

stimulate much careful thought and experimental work, as it shows how many problems about these compounds and the reactions in which they are involved remain to be solved. The author is usually fair in describing many different hypotheses, though it is sometimes not quite clear why he favours one rather than another.

The publishers and editors are to be congratulated on the production of another well-printed and attractive volume. A uniform quoting of references might be adopted with some advantages. Errors appear to be few; I detected an error or omission of a reference quoted in page 7, and the diffusion constant quoted on page 434 should be $D_{20} = 6.5 \times 10^{-7}$. This book should be a great help to workers in all branches of biochemistry and should also be a source of ideas and topics of research for physical chemists.

HERBERT GUTFREUND

101.

GRAIN STORAGE IN BRITAIN

The Scientific Principles of Grain Storage

By T. A. Oxley. Pp. v+103. (Liverpool: Northern Publishing Co., Ltd., 1948.) 8s. 6d.

THE storage of cereals is a subject which has engaged human ingenuity for a very long time; its practice is therefore still governed in part by traditions which have grown up in varying circumstances of climate in different parts of the world. The literature of the subject is accordingly scattered and ill-adapted for co-ordination, partly because of the limited application to local conditions of many individual contributions. Furthermore, since much of the knowledge is in the possession of those who are neither trained to assemble their findings according to the scientific method nor to the habit of making them public, it is perhaps not surprising that generalized studies are few and far between. Mr. T. A. Oxley's contribution is therefore to be welcomed as a considerable addition to published knowledge, and the more so since it comes at a time when the annual tribute paid to rodents, insects, moulds and bacteria, currently estimated at ten per cent, can so ill be spared from the world's stock.

As its title suggests, the book is an account in scientific terms of facts concerning grain storage and does not involve any detail concerning application to practice. Though this method of presentation enables, in part, wide generalization to be made, it is perhaps not unfair to say that the book lacks some of the comprehensive nature suggested by its title, in so far as it deals in the main with two aspects of grain storage that are of particular interest in Great Britain.

The first concerns the preservation of grain harvested in an unstable condition by reason of too high a water content, a subject which becomes of greater importance year by year as the use of the combine harvester becomes more widespread in Great Britain. The second concerns the recognition and control of insect infestations, which in British experience are largely the result of importation.

The facts concerning insect infestation may doubtless be successfully sought elsewhere and in greater detail, as for example, in the recent publication by Freeman and Turtle, "The Control of Insects in Flour Mills". On the other hand, it would be difficult to parallel the study which Mr. Oxley offers of the physics of grain in bulk and of the deductions which

he draws from the thermal data available. It is in this particular field that the book excels and in which it is greatly aided by the clarity and brevity of style which the author brings to it. Doubtless the fact that much of the work on which he draws is his own in origin contributes to its success.

Since this book was written (it is dated August 1947), development has taken place in some of the matters it describes; for example, the use of pre-heated air for the drying of grain in bins has benefited from further study. No doubt in a later edition not only will such subjects be more fully described, but also the scope of the book will be enlarged to cover the problems of grain storage under tropical and sub-tropical conditions, where probably the greatest economies in the conservation of grain can be made.

It would not be difficult to cavil at minor points of fact and emphasis; to do so, however, would serve no useful purpose and might prejudice the very warm welcome that this useful book deserves.

E. N. GREER

12/6

PRINCIPLES OF STATISTICAL INFERENCE

Theory of Experimental Inference

By C. West Churchman. Pp. xi + 292. (New York: The Macmillan Company; London: Macmillan and Co. Ltd., 1948.) 21s. net.

THE first duty of a reviewer is to say what his book is about; but that is not easy here. The title suggests to a British reader that the work will be commensurate with that of Harold Jeffreys and with the later writings of Bertrand Russell. But neither of these writers is mentioned, nor does the author show signs of being aware of their existence. Again, in his preface the author says that "we are making the much stronger claim" (and it is, indeed, a startling claim) "that the science of ethics (like all the principal branches of science) is *basic* to the meaning of any question that the experimental scientist raises". But I have not found a word in the book concerned with what is called ethics by the plain man; it seems to be taken for granted that all problems of value are ethical, so that there is no distinction between the good, on one hand, and the true or the beautiful, on the other. The author's thesis is then still startling; for experimental facts have often been distinguished from other things on the ground that they are free from the differences of opinion that attend all judgments of value. And it is still not immediately clear how his discussion bears on his thesis.

The first chapter of the book expounds the elements of statistical theory, as it has been developed by such men as Karl Pearson and R. A. Fisher; the second discusses the application of this theory to experimental inquiry. The treatment here is completely dogmatic; no sort of reason seems to be adduced for believing that the theory is in any sense true, or the method based on it valid in any sense relevant to experimental investigations. The author appears to hold that all other doctrines must be judged by their conformity with Pearson-Fisher statistics rather than conversely. On this basis he finds that the recognized systems of philosophy differ primarily in their view whether facts are logically prior to laws or vice versa. The discussion of these systems, professedly on this view, occupies the central and main part of the book;