

The Italian Doctor During the Black Death

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Italy was the first part of Europe to witness the Black Death firsthand after Genoese sailors carrying the disease brought it to Messina in October 1347.¹ From there the plague spread to the remainder of the country within months. By the time England had even received word of the plague's existence, one-third to one-half of the residents of Italy had already succumbed to its lethal effects.² Italians were known and prized throughout Europe for their medical knowledge, credited for introducing Arabic texts to the Latin-reading West³ and revered for their pioneering studies of surgery and anatomy. By the fourteenth century the University of Bologna was the most prestigious medical school in all of Christian Europe,⁴ and the first recorded human autopsy was performed there by Bartolommeo da Varignana in 1302.⁵ However, despite housing Europe's premier physicians, Italy was hit every bit as hard as its neighbors, if not worse, and at the peak of the epidemic in Italy the doctors themselves often proclaimed that the pestilence was simply God's wrath and could be neither cured nor avoided. Chronicler and Piacenzan lawyer Gabriele de' Mussis (d. 1356) lamented in his *Historia de morbo* that "many physicians began to realize the futility of their medicine and refused to visit the sick, hiding away to preserve their own health rather than add themselves to the list of those whom they could not

¹ John Larner, *Italy in the Age of Dante and Petrarch, 1216-1380* (London, Longman, 1980), 257.

² This figure reflects most modern estimates. Contemporary chroniclers generally claim that the death rate was much higher, in whose accounts 90 percent is not an uncommon figure. See John Aberth, *From the Brink of the Apocalypse: Confronting Famine, War, Plague, and Death in the Later Middle Ages* (New York: Routledge, 2001), 124.

³ Katherine Ludwig Jansen, Joanna H. Drell, and Frances Andrews, *Medieval Italy: Texts in Translation* (Philadelphia: University of Pennsylvania, 2009), 309.

⁴ Edward Grant, *The Foundations of Modern Science in the Middle Ages: Their Religious, Institutional, and Intellectual Contexts* (Cambridge: Cambridge University Press, 1996), 26.

⁵ George Sarton, *Introduction to the History of Science*. 3rd ed. Vol. 3, Part 1 (Washington D.C.: Williams & Wilkins, 1947), 243.

heal.”⁶ However, the profession as a whole never gave up on fighting the plague completely. The proposed cures, remedies, preventatives, theories and, if nothing else, documentation, were both detailed and varied.

During this time, not everyone who practiced medicine received a formal education. Of the physicians, surgeons, barber-surgeons, apothecaries, and non-professional practitioners who did, only physicians and surgeons received their training at a university, and the latter only on occasion.⁷ For those who did receive a formal medical education, the University of Bologna and other Italian schools⁸ offered a program similar to those offered elsewhere in Europe at the time, often based around a cathedral where admittance to the clergy was often a requirement for admittance to the university.⁹ The curriculum focused on the reading of scientific texts written by established authorities, most notably Hippocrates (c. 460-370 BCE), Galen (c. 129-199 CE), and Avicenna (c. 980-1037 CE).¹⁰ Students then analyzed these texts according to the principles laid down by Peter Abelard in his twelfth-century text *Sic et Non*,¹¹ where the scholar compared two arguments and used both to reach a conclusion through logic. In addition, an aspiring physician would train in the seven liberal arts.¹² Yet these subjects and classical authors were the sum total of a physician’s education, meaning his or her training relied far more on centuries-old literature than clinical research. A syllabus of the medical curriculum at the University of Bologna a few years after the plague featured forty-six lectures over its four-year program, each focusing entirely upon a particular text. With only two exceptions, all lessons came from

⁶ Rosemary Horrox, *The Black Death* (Manchester, U.K.: Manchester University Press, 1994), 22.

⁷ Robert Steven Gottfried, *The Black Death: Natural and Human Disaster in Medieval Europe* (New York: Free, 1983), 104.

⁸ The universities of Salerno and Padua were also well known for their medical curricula.

⁹ A. C. Crombie, *Medieval and Early Modern Science* (Cambridge, Mass.: Harvard University Press, 1963), 235.

¹⁰ Gottfried, 105.

