

**DOWN TO EARTH: ONE HUNDRED AND FIFTY YEARS OF THE BRITISH GEOLOGICAL SURVEY** by H.E. Wilson, Scottish Academic Press, Edinburgh & London, 1985. No. of pages: 189. Price: £9.95 (paperback only).

Believe it or not, this is a book about the British Geological Survey that is actually fun to read! The Geological Survey has, like other typically 'British' organizations such as the BBC, the British Council and the Royal Academy, the rather undeserved reputation among outsiders of being somewhat stuffy, aloof and inward looking, and this book, which is anything but stuffy, will, I hope, help to dispel this stereotyped image. The two previously published books on the history of the Survey by former Directors Flett, in 1935, and Bailey, in 1952, tend to be bland and, frankly, rather boring, but the present author clearly believes that history is about *people* and the book describes the clash of strong and colourful personalities.

It is undoubtedly best at recording the organization's slow rise to its apogee, in terms of scientific reputation and staff numbers, in the late 60s and 70s. The Survey's subsequent rapid decline during the 1980s, when NERC HQ, D En, etc., came to exert an undue influence on the Survey's Scientific programme, is hinted at, rather than described in detail. We must hope that this may be remedied in a future second edition which can draw on the numerous articles and letters in the national and scientific press over the last few years, as well as on the author's own extensive knowledge of the personalities and events.

Mr. Wilson has produced some most interesting new information, revealing, for example, several well concealed skeletons in the Survey's cupboard. The most spectacular of these is the revelation that, at least in the opinion of his own staff who were in a good position to know, the eminent Director General, Sir Archibald Geikie, systematically embezzled the surveyors' field allowances. Their views are admirably summarized in a poem by an anonymous Junior Assistant (p. 120), which is remarkably explicit and uninhibited. The careful preservation of this poem in the unofficial archives of the Survey's Edinburgh office suggests that other geologists shared the poet's views and that Geikie was a widely hated man. Mr. Wilson himself provides succinct thumbnail sketches of other Directors, such as De la Beche ('a thorough jobber'), 'Black John' Flett ('ran the Survey like an autocrat') and Bailey ('in the great tradition of English eccentrics'), as well as many smaller fry.

Lest the potential reader should get the impression that this book consists largely of amusing anecdotes and Victorian scandals, I must stress that it contains many interesting and hitherto unpublished facts as, for example in the chapters on the Drawing Office ('From Stone-Age to Microchip'), the Continental Shelf units ('On the Shelf: geology beneath the waves') and the Computer Unit ('The Numbers Game: computing and computers'). It also includes a brief account of the Overseas Geological Surveys which were merged with the home Survey in 1965 ('The marriage was certainly not based on mutual trust').

Each chapter is headed by an amusing sketch by a talented cartoonist, Roger Geary, which admirably suits the style of the following text. My own personal favourite is the sketch of four hard-faced Victorian gentlemen that heads Chapter IV, 'The Mandarins: those set in authority over us.' The other illustrations include a set of evocative old photographs. They are clear and admirably complement the text.

Having listed its merits it is only fair to mention the book's two principal shortcomings. The first is the lack of an index, which makes it difficult to use the book for quick reference. The second is the price of £9.75 for a fairly slim paperback, when you can still buy fat, hardback B.G.S. memoirs that were published in the 1970s for less than £3. Despite this, I rate the book as a 'must' for anyone who is interested in either the history of Geology or the Geological Survey. If you cannot afford it yourself you should recommend it to your local, or departmental library.

W.A. READ

**EARTH AND LIFE THROUGH TIME** by Steven M. Stanley, W.H. Freeman, Oxford, 1985. No. of pages: 690. Price: £39.95 (hardback). ISBN 0-7167-1677-1.

