith I send you a copy of my letter and the ——'s epistle, by which you will see that the latter requires no reply, because the queries therein contained addressed to me, are answered by the facts related in the work which you are about to publish. Can you give it a place in the appendix, that it may be compared with the pastoral address of the archbishop of Toulouse?

I am, respectfully, yours, &c.

SAMUEL AKERLY.

I offered my pages to Dr. Samuel Akerly in the present case, from a sense of duty, as he had been my colleague in the Medical Repository, from which the preceding remarks, (page 150) are quoted. He had also written last autumn a forcible letter on the subject of interment, which I regret was not more generally noticed. It provoked some animadversions from a writer signing himself N. As Dr. Akerly, from proper motives, declines a personal controversy, I should not bring forward extracts from his letter unless permitted to offer some general remarks on the communication of N. in the Evening Post of Nov. 25th, 1822.

The writer adopts a mode of reasoning totally rejected in logic, because it draws a general conclusion from a minor proposition : *à minori ad majus non valet consequentia*. He reasons from several facts, which cannot invalidate the general principle of pernicious effects from accumulations of dead matter. He mistakes or misstates facts, from French authors, on the time required for the complete destruction of dead bodies ; and respecting the great pits in the cemetery of the Innocents at Paris, from which certainly no comparison ever was made with our own mode of interment. He erroneously concludes, because Fourcroy states three years as a term during which the generation of the septic poison must take place, which is instant death to those exposed to it, that beyond this period, dead matter is harmless ; and yet Fourcroy does not define whether there be but this poison as a cause of the diseases and symptoms which he relates as attacking the workmen and persons residing in the vicinity of the burying ground.

He indulges in the supposition that there is no evidence or proof that the churchyards of this city have produced sickness ; as if we were obliged to believe with him that the epidemic of 1822, in the vicinity of Trinity churchyard, was imported to that district from the Lazaretto.

He agrees, however, that the last mentioned cemetery should be closed, if it is too full, or if “ bodies cannot be deposited there at sufficient depth,” yet he makes no calculation to ascertain the fact : will he permit us to offer him a slight one ? The whole ground of Trinity Church is not much more than two acres, one half of which is taken up with the church and the vaults, leaving one acre perhaps, or 43,560 square feet, which, if divided by 31, the proper measure of square feet for a single interment, gives $1405\frac{5}{3}$, the number of spaces left for graves. Now, the mortality for four years (the lowest term for the destruction of the human frame in graves) will amount to 13,464 ; and it will be no exaggeration to say, that one third of this is deposited in the general and public cemetery of Trinity Church. Therefore, in four years, 4488 have been placed where only 1405 should be ; they must then be, contrary to law, inhumed one above another, or must be side by side, forming a complete stratum of decompo-

sition. But there is not even as much room as this calculation allows, for the cemetery is thickly interspersed with tombs and memorials, that secure the ground annexed to them from being appropriated to fresh interments in the short space of four years.

N. has taken great trouble to ascertain whether any offensive smell from that ground, could be detected by any of his numerous friends, only one of whom, he designates, and that is the master of the Episcopal Charity School. They all agree, he says, in telling him that they have perceived none. Having withheld his name from the public, he brings but poor counter-evidence against the testimony of more than twenty persons (besides those whose names are affixed to the certificates of Mr. Allen) delivered before the Health Committee. He would fain hold up Dr. Roosa to derision, for having found the yard most offensive where the fewest interments take place. Far from there being any thing absurd in this, had N. ever observed, he would have seen (the most convenient time for such an observation, is in the country just before sunrise) that the vapours of the night are condensed in the low grounds, and every slight inequality of surface, is marked by a corresponding collection of mist. Had he known this tendency of aerial substances to condense as they rise, and to fall back to the earth, he would scarcely have amused us with such a ludicrous description of vapours descending, turning a corner incognito, meeting their auxiliary forces at the foot of Rector-street, &c. There is nothing else of a controversial nature in the communication of N., except, perhaps, the question he addresses to Dr. Akerly, wherefore corpses, highly offensive, cease to be so when deposited in a vault, which, he says, is a well corroborated phenomenon! We can only answer, that the purer the air, the stronger effluvia accidentally mingled with it, strikes the senses. If there were really any such change from *interment in vaults*, how many miracles in the time of superstition it would have given rise to; all of which would have been thought the consequence of the prayers of the Church!

