CHAPTER XIV.

FROM FETICH TO HYGIENE.

I. THE THEOLOGICAL VIEW OF EPIDEMICS AND SANITATION.

A very striking feature in recorded history has been the recurrence of great pestilences. Various indications in ancient times show their frequency, while the famous description of the plague of Athens given by Thucydides, and the discussion of it by Lucretius, exemplify their severity. In the Middle Ages they raged from time to time throughout Europe: such plagues as the Black Death and the sweating sickness swept off vast multitudes, the best authorities estimating that of the former, at the middle of the fourteenth century, more than half the population of England died, and that twenty-five millions of people perished in various parts of Europe. In 1352 sixty-seven thousand patients died of the plague at Paris alone, and in 1580 more than twenty thousand. The great plague in England and other parts of Europe in the seventeenth century was also fearful, and that which swept the south of Europe in the early part of the eighteenth century, as well as the invasions by the cholera at various times during the nineteenth, while less terrible than those of former years, have left a deep impress upon the imaginations of men.

From the earliest records we find such pestilences attributed to the wrath or malice of unseen powers. This had been the prevailing view even in the most cultured ages before the establishment of Christianity: in Greece and Rome especially, plagues of various sorts were attributed to the wrath of the gods; in Judea, the scriptural records of various plagues sent upon the earth by the Divine fiat as a punishment for sin show the continuance of this mode of
thought. Among many examples and intimations of this in our sacred literature, we have the epidemic which carried off fourteen thousand seven hundred of the children of Israel, and which was only stayed by the prayers and offerings of Aaron, the high priest; the destruction of seventy thousand men in the pestilence by which King David was punished for the numbering of Israel, and which was only stopped when the wrath of Jahveh was averted by burnt-offerings; the plague threatened by the prophet Zechariah, and that delineated in the Apocalypse. From these sources this current of ideas was poured into the early Christian Church, and hence it has been that during nearly twenty centuries since the rise of Christianity, and down to a period within living memory, at the appearance of any pestilence the Church authorities, instead of devising sanitary measures, have very generally preached the necessity of immediate atonement for offences against the Almighty.

This view of the early Church was enriched greatly by a new development of theological thought regarding the powers of Satan and evil angels, the declaration of St. Paul that the gods of antiquity were devils being cited as its sufficient warrant.*

Moreover, comets, falling stars, and earthquakes were thought, upon scriptural authority, to be "signs and wonders"—evidences of the Divine wrath, heralds of fearful visitations; and this belief, acting powerfully upon the minds of millions, did much to create a panic-terror sure to increase epidemic disease wherever it broke forth.

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* For plague during the Peloponnesian war, see Thucydides, vol. ii, pp. 47-55, and vol. iii, p. 87. For a general statement regarding this and other plagues in ancient times, see Lucretius, vol. vi, pp. 1090 et seq.; and for a translation, see vol. i, p. 179, in Munro's edition of 1886. For early views of sanitary science in Greece and Rome, see Forster's Inquiry, in The Pamphleteer, vol. xxiv, p. 404. For the Greek view of the interference of the gods in disease, especially in pestilence, see Grote's History of Greece, vol. i, pp. 251, 485, and vol. vi, p. 213; see also Herodotus, lib. iii, c. xxxiii, and elsewhere. For the Hebrew view of the same interference by the Almighty, see especially Numbers xi, 4-34; also xvi, 49; I Samuel xxiv; also Psalm cxi. 29; also the well-known texts in Zechariah and Revelation. For St. Paul's declaration that the gods of the heathen are devils, see I Cor. x, 20. As to the earlier origin of the plague in Egypt, see Haeser,'Lehrbuch der Geschichte der Medicin und der epidemischen Krankheiten, Jena, 1875-'82, vol iii, pp. 15 et seq.
The main cause of this immense sacrifice of life is now known to have been the want of hygienic precaution, both in the Eastern centres, where various plagues were developed, and in the European towns through which they spread. And here certain theological reasonings came in to resist the evolution of a proper sanitary theory. Out of the Orient had been poured into the thinking of western Europe the theological idea that the abasement of man adds to the glory of God; that indignity to the body may secure salvation to the soul; hence, that cleanliness betokens pride and filthiness humility. Living in filth was regarded by great numbers of holy men, who set an example to the Church and to society, as an evidence of sanctity. St. Jerome and the Breviary of the Roman Church dwell with unction on the fact that St. Hilarion lived his whole life long in utter physical uncleanness; St. Athanasius glorifies St. Anthony because he had never washed his feet; St. Abraham's most striking evidence of holiness was that for fifty years he washed neither his hands nor his feet; St. Sylvia never washed any part of her body save her fingers; St. Euphraxia belonged to a convent in which the nuns religiously abstained from bathing; St. Mary of Egypt was eminent for filthiness; St. Simon Stylites was in this respect unspeakable—the least that can be said is, that he lived in ordure and stench intolerable to his visitors. The Lives of the Saints dwell with complacency on the statement that, when sundry Eastern monks showed a disposition to wash themselves, the Almighty manifested his displeasure by drying up a neighbouring stream until the bath which it had supplied was destroyed.

The religious world was far indeed from the inspired utterance attributed to John Wesley, that "cleanliness is near akin to godliness." For century after century the idea prevailed that filthiness was akin to holiness; and, while we may well believe that the devotion of the clergy to the sick was one cause why, during the greater plagues, they lost so large a proportion of their numbers, we can not escape the conclusion that their want of cleanliness had much to do with it. In France, during the fourteenth century, Guy de Chauliac, the great physician of his time, noted particularly that cer-
tain Carmelite monks suffered especially from pestilence, and that they were especially filthy. During the Black Death no less than nine hundred Carthusian monks fell victims in one group of buildings.

Naturally, such an example set by the venerated leaders of thought exercised great influence throughout society, and all the more because it justified the carelessness and sloth to which ordinary humanity is prone. In the principal towns of Europe, as well as in the country at large, down to a recent period, the most ordinary sanitary precautions were neglected, and pestilences continued to be attributed to the wrath of God or the malice of Satan. As to the wrath of God, a new and powerful impulse was given to this belief in the Church toward the end of the sixth century by St. Gregory the Great. In 590, when he was elected Pope, the city of Rome was suffering from a dreadful pestilence: the people were dying by thousands; out of one procession imploring the mercy of Heaven no less than eighty persons died within an hour: what the heathen in an earlier epoch had attributed to Apollo was now attributed to Jehovah, and chroniclers tell us that fiery darts were seen flung from heaven into the devoted city. But finally, in the midst of all this horror, Gregory, at the head of a penitential procession, saw hovering over the mausoleum of Hadrian the figure of the archangel Michael, who was just sheathing a flaming sword, while three angels were heard chanting the Regina Coeli. The legend continues that the Pope immediately broke forth into hallelujahs for this sign that the plague was stayed, and, as it shortly afterward became less severe, a chapel was built at the summit of the mausoleum and dedicated to St. Michael; still later, above the whole was erected the colossal statue of the archangel sheathing his sword, which still stands to perpetuate the legend. Thus the greatest of Rome's ancient funeral monuments was made to bear testimony to this mediæval belief; the mausoleum of Hadrian became the castle of St. Angelo. A legend like this, claiming to date from the greatest of the early popes, and vouched for by such an imposing monument, had undoubtedly a marked effect upon the dominant theology throughout Europe, which was constantly developing a great body of
thought regarding the agencies by which the Divine wrath might be averted.

