

THE STATE OF MEDICINE AT THE TIME OF THE CRUSADES

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MR. CHAIRMAN, LADIES, AND GENTLEMEN,

It is fitting that I begin by letting you know how much I value the compliment you pay me in asking me to address you on the occasion of the opening of the new session. It is a great honour to have Mr. Corkey introduce me to this distinguished audience.

To our younger colleagues here for the first time, I would like to add a few words of welcome to those of our Chairman and to say that you have chosen a good Medical School and a good time in its history. The Royal is in the forefront of medical progress, whether it be radiography, in radium therapy, in thoracic surgery, in cardiology, or in the teaching of medicine and surgery generally. Ladies and gentlemen, I wish you a successful year's work.

I must confess to a certain diffidence in appearing before you to deliver the address this morning, particularly in the light of the very high standards set by my predecessors.

The choice of subject was, in itself, one of my greatest difficulties. Osler, in his great book *Aequanimitas*, says, "There are, in truth, no specialities in medicine, since to know fully many of the important diseases a man must be familiar with their manifestations in many organs."

I felt that it was desirable to go beyond the boundaries of my own speciality, and I propose, therefore, to tell you about the contribution to medicine by the Knights of St. John of Jerusalem, and by the Saracens, the Arabs, their adversaries in the Wars of the Crusades. I therefore describe it as "The State of Medicine at the time of the Crusades."

G. K. Chesterton once pointed out that, to understand the culture and civilisation of a people, one had to look at their religious beliefs. The Emperor Julian, the apostate, in the fourth century A.D., said, "Now we see what it is that makes these Christians such powerful enemies of our gods, it is the brotherly love which they manifest toward strangers and toward the sick and the poor, the thoughtful manner in which they care for the dead, and the purity of their own lives." The connection between medicine and religion is buried deep in history. The explanation for this is quite simple. Man is both body and soul.

In its classical meaning, humanism, of which Petrarch was a chief prophet, is defined by J. A. Symonds as a 'just perception of the dignity of man as a rational, volitional, and sentient being, born upon this earth with a right to use

it and enjoy it.' It is in this spirit that the principal factor of the Renaissance of Medicine is to be found—a revival that was prepared by the later Middle Ages with those early studies on the cadaver and the beginning of clinical observation which are characteristic of humanism.

The late Lord Horder, who was the first President of the British Association of Physical Medicine, once wrote, "The treatment is the treatment of the individual by the individual, any physician who can inspire gentleness, virtue, wisdom, and endurance will help to hasten and ensure the cure. Any physician who cannot prescribe such remedies obstructs the cure and should stand aside."

In the non-Christian cultures of the past, as, of course, supremely in Christianity itself, the religious leaders and pioneers of medical practice were often synonymous.

In this connection it is of vital interest to recall the History of the Hospitallers of St. John of Jerusalem, nearly five hundred years of magnificent moral and material achievement, a slow and melancholy decline, and final extinction as a religious and military community, and then in our own day the re-creation of the Order in civilian form.

The great historian of the Order, the Abbé Vertot, began his famous work, *The Venerable Order of St. John of Jerusalem*, with these words—"The history I have taken upon me to write is that of a fraternity of hospitallers, which afterwards became a military society and at last a Sovereign Order; instituted upon the motives of charity and prompted by a zeal for a defence of the Holy Land, to take up arms against the infidels, an Order, which, amidst the noise and clashing of swords, and with a continual war upon their hands, was capable of joining the peaceable virtues of religion with the most distinguishing courage in the field. This union of the two professions so remote and distant seem to me an object worthy the regard and consideration of mankind." And now let us transfer ourselves to the Holy Land.

You will remember, ladies and gentlemen, on the partition of the Roman Empire at the end of the fourth century A.D., when Constantine the Great made Constantinople the capital of the eastern half or Byzantine half, Palestine fell within the Byzantine half. But with the rise of Islam, under the teachings of the Prophet Mohammed, the Arabs had been filled with a conquering zeal which sent their curved swords eastward to the arid banks of the Indus. Even the mountains of the Caucasus heard their fearful cry—"Fight, fight, Firdaws, Firdaws, Paradise, Paradise." Westward they had marched along the North African coast until they spurred their horses into the Atlantic, calling upon God to witness that only the waves of the ocean prevented their further victorious advance to the glory of His name.

