Name Reactions – A Collection of Detailed Reaction Mechanisms. Jie Jack Li. Springer-Verlag, Berlin. 2002. 416 pp. Price: US$ 19.95.

For beginners, the study of organic chemistry necessarily involves remembering a series of basic reactions and transformations. While just the thought of this scares a large number of students, there are many who take pride in remembering 'name reactions'. These are reactions which are of great importance in organic chemistry, and therefore have been honoured (by peers) by associating the discoverer's name with the reaction. Indeed, there are several books available on this subject. The *Merck Index* also lists several name reactions in a separate section (the 13th edition published in 2001 has 446 name reactions). The present title, written by Jie Jack Li, lists 315 name reactions, with about 20% contributions from the 19th century, and about 30 and 50% contributions from the first half and the second half of the 20th century, respectively. The readers may find it interesting to note that as many as 15% of the reactions listed in this textbook are from the 1970s! In fact, there are twenty entries for the post-1990 period (including one from 2000) – although I am not too sure if all of them will eventually prove to be of general applicability, which is *usually* a criterion for a reaction to be labelled as a 'name reaction'. I would put some of them in the 'too early' category!

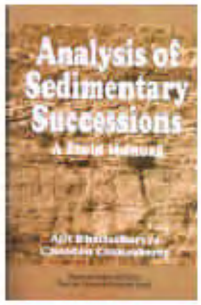
One of the strengths of this book is that the mechanism of each reaction is graphically described, usually in sufficient detail. This will make the book useful to undergraduate and postgraduate students and teachers of organic chemistry. The author has also provided recent references on the use of most of these named reactions, which researchers will find useful (it turns out that more than a third of the references are from 1995 onwards). Unfortunately, what I found missing in this book are the original references in a number of examples. Thus, Baker–Venkataraman rearrangement does not mention Venkataraman's paper (*J. Chem. Soc.*, 1934, 1767). Similarly, Borsche–Drechsel cyclization cites only the Dreschsel paper, and both for HVZ and MPV reactions, only one paper is cited. Some more examples include: Boekelhide reaction, Gewald aminothiophene synthesis, Guareschi–Thrope condensation, Hoffman–Löffler–Freytag reaction, Houben–Hoesch reaction, Julia–Lythgoe olefination, Luche reduction, McFadyen–Stevens reduction, Meyer–Schuster rearrangement, Miclaelis–Arbuzov phosphonate synthesis, Schotten–Baumann reaction, etc. Although many of these references are available from the *Merck Index*, their inclusion would have made the book more complete. A short one-line summary of the more recent references would also have made it easier for researchers to find papers of their interest more quickly. This reviewer also believes that some additional information should have been included to make the book more informative to the students. A few such examples are: mentioning the Newman modification of the Arndt–Eistert homologation; a one-line description of the origin of the name of the Beirut reaction; a short discussion on the importance of ene-diyne antibiotic action in the context of Bergman cyclization; explaining the role of Cu_2Cl_2 in the mechanism of Gattermann–Koch reaction; giving the range of *ee* in the asymmetric reactions; mentioning that the Tebbe olefination works with carbonyl compounds other than ketones, etc.

The book is not free from errors. I will list a few representative ones here. *s*-trioxane is mistakenly labelled as formalin on p. 38; the year of publication of ref. 1 on p. 54 should be 1885 (and not 1989); negative charge is missing on boron in one of the structures on p. 79; 3–5 spiro structure is incorrectly drawn on p. 82, it should have phosphorus as part of the three-membered ring; R, R^1 and R^2 are incorrectly shown in the reaction on p. 84; ref. 1 on p. 171 should be Ber., 1871, **4**, 742; journal name is missing from ref. 7 on p. 203; McLafferty fragmentation is shown on the neutral diradical, it should be the radical cation (p. 217); conrotatory (typo on p. 251); typo in second author's name in ref. 2 on p. 293; Mesazide (last step, p. 299); quinoline is written as isoquinoline (p. 303).

Despite these minor shortcomings, I believe that this collection of name reactions will be of general interest to students, teachers and working organic chemists.

UDAY MAITRA

Department of Organic Chemistry,
Indian Institute of Science,
Bangalore 560 012, India
e-mail: maitra@orgchem.iisc.ernet.in



Analysis of Sedimentary Successions – A Field Manual. Ajit Bhattacharyya and Chandan Chakraborty (eds). Oxford and IBH Publishing Co Pvt Ltd, 66 Janpath, New Delhi 110 001. 437 pp. Price: not mentioned.

There are not many books on geology written by Indian authors and published in India, so that the material is available to students at a reasonable price. Keeping Indian students in mind, the effort by the authors to produce a book (the one under review) for the study of sedimentary successions in the field is commendable. In the last few decades, fundamental changes have taken place in the approach to study sedimentary deposits. Now, most of the information is obtained in the field itself in order to interpret the depositional environment. The study of sedimentary succession using sedimentary structures and sequential changes has helped in the understanding of the stratigraphy in a better way, and this approach is followed globally to understand the earth's history. Laboratory studies are carried out, once the field interpretation is complete. The book has used the modern approach and tried to provide an insight into the procedure to study sedimentary succession.

