

Edward Grant, *A History of Natural Philosophy. From the Ancient World to the Nineteenth Century* (Cambridge: Cambridge University Press, 2007), xiv + 361 pp. ISBN 978-0-521-68957-1

By *Luis Miguel Carolino**

In his long series of contributions to a comprehensive understanding of medieval and early modern science, Edward Grant focuses on the relation between science and natural philosophy. The central thesis of this book is that a crucial change in natural philosophy occurred in the seventeenth century as a result of the fusion of natural philosophy with the exact sciences. For this reason, although the book covers the period from around 3500 BC to the nineteenth century, the strong emphasis is placed on the transition from the late Middle Ages to the Early Modern Period.

Natural philosophy and the exact sciences were distinct subjects throughout the Medieval Ages, but in this period they gradually expanded their horizons, came close and eventually gave origin to a new kind of knowledge, a natural philosophy that became mathematized. As Grant argues, this "fusion manifested itself bilaterally: natural philosophy influenced the exact sciences to seek the physical causes of relevant phenomena, and thereby broaden the scope of their activities; as this occurred, natural philosophy was inevitably mathematized and its scope expanded." (319). In this mathematized form, natural philosophy became synonymous of science in the nineteenth century, when it gave origin to a variety of scientific disciplines. From this perspective, Grant argues that "natural philosophy was the basic instrument in the development of our many modern sciences." (p. 319).

At the origin of Grant's thesis – and probably at the origin of this very book – one can find the deep disagreement between Grant and Andrew Cunningham with respect to the nature of natural philosophy. It goes beyond the scope of this book review to analyse the whole debate between Grant and Cunningham (see, for example, *Early Science and Medicine*, 2000, 5, pp. 259-300). As Grant refers, Cunningham sustains that "natural philosophy was always about God, even when God is not discussed or mentioned; and, consequently, (...) natural philosophy could not be science, because the latter was never about God" (xi). Grant has a radically different understanding of natural philosophy. To him, the scope of natural philosophy is to provide natural phenomena with natural explanations. The absence of a divine concern in

natural philosophy derives therefore from its very nature. Grant makes his case by arguing that theology (and metaphysics), natural philosophy and mathematics were understood for centuries as three different kinds of theoretical knowledge. Natural philosophy considered bodies undergoing change and motion while theology and mathematics treated entities that did not suffer change. The subject of natural philosophy and the fact that, in studying natural phenomena, medieval philosophers proceeded in a rational manner, enabled Grant to argue – against Cunningham – that the impact of theology in natural philosophy was minimal.

Based upon this understanding of natural philosophy and in his lifelong research on the subject, in his latest book, Grant proposes an impressive narrative of the general characteristics of natural philosophy in the different historical periods and stresses the main changes in this field over the centuries.

A History of Natural Philosophy is a major contribution for the history of this important discipline. It provides a new understanding not only of the causes of the Scientific Revolution, but also of the history of the disciplines in modern science.

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