This is one of those hefty texts designed for use as a set book in American college courses. The approach, however, is novel, and Stanley has 'written the book in the conviction that the physical history and the biological history of the earth are inextricably

intertwined', as he says in the Preface. It may seem a vast undertaking, but Stanley has expertly managed to convey the essentials of modern geology, biological evolution, and the history of the Earth's environments in a succinct and readable manner. To overcome the problem of presenting a great body of information in sufficient depth to be useful, the author has adopted three strategies: first, on the basis that a picture is worth a thousand words, the book is profusely illustrated with photographs and diagrams; second, there are a number of case studies which explore important concepts in greater depth; and third, four appendices and a glossary provide handy guides to the classifications of rocks, minerals, structures and fossils.

The first third of the book gives basic information about the Earth, life and time, concentrating on sedimentary environments, dating, evolution, and plate tectonics. These concepts are necessary to understand the latter two-thirds of the book which is a chronological survey of the Earth and its environments through time. New terms are introduced in bold type, and not surprisingly the first chapter is full of these; this chapter gives the absolute basics, including some useful distinctions, e.g. between uniformitarianism and actualism, and stratification, bedding, and lamination; fossils and taxonomy are explained here too. In 'Part One', Chapter 2 describes modern environments whilst Chapters 3 and 4 discuss the recognition of non-marine and marine sedimentary environments in the geological record. In 'Part Two', Chapter 5 is about stratigraphy and dating, Chapter 6 evolution and the fossil record and Chapter 7 (Part Three) describes plate tectonics. Chapter 8 is fascinating: it is entitled Mountain Building, and after describing the process, goes on to discuss the Alps, Himalayas, Andes, and the Appalachians as an example of an ancient mountain system. The reason for this chapter becomes obvious when you realize the rest of the book is the story of the Earth—essentially derived from the unravelling of orogenic belts.

Part Four consists of three chapters on the Precambrian, covering the origin of the Earth, the cratons, the origin of life, the development of the atmosphere and Precambrian life, and finally continental accretion about the cratons with studies of Laurentia, Gondwanaland, and Eurasia. Part Five covers the Palaeozoic in three chapters: early, middle, and late. Each chapter begins with a survey of life in the periods, this is followed by a summary of the palaeogeography and then finally there are regional examples, e.g. Iapetus, the Old Red continent, the Pennsylvanian. Part Six follows the same pattern in two chapters on the Mesozoic and Part Seven is two chapters on the Cenozoic. Particularly striking in Parts Five to Seven are the magnificent pencil drawings by Gregory S. Paul which bring the vertebrates to life in a way that few other reconstructions have done.

There is little to fault in this book, the text is well written, the abundant illustrations are clear and well chosen, none is redundant. It is nicely produced and has an attractive cover, though I suspect the boards may become detached on a library copy with constant student erosion; they seem a bit loose, but it does enable the book to open and stay flat. I doubt if there is a current course which could use this as a set book, particularly at the price—good value though it is—but would hope that this kind of approach increasingly be adopted in undergraduate courses. However, I recommend it strongly as background reading at all levels, it is sufficiently readable for the novice yet contains detailed studies and a fresh approach which would appeal to more advanced students of geology and biology. Libraries, at least, should get a few copies.

P.A. SELDEN

**HANDBOOK OF HOLOCENE PALAEOECOLOGY AND PALAEO-HYDROLOGY** by Bjorn E. Berglund (Ed.), Wiley, Chichester, 1986. No of pages: 869. Price: £65.00 (hardback).

This book indirectly stems from Project 158 B of the International Geological Correlation Programme which emphasized the need for uniform methods of correlating stratigraphical data on a continental scale. It was originally published in three volumes during 1979–1982, and now appears as a single, extended and complete revised handbook.

The book sets out to cover a wide range of palaeoecological methods which can be applied mainly to organic lake and mire deposits. Emphasis is placed on the reconstruction of Holocene environmental changes in the temperate zone, although it is stressed at the outset that many of the methods can be applied to older Quaternary deposits, and to areas