THE WARFARE OF SCIENCE
WITH THEOLOGY.

CHAPTER XIII.
FROM MIRACLES TO MEDICINE.

I. THE EARLY AND SACRED THEORIES OF DISEASE.

Nothing in the evolution of human thought appears more inevitable than the idea of supernatural intervention in producing and curing disease. The causes of disease are so intricate that they are reached only after ages of scientific labour. In those periods when man sees everywhere miracle and nowhere law,—when he attributes all things which he can not understand to a will like his own,—he naturally ascribes his diseases either to the wrath of a good being or to the malice of an evil being.

This idea underlies the connection of the priestly class with the healing art: a connection of which we have survivals among rude tribes in all parts of the world, and which is seen in nearly every ancient civilization—especially in the powers over disease claimed in Egypt by the priests of Osiris and Isis, in Assyria by the priests of Gibil, in Greece by the priests of Ἐσκυλαπιος, and in Judea by the priests and prophets of Jahveh.

In Egypt there is evidence, reaching back to a very early period, that the sick were often regarded as afflicted or possessed by demons; the same belief comes constantly before us in the great religions of India and China; and, as regards Chaldea, the Assyrian tablets recovered in recent years, while revealing the source of so many myths and legends transmitted to the modern world through the book of Gene-
sis, show especially this idea of the healing of diseases by the casting out of devils. A similar theory was elaborated in Persia. Naturally, then, the Old Testament, so precious in showing the evolution of religious and moral truth among men, attributes such diseases as the leprosy of Miriam and Uzziah, the boils of Job, the dysentery of Jehoram, the withered hand of Jeroboam, the fatal illness of Asa, and many other ills, to the wrath of God or the malice of Satan; while, in the New Testament, such examples as the woman "bound by Satan," the rebuke of the fever, the casting out of the devil which was dumb, the healing of the person whom "the devil oftentimes casteth into the fire"—of which case one of the greatest modern physicians remarks that never was there a truer description of epilepsy—and various other episodes, show this same inevitable mode of thought as a refracting medium through which the teachings and doings of the Great Physician were revealed to future generations.

In Greece, though this idea of an occult evil agency in producing bodily ills appeared at an early period, there also came the first beginnings, so far as we know, of a really scientific theory of medicine. Five hundred years before Christ, in the bloom period of thought—the period of Æschylus, Phidias, Pericles, Socrates, and Plato—appeared Hippocrates, one of the greatest names in history. Quietly but thoroughly he broke away from the old tradition, developed scientific thought, and laid the foundations of medical science upon experience, observation, and reason so deeply and broadly that his teaching remains to this hour among the most precious possessions of our race.

His thought was passed on to the School of Alexandria, and there medical science was developed yet further, especially by such men as Herophilus and Erasistratus. Under their lead studies in human anatomy began by dissection; the old prejudice which had weighed so long upon science, preventing that method of anatomical investigation without which there can be no real results, was cast aside apparently forever.*

* For extended statements regarding medicine in Egypt, Judea, and Eastern nations generally, see Sprengel, Histoire de la Médecine, and Haeser; and for
THE EARLY AND SACRED THEORIES OF DISEASE.

But with the coming in of Christianity a great new chain of events was set in motion which modified this development most profoundly. The influence of Christianity on the healing art was twofold: there was first a blessed impulse—the thought, aspiration, example, ideals, and spirit of Jesus of Nazareth. This spirit, then poured into the world, flowed down through the ages, promoting self-sacrifice for the sick and wretched. Through all those succeeding centuries, even through the rudest, hospitals and infirmaries sprang up along this blessed stream. Of these were the Eastern establishments for the cure of the sick at the earliest Christian periods, the Infirmary of Monte Cassino and the Hôtel-Dieu at Lyons in the sixth century, the Hôtel-Dieu at Paris in the seventh, and the myriad refuges for the sick and suffering which sprang up in every part of Europe during the following centuries. Vitalized by this stream, all mediæval growths of mercy bloomed luxuriantly. To say nothing of those at an earlier period, we have in the time of the Crusades great charitable organizations like the Order of

more succinct accounts, Baas, Geschichte der Medicin, pp. 15–29; also Isensee; also Frédault, Histoire de la Médecine, chap. i. For the effort in Egyptian medicine to deal with demons and witches, see Heinrich Brugsch, Die Aegyptologie, Leipsic, 1891, p. 77; and for references to the Papyrus Ebers, etc., pp. 155, 407; and following. For fear of dissection and prejudices against it in Egypt, like those in mediæval Europe, see Maspero and Sayce, Dawn of Civilization, p. 216. For the derivation of priestly medicine in Egypt, see Baas, pp. 16, 22. For the fame of Egyptian medicine at Rome, see Sharpe, History of Egypt, vol. ii, pp. 151, 184. For Assyria, see especially George Smith in Delitzsch's German translation, p. 34, and F. Delitzsch's appendix, p. 27. On the cheapness and commonness of miracles of healing in antiquity, see Sharpe, quoting St. Jerome, vol. ii, pp. 276, 277. As to the influence of Chaldean ideas of magic and disease on neighbouring nations, see Maspero and Sayce, as above, pp. 782, 783. As to the freedom of ancient Greece from the idea of demoniacal intervention in disease, see Lecky, History of European Morals, vol. i, p. 404 and note. But, on the other hand, see reference in Homer to diseases caused by a “demon.” For the evolution of medicine before and after Hippocrates, see Sprengel. For a good summing up of the work of Hippocrates, see Baas, p. 201. For the necessary passage of medicine in its early stages under priestly control, see Cabanis, The Revolution of Medical Science, London, 1806, chap. ii. On Jewish ideas regarding demons, and their relation to sickness, see Toy, Judaism and Christianity, Boston, 1891, pp. 168 et seq. For avoidance of dissections of human subjects even by Galen and his disciples, see Maurice Albert, Les Médecins Grecs à Rome, Paris, 1894, chap. xi. For Herophilus, Erasistratus, and the School of Alexandria, see Sprengel, vol. i, pp. 433, 434 et seq.
St. John of Jerusalem; and thenceforward every means of bringing the spirit of Jesus to help afflicted humanity. So, too, through all those ages we have a succession of men and women devoting themselves to works of mercy, culminating during modern times in saints like Vincent de Paul, Francke, Howard, Elizabeth Fry, Florence Nightingale, and Muhlenberg.

But while this vast influence, poured forth from the heart of the Founder of Christianity, streamed through century after century, inspiring every development of mercy, there came from those who organized the Church which bears his name, and from those who afterward developed and directed it, another stream of influence—a theology drawn partly from prehistoric conceptions of unseen powers, partly from ideas developed in the earliest historic nations, but especially from the letter of the Hebrew and Christian sacred books.

The theology developed out of our sacred literature in relation to the cure of disease was mainly twofold: first, there was a new and strong evolution of the old idea that physical disease is produced by the wrath of God or the malice of Satan, or by a combination of both, which theology was especially called in to explain; secondly, there were evolved theories of miraculous methods of cure, based upon modes of appeasing the Divine anger, or of thwarting Satanic malice.

Along both these streams of influence, one arising in the life of Jesus, and the other in the reasonings of theologians, legends of miracles grew luxuriantly. It would be utterly unphilosophical to attribute these as a whole to conscious fraud. Whatever part priestcraft may have taken afterward in sundry discreditable developments of them, the mass of miraculous legends, century after century, grew up mainly in good faith, and as naturally as elms along water-courses or flowers upon the prairie.
II. GROWTH OF LEGENDS OF HEALING.—THE LIFE OF XAVIER AS A TYPICAL EXAMPLE.

Legends of miracles have thus grown about the lives of all great benefactors of humanity in early ages, and about saints and devotees. Throughout human history the lives of such personages, almost without exception, have been accompanied or followed by a literature in which legends of miraculous powers form a very important part—a part constantly increasing until a different mode of looking at nature and of weighing testimony causes miracles to disappear. While modern thought holds the testimony to the vast mass of such legends in all ages as worthless, it is very widely acknowledged that great and gifted beings who endow the earth with higher religious ideas, gaining the deepest hold upon the hearts and minds of multitudes, may at times exercise such influence upon those about them that the sick in mind or body are helped or healed.

We have within the modern period very many examples which enable us to study the evolution of legendary miracles. Out of these I will select but one, which is chosen because it is the life of one of the most noble and devoted men in the history of humanity, one whose biography is before the world with its most minute details—in his own letters, in the letters of his associates, in contemporary histories, and in a multitude of biographies: this man is St. Francis Xavier. From these sources I draw the facts now to be given, but none of them are of Protestant origin; every source from which I shall draw is Catholic and Roman, and published under the sanction of the Church.

Born a Spanish noble, Xavier at an early age cast aside all ordinary aims, devoted himself to study, was rapidly advanced to a professorship at Paris, and in this position was rapidly winning a commanding influence, when he came under the sway of another Spaniard even greater, though less brilliantly endowed, than himself—Ignatius Loyola, founder of the Society of Jesus. The result was that the young professor sacrificed the brilliant career on which he had entered at the French capital, went to the far East as a simple
missionary, and there devoted his remaining years to re-
deeing the lowest and most wretched of our race.

Among the various tribes, first in lower India and after-
ward in Japan, he wrought untiringly—toiling through vil-
lage after village, collecting the natives by the sound of a
hand-bell, trying to teach them the simplest Christian formu-
las; and thus he brought myriads of them to a nominal con-
fession of the Christian faith. After twelve years of such
efforts, seeking new conquests for religion, he sacrificed his
life on the desert island of San Chan.

During his career as a missionary he wrote great num-
bers of letters, which were preserved and have since been
published; and these, with the letters of his contemporaries,
exhibit clearly all the features of his life. His own writings
are very minute, and enable us to follow him fully. No ac-
count of a miracle wrought by him appears either in his own
letters or in any contemporary document.* At the outside,
but two or three things occurred in his whole life, as exhib-
itied so fully by himself and his contemporaries, for which
the most earnest devotee could claim anything like Divine
interposition; and these are such as may be read in the
letters of very many fervent missionaries, Protestant as
well as Catholic. For example, in the beginning of his
career, during a journey in Europe with an ambassador, one
of the servants in fording a stream got into deep water and
was in danger of drowning. Xavier tells us that the ambas-
sador prayed very earnestly, and that the man finally strug-
gled out of the stream. But within sixty years after his
death, at his canonization, and by various biographers, this
had been magnified into a miracle, and appears in the va-
rious histories dressed out in glowing colours. Xavier tells
us that the ambassador prayed for the safety of the young
man; but his biographers tell us that it was Xavier who
prayed, and finally, by the later writers, Xavier is repre-

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* This statement was denied with much explosive emphasis by a writer in the
Catholic World for September and October, 1891, but he brought no fact to sup-
port this denial. I may perhaps be allowed to remind the reverend writer that
since the days of Pascal, whose eminence in the Church he will hardly dispute,
the bare assertion even of a Jesuit father against established facts needs some sup-
port other than mere scurrility.
sented as lifting horse and rider out of the stream by a clearly supernatural act.

Still another claim to miracle is based upon his arriving at Lisbon and finding his great colleague, Simon Rodriguez, ill of fever. Xavier informs us in a very simple way that Rodriguez was so overjoyed to see him that the fever did not return. This is entirely similar to the cure which Martin Luther wrought upon Melanchthon. Melanchthon had broken down and was supposed to be dying, when his joy at the long-delayed visit of Luther brought him to his feet again, after which he lived for many years.

Again, it is related that Xavier, finding a poor native woman very ill, baptized her, saying over her the prayers of the Church, and she recovered.

Two or three occurrences like these form the whole basis for the miraculous account, so far as Xavier's own writings are concerned.

Of miracles in the ordinary sense of the word there is in these letters of his no mention. Though he writes of his doings with especial detail, taking evident pains to note everything which he thought a sign of Divine encouragement, he says nothing of his performing miracles, and evidently knows nothing of them. This is clearly not due to his unwillingness to make known any token of Divine favour. As we have seen, he is very prompt to report anything which may be considered an answer to prayer or an evidence of the power of religious means to improve the bodily or spiritual health of those to whom he was sent.

Nor do the letters of his associates show knowledge of any miracles wrought by him. His brother missionaries, who were in constant and loyal fellowship with him, make no allusions to them in their communications with each other or with their brethren in Europe.

Of this fact we have many striking evidences. Various collections of letters from the Jesuit missionaries in India and the East generally, during the years of Xavier's activity, were published, and in not one of these letters written during Xavier's lifetime appears any account of a miracle wrought by him. As typical of these collections we may take perhaps the most noted of all, that which was pub-
lished about twenty years after Xavier's death by a Jesuit father, Emanuel Acosta.

The letters given in it were written by Xavier and his associates not only from Goa, which was the focus of all missionary effort and the centre of all knowledge regarding their work in the East, but from all other important points in the great field. The first of them were written during the saint's lifetime, but, though filled with every sort of detail regarding missionary life and work, they say nothing regarding any miracles by Xavier.

The same is true of various other similar collections published during the sixteenth and seventeenth centuries. In not one of them does any mention of a miracle by Xavier appear in a letter from India or the East contemporary with him.

This silence regarding his miracles was clearly not due to any "evil heart of unbelief." On the contrary, these good missionary fathers were prompt to record the slightest occurrence which they thought evidence of the Divine favour: it is indeed touching to see how eagerly they grasp at the most trivial things which could be thus construed.

Their ample faith was fully shown. One of them, in Acosta's collection, sends a report that an illuminated cross had been recently seen in the heavens; another, that devils had been cast out of the natives by the use of holy water; another, that various cases of disease had been helped and even healed by baptism; and sundry others sent reports that the blind and dumb had been restored, and that even lepers had been cleansed by the proper use of the rites of the Church; but to Xavier no miracles are imputed by his associates during his life or during several years after his death.

On the contrary, we find his own statements as to his personal limitations, and the difficulties arising from them, fully confirmed by his brother workers. It is interesting, for example, in view of the claim afterward made that the saint was divinely endowed for his mission with the "gift of tongues," to note in these letters confirmation of Xavier's own statement utterly disproving the existence of any such Divine gift, and detailing the difficulties which he encountered from his want of knowing various languages, and the
hard labour which he underwent in learning the elements of the Japanese tongue.

Until about ten years after Xavier’s death, then, as Emanuel Acosta’s publication shows, the letters of the missionaries continued without any indication of miracles performed by the saint. Though, as we shall see presently, abundant legends had already begun to grow elsewhere, not one word regarding these miracles came as yet from the country which, according to later accounts accepted and sanctioned by the Church, was at this very period filled with miracles; not the slightest indication of them from the men who were supposed to be in the very thick of these miraculous manifestations.

But this negative evidence is by no means all. There is also positive evidence—direct testimony from the Jesuit order itself—that Xavier wrought no miracles.

For not only did neither Xavier nor his co-workers know anything of the mighty works afterward attributed to him, but the highest contemporary authority on the whole subject, a man in the closest correspondence with those who knew most about the saint, a member of the Society of Jesus in the highest standing and one of its accepted historians, not only expressly tells us that Xavier wrought no miracles, but gives the reasons why he wrought none.

This man was Joseph Acosta, a provincial of the Jesuit order, its visitor in Aragon, superior at Valladolid, and finally rector of the University of Salamanca. In 1571, nineteen years after Xavier’s death, Acosta devoted himself to writing a work mainly concerning the conversion of the Indies, and in this he refers especially and with the greatest reverence to Xavier, holding him up as an ideal and his work as an example.

But on the same page with this tribute to the great missionary Acosta goes on to discuss the reasons why progress in the world’s conversion is not so rapid as in the early apostolic times, and says that an especial cause why apostolic preaching could no longer produce apostolic results “lies in the missionaries themselves, because there is now no power of working miracles.”

He then asks, “Why should our age be so completely
destitute of them?" This question he answers at great length, and one of his main contentions is that in early apostolic times illiterate men had to convert the learned of the world, whereas in modern times the case is reversed, learned men being sent to convert the illiterate; and hence that "in the early times miracles were necessary, but in our time they are not."

