
PLEUROTHALLIDS

NEOTROPICAL JEWELS

VOLUME I

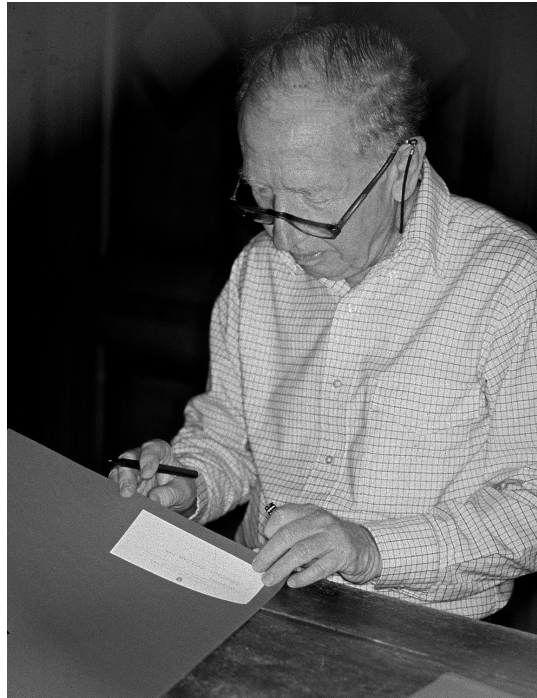
ADAM P. KARREMANS
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To Carl A. Luer (1922 - 2019)

who dedicated 44 years of his life to collecting, illustrating and studying Pleurothallidinae and laid the foundation for modern research on the subtribe.



PLEUROTHALLIDS

NEOTROPICAL JEWELS VOLUME I

ACIANTHERA
ANATHALLIS
ANDINIA
ANDRETTAEA
CHAMELOPHYTON
ECHINOSEPALA
GRAVENDEELIA
LANKESTERIANA
LUERELLA
MUSCARELLA
MYOXANTHUS
OPHIDION
PHLOEOPHILA
PORROGLOSSUM
PSEUDOLEPANTHES
PUPULINIA
SPECKLINIA

ADAM P. KARREMANS
&
SEBASTIÁN VIEIRA URIBE

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Foreword

ALEC PRIDGEON

Subtribe Pleurothallidinae of tribe Epidendreae, commonly called pleurothallids, are currently among the most popular of cultivated orchids for their mostly small (even miniature) stature and unusual, often showy flowers spanning less than 1 millimeter in diameter (e.g. *Platystele jungermannioides* (Schltr.) Garay) to 30 centimeters or more (e.g. *Dracula chimaera* (Rchb.f.) Luer). The subtribe consists of well over 5000 species and ranges from Florida, the West Indies and Mexico to southern Brazil and Argentina. The Andes of Colombia, Ecuador, and Peru are by far the most species-rich areas, but Costa Rica and Panama are also well represented. Pleurothallids are primarily epiphytic, although many are secondarily terrestrial or lithophytic. All have a sympodial growth habit, and the vast majority have unifoliate, non-pseudobulbous stems, conduplicate leaves, velamentous roots, and an articulation between the ovary and pedicel. Most have an annular (ring-shaped) thickening where the inflorescence emerges from the apex of the stem.

Circumscription of pleurothallid genera prior to the advent of molecular systematics has been problematic in many cases, and even contentious in others, such as the megagenera *Pleurothallis* R.Br. and *Stelis* Sw. Homoplasy (recurrence) in many floral characters, the result of convergence in mechanisms of deceit pollination to attract dipterans (flies), forced morphologists to use combinations of characters rather than single unique characters to define most taxa. In *Folia Orchidacea* (1859), John Lindley succinctly addressed the difficulty in classifying *Pleurothallis*, which over time became a placeholder (“dumping ground”) for species that could not readily be accommodated in other genera: “For the present I think it necessary to preserve this great and difficult genus without dismemberment. Not that I regard it as a really single aggregation of species, but because, in the present state of our information, and working exclusively upon dried specimens, I am of the opinion that the materials on which to construct other genera do not exist in Europe; or, if they do exist, are not to be found either in books or any single herbarium.”

