

**Man and Beast**

By Major C. W. Hume. Pp. 222. (London: Universities Federation for Animal Welfare, 1962.) 15s.

THIS is a compilation, by Margaret Pattison, from the writings of Major Hume on matters of animal welfare, and is part of the campaign waged by the Universities Federation for Animal Welfare to ensure that the subject is brought to the attention of all concerned with the prevention of cruelty in general and with the use of animals for the purposes of man. It is well to provide in one small book the essentials of the arguments so well brought out over many years and many of the themes deserve the emphasis of repetition.

There is no doubt about the value of such a body as the Universities Federation. Even the most dedicated research worker can reasonably be reminded that he must constantly give consideration to the ethical and humanitarian aspects concerning animal experimentation. Human nature is such that constant reminders about responsibilities must be accepted. In the exploitation of domestic animals for human food, materials and for work the well-being of the animal is important. Habituation to the more unpleasant features of the necessary practices involved in the exploitation of animals can blunt the susceptibilities of the individual, and actual cruelty can be condoned.

In the past half-century or so much has been done in many countries to prevent suffering that can arise from certain practices. The compulsory use of anaesthesia for certain routine operations has done much in this direction. It is, however, well to emphasize that some legislation in this direction covered practices which a past generation of veterinary surgeons had accepted because animals had from time immemorial been given little consideration on matters related to pain; when enlightened members advocated the necessarily more elaborate procedures now used there had been some lack of support. When a strong trade union has an influence on a regular, seasonal, peripatetic procedure, such as sheep shearing, where profit is closely bound with rapid turnover of the operation and time an all-important factor in profit, insistence on rigid routine and on the necessary local facilities and labour ready for the visiting 'team', the animal concerned might receive less consideration than desirable. With the developments of 'factory' methods for the rearing of birds and animals for the table, where thousands and not tens may be the units, there was never greater need to emphasize that the individual animals have their rights.

This book will be an important reminder that humanity, as well as profit, is as desirable as ever. W. A. POOL

**Rutherford at Manchester**

Edited by J. B. Birks. Pp. x+364+7 plates. (London: Heywood and Co., Ltd., 1962.) 60s.

THE fiftieth anniversary of the discovery of the nucleus by Rutherford and his collaborators in Manchester was celebrated in 1961 by an international conference. This volume records the historical portions of this conference in addition to much other material relating to Rutherford's Manchester period. About half the book is taken up with reprints of the papers by Rutherford, Bohr, Moseley and others which first reported these discoveries. Almost all the remainder consists of reminiscences by Rutherford's students and collaborators. The result is rather heterogeneous, but in the manner of a cinematic montage is quite effective in creating a human picture of the great physicist.

The 'cult of personality' in physics has always been prominent, and is not necessarily a bad thing. Indeed some physicists would say that progress in physics is from personality to personality. The tendency is bad, however, when the influence of one powerful personality holds back the emergence and recognition of the next.

That Rutherford himself would have deplored any such effect is clear from a reading of this book. Though he enjoyed being a world figure and could be ruthless in getting results, yet it is clear that he also enjoyed nurturing and developing young physicists with fresh ideas and was completely fair in giving them full credit. Great physicists have not always shown such tolerance as they grew older and it is clear that Rutherford was a great man as well as a great physicist.

It is also clear that although Rutherford used rather simple and cheap apparatus for much of his work, he was delighted with every new technical development which opened up new experimental fields. He had no interest in technical developments as ends in themselves, but he still seized on the best equipment available for studying his interest of the moment.

This book is valuable not only for the factual history which it preserves but also for the inspiration and encouragement it may give to to-morrow's 'personalities' of physics. E. B. PAUL

**Atomic Theory and the Description of Nature**

Four Essays, with an Introductory Survey. By Prof. Niels Bohr. First printed 1934. Pp. vii+119. (Cambridge: At the University Press, 1961.) 8s. 6d. net; 1.65 dollars.

OF the four essays by the late Prof. N. Bohr two were originally published in *Nature* in 1925 and 1927, the third in the *Naturwissenschaften* and *Fysisk Tidsskrift* in 1929. First issued in one volume in 1934, they were reprinted in 1961 and a preface was added by Prof. Bohr. Most physicists will be grateful that this little volume is available again. The interest of the four articles is mainly due to the insight one can obtain of the fundamental changes of outlook introduced by the new quantum mechanics. By 1929 Dirac, Heisenberg, Schrodinger, Born and others had provided the mathematical formalism which made it possible to obtain the truly sensational results which the new theories provided. However, the necessity for "a radical departure from ordinary pictorial description and accustomed demands of physical explanations" was not accepted by all physicists (for example, Einstein).

The articles are free from mathematical formulæ, but nevertheless demand close attention to appreciate the wide sweep and the depth of the arguments; they ought to be made compulsory for the young theoretical physicists who are so often virtuosos in the manipulation of algebra (and proud of it) but occasionally shaky in deeper questions of what they are really doing. E. BRETSCHER

**World List of Forensic Science Laboratories**

Edited by Dr. D. Patterson. Pp. iii+30. (London: Forensic Science Society, 107 Fenchurch Street, 1963.) 7s. 6d.; 1.50 dollars.

THIS excellent publication meets a long-felt need both by forensic scientists and by those who desire their services. It comprises 280 entries from 42 countries and lists such details as the title of each laboratory, its address and telephone number, and the name of its director. No attempt is made to define 'forensic science', but it is evident that the interpretation is wide. While it is not in any sense an 'approved' list, much of the information has been derived from official sources.

The very existence of a forensic 'Who's Who' is certain to foster greater co-operation internationally. Perhaps the first manifestation of this will be by way of the response to the Editor's invitation to assist in the preparation of an even more comprehensive list in due course. In this connexion, laboratories in Germany are conspicuous by their absence, and the Communist countries have but one representative—the Scientific Research Institute of Forensic Medicine, Moscow.

R. A. OUTERIDGE