one plant ingredient, the combination and method of preparation of which renders it effective for a particular malady. Traditional medicine is often viewed as an empirical system and thus has no place in a rational world. Modern 'medicine' or the so-called allopathic drugs on the other hand, demands knowledge of the chemistry and pharmacology of the drug constituents. This knowledge must be established through rigorous testing and analysis. The use of herbal drugs as alternatives to 'allopathic' medicines for a large number of ailments is gaining ground, particularly for common ailments. This rise in the use of herbal drugs is accompanied by a clamour for pharmacological data authenticating therapeutic claims as well as establishment of manufacturing protocols for the various formulations. Natural products chemistry is seen as the way to establish the chemical identity of active constituent(s) and manufacturing quality control standard through the application of modern analytical chemistry methods. Thus, herbal drugs, traditional systems of medicine and natural products chemistry and may be viewed as three related aspects of a common health goal, i.e. to provide safe, efficacious and cost effective treatment.

This book attempts to unite the various subjects or disciplines discussed above and many more related topics in one voluminous effort. The eight sections cover diverse topics such as chemistry and pharmacology of herbal drug formulations or individual plants, biodiversity of plant species with particular emphasis on the plant species of the Northeastern and Himalayan regions of the country, new drug discovery, use of herbal formulations or phytochemicals against radiation damage, the role of biotechnology for improved production and yields of different phytoconstituents, etc. Also included are sections on linking traditional medicine with modern medicine as well as a section on patents and intellectual property rights.

The editors have claimed that the book is intended for researchers, academicians, students, pharmaceutical companies and others interested in the area of herbal drugs research. Inspite of their best efforts the book falls abysmally short in content and editorial and publication standards. It appears to be a collection of thoughts from a number of contributors. Almost every chapter begins with hackneyed comments on the history and virtues of Ayurveda and the need to inject modern analytical methods in order to understand, probe, exploit or improve this system of medicine. This was already introduced in the Preface and could have been added as an editorial note at the beginning of the book. Another point is the repetition of content. Chromatographic techniques are elaborated upon in chapters 4, 7, 8 and 9. Chapters 15 and 16 in Section 3 (New Drug Discovery) deal with the role of natural products in new drug discovery and the role of natural product chemistry in drug discovery respectively. Chapter 16 is a near identical repeat of chapter 15, the chemical compounds listed are identical except for the fact that in chapter 15, the names of the compounds are given below each structure, whereas in chapter 16 they appear in the text. Both chapters only list well-known chemicals or drugs. In essence it provides no new information to the researcher, academician or student. The authors of chapter 16 have attempted to discuss some elaborate automated chromatographic (separation) techniques using the extracts of *Hippophae rhamnoides* as an example. They have managed to isolate and determine the structures of sucrose and gallic acid. In presenting the structures they could have referenced earlier identification and structure determination of these molecules.

In atleast two instances, different structures have been depicted for the same molecule (Chapter 8, azadiradione, pages 75 and 76) and digitoxin (Chapter 15, page 145 and Chapter 16, page 150). The list of errors is vast and touches several aspects of presentation of scientific material, from facts to language to content. A glaring example of editorial standards of the book is reflected in a schematic figure (Plate 1, Chapter 11, Figure 11.1) which even contains the Adobe PDF logo.

The content in the chapter 'Herbal Drugs Food – A Perspective' (Chapter 37) leaves the reader in a state of helplessness. Food items (mainly fruits and vegetables) and their associated health benefits are monotonously listed and then without warning the theme switches into a therapeutic mode and lists plants that may be beneficial for particular ailments. In this chapter, two paragraphs are accompanied by references while the rest of the chapter contains material without references. One wonders where this information was obtained. Added to this is the fact that several plants listed in this chapter are not even indigenous to India. One can well imagine the bewilderment of a student who comes across names of plants such as 'sangre de grado' or 'Yerba mate'. Incidentally both preparations are made from plants that grow in South America! The botanical names of these plants are *Croton lechleri* and *Ilex paraguariensis* respectively. Is such a listing really necessary? If yes, then at the least, plants that grow in the Indian subcontinent, with equivalent properties could be listed for the student to be enthused. Similar lists of plants and their associated uses appear in almost every chapter.

However, one redeeming factor in this book is an interesting chapter on the application of a functional genomics approach towards understanding biosynthesis of alkaloids, using *Catharanthus roseus* as an example. Details of such methodology would be of immense help to students.

Overall, this book is tedious to read and offers no insight into the research of herbal drugs in the 21st century or earlier.

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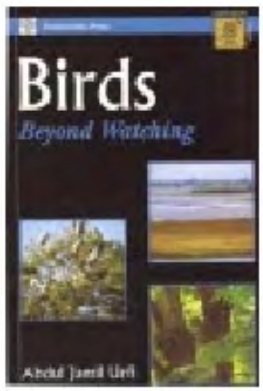

Birds: Beyond Watching. Abdul Jamil Urfi. Universities Press (India) Pvt. Ltd., 3-5-819 Hyderguda, Hyderabad 500 029. 2004. 214 pp. Price: Rs 285.

This is a book that has surely been long awaited by an increasing number of birdwatchers and nature-lovers, particularly with the advent of wildlife-oriented television channels and birding lists on the Internet. The book is definitely one-of-its-kind, providing a very nice mix of science, natural history and possible conservation action.