This statement and argument refer, as we have seen, directly to Xavier by name, and to the period covered by his activity and that of the other great missionaries of his time. That the Jesuit order and the Church at large thought this work of Acosta trustworthy is proved by the fact that it was published at Salamanca a few years after it was written, and republished afterward with ecclesiastical sanction in France.*

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* The work of Joseph Acosta is in the Cornell University Library, its title being as follows: *De Natura Novi Orbis libri duo et De Promulgatione Evangelii apud Barbaros, sive De Procuranda Indorum Salute, libri sex, autore Josepho Acosta, presbytero Societatis Jesu. I. H. S. Salmanticae, apud Guillemum Foquet, MDLXXXIX.* For the passages cited directly contradicting the working of miracles by Xavier and his associates, see lib. ii, cap. ix, of which the title runs, *Cur Miracula in Conversione gentium non fiant nunc, ut olim, a Christi pradicatoribus,* especially pp. 242–245; also lib. ii, cap. viii, pp. 237 et seq. For a passage which shows that Xavier was not then at all credited with "the miraculous gift of tongues," see lib. i, cap. vii, p. 173. Since writing the above, my attention has been called to the alleged miraculous preservation of Xavier's body claimed in sundry letters contemporary with its disinterment at San Chan and reinterment at Goa. There is no reason why this preservation need in itself be doubted, and no reason why it should be counted miraculous. Such exceptional preservation of bodies has been common enough in all ages, and, alas for the claims of the Church, quite as common of pagans or Protestants as of good Catholics. One of the most famous cases is that of the fair Roman maiden, Julia, daughter of Claudius, over whose exhumation at Rome, in 1485, such ado was made by the sceptical scholars of the Renaissance. Contemporary observers tell us enthusiastically that she was very beautiful, perfectly preserved, "the bloom of youth still upon her cheeks," and exhaling a "sweet odour"; but this enthusiasm was so little to the taste of Pope Innocent VIII that he had her reburied secretly by night. Only the other day, in June of the year 1895, there was unearthed at Stade, in Hanover, the "perfectly preserved" body of a soldier of the eighth century. So, too, I might mention the bodies preserved at the church of St. Thomas at Strasburg, beneath the Cathedral of Bremen, and elsewhere during hundreds of years past; also the cases of "adipoceration" in various American cemeteries, which never grow less wonderful by repetition from mouth to mouth and in the public prints. But, while such preservation is not incredible nor even strange, there is much reason why precisely in the case of a saint like St. Francis Xavier the evidence for it should be
received with especial caution. What the touching fidelity of disciples may lead them to believe and proclaim regarding an adored leader in a time when faith is thought more meritorious than careful statement, and miracle more probable than the natural course of things, is seen, for example, in similar pious accounts regarding the bodies of many other saints, especially that of St. Carlo Borromeo, so justly venerated by the Church for his beautiful and charitable life. And yet any one looking at the relics of various saints, especially those of St. Carlo, preserved with such tender care in the crypt of Milan Cathedral, will see that they have shared the common fate, being either mumified or reduced to skeletons; and this is true in all cases, so far as my observation has extended. What even a great theologian can be induced to believe and testify in a somewhat similar matter, is seen in St. Augustine’s declaration that the flesh of the peacock, which in antiquity and in the early Church was considered a bird somewhat supernaturally endowed, is incorruptible. The saint declares that he tested it and found it so (see the De Civitate Dei, xxi, c. 4, under the passage beginning Quis enim Deus). With this we may compare the testimony of the pious author of Sir John Mandeville’s Travels, that iron floats upon the Dead Sea while feathers sink in it, and that he would not have believed this had he not seen it. So, too, testimony to the “sweet odour “ diffused by the exhumed remains of the saint seems to indicate feeling rather than fact—the highly wrought feeling of disciples standing by—the same feeling which led those who visited St. Simon Styliites on his heap of ordure, and other hermits unwashed and living in filth, to dwell upon the delicious “odour of sanctity” pervading the air. In point, perhaps, is Louis Veuillot’s idealization of the “parfum de Rome,” in face of the fact, to which the present writer and thousands of others can testify, that under papal rule Rome was materially one of the most filthy cities in Christendom. For the case of Julia, see the contemporary letter printed by Janitschek, Gesellschaft der Renaissance in Italien, p. 120, note 167; also Infessura, Diarium Rom. Orbis, in Muratori, tom. iii, pt. 2, col. 1192, 1193, and elsewhere; also Symonds, Renaissance in Italy: Age of the Despots, p. 22. For the case at Stade, see press dispatch from Berlin in newspapers of June 24, 25, 1895. The copy of Emanuel Acosta I have mainly used is that in the Royal Library at Munich, De Japonicis rebus epistolarii libri iii, item recogniti; et in Latinum ex Hispanicom sermonem conversi, Dilinge, MDLXXI. I have since obtained and used the work now in the library of Cornell University, being the letters and commentary published by Emanuel Acosta and attached to Maffei’s book on the History of the Indies, published at Antwerp in 1685. For the first beginnings of miracles wrought by Xavier, as given in the letters of the missionaries, see that of Almeida, lib. ii, p. 183. Of other collections, or selections from collections, of letters which fail to give any indication of miracles wrought by Xavier during his life, see Wytfliet and Magin, Histoire Universelle des Indes Occidentales et Orientales, et de la Conversion des Indiens, Douay, 1612. Though several letters of Xavier and his fellow-missionaries are given, dated at the very period of his alleged miracles, not a trace of miracles appears in these. Also Epistola Japonica de multorum in variis Insulis Gentilium ad Christi fædem Conversione, Lovani, 1570. These letters were written by Xavier and his companions from the East Indies and Japan, and cover the years from 1549 to 1564. Though these refer frequently to Xavier, there is no mention of a miracle wrought by him in any of them written during his lifetime.
tuectual atmosphere of any land and time, and how inde-
pendent it is of fact.

For, shortly after Xavier's heroic and beautiful death in
1552, stories of miracles wrought by him began to appear.
At first they were few and feeble; and two years later Mel-
chior Nunez, Provincial of the Jesuits in the Portuguese
dominions, with all the means at his command, and a corre-
spondence extending throughout Eastern Asia, had been
able to hear of but three. These were entirely from hear-
say. First, John Deyro said he knew that Xavier had the
gift of prophecy; but, unfortunately, Xavier himself had re-
primanded and cast off Deyro for untruthfulness and chea-tery.
Secondly, it was reported vaguely that at Cape Comorin
many persons affirmed that Xavier had raised a man from
the dead. Thirdly, Father Pablo de Santa Fé had heard
that in Japan Xavier had restored sight to a blind man.
This seems a feeble beginning, but little by little the stories
grew, and in 1555 De Quadros, Provincial of the Jesuits in
Ethiopia, had heard of nine miracles, and asserted that Xa-
vier had healed the sick and cast out devils. The next year,
being four years after Xavier's death, King John III of
Portugal, a very devout man, directed his viceroy Barreto
to draw up and transmit to him an authentic account of
Xavier's miracles, urging him especially to do the work
"with zeal and speedily." We can well imagine what treas-
ures of grace an obsequious viceroy, only too anxious to
please a devout king, could bring together by means of the
hearsay of ignorant, compliant natives through all the little
towns of Portuguese India.

But the letters of the missionaries who had been co-work-
ers or immediate successors of Xavier in his Eastern field
were still silent as regards any miracles by him, and they
remained silent for nearly ten years. In the collection of
letters published by Emanuel Acosta and others no hint at
any miracles by him is given, until at last, in 1562, fully ten
years after Xavier's death, the first faint beginnings of these
legends appear in them.

At that time the Jesuit Almeida, writing at great length
to the brethren, stated that he had found a pious woman who
believed that a book left behind by Xavier had healed sick
folk when it was laid upon them, and that he had met an old man who preserved a whip left by the saint which, when properly applied to the sick, had been found good both for their bodies and their souls. From these and other small beginnings grew, always luxuriant and sometimes beautiful, the vast mass of legends which we shall see hereafter.

This growth was affectionately garnered by the more zealous and less critical brethren in Europe until it had become enormous; but it appears to have been thought of little value by those best able to judge.

For when, in 1562, Julius Gabriel Eugubinus delivered a solemn oration on the condition and glory of the Church, before the papal legates and other fathers assembled at the Council of Trent, while he alluded to a multitude of things showing the Divine favour, there was not the remotest allusion to the vast multitude of miracles which, according to the legends, had been so profusely lavished on the faithful during many years, and which, if they had actually occurred, formed an argument of prodigious value in behalf of the special claims of the Church.

The same complete absence of knowledge of any such favours vouchsafed to the Church, or at least of any belief in them, appears in that great Council of Trent among the fathers themselves. Certainly there, if anywhere, one might on the Roman theory expect Divine illumination in a matter of this kind. The presence of the Holy Spirit in the midst of it was especially claimed, and yet its members, with all their spiritual as well as material advantages for knowing what had been going on in the Church during the previous thirty years, and with Xavier's own friend and colleague, Laynez, present to inform them, show not the slightest sign of any suspicion of Xavier's miracles. We have the letters of Julius Gabriel to the foremost of these fathers assembled at Trent, from 1557 onward for a considerable time, and we have also a multitude of letters written from the Council by bishops, cardinals, and even by the Pope himself, discussing all sorts of Church affairs, and in not one of these is there evidence of the remotest suspicion that any of these reports, which they must have heard, regarding Xavier's miracles, were worthy of mention.
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Here, too, comes additional supplementary testimony of much significance. With these orations and letters, Eugubinus gives a Latin translation of a letter, "on religious affairs in the Indies," written by a Jesuit father twenty years after Xavier's death. Though the letter came from a field very distant from that in which Xavier laboured, it was sure, among the general tokens of Divine favour to the Church and to the order, on which it dwelt, to have alluded to miracles wrought by Xavier had there been the slightest ground for believing in them; but no such allusion appears.*

So, too, when in 1588, thirty-six years after Xavier's death, the Jesuit father Maffei, who had been especially conversant with Xavier's career in the East, published his History of India, though he gave a biography of Xavier which shows fervent admiration for his subject, he dwelt very lightly on the alleged miracles. But the evolution of miraculous legends still went on. Six years later, in 1594, Father Tursellinus published his Life of Xavier, and in this appears to have made the first large use of the information collected by the Portuguese viceroy and the more zealous brethren. This work shows a vast increase in the number of miracles over those given by all sources together up to that time. Xavier is represented as not only curing the sick, but casting out devils, stilling the tempest, raising the dead, and performing miracles of every sort.

In 1622 came the canonization proceedings at Rome. Among the speeches made in the presence of Pope Gregory XV, supporting the claims of Xavier to sainthood, the most important was by Cardinal Monte. In this the orator selects out ten great miracles from those performed by Xavier during his lifetime and describes them minutely. He insists that on a certain occasion Xavier, by the sign of the cross, made sea-water fresh, so that his fellow-passengers and the crew could drink it; that he healed the sick and raised the dead in various places; brought back a lost boat to his ship; was on one occasion lifted from the earth bodily and trans-

* For the work referred to, see Julii Gabrieli Eugubini orationum et epistololarum, etc., libri duo [cf] Epistola de rebus Indicis d'quodam Societatis Jesu presbytero, etc., Venetiis, 1569. The Epistola begins at fol. 44.
figured before the bystanders; and that, to punish a blaspheming town, he caused an earthquake and buried the offenders in cinders from a volcano: this was afterward still more highly developed, and the saint was represented in engravings as calling down fire from heaven and thus destroying the town.

The most curious miracle of all is the eighth on the cardinal’s list. Regarding this he states that, Xavier having during one of his voyages lost overboard a crucifix, it was restored to him after he had reached the shore by a crab.

The cardinal also dwelt on miracles performed by Xavier’s relics after his death, the most original being that sundry lamps placed before the image of the saint and filled with holy water burned as if filled with oil.

This latter account appears to have deeply impressed the Pope, for in the Bull of Canonization issued by virtue of his power of teaching the universal Church infallibly in all matters pertaining to faith and morals, His Holiness dwells especially upon the miracle of the lamp filled with holy water and burning before Xavier’s image.

Xavier having been made a saint, many other Lives of him appeared, and, as a rule, each surpassed its predecessor in the multitude of miracles. In 1622 appeared that compiled and published under the sanction of Father Vitelleschi, and in it not only are new miracles increased, but some old ones are greatly improved. One example will suffice to show the process. In his edition of 1596, Tursellinus had told how, Xavier one day needing money, and having asked Vellio, one of his friends, to let him have some, Vellio gave him the key of a safe containing thirty thousand gold pieces. Xavier took three hundred and returned the key to Vellio; whereupon Vellio, finding only three hundred pieces gone, reproached Xavier for not taking more, saying that he had expected to give him half of all that the strong box contained. Xavier, touched by this generosity, told Vellio that the time of his death should be made known to him, that he might have opportunity to repent of his sins and prepare for eternity. But twenty-six years later the Life of Xavier published under the sanction of Vitelleschi, giving the story, says that Vellio on opening the safe found that all
his money remained as he had left it, and that *none at all* had disappeared; in fact, that there had been a miraculous restitution. On his blaming Xavier for not taking the money, Xavier declares to Vellio that not only shall he be apprised of the moment of his death, but that the box shall always be full of money. Still later biographers improved the account further, declaring that Xavier promised Vellio that the strong box should *always* contain money sufficient for all his needs. In that warm and uncritical atmosphere this and other legends grew rapidly, obedient to much the same laws which govern the evolution of fairy tales.*

In 1682, one hundred and thirty years after Xavier's death, appeared his biography by Father Bouhours; and this became a classic. In it the old miracles of all kinds were enormously multiplied, and many new ones given. Miracles few and small in Tursellinus became many and great in Bouhours. In Tursellinus, Xavier during his life saves one person from drowning, in Bouhours he saves during his life three; in Tursellinus, Xavier during his life raises four persons from the dead, in Bouhours fourteen; in Tursellinus there is one miraculous supply of water, in Bouhours three; in Tursellinus there is no miraculous draught of fishes, in Bouhours there is one; in Tursellinus, Xavier is transfigured twice, in Bouhours five times: and so through a long series of miracles which, in the earlier lives appearing either not at all or in very moderate form, are greatly increased and enlarged by Tursellinus, and finally enormously amplified and multiplied by Father Bouhours.

* The writer in the Catholic World, already mentioned, rather rashly asserts that there is no such *Life of Xavier* as that I have above quoted. The reverend Jesuit father has evidently glanced over the bibliographies of Carayon and De Backer, and, not finding it there under the name of Vitelleschi, has spared himself further trouble. It is sufficient to say that the book may be seen by him in the library of Cornell University. Its full title is as follows: *Compendio della Vita del S. P. Francesco Xaviero della Compagna di Gesù, Canonizzato con S. Ignazio Fondatore dell' istessa Religione dalla Santità di N. S. Gregorio XV.* Composto, e dato in luce per ordine del Reverendiss. P. Mutio Vitelleschi Preposito Generale della Comp. di Gesù. In Venetia, MDCCXII, Appresso Antonio Pinelli, Con Licenza de' Superiori. My critic hazards a guess that the book may be a later edition of Torsellino (Tursellinus), but here again he is wrong. It is entirely a different book, giving in its preface a list of sources comprising eleven authorities besides Torsellino.
And here it must be borne in mind that Bouhours, writing ninety years after Tursellinus, could not have had access to any new sources. Xavier had been dead one hundred and thirty years, and of course all the natives upon whom he had wrought his miracles, and their children and grandchildren, were gone. It can not then be claimed that Bouhours had the advantage of any new witnesses, nor could he have had anything new in the way of contemporary writings; for, as we have seen, the missionaries of Xavier's time wrote nothing regarding his miracles, and certainly the ignorant natives of India and Japan did not commit any account of his miracles to writing. Nevertheless, the miracles of healing given in Bouhours were more numerous and brilliant than ever. But there was far more than this. Although during the lifetime of Xavier there is neither in his own writings nor in any contemporary account any assertion of a resurrection from the dead wrought by him, we find that shortly after his death stories of such resurrections began to appear. A simple statement of the growth of these may throw some light on the evolution of miraculous accounts generally. At first it was affirmed that some people at Cape Comorin said that he had raised one person; then it was said that there were two persons; then in various authors—Emanuel Acosta, in his commentaries written as an afterthought nearly twenty years after Xavier's death, De Quadros, and others—the story wavers between one and two cases; finally, in the time of Tursellinus, four cases had been developed. In 1622, at the canonization proceedings, three were mentioned; but by the time of Father Bouhours there were fourteen—all raised from the dead by Xavier himself during his lifetime—and the name, place, and circumstances are given with much detail in each case.*

* The writer in the Catholic World, already referred to, has based an attack here upon a misconception—I will not call it a deliberate misrepresentation—of his own by stating that these resurrections occurred after Xavier's death, and were due to his intercession or the use of his relics. This statement of the Jesuit father is utterly without foundation, as a simple reference to Bouhours will show. I take the liberty of commending to his attention The Life of St. Francis Xavier, by Father Dominic Bouhours, translated by James Dryden, Dublin, 1838. For examples of raising the dead by the saint during his lifetime, see pp. 69, 82, 93, 111, 218, 307, 316, 321—fourteen cases in all.
It seems to have been felt as somewhat strange at first that Xavier had never alluded to any of these wonderful miracles; but ere long a subsidiary legend was developed, to the effect that one of the brethren asked him one day if he had raised the dead, whereat he blushed deeply and cried out against the idea, saying: "And so I am said to have raised the dead! What a misleading man I am! Some men brought a youth to me just as if he were dead, who, when I commanded him to arise in the name of Christ, straightway arose."