¹¹ David C. Lindberg, *The Beginnings of Western Science: the European Scientific Tradition in Philosophical, Religious, and Institutional Context, 600 B.C. to A.D. 1450* (Chicago: University of Chicago, 1992), 115.

¹² The Trivium (grammar, rhetoric, and logic) and the Quadrivium (arithmetic, geometry, music and astronomy). Gottfried, 106.

Hippocrates, Galen, or Avicenna.¹³ This trend extended beyond universities and into the works of professional doctors. A treatise typical of those found in Italy in the decades before the plague was that of Francesco di Piedmonte, who explained the method of his work in a therapeutic text for his patron, Roger, the king of Naples and Sicily from 1309-1343, titled *De egritudinibus cordis*. First, he said, one should identify the nature of the disease using a list of symptoms classified by Galen, then prescribe the proper medicine¹⁴ using remedies also borrowed from older sources. In fact, there is hardly an original opinion expressed in the entire work, for he preferred to depend almost entirely on earlier authorities.¹⁵ Many physicians also made a side business of translating the works of the authorities into Latin, such as the physician Pietro d'Albano (d. 1316), a professor of philosophy and medicine in Bologna, and Niccolò da Reggio, a physician for several Angevin kings.¹⁶

After six to eight years of education¹⁷ the student would receive his degree, either abroad or from one of the many universities in Italy, and in the case of the latter, perhaps from one of the four new schools established in the first half of the fourteenth century.¹⁸ These credentials alone were generally enough for the individual to consider himself a physician and begin practicing, although by the fourteenth century Naples had developed a standardized system for licensing doctors.¹⁹ In general, education and reputation were what made doctors more so than any official qualifications, but for anyone with any of these assets there were ample opportunities available. Most fourteenth-century

¹³ Those exceptions were the first and second halves of *Colliget*, a twelfth-century text written by Islamic scientist Averroës. See Jansen, 328-29.

¹⁴ "*Cura confestim sequitur cognitionem facientis cause et etiam substantie.*"

¹⁵ Francesco di Piedmonte died in 1319, but cautioned his patron against corrupted air in a manner almost identical to later doctors' advice on avoiding the plague. See Sarton, Part 1, 835-36.

¹⁶ Sarton, Part 1, 242-43.

¹⁷ Grant, 48.

¹⁸ The University of Rome (founded by Pope Boniface VIII in 1303), Perugia (1308), Treviso (1318), Pisa (in 1343, though curtailed in growth by plague and conquest of Pisa by Florence), and Florence (1349, just as the plague there was ending). See Sarton, Part 1, 470-78.

¹⁹ This system covered both men and women, which was an unusual case. See Jansen, 309.

towns had at least one physician, and there were doctors attached to every court, both secular and ecclesiastical.²⁰

While there were a number of general theories dictating medicinal practice, one outlook took precedence in a way that would serve to lead—or mislead—doctors in nearly all of their diagnoses. The theory, a combination of ideas proposed by Galen and Avicenna,²¹ was that the universe was composed of the four key elements and their corresponding qualities of either hot or cold and either wet or dry. Earth was believed to be cold and dry, water cold and wet, fire hot and dry, and air hot and wet.²² All medical drugs were likewise classified according to these qualities, a practice already well-established by the mid-twelfth century. In his *Circa instans*, Mattheus Platearius, a physician from Salerno, opens each description of an herb with its elemental properties. “Aloe wood is hot and dry in the second degree,” he says, while “[m]andrake is cold and dry, but its degree is not specified by the authorities,” and “[s]ugar is hot and moist in the second degree, more or less.”²³ The human body, however, unlike most objects, did not generally have a dominant set of qualities, although very rarely was a person completely neutral, either. Rather, their *complexion*, or temperament, was determined by the mix and balance of the elements in the body, which in turn dictated health and disposition. Balance was maintained by the four bodily humors—phlegm, blood, black bile, and yellow bile—which cycled throughout the body to maintain elemental balance.²⁴ A body in equilibrium was known as *eukrasia*. This represented a state of good health. Sickness was the result of an imbalance of humors, called *dyskrasia*.²⁵

In the case of *dyskrasia*, it was the role of the doctor to analyze a patient and to first determine his or her particular ratio of humors. This analysis was considered simple if the physician was attached to a wealthy patron. The reasoning was that the doctor would be able to observe his employer’s day-to-

²⁰ Sarton, Part 1, 240.