After Lindley’s published classifications of the orchid family, there followed successive floristic treatments, generic monographs, and/or descriptions of new species by H.G. Reichenbach *fil.*, Rudolf Schlechter, and Robert L. Dressler, which dominated pleurothallid systematics until Carlyle A. Luer began his long-running series *Icones Pleurothallidarum* (1986-2012) for the Missouri Botanical Garden and the self-published series *Thesaurus Masdevalliarum* (1984-1995), *Thesaurus Dracularum* (1988-1993), and *A Treasure of Masdevallia* (1996-2004). Spanning almost 30 years, Luer described and illustrated thousands of previously known and new pleurothallid species and several new genera throughout the Neotropics.

Molecular systematic treatments of the subtribe at the turn of the millennium upheld the majority of Luer’s concepts, although others were transferred to resurrected genera such as *Acianthera* Scheidw., *Anathallis* Barb.Rodr. and *Specklinia* Lindl. or to new ones such as *Diodonopsis* Pridgeon & M.W.Chase and *Echinosepala* Pridgeon & M.W.Chase. New data from studies using additional taxa and DNA markers shrank or expanded some genera, illustrating the fluidity of generic circumscriptions with time and technology. As such, systematics is an ongoing exercise -- some would say an affliction -- and so change is to be welcomed if appropriate scientific methods and reliance on strong measures of statistical support are adopted in taxonomic revisions.

Well-known and respected orchidologists Adam P. Karremans of Lankester Botanical Garden, University of Costa Rica and Sebastián Vieira Uribe of Corporación SalvaMontes Colombia have spearheaded this ambitious, beautifully illustrated monographic series on pleurothallids that incorporates the latest in systematics and pollination biology of the various genera. It may not be an exaggeration to say that the most significant contributors to our current understanding of Pleurothallidinae begin with the letter ‘L’: Lindley, Luer, and Lankester Botanical Garden.



Acknowledgements

The idea of a book scrutinizing the pleurothallid genera in detail, by showcasing their innate diversity using color photography, came to us several years ago, but making it a reality presented several challenges. One major issue was the lack availability of materials of rare species and genera, especially those from poorly botanized areas. Dealing with the unstable classification within the subtribe had been another setback. It was Rudolf Jenny who ultimately convinced us in August of 2019 that the book could be brought out in multiple volumes, publishing genera as they became sufficiently complete, without necessarily following alphabetical or phylogenetic order. The switch from a single, complete treatment to a series of partial ones had a dramatic impact on the project. Another key decision was to involve more people in the writing and photography. We had initially set out to include our own materials only, one of us would write the texts (APK), while the other would be the photographer (SVU). But we quickly realized that involving the whole pleurothallid community significantly improved the quality and completeness of the book. Volume I of “Pleurothallids Neotropical Jewels” has only been made possible thanks to the joint efforts of a multitude of pleurothallid experts and fanatics around the world who kindly offered their assistance. The first volume includes about 1000 photographs taken by 107 different people from many countries. Their acronyms (as referred to in this book), full names and the number of photographs contributed is detailed below. Our thanks go to all the individuals and organizations who assisted in the production of this book.

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Ophidion barbilabium (Vierling) Karremans & J.S.Moreno
Colombia - SVU

PLEUROTHALLIDS

NEOTROPICAL JEWELS

Subtribe Pleurothallidinae is the largest and one of the most recently and intensely diversified groups in the

Orchidaceae family. Estimates suggest that with a whopping 5500 species recognized today, pleurothallids represent about one fifth of all known orchids. They are endemic to the tropical forests of the new world, being one of its major floristic components.

Those who have had the pleasure to set foot in a neotropical cloud forest have probably been amazed by the overwhelming diversity of Pleurothallidinae, both species and genera, that a single site can host.

“Pleurothallids Neotropical Jewels” is a tribute to the beauty and complexity of the most specious group of orchids on Earth. The unparalleled diversity of pleurothallids is showcased through color photographs here for the first time. This comprehensive treatment incorporates the most up-to-date classification of the subtribe, its genera and species, and is richly complemented by notes on taxonomy, morphology, distribution, ecology and pollination.

Each volume includes a general introduction followed by specific generic treatments. This first volume features about 500 different species, across 17 of the 44 pleurothallid genera. It is generously illustrated with more than one thousand color photographs covering phylogenetic, morphological, ecological and geographical variation as best as possible. With an average of two thirds of the species in each genus featured, “Pleurothallids Neotropical Jewels” is an essential guide for anyone interested in Pleurothallidinae, from the avid hobbyist to the highly specialized professional.

This book is the physical expression of a decade of collecting, photographing and studying Pleurothallidinae by the authors. It has only been made possible thanks to the joint efforts of researchers and growers belonging to the pleurothallid community worldwide.