Noteworthy is the evolution of other miracles. Tursellinus, writing in 1594, tells us that on the voyage from Goa to Malacca, Xavier having left the ship and gone upon an island, was afterward found by the persons sent in search of him so deeply absorbed in prayer as to be unmindful of all things about him. But in the next century Father Bouhours develops the story as follows: "The servants found the man of God raised from the ground into the air, his eyes fixed upon heaven, and rays of light about his countenance."

Instructive, also, is a comparison between the successive accounts of his noted miracle among the Badages at Travancore, in 1544. Xavier in his letters makes no reference to anything extraordinary; and Emanuel Acosta, in 1571, declares simply that "Xavier threw himself into the midst of the Christians, that reverencing him they might spare the rest." The inevitable evolution of the miraculous goes on; and twenty years later Tursellinus tells us that, at the onslaught of the Badages, "they could not endure the majesty of his countenance and the splendour and rays which issued from his eyes, and out of reverence for him they spared the others." The process of incubation still goes on during ninety years more, and then comes Father Bouhours's account. Having given Xavier's prayer on the battlefield, Bouhours goes on to say that the saint, crucifix in hand, rushed at the head of the people toward the plain where the enemy was marching, and "said to them in a threatening voice, 'I forbid you in the name of the living God to advance farther, and on His part command you to return in the way you came.' These few words cast a terror into the minds of those soldiers who were at the head of the army; they re-
mained confounded and without motion. They who marched afterward, seeing that the foremost did not advance, asked the reason of it. The answer was returned from the front ranks that they had before their eyes an unknown person habited in black, of more than human stature, of terrible aspect, and darting fire from his eyes. . . . They were seized with amazement at the sight, and all of them fled in precipitate confusion."

Curious, too, is the after-growth of the miracle of the crab restoring the crucifix. In its first form Xavier lost the crucifix in the sea, and the earlier biographers dwell on the sorrow which he showed in consequence; but the later historians declare that the saint threw the crucifix into the sea in order to still a tempest, and that, after his safe getting to land, a crab brought it to him on the shore. In this form we find it among illustrations of books of devotion in the next century.

But perhaps the best illustration of this evolution of Xavier's miracles is to be found in the growth of another legend; and it is especially instructive because it grew luxuriantly despite the fact that it was utterly contradicted in all parts of Xavier's writings as well as in the letters of his associates and in the work of the Jesuit father, Joseph Acosta.

Throughout his letters, from first to last, Xavier constantly dwells upon his difficulties with the various languages of the different tribes among whom he went. He tells us how he surmounted these difficulties: sometimes by learning just enough of a language to translate into it some of the main Church formulas; sometimes by getting the help of others to patch together some pious teachings to be learned by rote; sometimes by employing interpreters; and sometimes by a mixture of various dialects, and even by signs. On one occasion he tells us that a very serious difficulty arose, and that his voyage to China was delayed because, among other things, the interpreter he had engaged had failed to meet him.

In various Lives which appeared between the time of his death and his canonization this difficulty is much dwelt upon; but during the canonization proceedings at Rome, in
FROM MIRACLES TO MEDICINE.

the speeches then made, and finally in the papal bull, great stress was laid upon the fact that Xavier possessed *the gift of tongues*. It was declared that he spoke to the various tribes with ease in their own languages. This legend of Xavier’s miraculous gift of tongues was especially mentioned in the papal bull, and was solemnly given forth by the pontiff as an infallible statement to be believed by the universal Church. Gregory XV having been prevented by death from issuing the *Bull of Canonization*, it was finally issued by Urban VIII; and there is much food for reflection in the fact that the same Pope who punished Galileo, and was determined that the Inquisition should not allow the world to believe that the earth revolves about the sun, thus solemnly ordered the world, under pain of damnation, to believe in Xavier’s miracles, including his “gift of tongues,” and the return of the crucifix by the pious crab. But the legend was developed still further: Father Bouhours tells us, “The holy man spoke very well the language of those barbarians without having learned it, and had no need of an interpreter when he instructed.” And, finally, in our own time, the Rev. Father Coleridge, speaking of the saint among the natives, says, “He could speak the language excellently, though he had never learned it.”

In the early biography, Tursellinus writes: “Nothing was a greater impediment to him than his ignorance of the Japanese tongues; for, ever and anon, when some uncouth expression offended their fastidious and delicate ears, the awkward speech of Francis was a cause of laughter.” But Father Bouhours, a century later, writing of Xavier at the same period, says, “He preached in the afternoon to the Japanese in their language, but so naturally and with so much ease that he could not be taken for a foreigner.”

And finally, in 1872, Father Coleridge, of the Society of Jesus, speaking of Xavier at this time, says, “He spoke freely, flowingly, elegantly, as if he had lived in Japan all his life.”

Nor was even this sufficient: to make the legend complete, it was finally declared that, when Xavier addressed the natives of various tribes, each heard the sermon in his own language in which he was born.
GROWTH OF LEGENDS OF HEALING.

All this, as we have seen, directly contradicts not only the plain statements of Xavier himself, and various incidental testimonies in the letters of his associates, but the explicit declaration of Father Joseph Acosta. The latter historian dwells especially on the labour which Xavier was obliged to bestow on the study of the Japanese and other languages, and says, “Even if he had been endowed with the apostolic gift of tongues, he could not have spread more widely the glory of Christ.”

It is hardly necessary to attribute to the orators and biographers generally a conscious attempt to deceive. The simple fact is, that as a rule they thought, spoke, and wrote in obedience to the natural laws which govern the luxuriant growth of myth and legend in the warm atmosphere of love and devotion which constantly arises about great religious leaders in times when men have little or no knowledge of natural law, when there is little care for scientific evidence, and when he who believes most is thought most meritorious.

* For the evolution of the miracles of Xavier, see his Letters, with Life, published by Léon Pagès, Paris, 1855; also Maffei, Historiarum Indicarum libri xvi, Venice, 1589; also the lives by Tursellinus, various editions, beginning with that of 1594; Vitelleschi, 1622; Bouhours, 1682; Massei, second edition, 1682 (Rome), and others; Bartoli, Baltimore, 1866; Coleridge, 1872. In addition to these, I have compared, for a more extended discussion of this subject hereafter, a very great number of editions of these and other biographies of the saint, with speeches at the canonization, the bull of Gregory XV, various books of devotion, and a multitude of special writings, some of them in manuscript, upon the glories of the saint, including a large mass of material in the Royal Library at Munich and in the British Museum. I have relied entirely upon Catholic authors, and have not thought it worth while to consult any Protestant author. The illustration of the miracle of the crucifix and crab in its final form is given in La Dévotion de Dix Vendredis à l'Honneur de St. François Xavier, Bruxelles, 1699, Fig. 24: the pious crab is represented as presenting the crucifix which by a journey of forty leagues he has brought from the depths of the ocean to Xavier, who walks upon the shore. The book is in the Cornell University Library. For the letter of King John to Barreto, see Léon Pagès’s Lettres de St. François Xavier, Paris, 1855, vol. ii, p. 465. For the miracle among the Badages, compare Tursellinus, lib. ii, c. x, p. 16, with Bouhours, Dryden’s translation, pp. 146, 147. For the miracle of the gift of tongues, in its higher development, see Bouhours, p. 235, and Coleridge, vol. i, pp. 172 and 208; and as to Xavier’s own account, see Coleridge, vol. i, pp. 151, 154, and vol. ii, p. 551.

† Instances can be given of the same evolution of miraculous legend in our own time. To say nothing of the sacred fountain at La Salette, which preserves its
These examples will serve to illustrate the process which in thousands of cases has gone on from the earliest days of healing powers in spite of the fact that the miracle which gave rise to them has twice been pronounced fraudulent by the French courts, and to pass without notice a multitude of others, not only in Catholic but in Protestant countries, the present writer may allude to one which in the year 1893 came under his own observation. On arriving in St. Petersburg to begin an official residence there, his attention was arrested by various portraits of a priest of the Russo-Greek Church; they were displayed in shop windows and held an honoured place in many private dwellings. These portraits ranged from lifelike photographs, which showed a plain, shrewd, kindly face, to those which were idealized until they bore a strong resemblance to the conventional representations of Jesus of Nazareth. On making inquiries, the writer found that these portraits represented Father Ivan, of Cronstadt, a priest noted for his good deeds, and very widely believed to be endowed with the power of working miracles.

One day, in one of the most brilliant reception rooms of the northern capital, the subject of Father Ivan's miracles having been introduced, a gentleman in very high social position and entirely trustworthy spoke as follows: "There is something very surprising about these miracles. I am slow to believe in them, but I know the following to be a fact: The late Metropolitan Archbishop of St. Petersburg loved quiet, and was very averse to anything which could possibly cause scandal. Hearing of Father Ivan's miracles, he summoned him to his presence and solemnly commanded him to abstain from all the things which had given rise to his reported miracles, and with this injunction dismissed him. Hardly had the priest left the room when the archbishop was struck with blindness and remained in this condition until the priest returned and removed his blindness by intercessory prayers." When the present writer asked the person giving this account if he directly knew these facts, he replied that he was, of course, not present when the miracle was wrought, but that he had the facts immediately from persons who knew all the parties concerned and were cognizant directly of the circumstances of the case.

Some time afterward, the present writer being at an afternoon reception at one of the greater embassies, the same subject was touched upon, when an eminent general spoke as follows: "I am not inclined to believe in miracles, in fact am rather sceptical, but the proofs of those wrought by Father Ivan are overwhelming." He then went on to say that the late Metropolitan Archbishop was a man who loved quiet and disliked scandal; that on this account he had summoned Father Ivan to his palace and ordered him to put an end to the conduct which had caused the reports concerning his miraculous powers, and then, with a wave of the arm, had dismissed him. The priest left the room, and from that moment the archbishop's arm was paralyzed, and it remained so until the penitent prelate summoned the priest again, by whose prayers the arm was restored to its former usefulness. There was present at the time another person besides the writer who had heard the previous statement as to the blindness of the archbishop, and on their both questioning the general if he were sure that the archbishop's arm was paralyzed, as stated, he declared that he could not doubt it, as he had it directly from persons entirely trustworthy, who were cognizant of all the facts.

Some time later, the present writer, having an interview with the most eminent lay authority in the Greek Church, a functionary whose duties had brought him into
the Church until a very recent period. Everywhere
miraculous cures became the rule rather than the exception
throughout Christendom.

III. THE MEDIÆVAL MIRACLES OF HEALING CHECK MEDICAL SCIENCE.

So it was that, throughout antiquity, during the early
history of the Church, throughout the Middle Ages, and in-
deed down to a comparatively recent period, testimony to
miraculous interpositions which would now be laughed at
by a schoolboy was accepted by the leaders of thought.
St. Augustine was certainly one of the strongest minds in
the early Church, and yet we find him mentioning, with
much seriousness, a story that sundry innkeepers of his time
put a drug into cheese which metamorphosed travellers into
domestic animals, and asserting that the peacock is so fa-
voured by the Almighty that its flesh will not decay, and that
he has tested it and knows this to be a fact. With such a
disposition regarding the wildest stories, it is not surprising
that the assertion of St. Gregory of Nazianzen, during the
second century, as to the cures wrought by the martyrs
Cosmo and Damian, was echoed from all parts of Europe
until every hamlet had its miracle-working saint or relic.

The literature of these miracles is simply endless. To
take our own ancestors alone, no one can read the Ecclesiast-
tical History of Bede, or Abbot Samson's Miracles of St. Ed-
mund, or the accounts given by Eadmer and Osbern of the
miracles of St. Dunstan, or the long lists of those wrought
by Thomas à Becket, or by any other in the army of Eng-

almost daily contact with the late archbishop, asked him which of these stories was
correct. This gentleman answered immediately: "Neither; I saw the archbishop
constantly, and no such event occurred: he was never paralyzed and never blind."

The same gentleman then went on to say that, in his belief, Father Ivan had
shown remarkable powers in healing the sick, and the greatest charity in relieving
the distressed. It was made clearly evident that Father Ivan is a saintlike man,
devoted to the needy and distressed and exercising an enormous influence over
them—an influence so great that crowds await him whenever he visits the capital.
In the atmosphere of Russian devotion myths and legends grow luxuriantly about
him, nor is belief in him confined to the peasant class. In the autumn of 1894 he
was summoned to the bedside of the Emperor Alexander III. Unfortunately for
the peace of Europe, his intercession at that time proved unavailing.
lish saints, without seeing the perfect naturalness of this growth. This evolution of miracle in all parts of Europe came out of a vast preceding series of beliefs, extending not merely through the early Church but far back into paganism. Just as formerly patients were cured in the temples of Æsculapius, so they were cured in the Middle Ages, and so they are cured now at the shrines of saints. Just as the ancient miracles were solemnly attested by votive tablets, giving names, dates, and details, and these tablets hung before the images of the gods, so the mediaeval miracles were attested by similar tablets hung before the images of the saints; and so they are attested to-day by similar tablets hung before the images of Our Lady of La Salette or of Lourdes. Just as faith in such miracles persisted, in spite of the small percentage of cures at those ancient places of healing, so faith persists to-day, despite the fact that in at least ninety per cent of the cases at Lourdes prayers prove unavailing. As a rule, the miracles of the sacred books were taken as models, and each of those given by the sacred chroniclers was repeated during the early ages of the Church and through the mediæval period with endless variations of circumstance, but still with curious fidelity to the original type.

It should be especially kept in mind that, while the vast majority of these were doubtless due to the myth-making faculty and to that development of legends which always goes on in ages ignorant of the relation between physical causes and effects, some of the miracles of healing had undoubtedly some basis in fact. We in modern times have seen too many cures performed through influences exercised upon the imagination, such as those of the Jansenists at the Cemetery of St. Médard, of the Ultramontanes at La Salette and Lourdes, of the Russian Father Ivan at St. Petersburg, and of various Protestant sects at Old Orchard and elsewhere, as well as at sundry camp meetings, to doubt that some cures, more or less permanent, were wrought by sainted personages in the early Church and throughout the Middle Ages.*

* For the story of travellers converted into domestic animals, see St. Augustine, De Civ. Dei, liber xviii, chaps. xvii, xviii, in Migne, tom. xli, p. 574. For Gregory
THE MEDIEVAL MIRACLES OF HEALING.

There are undoubtedly serious lesions which yield to profound emotion and vigorous exertion born of persuasion, confidence, or excitement. The wonderful power of the mind over the body is known to every observant student. Mr. Herbert Spencer dwells upon the fact that intense feeling or passion may bring out great muscular force. Dr. Berdoe reminds us that "a gouty man who has long hobbled about on his crutch, finds his legs and power to run with them if pursued by a wild bull"; and that "the feeblest invalid, under the influence of delirium or other strong excitement, will astonish her nurse by the sudden accession of strength."*

But miraculous cures were not ascribed to persons merely. Another growth, developed by the early Church mainly from germs in our sacred books, took shape in miracles wrought by streams, by pools of water, and especially by relics. Here, too, the old types persisted, and just as we

of Nazianzen and the similarity of these Christian cures in general character to those wrought in the temples of Æsculapius, see Sprengel, vol. ii, pp. 145, 146. For the miracles wrought at the shrine of St. Edmund, see Samsonis Abbatis Opus de Miraculis Sancti Ædmundi, in the Master of the Rolls' series, passim, but especially chaps. xiv and xix for miracles of healing wrought on those who drank out of the saint's cup. For the mighty works of St. Dunstan, see the Mirac. Sancti Dunstani, auctore Eadmero and auctore Osberno, in the Master of the Rolls' series. As to Becket, see the Materials for the History of Thomas Becket, in the same series, and especially the lists of miracles—the mere index of them in the first volume requires thirteen octavo pages. For St. Martin of Tours, see the Guizot collection of French Chronicles. For miracle and shrine cures chronicled by Bede, see his Ecclesiastical History, passim, but especially from page 110 to page 267. For similarity between the ancient custom of allowing invalids to sleep in the temples of Serapis and the medieval custom of having them sleep in the church of St. Antony of Padua and other churches, see Meyer, Aberglaube des Mittelalters, Basel, 1884, chap. iv. For the effect of "the vivid belief in supernatural action which attaches itself to the tombs of the saints," etc., as "a psychic agent of great value," see Littré, Médecine et Médecins, p. 131. For the Jansenist miracles at Paris, see La Vérité des Miracles opérés par l'Intercession de M. de Paris, par Montgérion, Utrecht, 1737, and especially the cases of Mary Anne Couronneau, Philippe Sergent, and Gautier de Pezenas. For some very thoughtful remarks as to the worthlessness of the testimony to miracles presented during the canonization proceedings at Rome, see Maury, Légendes Pieuses, pp. 4-7.

