

BOOK REVIEW

Edited by Ulrich Saint-Paul

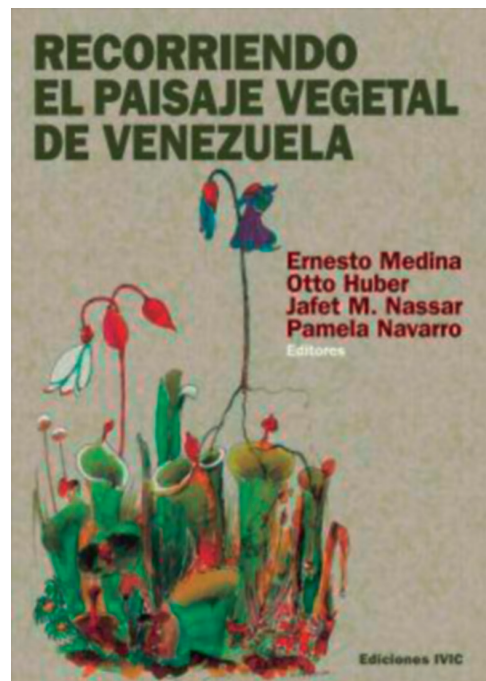
The following critiques express the opinions of the individual evaluators regarding the strengths, weaknesses, and value of the publications they review. As such, the appraisals are subjective assessments and do not necessarily reflect the opinions of the editors or any official policy of the Society for Tropical Ecology.

Recorriendo el paisaje vegetal de Venezuela. Medina, E., Huber, O., Nassar, J.M. & P Navarro (eds.). 2013. Ediciones IVIC, Instituto Venezolano de Investigaciones Científicas (IVIC), Caracas, Venezuela. 320 pp. ISBN 978-980-261-147-8.

Recorriendo el paisaje vegetal de Venezuela, assembled by three scientific editors and well coordinated by chief editor Pamela Navarro, is a tribute to Volkmar Vareschi, a vegetation ecologist and plant biologist who left Europe for Venezuela in 1950. Vareschi (1906–1991) was an Austrian botanist specializing in plant ecology who, after stays in Innsbruck, Zürich, and Munich, founded the Chair of Ecology at the Central University of Venezuela in Caracas. In the course of over 40 years of study, Vareschi carried out multiple investigations in the field of tropical ecology and was a pioneer in the introduction of innovative methodologies for paleoecological studies of the movement of glaciers or to determine air pollution in cities. He developed a system of ecological analyses for modern plant ecology based on phytosociology and functional ecology, and became well known outside Venezuela, particularly for his book *Vegetation ecology of the tropics* (1980). Vareschi's intellectual curiosity was not exclusively oriented towards science but also included artistic and literary creations.

On the basis of his many studies of plant communities in contrasting environments in the tropical region, semi-arid areas, and rain forests, as well as in the high Andean *páramos*, the idea to honor him was born at the *IX Congreso Venezolano de Ecología*. Pre-

sentations held at the Symposium *Through the Venezuelan plant landscape: tribute to Volkmar Vareschi* in November 2012 at the International Center for Tropical Ecology (CIET) in Venezuela were compiled and edited for publication, resulting in 15 chapters written by different authors, all collaborators or students of Vareschi. The result is this book of 320 pages, written in Spanish, which comprises bio-



graphical notes as well as updated information on various ecosystems typical of Venezuela. Starting with a preface and a description of Vareschi's personal development from an interested student in Europe to the university professor at the Escuela de Biología de la Universidad Central de Venezuela, his major contributions to vegetation ecology and physiology are outlined, focusing on aspects of diversity and conservation of the *bosques húmedos macrotérmicos* in Venezuela to the present day, followed by chapters on the *matorrales* of the Orinoco Delta, the Cactaceae in arid ecosystems, the cloud forests, the role of fire in the savannas, the evolution of ecological research in the *páramos*, the re-establishment of natural vegetation after the landslides in the Coastal Cordillera, and changes of the vegetation in the savannas of the biological station "Francisco Tamayo" in the *Llanos*. Subsequent chapters describe the contribution of Volkmar Vareschi to the understanding of ferns and lichens, later focusing on the mountainous vegetation of the Andes and the tepuis, as well as the role of lichens in the detection of air pollution in Caracas. The book ends with Vareschi's complete bibliography and biographical notes on the authors.

This publication offers an interesting overview of Vareschi's lifetime's oeuvre, with pictures of original historical documents, excerpts from his lectures and hand-written contributions, species lists and vegetation maps, as well as figures of his famous drawings of vegetation profiles. The various authors of the chapters, who knew Vareschi well and esteemed him as a scientist and intellectual, give the book a personal touch that makes it more ample than a straightforward biography. Furthermore, the book does not only deal with Vareschi's knowledge and understanding but gives an update of the different fields of vegetation ecology in Venezuela and their present status quo. Thus the work represents the state of the art for anyone dealing with vegetation distribution, regeneration, and conservation in Venezuela. The vegetation maps and species lists are updated, and the present conditions of selected ecosystems, as well as their major threats, are delineated, thus representing a valuable basis for those involved in nature conservation in Venezuela.