First among these agencies, naturally, were evidences of devotion, especially gifts of land, money, or privileges to churches, monasteries, and shrines—the seats of fetiches which it was supposed had wrought cures or might work them. The whole evolution of modern history, not only ecclesiastical but civil, has been largely affected by the wealth transferred to the clergy at such periods. It was noted that in the fourteenth century, after the great plague, the Black Death, had passed, an immensely increased proportion of the landed and personal property of every European country was in the hands of the Church. Well did a great ecclesiastic remark that “pestilences are the harvests of the ministers of God.” *

Other modes of propitiating the higher powers were penitential processions, the parading of images of the Virgin or of saints through plague-stricken towns, and fetiches innumerable. Very noted in the thirteenth and fourteenth centuries were the processions of the flagellants, trooping through various parts of Europe, scourging their naked bodies, shrieking the penitential psalms, and often running from wild excesses of devotion to the maddest orgies.

Sometimes, too, plagues were attributed to the wrath of lesser heavenly powers. Just as, in former times, the fury of “far-darting Apollo” was felt when his name was not re-

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* For triumphant mention of St. Hilarion’s filth, see the Roman Breviary for October 21st; and for details, see S. Hieronymus, *Vita S. Hilarionis Eremitae*, in Migne, *Patrologia*, vol. xxiii. For Athanasius’s reference to St. Anthony’s filth, see works of St. Athanasius in *The Nicene and Post-Nicene Fathers*, second series, vol. iv, p. 209. For the filthiness of the other saints named, see citations from the *Lives of the Saints*, in Lecky’s *History of European Morals*, vol. ii, pp. 117, 118. For Guy de Chauliac’s observation on the filthiness of Carmelite monks and their great losses by pestilence, see Meryon, *History of Medicine*, vol. i, p. 257. For the mortality among the Carthusian monks in time of plague, see Mrs. Lecky’s very interesting *Visit to the Grand Chartreuse*, in *The Nineteenth Century* for March, 1891. For the plague at Rome in 590, the legend regarding the fiery darts, mentioned by Pope Gregory himself, and that of the castle of St. Angelo, see Gregorovius, *Geschichte der Stadt Rom im Mittelalter*, vol. ii, pp. 26-35; also Story, *Castle of St. Angelo*, etc., chap. ii. For the remark that “pestilences are the harvest of the ministers of God,” see reference to Charlevoix, in Southey, *History of Brasil*, vol. ii, p. 254, cited in Buckle, vol. i, p. 130, note.
spectfully treated by mortals, so, in 1680, the Church authori-
ties at Rome discovered that the plague then raging resulted
from the anger of St. Sebastian because no monument had
been erected to him. Such a monument was therefore placed
in the Church of St. Peter ad Vincula, and the plague ceased.

So much for the endeavour to avert the wrath of the
heavenly powers. On the other hand, theological reasoning
no less subtle was used in thwarting the malice of Satan.
This idea, too, came from far. In the sacred books of India
and Persia, as well as in our own, we find the same theory
of disease, leading to similar means of cure. Perhaps the
most astounding among Christian survivals of this theory
and its resultant practices was seen during the plague at
Rome in 1522. In that year, at that centre of divine illumi-
nation, certain people, having reasoned upon the matter,
came to the conclusion that this great scourge was the result
of Satanic malice; and, in view of St. Paul's declaration that
the ancient gods were devils, and of the theory that the an-
cient gods of Rome were the devils who had the most reason
to punish that city for their dethronement, and that the great
amphitheatre was the chosen haunt of these demon gods, an
ox decorated with garlands, after the ancient heathen man-
ner, was taken in procession to the Colosseum and solemnly
sacrificed. Even this proved vain, and the Church authori-
ties then ordered expiatory processions and ceremonies to
propitiate the Almighty, the Virgin, and the saints, who
had been offended by this temporary effort to bribe their
enemies.

But this sort of theological reasoning developed an idea
far more disastrous, and this was that Satan, in causing
pestilences, used as his emissaries especially Jews and
witches. The proof of this belief in the case of the Jews
was seen in the fact that they escaped with a less percentage
of disease than did the Christians in the great plague periods.
This was doubtless due in some measure to their remarkable
sanitary system, which had probably originated thousands of
years before in Egypt, and had been handed down through
Jewish lawgivers and statesmen. Certainly they observed
more careful sanitary rules and more constant abstinence
from dangerous foods than was usual among Christians; but
the public at large could not understand so simple a cause, and jumped to the conclusion that their immunity resulted from protection by Satan, and that this protection was repaid and the pestilence caused by their wholesale poisoning of Christians. As a result of this mode of thought, attempts were made in all parts of Europe to propitiate the Almighty, to thwart Satan, and to stop the plague by torturing and murdering the Jews. Throughout Europe during great pestilences we hear of extensive burnings of this devoted people. In Bavaria, at the time of the Black Death, it is computed that twelve thousand Jews thus perished; in the small town of Erfurt the number is said to have been three thousand; in Strasburg, the Rue Brulée remains as a monument to the two thousand Jews burned there for poisoning the wells and causing the plague of 1348; at the royal castle of Chinon, near Tours, an immense trench was dug, filled with blazing wood, and in a single day one hundred and sixty Jews were burned. Everywhere in continental Europe this mad persecution went on; but it is a pleasure to say that one great churchman, Pope Clement VI, stood against this popular unreason, and, so far as he could bring his influence to bear on the maddened populace, exercised it in favour of mercy to these supposed enemies of the Almighty.*

* For an early conception in India of the Divinity acting through medicine, see *The Bhagavadgītā*, translated by Telang, p. 82, in Max Müller's *Sacred Books of the East*. For the necessity of religious means of securing knowledge of medicine, see the *Amṛgītā*, translated by Telang, in Max Müller's *Sacred Books of the East*, p. 388. For ancient Persian ideas of sickness as sent by the spirit of evil and to be cured by spells, but not excluding medicine and surgery, and for sickness generally as caused by the evil principle in demons, see the *Zend-Avesta*, Darmesteter's translation, introduction *passim*, but especially p. xciii. For diseases wrought by witchcraft, see the same, pp. 230, 293. On the preference of spells in healing over medicine and surgery, see *Zend-Avesta*, vol. i, pp. 85, 86. For healing by magic in ancient Greece, see, e. g., the cure of Ulysses in the *Odyssey*, "They stopped the black blood by a spell" (*Odyssey*, xix, 457). For medicine in Egypt as partly priestly and partly in the hands of physicians, see Rawlinson's *Herodotus*, vol. ii, p. 136, note. For ideas of curing of diseases by expulsion of demons still surviving among various tribes and nations of Asia, see J. G. Frazer, *The Golden Bough: a Study of Comparative Religion*, London, 1890, pp. 184–192. For the Flagellants and their processions at the time of the Black Death, see Lea, *History of the Inquisition*, New York, 1888, vol. ii, pp. 381 et seq. For the persecution of the Jews in time of pestilence, see ibid., p. 379 and following, with authorities in the notes. For the expulsion of the Jews from Padua, see the *Acta Sanctorum*, September, tom. vii, p. 893.
Yet, as late as 1527, the people of Pavia, being threatened with plague, appealed to St. Bernardino of Feltro, who during his life had been a fierce enemy of the Jews, and they passed a decree promising that if the saint would avert the pestilence they would expel the Jews from the city. The saint apparently accepted the bargain, and in due time the Jews were expelled.