These remarks may serve to preface the following documents from Dr. S. Akerly's letter, New-York, October 13, 1822, as published in a small pamphlet by Mr. F. D. Allen, page 6.

“ I regret that the work of Vicq D’Azyr, to which you was referred, cannot be found in the Hospital Library. The contents of that book might supply you with many facts which would be important in the discussion of the subject of burials. It contains a history of christian interment, and a compendious statement, showing the danger of sepulture in large cities. It was first published in Italian, by Scipio Piattoli, by order of the Duke of Modena, and translated into French by Vicq D’Azyr. The ancient customs concerning funerals and the burial of the dead, apart from the living, are related in the work, and the superstition which gave rise to the fashion of interments in churches and cities. The motives which led to the adoption of this method, do not now influence the practice, but our associations and sympathies are wedded to a custom of long standing, and it will be difficult to produce an immediate change. D’Azyr’s translation also contains an eloquent pastoral address of the Archbishop of Toulouse, inculcating the propriety of burials in more secluded and retired places than a city affords. He is supported by the authority of the fathers of the Christian Church, and the practice of the ancients.”

“ Trinity church-yard is on high ground, west of Broadway, and contains about two and a half acres. It is walled up on two sides above the adjoining streets. Its westerly wall is ten or twelve feet high, and forms, in its whole length, of more than 300 feet, one side of Lumber-street, which is very narrow. This church was first built in 1698, and its grave-yard has been receiving the dead from that time to the present, a period of 124 years. More persons are probably interred within its precincts than in any burying-ground in the city, and it is supposed to contain the remains of human beings almost equal in number to the present population of New-York. A burial can scarcely take place, without disturbing a previous one, and the bodies cannot be deposited to a sufficient depth. I have seen a corpse buried in Trinity church-yard not more than 18 inches under ground, and a less depth in another instance in another burying-ground in this city.”

“ Can the neighbourhood of such collections of animal corruption, be otherwise than the cause of sickening exhalations ?

Can any one believe that it is safe and healthful to live near such a place? If the evil is not corrected, this cemetery will be injurious to health at all times except in the months of frost, and hereafter its malignant influence may show itself earlier in the season. Depend upon it, the property in that part of the city will be greatly injured and depreciated, unless something effectual is done. It may be asked, what proof have we of its sickening influence, and why has it not before caused similar mischief? To this it may be answered in general, that the cup must be full before an addition will make it overflow. But this same burying ground emitted pestilential vapours during the revolutionary war, the recollection of which is not obliterated from the memory of a number of living witnesses. In the hard winter of 1780-81, this city was in possession of the enemy, and the ground was so frozen, that the soldiers and others who were buried there, during that long and severe winter, were interred but a small distance beneath the surface. The consequence was, that in the ensuing warm season, it became so offensive as to require the interposition of the military commandant, and the Hessian soldiers were employed in covering the whole ground with a fresh stratum of earth, three or four feet thick."

To explain further the infecting operation of the Trinity Church burying ground, especially on its westerly side, the following I extract from an article in the Commercial Advertiser, September 7, 1822.

"Mr. P. is very incorrect—first, by representing the infected district of New-York as the most cleanly and airy part of the town. Far from it: there are five streets in it, narrow, and mostly composed of old frame houses, with cellars more or less accessible to impure springs of water. These waters have their source in a spot of ground of about two acres, the grave-yard of Trinity Church, which is twenty-five or twenty-seven feet higher than the last street below it. This ground is encompassed by a strong wall, over which not a drop of water can flow from its level surface, and rains must, of course, sink and filter through a mass, deep, and composed of ten feet at least of dead bodies, (more than 100,000,) which of late years have been so far in-

