that they just about do but your average geologist, even at graduate level, may well be put off by the maths, especially as it starts so early (pages 3 and 4) in the opening chapter. In my opinion at least some of the mathematical treatment of the opening chapter could have been best avoided or perhaps, better still, confined to an appendix at the end. Throughout the rest of the book the mathematical side is downplayed and I think as a result makes the material more accessible rather than less so.

The book follows a slightly quirky path with chapters on Geomagnetism, Rock Magnetism, Magnetic Prospecting, Palaeomagnetism, Magnetic Fabrics, The Magnetic Signature of the Earth's Crust, Magnetic Chronology, Environmental Magnetism and finally a brief history of the study of magnetism. The organization of the book might have been better served by bringing the magnetic prospecting and crustal magnetism sections together so that one led on from the other but the rights and wrongs of any such organization is always subjective.

I think one of the highlights of the book is the extremely good use of Italian examples to explain the various topics under discussion. If nothing else these, perhaps less familiar, examples will serve as a valuable resource to those teaching in the broad discipline of geomagnetism. The text is very well written and I think most readers will find the book quite readable. However there is a certain quirkiness to it all – some slightly odd phrasing or the occasional missing word strikes one quite often, which after a moment's pause one realises is due to the fact that the authors' first language is not English but in fact does not obscure the authors' meaning in any way.

At the end of each chapter the authors provide a brief set of recommendations for suggested reading and combine this with a short set of references for figure sources. While this is not an extensive reference list it does give the interested reader enough information to begin to follow up the various topics under discussion. Throughout the quality of the diagrams is very good with many very clean, simple line drawings and a limited number of colour plates.

In the end I think this will become a reference book in libraries rather than a true textbook for the undergraduate or graduate geologist. Having said that I would hope it would become a standard on taught graduate courses in geophysics where its broad introduction to the diversity of geomagnetism would serve such readers well.

Graeme K. Taylor

CALDWELL, D. R., EHLEN, J. & HARMON, R. S. (eds) 2004. *Studies in Military Geography and Geology*. xiv + 348 pp. Dordrecht, Boston, London: Kluwer. Price Euros 119.95, £79.00, SFr 194.50, US $159.00 (hard covers). ISBN 1 4020 3104 1.
doi:10.1017/S0016756806002378

More than six decades on from the end of World War Two, there are few people who have personal experience of warfare involving conventional battlefields. Apart from low-intensity, counter-insurgency conflicts, the post-WW2 period, one of continual conflict somewhere on the planet, has seen not a single campaign that has pitted large armies on a roughly equal footing, except occasionally in Korea and Vietnam. Pitched battles, such as Desert Storm in the first Gulf War, have been decided by overwhelming air power and surface-to-surface firepower in a matter of a few hours, irrespective of ground. So a book on the central role of terrain in military strategy and tactics is more of historical interest than looking ahead to battle plans that are dominated by conditions under foot. Stemming from a conference at the US Military Academy, West Point in 2003, it is no surprise to find *Studies in Military Geography and Geology* dominated by North American issues from the War of Independence and the Civil War. But there are vignettes about Hannibal's invasion of southern Europe, and the role of German geologists and geographers in planning the invasion of the Soviet Union and the aborted invasion of Britain.

That being said, anyone likely to come under fire aims to seek natural cover, and maintaining supply lines will depend on whether or not vehicles can become bogged and water supplies assured. The second is now less appropriate to armies of the last remaining superpower; millions of litres of bottled spring water, as well as TV dinners, fly into Iraq. Yet the first Gulf War was only able to sustain hundreds of thousands of troops by exploiting a major aquifer in northern Saudi Arabia from wells drilled to a depth of a kilometre, and using remote sensing to locate existing wells in the featureless desert that formed the main battle ground. Interestingly, the UN military force that is deployed along the Eritrean–Ethiopian border to observe adherence to the cease-fire terms at the end of the 1998–2000 war there uses bottled supplies. Not having drilled wells, they have done little to restore groundwater supplies in anticipation of the return of tens of thousands of refugees displaced by the war.

