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RUDOLF SCHLECHTER'S SOUTH-AMERICAN ORCHIDS IV. SCHLECHTER'S "NETWORK": VENEZUELA AND COLOMBIA

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ABSTRACT. The fourth chapter of the series about Rudolf Schlechter's South-American orchids again presents abridged biographical information about the botanists and orchid collectors that formed part of Schlechter's South-American network and who travelled and worked in those countries on the continent's northern and Caribbean coasts, through Venezuela and Colombia. In the case of Colombia, we cross the isthmus of Darien and arrive for the first time on the Pacific coast of South America. As in other chapters, brief geographical and historical introductory outlines are presented for each of these countries, followed by a narrative on those orchidologists who visited the area, chronologically by the dates of their botanical collections.

KEYWORDS/PALABRAS CLAVE: biography, biografía, history of botany, historia de la botánica, Orchidaceae

Venezuela. In March 1498, Christopher Columbus sailed past the Orinoco delta during his third voyage and continued into the Gulf of Paria. Columbus described the new territory as *la tierra de Gracia* ('the land of Grace'). One year later, Alonso de Ojeda arrived at the same coast and sailed into the Gulf of Maracaibo. An Italian merchant from the city of Florence by the name of Amerigo Vespucci (1454–1512) was part of this expedition. Not only did Vespucci lend his name to the new continent (Fig. 1), but he observed the native stilt houses along the shores of the lake, which reminded him of the city of Venice (Fig. 2). This prompted him to call this region *piccola Venezia* (little Venice) or *Venezziola* in the Italian language of his time, hence the country's name of Venezuela, by which we know it today (Fig. 3).

The name "Little Venice" became popular in Europe probably because of the concession made by the Spanish Court to the German merchants of the Welser family to explore and govern parts of the South American territory. Its translation "Klein-Venedig" appears in various German documents of its time.

Following Schlechter (1919: 2), the territory of Venezuela can be divided into four distinctive regions: the flatlands along the Caribbean coast, limited to the south by the second region, the northern mountain chains (Fig. 4); the plains ("llanos") which extend to the west across the border with Colombia

and to the south and southeast across the Orinoco River basin (Fig. 5–7); and the Venezuelan Guiana Highlands, limited to the east and south by Guyana and Brazil, respectively.

In the five volumes of his series *Die Orchideenfloren der südamerikanischen Kordillerenstaaten* (1919–1922), Rudolf Schlechter first gives a brief description of each country's geography, followed by an outline of the history of its botanical exploration. It seems reasonable to follow along the same lines.

In 1669, the Spanish Jesuit priests Monteverde and Castan established the first mission to the tribe of the Saliva along the Orinoco River in Venezuela, under the name of Nuestra Señora de los Salibas. Another Jesuit, José Gumilla (1686–1750), arrived in Bogotá in 1705 and, in 1714, went as a missionary to the plains along the Orinoco, where he would spend the remaining 35 years of his life. A precursor of the enlightenment, Gumilla showed great interest in natural history; in 1731 he published his main work, *Historia Natural, Civil y Geográfica de las Naciones situadas en las riberas del río Orinoco (Natural, civil and geographic history of the nations located on the shores of the Orinoco River)*. On page 324 of this work, Gumilla gives a description of vanilla which is worthy of being repeated here: "...the country offers everywhere a large correspondence of rich and abundant fruits, among which it is of not less importance that fruit or



FIGURE 1. Amerigo Vespucci (1454–1512) awakening America. Engraving by Jan Galle after Jan van der Straet, ca. 1615. The scene depicts Amerigo Vespucci representing the Old-World explorers as he wakes up a Native American from her hammock slumber. Local flora and fauna dot the background, as well as natives having a cannibalistic roast.



FIGURE 2. Maracaibo Indian dwellings. From *The Universal Geography with Illustrations and Maps*, Elisée Reclus.



FIGURE 3. Colton's map of Venezuela, Colombia, and Ecuador, 1855.

aromatic spice which is commonly called Baynilla, which by nature and condition grows wild (although a method has already been found to cultivate it). It grows in the dense parts of the forests and meadows and, if it finds a hold, clings to the trunks and branches, no less than the vines, which here climb and take possession of the poplars. But if the seed falls -when it is ripe, and the Baynilla opens and has the misfortune to grow where it cannot find hold- then it follows the same adversity of those men who, as much as they deserve it, do not find who gives them a hand..." (Ossenbach 2020: 112–114).

In February 1754, the Swede Pehr Löfling (1729–1756), one of Linnaeus' disciples, sailed from the Spanish port of Cádiz to Cumaná on Venezuela's Caribbean coast. For two years, Löfling botanized in Cumaná and undertook several expeditions to the

Orinoco River and the Venezuelan Guiana, which proved fatal to him. Plagued by malaria and yellow fever, Löfling passed away in February 1756 in the Jesuit mission of San Antonio de Caroní. Löfling's herbarium has disappeared, but his botanical collections were described by Linnaeus, who in 1758 published Löfling's *Iter Hispanicum... (Travel to the Spanish countries...)* with special mention of the genus *Epidendrum*. Also, the Library of the Royal Botanical Garden in Madrid holds a manuscript of a *Flora cumanaensis*, written by Loeffling during his journey, in which he described a total of 11 new orchid species. Madrid also keeps several drawings prepared by the draftsmen of the expedition (Fig. 8).

Alexander von Humboldt (1769–1859) and Aimé Bonpland (1773–1858) arrived in Cumaná in June 1799 during their "Journey to the Equinoctial Regions



FIGURE 4. The Sierra Nevada of Merida. Unknown photographer.



FIGURE 5. The “llanos” of Venezuela. Unknown photographer.

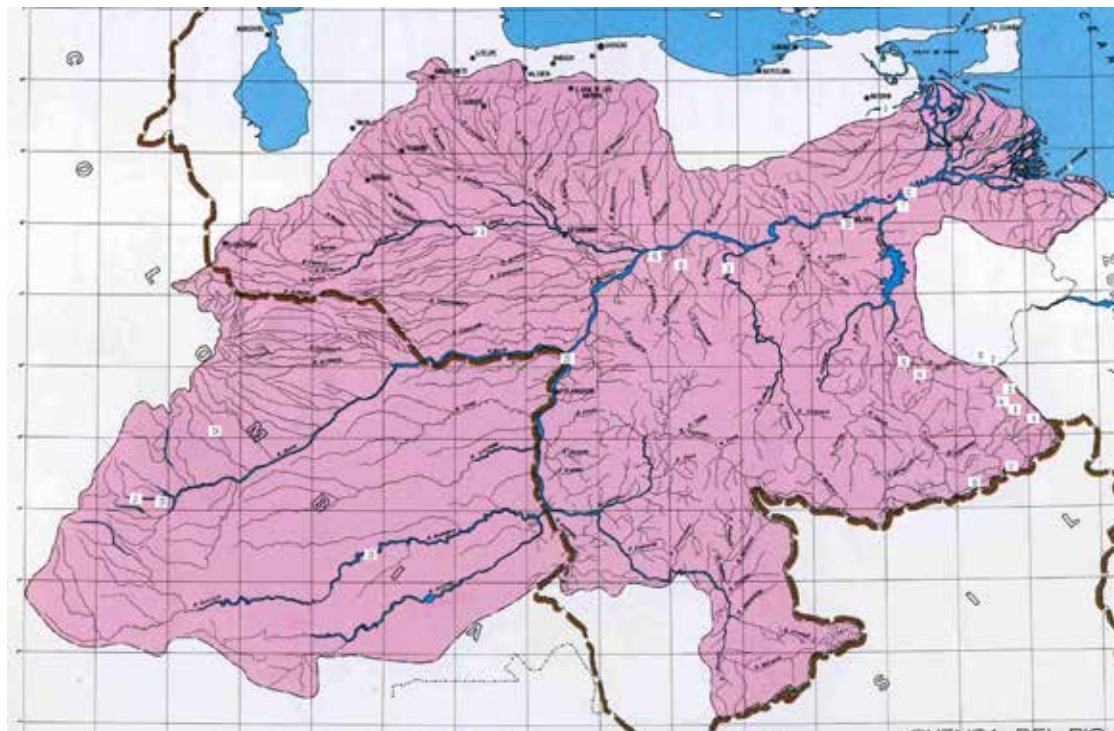


FIGURE 6. The Orinoco River Basin.



FIGURE 7. The Orinoco River, oil on canvas by Pilar Casasa.



FIGURE 8. *Caularthron bilamellatum* (Rchb.f.) R.E.Schult. Archives of the Royal Botanical Garden, Madrid. Div. II, plate 49.

of South America". They explored Cumaná and then travelled west to Caracas. From there, their journey took them through the "Ilanos" and to the Casiquiare River, which connects the Orinoco to the Río Negro and thence with the Amazon.