The book is organized basically in five chapters. Bulk of the book consists of chapter two, where important structures observed in different types of lithologies are described. The description does not follow any conventional or standard scheme. The features are described according to available information. To many readers, the scheme may be confusing. The features are described according to the nature of lithology (grain size). However, such demarcation may not always be correct. As also mentioned by the authors, trace fossils and palaeosols are described in detail. The description of palaeosol is quite elaborate, describing distinctive features which will

be useful for students. Features of event beds are described. However, there are many other types of event beds found in sedimentary successions which are not described.

Analysis of sedimentary succession is usually aimed to reconstruct the depositional environment which helps to understand the palaeogeography and basinfill history. The chapter on palaeogeography gives only a basic idea of the problem, but does not show how to use data collected in field on sedimentary succession for palaeogeographic analysis. The concept of sequence stratigraphy has been recently developed and helps in understanding the processes causing changes in sedimentary successions. A useful summary of the principles of sequence stratigraphy is given. It would have been good to have field criteria and examples to identify different types of sequence boundaries and sequence–boundary surfaces. The chapter on basinfill is also short and sketchy. The authors have included as appendix the code of stratigraphic nomenclature which I am sure would be useful to most of the readers, as it is not readily available in any textbook.

Overall, the book is well-written with many good illustrations. Despite emphasizing only certain aspects of sedimentary succession study in the field, it is a useful contribution.

To sum up, the book is a useful contribution to sedimentology using field methods. It gives an exhaustive account of sedimentary structures and their utility in interpretation of the succession. The book is well illustrated with a large number of sketches and photographs. It will be useful to students and to teachers of sedimentology and those organizing field courses in sedimentology. Published in India, the price is affordable to both the student and teaching community.

I. B. SINGH

Department of Geology,
University of Lucknow,
Lucknow 226 007, India

Tectonics of Southern Granulite Terrain: Kuppam–Palani Geotransect. Memoir 50. M. Ramakrishnan (ed.) Geological Society of India, Gavipuram P.O., Bangalore 560 019. 2003. 434 pp. Price: Rs 500/US$ 50.

The book under review is a collection of 17 papers, including three overviews, most of which developed from a multidisciplinary and multi-institutional research initiative to study the deep continental structure of the southern peninsular India – a work sponsored by the Department of Science and Technology under the Deep Continental Studies Programme. The importance of this region stems from the fact that it hosts the two parallel east-west trending, morphologically well-expressed, continental scale zones of ductile deformation. These are called Moyar–Bhavani and the Palghat–Cauvery shear belts and they fringe a much older crustal block of Dharwar craton (> 2500 m.y.). Published as a memoir of the Geological Society of India, the book deals with the geological and geophysical evidence collected along a 300-km-long transect – a corridor starting from Kuppam in the north and ending near Palani in the south, which encompasses part of the Dharwar craton and passes soon into the granulitic belt of southern peninsular India. The papers in this book primarily deal with the interpretations on the origin of the shear zones, their role in the Precambrian geodynamics and their relation to the Dharwar craton.

The southern granulite terrain (SGT) offers a rare type area that showcases one of the most ancient remobilized crusts in the world. These terrains preserve the imprints of early earth processes (initial forms of plate tectonics) that occurred between 2500 and 550 m.y. ago. This 1950 m.y.-long interval, representing about three-fourths of the earth's history, may have seen several cycles of rifting, plate movement, subduction, collision and mountain-building or other variants of these processes. As the rocks are buried during collisional episodes, their mineralogy changes during metamorphism and later, these lower crustal rocks (high-grade rocks of granulitic composition) return to the surface as the crust is exhumed or transported possibly along thrust faults. Obfuscated by eons of erosion and magmatism, what remains today are some hazy indicators of ductile deformation preserved in the rocks concentrated along some linear zones. Resolving the spatial and temporal aspects of the tectonic activities that took place billions of years ago can therefore be likened to solving an extremely difficult crossword puzzle. Some vague and complicated clues remain latent in these puzzles, but the odds of getting the correct picture depend on the chance encounter of the right indicators. But how do we know if the clues themselves are correct? As in a crossword puzzle, the right clue should not only make a perfect match locally, but it should also fit with the larger picture. The book under review tells us how some of our best geologists and geophysicists approached similar problems that display nuances of a jigsaw puzzle.

The book contains four broad sections – overviews, geophysical studies, structural geology and a final section consisting of varied topics of geochronology, geochemistry and petrology. The overview section starts with a perceptive article by M. Ramakrishnan, who also is the editor of this book. The article presents an exhaustive review on the status of Precambrian studies and goes on to build up a global perspective on the focal theme in terms of Pan African mountain-building activities (900–550 m.y. ago) and its relation to Precambrian tectonics and the Gondwana assembly of supercontinents. The article by K. Gopalakrishnan highlights the evolution of SGT by amalgamation of a number of microcontinents. T. M. Mahadevan in his overview, however, strikes a different note and cautions against the generalization of Precambrain tectonics in terms of collision models alone, and emphasizes the importance of vertical tectonics that may have been synchronous with thermal episodes at 2500, 750 and 550 m.y.

The articles under the second section deal with geophysical studies conducted along the transect corridor. Research groups from various organizations (mainly from NGRI, Hyderabad) have contributed to these efforts. The seismic reflection and refraction studies (Reddy *et al.*), magnetotelluric investigations (Harinarayana *et al.*), deep-resistivity studies (Singh, S. B. *et al.*) and heat-flow studies (Roy *et al.*) come up with the fact that the older Dharwar craton and relatively younger SGT show contrasting crustal properties in terms of thickness, resisti-