

SHORT REVIEWS

God Beyond Time

By J. H. Reyner. Pp. 110. (London: Regency Press, 1965.) 21s.; 4 dollars.

GOD *Beyond Time* is a readable and interesting account of the various tenets which—largely by convention and unquestioning custom—we cherish with respect to time. It is an age-long problem, with "Time's arrow" always facing towards the future, giving little encouragement to clear thinking as to the possible effects of time reversal and the now generally accepted principle that in certain circumstances entropy may remain constant, or even decrease.

Some of the most original parts of the work deal with states of mind commonly classed as abnormal: Mr. Reyner is sure that there is a (real) noumenal world having properties which a purely materialistic science cannot hope to reveal. It is certainly true that a subject under the influence of the alkaloid mescaline experiences visions akin to those of the biblical witnesses of the Apocalypse. But it is equally clear that these strange events are due to interference with the normal functioning of glucose in the brain: it is a matter for serious reflexion what mankind would have been like if this reaction had been different from what in fact it is.

Mr. Reyner deals bravely with the ether of space; rendered needless by the mathematics of relativity, but not thereby necessarily eliminated from the thought-processes of natural philosophers. Most probably many men of science feel that in ether physics they stand at the very frontier between the observable and the unknowable, where negative experiment may hide a world into which only metaphysics can enter, if at all. These deep waters are probed with a seemly reverence, and a realization of the limits of the scientific method, as commonly understood.

F. I. G. RAWLINS

Science, Faith and Society

By Prof. Michael Polanyi. Pp. 96. (Chicago and London: University of Chicago Press, 1964.) 3.75 dollars; 28s.

Nature and God

By Prof. L. Charles Birch. Pp. 128. (London: SCM Press, Ltd., 1965.) 6s. 6d.

TO the second edition of his Riddell Memorial Lectures on the meaning and nature of scientific enquiry, originally published in 1946 under the title *Science, Faith and Society*, Prof. Polanyi contributes a new introduction, "Background and Prospect". In this he cites several writers such as W. I. Beveridge, J. Bronowski and S. Toulmin, who have published, in the interval, views on the nature of science and pursuit of discovery which overlap his own. He reiterates that we still have no clear conception of how discovery comes about and that the creative life of any community organized essentially on the line of scientific life rests on a belief in the continuing possibility of revealing truths still hidden, or, as he now prefers to express it, in a belief in "the reality of emergent meaning and truth". Apart from this, Prof. Polanyi's argument for a symbiosis between thought and society leads him to insist that a general respect for truth is all that is needed for society to be free. Moreover, while he challenges the Marxist position as firmly as ever, he seems more hopeful of an ultimate *rapprochement* from the Communist side leading to a modern theory of freedom. The introduction and the original lectures are highly relevant to present-day discussions on the organization of science and on planning in general in Britain. It is

from this pragmatic point of view, perhaps, rather than for its contribution to the philosophy of science, that this second edition is welcome.

The book has in fact much less in common with Prof. Birch's little book than the titles would suggest. While Prof. Birch believes that the supernaturalist tradition in theology and traditional science are being driven farther and farther apart, he also believes that radical changes within science and within theology and philosophy are altering the whole traditional position. His book is an attempt to explain these changes and the new and constructive way of looking at the natural world, in the light both of science and of Christian insights, which these changes open up. He begins by reviewing the successive views of the universe from the sixteenth century to "Darwin's century", which has a chapter to itself. A chapter on chance and purpose continues this historical exposition and this is followed by one in which he considers the modern concept of creation in the light of the concept which is based on The Bible. The essence of the book is in the final chapter on the meaning of creation in which Prof. Birch sets forth (without dogmatism) six affirmations about the nature and meaning of creation which he develops from the changes previously described. His argument is supported, chapter by chapter, by lists of references which constitute an admirable bibliography. Whether or not Prof. Birch convinces his readers, he stimulates discussion and thought, and his little book should shatter complacency and dogmatism on either side.

Early Seventeenth Century Scientists

Edited by R. Harré. (Commonwealth and International Library, Science and Society, Vol. 1.) Pp. xi+188. (Oxford, London and New York: Pergamon Press, 1965.) 25s.

THE seventeenth century was a golden age in the history of science. The telescope had opened up vast new spaces in the cosmos and the microscope was revealing the infinite variety and wonder of new miniature worlds. Various academies of science were in being and, in particular, the Royal Society of London had been founded on the Restoration of the Monarchy. Galileo had died and Newton been born in the same year, 1642. On every side there was the joy in the use of eyes, ears and limbs in the study of Nature and the improvement of industry and navigation. Mathematics was becoming, to an increasing extent, both the handmaid and the language of science. The end of the Thirty Years War in Europe and the Commonwealth in England was marked with a great sense of freedom in observation, thought and invention, as well as in more trivial matters. By the study of seven scientists the authors present the state of science, both in method and in content, between 1590 and 1645.

The development of ideas of scientific method is followed through Bacon and Descartes, the development of the rudiments of biochemistry in Van Helmont, of physics in Gilbert, Galileo and Kepler, and of physiology in Harvey. Each of these men might be regarded almost as the founder of the branch of science in which he specialized, and laid the foundations on which the modern shapes of the respective branches of science were built. The "Harvard Case Books" have shown the way to a useful treatment of topics in the history of science. More important than details of the lives of scientists are the climate of thought in which they worked, their methods of working, their antecedents and advances in scientific