David Lockart (–1846), from 1828 Director of the Botanical Garden in Port-of-Spain, Trinidad, made several excursions to Venezuela's mainland, from where he sent several Orchidaceae to William Hooker at Kew. Carl Friedrich Eduard Otto (1812–1885) travelled to Cuba in 1838 and, in 1840, went to the north coast of Venezuela. He stayed in the country until 1841, travelling from Cumaná southwards to the Orinoco and making important botanical collections.

In 1840, Colonia Tovar, an important German settlement 65 km to the west of Caracas (Fig. 9), saw the arrival of traveller and botanist Johann Wilhelm Karl Moritz (1797–1866). Moritz lived in Colonia Tovar until his death. He travelled throughout Venezuela and made extensive collections of orchids,

mostly described by Klotzsch and Reichenbach. The epithet *moritzii* was coined in his honour.

Belgian orchidologist Jean Jules Linden (1817–1898), accompanied by Nicolas Funk (1816–1896) and Louis Joseph Schlim (1819–1863), disembarked in Venezuela in 1841 during their third voyage to America. From Cumaná they travelled to Mérida and went on further to Trujillo, the "Ilanos" and Carabobo, returning in 1845 to Caracas. John Lindley described dozens of new orchids collected during this journey. Funk and Schlim again explored the departments of Miranda, Carabobo, Barquisimeto, Zulia, Trujillo and Mérida during the following years. Many of their new orchid collections were, in this case, described by H.G. Reichenbach.

Reinhart Frans Cornelis van Lansberge (1804–1873) was Consul of the Netherlands in Caracas during the 1840s and was later promoted to Governor of Suriname. In 1845, during his time in Venezuela, he sent a collection of orchids to Europe, described by H.G. Reichenbach as *Orchideae Lansbergianae*. German plant collector Hermann Wagener (1823–1877) explored the northern Venezuelan states along the Caribbean coast and the northern mountain chain in the state of Mérida between 1848 and 1853, again from 1854 to 1855. Wagener's orchid specimens were described by Reichenbach in over a dozen different articles in the years 1854 and 1855.

Gustav Carl Wilhelm Hermann Karsten (1817–1908) travelled in America from 1844 to 1847 and 1848 to 1856. He explored the states of Carabobo and Bolívar and, for several months, made the German Colonia Tovar his headquarters. During his second journey, Karsten collected also in Colombia and Ecuador. Another German, August Fendler (1813–1883), spent the years of 1856–1858 in Colonia Tovar, where he acquired a small property. His orchid collection was especially rich in the genera *Stelis* and *Pleurothallis* and was studied by J. Lindley and R. Schlechter (Todzia 1989).

Finally, David Burke (1854–1897), a collector sent by James Veitch & Sons, collected several orchids on Mount Roraima in 1891.

ADOLF ERNST (1832–1899; collected 1861–1899)

"I will never forget the pleasant surprise I felt when for the first time, some twenty-seven years ago,



FIGURE 9. Colonia Tovar in 1844. Copper engraving after an oil painting by Ferdinand Bellermann.

the splendid panorama of the valley of Caracas opened before my eyes from the heights of La Cruz, on the old road from La Guaira. Pastures, mountains and hills, and in the midst, the city with its red roofs, like a big ruby set amongst countless emeralds.” (A. Ernst quoted in Jahn 1932: 320).

Adolfo (Adolf) Ernst (1832–1899) (Fig. 10), a German of Jewish origin, was born in Primkenau, Silesia. After finishing high school in his hometown, he moved to Berlin, where he studied natural sciences, pedagogy, and modern languages. It was during this time that he met the two children of Venezuelan general Judas Tadeo Piñango. He developed a warm friendship with them, and it was through their encouragement that he moved to Venezuela.

Ernst arrived at the port of La Guaira in 1861 and became Professor of Natural Sciences at the University of Caracas in 1874 (Anonymous 1900: 48). He established his permanent residence in Caracas, dedicated in body and soul to science. In May 1867, now completely adapted to the Venezuelan life, he founded the Society of Physical and Natural Sciences of Caracas and later, in 1874, the National Museum. In 1876, he was named director of the National Library, giving the institution great impulse. During the government of Antonio Guzmán Blanco, who was the absolute ruler of Venezuela from 1870 to 1899, he took part in the organization of international exhibitions in

Vienna (1873), Bremen (1874), Santiago de Chile, and Philadelphia (1876). In 1874, at the dictator's request, he organized the chair of Natural History at the Central University of Venezuela, where he spread Lamarck's and Charles Darwin's “natural selection” theories, of which he was a fervent follower and which were fundamental in Zoology and Botany.

During the 38 years he lived in Venezuela, his work was unanimously praised by all who knew him or knew his writings. An anonymous writer commented in 1878: “Dr. Adolf Ernst is, as his name betrays, a German who has deserted the Fatherland for Caracas and is there labouring to grow science upon a somewhat uncongenial soil. In botany, zoology, and ethnology alike, he has worked hard and is the founder of the “Sociedad de Ciencias Físicas y Naturales de Caracas,” and, we believe we may add, the writer of the greater part of the memoirs of that learned association” (Anonymous 1878: 231). Venezuelan historian Guillermo Morón wrote, “He came to Caracas following in the footsteps of Alexander von Humboldt -as many other Germans had done before. He wrote in Spanish, French, English, German, even in Portuguese and Italian... His ground-breaking work was abundant and pointed the way for many others to follow. Venezuelan Jews have now the task to divulge his complete works” (cited in Padrón Toro 2013: 10). And finally, in the words of Rudolf Schlechter, he was



FIGURE 10. Adolfo Ernst. Archives of Rudolf Jenny.

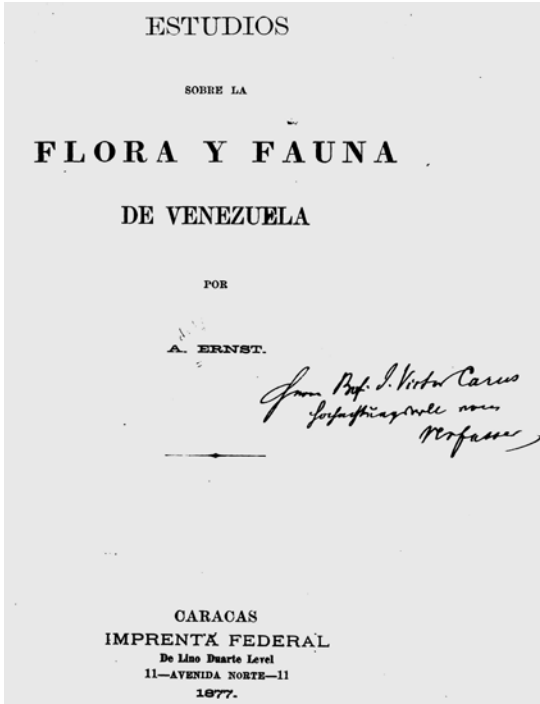


FIGURE 11. Title page of Ernst's work.

the man with “the best knowledge about Venezuela’s fauna and flora” (Schlechter 1919:10).

He travelled around the country and became an authority on Venezuelan wildlife. However, with few exceptions, he seldom made contact with the leading European botanists, nor did he send specimens to the leading institutions of his time. His collections, which must have been numerous, ended up in the herbarium of the University of Caracas, where insects devoured them. Ernst is essential because, in his works, we find the first attempts to prepare an orchid flora of Venezuela (Schlechter 1919:10). This modest flora, an *Alphabetic catalogue of the genera and species of orchids which have so far been collected in the territory of the Republic*, as Ernst called it, was published in 1877 as part of his ‘Estudios sobre la flora y fauna de Venezuela’ (Fig. 11). It enumerated 412 orchid species in 78 genera, *Epidendrum* (77 species), *Pleurothallis* (46 species), *Oncidium* (41 species), and *Maxillaria* (37 species) being the best represented (Ernst 1877: 249–273).

Goodyera neglecta Ernst, was named by Ernst from a collection at the Selva del Catuche, near



FIGURE 12. *Habenaria caracasana* Schltr. (= *Habenaria trifida* Kunth). Unknown photographer.

Caracas. However, the name is considered a *nomen nudum* since Ernst never published a formal new species description.

In September 1871, Ernst visited the islands of San Roque, and from 28 to 31 May 1873, he made a short excursion to the island of Margarita, which resulted in his *List of plants observed on Margarita Island* (1881). In this, he followed the order of families established by Grisebach in his *Flora of the British West Indian Islands*. The list included mostly plants in cultivation. Foldats mentions a collection by Ernst on Margarita of *Oncidium luridum* Lindl. Finally, in January 1874, he explored Tortuga Island, off the north coast of Venezuela. Ernst apparently also collected in the British Virgin Islands and the Bermudas at some point of his life (Ossenbach 2016: 362).

