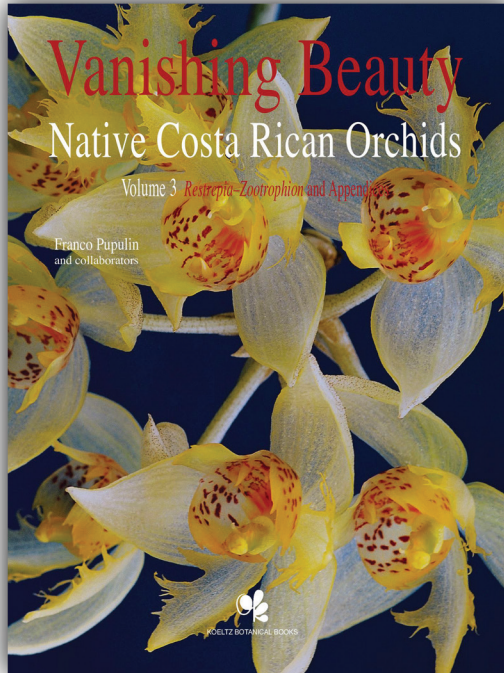


## BOOKS

**Vanishing Beauty. Native Costa Rican Orchids. Vol. 3: *Restrepia-Zootrophion and Appendices***, by Franco Pupulin and collaborators. Oberreifenberg, Germany, Koeltz Botanical Books, 2022. ISBN 978-3-946583-36-3. Large volume *in quarto* (25.5 × 33.0 cm), 467 pages (pp. 425–1003), 600 color photographs. Hardbound with dust jacket. 280,00 € incl. VAT (EU buyers) \* 261,68 € excl. VAT (Other buyers) (287,90 US\$).



With this third volume of the *Vanishing Beauty - Native Costa Rican Orchids*, Franco Pupulin, and collaborators complete a wonderfully illustrated, nearly complete catalogue of the exceptional diversity of Orchids in that Mesoamerican country. They have catalogued, at the time of sending the book for publication, 1672 confirmed species. However, several additional specimens and records currently housed at the Lankester Botanical Garden of the University of Costa Rica could increase the number to 2000.

Besides Franco Pupulin, coauthors include Noelia Belfort Oconitrillo, Mario A. Blanco, Diego Bogarín, German Carnevali, Isler F. Chinchilla, Stig Dalström, Melissa Díaz Morales, Melania Fernández, Günter Gerlach, Adam P. Karremans, Gustavo Rojas Alvarado, and Gerardo A. Salazar. Half of them are from the Lankester Botanical Garden, and the other half are from other countries in tropical America and

Europe. An excellent example of collaborative work, all with extensive field experience in the Neotropics. Species in the book are illustrated by one or several photographs, mostly of the flowers but sometimes including plants and a few Lankester Composite Digital Plates. They are organized alphabetically by generic names, while species within genera are ordered by similarity in whatever features placed closely together, either the vegetative features or the flowers, or a mixture of the two. The book covers *Restrepia* to *Zootrophion* with 16 additional genera, which had not been included in the first two volumes, added as Appendices.

The introduction is a wonderful summary of the history of orchid taxonomy and the number of species described by numerous authors, starting with Kunth and Lindley, followed by the works of Goodman and Salvin, to Reichenbach's 146 species in 54 genera

(1866). Later came Schlechter, Stanley, Ames (1937), and then what Ossenbach called the “great depression” of Costa Rican Orchidology.

Pupulin uses 1996 as the starting point for preparing this illustrative catalogue when his “construction” of *Vanishing Beauty* began. During the same period, the Lankester Botanical Garden, which was established in 1973, began to grow in staff and facilities and eventually became the foremost botanical garden, with an associated research facility, in the Neotropics, attracting not only Costa Rican botanists and amateurs but also specialists from throughout Mesoamerica and South America, especially from the Andean region.

Most importantly, the local staff, joined by amateurs, began making systematic collections and documenting orchids from many hitherto unexplored areas in Costa Rica. And thus, today, a school of well-trained and experienced botanists is collaborating with the Lankester Gardens.

Every genus has a detailed discussion of its history: first description, successive changes in its taxonomic placement, distinguishing features, distribution in the neotropics and detailed in Costa Rica, number of species described and recognized, pollination, and many other features. Each generic treatment makes for a most interesting read, with details gathered from personal experience, that of the Lankester team, and literature. There are few places where such an interesting and complete history is available. The depth of research and search for information offered per genus is surprising.

For example, in the case of *Rhynchostele* Rchb.f., which is mainly a Mexican genus with 18 species and has only 3 in Costa Rica, the author recounts how the first species was described by Lindley in 1841 based on *Odontoglossum pygmaeum*, a plant collected initially by Hartweg in Guatemala, and transcribes Lindley’s original comment that it may be misplaced in *Odontoglossum*, and a further note by the author of 1852 that “it may not belong to this genus”! In 1852, Reichenbach transferred it to his new genus, *Rhynchostele*, which most taxonomists have forgotten. It was not until Federico Halbinger in Mexico in 1983 segregated the “*Leucoglossum* complex” into his new genus *Cymbiglossum* that he failed to cite a type species for the genus. Many proposed changes

followed this, but eventually, Miguel Soto Arenas, Gerardo Salazar, and Alicia Rojas took a closer look at all the predominantly Mexican species and eventually transferred all the members of Lindley’s *Leucoglossum* to the long-forgotten genus of *Rhynchostele pygmaea*. This is one example of the taxonomic history of the many genera treated in the series of *Vanishing Beauty*. A story which is not so well described in any other publication.

