Wayne Shumaker. *The Occult Sciences in the Renaissance: A Study in Intellectual Patterns*. Berkeley and Los Angeles: University of California Press, 1972. Pp. xxii, 284. \$15.

When the occult sciences of the Middle Ages and the Renaissance are studied at all, they are most regularly examined either in order to solve specific literary problems or from a historical point of view that is more chronological than analytical. In this impressive and stimulating volume, however, Professor Shumaker has focussed on how people thought as well as on what they thought, with the result that his book is at once elucidative and evaluative; descriptive and analytical. As his sub-title informs us, the author is concerned with patterns of thought as well as the subjects thought about, but the patterns cannot be understood without thorough knowledge of the occult sciences themselves. Thus, for each of the five sciences discussed – astrology, witchcraft, white magic, alchemy, and Hermetica – the author provides us with ample citations of primary sources upon which he builds both a description of the science under consideration and an analysis of the intellectual patterns that made possible (or indeed inevitable) the beliefs examined. This derivation of analysis from specific source materials has been chosen by the author in order to steer a course between the Scylla of abstract philosophizing spun out of sheer mind and the Charybdis of simple antiquarianism.

The result of this approach is a volume that is useful for both the seeker of factual information and the historian of ideas. On the factual level Professor Shumaker provides us with a great deal of information about the five basic types of occultism, and each treatment, if less than encyclopedic, is much more than introductory. Even those scholars who are familiar with *occulta* in general and with one or two of its branches in particular will almost certainly find new and valuable information here about the rest. On the conceptual level Professor Shumaker makes three very significant contributions. First of all, he underscores the astonishing mass of occult literature – a corpus so neglected that its proper evaluation can “shock” an experienced Renaissance scholar:

What most shocked me was the discovery of a learned, and evidently very serious, Latin literature on *occulta* which could not be interpreted as playful. By writing in Latin, the authors addressed an educated European audience; and their knowledge of ancient literature, if not consistently accurate, was often astonishingly wide. Moreover, they refer constantly to a Neo-Latin literature whose central importance to the intellectual life of the period is seldom realized. It was not by accident that of nearly six thousand books in the Bodleian Library in 1605 only thirty-six were in English ... In a word, my sense of the intellectual climate of the Renaissance has been lastingly affected by the findings ... The Renaissance was different from what I had thought, and its literature often had meanings of which I had been unaware. My own attitude toward the *occulta* was irrelevant to the fact of their currency” (pp. xvi-xvii).

Professor Shumaker’s second observation is that this literature of the occult is not only extensive and serious, it is also concerned with content to the virtual exclusion of form. Regardless of modern scholarly commonplaces about the concern for style in the Latin literature studied in the Renaissance, the documents discussed in this book were read for what was believed to be factual information and for nothing else. Professor Shumaker’s third and most significant contribution to our knowledge of how people thought in the

Renaissance is his delineation of the pervasiveness of analogical thinking in all of the sciences examined. As he sums it up, "Induction was not a discipline easily to be invented" (p. 31).

Professor Shumaker's volume has been very handsomely produced with some 58 illustrations, which, although not keyed into the text, are well-chosen and very instructive. It is written in his characteristically engaging style, and has a good index and a helpful note on the bibliographical complexities of this kind of research. All in all the book should enjoy a wide and appreciative reception.

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W. P. D. Wightman. *Science in a Renaissance Society*. New York: Humanities Press, Inc., 1972. Pp. 191. \$7.50.

A. G. R. Smith. *Science and Society in the Sixteenth and Seventeenth Centuries*. London: Thames and Hudson, 1972. Pp. 216. \$8.95.

The history of science, as pursued by amateurs in earlier times, gave way in this century to the histories of various distinct sciences such as physics, biology, and geology. Specialists abandoned the over-enthusiastic approach to the achievements of a few great scientists and developed more objective accounts of stage-by-stage progress in each science at the hands of contributors of widely varying capabilities. A very large body of sober knowledge about the growth of different sciences, and about interrelations between their historical developments, has thus arisen, and this constitutes what is called internalist history of science.

The next appropriate study is that of the interworkings between science and society. This study results in what is called externalist history of science, which presently attracts the majority of students entering the field. But even when confined to relatively modern times, and to Western civilization in particular, the scope of this enterprise is too vast for immediate conquest. The most constructive approach at present appears to be to consider science and society during a limited period of time, or in a selected nation. The two books considered here deal only with the beginnings of modern science in Europe as related to society of the late Renaissance and of early modern times.

Professor Wightman has long been a specialist in the nascent sciences of the sixteenth century, a period that was relatively neglected until quite recently. Medieval science has been deeply studied since the pioneer work of Pierre Duhem around the turn of the century, while the seventeenth century had long attracted historians as the epoch of the Scientific Revolution, marked by the work of Galileo, Descartes, and Newton. The sixteenth century appeared to be a sort of interregnum, characterized by Duhem as one of widespread plagiarism rather than real scientific progress.

Nevertheless, science in the sixteenth century had a character of its own, neither medieval nor modern. It represented a turning away from medieval traditions to classical sources on the one hand, and to direct experience on the other. The latter trend first became evident in the 15th century; the former became conspicuous in the 16th century, soon after the appearance of printed books. Professor Wightman deals mainly with those two cen-