

Mr. Auguste R. Endrés: Not

A Journey into the life and work of the greatest orchidologist to ever visit Costa Rica

FRANCO PUPULIN, CARLOS OSSENBACH AND RUDOLPH JENNY

“WE GREATLY REGRET TO HEAR OF THE DEATH OF THE EXCELLENT BOTANICAL COLLECTOR, M. ENDRES. WE ARE PROMISED AN ACCOUNT OF HIS CAREER FROM PROF. REICHENBACH.” (ANONYMOUS, 1875).

With these scanty words, and the promise of a note on his orchidologic journey — that will never be written — botany took leave of A.R. Endrés in May 1875. His name, variously spelled as Endres, Enderes and Enders, had appeared sporadically in the *Gardener's Chronicle* since 1871, associated with orchid novelties, mostly just botanical curiosities, surfacing from Costa Rica. The brief obituary of the *Gardener's Chronicle's* publisher placed a tombstone on the short and obscure career of just another plant collector who had died doing his job. Time can be unfair.

It may seem strange to begin our story on Endrés from the end, but — as we will see — during some 150 years it proved to be quite difficult to unravel the story of his life from the beginning, even to find a date and a place to begin the tale of a prodigious man who had a surname, but not a known forename to start with. His end itself has long been a mystery, nothing more than a myth passed from mouth to mouth, according to which Endrés was murdered in Colombia. “*Riohacha — a man lies face down near an unplucked orchid*” (Kaufman and Kaufman 1999).



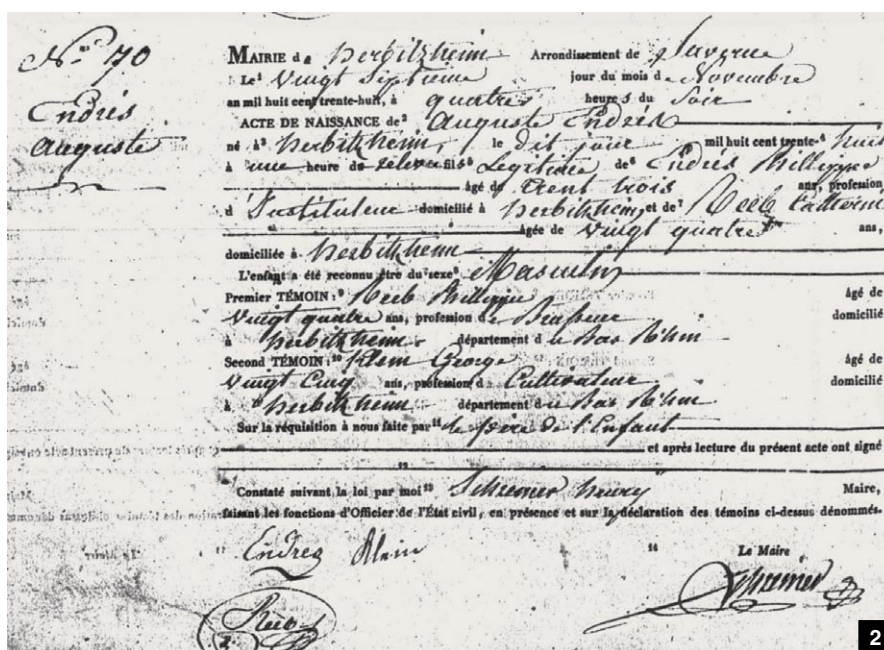
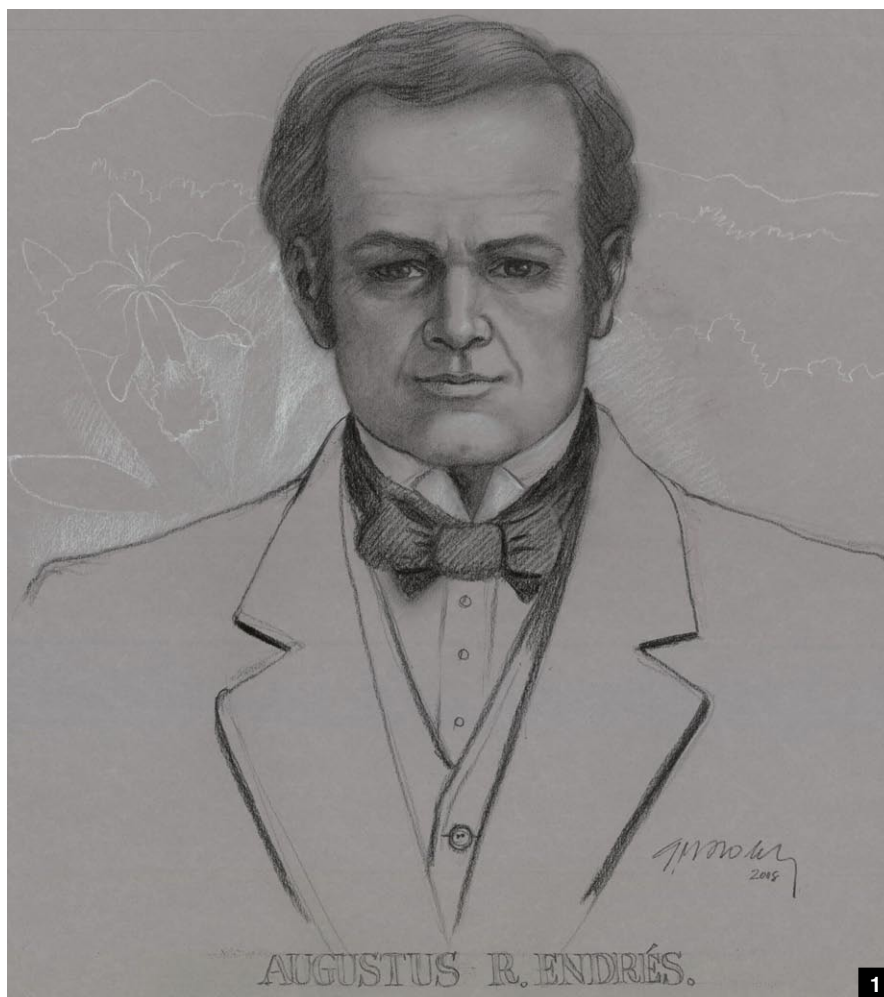
So Mysterious After All



