DIAGNOSIS IN HIPPOCRATES’ *EPIDEMICS*

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Applying a modern diagnosis to an ancient patient in Hippocrates’ Epidemics is more difficult than it may initially seem. Obviously, Hippocrates and his contemporaries were not looking for the same tell-tale symptoms that today’s physicians use to assign specific diseases and syndromes. All that we are able to know about the patient is what the ancient physician deemed important. Diseases, as described in the Hippocratic texts, do not easily translate into modern medical terminology. The greatest obstacle is the method of classifying diseases mentioned by ancient physicians, which is by symptoms. Modern medicine classifies diseases by their cause, thereby identifying each disease with greater accuracy. Additionally, the Hippocratic physicians utilized extremely vague categories of symptoms, thereby often omitting what is crucial for an accurate modern diagnosis. Another problem is that the meanings of some medical terms are hard to define and their definitions sometimes changed over time. In spite of the differences between the Hippocratic method of diagnosis and modern diagnosis, it is possible to obtain a modern diagnosis with limited success.
In order to be somewhat successful in diagnosing these ancient cases, it is necessary to understand and appreciate this art before transposing it into modern medicine. First, we must have a fundamental understanding of the texts and the physicians who wrote them. In order to understand these physicians, a basic understanding of medical knowledge in the 5th century BCE is required. It is helpful to understand the ancient and modern ideas about diseases, including their causes and common varieties. Lastly, methods of diagnosis must be discussed. With this information in mind, one is able to comprehend the ancient cases and apply modern medical knowledge in hope of finding a modern diagnosis.
CHAPTER 1
INTRODUCTION

Since ancient times, physicians and others with an interest in medicine have derived great pleasure from reading the works of Hippocrates. A favorite pastime must be attempting to apply current medical knowledge to ancient ideas. While it is quite easy to compare and contrast the views of the reader and the author, the true challenge lies in the ancient case histories. Applying a modern diagnosis to an ancient patient is much more difficult than it may initially seem. Obviously, Hippocrates and his contemporaries were not looking for the same tell-tale symptoms that later physicians use to assign specific diseases and syndromes. All that we are able to know about the patient is what the ancient physician deemed important.

Diseases, as described in the Hippocratic Corpus, do not easily translate into modern medical terminology.\(^1\) The greatest obstacle is the method of classifying diseases mentioned by ancient physicians, which is by symptoms. Modern medicine classifies diseases by their cause, thereby identifying each disease with greater accuracy. This better avoids the problem of classifying different diseases as the same. Since ancient medicine classifies diseases by symptoms, it incurs the very problem which modern medicine is able to avoid. Additionally, the Hippocratic physicians utilized extremely vague categories of symptoms, thereby often omitting what is crucial for an

\(^1\) Nutton (2004) 22.
accurate modern diagnosis.\(^2\) Another problem is that the meanings of some medical terms are hard to define and their definitions sometimes changed over time.\(^3\) Modern advances in medicine have actually made diagnosing the cases of the *Hippocratic Corpus* even more difficult. Knowledge of a vast number of rare pathologies makes any diagnosis based on a vague description even more inconclusive.

In spite of the differences between the Hippocratic method of diagnosis and modern diagnosis, it is possible to obtain a modern diagnosis with limited success. The author of *Epidemics* I says that ἡ τέχνη διὰ τριῶν, τὸ νόσημα καὶ ὁ νοσέων καὶ ὁ ἰητρός, “the skill is of three parts: the disease, the patient, and the doctor.”\(^4\) In order to be somewhat successful in diagnosing these ancient cases, one must understand all of these factors. It is necessary to understand and appreciate this art before transposing it into modern medicine. First, we must have a fundamental understanding of the texts and the physicians who wrote them. In order to understand these physicians, a basic understanding of medical knowledge in the 5\(^{th}\) century BCE is required. It is helpful to understand the ancient and modern ideas about diseases, including their causes and common varieties. Lastly, methods of diagnosis must be discussed. With this information in mind, one is able to comprehend the ancient cases and apply modern medical knowledge in hope of finding a modern diagnosis.


\(^3\) See Grmek (1989) 6-7 for examples.

CHAPTER 2
HIPPOCRATES AND THE HIPPOCRATIC CORPUS

There is a vast difference between what is known and what is commonly known about Hippocrates and the Hippocratic Corpus. In reality, we know practically nothing about him or about what he may or may not have written; however, common belief encompasses much more. This is due to several factors: The desire to know as much as possible about historical figures compels the fabrication of false, but plausible, information, especially when very little is known. “The Greek habit of composing imaginary speeches or letters by famous persons from the past as school exercises and public display pieces gradually blurred the distinction between the genuine and the false.” Over time, works of questionable authorship tend to be attracted to the genuine works, eventually blurring the distinction between what is genuine and what is not. Lastly, there is a longstanding tradition that emphasizes certain works and compels the belief that they had been written by Hippocrates himself. The end result is a man shrouded in mystery and a vast body of literature of questionable authorship.

Hippocrates is mentioned several times in Greek literature. Plato makes references to him in Protagoras and Phaedrus. Protagoras was written in the early fourth century and is set around 430 BCE, roughly fifty years earlier during Hippocrates’

time. Plato confirms that Hippocrates was from Cos, that his medical prowess was well-known, and that he would teach the art of medicine for payment. Plato also identifies Hippocrates as an Aesclepiad, a member of a guild of physicians that traces its heritage to Asclepius, and a teacher who accepted any student for a price. In *Phaedrus*, Hippocrates is named as the representative physician, even during his lifetime, and he is said to have an organistic approach to medicine, of which Socrates approves. Aristotle mentions Hippocrates once, claiming that he was a great physician and short in stature and making the point his greatness was the result of his ability as a physician, not wealth, birth, or size. Aristotle’s student Meno wrote a compendium of early Greek medicine that mentions Hippocrates’ opinion on the cause of disease. A group of letters and speeches from around 350 BCE serves as a major source for Soranus of Ephesus’ biography of Hippocrates, which was written around 100 BCE. Later biographies include one in the tenth-century *Suda* and another from the twelfth-century written by Tzetzes.

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6 Aristotle *Politics* 1326a.14-15; cf. Carrick (2001) 76. This is the only physical description of Hippocrates, adding to the difficulty in associating any ancient statues with him.