Joseph Dalton Hooker was among the few European scientists with whom Ernst corresponded; in a letter from Caracas dated 23 April 1869, Ernst wrote that he was anxious to hear from Hooker although he understood it was a busy time at Kew. He hoped that Hooker had received a box of orchids and a parcel of seeds as well as a letter that contained



FIGURE 13. *Gomphichis gracilis* Schltr. as *G. adnata* (Ridl.) Schltr. Photograph by K. Senghas.

a diploma for Hooker as an honorary member of Ernst's society [Young Naturalist Society in Caracas]. The last box Ernst dispatched to Kew contained *Pleurothallis*, *Maxillaria*, and a climbing *Oncidium* (most likely a *Cyrtochilum*).

In 1919, Rudolf Schlechter published the first volume of his famous series *Die Orchideenfloren der Südamerikanischen Kordillerenstaaten* (the orchid floras of the South American Andean States), which was dedicated to Venezuela (see Schlechter 1919). In this, Schlechter described 6 new orchid species, collected by Adolfo Ernst, some of them named in his honour. *Habenaria caracasana* (Fig. 12), *Gomphichis gracilis* (Fig. 13), *Pogonia nana*, *Epidendrum ernstii* (Fig. 14), *Habenaria ernstii*, and *Govenia ernstii* (Fig. 15) The building that contains the collections of Venezuela's National Museum was named in his honour "Centro Adolfo Ernst".

PAUL RUDOLF PREUSS (1861–1926; collected 1889–1900)

Paul Rudolf Preuss was born in the city of Thorn, in



FIGURE 14. *Epidendrum ernstii* Schltr. as *E. klotzscheanum* Rchb.f. Photograph by José David Lacruz.

Pommerellen, a region on the Baltic coast that during the preceding 1000 years had frequently changed hands between the Kingdom of Prussia and the Polish Republic, to which it now belongs. Preuss studied Natural Sciences at the universities of Königsberg and Berlin, where he received his Ph.D. in 1885 with a botanical dissertation.

In 1886, he travelled to Sierra Leone and the Gold Coast collecting insects and plants. In the following years (1888–1890), he was part of Dr. Zintgraff's expedition exploring the hinterland of Cameroon. He was admitted into the German Colonial Service in 1890 and engaged as director of the Barombi Station in Cameroon (Fig. 16A).

From 1892 until 1903, he was director of the experimental garden in the city of Victoria (today is known as Lembe), with an interlude from 1899 to 1900, during which he travelled under contract with the Colonial Economical Committee (Berlin) to Central and South America. While he continued in the service of the Colonial office, over the next 20 years, he collected animals and plants in New



FIGURE 15. *Govenia ernstii* Schltr. Photograph by Ivo Kindel.

Guinea, Sierra Leone, Togo, and Cameroon (Frahm & Eggers, 2001: 384).

A number of African orchids (all collected in Cameroon) were named in his honour by Kränzlin and Rolfe; among them are *Calyptrochilum preussii* Kränzlin, *Disa preussii* Kränzlin, *Disperis preussii* Rolfe, *Eulophia preussii* Kränzlin, *Peristylus preussii* Rolfe, *Platanthera preussii* Kränzlin, and *Polystachya preussii* Kränzlin.

During his journey to the American Tropics, his main interest focused on the cultivation of cocoa, coffee, and sugar cane, but while travelling from one plantation to another, he always found the time to increase his botanical collections. After visiting Suriname and Trinidad, he arrived in Venezuela, where he spent several months. Since Preuss was travelling on an official mission for the German Colonial Office, he found guidance and support from the representatives of the *Grosse Venezuela Eisenbahn-Gesellschaft* (Great Venezuelan Railroad). This German enterprise had built what was considered the most significant engineering accomplishment in the history of the country (Fig. 16B). Preuss used the railroad to travel across Venezuela. He then continued to Ecuador,

Panama, Nicaragua, Salvador, Guatemala, and Mexico, where he was especially interested in the production of *Vanilla*. Kränzlin described *Vanilla preussii* from a specimen collected by Preuss in Guatemala. He returned to Europe in 1900 after stopping briefly in Cuba and Jamaica (Karsten 1902: 223–225).

Paul Preuss published his journal of the expedition under the title *Expedition nach Zentral-und Südamerika 1899/1900* (Preuss 1901). While travelling from plantation to plantation, Preuss always stopped to admire the magnificent Venezuelan landscape and often commented on the vegetation he found in the different regions. “At 1,100 m we arrived at the rim of the forest and enjoyed one last glance over the cordillera, the valley of Aragua, and across Lake Valencia into the ‘llanos’. The forest enclosed us with its tropical vegetation, the gigantic tree-trunks and a surprising variety of epiphytic Aroids, Orchids, Bromeliadas and even an epiphytic palm, a species of *Carludovica*”; “*Vanilla pompona* grows wild in the forest, its fruits are used to perfume the linen”; “On the coast, near Puerto Cabello, one finds vanilla growing wild, probably *Vanilla planifolia*.” (Preuss 1901: 48–51).

Among the orchid specimens collected by Preuss in Venezuela, Kränzlin described *Dikylikostigma preussii* [= *Discyphus scopulariae* (Rchb.f.) Schltr.] (Fig. 17), *Habenaria galipanensis*, and *Habenaria turmerensis* as new species (Fig. 18). In 1919, Schlechter added an additional new species by Preuss, named *Epidendrum tricallosum* (Fig. 19).

KARL WILHELM JOHN (–; collected imported plants into Germany 1904–1905)

While at the turn of the century, British and other European collectors and nurseries stayed loyal to Kew, German botanists, collectors, and orchid growers saw Berlin as their main orchid research center, and when in need of species determinations, they initially turned to Kränzlin. However, in the first decade of the 20th century, Kränzlin was overshadowed by Rudolf Schlechter, who became Germany's leading orchidologist and maintained this position until he died in 1925.

By 1906 Schlechter had already described a plant of unknown origin as *Oncidium johnianum* in honour of Karl Wilhelm John (–), retired captain of the German Army and owner of a well-reputed orchid nursery in the small city of Andernach, on the



FIGURE 16. A. Barombi Station in Cameroon, 1888. Photograph by Karl Zeuner. B. One of the bridges of the Grosse Venezuela Eisenbahn-Gesellschaft, ca. 1904. Unknown photographer.



FIGURE 17. *Dikylikostigma preussii* Kraenzl. [= *Discyphus scopulariae* (Rchb.f.) Schltr]. Photograph by Magnus Manske.



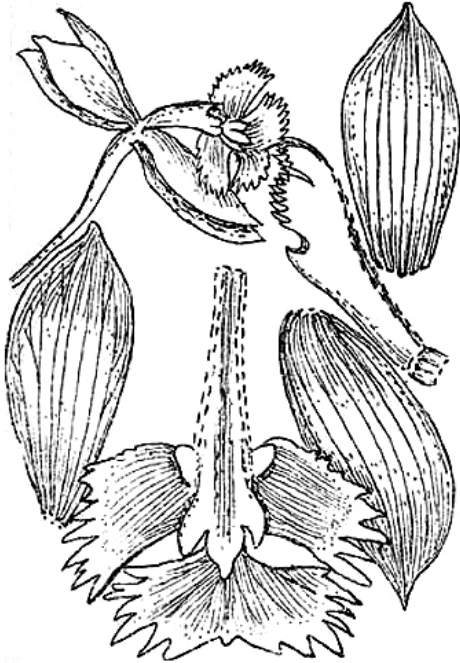
FIGURE 18. *Habenaria turmerensis* Kraenzl. as *Habenaria armata* Rchb.f. Photograph by K. Senghas.

Rhine River (Schlechter 1906: 4). In the same year, F. Ledien published an article about the singularities of *Coryanthes maculata* Hook., basing his observations on a plant supplied by John and probably of Venezuelan origin (Ledien 1906: 18). A founding member of the German Society for Orchidology, Karl W. John was elected to the board of directors of the Society during its inauguration ceremony on 10 May 1906. The first President was Max, Baron of Fürstenberg.

John published several small articles in the horticultural magazines *Orchis* (John 1906) and

Gartenflora, in which he also regularly announced the arrival of new orchid species at his nursery (Fig. 20).

“Several European nurseries, including Sander and Sons, Veitch, and other English firms, have imported large numbers of orchids, mainly of horticultural value, from Venezuela. Here in Germany, the author has received many specimens of Venezuelan orchids for determination from Mr. O[tto] Beyrodt of Manienfelde, near Berlin and K[arl] W[ilhelm] John of Andernach. The latter has also sent herbarium specimens among which were a few



Nr. 21. Epidendrum tricallosum

FIGURE 19. *Epidendrum tricallosum* Schltr. Illustration from Schlechter's *Figuren-Atlas* (Mansfeld, R. 1929. *Figuren-Atlas zu den Orchideenfloren der südamerikanischen Kordillerenstaaten*. t16.



FIGURE 21. *Brassavola multiflora* Schltr. as *Brassavola martiana* Lindl. Photograph by Maarten Sepp.



FIGURE 20. K.W. John's advertising in *Gartenflora*, 1913.

novelties, especially those from the small-flowering groups" (Schlechter 1919:11).