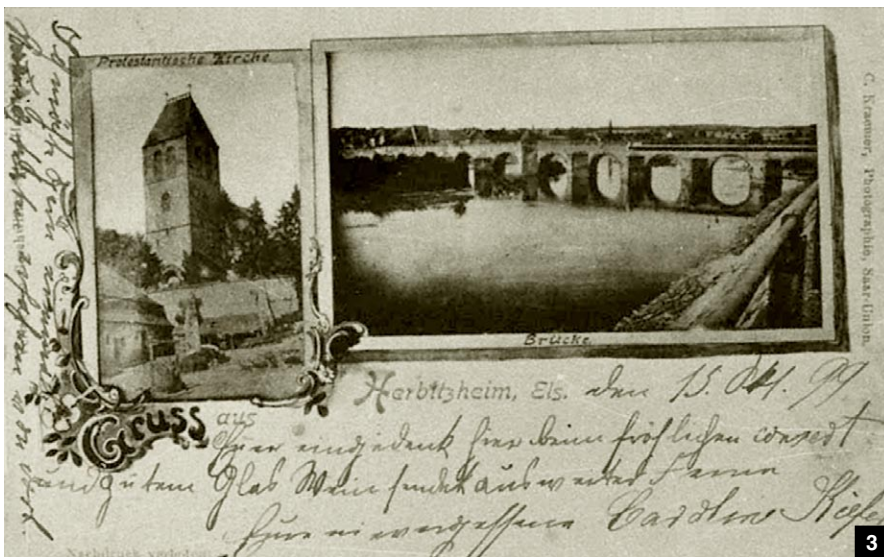
Lycaste dowiana, dedicated to Capt. John M. Dow, one of Endrés' greatest friends, was discovered and illustrated by Endrés in Costa Rica. Photograph by Franco Pupulin..

The history of Endrés, however, and the significance of his work in orchidology, deserved to be investigated, known, studied and written. It was not fortuity that, following independent paths, the three authors encountered the name of Endrés. If you have to deal with the rich orchid flora of Costa Rica, with the figures who molded the orchidology of Central America, or with the history of the plant species that entered the world of science and horticulture from the forests of the Neotropics, it is inevitable to reach the same conclusion: Endrés is simply ineludible. Anybody who had a chance just to scratch the surface of the immense orchid herbarium of Heinrich Gustav Reichenbach in Vienna must have been struck by the quantity and quality of the materials sent by Endrés: specimens, plant descriptions and extraordinarily accurate drawings. They seem endless. People who spent more time examining them, like Carl Luer for his studies in the Pleurothallid orchids, were not only amazed, but deeply admired his work. In 1995, 120 years after Endrés' death, when presenting a large series of new species of Pleurothallidinae from Costa Rica — many of which were based on plants and drawings of Endrés — Luer wrote the first biographic note on him, the first step aimed at rescuing Endrés and his work from oblivion (Luer 1995). Reading that note today, as well as others published in subsequent years on the same topic (i.e., Ossenbach 2007, 2009, Ossenbach et al. 2010), shows how little we knew about him, how many mistaken hypotheses were based on incomplete and erroneous information. Still more evident is how far we were from understanding the full value of his work and his methods for the orchidology of Costa Rica, and the importance that they would have had for the history of botany if published and studied at the time of Endrés' short career in science.