* For the citation in the text, as well as for a brief but remarkably valuable discussion of the power of the mind over the body in disease, see Dr. Berdoe's Medical View of the Miracles at Lourdes, in The Nineteenth Century for October, 1895.
find holy and healing wells, pools, and streams in all other ancient religions, so we find in the evolution of our own such examples as Naaman the Syrian cured of leprosy by bathing in the river Jordan, the blind man restored to sight by washing in the pool of Siloam, and the healing of those who touched the bones of Elisha, the shadow of St. Peter, or the handkerchief of St. Paul.

St. Cyril, St. Ambrose, St. Augustine, and other great fathers of the early Church, sanctioned the belief that similar efficacy was to be found in the relics of the saints of their time; hence, St. Ambrose declared that “the precepts of medicine are contrary to celestial science, watching, and prayer,” and we find this statement reiterated from time to time throughout the Middle Ages. From this idea was evolved that fetishism which we shall see for ages standing in the way of medical science.

Theology, developed in accordance with this idea, threw about all cures, even those which resulted from scientific effort, an atmosphere of supernaturalism. The vividness with which the accounts of miracles in the sacred books were realized in the early Church continued the idea of miraculous intervention throughout the Middle Ages. The testimony of the great fathers of the Church to the continuance of miracles is overwhelming; but everything shows that they so fully expected miracles on the slightest occasion as to require nothing which in these days would be regarded as adequate evidence.

In this atmosphere of theologic thought medical science was at once checked. The School of Alexandria, under the influence first of Jews and later of Christians, both permeated with Oriental ideas, and taking into their theory of medicine demons and miracles, soon enveloped everything in mysticism. In the Byzantine Empire of the East the same cause produced the same effect; the evolution of ascertained truth in medicine, begun by Hippocrates and continued by Herophilus, seemed lost forever. Medical science, trying to advance, was like a ship becalmed in the Sargasso Sea: both the atmosphere about it and the medium through which it must move resisted all progress. Instead of reliance upon observation, experience, experi-
ment, and thought, attention was turned toward supernatural agencies.*

IV. THE ATTRIBUTION OF DISEASE TO SATANIC INFLUENCE.
—"PASTORAL MEDICINE" CHECKS SCIENTIFIC EFFORT.

Especially prejudicial to a true development of medical science among the first Christians was their attribution of disease to diabolic influence. As we have seen, this idea had come from far, and, having prevailed in Chaldea, Egypt, and Persia, had naturally entered into the sacred books of the Hebrews. Moreover, St. Paul had distinctly declared that the gods of the heathen were devils; and everywhere the early Christians saw in disease the malignant work of these dethroned powers of evil. The Gnostic and Manichæan struggles had ripened the theologic idea that, although at times diseases are punishments by the Almighty, the main agency in them is Satanic. The great fathers and renowned leaders of the early Church accepted and strengthened this idea. Origen said: "It is demons which produce famine, unfruitfulness, corruptions of the air, pestilences; they hover concealed in clouds in the lower atmosphere, and are attracted by the blood and incense which the heathen offer to them as gods." St. Augustine said: "All diseases of Christians are to be ascribed to these demons; chiefly do they torment fresh-baptized Christians, yea, even the guiltless, newborn infants." Tertullian insisted that a malevolent angel is in constant attendance upon every person. Gregory of Nazianzus declared that bodily pains are provoked by demons, and that medicines are useless, but that they are often cured by the laying on of consecrated hands. St. Nilus and St. Gregory of Tours, echoing St. Ambrose, gave examples to show the sinfulness of resorting to medicine instead of trusting to the intercession of saints.

St. Bernard, in a letter to certain monks, warned them

* For the mysticism which gradually enveloped the School of Alexandria, see Barthélemy Saint-Hilaire, *De l'École d'Alexandrie*, Paris, 1845, vol. vi, p. 161. For the effect of the new doctrines on the Empire of the East, see Sprengel, vol. ii, p. 240. As to the more common miracles of healing and the acknowledgment of non-Christian miracles of healing by Christian fathers, see Fort, p. 84.
that to seek relief from disease in medicine was in harmony neither with their religion nor with the honour and purity of their order. This view even found its way into the canon law, which declared the precepts of medicine contrary to Divine knowledge. As a rule, the leaders of the Church discouraged the theory that diseases are due to natural causes, and most of them deprecated a resort to surgeons and physicians rather than to supernatural means.*

Out of these and similar considerations was developed the vast system of "pastoral medicine," so powerful not only through the Middle Ages, but even in modern times, both among Catholics and Protestants. As to its results, we must bear in mind that, while there is no need to attribute the mass of stories regarding miraculous cures to conscious fraud, there was without doubt, at a later period, no small admixture of belief biased by self-interest, with much pious invention and suppression of facts. Enormous revenues flowed into various monasteries and churches in all parts of Europe from relics noted for their healing powers. Every cathedral, every great abbey, and nearly every parish church claimed possession of healing relics. While, undoubtedly, a childlike faith was at the bottom of this belief, there came out of it unquestionably a great development of the mercantile spirit. The commercial value of sundry relics was often very high. In the year 1056 a French ruler pledged securities to the amount of ten thousand solidi for the production of the relics of St. Just and St. Pastor, pending a

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* For Chaldean, Egyptian, and Persian ideas as to the diabolic origin of disease, see authorities already cited, especially Maspero and Sayce. For Origen, see the Contra Celsum, lib. viii, chap. xxxi. For Augustine, see De Divinatone Demonum, chap. iii (p. 585 of Migne, vol. xli). For Tertullian and Gregory of Nazianzus, set citations in Sprengel and in Fort, p. 6. For St. Nilus, see his life, in the Bollandise Acta Sanctorum. For Gregory of Tours, see his Historia Francorum, lib. v, cap. 6, and his De Mirac. S. Martini, lib. ii, cap. 60. I owe these citations to Mr. Lea (History of the Inquisition of the Middle Ages, vol. iii, p. 410, note). For the letter of St. Bernard to the monks of St. Anastasius, see his Epistola in Migne, tom. 182, pp. 550, 551. For the canon law, see under De Consecratione, dist. v, c. xxi, "Contraria sunt divinæ cognitioni præcepta medicinae: a jejunio revocant, lucubrare non sinunt, ab omni intentione meditationis abducunt." For the turning of the Greek mythology into a demonology as largely due to St. Paul, see I Corinthians x, 20: "The things which the Gentiles sacrifice, they sacrifice to devils, and not to God."
legal decision regarding the ownership between him and the Archbishop of Narbonne. The Emperor of Germany on one occasion demanded, as a sufficient pledge for the establishment of a city market, the arm of St. George. The body of St. Sebastian brought enormous wealth to the Abbey of Soissons; Rome, Canterbury, Treves, Marburg, every great city, drew large revenues from similar sources, and the Venetian Republic ventured very considerable sums in the purchase of relics.

Naturally, then, corporations, whether lay or ecclesiastical, which drew large revenue from relics looked with little favour on a science which tended to discredit their investments.

Nowhere, perhaps, in Europe can the philosophy of this development of fetichism be better studied to-day than at Cologne. At the cathedral, preserved in a magnificent shrine since about the twelfth century, are the skulls of the Three Kings, or Wise Men of the East, who, guided by the star of Bethlehem, brought gifts to the Saviour. These relics were an enormous source of wealth to the cathedral chapter during many centuries. But other ecclesiastical bodies in that city were both pious and shrewd, and so we find that not far off, at the church of St. Gereon, a cemetery has been dug up, and the bones distributed over the walls as the relics of St. Gereon and his Theban band of martyrs! Again, at the neighbouring church of St. Ursula, we have the later spoils of another cemetery, covering the interior walls of the church as the bones of St. Ursula and her eleven thousand virgin martyrs: the fact that many of them, as anatomists now declare, are the bones of men does not appear in the Middle Ages to have diminished their power of competing with the relics at the other shrines in healing efficiency.

No error in the choice of these healing means seems to have diminished their efficacy. When Prof. Buckland, the eminent osteologist and geologist, discovered that the relics of St. Rosalia at Palermo, which had for ages cured diseases and warded off epidemics, were the bones of a goat, this fact caused not the slightest diminution in their miraculous power.

Other developments of fetich cure were no less discour-
aging to the evolution of medical science. Very important among these was the Agnus Dei, or piece of wax from the Paschal candles, stamped with the figure of a lamb and consecrated by the Pope. In 1471 Pope Paul II expatiated to the Church on the efficacy of this fetish in preserving men from fire, shipwreck, tempest, lightning, and hail, as well as in assisting women in childbirth; and he reserved to himself and his successors the manufacture of it. Even as late as 1517 Pope Leo X issued, for a consideration, tickets bearing a cross and the following inscription: "This cross measured forty times makes the height of Christ in his humanity. He who kisses it is preserved for seven days from falling-sickness, apoplexy, and sudden death."

Naturally, the belief thus sanctioned by successive heads of the Church, infallible in all teaching regarding faith and morals, created a demand for amulets and charms of all kinds; and under this influence we find a reversion to old pagan fetishes. Nothing, on the whole, stood more constantly in the way of any proper development of medical science than these fetish cures, whose efficacy was based on theological reasoning and sanctioned by ecclesiastical policy.

It would be expecting too much from human nature to imagine that pontiffs who derived large revenues from the sale of the Agnus Dei, or priests who derived both wealth and honours from cures wrought at shrines under their care, or lay dignitaries who had invested heavily in relics, should favour the development of any science which undermined their interests.*

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* See Fort’s Medical Economy during the Middle Ages, pp. 211–213; also the Handbooks of Murray and Baedeker for North Germany, and various histories of medicine passim; also Collin de Plancy and scores of others. For the discovery that the relics of St. Rosalia at Palermo are simply the bones of a goat, see Gordon, Life of Buckland, pp. 94–96. For an account of the Agnus Dei, see Rydberg, pp. 62, 63; and for “Conception Billets,” pp. 64 and 65. For Leo X’s tickets, see Häusser (professor at Heidelberg), Period of the Reformation, English translation, p. 17.
V. THEOLOGICAL OPPOSITION TO ANATOMICAL STUDIES.

Yet a more serious stumbling-block, hindering the beginnings of modern medicine and surgery, was a theory regarding the unlawfulness of meddling with the bodies of the dead. This theory, like so many others which the Church cherished as peculiarly its own, had really been inherited from the old pagan civilizations. So strong was it in Egypt that the embalmer was regarded as accursed; traces of it appear in Graeco-Roman life, and hence it came into the early Church, where it was greatly strengthened by the addition of perhaps the most noble of mystic ideas—the recognition of the human body as the temple of the Holy Spirit. Hence Tertullian denounced the anatomist Herophilus as a butcher, and St. Augustine spoke of anatomists generally in similar terms.

But this nobler conception was alloyed with a mediæval superstition even more effective, when the formula known as the Apostles' Creed had, in its teachings regarding the resurrection of the body, supplanted the doctrine laid down by St. Paul. Thence came a dread of mutilating the body in such a way that some injury might result to its final resurrection at the Last Day, and additional reasons for hindering dissections in the study of anatomy.

To these arguments against dissection was now added another—one which may well fill us with amazement. It is the remark of the foremost of recent English philosophical historians, that of all organizations in human history the Church of Rome has caused the greatest spilling of innocent blood. No one conversant with history, even though he admit all possible extenuating circumstances, and honour the older Church for the great services which can undoubtedly be claimed for her, can deny this statement. Strange is it, then, to note that one of the main objections developed in the Middle Ages against anatomical studies was the maxim that "the Church abhors the shedding of blood."

On this ground, in 1248, the Council of Le Mans forbade surgery to monks. Many other councils did the same, and at the end of the thirteenth century came the most serious
blow of all; for then it was that Pope Boniface VIII, without any of that foresight of consequences which might well have been expected in an infallible teacher, issued a decretal forbidding a practice which had come into use during the Crusades, namely, the separation of the flesh from the bones of the dead whose remains it was desired to carry back to their own country.

The idea lying at the bottom of this interdiction was in all probability that which had inspired Tertullian to make his bitter utterance against Herophilus; but, be that as it may, it soon came to be considered as extending to all dissection, and thereby surgery and medicine were crippled for more than two centuries; it was the worst blow they ever received, for it impressed upon the mind of the Church the belief that all dissection is sacrilege, and led to ecclesiastical mandates withdrawing from the healing art the most thoughtful and cultivated men of the Middle Ages and giving up surgery to the lowest class of nomadic charlatans.

So deeply was this idea rooted in the mind of the universal Church that for over a thousand years surgery was considered dishonourable: the greatest monarchs were often unable to secure an ordinary surgical operation; and it was only in 1406 that a better beginning was made, when the Emperor Wenzel of Germany ordered that dishonour should no longer attach to the surgical profession.*

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* As to religious scruples against dissection, and abhorrence of the *Paraschites*, or embalmer, see Maspero and Sayce, *The Dawn of Civilisation*, p. 216. For denunciation of surgery by the Church authorities, see Sprengel, vol. ii, pp. 432-435; also Fort, pp. 452 et seq.; and for the reasoning which led the Church to forbid surgery to priests, see especially Frédault, *Histoire de la Médecine*, p. 200. As to the decretal of Boniface VIII, the usual statement is that he forbade all dissections. While it was undoubtedly construed universally to prohibit dissections for anatomical purposes, its declared intent was as stated in the text; that it was constantly construed against anatomical investigations can not for a moment be denied. This construction is taken for granted in the great *Histoire Littéraire de la France*, founded by the Benedictines, certainly a very high authority as to the main current of opinion in the Church. For the decretal of Boniface VIII, see the *Corpus Juris Canonici*. I have used the edition of Paris, 1618, where it may be found on pp. 866, 867. See also, in spite of the special pleading of Giraldi, the Benedictine *Hist. Lit. de la France*, tome xvi, p. 98.
VI. NEW BEGINNINGS OF MEDICAL SCIENCE.

In spite of all these opposing forces, the evolution of medical science continued, though but slowly. In the second century of the Christian era Galen had made himself a great authority at Rome, and from Rome had swayed the medical science of the world: his genius triumphed over the defects of his method; but, though he gave a powerful impulse to medicine, his dogmatism stood in its way long afterward.

The places where medicine, such as it thus became, could be applied, were at first mainly the infirmaries of various monasteries, especially the larger ones of the Benedictine order: these were frequently developed into hospitals. Many monks devoted themselves to such medical studies as were permitted, and sundry churchmen and laymen did much to secure and preserve copies of ancient medical treatises. So, too, in the cathedral schools established by Charlemagne and others, provision was generally made for medical teaching; but all this instruction, whether in convents or schools, was wretchedly poor. It consisted not in developing by individual thought and experiment the gifts of Hippocrates, Aristotle, and Galen, but almost entirely in the parrot-like repetition of their writings.

But, while the inherited ideas of Church leaders were thus unfavourable to any proper development of medical science, there were two bodies of men outside the Church who, though largely fettered by superstition, were far less so than the monks and students of ecclesiastical schools: these were the Jews and Mohammedans. The first of these especially had inherited many useful sanitary and hygienic ideas, which had probably been first evolved by the Egyptians, and from them transmitted to the modern world mainly through the sacred books attributed to Moses.

The Jewish scholars became especially devoted to medical science. To them is largely due the building up of the School of Salerno, which we find flourishing in the tenth century. Judged by our present standards its work was poor indeed, but compared with other medical instruction of the time it was vastly superior: it developed hygienic
principles especially, and brought medicine upon a higher
plane.