²¹ Jansen, 310.

²² Gottfried, 105.

²³ “The authorities” to whom Mattheus Platearius refers are Avicenna and Galen. See Jansen, 318-20.

²⁴ Lindberg, 332.

²⁵ Gottfried, 105.

day activities over an extended period and would therefore be highly attuned to his or her particular disposition. Otherwise, the doctor would have to make do by asking the patient a series of questions about his or her lifestyle and habits. Next, if he determined the patient's alignment to be out of the ideal range, he would prescribe the proper countermeasure to bring the ratios back in line, restoring balance with "cool" medicines if the patient were too hot, and so on.²⁶

Another theory which permeated nearly every facet of fourteenth-century medical thought was the role of stars, planets, and other heavenly bodies on human health, a connection made by Hippocrates.²⁷ In the first half of the century, Pietro d'Albano composed a treaty on poisons. Though written slightly before the plague, its theories would be used later in describing the plague as a miasma. It also featured comparisons between poisons and astrology. Not all bought into this theory, however. The fourteenth-century poet Petrarch was a staunch critic of astrology, dismissing d'Albano's cosmic analysis as being a part of "the medical taste of the time."²⁸ In spite of Petrarch's criticisms, however, astrology and medicine remained intertwined in the minds of most Italian doctors, and nearly every medical practitioner was also an astrologer to some degree. Other medico-astrological writers well-known to their contemporaries included Niccolò di Paganica and Ugo de Castello, both Dominican friars and physicians; Andalò di Negro; Paolo dell' Abbaco; and Maino de Maineri. Maineri, who studied at the University of Paris, was a royal physician to the Visconti family of Milan, and his plague tract *Libellus de preservatione ab epydimia* written in 1360 put particular focus on the astrological roots of the initial outbreak of the plague in 1347.²⁹

When the Black Death arrived in Italy in the later months of 1347, doctors were quick to ascribe its causes and characteristics to their perceived laws of the universe. Most attributed the cause to a planetary alignment that had occurred on March 20, 1345. "And so this came to pass," wrote chronicler

²⁶ Lindberg, 333.

²⁷ Lindberg, 339.

²⁸ Sarton, Part 1, 242.

²⁹ Sarton, Part 1, 243.

Giovanni Villani of the plague of Florence in 1348, “according to the astrologers and naturalists, because of the conjunction of Saturn and Jupiter and Mars in the sign of Aquarius.”³⁰ Medico-astrologers viewed all three as traditionally “hot” planets, and viewed both Jupiter and Saturn as wet.³¹ Since this alignment took place in the house of Aquarius, a warm, humid sign, the resulting conclusion that the pestilence should be classified as a hot, humid disease was clear. By extension, this classification denoted it as corresponding to the element of air, and medico-astrologers thus recognized it as an airborne disease. To them, the nature of the disease explained the speed and universality of its spread and its ability to jump from person to person without contact, as well as its high mortality rate, since the disease could reach the center of the body in a single breath as it entered the lungs.³² Most interpreted the plague as a miasma: a poison or “corruption of the air.” The latter phrase shows up as the predominant description in contemporary texts of all varieties, from plague tracts to city ordinances.³³ Astrology also played a role in other ways: for instance, Gabriele de’ Mussis noted that “the illness was more dangerous during an eclipse, because then its effect was enhanced, and it was at such times that people died in the greatest numbers.”³⁴ The physician Gentile da Foligno, a professor at the University of Bologna and Perugia, wrote the largest plague tract of anyone to personally witness the Black Death, the *Consilium contra pestilentiam*. In his work he followed many of the traditional scientific structures set in place, such as the use of Abelard’s method—the four humors, elemental balance, and their astrological connections—and wrote commentaries on Galen, Avicenna, Hippocrates, and others, following the scholastic method precisely.³⁵ He also proposed alternate theories that did not use astrology, arguing that a series of earthquakes could have opened up ancient wells or caverns full of stagnant, corrupted

³⁰ Book 12, Chapter 23. Toward the end of his chronicle, Villani left a blank space so he could record when the pestilence ended, but it took his life before he could fill it in. See Jansen, 23, and Aberth, 123.