Eventually, the desire to shed light on the fundamental elements of Endrés life, and the urgency of having his scientific merits recognized and appreciated, became a mania for the authors, a fever, and an obsession. For more than 10 years, the figure of “mysterious Mr. Endrés” was the center of their searches, their investigations, and their conversations. Along the way, the “Endrés sickness” infected many friends and students in Costa Rica, Austria, Colombia, France, Germany, Panama and United States, who added their expertise and knowledge to the task force focused on the life and work of Endrés. Several of their names are listed in the paragraph of our deepest acknowledgments at the end



- [1] A “portrait” of Endrés based on his description on the U.S. passport application. Drawing by Gonzalo Morales, Jr.
- [2] Auguste Endrés' birth certificate dated November 26, 1838.
- [3] The church of Saint Marie in Herbitzheim, where Endrés was baptized, and the village's stone bridge over the River Saar (1899).
- [4] Typical Alsatian costume of the fourteenth century. Photo by Adolphe Braun, ca. 1871.



[5] *Cattleya dowiana*. Painting by the German artist Emilio Span, who lived in Costa Rica (courtesy of Ricardo Kriebel).

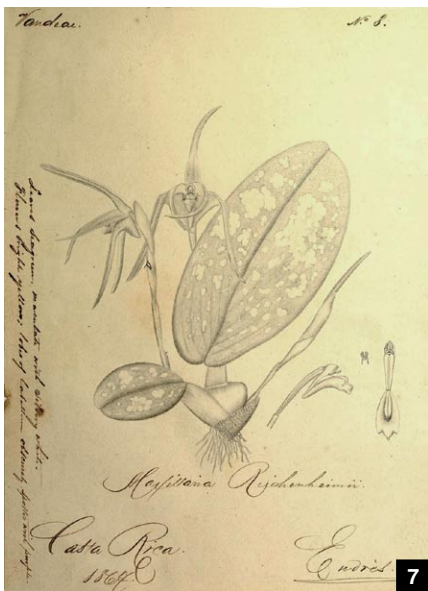
[6] "Over the Rhine" district in Cincinnati, ca. 1914 (courtesy of the Cincinnati Historical Society).

of this paper. Finally, last year the Natural History Museum of Vienna published a large work in two volumes that gathers the results of this obsessive search. We hope it is a proper and due homage to a great explorer, botanist, ecologist and illustrator, probably the greatest who ever worked in Costa Rica.

WHO WAS HE? According to his birth certificate, Auguste Endrés was born on November 27, 1838, in Herbitzheim, a village in the department of Bas-Rhin in Alsace, France. The spelling of his family name with an accent had nothing to do with the Spanish language — as we thought at the beginning — but was of French origin. He was born in France, of a German family, and the roots of his culture were German. His father, Philippe Endrés, was a schoolteacher, and Catherine Reeb, his mother, descended from a family whose name goes back in the district of Saar-Union until at least the 15th century. If he was a “half-cast,” as Veitch (1906) described him, it was not for racial reasons, as we mistakenly suspected for long time, but because he socially belonged to the middle class.

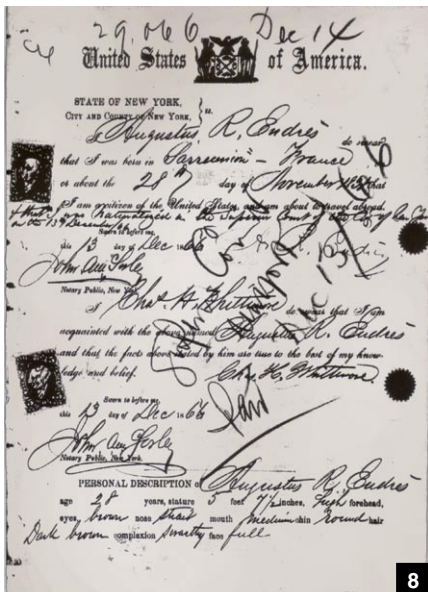
At the beginning of 1855, he moved to New York with his grandfather Auguste Reeb, from whom he probably inherited the “R” of his middle name. The rest of the family, father, mother and seven brothers, joined him 2 years later, but soon thereafter they moved to Cincinnati, where Philippe Endrés began working as a teacher. He must have had a good command of the English language, and this perhaps explains why his son Auguste spoke and wrote so fluently in English.

Auguste, who meanwhile had changed his name to the German “Augustus,” remained in New York. Here, he made the acquaintance of Isaac Buchanan, a well known horticulturist, with a large orchid collection on Long Island, to whom many years later Endrés would send plants from Costa Rica. He was responsible for introducing Endrés to several of the most famous names in orchidology of that time, such as William Hooker, George U. Skinner, James Bateman, Hugh Low and John Day. Buchanan was also a good friend of Capt. John Dow (celebrated in *Cattleya dowiana*, *Lycaste dowiana* and other beautiful orchids), probably Endrés’ best friend during the years of his Costa Rican adventure. And it is likely that it was Buchanan who financed Endrés’ travels to Germany (and perhaps to England), in particular to Berlin, where Augustus spent most of his time when he was in Europe. There he became acquainted with Moritz



