



Ethnobotany of the Andes. Narel Y. Paniagua-Zambrana and Rainer W. Bussmann (eds). Springer Nature Switzerland AG, Gewerbestrasse 11, 6330 Cham, Switzerland. 2020. xxxi + 1955 pages. Price: € 649.99. Print ISBN 978-3-030-28932-4, online ISBN 978-3-030-28933-1. doi: <https://doi.org/10.1007/978-3-030-28933-1>.

Concerted efforts are required to keep cultural identity alive, and to document and make the traditional knowledge of a particular region and/or an ethnic group available to the wider audience. Such an effort by the editors of this book, Paniagua-Zambrana and Bussmann, has brought together tremendous amount of information on the ethnobotany of the Andes. This compressive book was conceptualized by them being aware that ‘traditional’ knowledge is in a flux and is adapting to applied aspects such as climate change research, conservation and sustainable development. Globalization of plant markets has greatly influenced how the management of plant resources is done today. Although individual ethnobotanical studies are now available from almost all regions of the world, this book is special being comprehensive and encyclopaedic in nature. It has compiled extensive information on the ethnobotanical studies of the Andes mountain ranges, which is widely scattered in the literature. The Andes mountains are one the most diverse ecosystems globally from a biological point of view. Different ethnic groups of the Andes are Aymara, Ese Eja, Quechua, Yuracaré, Tacana, Chácobo, Pacahuara, Matses and Yami-nahua. There are also certain other unspecified ethnic groups, namely Azuay, Cañar, Pichincha, Bolívar, Imbabura, Mestiza-Pichincha, Carchi, Tungurahua, Chimborazo. All these ethnic groups and their plant uses have been covered in this book.

The book is voluminous consisting of 2000 pages and 1411 figures. It is divided into two parts, viz. Part I – regions and Part II – plant profiles. Part I, in two chapters, gives a comprehensive account of the

location, geography, geology, climate, plant use (and traditional medicine), vegetation, etc. of the mountain regions of the Andes – Bolivia, Chile, Peru, Colombia and Ecuador.

Part II has 300 chapters and is presented in two volumes. This part forms the bulk of the book. Volume 1 of Part II contains 146 chapters describing the profile of 260 plant species. Volume 2 has 154 chapters describing 306 plant species. The editors in collaboration with two other ethnobotanists, Javier Echeverría (Universidad de Santiago de Chile, USACH, Santiago de Chile, Chile) and Carolina Romero (William L. Brown Center, Missouri Botanical Garden, St. Louis, MO, USA) have contributed to all the chapters. Out of the total 1767 publications authored or co-authored by Bussmann (till 1 December 2020), about 17% are published in this book, i.e. *Ethnobotany of the Andes*.

Each chapter of Part II is dedicated either to a particular species or a family (e.g. *Achnatherum splendens* of Poaceae), or a few species of the same genus of a particular family (e.g. four species of genus *Achillea*, i.e. *A. asiatica*, *A. filipendulina*, *A. millefolium* and *A. setacea* of Asteraceae). The plant species described are arranged in alphabetical order, irrespective of the family and/or plant group to which they belong. Ethnobotany of 566 plant species is described in the book. The individual chapters are exhaustive, presenting detailed and comprehensive information on various aspects of the plant species, including current overview of the taxonomy, synonyms, local names, botanical description, information on the ecology and distribution, local medicinal, food, handicraft and other uses. Botanical description of the plants is exceptional, wherein minute details of morphological characters are given. This along with high-quality photographs (taken mostly by the editors themselves) make the book an ideal and reliable pictorial field guide for students/researchers to identify and locate these plants. The ethnobotanical information of plants (medicinal, food, handicrafts, and others) from Bolivia, Chile, Peru, Colombia and Ecuador is compared well with that from some other mountain ranges of the world, such as the Himalaya. The ethnobotanical information has data beginning from the 18th century all the way up to 2019. The literature survey is nearly up to date. The efforts of the editors/contributors to collect such vast amount of data and present them so logically is commendable.

Traditional knowledge has played key role in the development of new drugs in the modern therapeutic system. The contributors could have added another aspect of the described plants under the heading ‘Drug discovery’, covering the successful and/or unsuccessful attempts of drug discovery from them based on traditional knowledge. This is especially possible for the plants whose phytochemistry is already known. This section would have highlighted and strengthened the link between traditional knowledge and drug discovery.

Some of the references are wrongly cited; for example, a work (Bhat *et al.*, 2015) from Western Himalaya (India) is mentioned many times throughout the book. This should be Malik *et al.*, 2015 (as mentioned rightly in certain places). Phytochemistry (information on the active components) of only a few plants is given. However, information about the effects of these active components on the human body is not covered.

Despite these minor shortcomings, this book is one of the best-edited volumes on the subject. Although it is expensive for personal collection (priced at more than Rs 50,000), the book is worth the price. It can be an asset to educational and research institutions. The essence and uniqueness of this comprehensive work is that it makes information about the use of plants in the Andes available to the wider public, as well as to scientists and conservationists. The book could be a starting point of an effort committed to the study of native flora of the Andes in the context that considers plants as a natural resource of immense importance for the region. I hope that future studies will consider the existing information and perform studies to fill in the knowledge gaps that exist.

It is with great pleasure that I recommend this book to a wide audience, not only researchers, students and teachers of ethnobotany, but also to the general public interested in plant resources. Recourse to many books, most of them unavailable in several libraries, can be overcome by referring to this book. Ethnobotanists and particularly those of the Andes and other mountain systems should keep this book handy for reference.

ZUBAIR A. MALIK

Department of Biology,
Govt. HSS Hardturoo,
Anantnag 192 201, India
e-mail: malikmzubair081@gmail.com