The abortive hunt for Osama bin Laden since the invasion of Afghanistan in 2002 highlights the tremendous advantage to small defensive forces of limestone terrain – highly irregular karst topography and a multitude of caves in which to hide. There is an interesting parallel account of how the intricate tropical karst of upland Jamaica – Cockpit Country – thwarted British forces' attempts to suppress a guerrilla force of escaped slaves during the Maroon Wars of 1690–6. A combination of cordoning the karst terrain from which the guerrillas operated, deforestation, and guarding the few surface water supplies enabled the British to contain the rebellion. Maroon fighters, however, only sought terms after a measles epidemic weakened their forces. That karstic regions still worry counter-insurgency forces is emphasized by a detailed analysis of Afghan limestones. Its scope is from microscopic and geochemical studies of hand specimens, to determine which facies are most prone to solution cavities, to geospatial analysis of lithofacies maps and fracture systems as a means of predicting where most caves might be. The outcome was blanket bombing of limestone country close to the Afghan–Pakistani border, but no significant achievement of its objectives.

The central political purpose of conventional warfare is to wreak as much devastation as possible to force opponents to submit. But in these sensitive times, it seems that armies have some duties similar to those of mining companies: they are supposed to protect environment and heritage as best they can – at least on their training grounds. So there are two chapters dealing with environmental impact of marching and movement of armour. In the first, case studies focus on a bayonet assault course at West Point (has any reader actually seen news footage of US soldiers with fixed bayonets?). Equally earnest is the account of how vehicle tracks on surfaces coated by desert pavement last for tens if not hundreds of years, from studies of US arid-land training sites. To this day, the El Alamein battlefield lays out the to-ing and fro-ing of the Afrika Corps and the Eighth Army. And what of the impact on archaeology, for which US legislation has

extremely stringent rules? Yes, there is a chapter on assessing such impacts, no doubt being applied to the world's densest area of archaeological sites from the Last Glacial Maximum to the first civilizations – on the Tigris–Euphrates plains.

*Studies in Military Geography and Geology* is not as lugubrious as it could be: no studies about means of detecting mass burials (oddly nothing about finding buried weapons of mass destruction either), the geochemical dispersion of dust from depleted uranium projectiles, or contamination of water resources by white phosphorus. Apart from military historians, I think a likely readership might well be the irregular forces which modern warfare seeks to suppress, for they are exploiters of terrain and cover par excellence.

S. A. Drury

KENRICK, P. & DAVIS, P. 2004. *Fossil Plants*. 216 pp. London: The Natural History Museum. Price £16.95 (paperback). ISBN 0 565 09176 X.
doi:10.1017/S0016756807003226

Popular books on fossil plants are relatively few and far between. This offering from the Natural History Museum is welcome being both well illustrated and authoritative. The book is arranged into eight chapters following a time line in general but also incorporating other themes. We start 'in the beginning' with a brief review of life in the Precambrian and into the early Palaeozoic with the spread of life onto land. This features the Rhynie Chert, which also starts the second chapter on the Devonian. In some respects this account is an opportunity missed as no reconstruction of the hot spring setting nor community is given and highlights a weak point in referencing. A link to the University of Aberdeen Rhynie website would have been a good idea. The rise of the seed plants and first trees are also covered.

Chapter 3 is on forests and here we lose some of the time element. There are many interesting stories and anecdotes but a reader has little chance in following up the stories as referencing is only to a few textbooks. Aspects of plant preservation are dealt with here but I would like to have seen some illustrations. There is little mention of the significance of charcoal, and fire receives scant attention. Chapter 4 is on coal, which deals mainly with Carboniferous peat-forming plants. There is little discussion here of the evolution of peat-forming vegetation which is a pity considering coals are found worldwide in all periods from the Devonian.