As to witches, the reasons for believing them the cause of pestilence also came from far. This belief, too, had been poured mainly from Oriental sources into our sacred books and thence into the early Church, and was strengthened by a whole line of Church authorities, fathers, doctors, and saints; but, above all, by the great bull, Summis Desiderantes, issued by Pope Innocent VIII, in 1484. This utterance from the seat of St. Peter infallibly committed the Church to the idea that witches are a great cause of disease, storms, and various ills which afflict humanity; and the Scripture on which the action recommended against witches in this papal bull, as well as in so many sermons and treatises for centuries afterward, was based, was the famous text, “Thou shalt not suffer a witch to live.” This idea persisted long, and the evolution of it is among the most fearful things in human history.*

* On the plagues generally, see Hecker, Epidemics of the Middle Ages, passim; but especially Haeser, as above, III. Band, pp. 1–202; also Sprengel, Baas, Isensee, et al. For brief statement showing the enormous loss of life in these plagues, see Littre, Médecine et Médecins, Paris, 1875, pp. 3 et seq. For a summary of the effects of the black plague throughout England, see Green’s Short History of the English People, chap. v. For the mortality in the Paris hospitals, see Desmazes, Supplices, Prisons et Graces en France, Paris, 1866. For striking descriptions of plague-stricken cities, see the well-known passages in Thucydides, Boccaccio, De Foe, and, above all, Manzoni’s Promessi Sposi. For examples of averting the plagues by processions, see Leopold Delisle, Études sur la Condition de la Classe Agricole, etc., en Normandie au Moyen Age, p. 630; also Fort, chap. xxiii. For the anger of St. Sebastian as a cause of the plague at Rome, and its cessation when a monument had been erected to him, see Paulus Diaconus, cited in Gregorovius, vol. ii, p. 165. For the sacrifice of an ox in the Colosseum to the ancient gods as a means of averting the plague of 1522, at Rome, see Gregorovius, vol. vii, p. 390. As to massacres of the Jews in order to avert the wrath of God in pestilence, see L’École et la Science, Paris, 1887, p. 178; also Hecker, and especially Hoeniger, Gang und Verbreitung des Schwarzen Todes in Deutschland, Berlin, 1880. For a long list of towns in which burnings of Jews took place for this imaginary cause, see pp. 7–11. As to absolute want of sanitary precautions, see Hecker, p. 292. As to condemna-
In Germany its development was especially terrible. From the middle of the sixteenth century to the middle of the seventeenth, Catholic and Protestant theologians and ecclesiastics vied with each other in detecting witches guilty of producing sickness or bad weather; women were sent to torture and death by thousands, and with them, from time to time, men and children. On the Catholic side sufficient warrant for this work was found in the bull of Pope Innocent VIII, and the bishops' palaces of south Germany became shambles,—the lordly prelates of Salzburg, Würzburg, and Bamberg taking the lead in this butchery.

In north Germany Protestantism was just as conscientiously cruel. It based its theory and practice toward witches directly upon the Bible, and above all on the great text which has cost the lives of so many myriads of innocent men, women, and children, "Thou shalt not suffer a witch to live." Naturally the Protestant authorities strove to show that Protestantism was no less orthodox in this respect than Catholicism; and such theological jurists as Carpzov, Dambrouder, and Calov did their work thoroughly. An eminent authority on this subject estimates the number of victims thus sacrificed during that century in Germany alone at over a hundred thousand.

Among the methods of this witch activity especially credited in central and southern Europe was the anointing of city walls and pavements with a diabolical unguent causing pestilence. In 1530 Michael Caddo was executed with fearful tortures for thus besmeasuring the pavements of Geneva. But far more dreadful was the torturing to death of a large body of people at Milan, in the following century, for pro-

— by strong religionists of medical means in the plague, see Fort, p. 130. For a detailed account of the action of Popes Eugene IV, Innocent VIII, and other popes, against witchcraft, ascribing to it storms and diseases, and for the bull Summis Deusiderantes, see the chapters on Meteorology and Magic in this series. The text of the bull is given in the Malleus Maleficarum, in Binsfeld, and in Roskoff, Geschichte des Teufels, Leipzig, 1869, vol. i, pp. 222-225, and a good summary and analysis of it in Soldan, Geschichte der Hexenprocesse. For a concise and admirable statement of the contents and effects of the bull, see Lea, History of the Inquisition, vol. iii, pp. 40 et seq.; and for the best statement known to me of the general subject, Prof. George L. Burr's paper on The Literature of Witchcraft, read before the American Historical Association at Washington, 1890.
ducing the plague by anointing the walls; and a little later similar punishments for the same crime were administered in Toulouse and other cities. The case in Milan may be briefly summarized as showing the ideas on sanitary science of all classes, from highest to lowest, in the seventeenth century. That city was then under the control of Spain; and, its authorities having received notice from the Spanish Government that certain persons suspected of witchcraft had recently left Madrid, and had perhaps gone to Milan to anoint the walls, this communication was dwelt upon in the pulpits as another evidence of that Satanic malice which the Church alone had the means of resisting, and the people were thus excited and put upon the alert. One morn-
ing, in the year 1630, an old woman, looking out of her win-
dow, saw a man walking along the street and wiping his fingers upon the walls; she immediately called the attention of another old woman, and they agreed that this man must be one of the diabolical anointers. It was perfectly evident to a person under ordinary conditions that this unfortunate man was simply trying to remove from his fingers the ink gathered while writing from the ink-horn which he carried in his girdle; but this explanation was too simple to satisfy those who first observed him or those who afterward tried him: a mob was raised and he was thrown into prison. Be-
ing tortured, he at first did not know what to confess; but, on inquiring from the jailer and others, he learned what the charge was, and, on being again subjected to torture utterly beyond endurance, he confessed everything which was sug-
gested to him; and, on being tortured again and again to give the names of his accomplices, he accused, at hazard, the first people in the city whom he thought of. These, being arrested and tortured beyond endurance, confessed and im-
plicated a still greater number, until members of the fore-
most families were included in the charge. Again and again all these unfortunates were tortured beyond endurance. Under paganism, the rule regarding torture had been that it should not be carried beyond human endurance; and we therefore find Cicero ridiculing it as a means of detecting crime, because a stalwart criminal of strong nerves might resist it and go free, while a physically delicate man, though
innocent, would be forced to confess. Hence it was that under paganism a limit was imposed to the torture which could be administered; but, when Christianity had become predominant throughout Europe, torture was developed with a cruelty never before known. There had been evolved a doctrine of "excepted cases"—these "excepted cases" being especially heresy and witchcraft; for by a very simple and logical process of theological reasoning it was held that Satan would give supernatural strength to his special devotees—that is, to heretics and witches—and therefore that, in dealing with them, there should be no limit to the torture. The result was in this particular case, as in tens of thousands besides, that the accused confessed everything which could be suggested to them, and often in the delirium of their agony confessed far more than all that the zeal of the prosecutors could suggest. Finally, a great number of worthy people were sentenced to the most cruel death which could be invented. The records of their trials and deaths are frightful. The treatise which in recent years has first brought to light in connected form an authentic account of the proceedings in this affair, and which gives at the end engravings of the accused subjected to horrible tortures on their way to the stake and at the place of execution itself, is one of the most fearful monuments of theological reasoning and human folly.