³¹ Gottfried, 111.

³² Luis García-Ballester, *Practical Medicine from Salerno to the Black Death* (Cambridge: Cambridge University Press, 1994), 106.

³³ Horrox, 106.

³⁴ Horrox, 25.

³⁵ These commentaries were written at the request of the University of Perugia at the onset of the plague. See Sarton, Part 1, 849.

air, or dislodged poisonous gases and “evil smells” from lakes and ponds.³⁶ There had been, in fact, a large earthquake in 1347 just a few months before the plague hit Italy. Giovanni Villani recorded a powerful tremor in 1347,³⁷ as did Petrarch, who was in Verona at the time.³⁸ The idea of corrupt air trapped in long-closed caverns and wells originally came from Galen and Avicenna, although Gentile only expressly cited the former in that argument.³⁹

The theories of established authorities guided not only doctors’ reasoning for the cause of the Black Death, but also its treatment. Alberto de’ Zancari wrote a plague treatise titled *De febre pestilentiali super primam fen quarti canonis Avicennae*, borrowing heavily from Hippocrates’ ideas on diet and the influence of air on health. Earlier, Niccolò Bertruccio, a physician, anatomist, and a professor of logic and medicine at the University of Bologna, wrote a general pre-plague treatise on dealing with fever (*De aegritudinibus universalibus hoc est de febribus*), poison (*De venenis*), and maintenance of inner balance in day-to-day activities (*De regimine sanitatis*). He would later apply his principles to the plague, but died during the initial outbreak in Bologna despite his own advice in 1347.

Physicians in general saw the disease as both hot and wet, and they gave recommendations accordingly. People considered particularly vulnerable were those whose temperaments were already on the warm and moist end of the spectrum, which included anyone who was young, active, had a large appetite, or was over-passionate about anything. Such personality types were thought to be a result of predominantly hot humors, which in turn made them more susceptible.⁴⁰ The anonymous early fourteenth-century treatise *Tacuinum sanitatis* stressed moderation in all aspects of life so as to maintain proper balance and keep humors at peak efficiency, and to “avoid foods that spoil quickly,

³⁶ Sarton, Part 1, 853.

³⁷ John Kelly, *The Great Mortality: An Intimate History of the Black Death, the Most Devastating Plague of All Time* (New York: HarperCollins, 2005), 104.

³⁸ Ernest Hatch Wilkins, *The Life of Petrarch* (University of Chicago Press, Illinois, 1963), 74.

³⁹ Garcia-Ballester, 255.

⁴⁰ Gottfried, 113.

since the bad smell aids in corruption of the air.”⁴¹ Doctors generally advised avoiding wet areas like coasts, marshes and stagnant waters, as well as southern exposures, since southern wind came from “hot” places like Africa and the Middle East, and instead recommended moving to cool and dry areas, like mountains. Failing that, one could simulate such conditions by staying cool and covering brightly lit windows. Likewise, bathing and exercise were discouraged as they made the victim literally hotter and wetter along with opening the pores, which let corrupt air in more easily.⁴² Gentile da Foligno also advocated control of habits and emotions in order to maintain balance. He particularly recommended against fear, worry, weeping, speaking ill of others, excessive cogitation, and wrath, all of which “overheated the members” with heat, the trait thought to be most out of balance in plague victims. Sadness was seen as a cool emotion, but also a wet one, and should therefore also be avoided as something that would predispose an individual to plague.⁴³

Aside from general lifestyle advice, more direct intervention was sometimes taken to defend against plague. The act of phlebotomy, or bloodletting, was supported by a wide number in the medical community as a means of reducing the natural heat of the body.⁴⁴ De’ Mussis described the process of a typical doctor during the height of the pestilence. The doctor would cut “from the arm if the upper part of the body was affected, from the tendon of the foot if it was the lower part which was affected. When this was followed up with medicinal means, using mallow or a plaster of marsh mallow to ripen the boil and draw the humors from the seat of the illness, and then cutting out the boil, the patients received the blessing of health.”⁴⁵ In a set of instructions on diet and medication in the style of Galen and Hippocrates, Gentile added phlebotomy as another fine method of balancing the humors,⁴⁶ as did John of Penna, a professor at the University of Naples. However, both he and Gentile cautioned that it was

⁴¹ Bread, eggs, fruit and vegetables were best, as they aided digestion. See Gottfried, 114.