Hippocrates was born in Cos, perhaps around 460, and he belonged to a guild of physicians called Asclepiadae.\textsuperscript{10} He learned medicine from his father, Heraclides, and from Herodicus. During his lifetime, he traveled all over Greece and his help was sought by Perdiccas, king of Macedonia, and Artaxerxes, king of Persia. He was present during the plague at Athens and for plagues in other places. Hippocrates probably died in Thessaly around 399 BC and was buried near Larissa.\textsuperscript{11} 

The \textit{Hippocratic Corpus} is composed of about sixty works in Ionic Greek.\textsuperscript{12} The uncertainty as to the number is due to the erroneous separation and combination of texts in antiquity. Today’s standard \textit{Hippocratic Corpus} dates back to 1526, when the first edition was published by the Aldine press in Venice. The surviving manuscripts contain only individual selections from the \textit{Hippocratic Corpus}. A majority of the passages in the 1526 edition were accredited to Hippocrates by the first century AD, perhaps earlier. Most of the works in the \textit{Hippocratic Corpus} were probably written between 420 and 350 BCE, corresponding to the lifetime of Hippocrates and the following decades. Some works, on the other hand, are probably from the third or second centuries BC or even as late as the first or second century CE.

\textsuperscript{10} Aulus Gellius N.A. XVII.21 says that he was older than Socrates, which would put his birth before 470; Jones (1984) xlii-xliii.

\textsuperscript{11} Carrick (2001) 78; however, Jones (1984) xlii asserts that Hippocrates was born in 460 and lived for a long, but unknown, period of time, citing possible ages of 85, 90, 104, and 109 years. This would place his death between 375 and 351. If he were born before Socrates, as Aulus Gellius suggests, and died in or around 399, this would give him a long, yet still reasonable, lifespan.

\textsuperscript{12} Nutton (2004) 60-61.
The *Hippocratic Corpus* contains the first works actually written by the physicians themselves describing the profession and their role. Some works in the *Hippocratic Corpus*

show signs of a great mind, dignified and revered with all the severity of the Periclean period, which, without being distinctly original, transformed the best tendencies in Greek medicine into something which has ever since been the admiration of doctors and scientific men… *Prognostic, Regimen in Acute Diseases*, and *Epidemics* I and III fit the last category.

These works are generally grave and austere in style and scientific in content. Language is typically used to express thought, not to adorn it, except in more dramatic passages and those which were clearly written to be circulated, such as the *Constitutions* in the *Epidemics*. Both superstition and philosophy are normally excluded.

Determining which, if any, of the extant texts were written by Hippocrates himself is nearly impossible. Ancient scholars, such as Aristotle and the author of the Anonymous Londinensis papyrus, and others could not agree which texts were genuine either. The selections that Galen deemed authentic based on language, style, and content were regarded as such until the mid-nineteenth century. “But for all Galen’s diligence and learning this was an ultimately circular procedure; Aristotle had already denied the reliability of its starting point.”

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The *Epidemics* are the most extensive collection of medical cases from antiquity.\(^{19}\) Hippocrates (or one of his associates) was the first physician to record case histories.\(^{20}\) They present necessary information so that the author and his readers could estimate the severity of a disease, predict its outcome, and treat it, if possible. This includes close observation of symptoms and consequences, remarks on remedies, and recording of atmospheric phenomena.\(^{21}\) Plagues occurred in ancient Greece; however, the *Epidemics* primarily relate endemic, not epidemic, diseases, as even the plague of Athens is not discussed. Considering the purpose of these works, it is understandable that the focus is the disease, and not the patients.\(^{22}\) The author writes as an observer of natural phenomena more than as a physician; however, there is no reason to assume that the patients were not treated. Treatment is occasionally mentioned or hinted at, but not discussed because it is irrelevant to the purpose of *Epidemics*.

The *Epidemics* were written at three different dates: books I and III ca. 410 BCE; books II, IV, and VII ca. 400 BCE, and books V and VI between 358 and 348 BCE.\(^{23}\) Some of these may have been written by the same author, while others were composed from the same material, as some cases from *Epidemics* V and VII are nearly identical, but with slightly different wording. Only the oldest part of the collection, *Epidemics* I and II, containing forty-two cases, will be discussed here.

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\(^{19}\) Nutton (2004) 22.

\(^{20}\) Gordon (1949) 519.


\(^{23}\) Nutton (2004) 60. These are only general groupings by date. The precise order in which these works were written is heavily debated.
The advancement of Greek medicine leading into the fourth century was the product of the increased influence of reason and generally decreasing influences of religion and philosophy. At the earliest stages, religion was the major contributing factor. What is not understood is attributed to the divine, and what is understood is natural; this changes over generations as knowledge increases. 1 “But this realization did not come all at once, and in the science of medicine it was peculiarly slow. There is something arresting in the spread of an epidemic and in the onset of epilepsy or of a pernicious fever. It is hard for most minds, even scientific minds, not to see the working of a god in them.” An excellent example of this is found in Thucydides’ Peloponnesian War: 2 The plague of Athens in 430 BCE was seen as a turning point in the war, after which Athens eventually surrendered. Additionally, there was also a surge in the popularity of Asclepius, the god of healing, around this period. Reason did, however, have a firm basis early on. The efficacy of human means to relieve pain is so obvious that even in Homer, the first literary authority for Greek medicine, rational treatment is fully recognized. Philosophy eventually superseded religion and sought for uniformity in all phenomena, leading to guesswork and neglect of fact in an attempt to frame a comprehensive theory. 3

2 Thucydides Peloponnesian War 2.47-2.55.
Charles Daremberg said in *Histoire des sciences médicales*, “the philosophers tried to explain nature while shutting their eyes.” As the influence of the philosophers decreased, so did the desire to find universal theories that apply equally to the cosmos and to medicine. Experience in the practice of medicine eventually was becoming the predominant influence on medical theories, thereby allowing for all future advancements.

The *Hippocratic Corpus* contains both medicine and philosophy. Some treatises try to explain medical phenomena with *a priori* assumptions, while others do not. Celsus says in his introduction that “Hippocrates… separated this discipline from the study of wisdom, and he was a man distinguished in skill and eloquence.” He also says that Hippocrates separated medicine and philosophy, and the best works produced by the Hippocratic school lack philosophic assumptions as much as they lack religious dogma.