Still more important is the rise of the School of Mont-
pellier; this was due almost entirely to Jewish physicians,
and it developed medical studies to a yet higher point, doing
much to create a medical profession worthy of the name
throughout southern Europe.

As to the Arabians, we find them from the tenth to the
fourteenth century, especially in Spain, giving much thought
to medicine, and to chemistry as subsidiary to it. About
the beginning of the ninth century, when the greater Chris-
tian writers were supporting fetich by theology, Almamon,
the Moslem, declared, "They are the elect of God, his best
and most useful servants, whose lives are devoted to the
improvement of their rational faculties." The influence of Avi-
cenna, the translator of the works of Aristotle, extended
throughout all Europe during the eleventh century. The
Arabians were indeed much fettered by tradition in medical
science, but their translations of Hippocrates and Galen pre-
served to the world the best thus far developed in medicine,
and still better were their contributions to pharmacy: these
remain of value to the present hour.*

Various Christian laymen also rose above the prevailing
theologic atmosphere far enough to see the importance of
promoting scientific development. First among these we
may name the Emperor Charlemagne; he and his great
minister, Alcuin, not only promoted medical studies in the
schools they founded, but also made provision for the estab-
ishment of botanic gardens in which those herbs were espe-
cially cultivated which were supposed to have healing
virtues. So, too, in the thirteenth century, the Emperor
Frederick II, though under the ban of the Pope, brought to-

* For the great services rendered to the development of medicine by the Jews,
see Monteil, Médecine en France, p. 58; also the historians of medicine generally.
For the quotation from Almamon, see Gibbon, vol. x, p. 42. For the services of
both Jews and Arabians, see Bédarride, Histoire des Juifs, p. 115; also Sismondi,
Histoire des Français, tome i, p. 191. For the Arabians, especially, see Rosseeuw
Saint-Hilaire, Histoire d'Espagne, Paris, 1844, vol. iii, pp. 191 et seq. For the tend-
cy of the Mosaic books to insist on hygienic rather than therapeutical treatment,
and its consequences among Jewish physicians, see Sprengel, but especially Fré-
gether in his various journeys, and especially in his crusad-
ing expeditions, many Greek and Arabic manuscripts, and
took special pains to have those which concerned medicine
preserved and studied; he also promoted better ideas of
medicine and embodied them in laws.

Men of science also rose, in the stricter sense of the word,
even in the centuries under the most complete sway of
theological thought and ecclesiastical power; a science, in-
deed, alloyed with theology, but still infolding precious
germs. Of these were men like Arnold of Villanova, Ber-
trand de Gordon, Albert of Bollstadt, Basil Valentine, Ray-
mond Lully, and, above all, Roger Bacon; all of whom culti-
vated sciences subsidiary to medicine, and in spite of charges
of sorcery, with possibilities of imprisonment and death, kept
the torch of knowledge burning, and passed it on to future
generations.*

From the Church itself, even when the theological atmos-
phere was most dense, rose here and there men who persisted
in something like scientific effort. As early as the ninth cen-
tury, Bertharius, a monk of Monte Cassino, prepared two
manuscript volumes of prescriptions selected from ancient
writers; other monks studied them somewhat, and, during
succeeding ages, scholars like Hugo, Abbot of St. Denis,—
Notker, monk of St. Gall,—Hildegard, Abbess of Rupert-
berg,—Milo, Archbishop of Beneventum,—and John of St.
Amand, Canon of Tournay, did something for medicine as
they understood it. Unfortunately, they generally under-
stood its theory as a mixture of deductions from Scripture
with dogmas from Galen, and its practice as a mixture of
incantations with fetiches. Even Pope Honorius III did
something for the establishment of medical schools; but he
did so much more to place ecclesiastical and theological
fetters upon teachers and taught, that the value of his gifts
may well be doubted. All germs of a higher evolution of

* For the progress of sciences subsidiary to medicine even in the darkest ages,
see Fort, pp. 374, 375; also Isensee, Geschichte der Medicin, pp. 225 et seq.; also
Monteil, p. 89; Heller, Geschichte der Physik, vol. i, bk. 3; also Kopp, Ge-
schichte der Chemie. For Frederick II and his Medicinal-Gesetz, see Baas, p. 221,
but especially Von Raumer, Geschichte der Hohenstaufen, Leipsic, 1872, vol. iii,
p. 259.
medicine were for ages well kept under by the theological spirit. As far back as the sixth century so great a man as Pope Gregory I showed himself hostile to the development of this science. In the beginning of the twelfth century the Council of Rheims interdicted the study of law and physic to monks, and a multitude of other councils enforced this decree. About the middle of the same century St. Bernard still complained that monks had too much to do with medicine; and a few years later we have decreets like those of Pope Alexander III forbidding monks to study or practise it. For many generations there appear evidences of a desire among the more broad-minded churchmen to allow the cultivation of medical science among ecclesiastics: Popes like Clement III and Sylvester II seem to have favoured this, and we even hear of an Archbishop of Canterbury skilled in medicine; but in the beginning of the thirteenth century the Fourth Council of the Lateran forbade surgical operations to be practised by priests, deacons, and subdeacons; and some years later Honorius III reiterated this decree and extended it. In 1243 the Dominican order forbade medical treatises to be brought into their monasteries, and finally all participation of ecclesiastics in the science and art of medicine was effectually prevented.*

VII. THEOLOGICAL DISCOURAGEMENT OF MEDICINE.

While various churchmen, building better than they knew, thus did something to lay foundations for medical study, the Church authorities, as a rule, did even more to thwart it among the very men who, had they been allowed liberty, would have cultivated it to the highest advantage.

* For statements as to these decrees of the highest Church and monastic authorities against medicine and surgery, see Sprengel, Baas, Geschichte der Medicin, p. 204, and elsewhere; also Buckle, Posthumous Works, vol. ii. p. 567. For a long list of Church dignitaries who practised a semi-theological medicine in the Middle Ages, see Baas, pp. 204, 205. For Bertharius, Hildegard, and others mentioned, see also Sprengel and other historians of medicine. For clandestine study and practice of medicine by sundry ecclesiastics in spite of the prohibitions by the Church, see Von Raumer, Hohenstaufen, vol. vi, p. 438. For some remarks on this subject by an eminent and learned ecclesiastic, see Ricker, O. S. B., professor in the University of Vienna, Pastoral-Psychiatrie, Wien, 1894, pp. 12, 13.
THEOLOGICAL DISCOURAGEMENT OF MEDICINE.

Then, too, we find cropping out everywhere the feeling that, since supernatural means are so abundant, there is something irreligious in seeking cure by natural means: ever and anon we have appeals to Scripture, and especially to the case of King Asa, who trusted to physicians rather than to the priests of Jahveh, and so died. Hence it was that St. Bernard declared that monks who took medicine were guilty of conduct unbecoming to religion. Even the School of Salerno was held in aversion by multitudes of strict churchmen, since it prescribed rules for diet, thereby indicating a belief that diseases arise from natural causes and not from the malice of the devil: moreover, in the medical schools Hippocrates was studied, and he had especially declared that demoniacal possession is "nowise more divine, nowise more infernal, than any other disease." Hence it was, doubtless, that the Lateran Council, about the beginning of the thirteenth century, forbad physicians, under pain of exclusion from the Church, to undertake medical treatment without calling in ecclesiastical advice.

This view was long cherished in the Church, and nearly two hundred and fifty years later Pope Pius V revived it by renewing the command of Pope Innocent and enforcing it with penalties. Not only did Pope Pius order that all physicians before administering treatment should call in "a physician of the soul," on the ground, as he declares, that "bodily infirmity frequently arises from sin," but he ordered that, if at the end of three days the patient had not made confession to a priest, the medical man should cease his treatment, under pain of being deprived of his right to practise, and of expulsion from the faculty if he were a professor, and that every physician and professor of medicine should make oath that he was strictly fulfilling these conditions.

Out of this feeling had grown up another practice, which made the development of medicine still more difficult—the classing of scientific men generally with sorcerers and magic-mongers: from this largely rose the charge of atheism against physicians, which ripened into a proverb, "Where there are three physicians there are two atheists."* 

* "Ubi sunt tres medici ibi sunt duo athei." For the bull of Pius V, see the Bullarium Romanum, ed. Gaude, Naples, 1882, tom. vii, pp. 430, 431.
Magic was so common a charge that many physicians seemed to believe it themselves. In the tenth century Gerbert, afterward known as Pope Sylvester II, was at once suspected of sorcery when he showed a disposition to adopt scientific methods; in the eleventh century this charge nearly cost the life of Constantine Africanus when he broke from the beaten path of medicine; in the thirteenth, it gave Roger Bacon, one of the greatest benefactors of mankind, many years of imprisonment, and nearly brought him to the stake: these cases are typical of very many.

Still another charge against physicians who showed a talent for investigation was that of Mohammedanism and Averroism; and Petrarch stigmatized Averroists as "men who deny Genesis and bark at Christ." *

The effect of this widespread ecclesiastical opposition was, that for many centuries the study of medicine was relegated mainly to the lowest order of practitioners. There was, indeed, one orthodox line of medical evolution during the later Middle Ages: St. Thomas Aquinas insisted that the forces of the body are independent of its physical organization, and that therefore these forces are to be studied by the scholastic philosophy and the theological method, instead of by researches into the structure of the body; as a result of this, mingled with survivals of various pagan superstitions, we have in anatomy and physiology such doctrines as the increase and decrease of the brain with the phases of the moon, the ebb and flow of human vitality with the tides of the ocean, the use of the lungs to fan the heart, the function of the liver as the seat of love, and that of the spleen as the centre of wit.

Closely connected with these methods of thought was the doctrine of signatures. It was reasoned that the Almighty must have set his sign upon the various means of curing disease which he has provided: hence it was held that blood-root, on account of its red juice, is good for the blood; liverwort, having a leaf like the liver, cures diseases of the liver; eyebright, being marked with a spot like an eye, cures dis-

* For Averroes, see Renan, Averroès et l'Averroïsme, Paris, 1861, pp. 327–335. For a perfectly just statement of the only circumstances which can justify a charge of atheism, see Rev. Dr. Deems, in Popular Science Monthly, February, 1876.
eases of the eyes; celandine, having a yellow juice, cures jaundice; bugloss, resembling a snake’s head, cures snake-bite; red flannel, looking like blood, cures blood-taints, and therefore rheumatism; bear’s grease, being taken from an animal thickly covered with hair, is recommended to persons fearing baldness.*

Still another method evolved by this theological pseudo-science was that of disgusting the demon with the body which he tormented: hence the patient was made to swallow or apply to himself various unspeakable ordures, with such medicines as the livers of toads, the blood of frogs and rats, fibres of the hangman’s rope, and ointment made from the body of gibbetted criminals. Many of these were survivals of heathen superstitions, but theologic reasoning wrought into them an orthodox significance. As an example of this mixture of heathen with Christian magic, we may cite the following from a mediaeval medical book as a salve against “nocturnal goblin visitors”: “Take hop plant, wormwood, bishopwort, lupine, ash-throat, henbane, harewort, viper’s bugloss, heathberry plant, cropleek, garlic, grains of hedgerife, githrice, and fennel. Put these worts into a vessel, set them under the altar, sing over them nine masses, boil them in butter and sheep’s grease, add much holy salt, strain through a cloth, throw the worts into running water. If any ill tempting occur to a man, or an elf or goblin night visitors come, smear his body with this salve, and put it on his eyes, and cense him with incense, and sign him frequently with the sign of the cross. His condition will soon be better.”†

* For a summary of the superstitions which arose under the theological doctrine of signatures, see Dr. Eccles’s admirable little tract on the Evolution of Medical Science, p. 140; see also Scoffern, Science and Folk Lore, p. 76.

† For a list of unmentionable ordures used in Germany near the end of the seventeenth century, see Lammert, Volksmedizin und medizinischer Aberglaube in Bayern, Würzburg, 1869, p. 34, note. For the English prescription given, see Cockayne, Leechdoms, Wortcunning, and Starcraft of Early England, in the Master of the Rolls’ series, London, 1865, vol. ii, pp. 345 and following. Still another of these prescriptions given by Cockayne covers three or four octavo pages. For very full details of this sort of sacred pseudo-science in Germany, with accounts of survivals of it at the present time, see Wuttke, Prof. der Theologie in Halle, Der Deutsche Volksaberglaube der Gegenwart, Berlin, 1869, passim. For France, see Rambaud, Histoire de la Civilisation française, pp. 371 et seq.
As to surgery, this same amalgamation of theology with survivals of pagan beliefs continued to check the evolution of medical science down to the modern epoch. The nominal hostility of the Church to the shedding of blood withdrew, as we have seen, from surgical practice the great body of her educated men; hence surgery remained down to the fifteenth century a despised profession, its practice continued largely in the hands of charlatans, and down to a very recent period the name "barber-surgeon" was a survival of this. In such surgery, the application of various ordures relieved fractures; the touch of the hangman cured sprains; the breath of a donkey expelled poison; friction with a dead man's tooth cured toothache.*

The enormous development of miracle and fetich cures in the Church continued during century after century, and here probably lay the main causes of hostility between the Church on the one hand and the better sort of physicians on the other; namely, in the fact that the Church supposed herself in possession of something far better than scientific methods in medicine. Under the sway of this belief a natural and laudable veneration for the relics of Christian martyrs was developed more and more into pure fetichism.

Thus the water in which a single hair of a saint had been dipped was used as a purgative; water in which St. Remy's ring had been dipped cured fevers; wine in which the bones of a saint had been dipped cured lunacy; oil from a lamp burning before the tomb of St. Gall cured tumours; St. Valentine cured epilepsy; St. Christopher, throat diseases; St. Eutropius, dropsy; St. Ovid, deafness; St. Gervase, rheumatism; St. Apollonia, toothache; St. Vitus, St. Anthony, and a multitude of other saints, the maladies which bear their names. Even as late as 1784 we find certain authorities in Bavaria ordering that any one bitten by a mad dog shall at once put up prayers at the shrine of St. Hubert, and not waste his time in any attempts at medical or surgical cure.†

In the twelfth century we find a noted cure attempted by

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* On the low estate of surgery during the Middle Ages, see the histories of medicine already cited, and especially Kotellmann, Gesundheitspflege im Mittelalter, Hamburg, 1890, pp. 216 et seq.
† See Baas, p. 614; also Biedermann.
causing the invalid to drink water in which St. Bernard had washed his hands. Flowers which had rested on the tomb of a saint, when steeped in water, were supposed to be especially efficacious in various diseases. The pulpit everywhere dwelt with unction on the reality of fetich cures, and among the choice stories collected by Archbishop Jacques de Vitry for the use of preachers was one which, judging from its frequent recurrence in monkish literature, must have sunk deep into the popular mind: "Two lazy beggars, one blind, the other lame, try to avoid the relics of St. Martin, borne about in procession, so that they may not be healed and lose their claim to alms. The blind man takes the lame man on his shoulders to guide him, but they are caught in the crowd and healed against their will."*

Very important also throughout the Middle Ages were the medical virtues attributed to saliva. The use of this remedy had early Oriental sanction. It is clearly found in Egypt. Pliny devotes a considerable part of one of his chapters to it; Galen approved it; Vespasian, when he visited Alexandria, is said to have cured a blind man by applying saliva to his eyes; but the great example impressed most forcibly upon the mediæval mind was the use of it ascribed in the fourth Gospel to Jesus himself: thence it came not only into Church ceremonial, but largely into medical practice.†

As the theological atmosphere thickened, nearly every country had its long list of saints, each with a special power over some one organ or disease. The clergy, having great influence over the medical schools, conscientiously mixed this fetich medicine with the beginnings of science. In the tenth century, even at the School of Salerno, we find that

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* For the efficacy of flowers, see the Bollandist Lives of the Saints, cited in Fort, p. 279; also pp. 457, 458. For the story of those unwillingly cured, see the Exempla of Jacques de Vitry, edited by Prof. T. F. Crane, of Cornell University, London, 1890, pp. 52, 182.

† As to the use of saliva in medicine, see Story, Castle of St. Angelo, and Other Essays, London, 1877, pp. 208 and elsewhere. For Pliny, Galen, and others, see the same, p. 211; see also the book of Tobit, chap. xi, 2-13. For the case of Vespasian, see Suetonius, Life of Vespasian; also Tacitus, Historia, lib. iv, c. 81. For its use by St. Francis Xavier, see Coleridge, Life and Letters of St. Francis Xavier, London, 1872.
the sick were cured not only by medicine, but by the relics of St. Matthew and others.