Before his publication on the orchid flora from Venezuela, Schlechter had already described two Brazilian orchid species imported by John: *Brassavola multiflora* (Fig. 21) and *Oncidium johnianum* (Fig. 22).

But Venezuela was undoubtedly the country from where John received his main supplies. In 1919,



FIGURE 22. *Oncidium johnianum* Schltr. as *Oncidium barbatum* Lindl. In Lindley's *Collectanea botanica...*, plate 27, 1821.



FIGURE 23. *Diacrium venezuelanum* Schltr. (= *Caularthron bilamellatum* (Rchb.f.) R.E. Schultes). Photograph by José Pestana.



FIGURE 24. *Encyclia leucantha* Schltr. Photograph by E. Hunt.



FIGURE 25. *Stelis amblyophylla* Schltr. (= *Stelis grandiflora* Lindl.). Photograph by O. Gaubert.

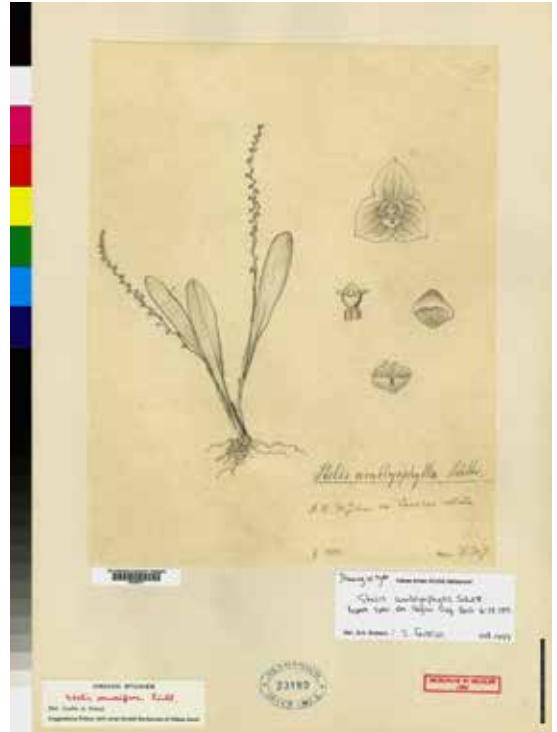


FIGURE 26. *Stelis amblyophylla* Schltr. Drawing of type at the Harvard University Herbaria, # 00090517.

Schlechter described 12 species imported by John from that country, all of which had been collected in the surroundings of Caracas. Besides *Microstylis johniana*, dedicated to him by Schlechter, John sent the following new species to Berlin for their determination: *Bletia stenophylla*, *Comparettia venezuelana*, *Diacrium venezuelanum* (Fig. 23), *Encyclia leucantha* (Fig. 24), *Stelis amblyophylla* (Fig. 25–26), *Epidendrum pachyanthum* (Fig. 27), *Epidendrum venezuelanum*, *Notylia venezuelana*, *Pleurothallis intermedia* (Fig. 28), *Pleurothallis nephrocardia* (Fig. 29), and *Epidendrum laetum* (Fig. 30). Schlechter also described *Laelia johniana* from Colombia and *Maxillaria fuerstenbergiana* from Peru. Kränzlin and Oppenheimer found two additional new species among John's collections: *Maxillaria johniana* from Peru and *Oncidium johnii* from Mexico.

HENRI FRANÇOIS PITTIER (1857–1950; collected 1906–1950)

Henry François Pittier (Fig. 31), a Swiss engineer with strong interests in natural sciences, followed the



FIGURE 27. *Encyclia pachyanthum* Schltr. (= *Prosthechea hartwegii* (Lindl.) W.E.Higgins). Drawing of type at the Harvard University Herbaria, # 00070653.



FIGURE 28. *Pleurothallis intermedia* Schltr. (= *Pleurothallis loranthophylla* Rchb.f.). Photograph by Daniel Jiménez.



FIGURE 29. *Pleurothallis nephrocardia* Schltr. Photograph by P.C. Brouwer.



FIGURE 30. *Epidendrum laetum* Schltr. (= *Epidendrum calanthum* Rchb.f. & Warsz.). Photograph by Eric van den Berghe

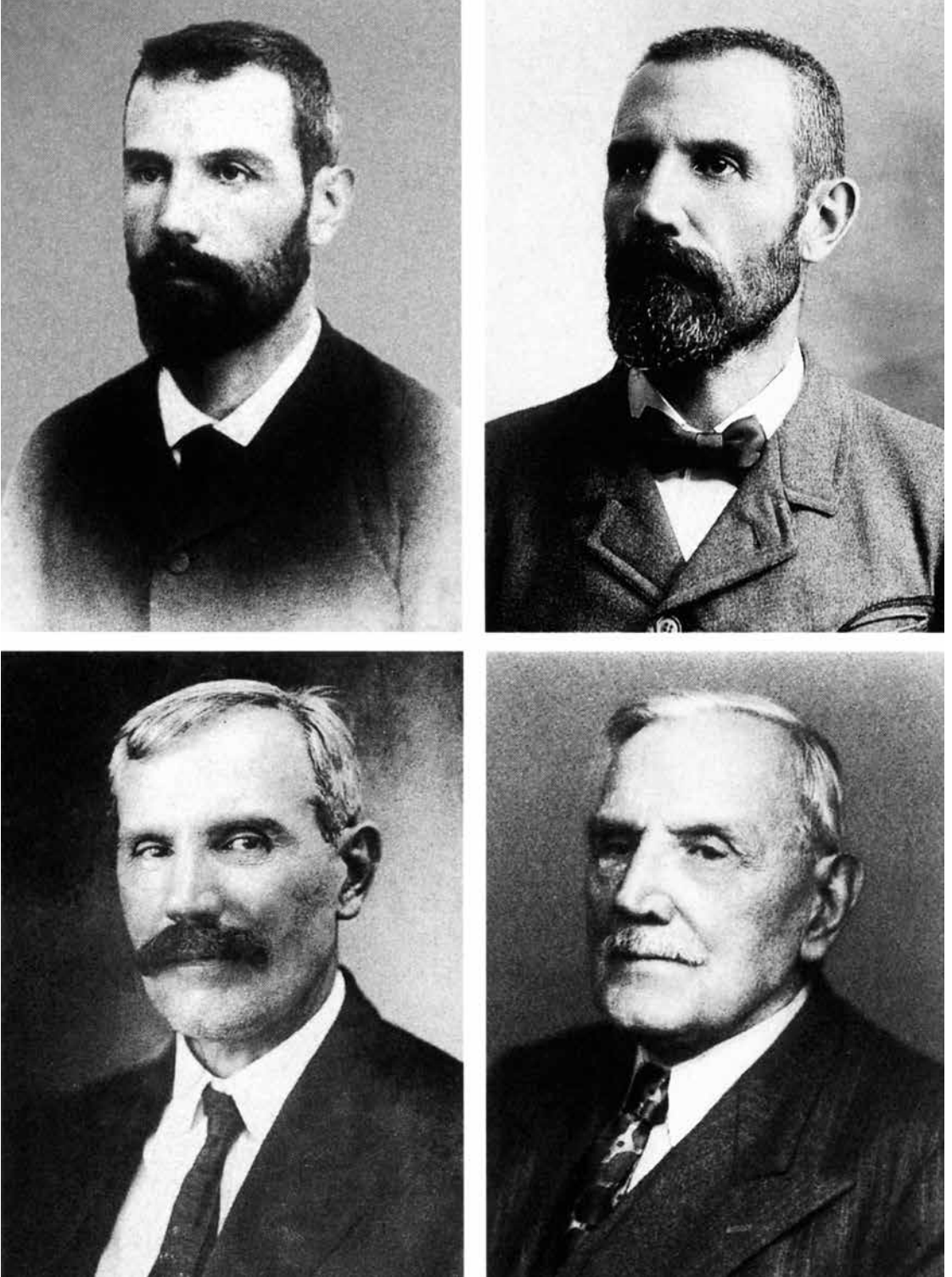


FIGURE 31. Henri Pittier. Photographed in 1880, 1903, 1914, and 1946. Courtesy of Luko Hilje.