This opus shows how orchid taxonomy has changed after the “great depression” has evolved, and now it is Latin American botanists and amateurs who are working together in some countries and have taken over where American and European botanists used to do orchid taxonomy often without having ever seen the species in their natural habitat and working with a poor sample of orchid diversity in any one herbarium.

As Franco points out, with modern techniques, information, and fieldwork, once you start carefully disentangling material of one variable species, you suddenly end up with a dozen species. Many of them undescribed. An extreme case is the *Epidendrum difforme* group, mentioned as such an example in volume one (Pupulin 2005) when more than 90 species had been described. It now includes over 130 recognized species.

With the advent of the Internet, numerous historical collections and publications are now accessible to Latin American students. This has opened the door for those of us living in the Neotropics to be able to work from home, with the plants in our forests and much of the available historical material available. In some cases, these species are not represented in local herbaria. Few countries have undertaken systematic fieldwork to collect samples of all plants for the local herbaria, Costa Rica, Ecuador, and Mexico being among the few where this has been done. Therefore, the local herbaria have better representations of the local flora.

Despite this, all collections put together are not really representative of biological diversity, and more fieldwork is needed. High-resolution photography can now be done in the field and in the evenings when field collections are pressed. Photographic series to prepare Lankester Composite Digital Plates (LCDPs) can easily be made, and leaf samples can be prepared in silica for genomic sequencing, giving us new information that had not been available previously and

which now allows us to revisit the taxonomic decisions we made 10 and 20 years ago based on herbarium material with little or no information on leaf and flower color, fragrance, and no genomic information.

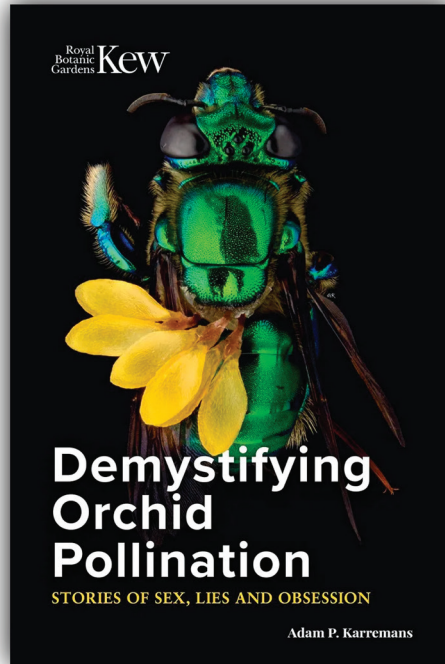
Even in a country where fieldwork has been possible for the last fifty or so years, many species remain to be discovered. Now that several Andean countries are at peace and field-work is possible, there are great opportunities for orchid work to be carried out in areas previously inaccessible, as long as there is collaboration between professional botanists and amateurs and the authorities give the necessary collecting permits, local herbaria facilitate the deposit

of herbarium material. People in the field have high-resolution digital cameras at hand to document all the details of the habitat and the species freshly collected. The remaining world specialists, in particular genera, must also be part of this collaboration, as demonstrated by this opus.

The three volumes of Pupulin's *Vanishing Beauty, Native Costa Rican Orchids*, are a must-have for any student interested in neotropical orchids.

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Herbario AMO  
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**Demystifying Orchid Pollination Stories of Sex, Lies and Obsession**, by Adam P. Karremans. Kew Publishing, 2023. ISBN 9781842467848. Hardback 234 × 156 mm, 442 pages, 120 colour photographs. English. 40,86 € (EU buyers); 30 £ excl. vat (UK buyers); 50,00 US\$.



One of the lesser-known aspects of orchids is their pollination, and what their pollinators might be. It has fascinated both scientists and orchid growers for centuries, and so much remains unknown. No less than Charles Darwin, wrote a book (in fact it was the first book written on this subject) entitled “*On the Various Contrivances by which British and Foreign Orchids are Fertilised by Insects, and the Good Effects of Intercrossing*” in 1862.

Adam Karreman’s book, of 442 pages, is a wonderful and fascinating look into how orchids reproduce, how they manage to attract their pollinators, from many different families of the insect and animal kingdoms.

Each chapter, of which there are seven, is broken down into sub-sections. Each subsection is then titled by the name of a song from some of the greatest names in music, both past and present. There is one other fascinating aspect to these subsections: many have a

QR code that takes the reader to a short video clip on YouTube on the topic discussed. So, if you have a mobile phone, you will have plenty of interesting videos to watch, and more importantly to learn from.

The photography in this book is nothing short of superb and the close-up pictures of assorted insects is absolutely amazing with the detail shown. These pictures alone are worth the cost of this magnificent book.

The terminology used is for the layman and where a more scientific term is used it is explained. There is also a glossary explaining many of the terms used.

There is still so much to be learned about the pollination of orchids and this book is a wonderful start to a fascinating subject.

A must-have addition to any orchid species lovers’ library.

*Jim Cootes*  
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