The essentially tolerant Muslims permitted, even encouraged, Christian pilgrimage, and pilgrims went there unarmed and stayed in hospices such as that provided by the merchants of Amalfi, the precursors of the Order of St. John from whom they took their emblem, the white eight-pointed cross.

Then, in the year 1095, occurred a great convulsion in the east. The lenient rule of the Arabs was replaced for a time by the rule of some fierce invaders

from the Steppes, beyond the Caspian Sea, the ferocious Turcomans; and the returning pilgrims to Europe complained loudly of the oppressions they suffered at the hands of the barbarians.

At home and throughout Europe a feeling of indignation rose steadily until, after appeals by the Pope in 1095, and the fiery preaching of Peter the Hermit, the forces of Christendom were urged to start a Holy War against the Infidels. Under the leadership of Godfrey de Bouillon, one of the noblest representatives of mediæval chivalry, a great religious expedition was formed—this was the first of the Great Crusades.

In the summer of 1099, after suffering many casualties and hardships in their tremendous march across the breadth of Europe and through Asia Minor, the Crusaders appeared before the walls of Jerusalem and demanded the surrender of the city. At that time the Warden of the Hospice, which also combined the function of a hospital, had as its warden a certain Gerard from Martiques in Provence, whose saintly life and untiring care for the sick and suffering earned him the title of 'The Blessed Gerard.'

After a siege lasting only six weeks, the city was captured and the grateful Crusaders, by donations and privileges, enabled Gerard to enlarge the hospital. The community of monks tending the hospital were constituted into the famous Order of St. John of Jerusalem. Peripheral hospitals were also established in many of the maritime provinces of Europe, so that the pilgrims could find shelter, food, and medical care while they waited for transport to the Holy Land.

The Crusaders had not been long in the Holy Land, however, before a problem of enormous difficulty began to confront them. There was a grievous inadequacy of fighting manpower. After the capture of Jerusalem, the greater part of the crusading army returned to Europe, leaving in the Holy Land only three hundred horses and two thousand infantry. The ravages of the climate, with malaria, dysentery, typhoid, and plague, especially on the hot swampy littoral, the constant marching and fighting under a burning sun, clothed in heavy chain armour over leather jerkins and carrying heavy weapons, the very poor military hygiene of the day, the losses in battle and low rate of wound recovery, all combined to make inroads on the fighting strength that could scarcely be replenished by drafts from Europe. In addition, for some yet unexplained reason, the mortality amongst male children was inordinately high.

As a contribution towards the solution of this problem, the second Master of the Hospital, Raymond du Puy, decided that the inherent discipline, austerity of living and organisation of the monks of the hospital could be deployed in a military role. Certain of the brethren were formed into a new class of fighting monks, and from the year 1113 onwards the Order of St. John added a military function to its original humanitarian role.

I cannot here dilate on the military exploits of the hospitallers. It must be enough to say that the Knights Templar and the Knights of the Hospital constituted the main military bulwark of the Latin kingdom of Jerusalem during its two hundred years' existence in the midst of the hostile Saracen world.

Without their unremitting valour and military skill, the kingdom would certainly not have endured more than a few years. Yet despite this cardinal military role, the Hospitallers, I would emphasise again, never forgot their ancient humanitarian role and these early statutes of the Knights Hospitaller give us an indication of the humanity and imagination which informed their medical outlook. We read, for example, that the sick were always referred to as “our lords the sick.”

The commanders of hospitals were instructed to—

“Again I have commanded that wheresoever there shall be Houses for the sick, the commanders of such Houses shall tend the sick people lying there, cheerfully and gladly, and shall do their duty by them without any complaint, for which good deeds they shall have their reward in Heaven. And if, which God forbid, any of the brethren neglect to carry out this order of the Master of the Hospital, the rest of the brethren shall take care of the sick and shall report it to the Master, and he shall punish them according to the Justice of the House.”