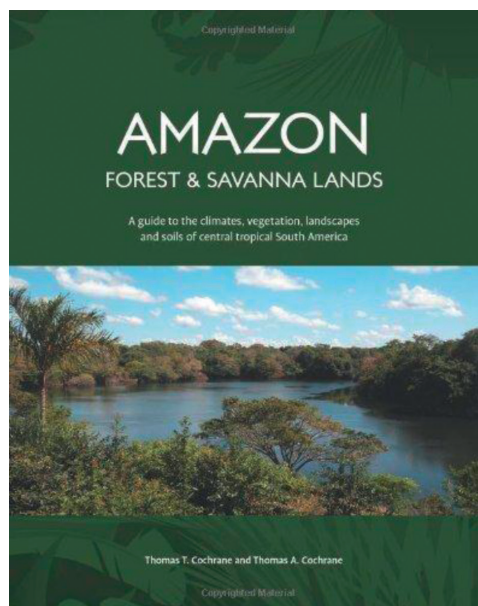
The result is a highly interesting work which not only evaluates the lifetime achievements of an outstanding tropical ecologist but is also a fascinating read, with warm-hearted anecdotes and scientific descriptions of the "plant landscape" of Venezuela.

Pia Parolin, Nice, France

Amazon Forest & Savanna Lands: A guide to the climates, vegetation, landscapes and soils of central tropical South America. Cochrane, T.T. & T.A. Cochrane. 2011. University of Canterbury (N.Z.). Printed by CreateSpace (an Amazon publishing company), Scotts Valley, California, USA. 188p. ISBN 978-1-4528-6637-6. \$49.00.

With this book the authors provide a very valuable overview of the huge Amazonian forest and savanna resources, with their different climates, landscapes, vegetation and soils, integrating exploratory field science with the essentials of basic physics and chemistry.

Thomas T. Cochrane graduated as an agricultural scientist at Massey College, University of New Zealand and pursued postgraduate (PhD) studies at the Imperial College of Tropical Agriculture (Trinidad) in the West Indies and is a specialist in tropical land resources with more than 50 years of experience in the evaluation of Amazonian soils, land-use potential, as well as management and conservation. He is currently supervising the Agrotecnologica Amazonica's forest-savanna ecological conservation park in Bolivia. His son, Thomas A. Cochrane, obtained his graduation from the Department of Agricultural and Biological Engineering at Purdue University, West Lafayette, USA. He has worked in several projects on the long-term sustainability of



water, land, energy and biological resources in Amazonia. Currently he is senior lecturer in the Department of Civil and Natural Resources Engineering at the University of Canterbury in New Zealand.

The book is largely based on original studies that the senior author conducted. It is a sequel to earlier land system studies in Amazonia published in *Land in tropical America* by Cochrane *et al.* (1985), and includes much more detailed information from subsequent studies. The book is divided into three sections with 16 chapters, an epilogue, and appendices. **Section 1 “An Overview of Amazonia”** provides a very good survey of climate, landscape, natural vegetation, soil classification, physical and chemical soil properties, and agro-ecological zones. **Section 2 “Larger Scale Land Resource Studies in Amazonia”** begins with a summary of the refinement of the computerized Land System approach and its adoption by the International Soil Science Society. The following chapters summarize studies on the geoeconomic region of Brasilia, the northern Bolivian Amazon, and the northwestern Amazon in the Brazilian state of Rondônia.

The final **Section 3 “Findings from the Land Resource Studies for the Use and Conservation of Amazon Soils”** deals with a range of important topics regarding land use in Amazonia. Subtitles of the chapters are: “Amazon Climate Parameters and Plant Growth”, “Deforestation and its Effect on Amazon soils”, “The Paradox of Savannas in Amazonia”, “Leaching Losses and the Improvement of Amazon

Forest and Savanna Soils” and “Selecting Crops and enhancing Soil Fertility for Local Conditions”.

The **Epilogue** concludes the three sections and has a large set of references. The 12 **Appendices** contain detailed technologies based on the first author’s peer-reviewed publications to enhance the study and management of Amazonia and tropical lands in general. The 44 pages include important additional information titled (*e.g.*) “Enhancing Soil Surveys to Help Predict Fertilizer Needs; a statistical procedure to facilitate soil fertilizer investigations”, “Tissue Analysis for Enhancing Field Fertilizer Trials”, “Estimating Fertilizer Needs in Lesser Developed Tropical Regions”, “Measuring the Surface Charge Characteristics of Oxisols and Ultisols”, “A Field Test for Iron Toxicity Conditions in Tropical Soils”, “Correcting Al Toxicity in Tropical Mineral Soils”, “The Chemical Properties of Native Savanna and Forest Soils in Central Brazil”, “Estimating Reference Evapotranspiration”, “Solution Flow through the Soil-Plant Continuum”.

In conclusion this book fully summarizes land resource studies in Amazonia and is a very helpful guide to the climates, vegetation, landscapes, and soils of this huge region. It is a very useful book for a broad audience of scientists, agronomists, foresters, farmers, and ecologists as well as administrators.

The book, in either English or Spanish, can be downloaded via the authors’ website <http://www.agteca.org/>

Hermann Behling, Göttingen, Germany