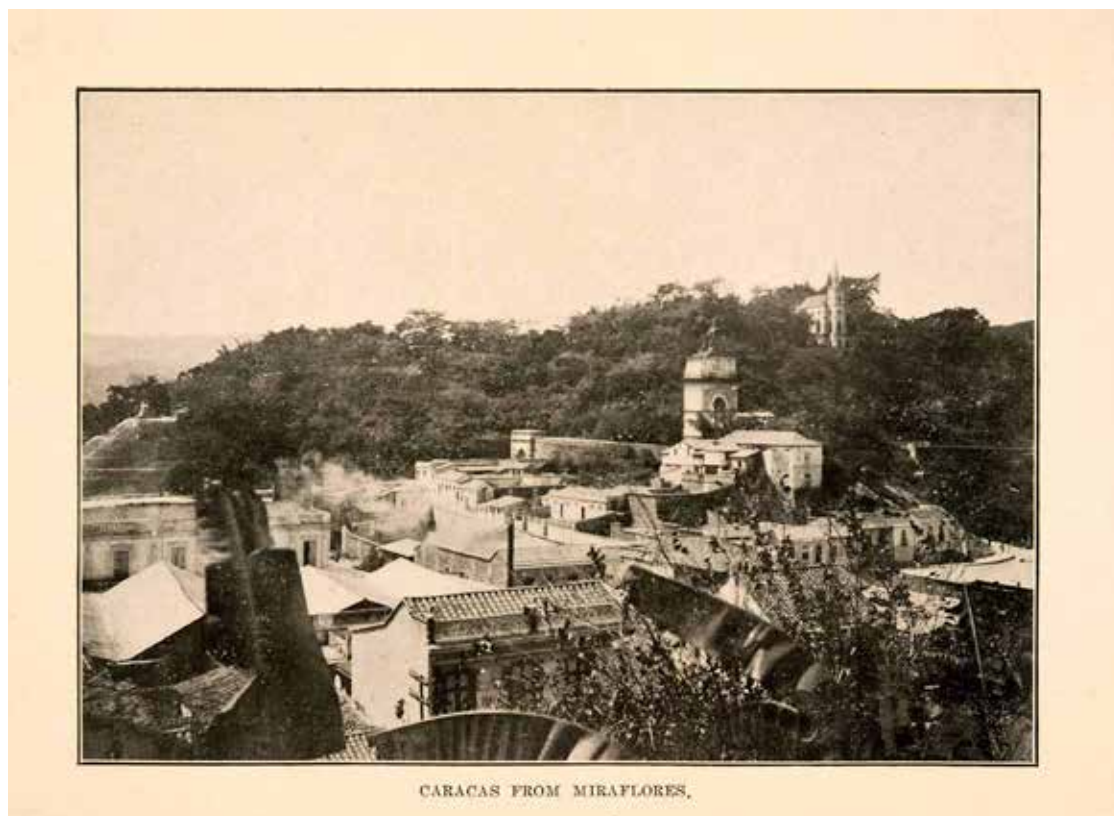


FIGURE 32. The city of Caracas in 1908, shortly before Pittier's arrival. Unknown photographer.



FIGURE 33. Henri Pittier National Park. Photograph by Santos R. Herra Faro.



FIGURE 34. Bust of Pittier at Henri Pittier National Park.
Unknown photographer

call of Costa Rican Secretary of Education Mauro Fernández and arrived in the small Central American country in October 1887. He would never return to Switzerland. Fernández wanted to staff a number of recently founded high schools and successfully recruit a number of Swiss professionals, among whom Pittier, Rudin, and Biolley were the most important.

Pittier was born in Bex, Canton Waadt, on 13 August 1857. He graduated as a civil engineer from the University of Lausanne and started a mapping survey of the alpine flora of Switzerland. After breaking his leg in an accident and while immobilized, he began to read intensively about natural sciences. Thus, he came into contact with the work of Eduard Haeckel, the famous German naturalist, and was so fascinated by his ideas that he decided to go to Germany, where he started doctoral studies at the University of Jena.

From 1887 to 1903, Pittier organized and directed the 'Instituto Físico-Geográfico de Costa Rica', one of whose objectives were to map the republic. In need of an assistant, Pittier convinced the Costa Rican government to give the position to Swiss botanist

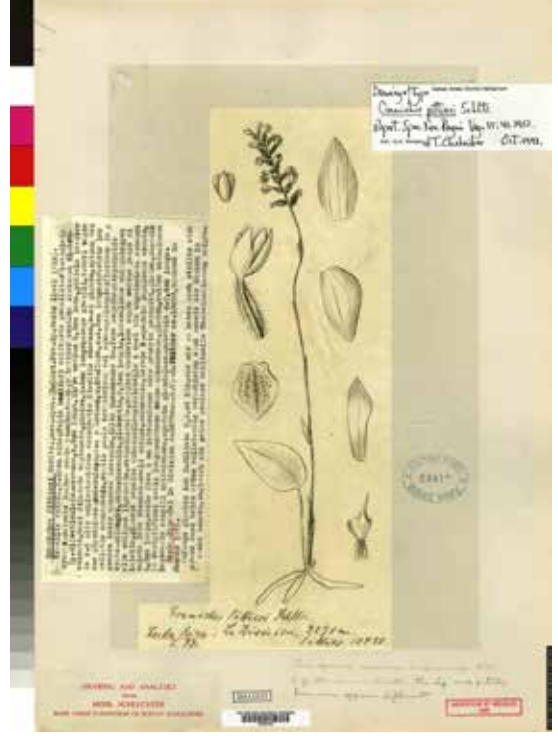


FIGURE 35. *Cranichis pittieri* Schltr. Drawing of type at the Oakes Ames Orchid Herbarium, #24415

Adolphe Tonduz. Together, they became involved in the organization of the National Herbarium in San Jose. Pittier and Tonduz made botanical collections from 1887 to 1904: One of the results of these collections was the *Primitiae Florae Costaricensis*, published between 1891 and 1901 in three volumes containing 12 fascicles and written in collaboration with Theophil Alexis Durand from the Botanical Garden in Brussels.

Pittier went to Washington D.C. in 1904 to work for the United States Department of Agriculture at the Bureau of plant industry. His grand title was 'Special agent in the botanical investigation in tropical agriculture'; this was shortened in 1912 to 'Botanist'. Between 1905 and 1919, he worked in Washington and also travelled extensively in Central and South America, where he collected in Panama, Mexico, Guatemala, El Salvador, Colombia, Ecuador, and Venezuela. In 1906, he made botanical collections in the region of Santa Marta, Colombia. *Epidendrum sanctae-martae* was described by Schlechter from a collection by Pittier on the slopes of Santa Marta's Sierra Nevada dated June 1906. From 1910 to 1912, Pittier took part in the

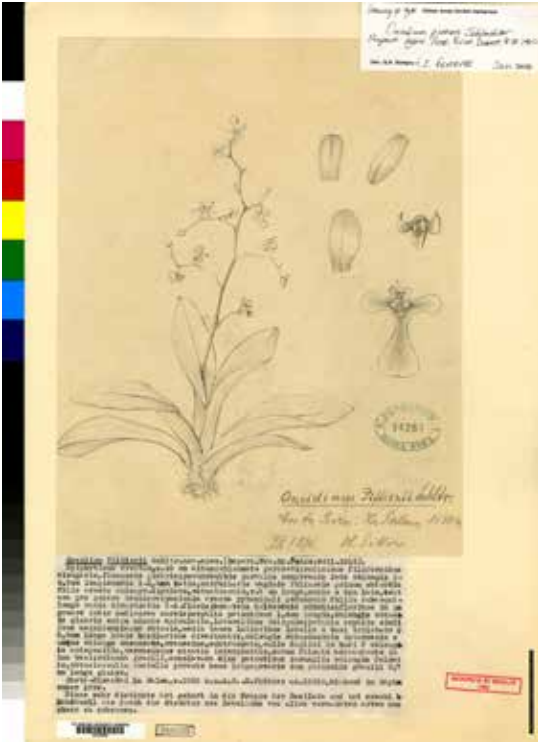


FIGURE 36. *Oncidium pittieri* Schltr. Drawing of type at the Oakes Ames Orchid Herbarium, #24261.



FIGURE 37. *Ornithidium pittieri* Ames (= *Maxillaria pittieri* (Ames) L.O. Williams). Photograph by Daniel Jiménez.

'Biological Exploration of Panama' by the Smithsonian Institution, collecting over 4000 specimens. His collections were of utmost importance for the flora of Panama, where he would become a key actor after the decision of Panama's president Belisario Porras to establish the Experimental Agricultural Station Matías Hernández in 1916, the first research center in Panama. Pittier was its first director.

While in Washington, Pittier travelled to Venezuela, then under the government of Juan Vicente Gómez, for the first time in 1913 as a consultant for establishing a school of agriculture (Fig. 32). However, his opinions were disregarded, and he decided to return to Washington. During his short stay, Pittier found time to make an essential collection of plants in the state of Miranda, among which Schlechter described a number of new species (Schlechter 1919). In 1917, he returned to Venezuela in another failed venture to establish an Experimental Agricultural Station.

In 1919, at the age of 62, Pittier travelled once more to Venezuela, this time as director of the Commercial Museum in Caracas. He established himself in the country and, notwithstanding his age, travelled extensively throughout Venezuela, publishing his well-known *Manual de las Plantas usuales de Venezuela* in 1926, followed in 1939 by its first supplement. He also founded the National Herbarium in Caracas and published some 300 books and articles in different journals. Henri Pittier never left Venezuela again and died at the age of 93 on 27 January 1950.

There are still discussions about the final number of plants collected by Pittier, but without doubt, he made a most important contribution, especially to the knowledge of the floras of Panama, Costa Rica, and Venezuela (biographical information mainly after Jenny 2017).