Then again—The Statutes of Fr. Jobert, Master of the Hospital, 1172-1177: “. . . The privilege of the sick to have white bread, the terms included the setting aside of two casales (a casale was a hamlet of at least one hundred houses) for the provision of white bread, with the further provision that should this quantity be insufficient, the additional amount needed should be from the Treasury. Each loaf should be 16 ounces for two poor persons.” This particular statute ends with these words: “. . . and if it should happen, which God forbid, that anyone should presume rashly to conceal or contravene this pious and sacred gift, let him forever be damned with Judas, who betrayed Our Lord Jesus Christ, and let him incur the curse of Cain, and of Dathan, and Abiron, whom the earth swallowed up. Amen.”

Time and again we come upon the most delightful passages, in the statutes of Roger des Moulins, Master of the Hospital, 1177-1187, for example:—

“Furthermore it is ordained with the assent of all the brethren that four experienced doctors shall be appointed for the service of the poor at the Hospital of Jerusalem, qualified to examine urine and to diagnose diseases, and to assist them by the administration of medicines.

“It is ordained how long and how broad should be the beds in which the sick lie, and that each bed should have its coverlet and two sheets of its own.”

After these needs, is decreed the fourth command—“that each of the sick should have a cloak of sheepskin, cap of wool and boots for going to and coming from the latrines (*ad cameras secretas*).

“It is also decreed that little cradles should be made for the babies of women pilgrims born in the House, so that they may lie separate, and that the baby in its own bed may be in no danger from the restlessness of its mother.”

“Let the brethren of the Hospital by night and by day cheerfully and gladly tend the sick as their lords.” Moreover, it was added in Chapter General that “in every ward of the House where the sick shall lie, nine servants shall be appointed to wait upon them, who at the command of the brethren shall humbly wash the feet and heads of the sick, and cleanse their garments, and make their

beds, and prepare the food they need, and give them to drink, and be obedient in all things for the benefit of the sick.”

Their charity extended in all directions—even to supporting children. The said Holy House had also been accustomed to receive and support children abandoned by their parents.

I find the following a very sympathetic gesture—“And, to a poor couple, man and woman who were desirous of entering the estate of matrimony and were without goods with which to celebrate their marriage, it has been the custom to give two bowls or the rations of two brethren.”

About the same time, if I may digress for a moment, there was a great mediæval hospital movement in all the cities to combat and isolate patients suffering from leprosy. Already known to the Ancient Hebrews, Greeks, and Romans, the disease began to appear in Northern Europe in the sixth and seventh centuries A.D., and its spread in connection with crusades was appalling. It reached its zenith in the thirteenth century. Lunberger Chronik paraphrased by Heine, “Living corpses they wandered to and fro, muffled from head to foot, a hood drawn over the face, and carrying in the hand a bell, the Lazarus bell, as it was called, through which they were to give timely warning of their approach, so that everyone could get out of the way in time.”

Leper hospitals for the purpose of segregation became apparent and they turned out to be a potent factor in the eventual stamping-out of the disease. The number of these Lazar houses (leprodochia or leprosoria), as they were then called, was extraordinary. There were some two hundred in England and Scotland, and two thousand in France alone.

Although in all mediæval hospitals nursing and seclusion were the rule with absolute neglect of treatment, it is clear from Virchow’s thorough-going narrative the building of the leprosoria represented a great social and hygienic movement, a wave of genuine prophylaxis as well as of human charity.

Literary medicine and philosophy took refuge in the churches and cloisters, and developed almost exclusively in the monasteries.

It is natural that these men who had been driven by the sight of human miseries and fratricidal struggles to embrace the monastic rule of sacrifice and renunciation should be the first and the most zealous in treating leprosy, the plague, and in succouring the wounded.

The Hospitallers were very prominent in the great Third Crusade and especially distinguished themselves by their famous rearguard action in King Richard’s magnificent victory at Arsuf in 1191. But, alas, the destruction of the Latin Field Army at the great Battle of Hattin, where the Hospitallers on the battlefield nearly all perished, ensured the fall of Jerusalem to the Muslim army, commanded by Saladin.