Physicians in ancient Greece were only one type of healers, as there was also a variety of religious healers. As such, they had to compete against other physicians and other healers for patients. It was crucial for physicians to make good first-impressions and maintain an impeccable reputation. As in any other profession, one must be a skilled speaker and interact well with others in order to accomplish this. A physician’s reputation was maintained by either satisfying their patients or at least being able to foretell negative outcomes. By predicting the course and outcome of a patient’s illness, the ancient physicians were able to build public confidence in their skill and maintain a steady clientele. Prognosis is more than a means of impressing patients: It is one of the

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5 *Hippocrates… ab studio sapientiae disciplinam hanc separatit, vir et arte and facundia insignis*


most distinctive and important features of Hippocratic medicine.\(^8\) It is crucial to understanding the patient’s ailment and knowing the necessary treatment, which must be adapted as the patient’s condition progresses. It is this understanding of the condition that separates the physician from other kinds of healers. The importance of prognosis is clearly reflected in the writings of the *Hippocratic Corpus*: *Aphorisms*, *Coan Prognoses*, *Dentition*, *Prorrhetic I*, *Prognostic*, and *Airs, Waters, and Places* all deal with the art of prognosis, and the *Epidemics* were written to assist in giving an accurate prognosis.

Physicians differed in several respects. Plato divides physicians into slaves and non-slaves, with each treating their own class.\(^9\) He also acknowledges that a free-born doctor would also treat slaves, as shown within the *Hippocratic Corpus*. Some doctors stayed within their own communities, while many others traveled extensively.\(^10\) Some worked alone, and others were members of guilds. Physicians could have one of several different sources of income: Some were wealthy enough to treat patients without a fee, some were paid by patients, and others paid by the state. Those who were paid by the state would either tend to an army or navy while on campaign or serve as a “public doctor”.\(^11\) Athens even paid doctors to reside in the city.\(^12\)

\(^8\) Gordon (1949) 504; Nutton (2004) 89.


\(^11\) Herodotus [*History* 3, 129-37] says that both Athens and Aegina had a system of public doctors in by the late sixth century. Democedes held both of these positions at one time.

\(^12\) Plato *Gorgias* 455b, 456b; Xenophon *Memoirs* 4, 2, 5.
“The Hippocratic physiology of the body is based both on observation and on a wide range of analogies with the world around.”\textsuperscript{13} Ancient physicians needed to develop an understanding of physiology using only what they knew. They were able to witness natural processes around them, but it was more difficult to watch the human body work; consequently, they had to apply what they knew about the world outside of the human body to the inside of the human body. An added difficulty is that religious considerations made it nearly impossible to examine the inside of the human body through dissection. They were only able to gain experience in this area when they were fortunate enough to come upon a patient with substantial wounds, often from battle, and either perform surgery or briefly examine the corpse. In order for these physicians to achieve anything else, they would have had to disregard religious restrictions and experience a paradigm shift, a total change in their way of thinking.\textsuperscript{14}

The theory of fluids or humors became predominant in Hippocratic medicine.\textsuperscript{15} The major advantage of this theory is that it had tangible evidence: The presence of or difference in bodily fluids is easily recognizable. For example, pus or variations in sputum, urine, or excreta can all be seen and touched. The location where the fluid exited the body is also significant, as it seemed to show the point of bodily weakness. The identity and quality of the humors varies throughout the \textit{Hippocratic Corpus} and not all of its authors subscribe to a version of it.

\textsuperscript{13} Nutton (2004) 77.

\textsuperscript{14} “Paradigm shift” is Thomas Kuhn’s term for the radical change in the way one looks at nature that forms the basis of a scientific revolution. See Kuhn, Thomas S. (1996) \textit{The Structure of Scientific Revolutions}. Chicago.

\textsuperscript{15} Nutton (2004) 78.
Two humors were quickly and almost universally accepted, while others were the topic of much debate. Although there was no set number of important humors, phlegm and bile were of primary concern to physicians because they were both undoubtedly related to sickness.\textsuperscript{16} Phlegm (Gk. πλέγμα for flame, fire, inflammation), was originally associated with heat, inflammation, and swelling; however, by the fifth century, became to be considered as something cold, white, and sticky. Phlegm was seen to block air passages and thought to cause arthritis when it settled in a joint. Bile, which can be seen in vomit and diarrhea, was thought to deteriorate interior surfaces of the body, because of the stinging sensation produced when it is evacuated. Menecrates (fl. mid-4\textsuperscript{th} c.) believed that the body was composted of two hot elements, blood and bile, and two cold elements, breath and phlegm. In Diseases IV, the author identifies the humors as blood, bile, phlegm, and water, which no others identified as one of the humors. Toward the end of the fifth century, some believed bile to be of two types, red and black. Later, black bile was considered a separate humor. Red bile was considered good when it was in equilibrium, but black bile was often considered to be innately bad. This is the origin of the established theory.\textsuperscript{17}

The predominant Hippocratic theory of the four humors, which is outlined in The Nature of Man, is derived from the cosmogenic theory of Empedocles, a pre-Socratic philosopher who lived ca. 490-430 BCE. Empedocles’ four elements, which composed all types of matter, were earth, air, fire, and water and they were associated with four...

\textsuperscript{16} Nutton (2004) 79-82, 84.

\textsuperscript{17} Carrick (2001) 29.
qualities, hot, cold, wet, and dry.\textsuperscript{18} *Nature of Man* is the only Hippocratic work that explains the theory of four humours and is also the first in which it is mentioned. The author does not say that man is made of Empedocles’ four elements or anything else that does not clearly show itself in man, as that is beyond the domain of medicine.

The four humors have characteristic qualities. Like Empedocles’ elements, each humor is assigned two of the “primary opposites,” which are hot and cold and moist and wet.\textsuperscript{19} Additionally, each humor is assigned to a season, which shares its primary opposites, in which it is supposedly abundant:

\begin{table}[h]
\centering
\begin{tabular}{|c|c|c|c|}
\hline
Humor   & Element & Season & Primary opposites \\
\hline
Blood    & Air      & Spring  & Hot, moist       \\
\hline
Phlegm   & Water    & Winter  & Cold, moist      \\
\hline
Black bile & Earth   & Autumn  & Cold, dry        \\
\hline
Yellow bile & Fire     & Summer  & Hot, dry         \\
\hline
\end{tabular}
\caption{The humors and their associated qualities.\textsuperscript{20}}
\end{table}

This classification of the four humors represents a well-balanced system that is easy to understand and provides the basis for treatment.