The history of Venezuela's National Parks began in 1937, when Pittier advocated the creation of the Rancho Grande National Park, situated to the north of Maracay, in the state of Aragua. After Pittier's death, the park was renamed Parque Nacional Henri Pittier in 1953 (Fig. 33–34).

A large number of orchids were dedicated to Pittier by Schlechter and Oakes Ames. We find from his Costa Rican collections: *Cranichis pittieri* Schltr. (Fig. 35), *Vanilla pittieri* Schltr., *Nolyia pittieri* Schltr., *Oncidium pittieri* Schltr. (Fig. 36),



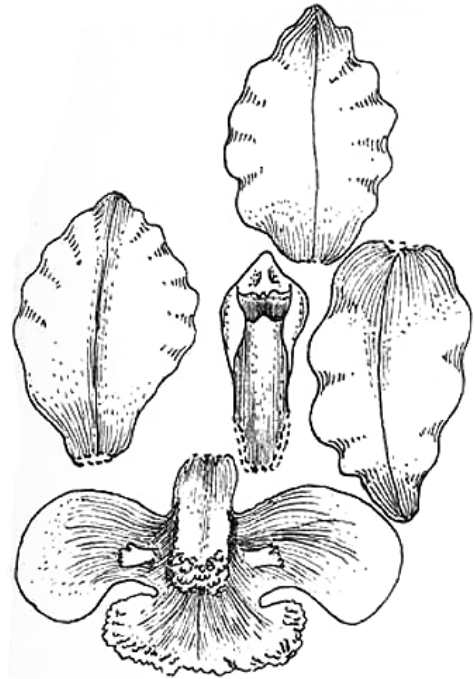
FIGURE 38. *Epidendrum pittieri* Ames. Illustration from Mutis' Flora de la Real Expedición del Nuevo Reino de Granada, vol. IX (Orchidaceae III), plate 33.

Ornithidium pittieri Ames (Fig. 37), *Pleurothallis pittieri* Schltr., and *Scaphosepalum pittieri* Schltr. In Panama, Pittier collected *Lockhartia pittieri* Schltr. and *Microstylis pittieri* Schltr.,

Pittier collected *Epidendrum pittieri* Ames (Fig. 38) in Colombia. And finally, the following Venezuelan species were dedicated to him: *Bletia pittieri* Schltr. ex Knuth, *Habenaria pittieri* Schltr. ex Knuth (*nom. nud.*), *Physurus pittieri* Schltr., and *Stelis pittieri* Schltr. (*nom. nud.*).

Additional new species from Venezuela were described by Schlechter in 1919, including *Elleanthus galipanensis*, *Hapalorchis cheirostyloides*, *Scaphosepalum trachypus*, *Cyrtopodium naiguatae* (Fig. 39–40), *Notylia venezuelana*, *Stelis covilleana*, and *S. calceolus*.

Among Pittier's collections in Colombia are: *Elleanthus scopulae*, *Epidendrum sanctae-martae*, *Gomphichis caucana* (Fig. 41–43) (all determined by Schlechter); as well as *Epidendrum suaveolens*, *E.*



Nr. 27 *Cyrtopodium Naiguatae*

FIGURE 39. *Cyrtopodium naiguatae* Schltr. Illustration from Schlechter's *Figuren-Atlas* (Mansfeld, R. 1929. *Figuren-Atlas zu den Orchideenfloren der südamerikanischen Kordillerenstaaten*. t8.

sulcatum, *Lepanthes mirabilis*, *Gomphichis foliosa*, *Stelis insignis*, *S. colombiana*, *S. pleurothalloides*, and *S. vagans* (determined by Ames).

According to Standley (1937–1938:49), “Henri Pittier has undoubtedly gained a more intimate knowledge of the natural history and especially the botany of Central America and northwestern South America than has ever been possessed by any single person.”

PAUL RUDOLF WOLTER (1862–1942) AND **SALOMON BRICEÑO GABALDÓN** (1826–1912; collected ca. 1912–1919)

Paul Rudolf Wolter (Fig. 44) was –together with other important German orchid growers such as Otto Beyrodt and Wilhelm Hennis– among the founding members of the *Deutsche Gesellschaft für Orchideenkunde* in 1906. Ernst Hugo Heinrich Pfitzer, the leading German orchidologist of his time, also took part in the inaugural meeting in May of that year.

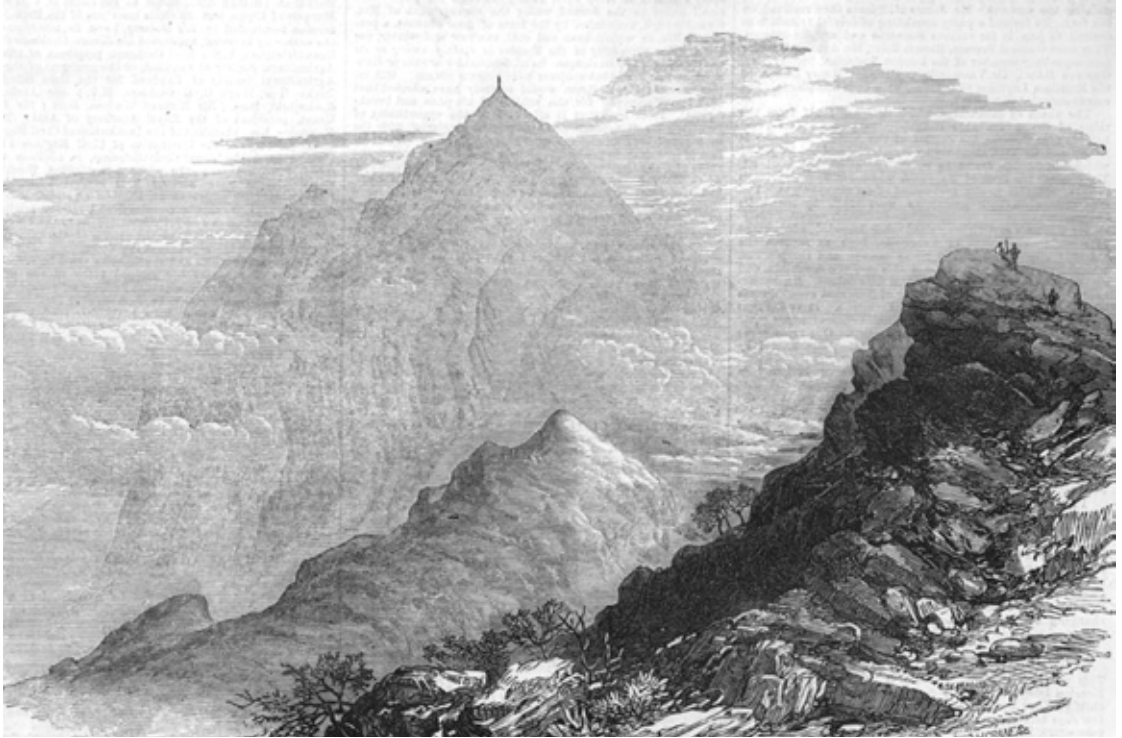


FIGURE 40. Naiguata Peak (2765 m.) in Venezuela's Coastal Mountain Range. Antique print of 1872.



FIGURE 41. *Gomphichis caucana* Schltr. Drawing of type made under Schlechter's supervision at the Oakes Ames Orchid Herbarium, #24628



FIGURE 42. *Gomphichis caucana* Schltr. Unknown photographer.



FIGURE 43. Valley of the River Cauca. Photograph by C.V.C.



FIGURE 44. Paul Rudolf Wolter (1862–1942). In *Orchis* 45/1941.

However, he passed away unexpectedly in December of the same year, leaving a vacuum soon occupied by Rudolf Schlechter.

Paul Wolter's firm, which he founded in 1885 in Wilhelmstadt, near Magdeburg, was one of the oldest German orchid nurseries. The firm published its first sales catalogues in 1894. An anonymous note remarked: "Paul Wolter has founded a specialized orchid nursery at Kleine Strasse N° 1 (20 minutes from the main station) and has published its first catalogue. Each plant has a special symbol indicating whether it must grow in a cold-, medium- or hot-house. We wish this enterprise the best of successes." (Anonymous 1894: 388).

Wolter served as an apprentice in horticulture at several of the most prestigious German nurseries. When he established his firm, he focused on high-quality plants. He began with the import of plants from all parts of the world, but before the turn of the century, he started growing his first orchids from seed and moved more and more towards orchid breeding. By 1904, Wolter already had 10,000 orchids in cultivation, among them about 70 hybrids, the first German stock. The first primary hybrids from *Cattleya* came from Magdeburg; some of the most popular among them were *Cattleya* Wolteriana = *C. aurantiaca* × *C. schroederiae*, and *Stanhopea* Wolteriana = *S. tigrina* × *S. martiana* (Henze-Brzesowski 1997: 124–125, Jenny



FIGURE 45. *Acineta wolteriana* Schltr. Photograph by Finca Dracula.