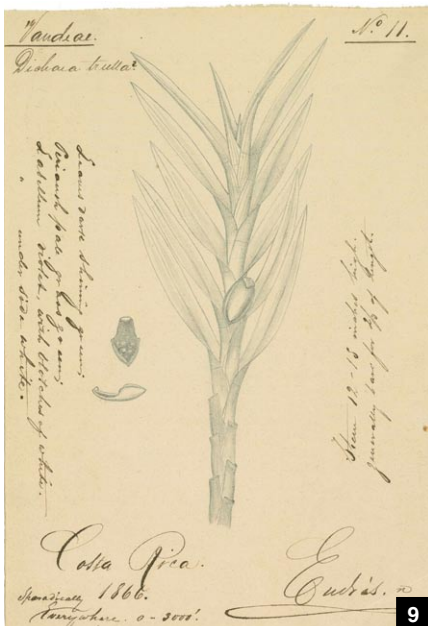
Reichenheim, owner of a luxurious orchid collection in Berlin, to whom Endrés dedicated one of his first orchid species, *Maxillaria reichenheimiana*. Finally, it was on a recommendation by Buchanan that Skinner and Bateman met in England and decided to employ Endrés to collect orchids in Costa Rica. In 1866, with a commission to collect for Bateman and for the botanist who would become his great scientific mentor, Professor Reichenbach, Endrés was naturalized as a U.S. citizen and obtained a U.S. passport to travel to Central America. His profession was given, for the first time, as “botanist.” By Christmas of 1866, he arrived in Greytown, Nicaragua, on board of the S.S. *San Francisco*. By canoe, he traveled along the San Juan River to the neighboring Costa Rica, where he collected and illustrated his first known orchid, *Dichaea trulla*, in 1866.

lowlands. But he never stopped collecting for science. As becomes evident from the materials he left, the Pleurothallid orchids were his main scientific interest, and among them the genus *Lepanthes* stands out by reason of the quantity of species that Endrés discovered, described and illustrated, more than two-thirds of all the species we actually know from Costa Rica. His human and scientific relationship with Reichenbach was not always the best one could hope for, and it was to discuss with the German Professor the future of his research and the use of his materials that a crestfallen Endrés traveled to Europe in April, 1874. The meeting with the German botanist in Hamburg was, however, less troubling than expected, and Reichenbach (1875) even stated that they had some good days of orchid talks in the company of the great Czech collector Benedikt Roezl.



The unbelievable itineraries covered by Endrés during the next 7 years in his search for orchids, reaching all possible, and some nearly impossible, corners of the Costa Rica known and explored at that time, have been treated in detail by the authors in 2010, and again by Ossenbach and Pupulin (2013). It should be sufficient at this moment to remember that he was an indefatigable explorer. He settled in San Ramón, at that time the agricultural frontier of the country, where he bought a piece of land seemingly better suited to build a greenhouse than a house. From there, he moved by mule along the eastern flanks of the Cordillera de Tilarán toward the San Carlos plains, explored the Pacific from the dry lowlands of Guanacaste to the wet regions of Turrubares, climbed the Cordillera de Talamanca up to the Cerro de la Muerte (Mountain of Death), followed the route from San José to the old capital city of Cartago, climbed the Irazú volcano and descended to Turrialba and the wet plains of the Caribbean, where he collected a specimen of the elusive *Macradenia brassavolae* (Pupulin and Ossenbach 2002; Ossenbach et al. 2010).

Together with Roezl, Endrés embarked again for America, landing in New York. He made a short excursion with Roezl to Niagara Falls, and at the end of September of 1874 sailed to Barranquilla, on the Caribbean coast of Colombia. Was Colombia his new orchid El Dorado? Was he planning to collect there and to return then to his Costa Rican orchid flora? We will never be certain, but we have reasons to suspect that he had decided not to ever return to Costa Rica. What is certain is that he never returned from this journey. Two weeks after reaching Colombia, when traveling toward the highlands of the Cordillera de Santa Marta, Endrés fell ill from pleurisy and died in the small village of Dibulla, to which the Indians had brought him along the way back to Riohacha. It was the end of November of 1874.