The application of the humoral theory is well-summarized by Paul Carrick’s seven principles: equilibrium, seasonal influence, contraries, innate heat, natural healing, \textit{pepsis}, and critical days.\textsuperscript{21} An individual is in good health when his humors are in equilibrium, for disequilibrium causes sickness. The qualities of the seasons are applied to the humors, as shown above, and the seasons influence health. Illnesses are countered

\footnotesize
\textsuperscript{18} Nutton (2004) 81, 90-91.
\textsuperscript{19} Longrigg (1993) 91-92.
\textsuperscript{20} Carrick (2001) 31.
\textsuperscript{21} Carrick (2001) 29-34.
by their contraries, e.g. an excess of black bile, which is cold and dry, could be treated with beverages and warm baths. The body has an innate heat, which creates and moves the humors and causes digestion. Nature strives to heal an ill individual, and it is the responsibility to assist, not impede, this process. When there is an excess of one humor, the excess thickens via the process of *pepsi*, or coction, and is then expelled. This process is neither completely chemical nor mechanical.  

Lastly, each illness has critical days, on which the illness will change for better or worse, at predictable intervals. This could be accompanied by an expulsion of residue. Afterwards, there might be a relapse and another crisis. This basic understanding of the humors and the application of the theory allows a more in-depth look at good health, sickness, and treatment.

Determining the difference between healthy and ill is not as simple as it may appear. Whether phlegm and bile were present only in the sick or in both sick and healthy bodies was undetermined, with proponents on each side. Some believed that good health, even with an imbalance of humors, was the normal state and sickness arose when peccant material settled in a region; however, others believed that perfect health was rare, as an athlete could only remain at his best level of fitness with great diligence and people were usually at least slightly ill.  

Similarly, the author of *Nature of Man*

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23 Carrick (2001) 29-34.


identifies illness as when there is any imbalance of the humors.\textsuperscript{28} Many others accept that a slight imbalance of the humors is perfectly normal and that there is no immediate transition from well to ill that corresponds to a slight shift in equilibrium of the humors. This position is held by the author of \textit{Regimen}.\textsuperscript{29}

Vivian Nutton says that “on the whole, ancient medicine depended on the recuperative powers of the body and the self-limiting nature of many acute illnesses.”\textsuperscript{30} This idea is echoed in \textit{Epidemics} VI, case V: “Nature is the physician of diseases. Nature finds ways and means all by itself, not as a result of thought.”\textsuperscript{31} The physicians had to find ways to treat their patients without hindering any natural healing process. After identifying an illness, the physician had to decide whether or not he was able to treat the patient. Any treatment would be avoided if it were highly unlikely that it would be successful or that it would cause more harm than good. Not treating a patient under these circumstances was acceptable to most or all of the authors of the Hippocratic Corpus.\textsuperscript{32} “No blame was attached to a reasoned refusal to treat, and at least one author in the Corpus believed that it was essential to reject any case judged to be incurable; another advised that a decision to treat should be accompanied by an announcement of the likely


\textsuperscript{30} Nutton (2004) 35.

\textsuperscript{31} Carrick (2001) 33.

outcome.” Plato saw this as a true indication of skill, to acknowledge the limits of one’s power.

Greek methods of treatment sometimes strive to cure illness allopathically, by having the opposite effect of the present illness. When the humors are not at equilibrium, it must be restored by either removing what is in excess or by increasing what is deficient. “One of the distinctive features of Greek medicine is its insistence on dietetics as central to all therapeutics.” In the fifth century, the role of dietetics in Greek medicine advanced well beyond that of the Egyptians and Babylonians, who focused on the quantity of food consumed. Plato credits Herodicus of Selymbria, a gymnastic trainer, with these advancements. Regimen, Nutriment, and Regimen in Acute Diseases all suggest the modification of diet from the onset of disease. The usage of food to affect the balance of humors is no different than the usage of drugs. Nutton remarks that the distinction between the two can be almost entirely subjective at times. Patients were often treated hydromel, oxymel, wine, and barley water/gruel. Purgatives and emetics were used to remove substances from the body. Fomentations and baths were also used to alter the humors. Another common method of treatment is phlebotomy, the cutting of an artery and allowing the patient to bleed, sometimes to the

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34 Plato Republic 360e-361a.


37 Plato Republic 405d-406c.


point of unconsciousness. While it is unlikely that the patient benefited from this
procedure, it did not worsen his condition noticeably in many cases. With this basic
understanding of the humors and treatment, we may now consider health and disease in
ancient Greece.
CHAPTER 4
DISEASES IN ANCIENT GREECE

Not surprisingly, our modern idea of disease does not directly correlate to Greek medicine. For the Greeks, specific sets of symptoms eventually became diseases. The physicians understood diseases as natural processes that act on the human body, while others sometimes considered them to be separate from than realm of medicine, especially in a religious context.¹ The physicians used these diseases as mere guidelines to classify similar afflictions. Additionally, they knew that these diseases were somehow related to the geographical and atmospheric environment and that they typically ran a predictable course.² Experience showed them that patients often had to somehow modify their daily life in order to recover. They were not able to know anything beyond this; consequently, it was necessary for them to resort to hypotheses to explain the workings of diseases. “In doing so [the physician] was obeying a human instinct which assures us that progress requires the use of stop-gaps where complete and accurate knowledge is unattainable, and that a working hypothesis, although wrong, is better than no hypothesis at all.” Let us now consider what the ancient Greek physicians’ hypotheses were.

Ancient Greek explanations of disease vary even within the Hippocratic Corpus. Disease is not the result of invisible forces or the gods, but processes that occur within the natural world. In general, it is the product of an individual’s nutrition and interaction

with his environment, which causes problems with the body’s system of fluids and conduits. These problems can be the result of matter settling in a particular place, the presence of bad gases, or a surplus or deficiency of an otherwise beneficial fluid. All of the Hippocratic authors give natural explanations for disease that are general enough to explain all or most conditions. The author of the Anonymous Londinensis papyrus acknowledges that there is much argument over the cause of disease. Popular theories are that it is the product of residues (either pathological or produced as the body’s natural secretions) or of changes in the body’s elements. Physicians tend to believe in the theory of residues, while the philosophers tend to believe in the theory of elements. The majority of Greek medical writers believed that epidemics were caused by bad air. According to Meno, Hippocrates believed that disease was the resulted of badly digested or unwisely selected food, which produces bad air within the body. Some of the other works and their explanations are as follows: The author of *Breaths* supports the theory that Hippocrates supposedly held. *Places in Man* cites seven types of flux of the humors, originating in the head and settling elsewhere in the body, as cause of disease. The author of *Diseases* gives three causes: imbalance of humors (primarily with relation to diet), violent causes (falls, fatigue, or wounds), and the atmospheric conditions.

