Book Reviews

The Beilstein System: Strategies for Effective Searching. Edited by Stephen R. Heller (U.S. Agricultural Research Service). American Chemical Society, Washington, DC. 1997. xvi + 208 pp. 15 × 22.5 cm. $74.95. ISBN 0-8412-3523-6.

This book provides an overview of strategies for searching the Beilstein system, with an emphasis on the electronic database. A brief summary of each chapter will give the gestalt of the book.

Chapter 1. The Beilstein System: An Introduction, by Stepen R. Heller. This chapter contains an overview and goals for the text. The author accurately summarizes the chapters that follow.

Chapter 2. The *Beilstein Handbook*, by Reiner Luckenbach. This chapter discusses the printed handbook, especially the organization and the role as the foundation for the electronic database. The author describes in detail the error-checking algorithms.

Chapter 3. The Beilstein Online Database, by Andreas Barth. This chapter discusses the organization of the electronic database. The author provides an example for "fact" searching.

Chapter 4. Current Facts in Chemistry on CD-ROM, by Wendy Warr and Bernd Wollny. This chapter provides a brief review or critique of Current Facts, a product that may not be offered in the future.

Chapter 5. Computer Systems for Substructure Searching, by John M. Bernard and Dirk Walkowiak. This chapter contains a highly technical description of the algorithm for substructure searching. The authors describe the strategies as conceptual breakthroughs.

Chapter 6. CrossFire*plus*Reactions, by Alexander J. Lawson. This chapter contains both a highly technical description of the computer science that underlies the searching routines and three examples of searches. The author deftly combines the organic chemist's thought processes with those of the computer scientist.

Chapter 7. Using the Beilstein Reaction Database in an Academic Environment, by Engelbert Zass. The author reports on a one-year trial at the ETH in Zürich to evaluate CrossFire*plus*Reactions with other databases. The excellent detail of comparison provides the reader with strength and weaknesses of all the databases. The author concludes, "we consider [CrossFire*plus*Reactions] an absolutely indispensable source of information".

Chapter 8. Beilstein CrossFire: A Milestone in Chemical Information and Interlibrary Cooperation in America, by Ken Rouse and Roger Beckman. This chapter describes how academic libraries banded together to provide their clients with this resource. The authors touch on economic issues in constructing this consortium.

Chapter 9. Use of the Beilstein System in the Chemical and Pharmaceutical Industries, by Wendy Warr. This describes the integration of CrossFire into an industrial laboratory. The author touches on the cost−benefit ratio.

Chapter 10. AutoNom, by Janusz L. Wisniewski. This chapter contains a highly technical description of the algorithm for generating an IUPAC name for a molecule.

The cover of the book contains the following summary: "This volume presents a complete technical description of the vast Beilstein database and *Beilstein Handbook*. It reviews the history and growth of the Beilstein system. The book describes the new CrossFire search system and contains the latest information on the CrossFire*plus*Reactions database. There are chapters on Current Facts in Chemistry and on Autonom. Many examples are provided. This book will be of use to organic chemists, analytical chemists, and information specialists, and anyone who needs to find information in the Beilstein system."

I agree wholeheartedly with this summary but must qualify the last sentence. "Bench" chemists will find the book more useful as a source to explain the complex algorithms of searching and data retrieval but less useful as a reference source to conduct searches. Arguably, the more that one knows about the mechanisms, the better one can plan a search. The book will find better use as focal point for discussing integration of the Beilstein system into an electronic notebook. For example, a computer scientist and a natural products chemist could use the book as a starting point to discuss building a fully integrated, data management system for a research laboratory. In summary, chemical-information scientists will find this book a useful addition to their libraries.

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