

Beerling, and for palaeobotany, 'the past is the key to the future'.

Howard J. Falcon-Lang

GEE, D. G. & STEPHENSON, R. A. (eds) 2006. *European Lithosphere Dynamics*. Geological Society Memoir no. 32. vii + 662 pp. London, Bath: Geological Society of London. Price £70.00, US \$126.00; GSL members' price £35.00, US \$63.00; AAPG/SEPM/GSA/RAS/EFG/PESGB members' price £42.00, US \$76.00 (hard covers). ISBN 9781 86239 212 0. doi:10.1017/S0016756807004074

Europrobe began as a project to produce a geo-transect in an E–W direction linking western Europe with eastern Europe and the Soviet Union and had its genesis in the early 1980s. The initial project would have resulted in a profile similar in scope to the N–S European Geotraverse (the EGT). With the end of the Cold War came increasing dialogue and collaboration between geoscientists from the east and west and Europrobe workshops became a vehicle for this. The original idea of a profile developed into a plethora of projects that in scope was far greater than originally envisaged. This volume might be regarded as the culmination of these efforts.

The Memoir is divided into four sections containing a number of multi-author papers. The first, introductory, section contains a group of papers with a very broad scope that look at the present structure and properties of Europe and the series of collision and rifting events that led to the present-day collage. The remaining sections contain 32 papers grouped into the major orogenic episodes by which eastern and western Europe were sutured together. These work back in time through 'Alpine to Present', 'Mesozoic and Palaeozoic' and then 'Precambrian Europe'. The majority of the papers focus on specific aspects of crustal evolution, but also draw on data and interpretations from papers within this volume and other published work. The range of techniques applied is broad, covering the full range available to geoscientists in all disciplines. The geographic coverage, as would be expected from the projects incorporated into Europrobe as it evolved as a programme, is also broad: from the Iberian peninsular to the Urals and from Navoya Zemla to Tunisia and across to the Caucasus. The preface does illustrate the range of projects that formed Europrobe but the boundaries of these individual projects are not noticeable in the memoir. Instead many papers overlap and cross-reference each other providing a well-integrated picture of current knowledge, which is a credit to the authors and editors. A comprehensive index also makes cross-referencing topics easy. Each paper has its own reference list.

My only reservation about this Memoir is the title, which I would argue is misleading. This is not a book about 'dynamics'. Very few of the papers really discuss the forces at work in the past and only one or two address the issue of current plate stresses and their relation to post-Alpine tectonics. Instead this is really a 'Geological Evolution of Europe' but it is none the worse for being that.

This is an excellent summary of the results of the Europrobe programme drawing together current and recent research, and I recommend it to anyone with an interest in the crustal evolution of Europe. It should also be on the shelves of every library as an up-to-date reference on European geology.

R. W. England

BURDIGE, D. J. 2006. *Geochemistry of Marine Sediments*. xix + 609 pp. Princeton, Woodstock: Princeton University Press. Price £55.00, US \$85.00 (hard covers). ISBN 0 691 09506 X. doi:10.1017/S0016756807003743

David Burdige makes a very important contribution to the geochemical library with this comprehensive textbook. He sets out to provide the reader with a broad view of the fundamentals of marine sediment geochemistry and a quantitative view of geochemical processes occurring in recent marine sediments. He succeeds by producing a thoroughly researched, clearly structured and well written review. Unusually for a non-specialist organic geochemical tome, he has placed significant effort into introducing and educating the reader to understand that organic matter remineralization plays a pivotal role in many of the diagenetic reactions occurring in recent marine sediments.

In Chapters 2 to 6 there is a basic introduction to the study of marine geochemistry; quantitative process models are introduced in Chapter 7; while in Chapters 7 to 12 a more detailed examination of diagenetic reactions, their thermodynamics and kinetics, the reactivity of components of the sediments and the influence of external factors, such as bioturbation, are covered. Finally in Chapters 13 to 17 Burdige examines specific processes occurring in pelagic and continental margin sediments, including discussion on the controls on organic carbon preservation in marine sediments, the CO₂ system and sulphur and trace metal cycling.

When I received the book for review I was concerned that in an attempt to cover the very broad subject of marine geochemistry in some depth, the text could potentially fall between two stools: not comprehensive enough to be classed as a high-level text, while too detailed for the part-time geochemist. I needn't have worried; the introductory chapters are excellent and having read the sections on organic geochemistry, where I have some knowledge, I would have found it difficult to argue that the material presented was not a comprehensive review and did not provide insight into the subject. David Burdige has successfully bridged the gap between the disciplines of organic and inorganic geochemistry; his chapter linking sediment organic geochemistry with diagenesis was particularly useful. I made a point when reading the book, of trying to learn about things less close to my heart, such as models of bioturbation and bioirrigation, and found that despite my ignorance I was able to follow and understand the subject. I am sure that students will find it to be a user-friendly, extremely helpful text. My only complaint is that the format of the book is not ideal. I think it would work much better in larger size, with a clear distinction of figure legends and text, which in the present edition are sometimes poorly separated.

I will certainly be recommending this textbook to my students, both specialist undergraduates and postgraduates new to geochemistry. It is an excellent introduction to the subject.

George Wolff

BRITISH GEOLOGICAL SURVEY. 2005. *Glen Coe. Bedrock. 1:25 000 Geology Series*. Keyworth: British Geological Survey. Price £12.00; book and map pack £22.00. ISBN 0 7518 3299 5 flat; 0 7518 3300 2 folded and cased.

KOKELAAR, B. P. & MOORE, I. D. 2006. *Classical Areas of British Geology: Glencoe Caldera Volcano, Scotland*.