For the ancient Greeks, the factors affecting health were behavior and environment. Behavior includes any action a person may do throughout the day, especially eating and exercising. Naturally, eating good foods in moderation and

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exercising sufficiently were the focus. Environment requires considerably more explanation. In *Regimen*, the author says that a doctor must become acquainted with both the patient and his surroundings, which include the season, winds, weather, region, and even sunrise and sunset.  

6. *Airs, Waters, and Places* provides guidelines for predicting the types of diseases are likely to be found in a region, based on geographical and environmental factors. Within the *Epidemics* there is a collection of passages known as the *Constitutions*, which contains detailed and eloquent descriptions of the climate and geography of various regions. The best are found in books I and III; however, all of the books contain similar information. This idea of environment is intertwined with the idea of contagion. Many individuals may respond to the same environmental conditions, but many individuals grouped together have no greater chance of becoming ill than a small group does.  

7. It is the constitution and behavior of the individual and the impact of the environment that count, not the population density. While the notion of contagion is present, it is not as important a factor as one might expect. Thucydides mentions it in his description of the plague of Athens in 430 BCE, other authors use person-to-person contact to explain why some become sick while others do not, and it was also commonly used to describe religious pollution.  

8. In spite of this, the Hippocratic physicians do not apply it to their hypotheses.  

9. Another related missing consideration is the association of cities to health. None of the Hippocratic authors recognize a connection between health and the high population density of cities, which we now know to increase the danger of

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infectious diseases significantly. In spite of their focus on and knowledge of geography and climate, none of the authors in the Corpus maintain that any one Greek state is healthier than the other. While it is beneficial to understand what the Greeks thought of disease and factors affecting health, it equally important, if not more, to apply some modern medical knowledge to what we know about fifth- and fourth-century Greece, so that we will be better prepared to take on individual case histories in the following chapter.

For each civilization, there are certain factors that affect the health of the population as a whole. Quite often, many of these are beyond their control: Humans are most vulnerable to their environment when they are either very young or growing old, and the elderly are subjected to number of maladies which rarely affect the young and middle-aged. Location and type of community in which they live predispose them to a particular set of illnesses. Additionally, where and how people live determines what they eat, which can also have a negative effect on health at times.

The age structure of ancient Greece affected the types of conditions seen by physicians on a regular basis. In spite of a high infant mortality rate, children who survived through their first year often lived into their thirties or forties. Many historical figures are known to have lived much longer. Diseases that become prevalent in aging individuals would not have been extremely common. Additionally, the gradual deterioration of mind and body was expected as part of aging, so it is not given much

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Consequently, we can expect diseases and conditions that affect people of all ages in most cases.

Both urban and rural areas carry certain sets of risks. Before and during Hippocrates’ time, large cities were quite rare. The largest of these, such as Athens, Corinth, Syracuse, and Carthage, had over 15,000 inhabitants. Most cities were much smaller, having 2,000 or fewer people living within the city, and approximately 6,000 at most including surrounding areas. It is important to note that population density is more important than the size of the population. The larger cities attracted people from great distances, thereby replenishing a population that was not self-sustaining. Additionally, the population of these cities grew substantially in times of crisis because of the influx of nearby people, as in Athens during the plague. Mirko Grmek argues that increasing populations and urbanization in the sixth and early fifth centuries caused an increase of disease in Greece and a lowered life expectancy, as many diseases only flourish when population density is high. Hippocrates’ cities, on the other hand, were small, self-sufficient, agrarian communities. They were more exposed to diseases carried by the region’s fauna, but at less risk of contracting highly-contagious diseases from others. The locations of the communities also played a significant role. Those near malarial

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14 Thucydides Peloponnesian War 2.52.
lowlands were especially sickly.\textsuperscript{17} This will be discussed in detail later in this chapter. The authors of the *Hippocratic Corpus* do relate cities to health, but only with regard to their geography.\textsuperscript{18} Cities are not considered to be any better or worse than the country for one’s health. For the Greeks, the health of a city was related to the wind, sun, and water supply. Even in the *Epidemics*, which are often specific to one particular city the authors do not give specific examples of cities or towns when discussing geographic factors. Moreover, whereas the authors of AWP and R describe places which they deem to be most healthy, the authors of the Epidemics offer no advice on where to live.”

Another major factor in the general health is malnutrition, which often results from climactic changes.\textsuperscript{19} During the winter months, fruits, vegetables, and seafood could become scarce. A poor harvest or harsh winter could easily obliterate a significant portion of a city’s food supply, greatly affecting health. The Greeks made this association, as the similarity between the words *limos* (dearth) and *loimos* (disease) suggests. Malnutrition decreases the population’s resistance to disease; consequently, outbreaks are often associated with local famines, periods of siege, and armies, either when camped or on campaign.\textsuperscript{20} This concludes the general factors that affected health in ancient Greece, so we can now consider specific diseases, both ancient and modern.

Before we begin to discuss the specific diseases, we must once again remind ourselves that the Greeks’ diseases were determined by symptoms, not causes, and that the terminology is often extremely vague. For example, φθίσις is usually translated as

\begin{small}
\textsuperscript{17} Nutton (2004) 21.
\textsuperscript{18} Kosak (2000) 36.
\end{small}
tuberculosis, but it could be one of many diseases. All skin lesions were typically grouped together and there is no guarantee of consistent usage of terminology among physicians. In spite of these difficulties, we are still able to recognize many modern diseases in the ancient writings. Some common examples include coughs, colds, pneumonia, pleurisy, diarrhea, jaundice and other liver infections, parasitic digestive tract infections, tapeworms, ulcers, and leprosy (Hansen’s disease). Kidney and bladder dysfunction are mentioned frequently. Eye diseases, such as glaucoma, trachoma, and conjunctivitis are commonly mentioned. Strokes, epilepsy, migraines, headaches and other nervous and mental disorders are described in both medical and non-medical texts.