To cap the climax, after a poor apothecary had been tortured into a confession that he had made the magic ointment, and when he had been put to death with the most exquisite refinements of torture, his family were obliged to take another name, and were driven out from the city; his house was torn down, and on its site was erected "The Column of Infamy," which remained on this spot until, toward the end of the eighteenth century, a party of young radicals, probably influenced by the reading of Beccaria, sallied forth one night and leveled this pious monument to the ground.

Herein was seen the culmination and decline of the bull Summis Desiderantes. It had been issued by him whom a majority of the Christian world believes to be infallible in his teachings to the Church as regards faith and morals;
yet here was a deliberate utterance in a matter of faith and morals which even children now know to be utterly untrue. Though Beccaria's book on *Crimes and Punishments*, with its declarations against torture, was placed by the Church authorities upon the *Index*, and though the faithful throughout the Christian world were forbidden to read it, even this could not prevent the victory of truth over this infallible utterance of Innocent VIII.*

As the seventeenth century went on, ingenuity in all parts of Europe seemed devoted to new developments of fetichism. A very curious monument of this evolution in Italy exists in the Royal Gallery of Paintings at Naples, where may be seen several pictures representing the measures taken to save the city from the plague during the seventeenth century, but especially from the plague of 1656. One enormous canvas gives a curious example of the theological doctrine of intercession between man and his Maker, spun out to its logical length. In the background is the plague-stricken city: in the foreground the people are praying to the city authorities to avert the plague; the city authorities are praying to the Carthusian monks; the monks are praying to St. Martin, St. Bruno, and St. Januarius; these three saints in their turn are praying to the Virgin; the Virgin prays to Christ; and Christ prays to the Almighty. Still another picture represents the people, led by the priests, executing with horrible tortures the Jews, heretics, and witches who were supposed to cause the pestilence of 1656, while in the heavens the Virgin and St. Januarius are inter-

* As to the fearful effects of the papal bull *Summis Desiderantes* in south Germany, as to the Protestant severities in north Germany, as to the immense number of women and children put to death for witchcraft in Germany generally for spreading storms and pestilence, and as to the monstrous doctrine of "excepted cases," see the standard authorities on witchcraft, especially Wächter, *Beiträge zur Geschichte des Strafrechts*, Soldan, Horst, Hauber, and Längin; also Burr, as above. In another series of chapters on *The Warfare of Humanity with Theology*, I hope to go more fully into the subject. For the magic spreading of the plague at Milan, see Manzoni, *I Promessi Sposi* and *La Colonna Infame*; and for the origin of the charges, with all the details of the trial, see the *Processo Originale degli Unitori*, Milan, 1839, *passim*, but especially the large folding plate at the end, exhibiting the tortures. For the after-history of the Column of Infamy, and for the placing of Beccaria's book on the *Index*, see Cantu, *Vita di Beccaria*. For the magic spreading of the plague in general, see Littré, pp. 492 and following.
ceding with Christ to sheathe his sword and stop the plague.

In such an atmosphere of thought it is no wonder that the death statistics were appalling. We hear of districts in which not more than one in ten escaped, and some were entirely depopulated. Such appeals to fetich against pestilence have continued in Naples down to our own time, the great saving power being the liquefaction of the blood of St. Januarius. In 1856 the present writer saw this miracle performed in the gorgeous chapel of the saint forming part of the Cathedral of Naples. The chapel was filled with devout worshippers of every class, from the officials in court dress, representing the Bourbon king, down to the lowest lazzaroni. The reliquary of silver-gilt, shaped like a large human head, and supposed to contain the skull of the saint, was first placed upon the altar; next, two vials containing a dark substance said to be his blood, having been taken from the wall, were also placed upon the altar near the head. As the priests said masses, they turned the vials from time to time, and the liquefaction being somewhat delayed, the great crowd of people burst out into more and more impassioned expostulation and petitions to the saint. Just in front of the altar were the lazzaroni who claimed to be descendants of the saint's family, and these were especially importunate: at such times they beg, they scold, they even threaten; they have been known to abuse the saint roundly, and to tell him that, if he did not care to show his favour to the city by liquefying his blood, St. Cosmo and St. Damian were just as good saints as he, and would no doubt be very glad to have the city devote itself to them. At last, on the occasion above referred to, the priest, turning the vials suddenly, announced that the saint had performed the miracle, and instantly priests, people, choir, and organ burst forth into a great Te Deum; bells rang, and cannon roared; a procession was formed, and the shrine containing the saint's relics was carried through the streets, the people prostrating themselves on both sides of the way and throwing showers of rose leaves upon the shrine and upon the path before it. The contents of these precious vials are an interesting relic indeed, for they represent to us vividly that period when men who
were willing to go to the stake for their religious opinions thought it not wrong to save the souls of their fellow-men by pious mendacity and consecrated fraud. To the scientific eye this miracle is very simple: the vials contain, no doubt, one of those mixtures fusing at low temperature, which, while kept in its place within the cold stone walls of the church, remains solid, but upon being brought out into the hot, crowded chapel, and fondled by the warm hands of the priests, gradually softens and becomes liquid. It was curious to note, at the time above mentioned, that even the high functionaries representing the king looked at the miracle with awe: they evidently found "joy in believing," and one of them assured the present writer that the only thing which could cause it was the direct exercise of miraculous power.

It may be reassuring to persons contemplating a visit to that beautiful capital in these days, that, while this miracle still goes on, it is no longer the only thing relied upon to preserve the public health. An unbelieving generation, especially taught by the recent horrors of the cholera, has thought it wise to supplement the power of St. Januarius by the "Risanamento," begun mainly in 1885 and still going on. The drainage of the city has thus been greatly improved, the old wells closed, and pure water introduced from the mountains. Moreover, at the last outburst of cholera a few years since, a noble deed was done which by its moral effect exercised a widespread healing power. Upon hearing of this terrific outbreak of pestilence, King Humbert, though under the ban of the Church, broke from all the entreaties of his friends and family, went directly into the plague-stricken city, and there, in the streets, public places, and hospitals, encouraged the living, comforted the sick and dying, and took means to prevent a further spread of the pestilence. To the credit of the Church it should also be said that the Cardinal Archbishop San Felice joined him in this.

Miracle for miracle, the effect of this visit of the king seems to have surpassed anything that St. Januarius could do, for it gave confidence and courage which very soon showed their effects in diminishing the number of deaths. It would certainly appear that in this matter the king was
more directly under Divine inspiration and guidance than was the Pope; for the fact that King Humbert went to Naples at the risk of his life, while Leo XIII remained in safety at the Vatican, impressed the Italian people in favour of the new régime and against the old as nothing else could have done.