The Sultan Saladin was a brilliant military genius inspired by a religious ardour. He once wrote to Richard Cœur de Lion—“Jerusalem is as much to us as Mohammedans as it can be to you Christians and more. It is the place whence our Prophet made his night ascent to Heaven, and it will be the gathering place of our nation at the Great Judgment.”

After Hattin, Saladin moved on to the capture of Jerusalem itself. And thus, after eighty-eight years of Christian guardianship, the Holy Sepulchre fell once more into the hands of the Mohammedans.

In this hour of supreme triumph, Saladin showed a degree of mercy rare in mediæval conquerors. After allowing the garrison to march out with military honours of war, he permitted the few serving Knights Hospitallers, who had remained, to ransom the poor townfolk, who otherwise would have been sold into slavery and he granted the request of the Hospitallers that ten of their number should wait in the city until the sick and wounded were sufficiently healed to bear the hazard and fatigue of transit. The Hospitallers were given a respite of one year to clear up the affairs of their hospital before they left.

The contacts which the West made with the East, because of the Crusades, were considerable, and in the art and science of warfare, fortifications, metal work, architecture, chemistry, astronomy, and in many other directions the West has learned much from the East. But it was, perhaps, in the medical world that the gain was the greatest.

I am indebted to Brigadier Broadhurst, as my guide and interpreter in the otherwise closed territory of Oriental learning, for his introduction to the charming and learned Arab and Persian sages of the period. And you, ladies and gentlemen, are also indebted to him, for, with his commendable love of brevity, he ruthlessly insisted that I confine my efforts to two centuries rather than a millennium.

May I quote from Brigadier R. J. C. Broadhurst's translation—"The Travels of Ibn Jubayr from the original Arabic." This is a chronicle of a mediæval Spanish Moor's journey to the Egypt of Saladin, the holy cities of Arabia, Baghdad the city of caliphs, the Latin Kingdom of Jerusalem, and the Norman Kingdom of Sicily in the year 1183:

"Another of the things we saw, doing honour to the Sultan, was the Muristan (Hospital) in the centre of Cairo. It is a palace, goodly for its beauty and spaciousness. This benefaction he made so that he might deserve a heavenly reward and to acquire merit. He appointed as intendent a man of science with whom he placed a store of drugs and whom he empowered to use the potions and apply them in their various forms.

"In the rooms of the palace were placed beds, fully appointed for lying patients. At the disposal of the intendent are servants whose duty it is, morning and evening, to examine the conditions of the sick, and to bring them the food and the potions that befit them. Facing this establishment is another specially for women and they also have persons to attend them. A third which adjoins them, a large place, has rooms with iron windows, and it is a place of confinement for the insane. They also have persons who daily examine their condition and give them what is fitting for them. All these matters the Sultan oversees, examining and questioning, and demanding the greatest care and attention to them. In Misr there is another hospital of precisely the same model."

In the book of the Ten Treatises on the Eye, written by Hunain Ibn Is-Haq (808-877 A.D.) and translated into English by Max Meyerhof in 1928, we have the earliest extant textbook of ophthalmology. Hunain has been described as one

of the greatest scholars and noblest characters of his age. Under the caliphate of al-Mutawalkil, Hunain reached the summit of his glory as a translator and a medical practitioner. But during the same time, the mistrust of the Caliph, a very orthodox and fanatical Muslim and the envy of Hunain Christian colleagues, caused him a series of bad experiences. First the ruler proved Hunain's professional honour by a hard test. He bade him prepare a poison for one of his enemies, offering him rich reward if he would do so. Hunain refused and was imprisoned for one year. He was then brought before the Caliph and threatened with death for his disobedience. He answered, "I have skill only in what is beneficial, and have studied naught else." Asked by the Caliph, who then explained that he was only testing his physician's integrity, as to what prevented him from preparing the deadly poison, Hunain replied, "Two things: my religion and my profession. My religion decrees that we should do good even to our enemies, how much more to our friends. And my profession is instituted for the benefit of humanity and limited to relief and cure. Besides, every physician is under oath never to give anyone a deadly medicine."