Fevers (πυρετοί) are the most extensively depicted condition. This broad category includes any condition causing a feeling of excessive heat, either by the patient or the doctor. These fevers were classified by their periodicity, that is, the pattern of the highs. Some fevers maintained a constant high and then resolved, while others peak at highly-predictable intervals, such as two (πυρετός ἀμφημερινός), three (πυρετός τριταῖος) or four days (πυρετός τεταρταῖος). W. H. S. Jones states that these fevers are

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22 Descriptions of disfiguring skin diseases in texts from Babylonia, Egypt, and Israel from before 800 BCE are more likely to be psoriasis than leprosy. See Nutton (2004) 29.


indicative of malaria and his view is maintained by more recent scholarship.\textsuperscript{28} The most
dreaded fever is the semitertian, which Celsus describes:

\begin{quote}
Tertianarum vero duo genera sunt. Alterum eodem modo, quo quartana, et
incipiens et desinens, illo tantum interposito discrimine, quod unum diem praestat
integrum, terto redit. Alterum longe perniciosius, quod tertio quidem die
revertitur, ex quadraginta et octo horis fere triginta et sex per accessionem
occupat interdum etiam vel minus vel plus, neque ex toto in remissione desistit,
\hmtiraion appellant.\textsuperscript{29}
\end{quote}

There are indeed two types of tertian fevers. One, beginning and ending in the
same manner as a quartan fever, with only this difference admitted, that it
provides one free day and returns on the third. The other is more dangerous by
far, as it indeed returns on the third day, out of forty-eight hours, it occupies about
thirty-six hours with the attack, sometimes even more or less, and it does not
cease in the entire remission, but it is only lighter. Most doctors call this time
semitertian.

The semitertian fever, which is commonly known as the malignant tertian fever, is
indicative of falciparum malaria.\textsuperscript{30} Malarial cachexia, the result of a chronic malarial
infection, with symptoms of anemia, weakness, dark complexion, and enlarged spleen is
frequently found in the \textit{Hippocratic Corpus}.\textsuperscript{31} The common varieties of malaria in the
Mediterranean are \textit{Plasmodium vivax}, \textit{P. malariae}, and \textit{P. falciparum}, which is the most
hazardous.\textsuperscript{32} The Greeks were certainly familiar with the effects of these diseases:

Upstairs rooms are known to be healthier, severe fevers are especially common in years
having wet springs and hot summers (first providing an ideal breeding ground for

and associated variants of malaria.

\textsuperscript{29} Celsus \textit{De Medicina} III.3.2.

\textsuperscript{30} Sallares (2004) 314. The presence of \textit{Plasmodium falciparum}, which causes falciparum malaria, in
ancient Greece is still debated. Both Jones and Sallares believe that \textit{P. falciparum} was present. See


\textsuperscript{32} Nutton (2004) 32.
mosquitoes, then forcing them to relocate), and areas near fresh-water marshes are more
dangerous than salt-water marches. The chill associated with fevers is described in two
ways: The cold sensation is ῥῖγος and the associated shivering is φρίκη. Melancholia
(μελαγχολία), as its name suggests, was thought to be caused by black bile. 33 This
causes physical and mental prostration and is now associated with malaria. In addition to
fevers, there are several other conditions worth mentioning.

Colds, both with and without associated fevers, were common, but the presence of
influenza is unknown. 34 The description of the epidemic cough at Perinthus in
Epidemics IV appears very similar to influenza; however, it is stated that relapses into
pneumonia were rare. Especially in older individuals, the influenza virus or an associated
bacterial infection causes pneumonia.

Various types of inflammation are often described. 35 The two most common
forms are ἐρυσίπελας and θερμασία. Both varieties are warm, but the former is a
superficial and yellow and the latter is considered internal and red.

Common digestive problems are διάρροια and δυσεντερία. 36 Diarrhoia is simply
the production of loose stool. Dysenteria, however, is a more serious condition that is
associated with fever, ulceration, and the blood in the stool. This may be associated with
typhoid or paratyphoid.

Madness is communicated by various words. Although each of these probably each had a more specific meaning, only vague distinctions can be drawn. One group emphasises delirium: παραφέρομαι, παραφρονῶ, παρανοῶ, παρακρούω, παρακοπή, ἐκμαίνομαι, and μανία. The other group places emphasis on speech: λῆρος, παράληρος, παραληρῶ, παραλέγω, and λόγοι πολλοί. The most common of these in *Epidemics I* is παρακρούω.

Combinations of the preceding symptoms with many others constitute diseases for the Greek physician. A sound knowledge of diseases allowed him to provide his patients with an accurate prognosis when the symptoms resembled a known case and also to treat the patient to the best of his ability. Hippocrates’ *Epidemics* served as a practical guide to a handful of diseases. With Greek medical theories and an understanding of ancient diseases in mind, let us now turn our attention toward the *Epidemics* their method of diagnosis.

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CHAPTER 5
ANCIENT AND MODERN DIAGNOSES

The Epidemics include representative cases in order to help the physician recognize known sickness and know how to effectively predict their outcome and, if possible, treat them. The earliest books of the collection, I and III, contain cases in two different formats. Epidemics I begins with three Constitutions. These are nicely-written, graphic descriptions of the climate and illness of a specific region, Thasos, in this case. The style of these passages indicates that they were written to be read by others. At the end of the second Constitution, the author includes a short didactic passage regarding crises in serious diseases, the physician’s modus operandi, and head pains.\(^1\) The remainder of the book is occupied by fourteen individual case histories. These are not written in the style of the first part of the book as sentences are very brief and abrupt. Epidemics III has twelve case histories, followed by a Constitution, and sixteen more individual cases. In all of these cases, the author gives what he deems to be the most significant features:

The following were the circumstances attending the diseases, from which I framed my judgments, learning from the common nature of all and the particular nature of the individual, from the disease, the patient, the regimen prescribed, and the prescriber—for these make a diagnosis more favourable or les; from the constitution, both as a whole and with respect to the parts, of the weather and of each region; from the custom, mode of life, practices and ages of each patient; from talk, manner, silence, thoughts, sleep or absence of sleep, the nature and time of dreams, pluckings, scratchings, tears; from the exacerbations, stools, urine, sputa, vomit, the antecedents and consequences of each member in the successions of diseases, and the abscessions to a fatal issue or a crisis, sweat, rigor, chill, cough, sneezes, hiccoughs, breathing, belchings, flatulence, silent or

\(^1\) Hipp. Epidemics I.11.1-I.12.16.
noisy, hemorrhages, and hemorrhoids. From these things must we consider what their consequents also will be.\(^2\)

The author stresses individual symptoms, distinguishing between the essential and non-essential.\(^3\) Some of the symptoms noted by the author are helpful for applying a modern diagnosis, such as patterns of fevers, sudden changes (especially with respect to consciousness), how the patient breathes, etc.\(^4\) The differing goals and methods of ancient and modern diagnosis must be discussed in more detail before we apply them to the case histories found in the *Epidemics*.

