

manages to convey a large amount of misinformation. The first chapter deals principally with enzyme kinetics, but only deals with single-substrate kinetics and makes no mention of enzymes which do not obey simple hyperbolic kinetics. Inhibition is, justifiably, divided into reversible and irreversible types, but the example of irreversible inhibition given is non-competitive inhibition, and the reader is told that: "In reversible inhibition, the enzyme can recover its activity when the inhibitor is removed; in the case of an irreversible inhibitor it does not." Later on in the book there is a figure implying that while an irreversible inhibitor will yield complete inhibition of an enzyme if a sufficient amount is added, a reversible inhibitor will never cause complete inhibition. We are also told that the international unit of enzyme activity is measured at 25°, although the temperature for such determinations has been fixed at 30° since 1964.

It would take too much space to give a complete list of the errors and misleading statements contained in this book, and it may be that the publishers could consider

offering a prize for the reader who can spot the greatest number of errors. A few examples taken from other chapters in the book should, however, give an idea of the troubles. The chapter on the determination of substrates tells the reader how to determine DL-succinic acid, and advises the use of malate dehydrogenase for the determination of adipic, DL-citric and D-tartaric acids, although this same chapter contains a table indicating that none of these three acids are substrates for malate dehydrogenase. This table illustrates the remarkably low specificity of the commercial preparation of malate dehydrogenase used by the author, but no mention is made of the considerably higher specificity of highly purified preparations of this enzyme.

This book contains brief discussions of some of the less common methods of enzyme assays and gives enthusiastic accounts of some of the more devious coupling methods that can be used to increase the sensitivity of enzyme assays, but, because of the numerous errors, it represents a potential hazard to any unsuspecting student hoping to learn about enzymes and their uses. K. F. TIPTON

Obituaries

Professor H. H. Read

HERBERT HAROLD READ, FRS, died on March 29 at Whitstable, Kent, not far from the farm where he was born in 1889. Trained in geology under Watts at Imperial College, Read joined the Geological Survey of Great Britain in 1914 and served in Scotland for seventeen years interrupted only by three years of war service. In 1917, Read married Edith Browning who, with their only daughter, survives him. His Geological Survey work resulted in accounts of the layered basic intrusions in north-east Scotland, in extensive descriptions of migmatite complexes in the Northern Highlands and in Shetland, in substantial contributions to Dalradian stratigraphy and in the recognition for the first time of several important phenomena connected with metamorphism.

In 1931 Read succeeded P. G. H. Boswell in the chair of geology at Liverpool and subsequently followed Boswell once more to the chair of geology at Imperial College in 1939. In the same year Read was elected a Fellow of the Royal Society and in September was to preside over Section C of the British Association, though his address on metamorphism and igneous action was never delivered because of the outbreak of war. Publication of this address and of seven others which followed over the next fifteen years, including those given as president of the Geologists' Association (1942-44) and of the Geological Society of London (1947-49), established his international reputation. It is not easy to summarize the content of these addresses; leaving details aside, Read might be said to have attained two objectives. He set out to show how granitic rocks are distributed through the crust, paying particular attention to the role of granites in migmatite complexes, and to demonstrate that the non-fossiliferous crystalline rocks preserved a record of their geological history, which could be incorporated in the stratigraphical record already established through the study of sediments.

Read presided over the International Geological Congress held in London in 1948. In the same year he began his most extensive single investigation when, in collaboration with Professor R. M. Shackleton and Professor W. S. Pitcher and other colleagues, he started a survey, now successfully completed, of the crystalline rocks of Donegal, the results of which are set out in numerous papers. His



researches led to his election to the National Academies of Belgium, France, Ireland and Norway, to honorary membership of many geological societies, and to the award of the Geological Society's Wollaston Medal and in 1963 of a Royal Medal from the Royal Society.

Read wrote with facility and was a masterly lecturer. As well as his four Geological Survey memoirs he wrote either alone or in collaboration with Janet Watson, five books and had a sixth in an advanced stage of preparation at the time of his death. In a review published in 1949 (*Geogr. J.*, 114, 214), W. J. Arkell described Read's *Geology: An Introduction to Earth History* as a work of genius. This book epitomizes Read's ability to write clearly, attractively, often light-heartedly, and yet to convey a sense of awe. The final words of Arkell's review with his quotation from Read may be left to speak for themselves: "If by the time he reaches the last page the reader cannot enter into the spirit of the peroration: 'The geologist, standing on the earth as upon a footstool, looks at the past with wonder and turns to the future with hope', it will not be through the fault of the author".