creased by our population, that not a new occupant can be received into it, unless several layers of moulded coffins and dry bones are disinterred, the latter to be thrown into a charnel house. The force or pressure with which the waters from this elevated reservoir, must be impelled to any lower surface, whether they are drained like running springs or not, is to be measured by the height from which they originate ; and this is never less than ten feet, at the level of Lumber-street. But this pressure is comparatively much less than that of the atmosphere, equal to 2,300 pounds upon each square foot of the surface of the ground, and which concurs to incorporate the putrid animal matter with the water, which incessantly imbibes them. The terrible effects and operation of so much fermentation, during the moist and hot weather of the season, we are now experiencing. It has already been testified to by many people, and may further be by thousands of others."

I ought to have added here, that the pestilential exhalations from the ground of Trinity church-yard, were first developed and rendered fatally active at the foot of Rector-street, and even in Cedar and Greenwich-streets, on the principle, that water flowing from a reservoir, or a height, collects at the lowest level in the vicinity. The foot of Rector-street, therefore, would be most saturated with impure waters, and also be exposed most to the condensation of vapours.

Since an elucidation of all these principles and data, which trace the sickness of the last season to the condition of the lower infected district, may be wished, I now beg leave to offer an extract from a communication or address I delivered before the Medical Society, on the 11th of November, exactly pointing out the cause in relation to effect. This production, which is also relative to some important points of medical doctrine, I rendered public, as it was necessary to challenge opposition, controversy, or even the disputations of professional men, on the new maxims it professed, which (I am happy to find,) have escaped unanswered, and stand good to this day.

"It appears that from the number of cases reported to the Board of Health up to Saturday, October 26th, and which

amount to 401. if, as they suggest, a proper exception be made, and a proportionate addition of the deaths which have occurred since, and of those which, from various causes, have been omitted from the beginning, be added to the 230 which they report, a comparative mortality of more than two to one will be the result. If now from a general aggregate of mortality, which I take to be 256, we abstract the several portions belonging to the upper district, the remaining total for the district of Broadway will be a proportion of nearly three to one. This is unexampled in the history of the yellow fever, for the last thirty years in the United States. It is therefore matter of congratulation, that with a sanitary system so imperfect that it could not timely regulate the abandonment of infected districts, our public authorities, unbiassed by conflicting doctrines, have by various means checked the progress of a mortality, which might else have plunged our city into general and deplorable mourning.

Let us now comment a little upon its general result.

The Board of Health have informed us that of 65 individuals who resided in the upper part of the city, but who frequented the sickly districts, 34 have died. This is a diminished proportion of mortality. It appears of about the same proportion in the upper district, where out of 46 only 28 died; from which I am to conclude that the lower district has had a more deleterious and fatal influence upon its inhabitants than the upper one. This is a proof that the disease was not of the same specific or homogeneous nature. Since, therefore, it exhibited a greater degree of malignity in one part of the city than in another, and precisely in that district which is termed the cleanest and the healthiest, we must necessarily conclude that it was aggravated by local circumstances. Again, in these narrow, central and more confined streets, William, Maiden-lane, Stone, and Dutch, no more than one-third of the sick were its victims; in three houses and three families, in Dutch, Maiden-lane, and Nassau, 13 persons have sickened, seven were reported, and all have recovered. The milder nature of these cannot certainly be accounted for, but by their distance from the primary focus of infection.

In fine, the Board of Health have noticed Lewis and Grand streets at Corlaer's Hook. It should be recollected, that se-

rious representations on account of Williamsburgh Ferry, as a great nuisance, were made to that body, exactly at the time when several people there were apparently labouring under malignant fever, and after the deaths of two reported cases had taken place. This mortality the more deserves our attention, that the Resident Physician examined several other cases at the time, which he did not think proper to report. I heartily joined in the opinion after I had examined them with Dr. D. who attended them, and who kindly imparted the best information on their nature. We then have here the proportion of two to seven. This is more favourable than any one yet noticed, and demonstratively proves, that the disease supposed by some to have been imported at the foot of Rector-street, where its mortality was three to one, so far diminished at Corlaer's Hook, and in some central streets, as to put on the form of an ordinary autumnal complaint. Such a transformation of a supposed contagious disease is neither doctrinal nor comprehensible, in any sense of the controverted points.