The book of Hunain Ibn Is Haq on the structure of the eye, its diseases and their treatment, written in accordance with the opinions of Hippocrates and Galen on the knowledge of all that is necessary to instruct him who wishes to treat eye diseases in a reasonable manner in ten treatises. These deal with the nature of the eye and the brain and related problems together with remedies.

We must not forget that Galen's principle aim was to transform medicine into an exact science, like astronomy and mathematics. Hunain skilfully extracted all the passages from Galen's works concerning the eye and eye diseases and formed of them this systematic textbook.

Arab interest in the curative science found expression in the prophetic tradition that made science twofold: theology and medicine. The physician was at the same time metaphysician, philosopher, and sage, and the title "hakim" was indifferently applied to all these capacities.

The people of the East expected their kings to be immensely powerful, their queens incomparably beautiful, their wazirs enormously sagacious, and their physicians superhumanly discerning and resourceful.

To show the esteem in which medical men of the time were held, one court physician amassed a huge fortune of 88,800,000 dirhams, a sum equivalent, if we accept van Kremer's estimate of the dirham as equivalent to a franc, to more than three and a half million pounds sterling in thirty years. He was paid 100,000 dirhams for bleeding the Caliph twice a year and an equal sum for administering a semi-annual purgative draught.

This unbounded faith in the physician in the East is, I am told, a source of constant embarrassment to modern practitioners. Rhazi did this, they will tell him, and Avicenna did that, and are you not the heir of all the ages, greater than these, nay, even than Hippocrates and Galen? Such is the intimidating prospect which faces you young gentlemen, our Persian colleagues.

As to this superhuman discernment required of physicians, let me tell you a tale or two of Avicenna's discernment.

A relative of the ruler of a certain province lay sick of a malady which baffled all the local doctors. Avicenna, although his identity was then unknown, was invited to give his opinion and, after examining the patient, requested the collaboration of someone who knew all the districts and towns of the province, and who repeated their names while Avicenna kept his finger on the patient's pulse. At the mention of a certain town he felt a flutter in the pulse. "Now," said he, "I need someone who knows all the houses, streets, and quarters of this town." Again, when a certain street was mentioned, the same phenomenon was repeated, and once again when the names of a certain household were enumerated. The Avicenna said, "It is finished. This lad is in love with such-and-such a girl, who lives in such-and-such a house, in such-and-such a street, and the girl's face is the patient's cure." So the marriage was solemnized at a fortunate hour chosen by Avicenna, and thus the cure was completed.

I shall only cite one more anecdote, of which again Avicenna is the hero. A certain prince of the House of Buwayh was afflicted with melancholia and suffered from the delusion that he was a cow. "Every day," says the author, "he would low like a cow, causing annoyance to everyone, and crying, 'Kill me, so that a good stew may be prepared from my flesh'; until matters reached such a pass that he would eat nothing while the physicians were unable to do him any good." Finally Avicenna, who was at this time acting as prime minister, was persuaded to take the case in hand. First of all, he sent a message to the patient bidding him be of good cheer, because the butcher was coming to slaughter him, whereat, we are told, the sick man rejoiced. Some time afterwards Avicenna, holding a knife in his hand, entered the sick-room saying, "Where is this cow, that I may kill it?" The patient lowed like a cow to indicate where he was. By Avicenna's orders he was laid on the ground, bound hand and foot. Avicenna then felt him all over and said, "He is too lean, and not ready to be killed; he must be fattened." Then they offered him suitable food, of which he now partook eagerly, and gradually he gained strength, got rid of his delusion, and was completely cured. The narrator concludes, "All wise men perceive that one cannot heal by such methods of treatment save by virtue of pre-eminent intelligence, perfect science, and unerring acumen."

In the curative use of drugs some remarkable advances were made at this time by the Arabs. It was they who established the first apothecary shops, founded the earliest schools of pharmacy and produced the first pharmacopœia.