⁴² Gottfried, 114.

⁴³ Kelley, 173-74.

⁴⁴ Crombie, 230.

⁴⁵ Horrox, 26.

⁴⁶ Sarton, Part 1, 853.

only effective at the first sign of symptoms, and only if done in the proper place relative to the swellings, or buboes.⁴⁷ John also warned that such a process could weaken the heart and should be preceded by consumption of heart-strengthening supplements like rose syrup, bugloss or borage juice, the bone of a stag's heart, or sugar mixed with precious stones.⁴⁸ Gentile was partial to emerald.

Everyone, it seemed, had his own special list of herbs and ingredients that he thought best prevented infection. Marchione di Coppo Stefani of Florence, who lived through the plague, noted that during the epidemic, apothecaries "sold poultices of mallow, nettles, mercury, and other herbs necessary to draw off the mortality."⁴⁹ Others thought that the best way to fight an airborne disease was to purify the air rather than the person. Boccaccio noted that some "moved about freely, holding in their hands a posy of flowers, or fragrant herbs, or one of a wide range of spices, which they applied at frequent intervals to their nostrils, thinking it an excellent idea to fortify the brain with smells of that particular sort,"⁵⁰ while de' Mussis mentioned that "doctors attending the sick were advised to stand near an open window, keep their nose in something aromatic, or hold a sponge soaked in vinegar in their mouth."⁵¹ Gentile, meanwhile, recommended wine as a part of a good diet to keep the four humors in balance, preferably something old and light. Lettuce and the filbert nut also appeared on his list of preventatives.⁵² He also composed a weekly regimen, beginning with Monday, which included "doses of syrups of a group of seven herbs which (as we have seen) had no elementary qualities and did not therefore act by complexion. These were *enula* (elecampane or houseleek), St John's wort (*hypericon*), which was also known as *perforata*; the daisy; *rafancus*; dittany; long and round birthwort

⁴⁷ Kelley, 173-74.

⁴⁸ Sarton, Part 1, 860.

⁴⁹ Kelley, 111.

⁵⁰ Giovanni Boccaccio, *The Decameron*, trans. G. H. McWilliam (Harmondsworth, U.K.: Penguin House Classics, 1972), 53.

⁵¹ Horrox, 106.

⁵² Kelley, 173.

and lettuce,” which all worked according to “Whole Substance action,”⁵³ making them particularly appropriate “to counter the poison of the pestilence.” “Take their juice, or their powder,” he continues, “in wine or honey water...” and so on through Sunday.⁵⁴ De’ Mussis was pessimistic about the aid of any worldly items, preferring prayer as the best preventative. “I have, however,” he noted, “known a case where, although there was a stench arising from the patient, the use of the best theriac expelled the poison and prevented it proving fatal.”⁵⁵ Theriac was an ointment made from snake flesh and other ingredients was believed to draw poison from the body in a sort of “fight fire with fire” sense, and had been used as a cure-all since the days of Hippocrates.⁵⁶ Gentile included theriac as part of his Tuesday and Wednesday regimen, and directly compares some of his other drugs to the snake-flesh mix, which “[are] each... as strong as the theriac in healing poisoned wounds and all the ancients used them for wounds before theriac was known.”⁵⁷ Preventative steps were still urged, however, since doctors “realized the inadequacies of their curative abilities.”⁵⁸

The enormous number of surviving plague tracts demonstrates an absolute clamor for a cure,⁵⁹ as did the massively inflated wages for working doctors, such as a case in the town of Orvieto, where one of the town doctors, Matteo fù Angelo, received a salary of £25 per year in 1346, but which was raised to £200 per year and exception from civic taxes after the plague.⁶⁰ Still, it is equally clear that people realized the prescribed cures were frequently not enough to ward off death. Boccaccio wrote of Florence that:

⁵³ Natural substances that worked according to Whole Substance action, which Gentile refers to as “Specific Property,” “depended upon the action of the whole [of the substance] and not only manifest elementary qualities.” See Roger Kenneth French, *Canonical Medicine: Gentile Da Foligno and Scholasticism* (Leiden: Brill, 2001), 168.