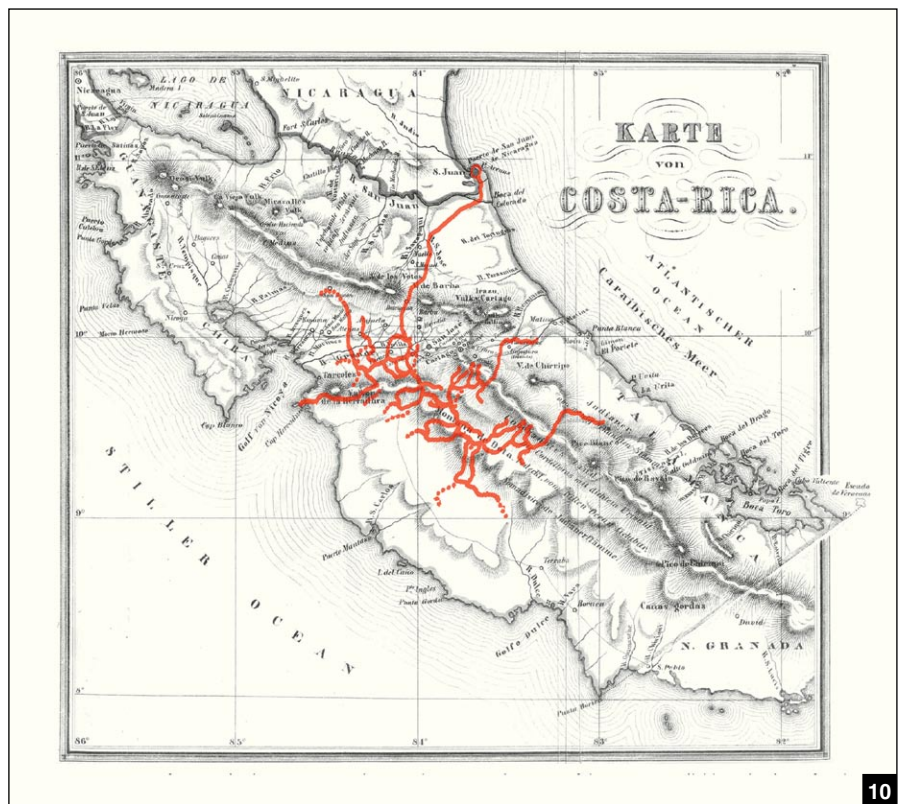
Apart from a short visit to Panama, where he traveled by train and collected a few orchids near the railroad stations along the route, over the next 7 and a half years Endrés lived in Costa Rica, becoming a legendary figure in the botanical explorations of the country, and providing an uninterrupted flow of orchid novelties to his correspondent, H.G. Reichenbach. Economic constraints forced him to collect orchids for horticultural purposes and even to work as the superintendent of the construction of the new road connecting San Ramón with the northern Costa Rican

AN EXPERIMENT NEVER BEFORE ATTEMPTED So, what exactly was young Mr. Endrés doing in Costa Rica? His engagement as an employee of the Veitch Nurseries between 1871 and 1873, when his contract was eventually terminated as “scarcely a success” (Veitch 1906), must not mislead us. Endrés was not a commercial plant collector, and he did not come to Costa Rica to collect for business. Although the documents that describe the ambitious scope of his project have been lost, what remains of his work clearly indicates that Endrés was working on a formal treatment of the orchids of Costa Rica, something similar to a modern orchid flora. As in a modern flora, the project required him to explore, to collect and prepare specimens, to write descriptions and to make botanical illustrations of all the orchid species of Costa Rica. And this was exactly what Endrés was committed to doing. It was

a one-man work, which required skills in botany, in art and in organization, to be tested against one of the richest floras on our planet. It was something never attempted before and, at least in this magnitude, an effort never again attempted after him (Pupulin 2013a).

The modern botanist will surely note that the orchid descriptions with which Endrés painstakingly filled hundreds of leaflets in his educated, small and elegant handwriting, are comparable to the treatments of a contemporary flora because of the quantity of botanical details and the precision of the botanical jargon that he employed. Each and all of the descriptions written by Endrés could simply be typed and printed in a modern book on the orchids of Costa Rica without the need to change a single comma. The descriptions of the vegetative habits are complete and detailed, and the flowers are described to their most minute details, including the pollinia and the anther. Precise measurements are given of all parts of the plants and the flowers. One really wonders why Reichenbach, with these materials at hand, ended up publishing such cryptic descriptions of the species discovered by Endrés. One could wonder, even more, why he published just a few of them, when he received hundreds, ready for the press. To his collections Endrés assigned a series of numbers, some of which refer to the individual plants and others to a system of “species numeration” within genera, a system that allowed him to record the distribution of a given species throughout a range and to register sets of phenological data. The geographic localities are often recorded precisely enough to allow us to locate extant populations even today. Dried plants, descriptions and sketches are related with each other through reference numbers, and these are often the explicit reference to a given page of his planned books: the orchid flora of Costa Rica.

It is only by comparing the manuscripts of Endrés’ unpublished work with the style of some of his most admired scientific mentors, that the modernity of his texts becomes apparent. Botany was, at the time of Endrés, quite a respected but dry science, and scientific orchidology was not an exception. The published works of John Lindley were mostly lists of Latin descriptions, often reduced to a couple of lines, and most of Reichenbach’s contributions were just synthetic descriptions of the new species’ diagnostic features, frequently limited to the essential characters of the flowers. This was in line with the provisions of nineteenth century botany, for which plant descriptions were



