any stop on any route; justified, I am sure, by the fact that this is the only cave in the area that can be descended by the casual visitor and not by any attempt to influence the purchasing policy of the management! Unfortunately, the book appeared just too soon to include the latest dating information which shows this cave to be over 1,000,000 years old (the current limit of calcite dating by U/Th methods).

The final excursion covers the Gort Lowlands. This area will be less familiar to cavers and at first sight is somewhat flat and featureless, "a monotonous expanse of low ground" in the author's own words. He is right, however, to include it here as it is an excellent example of a mature karst and an interesting contrast to the neighbouring Burren. It does, however, cover a much larger area than any of the previous excursions and a car or, at the very least, a cycle is necessary to complete the tour in one day. Mike is right to recommend the visitor centre at Coole, which gives an excellent account of the workings of turloughs and underground drainage systems.

A word must be said about the production values of this book. It is well printed on good quality paper and the photographs are extremely well reproduced throughout. Including the front and back covers there are 30 colour photos and only one in black and white. The photographs are both well-taken and well-produced and provide an excellent illustration of the text. Colour is used throughout the text for emphasis and where technical terms are used. These are also explained in an index at the back of the book. The diagrams, cross-referenced with the text, also make good use of colour and are clear and well presented.

This guide will be of interest both to cavers and to other visitors to the area and at £5.99 represents good value for money. An excellent publication that gives its author great credit.

Linda Wilson

Sediments in Caves. by Trevor D. Ford. 2001. B.C.R.A. Cave Studies Series. No. 9. SB. 32 pp. Price £2.50. ISBN 0 900265 23 X

When I started caving as school-kid back in the mists of time, cave sediments were the bane of my mother's life as I got back home after a caving trip and traipsed mud into the house. As I got older I realised that cave sediments were something to be dug out the way in search of caverns measureless to man, something I have yet to find, although I suspect the only way to achieve this is to take opiates. It was only after some years caving and many happy muddy hours spent digging down Cooper's Hole and GB that I began to comprehend that actually cave sediments could be quite interesting in their own right. OK, I admit that this is probably due to my growing interest in geology at the time, but nonetheless, they have a story to tell. As Trevor points out in the book, caves sit in the landscape, trapping sediments over time, often preserving evidence of past cultures, faunas and landscapes long since eroded to oblivion on the surface. Furthermore, they can be dated and put into a chronological context.

So it was I received Trevor Ford's latest opus on Cave Sediments, the most recent addition to the British Cave Research Association 'Cave Studies' series, an excellent set of short guides on various aspects of caves and karst aimed at the interested caver who wants to learn more about the caves they visit. As someone who has probably been caving for more years than the combined age of all the active UBSS student members put together, and a retired geologist to boot, Trevor Ford has an excellent pedigree for writing this guide. The book starts out with an introduction to the nature of cave sediments, discusses their sources and how they got to where they were deposited. All types of sediments are covered including more unusual

ones such as organic deposits and wind blown sediments. This is followed by a short section on sedimentological techniques and the book is brought to a neat conclusion with a section on dating cave sediments.

On first reading, the layout of the book gave the impression of it having been written in a hurry. The headings are often misleading and what follows doesn't always relate to the heading. In particular, the opening few pages were slightly misleading, especially as the section on autochonous sediments (if you want to know what this means, read the book) is about two pages long, followed by five lines on the more common allocthonous sediments; although these are more fully explained under subsequent separate headings. And why is there a lengthy paragraph on the sediments in Sand Caverns, Gaping Gill in the section on autochonous sediments when clearly, from reading the text, they are allocthonous?

As a guide to the classifying cave sediments in terms of their source and transport mechanisms, this book is extremely comprehensive and admirably fulfils its aims. But what it does not do is provide the reader with the tools to decipher what the sediments mean. Given the title of the book, the section on 'Techniques of Sedimentology' is somewhat surprisingly only one short paragraph. Furthermore, there is little discussion on how to identify sediment types or 'facies' using standard sedimentological techniques, and no mention of sedimentological structures such as cross bedding or ripple marks. Observations of these often prove critical to identifying flow directions and understanding how a cave functioned. It was precisely these sedimentological structures which provided the key to understanding the genesis of Ogof Draenen for example. Using this guide the average caver would be hard pressed to distinguish stream laid sediments from mud flow deposits or to deduce direction of water flow. In the final section, the difficult task of explaining the intricacies of dating methods to non-specialists was well written and concise, although the recent application of cosmogenic isotopes to dating cave sediments was not mentioned. Finally, I would have liked to have seen more emphasis placed on the role of cave sediments in modifying passage morphology, a fundamental process that is vastly underestimated in cave development.

