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Fathers of biology /

RECAP



FATHERS OF BIOLOGY

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BY

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P R E F A C E.

IT is hoped that the account given, in the following pages, of the lives of five great naturalists may not be found devoid of interest. The work of each one of them marked a definite advance in the science of Biology.

There is often among students of anatomy and physiology a tendency to imagine that the facts with which they are now being made familiar have all been established by recent observation and experiment. But even the slight knowledge of the history of Biology, which may be obtained from a perusal of this little book, will show that, so far from such being the case, this branch of science is of venerable antiquity. And, further, if in the place of this misconception a desire is aroused in the reader for a fuller acquaintance with the writings of the early anatomists the chief aim of the author will have been fulfilled.

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HIPPOCRATES.

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OWING to the lapse of centuries, very little is known with certainty of the life of Hippocrates, who was called with affectionate veneration by his successors "the divine old man," and who has been justly known to posterity as "the Father of Medicine."

He was probably born about 470 B.C., and, according to all accounts, appears to have reached the advanced age of ninety years or more. He must, therefore, have lived during a period of Greek history which was characterized by great intellectual activity; for he had, as his contemporaries, Pericles the famous statesman; the poets Æschylus, Sophocles, Euripides, Aristophanes, and Pindar; the philosopher Socrates, with his disciples Xenophon and Plato; the historians Herodotus and Thucydides; and Phidias the unrivalled sculptor.

In the island of Cos, where he was born, stood one of the most celebrated of the temples of Æsculapius, and in this temple—because he was descended from the Asclepiadæ—Hippocrates inherited from his forefathers

an important position. Among the Asclepiads the habit of physical observation, and even manual training in dissection, were imparted traditionally from father to son from the earliest years, thus serving as a preparation for medical practice when there were no written treatises to study.¹

Although Hippocrates at first studied medicine under his father, he had afterwards for his teachers Gorgias and Democritus, both of classic fame, and Herodicus, who is known as the first person who applied gymnastic exercises to the cure of diseases.

The Asclepions, or temples of health, were erected in various parts of Greece as receptacles for invalids, who were in the habit of resorting to them to seek the assistance of the god. These temples were mostly situated in the neighbourhood of medicinal springs, and each devotee at his entrance was made to undergo a regular course of bathing and purification. Probably his diet was also carefully attended to, and at the same time his imagination was worked upon by music and religious ceremonies. On his departure, the restored patient usually showed his gratitude by presenting to the temple votive tablets setting forth the circumstances of his peculiar case. The value of these to men about to enter on medical studies can be readily understood; and it was to such treasures of recorded obser-

¹ Grote's "Aristotle," vol. i. p. 3.

vations — collected during several generations — that Hippocrates had access from the commencement of his career.

Owing to the peculiar constitution of the Asclepions, medical and priestly pursuits had, before the time of Hippocrates, become combined; and, consequently, although rational means were to a certain extent applied to the cure of diseases, the more common practice was to resort chiefly to superstitious modes of working upon the imagination. It is not surprising, therefore, to find that every sickness, especially epidemics and plagues, were attributed to the anger of some offended god, and that penance and supplications often took the place of personal and domestic cleanliness, fresh air, and light.

It was Hippocrates who emancipated medicine from the thralldom of superstition, and in this way wrested the practice of his art from the monopoly of the priests. In his treatise on "The Sacred Disease" (possibly epilepsy), he discusses the controverted question whether or not this disease was an infliction from the gods; and he decidedly maintains that there is no such a thing as a sacred disease, for all diseases arise from natural causes, and no one can be ascribed to the gods more than another. He points out that it is simply because this disease is unlike other diseases that men have come to regard its cause as divine, and yet it is not really

more wonderful than the paroxysms of fevers and many other diseases not thought sacred. He exposes the cunning of the impostors who pretend to cure men by purifications and spells; "who give themselves out as being excessively religious, and as knowing more than other people;" and he argues that "whoever is able, by purifications and conjurings, to drive away such an affection, will be able, by other practices, to excite it, and, according to this view, its divine nature is entirely done away with." "Neither, truly," he continues, "do I count it a worthy opinion to hold that the body of a man is polluted by the divinity, the most impure by the most holy; for, were it defiled, or did it suffer from any other thing, it would be like to be purified and sanctified rather than polluted by the divinity." As an additional argument against the cause being divine, he adduces the fact that this disease is hereditary, like other diseases, and that it attacks persons of a peculiar temperament, namely, the phlegmatic, but not the bilious; and "yet if it were really more divine than the others," he justly adds, "it ought to befall all alike."

Again, speaking of a disease common among the Scythians, Hippocrates remarks that the people attributed it to a god, but that "to me it appears that such affections are just as much divine as all others are, and that no one disease is either more divine or more human than another, but that all are alike divine, for that each

has its own nature, and that no one arises without a natural cause.”

From this it will be seen that Hippocrates regarded all phenomena as at once divine and scientifically determinable. In this respect it is interesting to compare him with one of his most illustrious contemporaries, namely, with Socrates, who distributed phenomena into two classes: one wherein the connection of antecedent and consequent was invariable and ascertainable by human study, and wherein therefore future results were accessible to a well-instructed foresight; the other, which the gods had reserved for themselves and their unconditional agency, wherein there was no invariable or ascertainable sequence, and where the result could only be foreknown by some omen or prophecy, or other special inspired communication from themselves. Each of these classes was essentially distinct, and required to be looked at and dealt with in a manner radically incompatible with the other. Physics and astronomy, in the opinion of Socrates, belonged to the divine class of phenomena in which human research was insane, fruitless, and impious.¹

Hippocrates divided the causes of diseases into two classes: the one comprehending the influence of seasons, climates, water, situation, and the like; the other consisting of such causes as the amount and kind of food and exercise in which each individual indulges. He

¹ Grote's "History of Greece," vol. i. p. 358.

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