Chapter 5 is on measuring the past. This covers aspects such as plants as thermometers and proxies for $CO_2$ but illustrations such as of the cuticle with stomata could have been larger, clearer and annotated. Chapter 6 is on plant life through the ages. This looks at changing vegetation through time and considers evolution and extinction. A reconstruction of Gondwana is given but the changing pattern of the continents and biome development could have been given more prominence.

Chapter 7 on plants and animals deals with both plant–arthropod and plant–vertebrate interactions. Whilst interesting, it could have been improved with some good line drawings and a better sense of the evolution of interactions. The final chapter is on the rise of the flowering plants. I am sure that angiosperm palaeobotanists would like to see more detail and illustrations and to some extent I have some sympathy.

Overall the strength of the book is that it is well written and not expensive, but better illustrations could have been used in many places and the lack of websites and detailed references makes its use more limited. Despite this I think that all interested in the evolution of life should have a copy.

Andrew C. Scott

ALLEN, M. R., GOFFEY, G. P., MORGAN, R. K. & WALKER, I. M. (eds) 2006. *The Deliberate Search for the Stratigraphic Trap*. Geological Society Special Publication no. 254. v + 304 pp. London, Bath: Geological Society of London. Price £75.00, US $135.00; GSL members' price £37.50, US $68.00; AAPG/SEPM/GSA/RAS/EFG/PESGB members' price £45.00, US $81.00 (hard covers). ISBN 1 86239 192 0.
doi:10.1017/S0016756807003184

This book results from a conference, 'The Deliberate Search for the Stratigraphic Trap – Where Are We Now?', held in London in 2004. In their introduction the editors state that 'in-depth understanding of analogue fields . . . and . . . deep insights . . . were generally not well demonstrated'. Judging from the published record this seems fair comment. The contents, which could in several cases have been refereed more rigorously, fall into four groups.

The first, authored by consultants, comprises three papers dealing with corporate strategy, organization and procedures for successful pursuit of stratigraphic plays, based largely on global lookbacks in which prices and evolving technologies might have figured more prominently. The approach in all is from a prospect portfolio perspective; conclusions are now surely fairly well known but at least stress the need to fund and conserve appropriate levels of long-term information gathering to steepen expectation curves. Young professionals and senior managers alike should heed what is surely a *cri de coeur* from Binns that 'frequent re-organizations . . . divert attention away from the technical process'.

The second, authored by staff of the Department of Trade and Industry and the British Geological Survey, contains four papers promoting the potential for stratigraphic traps in various regions of the UK Continental Shelf. To what extent the 'leads' illustrated are calibrated evaluations or conceptual arm-waving is unclear.

The third, authored by industry staff, includes three case history papers. That by Godo is an informative integration of sedimentology, sequence stratigraphy and rock properties employed in pursuit of an amplitude-supported gas play in the Miocene of the Gulf of Mexico. The account of the pre-discovery evaluation of Buzzard in the UK North Sea allows British Gas staff to give themselves a well-deserved pat on the back. The promotional story on the Indonesian rift plays sets out a simple play concept using only 2D seismic data and does not discuss rock properties.

The fourth, authored by academics, is a mixed bag of four papers. It includes an exhaustive geometrical classification of seals with no reference to their sedimentology or rock properties and geometrical evaluation of the pinch-out of turbidites against a confining slope without sedimentological insight. The paper on sand 'extrudites' nicely mixes seismic and field descriptions of these volumetrically minor stratigraphic curios. An interesting discussion of visual cognition pitfalls in seismic display has general application.

Exploration acreage is too valuable to evaluate solely in terms of structural closures; the more so as high oil prices seem here to stay. Interpreters need to conceptualize all possible closed contours of hydrocarbon fluid potential at spatially complex reservoir/seal interfaces in a context of time-variant access to charge, structural deformation,