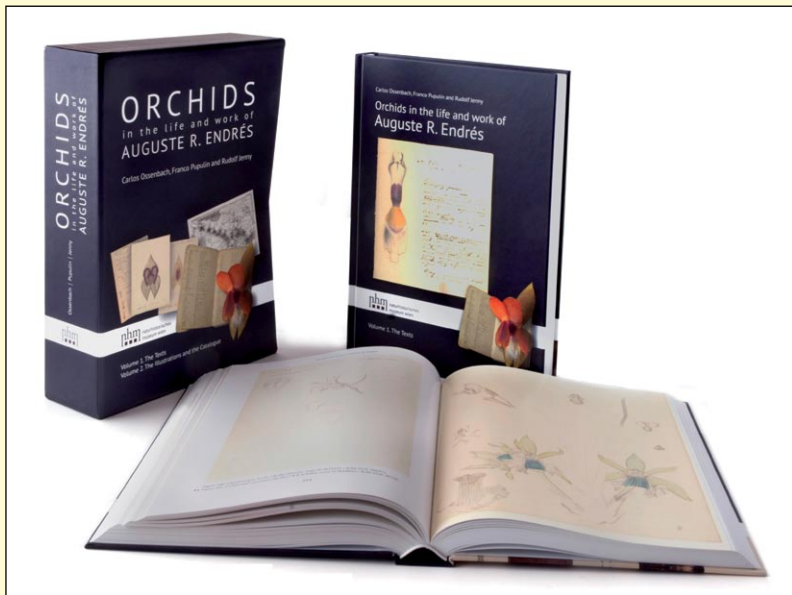
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in essence skeletal diagnoses, designed to convey the key characters that served to differentiate new species from their relatives. Endrés’ botany is instead a rich and contextualized science. Without being verbose, his descriptions contribute to producing a mental image of the species, and the consistency of his style assists in species comparison. When he had an opportunity to do it, he also added to his descriptions a side note, very similar to those that you may find in the contemporary description of a plant, where additional details are provided on its phenology and ecology. Endrés’ note on one of the sketches of his “*Pleurothallis mellifera*” referring to the flower’s exudation of honey and its visit

- [7] Endrés’ drawing of his “*Maxillaria Reicheinheimii*” (now *Maxillaria reichenheimiana*). Courtesy of the Natural History Museum, Vienna.
- [8] Passport application by Augustus R. Endrés. December 13, 1866.
- [9] Plant with a fruit and two views of the lip of *Dichaea trulla*, from the first known illustration made by Endrés in Costa Rica, 1866. Courtesy of the Natural History Museum, Vienna.
- [10] The most modern map of the country available at the time of Endrés’ arrival (Wagner and Scherzer 1856). In red are the exploratory itineraries by Endrés.
- [11] The village of San Ramón around 1880.



A Monument to a Lost Opportunity

By Franco Pupulin

A single volume was eventually not enough to pack the amount of information that Auguste R. Endrés left behind after his short and productive career in orchidology. Thanks to the courtesy of their respective curators, who granted us unlimited access to the original documents of Endrés' legacy, we discovered that the Herbarium and the Archives at the Natural History Museum in Vienna, Austria were literally a goldmine of letters, drawings, notes and specimens to study, sort out, organize and present as a unit, the life and work of one of the least-known botanical explorers, authors and artists.

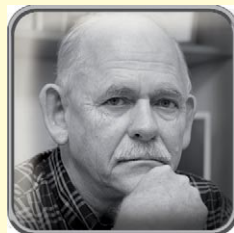
The first volume, with essays by Osssenbach, Pupulin, Jenny, Vitek and Riedl-Dorn, describes in detail everything that is known about Endrés, putting his life and work into the context of the botanical and social history of the time, and reviews the formal botanical achievements based on his activity. A few pages of Endrés' "ghost" book on the orchids of Costa Rica are also presented here, rigorously based on his illustrations and notes.

The second volume includes a large selection of the orchid drawings by Endrés, mostly never before seen, complemented by a complete catalogue of his materials conserved in Vienna and elsewhere, updated to the most recent and generally accepted nomenclature.

Orchids in the Life and Work of Auguste R. Endrés, by Carlos Osssenbach, Franco Pupulin and Rudolf Jenny. 890 pp (2 volumes in slipcase), 399 illustrations (color and black & white), hardback, approximately 11 × 8 × 2 ¼ inches (289 × 206 × 71 mm). Wien (Vienna), Naturhistorisches Museum, ISBN 978390421777. €350 (about \$450).



Franco Pupulin



Carlos Osssenbach



Rudolph Jenny

by small flies, is probably one of the earliest (if not the first) published observations about pollination in the Pleurothallidinae (Pupulin et al. 2012a). Now that we were able to gather all spare papers left by Endrés, and those conserved both at the Herbarium and the Archives of the Natural History Museum in Vienna, the proportions of his effort may well be compared with the quality of its execution. He left more than 800 orchid descriptions ready for the press — half of the orchid flora of Costa Rica as we actually know it. Even though just a few of them were described during Endrés' life, and another few after his death (Pupulin et al. 2011, 2012b, 2013), at the time of his journey in Costa Rica, seven out of 10 species he discovered were new to the science. Nobody, individually, ever produced anything similar.

A TALENTED ARTIST Auguste R. Endrés was not only an indefatigable explorer and a prolific writer, but also a fine illustrator. One may be tempted to use for him the expression of "artist," as his skills in drawing and rendering in pencil, and his mastering of light and shadows, have obvious characters of artistry. However, after seeing literally hundreds of his drawings, from the very preliminary sketches to their fair copies ready for engraving, it is clear that Endrés was not interested in the artistic aspects of botanical illustration. Illustration was for him a way to convey a type of information that was difficult — if not impossible — to express precisely through the use of words. The arrangement of the parts of his composite illustrations is often harmonious and pleasant, and judging by the dates of their execution, one could note a progressive improvement in composition through the years, but what is really striking about Endrés' illustrations is the quantity of details that he considered essential to characterize a species as such.

