A Brief History of Miasmic Theory

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While the idea that bad or corrupt air is the cause of illness and disease dates at least to ancient Greece, the use of the term “miasma” to describe this concept appears to date from the seventeenth or eighteenth centuries.

The Ancients: The Origin of the Theory

The Encyclopedia of Public Health states that miasmic theory “dates at least from classical Greece in the fourth or fifth century B.C.E.” The Greek physician Hippocrates (c. 460-377 B.C.E.) believed bad air to be the cause of pestilence—or, more accurately, believed bad air was equivalent to pestilence. Vitruvius, in his Ten Books on Architecture, warns of the dangers of various kinds of bad air—exhalations from marshes, pestilential air, and unhealthy vapors—but does not use the term “miasma”. Greco-Roman physician Galen (c. 130-201 C.E.) expanded upon the theory of bad air, tracing individual susceptibility to the balance of humors in the body. This idea was influential during the Middle Ages as an explanation for contagion—why some contracted plague while others did not.

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1 This paper was written in August 2007 in the capacity of a graduate research assistant to Assistant Professor Rebecca Williamson at the University of Cincinnati.
5 Byrne 2004: 44.
6 Ibid.
The Middle Ages: Corruption of the Air

The concept of bad air was the primary explanation for disease in general, and the plague in particular, during the Middle Ages and into the Renaissance. However, it appears that the term “miasma” was not yet in use to describe this theory. Instead, Medieval writers referred to “corruption of the air,” “pestilential air” or “putrefaction of the air” (the latter primarily referring to the process by which air became corrupt). This conclusion is based on a review of a number of primary sources. Specifically, “plague tractates”—pamphlets dating from 1348 onward written to inform the general public about the causes of, remedies to, and prevention of the plague—provide a relatively clear picture of the knowledge and terminology of the time. At least 281 plague tractates have been identified, of which 77 were written before 1400 and about 20 were written within five years of 1348.

Master Jacme d’Agramont, a physician of Lerida in Catalonia, Spain, wrote the first known plague tract in April of 1348. Jacme believed that most maladies came from pestilential or corrupt air. His tract goes into great detail on the various qualities of air and processes by which air can become corrupt. According to Winslow (1948), “This concept [of pestilence as corrupt air] is generally basic in all of the plague tracts. It goes back to Galen’s definition of pestilence as a disease arising from corruption of the air [...].” The report of the Medical Faculty of the University of Paris is dated the same year. It states: “The present epidemic or pest comes directly from air corrupted in its substance.” The report recommends the use of incense and fragrance, which “hampers putrefaction of the air, and removes the stench of the air and the

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8 Ibid.
10 Winslow 1948: 755.
11 Winslow 1948: 756.
12 Medical Faculty of the University of Paris 1348, as quoted in Winslow 1948: 756. An alternate translation reads: “We believe that the present epidemic or plague has arisen from air corrupt in its substance, and not changed in its attributes” (Horrox 1994: 160).
corruption [caused by] the stench.” Spanish-Arab physician Ibn Khatimah wrote a tract in 1349 in which he states: “[…] the immediate cause [of plague] is usually the corruption of the air, which surrounds people and which people inhale.” Khatimah states that this process of putrefaction could be recognized by its “foul vapor”.

Later writings use substantially similar terminology. The 1365 treatise of John of Burgundy refers to corrupt and pestilential air. The British Parliamentary statute of 1388 prohibited the dumping of “dung, offal, entrails and other ordure into ditches, rivers, waters, or other places” explicitly because it lead to corrupt and infected air, which caused “many illnesses and other intolerable diseases”. Renaissance architect Alberti wrote in 1450 of the importance of sewers in “preserving the wholesomeness and purity of the air” but does not use the term “miasma”.

Various scholars attributed the corruption of the air to various causes. The most common immediate causes were decaying organic matter (including vegetable matter, animals, and human corpses) and “exhalations” from swamps, marshes, and stagnant water. Other explanations include winds (especially southern winds) that transported corrupt air from another locality and (less commonly) earthquakes that released poisonous gasses trapped inside the earth (e.g., anonymous German treatise). Often these events were attributed to the alignment of the planets and/or supernatural reasons or divine wrath. Whatever the cause,
disease was attributed to corruption of the air. This belief persisted for centuries: similar reasoning accompanied the Great Sanitary Awakening of the mid-1800s.\textsuperscript{26}

**The Enlightenment: The Term “Miasma”**

The *Chambers 21st Century Dictionary* dates the word “miasma” to the 17th century. It is a Latin term derived from the Greek word for “pollution.”\textsuperscript{27} The term seems to have been popularized by—if not coined by—Giovanni Mari Lancisi, whose 1717 work *De noxiis paludum effluvis* (*Of the poisonous effluvia of malaria*)\textsuperscript{28} was cited by later physicians as the source of the term “miasm” or “miasma”.\textsuperscript{29} While the Library of Congress contains an un-translated copy of this work, I could find no closer copy to confirm his use of the word “miasma”.

**Nineteenth Century: Germ Theory**

Miasmic theory maintained its currency through the middle of the nineteenth century, even as evidence mounted for germ theory. The former was used to explain many diseases, including tuberculosis, malaria, and cholera.\textsuperscript{30} Miasmic theory enjoyed support from powerful institutions and individuals, among them Dr. William Farr, the assistant commissioner for the 1851 London census, who believed miasma to be the cause of cholera.\textsuperscript{31} Skeptics were in the minority in the 1850s. In an 1851 address to the Medical Social of North Carolina, Charles Earl Johnson argued that miasm could not be the cause of disease. He prefaced his argument with this statement: “I know that in advancing this opinion, I am impinging upon the current prejudices and dogmas of the schools, and, perhaps, upon the opinions of most, if not all, of the

\textsuperscript{26} Winslow 1948: 757.
\textsuperscript{29} See, for example, Charles Earl Johnson (1851), who asks “[…] have not medical men, from the days of Lancisi down to the present time, used the term miasm or malaria, as a sort of convenient cloak for covering up their real want of information upon this subject […]?” (10).
medical gentlemen here assembled.” An influential 1849 essay by British physician John Snow entitled *On the Mode of Communication of Cholera* argued that cholera was water-borne—an opinion that supported the competing germ theory.

Germ theory was further developed by Louis Pasteur in the 1860s and Robert Koch in the 1870s. It soon prevailed over miasmic theory.

**Bibliography**


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