Al-Rhazi (865-925), born near Tihran, the capital of modern Persia, and was probably the greatest and most original of all the Muslim physicians and the most prolific as an author. In selecting a new site for the great hospital at Baghdad, of which he was chief physician, he is said to have hung out shreds of meat in different places, choosing the place where they showed least signs of putrefaction. His contribution to medicine consisted of 113 major works and 28 minor ones. Of his monographs, one of the best known is a treatise on smallpox and measles, the earliest of its kind and rightly considered an ornament to the medical literature of the Arabs. In it we find the first clinical account of smallpox.

The most illustrious name in Arabic medical annals, after Al-Rhazi, is that of Ibn Sina (known to the West as Avicenna). He organised physicians to travel to different areas, carrying drugs and administering relief to ailing people; other physicians visited gaols daily. Such facts show an intelligent interest in public hygiene unknown to the rest of the world at that time. In his efforts to raise the scientific standards of the medical profession and in his efficient administration of the Baghdad hospital lay Avicenna's chief title to fame. This hospital, the first in Islam, was erected at the beginning of the ninth century. Shortly afterwards thirty-four hospitals were built throughout the Muslim world. Travelling clinics made their appearance in the eleventh century. Muslim hospitals had special wards for women and each had its own dispensary. Some were equipped with medical libraries and offered courses in medicine.

Avicenna's Qanun, a vast Arabic medical encyclopedia, which represented the final codification of Greco-Arabic medical thought, was published in Rome in 1593 and Cairo in 1877. It had previously been translated in Latin in the twelfth century. In the last thirty years of the fifteenth century it passed through fifteen Latin editions and one Hebrew. In recent years a partial translation into English was made. The book distinguishes mediastinitis from pleurisy and recognises the contagious nature of phthisis and the scientific diagnosis of ankylostomiasis and attributes it to an intestinal worm. Its materia medica considers some 760 drugs. From the twelfth to the seventeenth centuries the work served as the chief guide to medical science in the West and is still in occasional use in the Muslim East. In the words of Dr. Osler, in *The Evolution of Modern Medicine*, 'it has remained a medical bible for a longer period than any other work.'

It is now generally understood in certain specialised circles of competent historians of medicine that the early patterns of hospitalisation and hygiene in Europe received their energising impetus from Arab medical science. Guy de Chambrai (d. 1368), the surgeon of Montpellier, adopted the scorned operations of Arab physicians for rupture and cataract. Lanfranchi of Milan, who established himself in France (1295), introduced advanced methods in ligation of blood vessels and suture of wounds.

Less traceable, though no less real, is the link of the early European universities with the Arab diffusion centres. From the twelfth century onwards universities in Europe were established in numbers. The new learning crystallised in them. Such were Bologne, Padua, Montpellier, and Paris. As in Byzantine Alexandria, and Baghdad of the Caliphs, education revolved around the reading of the ancient authors, at last accessible in Latin. Experimental science was hardly known as yet, and botany, zoology, physics, and alchemy, as well as astronomy, mathematics, and medicine took their cue from their Arab masters. The science of chemistry owes its very inception to the tireless industry of the Arabs. They described scientifically the two principal operations of calcination and reduction: they improved on the method for evaporation, sublimation, melting, and crystallisation. They knew how to prepare crude sulphuric and nitric acids and to mix them to produce aqua regia, in which gold and silver would be dissolved.

The final expulsion of the Crusaders from the Holy Land by the Saracens at the end of the thirteenth century brought to a close the more direct contact between the East and the West. But the close association of nearly two hundred years had endowed the Western settlers in Palestine with much of the science and wisdom of the contemporary Muslim world. Hence it was that the immense suffering and loss of life and seeming uselessness of the Western attempt to seize Jerusalem from its Eastern inhabitants was compensated by an immense gain in knowledge, only a portion of which I have been able, within the compass of a short address, to indicate to you.

Today the Medical School is happy and proud to number amongst its students young men and women from the Arab and Middle Eastern world. And so it has come to pass that, after the passage of close upon a thousand years, we resume the dialogue between the East and the West—that dialogue wherein we learnt so much and which we gratefully acknowledge. Is that not a splendid thing, and if we who follow the healing art do not lead the way in international co-operation and the advancement of knowledge, who will?

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