FIGURE 46. *Maxillaria abelei* Schltr. as *Maxillaria rufescens* Lindl. Photograph by Danny Lentz.



FIGURE 47. *Mormodes wolteriana* Kraenzl. Photograph by E. Hunt.

2017: 281). Wolter became Germany's most important specialist in the difficult task of orchid hybridization (Anonymous 1906: 197). Besides hybridization, his main business interest was not the production of cut flowers but the acclimatization of imported plants for sale to wealthy collectors.

Paul Rudolf Wolter sold his nursery in 1941 for health reasons; he passed away the following year on 28 April. Botanists Friedrich Kränzlin and Rudolf Schlechter were frequent visitors to Wolter's nursery.

Many hybrids and species were dedicated to him. Besides the already mentioned hybrids (*C. × wolteriana* and *S. × wolteriana*), a few South American orchids were named in his honour by Schlechter: *Acineta wolteriana* (Fig. 45) from Colombia and *Batemaniana wolteriana* from Peru. Another Peruvian species imported by Wolter was *Maxillaria abelei* Schltr. (Fig. 46). Finally, Kränzlin described *Mormodes wolteriana* (Fig. 47), also from Peru.

Schlechter, in the introduction to his orchid flora of Venezuela, mentions a small orchid collection from the state of Mérida, of which no further information is available: "We received from Mr. P. Wolter, while this work was in print, a small orchid collection gathered by merchant Salomon Briceño in the vicinity of the city of Merida. The collection consists mainly of valuable horticultural plants, only usable for the cut-flower cultivation." (Schlechter 1919:11).

Salomón Briceño Gabaldón (Fig. 48), based in Mérida, was engaged in the commercial collecting of natural history specimens from the early 1870s. He was one of the leading suppliers of bird skins to the well-known British zoologist Walter Rothschild (Dorr *et al.* 2017: 20).

Colombia. Spain claimed the territory of Colombia during a journey by Rodrigo de Bastida, who from

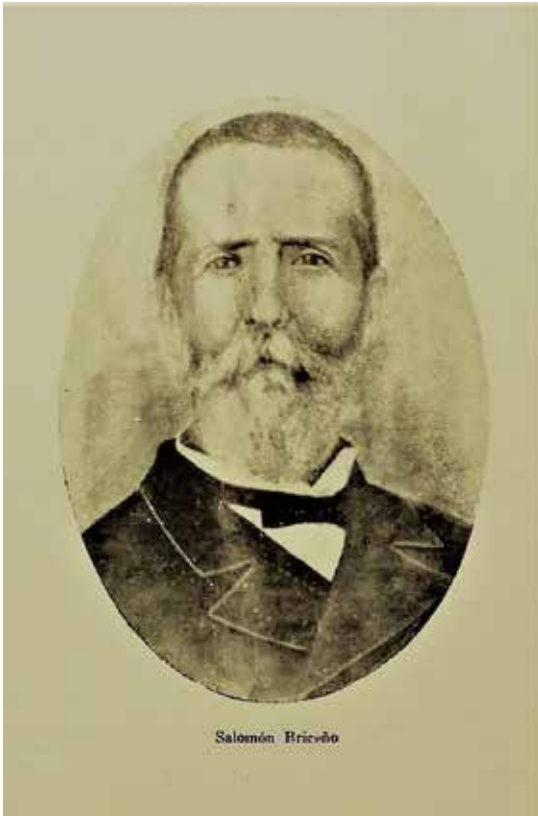


FIGURE 48. Salomón Briceño Gabaldón. Archives of Rudolf Jenny.

1501 to 1502 sailed from the region of Guajira (along the border of present-day Venezuela and Colombia) to the Gulf of Urabá, on the isthmus of Darien. During this voyage, de Bastida discovered the mouth of the Magdalena River. Colombia's geography is usually classified into five natural regions.

The Andes mountain range stretches from the border with Ecuador to the Sierra Nevada de Santa Marta, near the border with Venezuela. It includes Pico Cristóbal Colón (5730 m) (Fig. 49), Colombia's highest peak. Nearly three-fourths of Colombia's population lives in the highlands of the Andes.

To the east are the **Caribbean Lowlands**, where the Andes split into three distinct, roughly parallel chains or "cordilleras", extending northeastward almost to the Caribbean Sea. The valley of the slow-flowing Magdalena River, a major transportation artery, separates the Cordillera Central from the main eastern range, the Cordillera Oriental (Fig. 50). The

Magdalena is navigable deep into the interior of the country, as far as the city of Neiva. The course is, however, interrupted midway by rapids.

The **Pacific coastal region** is shared with Panama and Ecuador. It is separated from the Caribbean Lowlands by the lowlands of the Isthmus of Darién.

To the East are **the great plains**, or "llanos"; these are often flooded in the region of Orinoquia, and they continue into Venezuela (Fig. 51). They are bounded to the east and south with the **Amazon region**. The rivers of this region drain partly into the Orinoco basin and partially into the Amazon.

Colombia has perhaps the richest and most exciting orchid history of the Spanish-speaking South American countries. During the 18th century, its botanical exploration centred on the search for plants with medicinal or commercial uses. Later, in the 1840s to 1850s, at the peak of the wave of 'Orchidomania', Colombia became one of the hotspots for orchid collectors, especially for those searching for the spectacular species of *Cattleya* and *Odontoglossum*. During the last decades of the 19th century, orchid history in the country slowly turned its back on commercial collecting and focused again on scientific botanical research.

Nikolaus Joseph Freiherr von Jacquin (1717–1827) was the first European Botanist to collect on Colombian soil. Jacquin was sent to the Caribbean in 1754 by Emperor Francis I of Austria. He spent a short time in the vicinity of Cartagena, where he made botanical collections that included several orchids, which he described after his return to Europe in his famous *Selectarum Stirpium Americanarum Historia*. We remember him in the orchid genus *Jacquiniella*, established by Schlechter in his honour in 1920.

José Celestino Mutis (1732–1808) was born in the Spanish city of Cadiz. He studied botany and medicine at the University of Seville and went to Bogotá in 1760 as a personal physician of the Viceroy of New Granada. He soon began a systematic exploration of the native flora with the idea of publishing an extensive Flora of New Granada, which he never realized although he was able -with the help of native artists- to produce many beautiful illustrations, including those of dozens of orchids. It was said of Mutis that he never wrote a *Flora of New Granada*... he painted it. The genus *Mutisia* of the Asteraceae was dedicated to him by



FIGURE 49. Sierra Nevada de Santa Marta as seen from the Palomino River. Photograph by Matias Recondo.



FIGURE 50. Steamboat anchored to the shore of the Magdalena River, 1933. Photograph by Robert S. Platt.



FIGURE 51. Flood-lands in Orinoquia. Unknown photographer.

Linnaeus the Younger and beautifully illustrated for Mutis' flora (Fig. 52).

In 1801, Mutis received two prestigious visitors at his home in Bogotá: Alexander von Humboldt (1769–1859) and Aimé Bonpland (1773–1858). They had navigated the Magdalena River upstream to the city of Honda before continuing by land to Bogotá. After making rich botanical collections in the surroundings of the city, Humboldt and Bonpland crossed the Quindiu Pass in September and rode into Ecuador (Fig. 53). August Weberbauer, a famous plant collector in Peru, called them “the second discoverers of America”.

French botanist Justin Goudot (–1848) arrived in Colombia in 1822 and explored the country over the following 20 years. He travelled in all directions: on the Magdalena River, which he followed up to Honda; to Bogotá and across the Andes; in the district of Santa Marta on the Caribbean Sea; and finally, for a short period, also in the vicinity of Caracas, in Venezuela. His botanical collections were deposited at the National History Museum in Paris.

After their travels mentioned above in Venezuela, Jean Jules Linden and Louis Joseph Schlim crossed into Colombia, making rich collections of orchids. They travelled throughout the country, from the mountain peaks of the Andes to the shores of the Caribbean Sea,

returning in 1843 to Caracas. They crossed back into Colombia to explore the Sierra Nevada of Santa Marta and finally embarked in Río Hacha to return to Europe, making brief stops in Jamaica and Cuba. Nicolas Funck (1816–1896), who had travelled previously with Linden to Mexico and Brasil, arrived in Venezuela in the company of Schlim in the year of 1845 and explored both Venezuela and Colombia. Funck returned to Europe in 1846, but Schlim continued collecting and returned to Belgium in 1852.

Karl Theodor Hartweg (1812–1871) visited Colombia from 1842 to 1843. He had been in Ecuador before he crossed the Andes towards Bogotá. He sailed down the Magdalena River to the Caribbean coast from Honda, where he met with Jean Jules Linden.

On a Kew Botanical Gardens mission, William Purdie (1817–1857) came from Jamaica to Santa Marta, where he climbed the Sierra Nevada along the same route taken by Funck the year before.