In other parts of Italy the same progress is seen under the new Italian government. Venice, Genoa, Leghorn, and especially Rome, which under the sway of the popes was scandalously filthy, are now among the cleanest cities in Europe. What the relics of St. Januarius, St. Anthony, and a multitude of local fetiches throughout Italy were for ages utterly unable to do, has been accomplished by the development of the simplest sanitary principles.

Spain shows much the same characteristics of a country where theological considerations have been all-controlling for centuries. Down to the interference of Napoleon with that kingdom, all sanitary efforts were looked upon as absurd if not impious. The most sober accounts of travellers in the Spanish Peninsula until a recent period are sometimes irresistibly comic in their pictures of peoples insisting on maintaining arrangements more filthy than any which would be permitted in an American backwoods camp, while taking enormous pains to stop pestilence by bell-ringing, processions, and new dresses bestowed upon the local Madonnas; yet here, too, a healthful scepticism has begun to work for good. The outbreaks of cholera in recent years have done some little to bring in better sanitary measures.*

* As to recourse to fetichism in Italy in time of plague, and the pictures showing the intercession of Januarius and other saints, I have relied on my own notes made at various visits to Naples. For the general subject, see Peter, Études Napolitaines, especially chapters v and vi. For detailed accounts of the liquefaction of St. Januarius’s blood by eye-witnesses, one an eminent Catholic of the seventeenth century, and the other a distinguished Protestant of our own time, see Murray’s Handbook for South Italy and Naples, description of the Cathedral of San Gennaro. For an interesting series of articles on the subject, see The Catholic World for September, October, and November, 1871. For the incredible filthiness of the great cities of Spain, and the resistance of the people, down to a recent period, to the most ordinary regulations prompted by decency, see Bascome, History of Epidemic Pestilences, especially pp. 119, 120. See also the Autobiography of D’Ewes, London, 1846, vol. ii, p. 446; also, for various citations, the second volume of Buckle, History of Civilization in England.
II. GRADUAL DECAY OF THEOLOGICAL VIEWS REGARDING SANITATION.

We have seen how powerful in various nations especially obedient to theology were the forces working in opposition to the evolution of hygiene, and we shall find this same opposition, less effective, it is true, but still acting with great power, in countries which had become somewhat emancipated from theological control. In England, during the mediæval period, persecutions of Jews were occasionally resorted to, and here and there we hear of persecutions of witches; but, as torture was rarely used in England, there were, from those charged with producing plague, few of those torture-born confessions which in other countries gave rise to widespread cruelties. Down to the sixteenth and seventeenth centuries the filthiness in the ordinary mode of life in England was such as we can now hardly conceive: fermenting organic material was allowed to accumulate and become a part of the earthen floors of rural dwellings; and this undoubtedly developed the germs of many diseases. In his noted letter to the physician of Cardinal Wolsey, Erasmus describes the filth thus incorporated into the floors of English houses, and, what is of far more importance, he shows an inkling of the true cause of the wasting diseases of the period. He says, "If I entered into a chamber which had been uninhabited for months, I was immediately seized with a fever." He ascribed the fearful plague of the sweating sickness to this cause. So, too, the noted Dr. Caius advised sanitary precautions against the plague, and in after-generations, Mead, Pringle, and others urged them; but the prevailing thought was too strong, and little was done. Even the floor of the presence chamber of Queen Elizabeth in Greenwich Palace was "covered with hay, after the English fashion," as one of the chroniclers tells us.

In the seventeenth century, aid in these great scourges was mainly sought in special church services. The foremost English churchmen during that century being greatly given to study of the early fathers of the Church; the theological theory of disease, so dear to the fathers, still held sway, and
this was the case when the various visitations reached their climax in the great plague of London in 1665, which swept off more than a hundred thousand people from that city. The attempts at meeting it by sanitary measures were few and poor; the medical system of the time was still largely tinctured by superstitions resulting from mediæval modes of thought; hence that plague was generally attributed to the Divine wrath caused by “the prophaning of the Sabbath.” Texts from Numbers, the Psalms, Zechariah, and the Apocalypse were dwelt upon in the pulpits to show that plagues are sent by the Almighty to punish sin; and perhaps the most ghastly figure among all those fearful scenes described by De Foe is that of the naked fanatic walking up and down the streets with a pan of fiery coals upon his head, and, after the manner of Jonah at Nineveh, proclaiming woe to the city, and its destruction in forty days.

That sin caused this plague is certain, but it was sanitary sin. Both before and after this culmination of the disease cases of plague were constantly occurring in London throughout the seventeenth century; but about the beginning of the eighteenth century it began to disappear. The great fire had done a good work by sweeping off many causes and centres of infection, and there had come wider streets, better pavements, and improved water supply; so that, with the disappearance of the plague, other diseases, especially dysenteries, which had formerly raged in the city, became much less frequent.

But, while these epidemics were thus checked in London, others developed by sanitary ignorance raged fearfully both there and elsewhere, and of these perhaps the most fearful was the jail fever. The prisons of that period were vile beyond belief. Men were confined in dungeons rarely if ever disinfected after the death of previous occupants, and on corridors connecting directly with the foulest sewers: there was no proper disinfection, ventilation, or drainage; hence in most of the large prisons for criminals or debtors the jail fever was supreme, and from these centres it frequently spread through the adjacent towns. This was especially the case during the sixteenth and seventeenth centuries. In the Black Assize at Oxford, in 1577, the chief baron, the sheriff,
and about three hundred men died within forty hours. Lord Bacon declared the jail fever "the most pernicious infection next to the plague." In 1730, at the Dorsetshire Assize, the chief baron and many lawyers were killed by it. The High Sheriff of Somerset also took the disease and died. A single Scotch regiment, being infected from some prisoners, lost no less than two hundred. In 1750 the disease was so virulent at Newgate, in the heart of London, that two judges, the lord mayor, sundry aldermen, and many others, died of it.

It is worth noting that, while efforts at sanitary dealing with this state of things were few, the theological spirit developed a new and special form of prayer for the sufferers and placed it in the Irish Prayer Book.

These forms of prayer seem to have been the main reliance through the first half of the eighteenth century. But about 1750 began the work of John Howard, who visited the prisons of England, made known their condition to the world, and never rested until they were greatly improved. Then he applied the same benevolent activity to prisons in other countries, in the far East, and in southern Europe, and finally laid down his life, a victim to disease contracted on one of his missions of mercy; but the hygienic reforms he began were developed more and more until this fearful blot upon modern civilization was removed.*

