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Forensic Geoscience—Principles, Techniques & Applications, edited by K. Pye & D.J. Croft. Geological Society, London, Special Publications 232. The Geological Society Publishing House, Unit 7, Brassmill Enterprise Centre, Brassmill Lane, Bath BA1 3JN, United Kingdom; 318 pages, hardbound; price GBP 85.00. ISBN 1-86239-161-0.

Those interested in sediments may be surprised to find here the review of a book that appears to be on forensic science. The importance of sediment, soil, and the techniques used by sedimentologists in criminal investigations may already be known to some readers through books such as Raymond Murray's (2004) "Evidence from the Earth." Others may not be aware of the uses sedimentary research has in investigating crimes of domestic, environmental, international, or terrorist nature. Both instances justify publishing a review in the present Journal, as does the content of the book, discussed below.

Excepting the editorial introduction and overview, the book contains 28 papers. These may be grouped as three review articles on the applications of geology and geophysics to criminal investigations; twenty-one articles containing scientific research; two articles on legal issues and one on teaching. At the book's core are the technical articles, which are dominated by works on sedimentary geochemistry and three on isotopes (mostly biological). There then remains a collection of papers that cover many aspects of sedimentary analysis, from colour, particle size, scanning electron microscopy (SEM), and associated X-ray analysis. Whilst there are individual papers on archaeology and micro-organisms (diatoms), many of the other works include archaeological and biological information (graves and grave stratigraphy, soil biology). A paper on damage to spacecraft surfaces (Graham et al.) appears to stand out as different from the others, yet is actually based on SEM work that is familiar to many sedimentologists. This range of topics commends the book to Journal of Sedimentary Research readers, as it demonstrates the generic nature of many of the papers, making them more familiar in scientific style than papers in forensic journals. Only one paper (Stam, on a case of abduction and attempted homicide, the Imperial Valley case in California) concentrates on a single criminal case, as is standard in many forensic science journals.

As regards actual criminal investigations, three of the papers include one main case study, four papers include two case studies and one paper (Fenning and Donnelly on geophysics) has three case studies (including Saddleworth Moor, the body deposition and likely murder sites associated with the "Moors Murders" in northern England, also mentioned by Scott and Hunter). Other "known" crimes include murders perpetrated by Fred and Rosemary West (Cromwell Street, Gloucestershire) and Michael Sams (the railway kidnapper) as well as mass graves in Bosnia. Many of the papers concentrate on general issues, using sites or materials not directly associated with a criminal investigation in order to illustrate their application: these will be of interest to sedimentologists not interested in criminalistics.

The book is an excellent source of information for forensic scientists on how the geoscientist (geologist, sedimentologist, archaeologist, mineralogist, geophysicist, or geochemist) can provide assistance in criminal investigations. Likewise the book will show those working with sediments how their work is of interest to others. In this regard, many of the papers are demonstrations of what standard, tried, and tested sedimentological research can do. Conversely, there are fewer innovative papers on single techniques, the "new" work concentrating on the

comparison of techniques, their application or statistical robustness. We recently (Ruffell and McKinley 2005) reviewed similar material to that published in this text from forensic science journals and found a dominance of articles on botany, palynology, geophysics, and geological type analyses of glass, paint, fibres, and bones. In this regard, Pye and Croft's book may not be a reflection of the recent use of geoscience in forensics: we consider this a positive attribute, shifting the emphasis toward sedimentology of these newsworthy, lucrative, socially important, scientific applications to criminal investigation.

References:

Murray, R.C., 2004, Evidence from the Earth: Forensic Geology and Criminal Investigation: Missoula, Montana, Mountain Press Publishing, 227 p.

Ruffell, A., and McKinley, J.M., 2005, Forensic geoscience: applications of geology, geomorphology and geophysics to criminal investigations: Earth-Science Reviews, 69, p. 235-247.

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