Although the figures are clear, they are often not explained in the text. Oddly Figure 4 (p. 24) is mentioned before Figure 1, (p. 6), and neither Figures 2 or 3 are mentioned in the text although Figure 3 refers to a paragraph on the preceding page. The reader is left confused as to what the figures refer to and gives the impression that the book was cobbled together rather haphazardly. On a more positive note, the book contains a superb selection of photos by some excellent cave photographers. These photos, both from the UK and abroad give a good balance to the book and illustrate well many of the points made in the text. In particular, the front and rear covers are excellent. As a die-hard Mendip caver I was rather touched to see the photo of the Swildon's 2 streamway on the same page (p. 11) as the awesome Firecracker streamway in Mulu. And it's always gratifying to see the classic photo of Pete Smart sampling clay for palaeomagnetic analysis with his eyes shut! However, some of the photos suffer from high contrast, notably the photo of the caver in Ladder Dig, GB, on p.17, where it is unclear what the photo is trying to convey, unless of course you have spent hours digging in GB.

I was also disappointed by the quality of the printing. Previous books in this series have been of much higher quality. On my copy much of the text has been faintly transposed onto the opposite page giving a rather 'dirty' quality to the page. In addition, there is also a rather irksome overuse of hyphens in mid-sentence and in places the layout and text justification is not of the quality one would expect.

On the whole, this book is a worthwhile addition to the Cave Studies series, although I would have hoped for more from such an eminent author. However, it is still one of more comprehensive guides to cave sediments that I have seen. Hopefully it will stimulate more

interest in these often fascinating deposits and provide a launch pad for more detailed investigations. As with all the books in this series, its cheap price means you can't really go wrong and I heartily recommend it to any caver with the slightest interest in how that mud that chokes their dig got there in the first place.

Andy Farrant

Paviland Cave and the 'Red Lady' A Definitive Report. Edited by Stephen Aldhouse-Green 2000. Western Academic and Specialist Press. Bristol. HB 314pp. 132figs. 38clr pls. Price £40.
ISBN 0 9535418 1 9

In January 1823, the Rev. William Buckland, the first Professor of Geology at Oxford University, excavated within Goat's Hole cave at Paviland in the Gower peninsula of South Wales, finding the partially preserved burial of a man in his late twenties, 'healthy but dead', accompanied by 'two handsfulls' of pierced periwinkle shells and fragments of rods and rings carved from ivory. A mammoth skull was found close by and other animal bones and worked flints were also recovered from the excavation.

The bones lay in a mass of red ochre, which had stained the bones and shells, hence the burial, unfortunately misidentified as female, came to be known colloquially as the 'Red Lady' of Paviland. Buckland was at the time a believer in the Deluge hypothesis as explanatory of cave fillings, river terraces and other Pleistocene depositional and faunal evidence, hence the 'Red Lady' was rationalized as Romano-British in age and the ivory artifacts as made from 'diluvial' material, washed into the cave long before.

Material had already been recovered from the cave in 1822 and collection of finds continued through the 19th and into the 20th century. Recognition that the artifacts were Palaeolithic followed the visit to Oxford in 1863 of Lartet and Christy, co-authors of the epoch-making publication of palaeolithic art and artifacts in *Reliquiae Aquitanicae* (1865-75). By 1912 when Prof. W.J. Sollas, the then Professor of Geology at Oxford, with Abbé Henri Breuil on hand to identify the flints, undertook a thorough excavation, the main occupation had been identified as Aurignacian and the Palaeolithic age of the burial recognized. Unfortunately however, by then the greater part of the deposits in the cave had been removed and although Sollas found large numbers of artifacts and a large quantity of mammalian remains, most of these came from material already disturbed by collectors or storm waves washing into the cave.

As a result, disentangling the probable sequence of events in the cave was not possible before the advent of radiometric dating and other scientific methods now generously deployed to telling effect in this truly multi-disciplinary report, with contributions by 21 authors marshaled in 12 chapters, an exemplary foreword by Rhodri Morgan AM MP, First Secretary of the National Assembly for Wales, and summaries in English, Welsh, French, German and Spanish. The publication was supported by the University of Wales College, Newport, and the Friends of the National Museum of Wales.

Investigations directed by Aldhouse-Green [AG] in 1997 as part of the project also involved three other nearby caves; Hound's Hole, opening like Goat's Hole onto the limestone marine cliff at about 15 m OD; Ogof-y-Mor, a sea-cave at present beach level and Foxhole Cave, at 41 m OD, opening onto a steep narrow dry valley leading back though the cliffs to the coastal plateau behind.

After initial phreatic development, Goat's Hole and Hound's Hole appear to have developed along steeply inclined tectonic fissures, with the southerly up-dip portions of the caves removed by progressive marine erosion of the cliffs beginning at least by 300 ka in