Human nature, too, asserted itself, then as now, by making various pious cures fashionable for a time and then allowing them to become unfashionable. Just as we see the relics of St. Cosmo and St. Damian in great vogue during the early Middle Ages, but out of fashion and without efficacy afterward, so we find in the thirteenth century that the bones of St. Louis, having come into fashion, wrought multitudes of cures, while in the fourteenth, having become unfashionable, they ceased to act, and gave place for a time to the relics of St. Roch of Montpellier and St. Catherine of Sienna, which in their turn wrought many cures until they too became out of date and yielded to other saints. Just so in modern times the healing miracles of La Salette have lost prestige in some measure, and those of Lourdes have come into fashion.*

Even such serious matters as fractures, calculi, and difficult parturition, in which modern science has achieved some of its greatest triumphs, were then dealt with by relics; and to this hour the *ex votos* hanging at such shrines as those of St. Geneviève at Paris, of St. Antony at Padua, of the Druid image at Chartres, of the Virgin at Einsiedeln and Lourdes, of the fountain at La Salette, are survivals of this same conception of disease and its cure.

So, too, with a multitude of sacred pools, streams, and spots of earth. In Ireland, hardly a parish has not had one such sacred centre; in England and Scotland there have been many; and as late as 1805 the eminent Dr. Milner, of the Roman Catholic Church, gave a careful and earnest account of a miraculous cure wrought at a sacred well in Flintshire. In all parts of Europe the pious resort to wells and springs continued long after the close of the Middle Ages, and has not entirely ceased to-day.

It is not at all necessary to suppose intentional deception

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* For one of these lists of saints curing diseases, see Pettigrew, *On Superstitions connected with Medicine*; for another, see Jacob, *Superstitions Populaires*, pp. 96–100; also Rydberg, p. 69; also Maury, Rambaud, and others. For a comparison of fashions in miracles with fashions in modern healing agents, see Littre, *Médecine et Médecins*, pp. 118, 136, and elsewhere; also Sprengel, vol. ii, p. 143.
in the origin and maintenance of all fetish cures. Although two different judicial investigations of the modern miracles at La Salette have shown their origin tainted with fraud, and though the recent restoration of the Cathedral of Trondheim has revealed the fact that the healing powers of the sacred spring which once brought such great revenues to that shrine were assisted by angelic voices spoken through a tube in the walls, not unlike the pious machinery discovered in the Temple of Isis at Pompeii, there is little doubt that the great majority of fountain and even shrine cures, such as they have been, have resulted from a natural law, and that belief in them was based on honest argument from Scripture. For the theological argument which thus stood in the way of science was simply this: if the Almighty saw fit to raise the dead man who touched the bones of Elisha, why should he not restore to life the patient who touches at Cologne the bones of the Wise Men of the East who followed the star of the Nativity? If Naaman was cured by dipping himself in the waters of the Jordan, and so many others by going down into the Pool of Siloam, why should not men still be cured by bathing in pools which men equally holy with Elisha have consecrated? If one sick man was restored by touching the garments of St. Paul, why should not another sick man be restored by touching the seamless coat of Christ at Treves, or the winding-sheet of Christ at Besançon? And out of all these inquiries came inevitably that question whose logical answer was especially injurious to the development of medical science: Why should men seek to build up scientific medicine and surgery, when relics, pilgrimages, and sacred observances, according to an overwhelming mass of concurrent testimony, have cured and are curing hosts of sick folk in all parts of Europe?*

* For sacred fountains in modern times, see Pettigrew, as above, p. 42; also Dalyell, Darker Superstitions of Scotland, pp. 82 and following; also Montalembert, Les Moines d’Occident, tome iii, p. 323, note. For those in Ireland, with many curious details, see S. C. Hall, Ireland, its Scenery and Character, London, 1841, vol. i, p. 282, and passim. For the case in Flintshire, see Authentic Documents relative to the Miraculous Cure of Winifred White, of the Town of Wolverhampton, at Holywell, Flintshire, on the 28th of June, 1805, by John Milner, D. D., Vicar Apostolic, etc., London, 1805. For sacred wells in France, see Chevart,
Still another development of the theological spirit, mixed with professional exclusiveness and mob prejudice, wrought untold injury. Even to those who had become so far emancipated from allegiance to fetich cures as to consult physicians, it was forbidden to consult those who, as a rule, were the best. From a very early period of European history the Jews had taken the lead in medicine; their share in founding the great schools of Salerno and Montpellier we have already noted, and in all parts of Europe we find them acknowledged leaders in the healing art. The Church authorities, enforcing the spirit of the time, were especially severe against these benefactors: that men who openly rejected the means of salvation, and whose souls were undeniably lost, should heal the elect seemed an insult to Providence; preaching friars denounced them from the pulpit, and the rulers in state and church, while frequently secretly consulting them, openly proscribed them.

Gregory of Tours tells us of an archdeacon who, having been partially cured of disease of the eyes by St. Martin, sought further aid from a Jewish physician, with the result that neither the saint nor the Jew could help him afterward. Popes Eugene IV, Nicholas V, and Calixtus III especially forbade Christians to employ them. The Trullan Council in the eighth century, the Councils of Béziers and Alby in the thirteenth, the Councils of Avignon and Salamanca in the fourteenth, the Synod of Bamberg and the Bishop of Passau in the fifteenth, the Council of Avignon in the sixteenth, with many others, expressly forbade the faithful to call Jewish physicians or surgeons; such great preachers as John Geiler and John Herolt thundered from the pulpit against them and all who consulted them. As late as the middle of the seventeenth century, when the City Council of Hall, in Würtemberg, gave some privileges to a Jewish physician.

_Histoire de Chartres_, vol. i, pp. 84-89, and French local histories generally. For superstitions attaching to springs in Germany, see Wuttke, _Volksaberglaube_, §§ 12 and 356. For one of the most exquisitely wrought works of modern fiction, showing perfectly the recent evolution of miraculous powers at a fashionable spring in France, see Gustave Droz, _Autour d'une Source_. The reference to the old pious machinery at Trondhjem is based upon personal observation by the present writer in August, 1893.
on account of his admirable experience and skill,” the clergy of the city joined in a protest, declaring that “it were better to die with Christ than to be cured by a Jew doctor aided by the devil.” Still, in their extremity, bishops, cardinals, kings, and even popes, insisted on calling in physicians of the hated race.*

VIII. FETICH CURES UNDER PROTESTANTISM.—THE ROYAL TOUCH.

The Reformation made no sudden change in the sacred theory of medicine. Luther, as is well known, again and again ascribed his own diseases to “devils’ spells,” declaring that “Satan produces all the maladies which afflict mankind, for he is the prince of death,” and that “he poisons the air”; but that “no malady comes from God.” From that day down to the faith cures of Boston, Old Orchard, and among the sect of “Peculiar People” in our own time, we see the results among Protestants of seeking the cause of disease in Satanic influence and its cure in fetichism.

* For the general subject of the influence of theological ideas upon medicine, see Fort, History of Medical Economy during the Middle Ages, New York, 1883, chaps. xiii and xviii; also Collin de Plancy, Dictionnaire des Reliques, passim; also Rambaud, Histoire de la Civilisation française, Paris, 1885, vol. i, chap. xviii; also Sprengel, vol. ii, p. 345, and elsewhere; also Baas and others. For proofs that the School of Salerno was not founded by the monks, Benedictine or other, but by laymen, who left out a faculty of theology from their organization, see Haeser, Lehrbuch der Geschichte der Medicin, vol. i, p. 646; also Baas. For a very striking statement that married professors, women, and Jews were admitted to professional chairs, see Baas, pp. 208 et seq.; also summary by Dr. Payne, article in the Encyc. Brit. Sprengel’s old theory that the school was founded by Benedictines seems now entirely given up; see Haeser and Baas on the subject; also Daremberg, La Médecine, p. 133. For the citation from Gregory of Tours, see his Hist. Francorum, lib. vi. For the eminence of Jewish physicians and proscription of them, see Beugnot, Les Juifs d’Occident, Paris, 1824, pp. 76-94; also Bédarride, Les Juifs en France, en Italie, et en Espagne, chaps. v, viii, x, and xiii; also Rénouard, Histoire de la Médecine, Paris, 1846, tome i, p. 439; also, especially, Lammert, Volksmedizin, etc., in Bayern, p. 6, note. For Church decrees against them, see the Acta Conciliorum, ed. Hardouin, vol. x, pp. 1634, 1700, 1870, 1973, etc. For denunciations of them by Geiler and others, see Kotelmann, Gesundheitspflege im Mittelalter, pp. 194, 195. For a list of kings and popes who persisted in having Jewish physicians and for other curious information of the sort, see Prof. Levi of Vercelli, Cristiani ed Ebrei nel Medio Evo, pp. 200-207; and for a very valuable summary, see Lecky, History of Rationalism in Europe, vol. ii, pp. 265-271.
Yet Luther, with his sturdy common sense, broke away from one belief which has interfered with the evolution of medicine from the dawn of Christianity until now. When that troublesome declaimer, Carlstadt, declared that "whoso falls sick shall use no physic, but commit his case to God, praying that His will be done," Luther asked, "Do you eat when you are hungry?" and the answer being in the affirmative, he continued, "Even so you may use physic, which is God's gift just as meat and drink is, or whatever else we use for the preservation of life." Hence it was, doubtless, that the Protestant cities of Germany were more ready than others to admit anatomical investigation by proper dissections.*

Perhaps the best-known development of a theological view in the Protestant Church was that mainly evolved in England out of a French germ of theological thought—a belief in the efficacy of the royal touch in sundry diseases, especially epilepsy and scrofula, the latter being consequently known as the king's evil. This mode of cure began, so far as history throws light upon it, with Edward the Confessor in the eleventh century, and came down from reign to reign, passing from the Catholic saint to Protestant debauchees upon the English throne, with ever-increasing miraculous efficacy.

Testimony to the reality of these cures is overwhelming. As a simple matter of fact, there are no miracles of healing in the history of the human race more thoroughly attested than those wrought by the touch of Henry VIII, Elizabeth, the Stuarts, and especially of that chosen vessel, Charles II. Though Elizabeth could not bring herself fully to believe in the reality of these cures, Dr. Tooker, the Queen's chaplain, afterward Dean of Lichfield, testifies fully of his own knowledge to the cures wrought by her, as also does William Clowes, the Queen's surgeon. Fuller, in his Church History, gives an account of a Roman Catholic who was thus cured.

* For Luther's belief and his answer to Carlstadt, see his Table Talk, especially in Hazlitt's edition, pp. 250-257; also his letters passim. For recent "faith cures," see Dr. Buckley's articles on Faith Healing and Kindred Phenomena, in The Century, 1886. For the greater readiness of the Protestant cities to facilitate dissections, see Roth, Andreas Vesalius, p. 33.
by the Queen's touch and converted to Protestantism. Similar testimony exists as to cures wrought by James I. Charles I also enjoyed the same power, in spite of the public declaration against its reality by Parliament. In one case the King saw a patient in the crowd, too far off to be touched, and simply said, "God bless thee and grant thee thy desire"; whereupon, it is asserted, the blotches and humours disappeared from the patient's body and appeared in the bottle of medicine which he held in his hand; at least so says Dr. John Nicholas, Warden of Winchester College, who declares this of his own knowledge to be every word of it true.

But the most incontrovertible evidence of this miraculous gift is found in the case of Charles II, the most thoroughly cynical debauchee who ever sat on the English throne before the advent of George IV. He touched nearly one hundred thousand persons, and the outlay for gold medals issued to the afflicted on these occasions rose in some years as high as ten thousand pounds. John Brown, surgeon in ordinary to his Majesty and to St. Thomas's Hospital, and author of many learned works on surgery and anatomy, published accounts of sixty cures due to the touch of this monarch; and Sergeant-Surgeon Wiseman devotes an entire book to proving the reality of these cures, saying, "I myself have been frequent witness to many hundreds of cures performed by his Majesty's touch alone without any assistance of chirurgery, and these many of them had tyred out the endeavours of able chirurgeons before they came thither." Yet it is especially instructive to note that, while in no other reign were so many people touched for scrofula, and in none were so many cures vouched for, in no other reign did so many people die of that disease: the bills of mortality show this clearly, and the reason doubtless is the general substitution of supernatural for scientific means of cure. This is but one out of many examples showing the havoc which a scientific test always makes among miracles if men allow it to be applied.

To James II the same power continued; and if it be said, in the words of Lord Bacon, that "imagination is next of kin to miracle—a working faith," something else seems required to account for the testimony of Dr. Heylin to cures wrought
by the royal touch upon babes in their mothers' arms. Myth-making and marvel-mongering were evidently at work here as in so many other places, and so great was the fame of these cures that we find, in the year before James was de-throned, a pauper at Portsmouth, New Hampshire, petitioning the General Assembly to enable him to make the voyage to England in order that he may be healed by the royal touch.

The change in the royal succession does not seem to have interfered with the miracle; for, though William III evidently regarded the whole thing as a superstition, and on one occasion is said to have touched a patient, saying to him, "God give you better health and more sense," Whiston assures us that this person was healed, notwithstanding William's incredulity.

As to Queen Anne, Dr. Daniel Turner, in his *Art of Surgery*, relates that several cases of scrofula which had been unsuccessfully treated by himself and Dr. Charles Bernard, sergeant-surgeon to her Majesty, yielded afterward to the efficacy of the Queen's touch. Naturally does Collier, in his *Ecclesiastical History*, say regarding these cases that to dispute them "is to come to the extreme of scepticism, to deny our senses and be incredulous even to ridiculousness." Testimony to the reality of these cures is indeed overwhelming, and a multitude of most sober scholars, divines, and doctors of medicine declared the evidence absolutely convincing. That the Church of England accepted the doctrine of the royal touch is witnessed by the special service provided in the *Prayer-Book* of that period for occasions when the King exercised this gift. The ceremony was conducted with great solemnity and pomp: during the reading of the service and the laying on of the King's hands, the attendant bishop or priest recited the words, "They shall lay their hands on the sick, and they shall recover"; afterward came special prayers, the Epistle and Gospel, with the blessing, and finally his Majesty washed his royal hands in golden vessels which high noblemen held for him.

In France, too, the royal touch continued, with similar testimony to its efficacy. On a certain Easter Sunday, that pious king, Louis XIV, touched about sixteen hundred persons at Versailles.
This curative power was, then, acknowledged far and wide, by Catholics and Protestants alike, upon the Continent, in Great Britain, and in America; and it descended not only in spite of the transition of the English kings from Catholicism to Protestantism, but in spite of the transition from the legitimate sovereignty of the Stuarts to the illegitimate succession of the House of Orange. And yet, within a few years after the whole world held this belief, it was dead; it had shrivelled away in the growing scientific light at the dawn of the eighteenth century.*

IX. THE SCIENTIFIC STRUGGLE FOR ANATOMY.

We may now take up the evolution of medical science out of the mediæval view and its modern survivals. All through the Middle Ages, as we have seen, some few laymen and ecclesiastics here and there, braving the edicts of the Church and popular superstition, persisted in medical study and practice: this was especially seen at the greater universities, which had become somewhat emancipated from ecclesiastical control. In the thirteenth century the University of Paris gave a strong impulse to the teaching of medicine, and in that and the following century we begin to find the first intelligible reports of medical cases since the coming in of Christianity.

In the thirteenth century also the arch-enemy of the papacy, the Emperor Frederick II, showed his free-thinking tendencies by granting, from time to time, permissions to dissect the human subject. In the centuries following, sundry other monarchs timidly followed his example: thus John of

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* For the royal touch, see Becket, Free and Impartial Inquiry into the Antiquity and Efficacy of Touching for the King's Evil, 1772, cited in Pettigrew, p. 128, and elsewhere; also Scoffern, Science and Folk Lore, London, 1870, pp. 413 and following; also Adams, The Healing Art, London, 1887, vol. i, pp. 53-60; and especially Lecky, History of European Morals, vol. i, chapter on The Conversion of Rome; also his History of England in the Eighteenth Century, vol. i, chap. i. For curious details regarding the mode of conducting the ceremony, see Evelyn's Diary; also Lecky, as above. For the royal touch in France, and for a claim to its possession in feudal times by certain noble families, see Rambaud, Hist. de la Civ. française, p. 375.
Aragon, in 1391, gave to the University of Lerida the privilege of dissecting one dead criminal every three years.*

During the fifteenth century and the earlier years of the sixteenth the revival of learning, the invention of printing, and the great voyages of discovery gave a new impulse to thought, and in this medical science shared: the old theological way of thinking was greatly questioned, and gave place in many quarters to a different way of looking at the universe.

