

Supplement to NATURE

No. 5031

APRIL 2, 1966

VOL. 210

SCIENCE, MAN AND MORALS

Science, Man and Morals

By Dr. W. H. Thorpe. (Based upon the Freemantle Lectures delivered in Balliol College, Oxford, Trinity Term, 1963.) Pp. xii + 176. (London: Methuen and Co., Ltd., 1965.) 25s. net.

THE central themes of *Science, Man and Morals* are defined by the author as "the process of creation" and "the growing understanding of the unitary foundation underlying all experience—scientific, artistic and religious"; but these are dry bones which he brings to life.

Prof. Thorpe assembles an impressive array of evidence, mathematical as well as biological, to prove the fantastic improbability of the idea that the origin of life, or even the simultaneous formation of two or more molecules of any given enzyme, occurred purely by chance. Nor can the emergence and existence of mind be explained in terms of the laws of physics and chemistry. These laws must be obeyed but they do not require the self-consciousness which is the most convincing knowledge that we all have of ourselves. As a world authority on animal behaviour, Prof. Thorpe is eminently able to trace the development of social life and the importance of psychic factors in determining the evolution of human cultures. Moreover, in order to understand the beginnings of abstract ideas and of the language by means of which these may be expressed and communicated, the author has found it helpful to study animal communication, since in many ways the difference between the minds of men and of animals seems to be one of degree.

It is a far cry, however, from a scholarly discussion as to how early ideas came to include primitive ethical concepts, to the pressing modern ethical problems raised by the population explosion, artificial insemination, selective breeding, the welfare state, the uncontrolled exploitation of natural resources, personal problems such as chastity, monogamy and homosexuality and the immediate and imperative problems of aggression and war. Prof. Thorpe does not avoid any of these, but feeling, as he does, so strongly about aggression and war, one could have wished that he had given more than five pages to it.

The discussion of moral, as distinct from ethical, problems brings us into the domain of theology since "there can be no temptation to consider moral concepts as such as derivable from the scientific picture of the origin and development of the living world". Is there any necessary relationship between primitive magic—superstitious behaviour—and religious awareness? It seems not. Religious awareness appears to be a much later development of the search for understanding for its own sake. In spite of the complexities of the modern scientific world picture, the scientist remains obstinately convinced that he is dealing with a real, external world. Religious intuition, the direct knowledge of a world infinitely greater than, but in some sense sympathetic to, ourselves is more nearly akin to the approach of the artist than to that of the scientist, at least in so far as "artistic values are not just the expression of feelings and attitudes . . . but are in fact engendered in the process of establishing a relation with an objective reality transcending ourselves. . . . In theology, the mystical awareness of God as the whole, in

some sense the unity of all things, is in effect the basis of all the fundamentals of belief".

The idea of wholeness and the related concept of perfection are shared by a number of religions, but the core of the teaching of Christ is that God is Love and that the greatest achievement of human life is self-effacing love. Moreover, that personality, so far from being a finite attribute of finite beings, is an ideal conception, "the highest category of unity in diversity which we know". "There is a fundamental Christian conviction that somehow there is a realm in which what ought to be is what is; . . . it is impossible to conceive moral judgments being made where there is no moral agent; and a moral agent implies personality."

This is a very inadequate summary of a book that covers a very wide field. It is extremely well documented and the "Notes" which include and amplify the references are well worth reading. The anecdotal illustrations are few but good, and perhaps a non-biological scientist may be excused for wishing that there could have been rather more of them and less quotation from other authorities, even though the quotations are always relevant. The part of the argument that comes through most forcibly is that in which the author expresses his own convictions: and conviction is usually caught, not taught.

KATHLEEN LONSDALE

BRITISH STATESMEN OF SCIENCE

Statesmen of Science

By J. G. Crowther. Pp. xiii + 391 + 10 plates. (London: The Cresset Press, 1965.) 42s. net.

THE present place of science and technology in national life has not been easily won. Nor has it been won by those of us now working comfortably in well-equipped laboratories. The victory, in so far as it has been a victory, was won by our predecessors, who showed by their working examples, against the odds, something of what science and technology could do for civilization. They battled with the prejudice of the classical establishment and with the complacency of manufacturers. Most of us to-day are too busy with research, teaching or administration to give much thought to the account of the battle; but this is a pity, for the account is of vital interest. Hitherto, it has had mainly to be sought among contemporary documents, but Mr. Crowther's newest book provides an easy and illuminating access.

Statesmen of Science is a sequence of concise biographies of nine of the principal figures in the battle during the past century and a half: Brougham, Grove, Playfair, Prince Albert, the Duke of Devonshire, Strange, Haldane, Tizard, and Lindemann. Not only are the nine portraits well drawn, but, in addition, around these central figures are ably sketched many others—including Anderson, Babbage, de la Beche, Birkbeck, Faraday, John Herschel, Huxley, Lockyer, Kelvin, Peel, Rayleigh and Roscoe.

Mr. Crowther tempts us to join him in a Baconian analysis of the common factors in the backgrounds of the nine principal figures. Brougham and Haldane, indeed, emulated Francis Bacon as Lord Chancellors who were interested in science and its promotion. Like them, Grove was a lawyer, but was also a practising scientist and the