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Colin P. North and Kitty L. Milliken, Editors

A.J. (Tom) van Loon, Associate Editor for Book Reviews

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Introduction to Organic Geochemistry (2nd ed.), by Steve D. Killops & Vanessa J. Killops, 2005. Blackwell Publishing, 350 Main Street, Malden, MA 02148-5020, USA. Paperback, 393 pp. Price US\$ 74.95, £ 29.99. ISBN 0-632-065044-4.

Organic matter is found throughout the Earth's crust, upper mantle, hydrosphere, atmosphere and biosphere, as well as in carbonaceous chondrites. With the increased awareness that organic/inorganic interactions, in particular microbial processes involving bacteria and other microbes, have important roles to play in a wide range of systems, organic geochemistry has become a rapidly developing and important discipline over the past thirty years. The application of organic geochemical methods and techniques provides valuable information on not only petroleum and coal formation, but also on type and sources of anthropogenic organic contaminants, global climate change, paleoenvironmental reconstructions, and biomolecular archeology, to name a few. These topics are multidisciplinary - involving chemistry, geology, biology, botany, and environmental sciences - and the introductory text likewise is multidisciplinary and as such very useful and helpful for a wide range of students.

The second edition of this book deals with the fate of various types of organic matter in the Earth system, the pathways and biogeochemical transformations of carbon compounds over a range of time scales and in various environments. Compared to the first edition, which was published in 1993, the scope of this new edition has been widened and updated. The seven chapters (1. Carbon, the Earth and Life; 2. Chemical Composition of Organic Matter; 3. Production, Preservation and Degradation of Organic Matter; 4. Long-term Fate of Organic Matter in the Geosphere; 5. Chemical Stratigraphic Concepts and Tools; 6. The Carbon Cycle and Climate; 7. Anthropogenic Carbon and the Environment) are well illustrated, containing numerous figures and tables, chemical structures and reaction pathways. Technical terms are highlighted and defined when they appear in the text for the first time. There are scattered explanatory boxes providing essential information on related topics to further understanding or to supplement the text. This is of special importance for beginners and also very useful for teachers who want to prepare background information for their lectures. The 38 pages of references provide an excellent resource for those who want to dig out the original sources of concepts and case studies covered. In addition, the index at the end of the book provides a very convenient way for readers to re-access the contents. However, although suggestions for additional reading are listed in the end of the Preface to supplement the book for those topics that are not covered, it would be very nice if a third edition of the book could integrate methods, technical details and some case studies, so that readers will be stimulated to apply these to solve related problems.

It is, obviously, difficult to cover all aspects of organic geochemistry adequately in one book. The extent to which topics are covered is in some cases disproportional.

Some topics are dealt with too superficially, whereas others are detailed on a rather sophisticated level. In Chapter 3, for example, the section with the title ‘Depositional Environments Associated with Accumulation of Organic Matter’ contains only a brief discussion of the marine sedimentary environment, although it is by far the largest depositional setting and one of the most important repositories for organic carbon. Lakes and mires are, in contrast, highlighted and discussed to a degree not quite commensurate with the importance of their reservoir size.

In summary, the book is systematically structured, it has a truly extended coverage, it is up-to-date and well written. It will serve as an excellent textbook for undergraduate and graduate students. They will be made aware of,– and receive sound knowledge about a wide variety of topics, so that they may pursue their interests in the future. Professionals will also find out that the book is full of valuable source material of information and a very useful companion. In that regard, the title (Introduction to Organic Geochemistry) appears a bit of an understatement and could perhaps in future editions be supplemented by emphasizing the prominent role that organic matter plays in the Earth system.

Xiqiu Han

Key Laboratory of Submarine Geosciences & Second Institute of Oceanography

State Oceanic Administration

36 Baochu North Road, Hangzhou

Zhejiang, 310012

China



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