* For Erasmus, see the letter cited in Bascome, History of Epidemic Pestilences, London, 1851. For account of the condition of Queen Elizabeth's presence chamber, see the same, p. 206; see also the same for attempts at sanitation by Calus, Mead, Pringle, and others; and see Baas and various medical authorities. For the plague in London, see Green's History of the English People, chap. ix, sec. 2; and for a more detailed account, see Lingard, History of England, enlarged edition of 1849, vol. ix, pp. 107 et seq. For full scientific discussion of this and other plagues from a medical point of view, see Creighton, History of Epidemics in Great Britain, vol. ii, chap. i. For the London plague as a punishment for Sabbath-breaking, see A Divine Tragedie lately acted, or A collection of sundrie memorable examples of God's judgements upon Sabbath Breakers and other like libertines, etc., by that worthy divine, Mr. Henry Burton, 1641. The book gives fifty-six accounts of Sabbath-breakers sorely punished, generally struck dead, in England, with places, names, and dates. For a general account of the condition of London in the sixteenth and seventeenth centuries, and the diminution of the plague by the rebuilding of some parts of the city after the great fire, see Lecky, History of England in the Eighteenth Century, vol. i, pp. 592, 593. For the jail fever, see Lecky, vol. i, pp. 500–503.
The same thing was seen in the Protestant colonies of America; but here, while plagues were steadily attributed to Divine wrath or Satanic malice, there was one case in which it was claimed that such a visitation was due to the Divine mercy. The pestilence among the Indians, before the arrival of the Plymouth Colony, was attributed in a notable work of that period to the Divine purpose of clearing New England for the heralds of the gospel; on the other hand, the plagues which destroyed the white population were attributed by the same authority to devils and witches. In Cotton Mather's *Wonders of the Invisible World*, published at Boston in 1693, we have striking examples of this. The great Puritan divine tells us:

"Plagues are some of those woes, with which the Divil troubles us. It is said of the Israelites, in 1 Cor. 10. 10. *They were destroyed of the destroyer.* That is, they had the Plague among them. 'Tis the Destroyer, or the Divil, that scatters Plagues about the World: Pestilential and Contagious Diseases, 'tis the Divel, who do's oftentimes Invade us with them. 'Tis no uneasy thing, for the Divel, to impregnate the Air about us, with such Malignant Salts, as meeting with the Salt of our Microcosm, shall immediately cast us into that Fermentation and Putrefaction, which will utterly dissolve All the Vital Tyes within us; Ev'n as an Aqua Fortis, made with a conjunction of Nitre and Vitriol, Corrodes what it Siezes upon. And when the Divel has raised those Arsenical Fumes, which become Venomous Quivers full of Terrible Arrows, how easily can he shoot the deleterious Miasms into those Juices or Bowels of Men's Bodies, which will soon Enflame them with a Mortal Fire! Hence come such Plagues, as that Beesome of Destruction which within our memory swept away such a throng of people from one English City in one Visitation: and hence those Infectious Feavers, which are but so many Disguised Plagues among us, Causing Epidemical Desolations."

Mather gives several instances of witches causing diseases, and speaks of "some long Bow'd down under such a Spirit of Infirmity" being "Marvelously Recovered upon the Death of the Witches," of which he gives an instance. He also cites a case where a patient "was brought unto
death's door and so remained until the witch was taken and carried away by the constable, when he began at once to recover and was soon well."*

In France we see, during generation after generation, a similar history evolved; pestilence after pestilence came, and was met by various fetches. Noteworthy is the plague at Marseilles near the beginning of the last century. The chronicles of its sway are ghastly. They speak of great heaps of the unburied dead in the public places, "forming pestilential volcanoes"; of plague-stricken men and women in delirium wandering naked through the streets; of churches and shrines thronged with great crowds shrieking for mercy; of other crowds flinging themselves into the wildest debauchery; of robber bands assassinating the dying and plundering the dead; of three thousand neglected children collected in one hospital and then left to die; and of the death-roll numbering at last fifty thousand out of a population of less than ninety thousand.

In the midst of these fearful scenes stood a body of men and women worthy to be held in eternal honour—the physicians from Paris and Montpellier; the mayor of the city, and one or two of his associates; but, above all, the Chevalier Roze and Bishop Belzunce. The history of these men may well make us glory in human nature; but in all this noble group the figure of Belzunce is the most striking. Nobly and firmly, when so many others even among the regular and secular ecclesiastics fled, he stood by his flock: day and night he was at work in the hospitals, cheering the living, comforting the dying, and doing what was possible for the decent disposal of the dead. In him were united the two great antagonistic currents of religion and of theology. As a theologian he organized processions and expiatory services, which, it must be confessed, rather increased the

* For the passages from Cotton Mather, see his book as cited, pp. 17, 18, also 134, 145. Johnson declares that "by this meanes Christ . . . not only made roome for His people to plant, but also tamed the hard and cruel hearts of these barbarous Indians, insomuch that halfe a handful of His people landing not long after in Plymouth Plantation, found little resistance." See the History of New England, by Edward Johnson, London, 1654. Reprinted in the Massachusetts Historical Society's Collection, second series, vol. i, p. 67.
disease than diminished it; moreover, he accepted that wild
dream of a hysterical nun—the worship of the material,
physical sacred heart of Jesus—and was one of the first to
consecrate his diocese to it; but, on the other hand, the re-
ligious spirit gave in him one of its most beautiful manifesta-
tions in that or any other century; justly have the people of
Marseilles placed his statue in the midst of their city in an
attitude of prayer and blessing.

In every part of Europe and America, down to a recent
period, we find pestilences resulting from carelessness or
superstition still called “inscrutable providences.” As late
as the end of the eighteenth century, when great epidemics
made fearful havoc in Austria, the main means against them
seem to have been grovelling before the image of St. Sebast-
tian and calling in special “witch-doctors”—that is, monks
who cast out devils. To seek the aid of physicians was, in
the neighbourhood of these monastic centres, very generally
considered impious, and the enormous death rate in such
neighbourhoods was only diminished in the present century,
when scientific hygiene began to make its way.

The old view of pestilence had also its full course in Cal-
vinistic Scotland; the only difference being that, while in
Roman Catholic countries relief was sought by fetiches,
gifts, processions, exorcisms, burnings of witches, and other
works of expiation, promoted by priests; in Scotland, after
the Reformation, it was sought in fast-days and executions
of witches promoted by Protestant elders. Accounts of the
filthiness of Scotch cities and villages, down to a period well
within this century, seem monstrous. All that in these
days is swept into the sewers was in those allowed to remain
around the houses or thrown into the streets. The old the-
ological theory, that “vain is the help of man,” checked sci-
entific thought and paralyzed sanitary endeavour. The re-
sult was natural: between the thirteenth and seventeenth
centuries thirty notable epidemics swept the country, and
some of them carried off multitudes; but as a rule these
never suggested sanitary improvement; they were called
“visitations,” attributed to Divine wrath against human sin,
and the work of the authorities was to announce the partic-
ular sin concerned and to declaim against it. Amazing the-
ories were thus propounded—theories which led to spasms of severity; and, in some of these, offences generally punished much less severely were visited with death. Every pulpit interpreted the ways of God to man in such seasons so as rather to increase than to diminish the pestilence. The effect of thus seeking supernatural causes rather than natural may be seen in such facts as the death by plague of one fourth of the whole population of the city of Perth in a single year of the fifteenth century, other towns suffering similarly both then and afterward.