Usually, he illustrated the plant habit with inflorescences and flowers — an enlargement of the flower when small; a lateral view of the column and the attached lip; the lip in natural position or spread at a greater enlargement; enlargements of the petals; a ventral view of the column, most commonly with and without the anther cap and sometimes with added details; strong enlargements of the pollinarium in different views and the anther cap. This is, in essence, what a contemporary illustrator would include in one of his plates. But even when compared to contemporary work done with a top-class stereomicroscope and the aid of a drawing tube, the precision and fidelity of the flower details drawn by Endrés are

simply amazing (Pupulin 2013b). Very characteristic of his preparatory sketches was to take advantage of the bilateral symmetry of the orchid flowers, drawing only a half of them, completing the other half only in the final, fair copy of the drawing. In these first drafts, he usually just drew the contours of the subjects, providing just faint indications of the shadows. Overwhelmed by the enormous amount of labor needed to accomplish his illustrations, in 1871 he began introducing “symmetrical drawing” in the illustrations ready for the print.

We know, from the letters that he wrote to his sister and his friend Captain Dow, that Endrés only had a simple microscope at hand in 1871, 5 years after he had begun illustrating the orchid flora of Costa Rica. The fidelity with which he illustrated — with the naked eye! — the most minute details of the microscopic lip of a *Lepanthes* species, or the flower of a minuscule *Telipogon*, or the indumentum on the ovary of *Acineta densa* is amazing. He equaled in quality the best illustrators of his time, like J. Nugent Fitch, Miss Drake and Walter H. Fitch, and by far outdid them in the completeness and richness of details of his plates.

The fair copies of Endrés’ drawings, made with a hard pencil on chamois paper of good quality, and finely rendered to suggest three-dimensionality of the structures, are absolutely modern. We tried to find something comparable to his drawings of *Lepanthes* and other Pleurothallidinae in the work of his contemporaries, or among the illustrations of the artists who preceded him, but it was in vain. To our best knowledge, the first published drawings with a richness of details similar to that of Endrés were the illustrations made in 1904 by Miss H.A. Wood for the studies of Fawcett and Rendle on Jamaican orchids, 30 years after Endrés’ time.

Now that the individual pieces and the few known facts about his journeys from Europe to the United States and Costa Rica, and the voyage to his tragic end in Colombia, were assembled into the coherent pattern of a real life, now that his scattered notes, drawings and samples were finally rescued from oblivion and brought together in the perspective of a major botanical project, it is clear that to forget the prodigious work of Endrés, to forget him as the great botanist, artist and explorer that he was, was a sad mistake of the botanical science of his days. With the “help” of the late Reichenbach, one of the largest and most visionary projects dedicated to tropical orchidology was hidden and lost for



nearly 150 years. Meanwhile, botany lost a great opportunity to improve its methods for exploring and studying the diversity of tropical flora, before it was threatened by the unsustainable development that we know today.

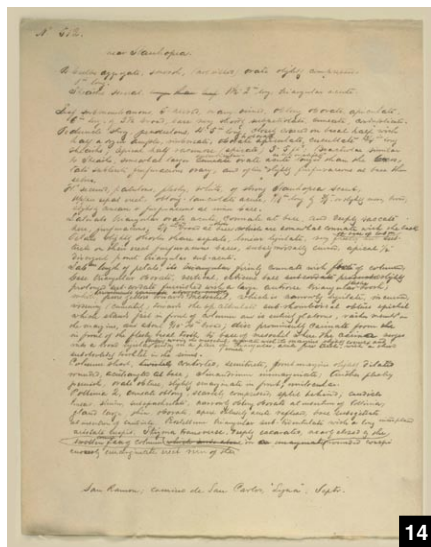
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[12] Endrés sketch and colored flower of *Lepanthes blephariglossa* (W0019700). Courtesy of the Natural History Museum, Vienna. The inset color image is that of a living specimen collected by Franco Pupulin at El Guarco de Cartago, Costa Rica. Photograph courtesy of Franco Pupulin.



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[13] The preliminary sketch of *Salpystele brunnea*, that precedes the formal description of this genus by more than a century. Courtesy of the Natural History Museum, Vienna. The inset color image is that of a specimen collected near San Ramón, where Endrés lived during his stay in Costa Rica. Photograph courtesy of Franco Pupulin.

[14] Endrés handwriting with the description of a new genus, “near Stanhopea” (today *Trevoria*). Courtesy of the Archives, Natural History Museum, Vienna.

