



Medical Toxicology of Natural Substances

There is an extensive body of literature on toxicology, and a superficial search yields more than 6000 book titles on this topic. However, there are very few works of reference that provide fast access to basic toxicological information and data on natural substances. The book *Medical Toxicology of Natural Substances—Foods, Fungi, Medicinal Herbs, Plants, and Venomous Animals*, by Donald G. Barceloux, efficiently fills this gap, with clearly set out chapters that list the toxicological properties of many organisms, extracts, and natural products. Early documents on the pharmacology and toxicology of natural products date back more than 3500 years, such as the Ebers Papyrus, a scroll from ancient Egypt. Over the centuries numerous facts and myths around the potency of natural toxins have accumulated. With that background of tradition, a work of reference such as this book by Barceloux cannot be expected to completely cover all the existing knowledge. Nevertheless, in over 1100 pages this comprehensive selection of topics covers a broad spectrum of the most important toxicologically relevant organisms and natural products. Unlike the Ebers Papyrus, which not only describes symptoms and empirically developed medicinal remedies but also contains magic spells and evocations, *Medical Toxicology of Natural Substances* focuses on a modern selection of scientifically validated facts based on clinical experience and the medical literature. Every chapter includes identifying characteristics and botanical descriptions of the organisms and details of the main toxins that they produce, and describes methods for the diagnosis and treatment of toxic effects. In addition to this core information, each chapter opens with a short historical overview of the individual toxins. These short introductions make the book especially entertaining. Some of the interesting facts, for example that Socrates was sentenced to death by drinking a mixture containing the poison hemlock, are fairly well known, but there are also more surprising anecdotes, such as those describing the ethnopharmacology of the treatment of diarrhea with goldenseal by the Iroquois native Americans, and the presence of yarrow as one of the plants in Neanderthal burial sites.

In the age of the Internet, reference books have to compete with online resources. Here, the advantages of a reference book compiled by a competent author and reviewed by a board of experts become apparent. *Medical Toxicology of Natural Products* is a very reliable information source, and stringent selection criteria have been applied. The impor-

tance of such high-quality information can be nicely illustrated by an example concerned with toxic mushrooms. An online search for “false morel” in *Wikipedia* (April 8, 2009) leads to an entry with the statement “Eating any false morel is not recommended, at least until more is known about possible toxins”. In contrast, the book by Barceloux reports on the epidemiology of the mushroom poison, including data about some fatalities, and gives structures and activities of the toxic hydrazines of the mushroom. Barceloux also gives information about the maximum tolerated dose and strategies for treatment, and all these facts are supported by a total of 31 references. It is clear to me which information source I would choose, either in a case of mushroom poisoning or in the preparation of a lecture on natural toxins.

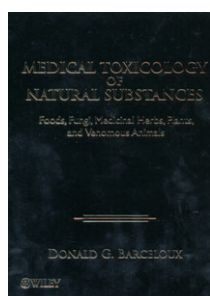
As a result of the wealth of scientific data and historical traditions on natural toxins, natural products chemists might sometimes fail to find their favored molecule or organism in a chapter of this book. But it will be evident to every well-informed reader that this is a consequence of the need to select the most relevant topics. Nevertheless, a comment about the selection criteria applied during the compilation of the book would have been useful. The organization of the book under the main topics of food-borne and microbial toxins, fungal toxins, medicinal herbs and essential oils, toxic plants, and venomous animals may not always enable the reader to determine if and where a specific item of information can be found. In routine work with the book, the reader will therefore have to rely on the detailed index.

Despite that minor criticism, I can thoroughly recommend this book, not only for users concerned with medicines to treat illnesses caused by toxins, but also for readers whose scientific interest or teaching activity is in the fields of toxicology or natural products research. The volume by Barceloux is the first of a series on medical toxicology, and one can look forward to the next contributions dealing with “Drugs of Abuse and Psychoactive Plants”, “Occupational and Environmental Exposures”, and “Pharmaceutical Overdoses”.

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DOI: 10.1002/anie.200902139



Medical Toxicology of Natural Substances
Foods, Fungi, Medicinal Herbs, Plants, and Venomous Animals. By Donald G. Barceloux. John Wiley & Sons, Hoboken 2008. 1158 pp., hardcover € 162.50.—ISBN 978-0471727613