Here and there, physicians more wisely inspired endeavoured to push sanitary measures, and in 1585 attempts were made to clean the streets of Edinburgh; but the chroniclers tell us that “the magistrates and ministers gave no heed.” One sort of calamity, indeed, came in as a mercy—the great fires which swept through the cities, clearing and cleaning them. Though the town council of Edinburgh declared the noted fire of 1700 “a fearful rebuke of God,” it was observed that, after it had done its work, disease and death were greatly diminished.*

III. THE TRIUMPH OF SANITARY SCIENCE.

But by those standing in the higher places of thought some glimpses of scientific truth had already been obtained, and attempts at compromise between theology and science in this field began to be made, not only by ecclesiastics, but first of all, as far back as the seventeenth century, by a man of science eminent both for attainments and character—Robert Boyle. Inspired by the discoveries in other fields, which had swept away so much of theological thought, he could no

* For the plague at Marseilles and its depopulation, see Henri Martin, Histoire de France, vol. xv, especially document cited in appendix; also Gibbon, Decline and Fall, chap. xliii; also Rambaud. For the resort to witch-doctors in Austria against pestilence, down to the end of the eighteenth century, see Biedermann, Deutschland im Achtzehnten Jahrhundert. For the resort to St. Sebastian, see the widespread editions of the Vita et Gesta Sancti Sebastiani, contra pestem patrem, preaced with commendations from bishops and other high ecclesiastics. The edition in the Cornell University Library is that of Augsburg, 1693. For the reign of filth and pestilence in Scotland, see Charles Rogers, D. D., Social Life in Scotland, Edinburgh, 1884, vol. i, pp. 305-316; see also Buckle’s second volume.
longer resist the conviction that some epidemics are due—in his own words—“to a tragical concourse of natural causes”; but he argued that some of these may be the result of Divine interpositions provoked by human sins. As time went on, great difficulties showed themselves in the way of this compromise—difficulties theological not less than difficulties scientific. To a Catholic it was more and more hard to explain the theological grounds why so many orthodox cities, firm in the faith, were punished, and so many heretical cities spared; and why, in regions devoted to the Church, the poorer people, whose faith in theological fetiches was unquestioning, died in times of pestilence like flies, while sceptics so frequently escaped. Difficulties of the same sort beset devoted Protestants; they, too, might well ask why it was that the devout peasantry in their humble cottages perished, while so much larger a proportion of the more sceptical upper classes were untouched. Gradually it dawned both upon Catholic and Protestant countries that, if any sin be punished by pestilence, it is the sin of filthiness; more and more it began to be seen by thinking men of both religions that Wesley’s great dictum stated even less than the truth; that not only was “cleanliness akin to godliness,” but that, as a means of keeping off pestilence, it was far superior to godliness as godliness was then generally understood.*

The recent history of sanitation in all civilized countries shows triumphs which might well fill us with wonder, did there not rise within us a far greater wonder that they were so long delayed. Amazing is it to see how near the world has come again and again to discovering the key to the cause and cure of pestilence. It is now a matter of the simplest elementary knowledge that some of the worst epidemics are conveyed in water. But this fact seems to have been discovered many times in human history. In the Peloponnesian war the Athenians asserted that their enemies had poisoned their cisterns; in the Middle Ages the people generally declared that the Jews had poisoned their wells; and as late as the cholera of 1832 the Parisian mob insisted that the water-carriers who distributed water for drinking pur-

poses from the Seine, polluted as it was by sewage, had poisoned it, and in some cases murdered them on this charge: so far did this feeling go that locked covers were sometimes placed upon the water-buckets. Had not such men as Roger Bacon and his long line of successors been thwarted by theological authority,—had not such men as Thomas Aquinas, Vincent of Beauvais, and Albert the Great been drawn or driven from the paths of science into the dark, tortuous paths of theology, leading no whither,—the world to-day, at the end of the nineteenth century, would have arrived at the solution of great problems and the enjoyment of great results which will only be reached at the end of the twentieth century, and even in generations more remote. Diseases like typhoid fever, influenza and pulmonary consumption, scarlet fever, diphtheria, pneumonia, and _la grippe_, which now carry off so many most precious lives, would have long since ceased to scourge the world.

Still, there is one cause for satisfaction: the law governing the relation of theology to disease is now well before the world, and it is seen in the fact that, just in proportion as the world progressed from the sway of Hippocrates to that of the ages of faith, so it progressed in the frequency and severity of great pestilences; and that, on the other hand, just in proportion as the world has receded from that period when theology was all-pervading and all-controlling, plague after plague has disappeared, and those remaining have become less and less frequent and virulent. *

The recent history of hygiene in all countries shows a long series of victories, and these may well be studied in Great Britain and the United States. In the former, though there had been many warnings from eminent physicians, and above all in the seventeenth and eighteenth centuries, from men like Caius, Mead, and Pringle, the result was far short of what might have been gained; and it was only in the year 1838 that a systematic sanitary effort was begun in

* For the charge of poisoning water and producing pestilence among the Greeks, see Grote, _History of Greece_, vol. vi, p. 213. For a similar charge against the Jews in the Middle Ages, see various histories already cited; and for the great popular prejudice against water-carriers at Paris in recent times, see the larger recent French histories.
England by the public authorities. The state of things at that time, though by comparison with the Middle Ages happy, was, by comparison with what has since been gained, fearful: the death rate among all classes was high, but among the poor it was ghastly. Out of seventy-seven thousand paupers in London during the years 1837 and 1838, fourteen thousand were suffering from fever, and of these nearly six thousand from typhus. In many other parts of the British Islands the sanitary condition was no better. A noble body of men grappled with the problem, and in a few years one of these rose above his fellows—the late Edwin Chadwick. The opposition to his work was bitter, and, though many churchmen aided him, the support given by theologians and ecclesiastics as a whole was very far short of what it should have been. Too many of them were occupied in that most costly and most worthless of all processes, “the saving of souls” by the inculcation of dogma. Yet some of the higher ecclesiastics and many of the lesser clergy did much, sometimes risking their lives, and one of them, Sidney Godolphin Osborne, deserves lasting memory for his struggle to make known the sanitary wants of the peasantry.

Chadwick began to be widely known in 1848 as a member of the Board of Health, and was driven out for a time for overzeal; but from one point or another, during forty years, he fought the opposition, developed the new work, and one of the best exhibits of its results is shown in his address before the Sanitary Conference at Brighton in 1888. From this and other perfectly trustworthy sources some idea may be gained of the triumph of the scientific over the theological method of dealing with disease, whether epidemic or sporadic.

In the latter half of the seventeenth century the annual mortality of London is estimated at not less than eighty in a thousand; about the middle of this century it stood at twenty-four in a thousand; in 1889 it stood at less than eighteen in a thousand; and in many parts the most recent statistics show that it has been brought down to fourteen or fifteen in a thousand. A quarter of a century ago the death rate from disease in the Royal Guards at London was twenty in a thousand; in 1888 it had been reduced to six in a thousand.
In the army generally it had been seventeen in a thousand, but it has been reduced until it now stands at eight. In the old Indian army it had been sixty-nine in a thousand, but of late it has been brought down first to twenty, and finally to fourteen. Mr. Chadwick in his speech proved that much more might be done, for he called attention to the German army, where the death rate from disease has been reduced to between five and six in a thousand. The Public Health Act having been passed in 1875, the death rate in England among men fell, between 1871 and 1880, more than four in a thousand, and among women more than six in a thousand. In the decade between 1851 and 1860 there died of diseases attributable to defective drainage and impure water over four thousand persons in every million throughout England: these numbers have declined until in 1888 there died less than two thousand in every million. The most striking diminution of the deaths from such causes was found in 1891, in the case of typhoid fever, that diminution being fifty per cent. As to the scourge which, next to plagues like the Black Death, was formerly the most dreaded—smallpox—there died of it in London during the year 1890 just one person. Drainage in Bristol reduced the death rate by consumption from 4.4 to 2.3; at Cardiff, from 3.47 to 2.31; and in all England and Wales, from 2.68 in 1851 to 1.55 in 1888.