The ancient physician, using the few tools available to him, achieves diagnosis through inspection, palpitation, auscultation, taste, and smell during his bedside observation.\(^5\) The appearance of the patient, including facial expression, posture, skin tone and abnormalities, and ocular disorders, is carefully recorded. Several observations denoted grave diseases: the physician considered patients who were found either with gross facial discoloration, lying supine with limbs extended, waving their hands frantically in front of his face, or randomly moving his fingers to be at great risk of death. All quality of all bodily fluids and excreta is also noted. Pulses, which are measured on the temples, arms, chest, abdomen, and wrists, are used as an indication of temperature; however, little attention was paid to the pulse rate independent of temperature. Palpitation allows examination of the kidneys, liver, spleen, and uterus, and also reveals fluid in the abdominal cavity. Direct auscultation, the placing of the physician’s ear


\(^3\) Gordon (1949) 522.


\(^5\) Gordon (1949) 522-523.
against the patient’s chest, allows him to check for the presence of fluid in the lungs. Additionally, the taste and small of all excreta, including sweat, sputum, vomit, feces, urine, and pus, to assist in diagnosis. For example, the presence of sweet-tasting urine denotes the diabetes. The thoroughness of the ancient physician in the recording of symptoms is extremely impressive.

While the goal of ancient diagnosis was to accurately record all of the symptoms of an ailment in order to facilitate precise prognosis, modern diagnosis attempts to identify the cause of the illness so that effective treatment can be rendered. The observation of symptoms is as important today as it was in Hippocrates’ time. Modern medicine uses the process of differential diagnosis in an effort to precisely identify the cause of the disease. After the patient’s symptoms are recorded, those which are deemed most important are compared with the vast number of known diseases. Once possible diseases are identified, the physician then uses a process of elimination to find the specific disease. Using the information that the author provides and differential diagnosis, let us now turn our attention toward *Epidemics* I and III to examine the cases and, if possible, apply a modern diagnosis. We will begin with the *Constitutions* in *Epidemics* I.

In the first case of the first *Constitution*, the author tells us about an illness that affected the people of Thasos. He first summarizes the weather for one year, and then he describes the illness, which occurred during the early spring. There are not many symptoms to describe, but they are clear and, in this case, easily recognizable. The first symptom mentioned is a fever that affected a few patients. The next symptom is much

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more helpful: ἐπάρματα δὲ παρὰ τὰ ὀτιὰ πολλοῖσιν ἐτερόρροπα καὶ ἐξ ἀμφοτέρων τοῖσι πλεῖστοισιν, “and there were swellings by the ears on one side for many and on both sides for most.” He then identifies those who were afflicted: ἐγίνετο δὲ ταῦτα μειρακίοισι, νέοισι, ἀκμάζονσι, καὶ τούτων τοῖσι περὶ παλαίστρην καὶ γυμνάσια πλεῖστοισι, γυναιξι δὲ ὀλίγησιν ἐγίνετο, “these happened to boys, young men, men in their prime, and to moist of those about the palaestra and gymnasium. It happened to a few women.” The patients also had βῆχες ξηραὶ, dry coughs and φωναὶ βραχώδεες, hoarse voices. The final symptom makes the illness perfectly clear: φλεγμοναὶ μετ’ ὀδύνης ἐς ὀρχίν ἐτερόρροποι, τοῖσι δὲ ἐς ἀμφοτέρους, “there was painful inflammation in the testicle on one side, but in both for some.” Again, our symptoms are fever, swellings near the ears, sore throats, and, in some cases, swollen testicles. This is clearly an outbreak of mumps, the symptoms of which are swollen salivary glands with a secondary severe sore throat, fever, headache, and swollen testicles in approximately twenty percent of post-pubescent males. Mumps is transmitted through saliva droplets, it makes sense that it would be easily spread while the men and boys exercise and wrestle. This is one of the easiest cases in the Epidemics to diagnose.

The second case of this Constitution is much more difficult. The author prefaces this case by informing us that the illness had been affecting some people for a long time and others who had been suspected of having it eventually developed symptoms. The outcome of this disease was not good: ἰπέθανον δὲ πολλοὶ πλεῖστοι τούτων, “but many

7 Hipp. Epidemics I.1.10-12.
8 Hipp. Epidemics I.1.20-22.
more of these people died.”\textsuperscript{10} We are told that this is φθίσις, consumption, but ἀνέθνησκον δὲ ὀξυτέρως ἢ ὡς εἴθισται διάγειν τὰ τοιαῦτα, “they were dying faster than those [conditions] like it were accustomed to progress.”\textsuperscript{11} Some of the symptoms of this disease include πυρετός ἡμιτριταῖος, semitertian fever, which peaks on alternating days but remains rather high on the low days, sweating, cold extremities, digestive problems, and sputa. Additionally, most patients also had a painful sore throat. The symptoms worsened until the patient died. The key to diagnosing this disease is the semitertian fever, which is caused by \textit{Plasmodium falciparum}. Falciparum malaria can damage the brain, lungs, and kidneys. Cerebral malaria, which can only be caused by \textit{P. falciparum}, is especially dangerous and produces high fevers, headaches, drowsiness, delerium, confusion, and coma. The presence of these symptoms further strengthen the argument for the existance of \textit{P. falciparum} in ancient Greece: ἄγρυπνοι τὸ σύνολον καὶ μάλιστα οὗτοι καὶ πάλιν κωματώδεες, “all together they were wakefullness, and especially [the semitertians], and then they were comatose.”\textsuperscript{12} If it were not for the clear presence of the malarial fever, it would be considerably more difficult to diagnose this case because of the combination wide range of symptoms resulting from damage to the brain, lungs, and kidneys.

The first individual case exhibits an interesting symptom, as does the fifteenth case in the last part of \textit{Epidemics} III. In the former case, the author says: τούτῳ πνεῦμα διὰ τέλος, ὡσπερ ἀνακαλεομένῳ, ἀραιὸν μέγα, “throughout the end, his breathing, as if

\begin{itemize}
\item \textsuperscript{10} Hipp. \textit{Epidemics} I.2.6-7.
\item \textsuperscript{11} Hipp. \textit{Epidemics} I.2.9-10.
\item \textsuperscript{12} Hipp. \textit{Epidemics} I.7.16-17
\end{itemize}
he were recalling it, was slight and great.”\textsuperscript{13} In the latter: τεσσαρεσκαίδεκάτη πνεύμα ἄραιόν, μέγα διὰ χρόνου καὶ πάλιν βραχύπνοος... ταύτῃ διὰ τέλεος πνεύμα ἄραιόν, μέγα, “on the fourteenth day, breath was slight, great for a time and again short of breath… throughout the end, her breath was slight and great.”\textsuperscript{14} These descriptions appear to be of Cheyne-Stokes breathing, in which breathing quickens, retards, stops, and restarts over thirty seconds to two minutes. The first patient died on the following day, which was the sixth day of his suffering, and the second patient died one week later, a total of three weeks from the first sign of illness. Cheyne-Stokes breathing is common in patients dying of congestive heart failure, which can have many causes and varied symptoms.