⁵⁴ French, 291.

⁵⁵ Horrox, 25.

⁵⁶ Sarton, Part 1, 850.

⁵⁷ French, 291.

⁵⁸ Gottfried, 113.

⁵⁹ Other authors of note who wrote plague tracts well known to their contemporaries include Dioniso Colle da Belluno, Tomasso del Ganbo, and others. See Sarton, Part 2, 1668.

⁶⁰ Modern scholars place the death rate at Orvieto at around 50 percent. See Philip Ziegler, *The Black Death* (New York: John Day, 1969), 56.

Numerous instructions were issued for safeguarding people's health, but all to no avail... Against these maladies, it seemed that all the advice of physicians and all the power of medicine were profitless and unavailing. Perhaps the nature of the illness was such that it allowed no remedy; or perhaps those people who were treating the illness (whose number has increased enormously because the ranks of the qualified were invaded by people, both men and women, who had never received any training in medicine), being ignorant of its causes, were not prescribing the appropriate cure.⁶¹

At the same time de' Mussis lamented, "to flee is impossible, to hide futile,"⁶² and Agnolo di Tura del Grasso, writing in 1348 after burying his wife and five children, mourned that "no medicine or any other defense availed."⁶³ When Gentile himself succumbed to the plague in 1348, it was clear that even the most renowned authorities were at a loss to stop the epidemic.⁶⁴

Still, even if they were unable to produce an effective cure, doctors were nevertheless methodological and accurate in describing the symptoms. The prescriptions and advice may have been based on outdated writings, but the analysis and identification is fairly consistent from author to author in describing the size of the swellings and time between contraction and death. Some, like Gabriele de' Mussis, were even able to separate between the various different strands of plague,⁶⁵ although others like Gentile did not, believing it to be identical to ancient pandemics referred to in older texts, as well as a minor outbreak of disease he had personally experienced in Padua.⁶⁶ Matteo Villani, a physician who survived the initial outbreak and who continued to work through several waves after it until his death during the plague of 1361-1363, wrote in his 1357 *Cronica con la continuazione di Filippo Villani* that

⁶¹ Boccaccio, 51.

⁶² Horrox, 20.

⁶³ William M. Bowsky, ed., *The Black Death: a Turning Point in History?* (Huntington, N.Y.: R. E. Krieger Publishing, 1978), 14.

⁶⁴ Garcia-Ballester, 241.

⁶⁵ Aberth, 121.

⁶⁶ Garcia-Ballester, 241.

“[a]t this time, diseases of tertiary, *quartene*, and other fevers with long-drawn-out illnesses afflicted our territory.”⁶⁷ It seems, however, that no writer ever connected the plague with either fleas or rats.⁶⁸

Yet while skepticism was widespread and many doctors threw down their books in defeat, others continued to apply their knowledge, however flawed, and work toward a cure, often to their last breath. The Great Mortality served as an eye-opener to many who realized that the authorities of the past may not have been sufficient to deal with the problems of their present, a shift in thinking that may have paved the way for later Renaissance physicians. Bologna began to carry out postmortem examinations of victims to try to find a cause through experimentation,⁶⁹ and after the first pandemic outbreak of plague passed, the rest of Europe universally accepted surgery, a practice until then the exclusive domain of the Italians.⁷⁰ With perhaps one-half of Italy lying in unmarked graves, the doctors of 1300-1350 could not deny that they had been thrust into a situation for which their education had not prepared them. Even so, still they argued, reasoned, theorized, and worked to maintain their place as the reputed leading medical practitioners of the Western world.

⁶⁷ Jansen, 326.

⁶⁸ Gottfried, 101.

⁶⁹ Crombie, 235.

⁷⁰ Sarton, Part 1, 244.

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