The most striking aspect about this book is the extensive coverage of various topics that would more than satisfy a birdwatcher. The good layout and thoughtful organization of the different chapters of the book are its other highlights. The author provides quite a bit of information on diverse topics like ecological theories, succession and food-chain development, scientific census techniques and sampling methods such as line transects and point counts, a good description of nesting and migration, and logically ends the book with how information provided by readers could potentially contribute to conservation. The readers are appropriately directed to relevant references and further readings have been recommended. The illustrations have been thoughtfully placed and boxes with additional information provide interesting reading. The illustrations of different bill and feet shapes as well as those portraying different behaviours deserve special mention.

The author writes in a style that is simple, easy to read and relatively free of jargon. However, this also brings in the occasional problem of over-simplification, such as the sunbird being described as 'vegetarian', while it is actually known to feed on insects. Perhaps, 'nectarivorous' would have been a better description. Another over-simplification is the description of the woodpecker's tongue as being 'sticky', though it would have been correct to mention that the tongue is not sticky in the traditional sense but its tip is hardened and has backward-facing barbs (illustrated in many papers including ref. 1) on which the insects get 'stuck'.

It is particularly interesting to see the author encouraging the reader to think beyond what one sees and to explore the different aspects of bird biology. This, coupled with a good 'activities' section on, among others, how to measure the height of a tree and how to form species-incidence curves, should go a long way in inculcating a scientific temperament in young readers. It is the personal comments and opinions, however, that make this book far more interesting to read than a general textbook on methods on bird watching.

There are, however, several minor problems in the book. An example of this, is the comment by Madhav Gadgil on the evolution of the peacock's tail. Reference has not been made to the work of Amotz Zahavi, the originator of the idea of the handicap principle[2] on the basis of which Gadgil's comments have been made, and the reader may be somewhat misled in her understanding of this principle. The reader would have benefited from further reading if the original reference had been quoted. Another potentially misleading part is where the author seems to indicate that the mark-recapture method is not a sound one to estimate bird population densities. The author could have referred the reader to a vast amount of literature on this subject (e.g. ref. 3) where not only population densities but also other vital parameters like survival rates have been estimated through the mark-recapture method.

Some very practical pieces of information on how to make a simple hide, a nest-box and nest-examining equipment provide the interested reader with tips to take bird-watching further. The general drawback with the book is that it has a strong leaning towards wetlands and waterfowl. The non-wetland birds mentioned are woodland birds or urban birds while very little of rainforest birds have been covered. This is reflected through nearly all chapters of the book including the pictures and the maps. This can perhaps be argued as a justifiable leaning considering that wetlands and urban woodlots are more widely found across the country than are rainforests (or any forest, for that matter!) and the book does target birdwatchers and naturalists primarily in urban areas.

These comments notwithstanding, the book proves to be a must-read for anyone interested in birds and provides excellent, extensive information that will definitely help an interested birdwatcher further her skills and refine her thinking about our feathered compatriots with whom we share this planet.

1. Wallace, R., *Wilson Bull.*, 1974, **86**, 79–83.
2. Zahavi, A. and Zahavi, A., *The Handicap Principle*, Oxford University Press, New York, 1997.
3. Williams, B. K., Nichols, J. D. and Conroy, M. J., *Analysis and Management of Animal Populations*, Academic Press, New York, 2002.

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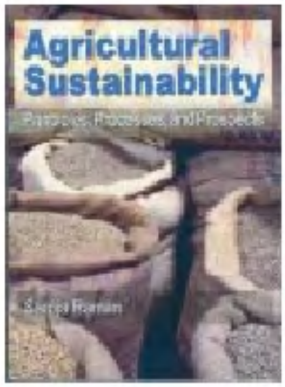

Agricultural Sustainability: Principles, Processes and Prospects. The Instructor's Manual. Saroja Raman. Food Products Press, An Imprint of The Haworth Press, Inc., 10 Alice Street, Binghamton, NY 13904-1580. 2006. 474 pp. Price not mentioned.

The book under review has been produced in two volumes. The first volume of the book attempts to present a broad picture of the past, present and future of global agriculture with reference to its sustainability. The second volume serves as an instructor's manual. The first volume is organized into three broad parts, the first dealing with the principles of sustainable agriculture, the second part with operationalisation and the third dealing with transition to agricultural sustainability. It is not clear who exactly the author has in mind as the reader. She defines the aim of the book as being – 'to portray without bias the conceptual as well as operational aspects of agricultural sustainability in a comprehensive and analytical manner with an emphasis on the contextual specificity of space, scale, time and socioeconomic patterns' (p. xvii). One has to guess the motive for writing the book of which one gets a glimpse under the section on acknowledgements which starts with the statement that – 'this book is the outcome of my resolve to give shape to a topic that I had been incubating in my mind for a considerable period of time' (p. xxi). The book is written in a scholarly style with a heavy list of references (a twenty eight page bibliography with over four hundred and fifty entries), which are cited frequently in the text.

While the author indeed recognizes the social, economic and ethical aspects and dimensions of sustainability it is clear that her own strong bias is towards the pre-eminent role that can be played by