

the mechanism, it would seem that the ultimate effect of anaesthesia or inert gas narcosis (*a*) may be related to a histotoxic anoxia, and (*b*) may be associated with some limitation in release of synaptic transmitters.

Bennett has been working in this field for some years and here he has very successfully separated the wheat from the chaff in what can be a confusing field. The historical aspects of the subject are included incidentally and where appropriate in the development of each section of the book. The plan of the book progresses from the signs and symptoms of narcosis through its causes and so to a review of the mechanisms. The causes are differentiated from the mechanisms. In the former all the physical aspects of the gases which have been shown as related to their narcotic potency are reviewed and the rate of saturation of the brain tissue is discussed, while under the latter heading the method by which the molecules of gas can interfere in nerve transmission are discussed in some detail.

An intermediate chapter discusses the relation of changes in carbon dioxide tension to the aetiology of narcosis, but concludes that these changes are only synergistic.

Interference of the relay systems in the hypothalamus has been found from electroencephalograms, and the significance of these is reviewed. Despite the observation on page 67 that there is a difference in the degree of change as between anaesthetics of different potency, the pattern of change seems to be the same—a loss of alpha activity and the gradual appearance of slow waves of increasing slowness and decreasing amplitude.

There is a change in the potentials evoked during narcosis by stimuli, and these are particularly well reviewed. The inference from these changes that the effect is at the postsynaptic rather than at the presynaptic membrane is interesting and is drawn from the earlier depression of the negative part of the evoked potential as compared with the positive.

The penultimate chapter amplifies the section on mechanism by reviewing the changes in electrical activity of the brain, the evidence for synaptic block and the significance of the narcotic blocking action of 'Azacyclonol' (Frenquel) and other drugs. The author emphasizes the interest of these observations when he writes: "The preventive action of drugs in depth intoxication and in gas narcosis is only in its infancy. Yet here may be the key not only to prevention but also to the mechanisms themselves of this baffling but entrancing problem". The final chapter brings the book up to date in a review of recent work which was published during the preparation of the book and there seems to have been nothing of importance published since. It is mainly concerned with the narcotic potency of neon and the fascinating synergism between this inert gas and oxygen which may itself, when in excess, produce a synaptic blocking action leading to histotoxic hypoxia.

This is a stimulating and comprehensive survey which will hold the interest of all who are working in anaesthesia and on high pressure environments. It is a book of easy reference for investigating these problems.

We await in anticipation the discovery of the missing piece which will turn this scientifically puzzling hotch-potch of theories into an aesthetically satisfying and complete picture, such as we have seen in the evolution of the theory of the myoneural transmission.

T. CECIL GRAY

ANIMAL FEEDING

Recent Advances in Animal Nutrition

Edited by J. T. Abrams. Pp. viii + 261. (London: J. and A. Churchill, Ltd., 1966.) 36s.

BOOKS on animal nutrition are usually either descriptions of practical livestock feeding or cover more fundamental

matters such as the chemistry of nutrition, physiological functions and needs for individual nutrients. To a teacher or student, books of the first kind provide an appreciation of the agricultural situation to which new knowledge is applied, and the latter are essential as summaries of current theory. But further steps must be taken, particularly at honours degree and research levels. The diversity and often apparent contradictions of the evidence which forms the bases of summaries in conventional texts, and the difficulties of applying fundamental and reasonably factual knowledge to practice, should be appreciated. In practice many variables, such as fodder composition, environment and disease, influence performance and confuse the interpretation of experiments. Experimental techniques must also be examined with care.

This new book, edited by Dr. Abrams, helps to take these steps of summarizing evidence and examining techniques by bringing together seven critical reviews by British workers. The overall size of the book has limited this approach, which is more detailed than that of a conventional text, to selected aspects of nutrition. The articles, in the main, discuss papers published since the late fifties, although older work is quoted if particularly relevant. They deal with the effects of processing on the nutritive values of foodstuffs, the nutritive values of herbage, aspects of poultry nutrition, protein and energy for bacon pigs, aspects of rat nutrition, vitamin A for ruminants and the balance trial and its limitations. The thought inevitably springs to mind that there could be subsequent volumes to cover other aspects of nutrition in the same sort of detail.

The authors have dealt with their subjects in somewhat different ways. Two hundred references on foodstuffs processing, for example, are reviewed, but the reader is sometimes left to draw his own conclusions, and summaries of sections would be useful to students. At the other extreme, the chapters on poultry and protein and energy for pigs cite only 24 and 52 papers, and tables illustrating clear arguments in the text are derived mostly from experiments at one centre. There is no harm in this provided an uninitiated student does not assume that the review covers all recent research. Such differences are to be expected, and all reviews are well written, easily read and interesting.

Most students prefer to buy conventional "reference" texts, but many would be well advised to read this book, which will be a valuable addition to libraries and the bookshelves of those engaged in research and teaching.

I. A. M. LUCAS

PICTORIAL GEOLOGY

Geology Illustrated

By John S. Shelton. Drawings by Hal Shelton. Pp. xii + 434. (San Francisco and London: W. H. Freeman and Company, 1966.) 80s.

THIS book is an exercise in public relations. It contains no summaries, review questions, very few suggested readings, line diagrams or maps, or anything faintly suggestive of text-books and academicism. The text, which bears out this approach, avoids the more obtuse jargon of geology and is clearly written. Photographs are plentiful and good, and it is usually quite clear what features they are illustrating. Interpretation is aided by the block diagrams which frequently accompany the photographs. The everyday objects used to give scale in the pictures make a welcome change from the standard geologist's hammer or compass.

Although the book is called *Geology Illustrated*, it by no means covers the whole field of geology evenly, and most of the space is devoted to geomorphology, stratigraphy, sedimentology and simple structural geology. In these fields, however, it provides a very palatable intro-