The same inference is to be drawn from a short view of the character and symptoms of the epidemic; they have been different from former recorded prevalences, varied from district to district, and from person to person, although of the same age, and apparently of the same constitution." &c.

(E) The sewers of the city of New-York in Broad-street, Old-slip, Maiden-lane, Beekman, Fulton, Roosevelt, and James-streets, &c. and also the canal, have each of them been more or less, in an insalubrious condition. As sewers are to be cleansed by the rise of the tide, which enters them twice in four and twenty hours, it must follow that the impure vapours and noxious gases in them, must be twice in that time, expelled into the air we breathe through the outlets that open on the street. To destroy these streams of poisonous air, it has lately been proposed to erect *purifying furnaces* over the mouths of the sewers, to attract by the suction of fire the foul air in them, and to consume it. This ingenious process, proposed by Mr. Ralph Bulkley, appears very practicable, and even a pipe carried from the

sewer to the fire-place of some adjacent house, will, he thinks, answer the intended purpose.

That much attention is requisite in large cities, to the condition of those necessary receptacles, is evinced by the stupendous subterranean works by which the Romans conveyed the filth of their city into the Tyber. Their Cloacæ, which were begun and finished by the Tarquins, extended under the whole city; the arch of the principal sewer, the Cloaca Maxima was high enough to permit a large waggon loaded with hay, or a vessel, to pass under it. Pliny says of these Cloacæ: '*Operam omnium dictu maximum, suffosis montibus, atque urbe pensili, subter navigata.* 36. 13.

The pernicious consequences of sewers have seldom been more destructive than in Cadiz, where circumstances render them peculiarly obnoxious. Cadiz is built on a rock, surrounded by the sea; the streets are narrow and confined; the houses have only courts, and the whole city is traversed by sewers, which are cleansed by the tides. When the east or Levant wind blows, the water of the bay is carried off from the port, the tides are lowered, and can no longer wash the filth from the sewers. Some times in the greatest heats of summer, this violent wind blows fifteen or twenty-one days without intermission, and pestiferous gases from the whole filth of the city are continually emitted through the air holes of the sewers. (*Statement, &c. yellow fever in New York, by Felix Pascalis, pref. p. viii.*)

(F) referred to page 161.

(G) referred to page 156,—7.

(H) The following are the best known writers, on the places, and dangers of interment.

ALEXANDER ab ALEXANDRO, *In Genialibus diebus.*

LUD. CÆLIUS, *In Lectionibus antiquis.*

LILIUS GREGORIUS GERALDUS, *De Sepulchri et vario sepeliendi vitu.* often quoted by Ramazzini in his treatise, *De morbis artificum.*

THOMAS PORCACCIIUS, *Dialogues sur les funerailles des anciens.*

JOANNES MEURSIUS, *De funere.*

CLAUD. GUICHARD, *Sur les Sépultures des anciens.*

JO. KIRCHMANNUS, *De funere Romanorum.*

JACOB GUTHERIUS, *De jure manium.*

ONUFRIUS PANVINIUS, *De ritu sepeliendi mortuos apud veteres Christianos et Eorumdem Cæmeteriis.*

GUILL. BERNARD, *De Sepulturis et Exequiis.*

HENRICUS SPONDANUS, *Cæmeteria Sacra.*

JAC. GRETSERUS, *De funere Christianorum.*

ANTON. BOSIUS, *De Româ Subterraneâ.* This work and that of Porcaccius, are also written in the Italian language.

M. LOUIS, *Traité sur la certitude des signes de mort.*

MURATORI, and Mess. OLIVIER and HABERMANN, on the plague; works containing much interesting matter on the present subject, with the present writers, VICQ-D'AZYR, SCIPIONE PIATTOLI, HAGENOT, MARET, and NAVIER.