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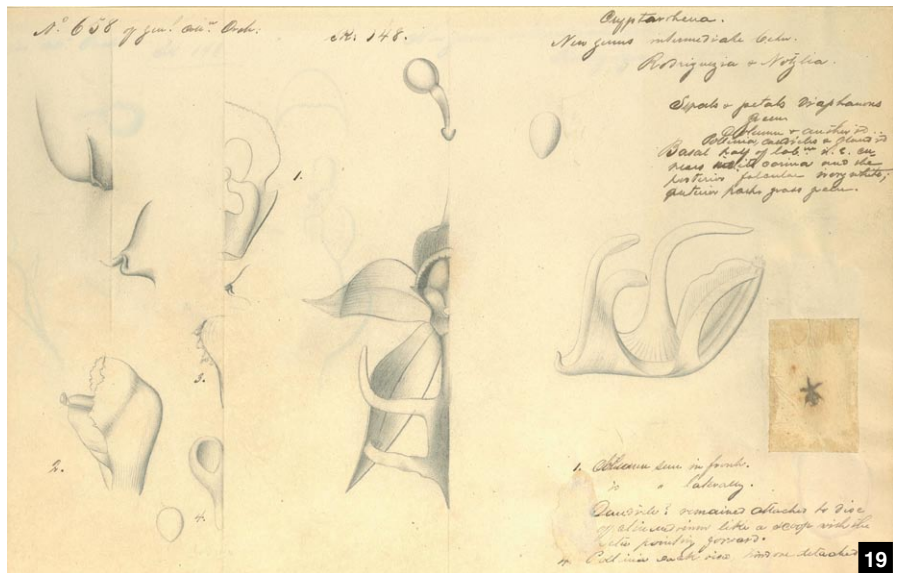
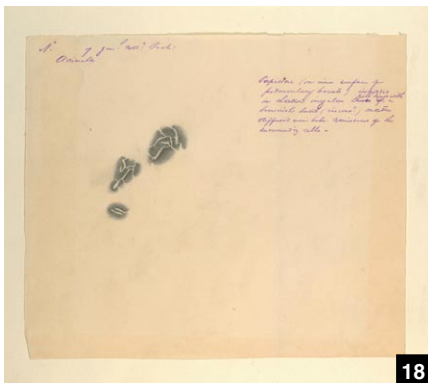
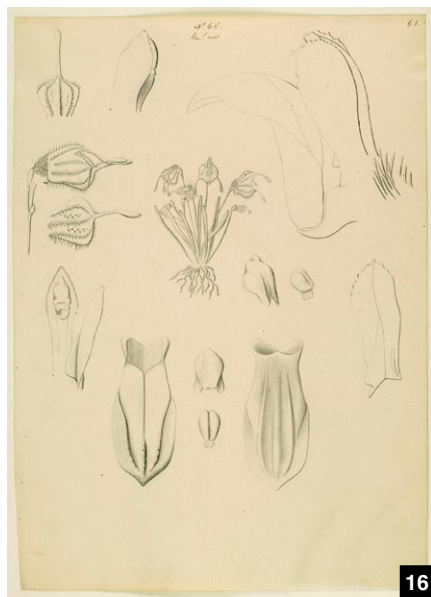
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- [15] Drawing by Endrés of *Kegeliella kupperi*. The species was described by Mansfeld 60 years later after Endrés death. Courtesy of the Natural History Museum, Vienna.
- [16] A final drawing of *Diodonopsis erinacea* (both the genus and the species were still undescribed at that time). Courtesy of the Natural History Museum, Vienna (W0019506).
- [17] The final drawing of *Lepanthes atrata*. Courtesy of the Natural History Museum, Vienna (W0019705).
- [18] Drawing of the microscopic indumentum that covers the floral bracts in *Acineta densa*. Courtesy of the Natural History Museum, Vienna.
- [19] An example of Endrés "symmetrical drawing": the flower and flower details of *Cryptarhena guatemalensis*. Courtesy of the Natural History Museum, Vienna.



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SPECIES ENDRESIANAE

All the Costa Rican species depicted here were described based on material collected by Endrés. All images by Franco Pupulin.

[1] *Cryptarrhena quadricornu* (= *guatemalensis*)
 [2] *Lockhartia amoena*
 [3] *Kegeliella kupperi*
 [4] *Maxillaria reichenheimiana*
 [5] *Dichaea cryptarrhena*
 [6] *Chondrorhyncha endresii* (= *Chondroscaphe bicolor*)
 [7] *Cryptophoranthus* (= *Zootrophion gracilentus*)
 [8] *Batemannia* (= *Huntleya*) *burtii*
 [9] *Stelis endresii*
 [10] *Sievekingia reichenbachiana*
 [11] *Telipogon minutiflorus*
 [12] *Endresiella* (= *Trevoria*) *zahlbruckneriana*
 [13] *Masdevallia* (= *Trisetella*) *triaristella*
 [14] *Pleurothallis* (= *Specklinia*) *endotrachys*
 [15] *Oncidium henrici-gustavi* (= *Oncidium bracteatum*)
 [16] *Lockhartia hercodonta*
 [17] *Miltonia endresii* (= *Miltoniopsis warscewiczii*)



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