What can be accomplished by better sanitation is also seen to-day by a comparison between the death rate among the children outside and inside the charity schools. The death rate among those outside in 1881 was twelve in a thousand; while inside, where the children were under sanitary regulations maintained by competent authorities, it has been brought down first to eight, then to four, and finally to less than three in a thousand.

In view of statistics like these, it becomes clear that Edwin Chadwick and his compeers among the sanitary authorities have in half a century done far more to reduce the rate of disease and death than has been done in fifteen hundred years by all the fetiches which theological reasoning could devise or ecclesiastical power enforce.

Not less striking has been the history of hygiene in France: thanks to the decline of theological control over
the universities, to the abolition of monasteries, and to such labours in hygienic research and improvement as those of Tardieu, Levy, and Bouchardat, a wondrous change has been wrought in public health. Statistics carefully kept show that the mean length of human life has been remarkably increased. In the eighteenth century it was but twenty-three years; from 1825 to 1830 it was thirty-two years and eight months; and since 1864, thirty-seven years and six months.

IV. THE RELATION OF SANITARY SCIENCE TO RELIGION.

The question may now arise whether this progress in sanitary science has been purchased at any real sacrifice of religion in its highest sense. One piece of recent history indicates an answer to this question. The Second Empire in France had its head in Napoleon III, a noted Voltairean. At the climax of his power he determined to erect an Academy of Music which should be the noblest building of its kind. It was projected on a scale never before known, at least in modern times, and carried on for years, millions being lavished upon it. At the same time the emperor determined to rebuild the Hôtel-Dieu, the great Paris hospital; this, too, was projected on a greater scale than anything of the kind ever before known, and also required millions. But in the erection of these two buildings the emperor's determination was distinctly made known, that with the highest provision for aesthetic enjoyment there should be a similar provision, moving on parallel lines, for the relief of human suffering. This plan was carried out to the letter: the Palace of the Opera and the Hôtel-Dieu went on with equal steps, and the former was not allowed to be finished before the latter. Among all the "most Christian kings" of the house of Bourbon who had preceded him for five hundred years, history shows no such obedience to the religious and moral sense of the nation. Catharine de' Medici and her sons, plunging the nation into the great wars of religion, never showed any such feeling; Louis XIV, revoking the Edict of Nantes for the glory of God, and bringing the nation to sorrow during many generations, never dreamed of making the construction of his
palaces and public buildings wait upon the demands of charity; Louis XV, so subservient to the Church in all things, never betrayed the slightest consciousness that, while making enormous expenditures to gratify his own and the national vanity, he ought to carry on works, pari passu, for charity. Nor did the French nation, at those periods when it was most largely under the control of theological considerations, seem to have any inkling of the idea that nation or monarch should make provision for relief from human suffering, to justify provision for the sumptuous enjoyment of art: it was reserved for the second half of the nineteenth century to develop this feeling so strongly, though quietly, that Napoleon III, notoriously an unbeliever in all orthodoxy, was obliged to recognise it and to set this great example.

Nor has the recent history of the United States been less fruitful in lessons. Yellow fever, which formerly swept not only Southern cities but even New York and Philadelphia, has now been almost entirely warded off. Such epidemics as that in Memphis a few years since, and the immunity of the city from such visitations since its sanitary condition was changed by Mr. Waring, are a most striking object lesson to the whole country. Cholera, which again and again swept the country, has ceased to be feared by the public at large. Typhus fever, once so deadly, is now rarely heard of. Curious is it to find that some of the diseases which in the olden time swept off myriads on myriads in every country, now cause fewer deaths than some diseases thought of little account, and for the cure of which people therefore rely, to their cost, on quackery instead of medical science.

This development of sanitary science and hygiene in the United States has also been coincident with a marked change in the attitude of the American pulpit as regards the theory of disease. In this country, as in others, down to a period within living memory, deaths due to want of sanitary precautions were constantly dwelt upon in funeral sermons as "results of national sin," or as "inscrutable Providences." That view has mainly passed away among the clergy of the more enlightened parts of the country, and we now find
them, as a rule, active in spreading useful ideas as to the prevention of disease. The religious press has been especially faithful in this respect, carrying to every household more just ideas of sanitary precautions and hygienic living.

The attitude even of many among the most orthodox rulers in church and state has been changed by facts like these. Lord Palmerston refusing the request of the Scotch clergy that a fast day be appointed to ward off cholera, and advising them to go home and clean their streets,—the devout Emperor William II forbidding prayer-meetings in a similar emergency, on the ground that they led to neglect of practical human means of help,—all this is in striking contrast to the older methods.

Well worthy of note is the ground taken in 1893, at Philadelphia, by an eminent divine of the Protestant Episcopal Church. The Bishop of Pennsylvania having issued a special call to prayer in order to ward off the cholera, this clergyman refused to respond to the call, declaring that to do so, in the filthy condition of the streets then prevailing in Philadelphia, would be blasphemous.

In summing up the whole subject, we see that in this field, as in so many others, the triumph of scientific thought has gradually done much to evolve in the world not only a theology but also a religious spirit more and more worthy of the goodness of God and of the destiny of man.*

* On the improvement in sanitation in London and elsewhere in the north of Europe, see the editorial and Report of the Conference on Sanitation at Brighton, given in the London Times of August 27, 1888. For the best authorities on the general subject in England, see Sir John Simon on English Sanitary Institutions, 1890; also his published Health Reports for 1887, cited in the Edinburgh Review for January, 1891. See also Parkes's Hygiene, passim. For the great increase of the mean length of life in France under better hygienic conditions, see Rambaud, La Civilisation contemporaine en France, p. 682. For the approach to depopulation at Memphis, under the cesspool system in 1878, see Parkes, Hygiene, American appendix, p. 307. For the facts brought out in the investigation of the departments of the city of New York by the Committee of the State Senate, of which the present writer was a member, see New York Senate Documents for 1865. For decrease of death rate in New York city under the new Board of Health, beginning in 1866, and especially among children, see Buck, Hygiene and Popular Health, New York, 1879, vol. ii, p. 573; and for wise remarks on religious duties during pestilence, see ibid., vol. ii, p. 579. For a contrast between the old and new ideas regarding pestilences, see Charles Kingsley in Fraser's Magazine, vol. iviii,
p. 134; also the sermon of Dr. Burns, in 1875, at the Cathedral of Glasgow before the Social Science Congress. For a particularly bright and valuable statement of the triumphs of modern sanitation, see Mrs. Plunkett's article in The Popular Science Monthly for June, 1891. For the reply of Lord Palmerston to the Scotch clergy, see the well-known passage in Buckle. For the order of the Emperor William, see various newspapers for September, 1892, and especially Public Opinion for September 24th.