In the sixteenth century Paracelsus appears—a great genius, doing much to develop medicine beyond the reach of sacred and scholastic tradition, though still fettered by many superstitions. More and more, in spite of theological dogmas, came a renewal of anatomical studies by dissection of the human subject. The practice of the old Alexandrian School was thus resumed. Mundinus, Professor of Medicine at Bologna early in the fourteenth century, dared use the human subject occasionally in his lectures; but finally came a far greater champion of scientific truth, Andreas Vesalius, founder of the modern science of anatomy. The battle waged by this man is one of the glories of our race.

From the outset Vesalius proved himself a master. In the search for real knowledge he risked the most terrible dangers, and especially the charge of sacrilege, founded upon the teachings of the Church for ages. As we have seen, even such men in the early Church as Tertullian and St. Augustine held anatomy in abhorrence, and the decretal of Pope Boniface VIII was universally construed as forbidding all dissection, and as threatening excommunication against those practising it. Through this sacred conventionalism Vesalius broke without fear; despite ecclesiastical censure, great opposition in his own profession, and popular fury, he studied his science by the only method that could give useful results. No peril daunted him. To secure material for his investigations, he haunted gibbets and charnel-houses, braving the fires of the Inquisition and the virus of the plague. First of all men he began to place the science of

* For the promotion of medical science and practice, especially in the thirteenth century, by the universities, see Baas, pp. 222–224.
human anatomy on its solid modern foundations—on careful examination and observation of the human body: this was his first great sin, and it was soon aggravated by one considered even greater.

Perhaps the most unfortunate thing that has ever been done for Christianity is the tying it to forms of science which are doomed and gradually sinking. Just as, in the time of Roger Bacon, excellent men devoted all their energies to binding Christianity to Aristotle; just as, in the time of Reuchlin and Erasmus, they insisted on binding Christianity to Thomas Aquinas; so, in the time of Vesalius, such men made every effort to link Christianity to Galen. The cry has been the same in all ages; it is the same which we hear in this age for curbing scientific studies: the cry for what is called "sound learning." Whether standing for Aristotle against Bacon, or for Aquinas against Erasmus, or for Galen against Vesalius, the cry is always for "sound learning": the idea always has been that the older studies are "safe."

At twenty-eight years of age Vesalius gave to the world his great work on human anatomy. With it ended the old and began the new; its researches, by their thoroughness, were a triumph of science; its illustrations, by their fidelity, were a triumph of art.

To shield himself, as far as possible, in the battle which he foresaw must come, Vesalius dedicated the work to the Emperor Charles V, and in his preface he argues for his method, and against the parrot repetitions of the mediæval text-books; he also condemns the wretched anatomical preparations and specimens made by physicians who utterly refused to advance beyond the ancient master. The parrot-like repeaters of Galen gave battle at once. After the manner of their time their first missiles were epithets; and, the vast arsenal of these having been exhausted, they began to use sharper weapons—weapons theologic.

In this case there were especial reasons why the theological authorities felt called upon to intervene. First, there was the old idea prevailing in the Church that the dissection of the human body is forbidden to Christians: this was used with great force against Vesalius, but he at first gained a temporary victory; for, a conference of divines having been
asked to decide whether dissection of the human body is sacrilege, gave a decision in the negative.

The reason was simple: the great Emperor Charles V had made Vesalius his physician and could not spare him; but, on the accession of Philip II to the throne of Spain and the Netherlands, the whole scene changed. Vesalius now complained that in Spain he could not obtain even a human skull for his anatomical investigations: the medical and theological reactionists had their way, and to all appearance they have, as a rule, had it in Spain ever since. As late as the last years of the eighteenth century an observant English traveller found that there were no dissections before medical classes in the Spanish universities, and that the doctrine of the circulation of the blood was still denied, more than a century and a half after Sarpi and Harvey had proved it.

Another theological idea barred the path of Vesalius. Throughout the Middle Ages it was believed that there exists in man a bone imponderable, incorruptible, incombustible—the necessary nucleus of the resurrection body. Belief in a resurrection of the physical body, despite St. Paul's Epistle to the Corinthians, had been incorporated into the formula evolved during the early Christian centuries and known as the Apostles' Creed, and was held throughout Christendom, "always, everywhere, and by all." This hypothetical bone was therefore held in great veneration, and many anatomists sought to discover it; but Vesalius, revealing so much else, did not find it. He contented himself with saying that he left the question regarding the existence of such a bone to the theologians. He could not lie; he did not wish to fight the Inquisition; and thus he fell under suspicion.

The strength of this theological point may be judged from the fact that no less eminent a surgeon than Riolan consulted the executioner to find out whether, when he burned a criminal, all the parts were consumed; and only then was the answer received which fatally undermined this superstition. Yet, in 1689 we find it still lingering in France, stimulating opposition in the Church to dissection. Even as late as the eighteenth century, Bernouilli having shown that the living human body constantly undergoes a series of changes, so that all its particles are renewed in a given num-
ber of years, so much ill feeling was drawn upon him, from theologians, who saw in this statement danger to the doctrine of the resurrection of the body, that for the sake of peace he struck out his argument on this subject from his collected works.*

Still other enroachments upon the theological view were made by the new school of anatomists, and especially by Vesalius. During the Middle Ages there had been developed various theological doctrines regarding the human body; these were based upon arguments showing what the body ought to be, and naturally, when anatomical science showed what it is, these doctrines fell. An example of such popular theological reasoning is seen in a widespread belief of the twelfth century, that, during the year in which the cross of Christ was captured by Saladin, children, instead of having thirty or thirty-two teeth as before, had twenty or twenty-two. So, too, in Vesalius’s time another doctrine of this sort was dominant: it had long been held that Eve, having been made by the Almighty from a rib taken out of Adam’s side, there must be one rib fewer on one side of every man than on the other. This creation of Eve was a

* For permissions to dissect the human subject, given here and there during the Middle Ages, see Roth’s Andreas Vesalius, Berlin, 1892, pp. 3, 13 et seq. For religious antipathies as a factor in the persecution of Vesalius, see the biographies by Boerhaave and Albinos, 1725; Burggraewe’s Études, 1841; also Haeser, Kingsley, and the latest and most thorough of all, Roth, as above. Even Goethals, despite the timidity natural to a city librarian in a town like Brussels, in which clerical power is strong and relentless, feels obliged to confess that there was a certain admixture of religious hatred in the treatment of Vesalius. See his Notice Biographique sur André Vesale. For the resurrection bone, see Roth, as above, pp. 154, 155, and notes. For Vesalius, see especially Portal, Hist. de l’Anatomie et de la Chirurgie, Paris, 1779, tome i, p. 407. For neglect of dissection and opposition to Harvey’s discovery in Spain, see Townsend’s Travels, edition of 1792, cited in Buckle, History of Civilization in England, vol. ii, pp. 74, 75. Also Henry Morley, in his Clément Marot, and Other Essays. For Bernouilli and his trouble with the theologians, see Wolf, Biographien sur Culturgeschichte der Schweiz, vol. ii, p. 95. How different Mundinus’s practice of dissection was from that of Vesalius may be seen by Cuvier’s careful statement that the entire number of dissections by the former was three; the usual statement is that there were but two. See Cuvier, Hist. des Sci. Nat., tome ii, p. 7; also Sprengel, Frédault, Hallam, and Littré; also Whewell, Hist. of the Inductive Sciences, vol. iii, p. 328; also, for a very full statement regarding the agency of Mundinus in the progress of anatomy, see Portal, vol. i, pp. 209–216.
favourite subject with sculptors and painters, from Giotto, who carved it upon his beautiful Campanile at Florence, to the illuminators of missals, and even to those who illustrated Bibles and religious books in the first years after the invention of printing; but Vesalius and the anatomists who followed him put an end among thoughtful men to this belief in the missing rib, and in doing this dealt a blow at much else in the sacred theory. Naturally, all these considerations brought the forces of ecclesiasticism against the innovators in anatomy.*

A new weapon was now forged: Vesalius was charged with dissecting a living man, and, either from direct persecution, as the great majority of authors assert, or from indirect influences, as the recent apologists for Philip II admit, he became a wanderer: on a pilgrimage to the Holy Land, apparently undertaken to atone for his sin, he was shipwrecked, and in the prime of his life and strength he was lost to the world.

And yet not lost. In this century a great painter has again given him to us. By the magic of Hamann's pencil Vesalius again stands on earth, and we look once more into his cell. Its windows and doors, bolted and barred within, betoken the storm of bigotry which rages without; the crucifix, toward which he turns his eyes, symbolizes the spirit in which he labours; the corpse of the plague-stricken beneath his hand ceases to be repulsive; his very soul seems to send forth rays from the canvas, which strengthen us for the good fight in this age.†

His death was hastened, if not caused, by men who conscientiously supposed that he was injuring religion: his poor, blind foes aided in destroying one of religion's greatest apostles. What was his influence on religion? He substi-

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* As to the supposed change in the number of teeth, see the *Gesta Philippi Augusti Francorum Regis, ... descripta a magistro Rigordo*, 1219, edited by Father François Duchesne, in *Historia Francorum Scriptores*, tom. v, Paris, 1649, p. 24. For representations of Adam created by the Almighty out of a pile of dust, and of Eve created from a rib of Adam, see the earlier illustrations in the *Nuremberg Chronicle*. As to the relation of anatomy to theology as regards Adam's rib, see Roth, pp. 154, 155.

† The original painting of Vesalius at work in his cell, by Hamann, is now at Cornell University.
tuted, for the repetition of worn-out theories, a conscientious and reverent search into the works of the great Power giving life to the universe; he substituted, for representations of the human structure pitiful and unreal, representations revealing truths most helpful to the whole human race.

The death of this champion seems to have virtually ended the contest. Licenses to dissect soon began to be given by sundry popes to universities, and were renewed at intervals of from three to four years, until the Reformation set in motion trains of thought which did much to release science from this yoke.*

X. THEOLOGICAL OPPOSITION TO INOCULATION, VACCINATION, AND THE USE OF ANÆSTHETICS.

I hasten now to one of the most singular struggles of medical science during modern times. Early in the last century Boyer presented inoculation as a preventive of smallpox in France, and thoughtful physicians in England, inspired by Lady Montagu and Maitland, followed his example. Ultra-conservatives in medicine took fright at once on both sides of the Channel, and theology was soon finding profound reasons against the new practice. The French theologians of the Sorbonne solemnly condemned it; the English theologians were most loudly represented by the Rev. Edward Massey, who in 1772 preached and published a sermon entitled The Dangerous and Sinful Practice of Inoculation. In this he declared that Job's distemper was probably confluent smallpox; that he had been inoculated doubtless by the devil; that diseases are sent by Providence for the punishment of sin; and that the proposed attempt to prevent them is "a diabolical operation." Not less vigorous was the sermon of the Rev. Mr. Delafaye, entitled Inoculation an Inde-

* For a curious example of weapons drawn from Galen and used against Vesalius, see Lewes, Life of Goethe, p. 343, note. For proofs that I have not overestimated Vesalius, see Portal, ubi supra. Portal speaks of him as "le génie le plus droit qu'ait l'Europe"; and again, "Vesale me parait un des plus grands hommes qui ait existé." For the charge that anatomists dissected living men—against men of science before Vesalius's time—see Littré's chapter on Anatomy. For the increased liberty given anatomy by the Reformation, see Roth's Vesalius, p. 33.
fensible Practice. This struggle went on for thirty years. It is a pleasure to note some churchmen—and among them Madox, Bishop of Worcester—giving battle on the side of right reason; but as late as 1753 we have a noted rector at Canterbury denouncing inoculation from his pulpit in the primatial city, and many of his brethren following his example. The same opposition was vigorous in Protestant Scotland. A large body of ministers joined in denouncing the new practice as “flying in the face of Providence,” and “endeavouring to baffle a Divine judgment.”

On our own side of the ocean, also, this question had to be fought out. About the year 1721 Dr. Zabdiel Boylston, a physician in Boston, made an experiment in inoculation, one of his first subjects being his own son. He at once encountered bitter hostility, so that the selectmen of the city forbade him to repeat the experiment. Foremost among his opponents was Dr. Douglas, a Scotch physician, supported by the medical profession and the newspapers. The violence of the opposing party knew no bounds; they insisted that inoculation was “poisoning,” and they urged the authorities to try Dr. Boylston for murder. Having thus settled his case for this world, they proceeded to settle it for the next, insisting that “for a man to infect a family in the morning with smallpox and to pray to God in the evening against the disease is blasphemy”; that the smallpox is “a judgment of God on the sins of the people,” and that “to avert it is but to provoke him more”; that inoculation is “an encroachment on the prerogatives of Jehovah, whose right it is to wound and smite.” Among the mass of scriptural texts most remote from any possible bearing on the subject one was employed which was equally cogent against any use of healing means in any disease—the words of Hosea: “He hath torn, and he will heal us; he hath smitten, and he will bind us up.”

So bitter was this opposition that Dr. Boylston’s life was in danger; it was considered unsafe for him to be out of his house in the evening; a lighted grenade was even thrown into the house of Cotton Mather, who had favoured the new practice, and had sheltered another clergyman who had submitted himself to it.
To the honour of the Puritan clergy of New England, it should be said that many of them were Boylston’s strongest supporters. Increase and Cotton Mather had been among the first to move in favour of inoculation, the latter having called Boylston’s attention to it; and at the very crisis of affairs six of the leading clergymen of Boston threw their influence on Boylston’s side and shared the obloquy brought upon him. Although the gainsayers were not slow to fling into the faces of the Mathers their action regarding witchcraft, urging that their credulity in that matter argued credulity in this, they persevered, and among the many services rendered by the clergymen of New England to their country this ought certainly to be remembered; for these men had to withstand, shoulder to shoulder with Boylston and Benjamin Franklin, the same weapons which were hurled at the supporters of inoculation in Europe—charges of “unfaithfulness to the revealed law of God.”

