

# CHAPTER 1

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## Understanding Disease: Ancient Theories

For a number of good reasons, man's attitude toward disease and death constitutes an important part of his attitude toward life itself. It cannot be otherwise, for no other phenomena are more existentially threatening, more essential to our being and nonbeing, than health problems. The development of what we today call medicine has always been central to our best thinking about our best interests: What is the essence of life and death, what causes different diseases, how do they develop, how are they best combatted and even, in the more fortunate cases, how can the ill be healed?

As far as we know, the first attempts at answering these and similar questions invoked magic. Gods or demons or other supernatural beings intervened for whatever good reason they had and created problems for us, or solved them, of their own volition and whenever they saw fit. Our own abilities to influence the resulting processes were thus restricted to attempts at pleasing the more powerful amongst them – bringing sacrifices, offering prayers and what not – which people duly did according to the habits of their society.

A problem with this principle of disease causation, however, is the many-to-many relationships it entails (many demons or gods, many ailments), and which inevitably preclude any possibility of reliably predicting things or results, be they favorable or the opposite, of both diseases and attempts to cure them. Everything was haphazard, dependent on the will and whims of supernatural beings and our ability to make them happy. Such

a scheme of things is simply not compatible with a rational approach to how the universe is put together and how health and disease have their respective places in a natural world.

We experience chaos around us, a multitude of phenomena that appear to be without connection or meaning. The ancient Greeks were the first to try to sort things out in a manner we today would call rational: Attempts to create order out of disorder, or cosmos out of chaos, were the predominant leitmotif of all their strivings and remain the underlying foundation also of later scientific efforts.

Natural philosophers set out to find the putative one substance out of which everything was made. Some said water, others air and so on; even highly abstract and modern-sounding concepts were brought to bear, like Anaximander's infinite (*to apeiron*) in the fifth century BCE. As with scientists of later times and their explanatory attempts, there was never a shortage of alternatives or disagreement among thinking people's accounts of reality, not even at the very beginning. Compromises were reached between those who sought a single material first cause and the phenomenologically inclined who recognized only the totality of things or events; Empedocles, who lived at about the same time as Anaximander, pointed to earth, wind, fire, and water as the four elements from which everything was made.

A similar *tetrad* gained prominence in thinking about disease causation during antiquity, namely that a disturbance of the balance between the body's four basic fluids – black and yellow bile, blood, and phlegm – caused all our health problems. Later on, a fusion occurred between this classification and Empedocles' elements, and different prevailing temperaments – resulting in people being thought to be predominantly *choleric*, *melancholic*, *phlegmatic* or *sanguinic* – were singled out corresponding to which imbalance among them existed within the body. For a long while, all of 2000 years, and for reasons that are anything but clear, the number four thus seemed to enjoy preferential treatment in the pathogenetic thinking of learned men of medicine, though competing theories drawing on the alleged existence of more or fewer humors or elements certainly existed.

The father of medicine, Hippocrates (around 460–370 BCE), is the one to whom these *humoral theories of disease* are usually ascribed. Whatever their validity and Hippocrates' actual historical role, to him belongs the traditional honor of having introduced rationality into medical thinking. No disease was caused by supernatural influences, spells and their like; even the sacred disease, what we today call epilepsy, was but a natural disorder in Hippocrates' opinion. In this sense, he was truly the conceptual father

of scientific medicine from which cancer cytogenetics flows as but one of numerous present-day offsprings.

While ancient thinking about cancer and other diseases characterized clinically by *phtisis* (wasting) was of necessity limited by the total absence of what we today would deem useful investigative tools, some principles of lasting importance can nevertheless be extracted from the very brief history drawn up above. Diseases, cancer included, are rational phenomena that can, at least in principle, be understood. Their causation is difficult, but the reduction of causes to as few as possible should be attempted (Ockham's "razor principle" from the high Middle Ages comes to mind: "Do not multiply causes unnecessarily!"). Finally, understanding of disease processes is a prerequisite for successful treatment; only in the most fortuitous of cases can one count on being able to achieve a cure if nothing of essence is known about the disease one is faced with. All these themes are going to be visited in the chapters to come.

## FURTHER READING

- Lane Fox, R. (2020). *The Invention of Medicine: From Homer to Hippocrates*. London: Penguin.
- Porter, R. (2006). *The Cambridge History of Medicine*. Cambridge: Cambridge University Press.
- Wise Bauer, S. (2015). *The Story of Western Science: From the Writings of Aristotle to the Big Bang Theory*. New York: WW Norton.