The eighth individual case is also difficult to diagnose, but is worthwhile to consider.\textsuperscript{15} Erasinos became ill with a fever discomfort after dinner and suffered until his death on the fifth day. He suffered from delerium on most days. His hypochondria were swollen and painful and his urine was black. The black urine and swollen, painful hypochondria may be evidence of kidney failure of unknown etiology. In this, and similar, cases, the brevity of the description and lack of a history make diagnosis extremely difficult.

The following case is of a different nature than all previous cases.\textsuperscript{16} Krito of Thasus experienced a sharp pain in his big toe while walking. He became nauseous, began to shiver, and became delirious. On the second day, his entire foot was swollen with black blisters, he had a severe fever, and he was still delirious. Krito died later that

\textsuperscript{13} Hipp. Epidemics I.26.39-40.

\textsuperscript{14} Hipp. Epidemics III.17.327-328, 334.

\textsuperscript{15} Hipp. Epidemics I.26.209-225.

day. The immediate pain and subsequent swelling seem to indicate a poisonous bite or sting. It was probably not an allergic reaction to an otherwise harmless wound, as anaphylactis, the common allergic reaction to stings and bites, would have taken his life very quickly. A more detailed description of the patient’s toe would help to better diagnose this case.

The key to the fourth case in *Epidemics* III may lie in the patient’s history, which is briefly mentioned. The author says: ἐκ δὲ πότων πυρετῶν συνεχέων γενομένων ὁ πόνος παρωξύνθη, “the pain of fevers grew worse from drinking.” We are also told that, on the second day, ὑποχόνδριον δεξιὸν συνετάθη, ἔρρεπεν ἐς τὰ ἔσω, “the right hypochondrion drew tight and was sinking inwards.” The right hypochondrium, located just below the ribs, corresponds to the site of the liver. A history of heavy drinking leading to chronic liver failure with rapid progression within the last few days seems appropriate for this case.

The *Constitution* of *Epidemics* III contains a horrifying condition. After the description of the climate, the author begins to describe the condition: πρῶι δὲ τοῦ Ἱρος ἀμα τοῖσι γενομένοισι ψύχεσιν ἐρυσιπέλατα πολλά, τοῖσι μὲν μετὰ προφάσιος, τοῖσι δ’ οὔ, κακοήθεα· πολλοὺς ἔκτεινε, “early in the spring, at the same time as the cold spurts, there were many abominable instances of erysipelas, some with causes and some without; it killed many.” More detail is given in the following section: πολλοῖσι μὲν τὸ ἐρυσίπελας μετὰ προφάσιος ἐπὶ τοῖσι τυχοῦσι καὶ πάνυ ἐπὶ σμικροῖσι τρωματίοις ἐφ’ ὅλω

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18 This is a transliteration of the Greek word and refers to a type of streptococcal cellulitis in modern medicine. Here I am using it to denote cellulitis of unknown etiology.

τῷ σώματι, “many had erysipelas with a cause in accidents and in very little wounds in the whole body.” \(^{20}\) From this statement, it appears that the cellulitis typically originates at the site of a cut or scrape. The condition is worse than it originally seems: τὸ ἐρυσίπελας πολὺ τακὺ πάντοθεν ἐπενέμετο. τοῖσι μὲν οὖν οὐν πλείστοισιν αὐτῶν ἄποστάσιες ἐς ἐμπυήματα συνέπιπτον· σαρκῶν καὶ νεύρων καὶ ὀστέων ἐκπτώσιες μεγάλαι, “the erysipelas was spreading very quickly from every direction. For most of the patients the rising [of the inflammations] were falling together into abscesses. There was a great decay of flesh, muscles, and bones.” \(^{21}\) Our problem has gone from mere cellulitis to necrotizing fasciitis. This is similar to necrotizing cellulitis, but penetrates deeper and enters the surface of underlying muscles. These infections are caused by bacteria such as varieties of \textit{Streptococcus} and \textit{Clostridium} and originate at lacerations, as our author mentions. The author succinctly generalizes the outcome with ἢ δὲ ταῦτα φοβερώτερα ἢ κακίω, “these were more frightening than dangerous,” goes on to describe the result of the infections, including the loss of large areas of skin, amputation, and death. \(^{22}\) The mortality rate for these necrotizing infections is approximately thirty percent.

\(^{20}\) Hipp. \textit{Epidemics} III.4.1-3.

\(^{21}\) Hipp. \textit{Epidemics} III.4.6-10.

\(^{22}\) Hipp. \textit{Epidemics} III.4.17.
CHAPTER 6
CONCLUSION

The best attempt at diagnosing the case histories in Hippocrates’ *Epidemics* is rooted in a firm understanding of the text, its author(s), and the beliefs of the time. The ability to understand the Greek, with all of the technical terms that are specific to medical treatises, is of utmost importance. The primary literature is the basis of our understanding of ancient Greek medicine and it should not be neglected. There is an abundance of literature on Hippocrates, the “Hippocratic question,” the *Hippocratic Corpus*, and ancient medicine to assist in the acquisition of this understanding. It is only with this material in mind that one has a chance of truly understanding Hippocratic writings.

As we have seen, some cases are very easy to diagnose, while some are quite puzzling, even to gifted physicians. All that we are able to know about the patients is what we are told, so our attempt at diagnosis relies completely on the ancient physician’s accurate recording of the symptoms, which was his diagnosis. Positive diagnoses are only possible when the ancient physician managed to record unmistakeable symptoms of modern diseases, such as mumps and falciparum malaria. Even then, there is a degree of uncertainty, as we are constantly discovering slight variations of modern diseases. In all other cases, there is no way to be absolutely certain of the patient’s illness. Regardless of outcome, to spend time reading the *Epidemics* carefully is a pleasure. Whether we
experience the satisfaction of believing that we have successfully diagnosed a case or the
challenge of a case that cannot be solved, the experience is truly rewarding.
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BIOGRAPHICAL SKETCH

Anthony Strazzulla was born on August 2nd, 1981, in Monroe, Michigan. He moved to Palm Bay, Florida, in 1996 and later to Indian Harbour Beach, where he graduated from Satellite High School in 2000. He graduated from the University of Florida with a Bachelor of Arts degree in classics and history in 2004. He will receive a Master of Arts in Latin from the University of Florida in May, 2006.