The facts were soon very strong against the gainsayers: within a year or two after the first experiment nearly three hundred persons had been inoculated by Boylston in Boston and neighbouring towns, and out of these only six had died; whereas, during the same period, out of nearly six thousand persons who had taken smallpox naturally, and had received only the usual medical treatment, nearly one thousand had died. Yet even here the gainsayers did not despair, and, when obliged to confess the success of inoculation, they simply fell back upon a new argument, and answered: “It was good that Satan should be dispossessed of his habitation which he had taken up in men in our Lord’s day, but it was not lawful that the children of the Pharisees should cast him out by the help of Beelzebub. We must always have an eye to the matter of what we do as well as the result, if we intend to keep a good conscience toward God.” But the facts were too strong; the new practice made its way in the New World as in the Old, though bitter opposition continued, and in no small degree on vague scriptural grounds, for more than twenty years longer.*

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* For the general subject, see Sprengel, *Histoire de la Médecine*, vol. vi, pp. 39–80. For the opposition of the Paris Faculty of Theology to inoculation, see the *Journal de Barbier*, vol. vi, p. 294; also the *Correspondance de Grimm et de*
The steady evolution of scientific medicine brings us next to Jenner's discovery of vaccination. Here, too, sundry vague survivals of theological ideas caused many of the clergy to side with retrograde physicians. Perhaps the most virulent of Jenner's enemies was one of his professional brethren, Dr. Moseley, who placed on the title-page of his book, *Lues Bovilla*, the motto, referring to Jenner and his followers, "Father, forgive them, for they know not what they do": this book of Dr. Moseley was especially indorsed by the Bishop of Dromore. In 1798 an Anti-vaccination Society was formed by physicians and clergymen, who called on the people of Boston to suppress vaccination, as "bidding defiance to Heaven itself, even to the will of God," and declared that "the law of God prohibits the practice." As late as 1803 the Rev. Dr. Ramsden thundered against vaccination in a sermon before the University of Cambridge, mingling texts of Scripture with calumnies against Jenner; but Plumptre and the Rev. Rowland Hill in England, Waterhouse in America, Thouret in France, Sacco in Italy, and a host of other good men and true, pressed forward, and at last science, humanity, and right reason gained the victory. Most striking results quickly followed. The diminution in the number of deaths from the terrible scourge was amazing. In Berlin, during the eight years following 1783, over four thousand children died of the smallpox; while during the

*Diderot*, vol. iii, pp. 259 et seq. For bitter denunciations of inoculation by the English clergy, and for the noble stand against them by Madox, see Baron, *Life of Jenner*, vol. i, pp. 231, 232, and vol. ii, pp. 39, 40. For the strenuous opposition of the same clergy, see Weld, *History of the Royal Society*, vol. i, p. 464, note; also, for its comical side, see Nichols's *Literary Illustrations*, vol. v, p. 800. For the same matter in Scotland, see Lecky's *History of the Eighteenth Century*, vol. ii, p. 83. For New England, see Green, *History of Medicine in Massachusetts*, Boston, 1881, pp. 58 et seq.; also chapter x of the *Memorial History of Boston*, by the same author and O. W. Holmes. For letter of Dr. Franklin, see *Massachusetts Historical Collections*, second series, vol. vii, p. 17. Several most curious publications issued during the heat of the inoculation controversy have been kindly placed in my hands by the librarians of Harvard College and of the Massachusetts Historical Society, among them *A Reply to Increase Mather*, by John Williams, Boston, printed by J. Franklin, 1721, from which the above scriptural arguments are cited. For the terrible virulence of the smallpox in New England up to the introduction of inoculation, see McMaster, *History of the People of the United States*, first edition, vol. i, p. 30.
eight years following 1814, after vaccination had been largely adopted, out of a larger number of deaths there were but five hundred and thirty-five from this disease. In Württemberg, during the twenty-four years following 1772, one in thirteen of all the children died of smallpox, while during the eleven years after 1822 there died of it only one in sixteen hundred. In Copenhagen, during twelve years before the introduction of vaccination, fifty-five hundred persons died of smallpox, and during the sixteen years after its introduction only one hundred and fifty-eight persons died of it throughout all Denmark. In Vienna, where the average yearly mortality from this disease had been over eight hundred, it was steadily and rapidly reduced, until in 1803 it had fallen to less than thirty; and in London, formerly so afflicted by this scourge, out of all her inhabitants there died of it in 1890 but one. As to the world at large, the result is summed up by one of the most honoured English physicians of our time, in the declaration that "Jenner has saved, is now saving, and will continue to save in all coming ages, more lives in one generation than were destroyed in all the wars of Napoleon."

It will have been noticed by those who have read this history thus far that the record of the Church generally was far more honourable in this struggle than in many which preceded it: the reason is not difficult to find; the decline of theology enured to the advantage of religion, and religion gave powerful aid to science.

Yet there have remained some survivals both in Protestantism and in Catholicism which may be regarded with curiosity. A small body of perversely ingenious minds in the medical profession in England have found a few ardent allies among the less intellectual clergy. The Rev. Mr. Rothery and the Rev. Mr. Allen, of the Primitive Methodists, have for sundry vague theological reasons especially distinguished themselves by opposition to compulsory vaccination; but it is only just to say that the great body of the English clergy have for a long time taken the better view.

Far more painful has been the recent history of the other great branch of the Christian Church—a history developed where it might have been least expected: the recent annals
of the world hardly present a more striking antithesis between Religion and Theology.

On the religious side few things in the history of the Roman Church have been more beautiful than the conduct of its clergy in Canada during the great outbreak of ship-fever among immigrants at Montreal about the middle of the present century. Day and night the Catholic priesthood of that city ministered fearlessly to those victims of sanitary ignorance; fear of suffering and death could not drive these ministers from their work; they laid down their lives cheerfully while carrying comfort to the poorest and most ignorant of our kind: such was the record of their religion. But in 1885 a record was made by their theology. In that year the smallpox broke out with great virulence in Montreal. The Protestant population escaped almost entirely by vaccination; but multitudes of their Catholic fellow-citizens, under some vague survival of the old orthodox ideas, refused vaccination and suffered fearfully. When at last the plague became so serious that travel and trade fell off greatly and quarantine began to be established in neighbouring cities, an effort was made to enforce compulsory vaccination. The result was, that large numbers of the Catholic working population resisted and even threatened bloodshed. The clergy at first tolerated and even encouraged this conduct: the Abbé Filiatrault, priest of St. James's Church, declared in a sermon that, "if we are afflicted with smallpox, it is because we had a carnival last winter, feasting the flesh, which has offended the Lord; . . . it is to punish our pride that God has sent us smallpox." The clerical press went further: the Étendard exhorted the faithful to take up arms rather than submit to vaccination, and at least one of the secular papers was forced to pander to the same sentiment. The Board of Health struggled against this superstition, and addressed a circular to the Catholic clergy, imploring them to recommend vaccination; but, though two or three complied with this request, the great majority were either silent or openly hostile. The Oblate Fathers, whose church was situated in the very heart of the infected district, continued to denounce vaccination; the faithful were exhorted to rely on devotional exercises of various sorts; under the sanction of the
hierarchy a great procession was ordered with a solemn appeal to the Virgin, and the use of the rosary was carefully specified.

Meantime, the disease, which had nearly died out among the Protestants, raged with ever-increasing virulence among the Catholics; and, the truth becoming more and more clear, even to the most devout, proper measures were at last enforced and the plague was stayed, though not until there had been a fearful waste of life among these simple-hearted believers, and germs of scepticism planted in the hearts of their children which will bear fruit for generations to come.*

Another class of cases in which the theologic spirit has allied itself with the retrograde party in medical science is found in the history of certain remedial agents; and first may be named cocaine. As early as the middle of the sixteenth century the value of coca had been discovered in South America; the natives of Peru prized it highly, and two eminent Jesuits, Joseph Acosta and Antonio Julian, were converted to this view. But the conservative spirit in the Church was too strong; in 1567 the Second Council of Lima, consisting of bishops from all parts of South America, condemned it, and two years later came a royal decree declaring that "the notions entertained by the natives regarding it are an illusion of the devil."

As a pendant to this singular mistake on the part of the older Church came another committed by many Protestants. In the early years of the seventeenth century the Jesuit missionaries in South America learned from the natives the value of the so-called Peruvian barks in the treatment of

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* For the opposition of conscientious men to vaccination in England, see Baron, *Life of Jenner*, as above; also vol. ii, p. 43; also Duns's *Life of Simpson*, London, 1873, pp. 248, 249; also *Works of Sir J. Y. Simpson*, vol. ii. For a multitude of statistics showing the diminution of smallpox after the introduction of vaccination, see Russell, p. 380. For the striking record in London for 1890, see an article in the *Edinburgh Review* for January, 1891. The general statement referred to was made in a speech some years since by Sir Spencer Wells. For recent scattered cases of feeble opposition to vaccination by Protestant ministers, see William White, *The Great Delusion*, London, 1885, *passim*. For opposition of the Roman Catholic clergy and peasantry in Canada to vaccination during the smallpox plague of 1885, see the English, Canadian, and American newspapers, but especially the very temperate and accurate correspondence in the *New York Evening Post* during September and October of that year.
ague; and in 1638, the Countess of Cinchon, Regent of Peru, having derived great benefit from the new remedy, it was introduced into Europe. Although its alkaloid, quinine, is perhaps the nearest approach to a medical specific, and has diminished the death rate in certain regions to an amazing extent, its introduction was bitterly opposed by many conservative members of the medical profession, and in this opposition large numbers of ultra-Protestants joined, out of hostility to the Roman Church. In the heat of sectarian feeling the new remedy was stigmatized as "an invention of the devil"; and so strong was this opposition that it was not introduced into England until 1653, and even then its use was long held back, owing mainly to anti-Catholic feeling.

What the theological method on the ultra-Protestant side could do to help the world at this very time is seen in the fact that, while this struggle was going on, Hoffmann was attempting to give a scientific theory of the action of the devil in causing Job’s boils. This effort at a quasi-scientific explanation which should satisfy the theological spirit, comical as it at first seems, is really worthy of serious notice, because it must be considered as the beginning of that inevitable effort at compromise which we see in the history of every science when it begins to appear triumphant.*

But I pass to a typical conflict in our days, and in a Protestant country. In 1847, James Young Simpson, a Scotch physician, who afterward rose to the highest eminence in his profession, having advocated the use of anaesthetics in obstetrical cases, was immediately met by a storm of opposition. This hostility flowed from an ancient and time-honoured belief in Scotland. As far back as the year 1591, Eufame Macalyane, a lady of rank, being charged with

* For the opposition of the South American Church authorities to the introduction of coca, etc., see Martindale, *Coca, Cocaine, and its Salts*, London, 1886, p. 7. As to theological and sectarian resistance to quinine, see Russell, pp. 194, 253; also Eccles; also Meryon, *History of Medicine*, London, 1861, vol. i, p. 74, note. For the great decrease in deaths by fever after the use of Peruvian bark began, see statistical tables given in Russell, p. 252; and for Hoffmann's attempt at compromise, ibid., p. 294.
seeking the aid of Agnes Sampson for the relief of pain at the time of the birth of her two sons, was burned alive on the Castle Hill of Edinburgh; and this old theological view persisted even to the middle of the nineteenth century. From pulpit after pulpit Simpson’s use of chloroform was denounced as impious and contrary to Holy Writ; texts were cited abundantly, the ordinary declaration being that to use chloroform was “to avoid one part of the primeval curse on woman.” Simpson wrote pamphlet after pamphlet to defend the blessing which he brought into use; but he seemed about to be overcome, when he seized a new weapon, probably the most absurd by which a great cause was ever won: “My opponents forget,” he said, “the twenty-first verse of the second chapter of Genesis; it is the record of the first surgical operation ever performed, and that text proves that the Maker of the universe, before he took the rib from Adam’s side for the creation of Eve, caused a deep sleep to fall upon Adam.” This was a stunning blow, but it did not entirely kill the opposition; they had strength left to maintain that the “deep sleep of Adam took place before the introduction of pain into the world—in a state of innocence.” But now a new champion intervened—Thomas Chalmers: with a few pungent arguments from his pulpit he scattered the enemy forever, and the greatest battle of science against suffering was won. This victory was won not less for religion. Wisely did those who raised the monument at Boston to one of the discoverers of anaesthetics inscribe upon its pedestal the words from our sacred text, “This also cometh forth from the Lord of hosts, which is wonderful in counsel, and excellent in working.”

XI. FINAL BREAKING AWAY OF THE THEOLOGICAL THEORY IN MEDICINE.

While this development of history was going on, the central idea on which the whole theologic view rested—the idea

of diseases as resulting from the wrath of God or malice of Satan—was steadily weakened; and, out of the many things which show this, one may be selected as indicating the drift of thought among theologians themselves.

Toward the end of the eighteenth century the most eminent divines of the American branch of the Anglican Church framed their *Book of Common Prayer*. Abounding as it does in evidences of their wisdom and piety, few things are more noteworthy than a change made in the exhortation to the faithful to present themselves at the communion. While, in the old form laid down in the English *Prayer Book*, the minister was required to warn his flock not "to kindle God's wrath" or "provoke him to plague us with divers diseases and sundry kinds of death," from the American form all this and more of similar import in various services was left out.

Since that day progress in medical science has been rapid indeed, and at no period more so than during the last half of the nineteenth century.

The theological view of disease has steadily faded, and the theological hold upon medical education has been almost entirely relaxed. In three great fields, especially, discoveries have been made which have done much to disperse the atmosphere of miracle. First, there has come knowledge regarding the relation between imagination and medicine, which, though still defective, is of great importance. This relation has been noted during the whole history of the science. When the soldiers of the Prince of Orange, at the siege of Breda in 1625, were dying of scurvy by scores, he sent to the physicians "two or three small vials filled with a decoction of camomile, wormwood, and camphor, gave out that it was a very rare and precious medicine—a medicine of such virtue that two or three drops sufficed to impregnate a gallon of water, and that it had been obtained from the East with great difficulty and danger." This statement, made with much solemnity, deeply impressed the soldiers; they took the medicine eagerly, and great numbers recovered rapidly. Again, two centuries later, young Humphry Davy, being employed to apply the bulb of the thermometer to the tongues of certain patients at Bristol after they had inhaled various gases as remedies for disease, and finding
that the patients supposed this application of the thermometer-bulb was the cure, finally wrought cures by this application alone, without any use of the gases whatever. Innumerable cases of this sort have thrown a flood of light upon such cures as those wrought by Prince Hohenlohe, by the "metallic tractors," and by a multitude of other agencies temporarily in vogue, but, above all, upon the miraculous cures which in past ages have been so frequent and of which a few survive.

The second department is that of hypnotism. Within the last half-century many scattered indications have been collected and supplemented by thoughtful, patient investigators of genius, and especially by Braid in England and Charcot in France. Here, too, great inroads have been made upon the province hitherto sacred to miracle, and in 1888 the cathedral preacher, Steigenberger, of Augsburg, sounded an alarm. He declared his fears "lest accredited Church miracles lose their hold upon the public," denounced hypnotism as a doctrine of demons, and ended with the singular argument that, inasmuch as hypnotism is avowedly incapable of explaining all the wonders of history, it is idle to consider it at all. But investigations in hypnotism still go on, and may do much in the twentieth century to carry the world yet further from the realm of the miraculous.

In a third field science has won a striking series of victories. Bacteriology, beginning in the researches of Leeuwenhoek in the seventeenth century, continued by O. F. Müller in the eighteenth, and developed or applied with wonderful skill by Ehrenberg, Cohn, Lister, Pasteur, Koch, Billings, Bering, and their compeers in the nineteenth, has explained the origin and proposed the prevention or cure of various diseases widely prevailing, which until recently have been generally held to be "inscrutable providences." Finally, the closer study of psychology, especially in its relations to folklore, has revealed processes involved in the development of myths and legends: the phenomena of "expectant attention," the tendency to marvel-mongering, and the feeling of "joy in believing."

In summing up the history of this long struggle between science and theology, two main facts are to be noted: First,
that in proportion as the world approached the “ages of faith” it receded from ascertained truth, and in proportion as the world has receded from the “ages of faith” it has approached ascertained truth; secondly, that, in proportion as the grasp of theology upon education tightened, medicine declined, and in proportion as that grasp has relaxed, medicine has been developed.

The world is hardly beyond the beginning of medical discoveries, yet they have already taken from theology what was formerly its strongest province—sweeping away from this vast field of human effort that belief in miracles which for more than twenty centuries has been the main stumbling-block in the path of medicine; and in doing this they have cleared higher paths not only for science, but for religion. 

* For the rescue of medical education from the control of theology, especially in France, see Rambaud, *La Civilisation Contemporaine en France*, pp. 682, 683. For miraculous cures wrought by imagination, see Tuke, *Influence of Mind on Body*, vol. ii. For the opposition to scientific study of hypnotism, see *Hypnotismus und Wunder: ein Vortrag, mit Weiterungen*, von Max Steiglenberger, Domprediger, Augsburg, 1888, reviewed in *Science*, February 15, 1889, p. 127. For a recent statement regarding the development of studies in hypnotism, see Liégeois, *De la Suggestion et du Somnambulisme dans leur rapport avec la Jurisprudence*, Paris, 1889, chap. ii. As to joy in believing and exaggerating marvels, see in the London Graphic for January 2, 1892, an account of Hindu jugglers by “Professor” Hofmann, himself an expert conjurer. He shows that the Hindu performances have been grossly and persistently exaggerated in the accounts of travellers; that they are easily seen through, and greatly inferior to the jugglers’ tricks seen every day in European capitals. The eminent Prof. De Gubernatis, who also had witnessed the Hindu performances, assured the present writer that the current accounts of them were monstrously exaggerated. As to the miraculous in general, the famous *Essay of Hume* holds a most important place in the older literature of the subject; but, for perhaps the most remarkable of all discussions of it, see Conyers Middleton, D. D., *A Free Inquiry into the Miraculous Powers which are supposed to have subsisted in the Christian Church*, London, 1740. For probably the most judicially fair discussion, see Lecky, *History of European Morals*, vol. i, chap. iii; also his *Rationalism in Europe*, vol. i, chaps. i and ii; and for perhaps the boldest and most suggestive of recent statements, see Max Müller, *Physical Religion*, being the Gifford Lectures before the University of Glasgow for 1890, London, 1891, lecture xiv. See also, for very cogent statement, and arguments, Matthew Arnold’s *Literature and Dogma*, especially chap. v, and, for a recent utterance of great clearness and force, Prof. Osler’s *Address before the Johns Hopkins University*, given in *Science* for March 27, 1891.