

aid identification of the spring recharge area, with a view to providing source protection. The third paper by Finlayson & Sauro provides a useful (if somewhat out of place in this section) summary of international organisations concerned with karst and their current (1990) research areas. In the fourth paper Forti *et al.* discuss karst aquifers in three regions of Tuscany with special emphasis on determining available water resources. The final paper of this section is by Johnston and provides an overview of the historical development in the understanding of the Floridian aquifer in the United States.

The last section of the *Proceedings* contains four papers (one in French) concerning "Tracing". Of these only one, that by Leohnert concerning Cretaceous Limestone in Westphalia, Germany, is concerned with "classic" dye tracing, albeit combined with limited hydrochemical and recharge/discharge measurement. That by Plata discusses the use of both natural and artificial tracers to determine hydraulic parameters. Specifically radioactive and saline tracers are used in borehole investigations to determine vertical water movement, location of fractures and aquifer response to precipitation. The benefit of using radioactive and saline tracers is that tracer dilution can be monitored continuously. However, use of radioactive tracers has many associated health and safety problems. Natural tritium as a tracer is also discussed, especially its use in determining groundwater flow and residence time. Examples are quoted from Brazil, Jamaica and the Dominican Republic. Finally, variations of stable isotope concentration in groundwater were compared with those of artificially introduced tritium to examine the recharge source for water discharging from the Reocin Mine in Spain. The paper by Tulipano extols the virtues of using contemporaneous physical, chemical and isotopic parameters in groundwater to elucidate the hydrogeology in complex areas, with special regard to aquifer management. According to its English abstract the French paper by Dzikowski *et al.* examines the hydrodynamics of tracer movement through an aquifer.

In general the *Proceedings* are well produced, however, some of the more complex maps and more detailed tables are difficult to read. The diverse range of papers concerning karst areas in a number of countries should ensure that there is something of interest for all those workers in the field of karst. Conversely this diversity means that the whole reference is unlikely to be of value to any one person, but would prove a valuable addition to karst libraries.

CHAPMAN, PHILIP, 1993. *Caves and Cave Life*. Harper Collins, 219 Pages, with 97 black and white photographs, line drawings and maps. Hardback £27.50 ISBN 0 00 219907 6 Softback £12.99 ISBN 0 00 219908 4. (Reviewed by Steve Cottle)

This excellent book has been produced by Harper Collins as part of their long-established New Naturalist series. This is a series of over 80 books that will be familiar to many for its intelligent and straightforward approach to various aspects of natural history for the general reader combining clear explanation of their subjects with a reasonable degree of depth whilst avoiding any gimmickry.

The book starts with a good introduction to the fascination of caves that has attracted not just cavers, entrepreneurs and tourists but also underground naturalists since they were first entered. It then goes on to define the habitats present in caves, such as macro- and mesocaverns, the climates present and an overview of the ranges of life forms within the cave. In doing so Chapman also manages to describe cave formation and the effect this has on the various habitats.

The main span of the book has two sections, the first of which gives a very good insight into the caves of Britain and Ireland. It does not just cover the history of the larger regions in good detail but also includes the smaller less visited areas such as the Highlands, North Wales and a number of the smaller Irish counties in addition to Co. Clare. The second section deals with cave fauna and flora before going on to describe communities found in caves. This is a superb section with a well defined text to describe each inhabitant. More importantly, there are the excellent illustrations by Brin Edwards that give a clear idea of the inhabitants of caves. Whilst describing the inhabitants in detail Chapman also enlivens the book by drawing on his past experiences and numerous anecdotes, including Barbara Streeves' rescue of a rabbit from St. Catherine's Swallet, by carrying it inside her wetsuit. (The bunny enjoyed the experience so much that it promptly hopped back down the cave.)

Whilst most of the information is not new the style and presentation are in a language accessible to all intelligent people without simplifying any of the matters concerned. It allows a fascinating insight into what cavers will blindly ignore as mud and cracks yet which can contain whole communities of life.

The last chapter however is a reminder to all cavers that we hold the key to a unique environment and its protection. Chapman uses quotes from a number of individuals and himself to demonstrate that cavers are the principal cause of destruction within caves, whilst mankind on the surface can account for the majority of pollution (not just sewerage but noxious and toxic chemicals) and the quarrying away of "the only truly natural ecosystem available for study in a country such as Great Britain."

In all this is an eminently readable and informative book that every caver should have and with so few errors that it would be pedantic to mention them.