

The Scientific Heritage

Science and Society in the Sixteenth and Seventeenth Centuries, by Alan G. R. Smith, *London and New York: Harcourt Brace Jovanovich, Inc., 1972. 216 pp. \$3.95 (paper).*

ONE OF A SERIES of profusely illustrated, introductory studies in social history, this book is notably unencumbered with the freight of intellectual clichés beneath which such introductions commonly sink. Professor Smith recognizes, for instance, that not everyone in the Middle Ages thought the world was flat, and he unveils, almost enthusiastically, the mediaeval origins of many allegedly Renaissance conceptions and methods. He points out that Copernicus was first assailed, not by the Roman Catholic Church, but by the Protestant reformers for whom, despite their emphasis on freedom of conscience, Copernicus was too revolutionary and unscriptural. Said Luther: this "new astrologer . . . wants to prove that the earth moves and goes round . . . The fool wants to turn the whole art of astronomy upside down." And Calvin, recollecting that the Psalmist says the earth cannot be moved (Ps. 93), inquires: "who will venture to place the authority of Copernicus above that of the Holy Spirit?" The cautious papacy, more tolerant of science and less entangled with fundamentalism, disdained to join the attack till the early seventeenth century, when Copernicanism had become contaminated with the heterodoxies of Galileo and, even more odious, the heresies of Bruno. Moreover, Smith displays, together with the achievements of these luminaries, their self-contradictions and eccentricities: Copernicus' conservative bias and reverence of Aristotle, Kepler's belief in astrology, Newton's mysticism.

Appreciating such emancipated and iconoclastic intellectual history as this, I offer the following as friendly criticisms. Gal-

ileo in Smith's account is no longer exhibited as a martyr to religious intransigence: the astronomer was as obnoxious and even unscrupulous in his dealings with the Church as that Church was intractable and short-sighted in its reckonings with him. This then is a good corrective to the prevailing myth celebrating Galileo as a Renaissance Socrates; after all, he only suffered house arrest, continued to publish, and died tranquilly among his books. Nevertheless, Smith proposes that the Church's esteem for Aristotle, and its desire to seem unified in the face of Protestantism, were paramount motives for the condemnation of Galileo in 1616. Possibly so; but no mention is made of his *Letter to the Grand Duchess* (1615) in which he implicitly challenges the power of God to intervene miraculously in his creation, and where he sees the Deity as "no less admirably" revealed in regular and immutable physical nature than in scripture and revelation. By delineating the quarrel exclusively within the philosophical and scientific spheres, and consequently scanting the theological ramifications, Smith produces, if not actually a false interpretation, at least a false emphasis.

Then again, to demonstrate the "malaise" supposedly engendered by science in some educated Christians, he quotes the famous passage from Donne's *First Anniversary* beginning "And new philosophy calls all in doubt." Now this is to misconceive Donne's intention, though it were hard to censure Professor Smith for this misconception since it has been perpetuated by such more specialized and hence more culpable scholars as Basil Willey, Marjorie Nicolson, and the prolific Peter Gay. It remains, however, that for Donne the new philosophy is not his philosophy, nor even a particularly valid philosophy. Donne in this poem is enforcing an orthodox point: that the world is disorderly and hence must be fallen and imperfect; even the findings of the new philosophy show this, he adds, *as well as* scripture. Indeed, the new philosophy is itself one sign of this disorder. As

is apparent from many portions of both his first and second *Anniversary*, for Donne the positive value of science is almost inconsequential, though one would never guess this from the ritualistic commentary on these lines by Willey, Gay, and, although more intricate and perceptive than the others, Miss Nicolson. More than sixty years have elapsed since Donne's great editor Herbert Grierson provided the proper interpretation of this passage: "It was not of religion [Donne] doubted, but of science . . . its shifting theories, its concern about the unimportant." Grierson's correct reading, however, jars unpleasantly with the current disposition of scholarship to detect the influence of science in all departments of life; and therefore, though it is too certain to be rebutted, like death and other unpleasant realities, it may be ignored.

Which brings us to one of the central questions posed by such a study: how in fact can we gauge the effect of science on society, philosophy, the arts? Following Nicolson, Smith points to the sublime and cosmic descriptions in *Paradise Lost* and observes:

Such preoccupation with the vastness of the universe is totally lacking in Shakespeare . . . but Shakespeare, unlike Milton, had never looked through a telescope.

The facility of such criticism evokes dissent. The tragedy of *Lear* is played out against an illimitably cosmic backdrop, and there are scenes in Virgil and Dante—one might even throw in Troilus' contemplation of the earth from outer space in Chaucer's epic—possessed of a cosmic tone; yet it may confidently be affirmed that these writers never looked through a telescope, either. Or again: following Paul Hazard, he discovers a strong connection between the scientific revolution and the secular rationalism of intellectuals in the late seventeenth century. And yet, as Busson, Ira Wade and others have contended, the rise of intellectual rationalism can be pushed

back to the early Renaissance and the Paduan school, back even into the Middle Ages and Averroes, long before experimental science could have wrought any spiritual effect. Now it may be plausible to speak of the scientific revolution as *accelerating* the secularization of modern thought; just as we may safely assert that Milton *made use* of the telescope in his descriptions, without implying that his imagination would have proved sterile but for the invention of that undoubtedly useful instrument. So qualifying ourselves, we may meditate tentatively on the influence of science on life, art, and thought; but our meditations will be as inconclusive as they are tentative. On the religious beliefs of even the scientists, to say nothing of the common man, the new philosophy seems to have exercised an indefinable influence; if anything, it inflamed Newton's mysticism. Religious beliefs have always operated more forcibly on people, whether they be educated or not, than have scientific theories or discoveries—whose ethical import is often cloudy and always controversial. As Dr. Johnson says, "We are perpetually moralists, but we are geometricians only by chance."

As an attempt to illuminate the influence of science on society, then, this study fails, as must any book so deliberately concise and rudimentary. As an intelligent and refreshingly unprejudiced introduction to the great Renaissance scientists and their cultural context, it is most commendable; and the illustrative material—engravings, paintings, title-pages, diagrams—are judiciously selected and superbly reproduced.

Reviewed by R. D. STOCK