An important figure in the history of Colombia's natural sciences was José Jerónimo Triana (1828–1890), who began his botanical journeys across Colombia in 1851 as a member of the ‘Comission chrographique de la Nouvelle Grenade’. Triana travelled in the company of one of the most important botanists and orchid collectors of his time, Józef Ritter

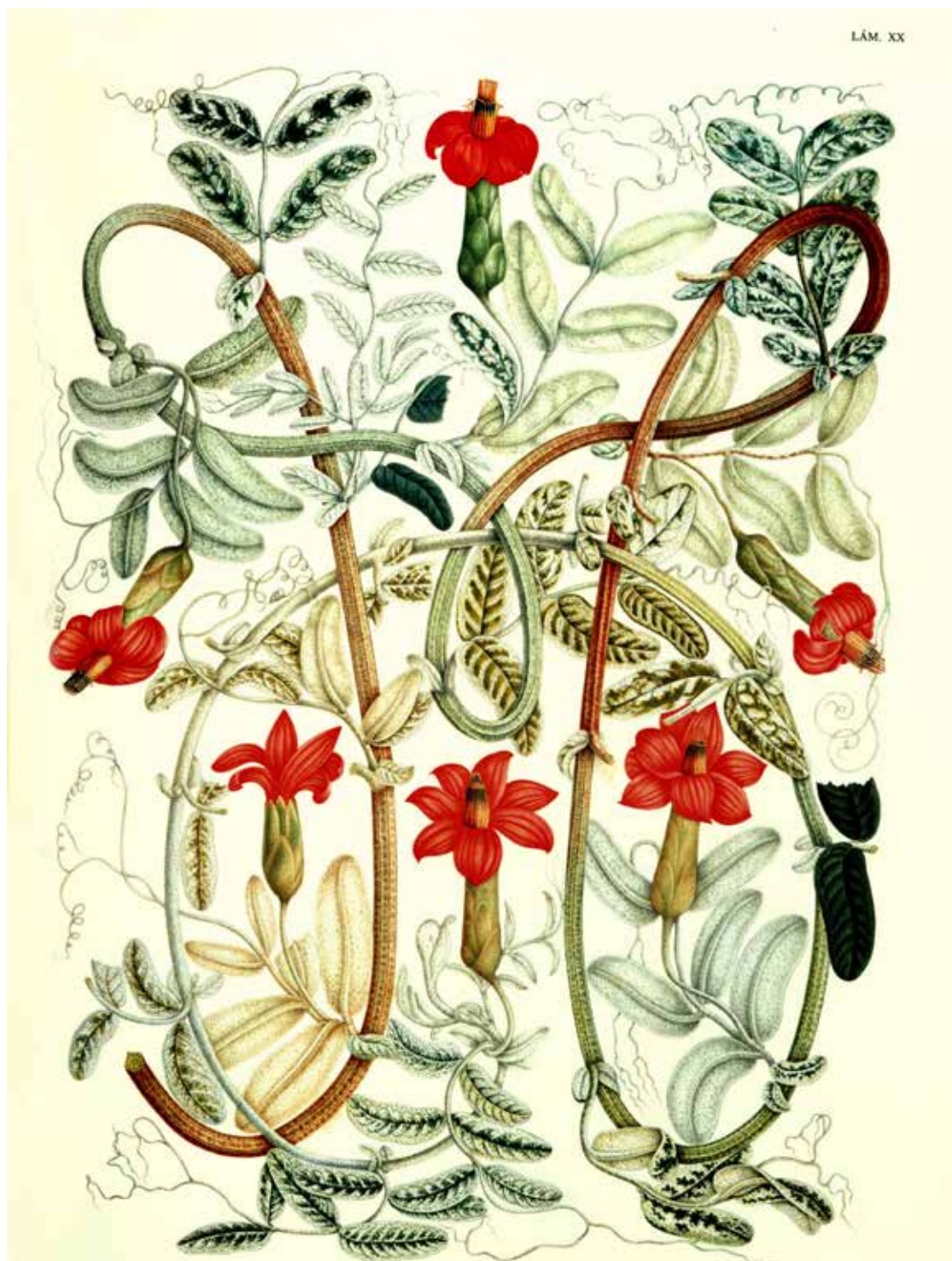
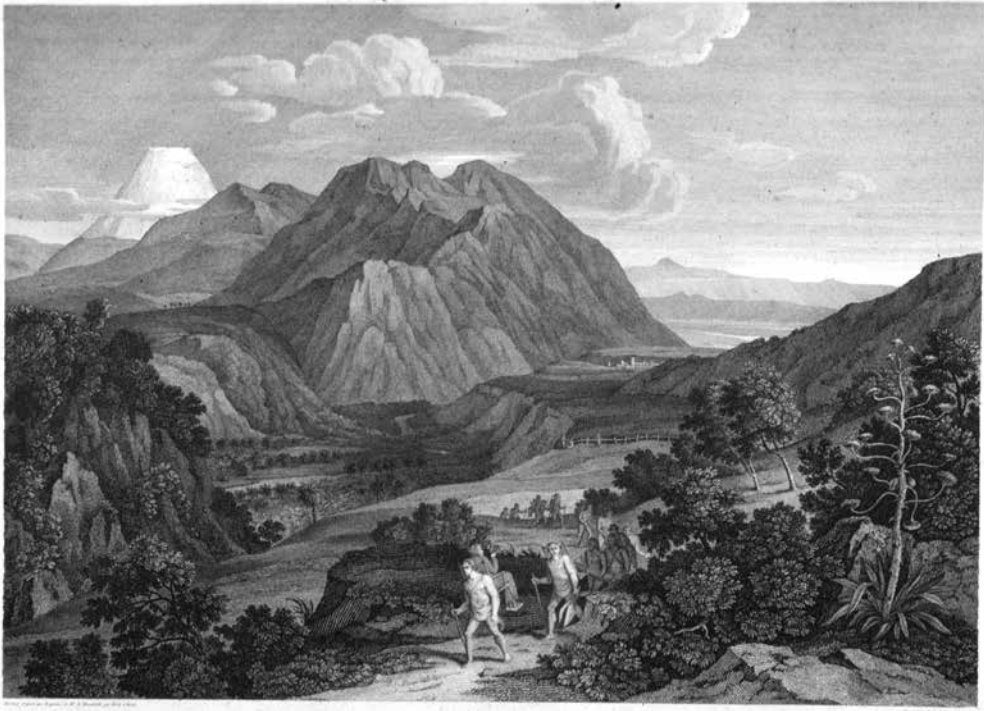


FIGURE 52. *Mutisia clematis* L. fil. Tempera on paper by Salvador Rizo. Iconografía mutisiana, div III, 1154. Archives of the Royal Botanical Garden, Madrid. Mutis' initials (C. M.) are skillfully interwoven with the plant details.



Passage du Quindiu, dans la Cordillère des Andes.

FIGURE 53. Pass of Quindiu. Engraving by Christian Friedrich Traugott Duttenhofer after a sketch by Humboldt, 1810.

von Warscewicz (1812–1866). In 1851, he explored the Pacific coast, accompanying Warscewicz to the port of Buenaventura, where the latter embarked for Guayaquil in Ecuador. The Polish collector would return to Colombia in 1853 on his way back to Europe. *Cattleya trianae*, one of the most beautiful of its genus and the national flower of Colombia, known as ‘Flor de Mayo’ (flower of May), was named by Linden and Reichenbach *f.* in Triana’s honour. Triana travelled to the Quindiu mountains in 1854 in the company of Dr. Gustav Karl Wilhelm Hermann Karsten.

Hermann Karsten (1817–1908), in Schlechter’s words, one of the “keenest observers among the collectors and botanists of the South American Andes states” (Schlechter 1919: 11), worked in Colombia between 1852 and 1866. He arrived in Santa Marta in 1852, after having spent 8 years in Venezuela (see above). He spent almost a year exploring the Sierra Nevada and then proceeded to Bogotá, where he worked as a physician during 1853. After crossing the Andes, he went as far as Riobamba, in Ecuador and

returned north to embark in Cartagena on his way to Europe. Between 1862 and 1869, he published a two-volume flora of Colombia, under the title *Flora Columbiae: terrarumque adiacentium specimina selecta in peregrinatione duodecim annorum observata /delineavit et descripsit H. Karsten* (Flora of Colombia and its neighboring states with selected specimens observed during twelve years of travel, illustrated and described by H. Karsten) (Figs. 54–55).

A countryman of Karsten, Hermann Wagener, already mentioned above, had his headquarter in Venezuela but visited Colombia twice (1852, 1855) under contract to Jean Jules Linden. Although he spent a relatively short time in Colombia, he collected a large number of orchid species, most of which were described by Reichenbach.

Gustav Wallis (1830–1878), again a German collector, who brought over 1,000 plant species to Europe, travelled through Colombia in 1866 and again in 1872. From the Amazon to the Andes and Sierra Nevada to the Magdalena River and Bogotá,

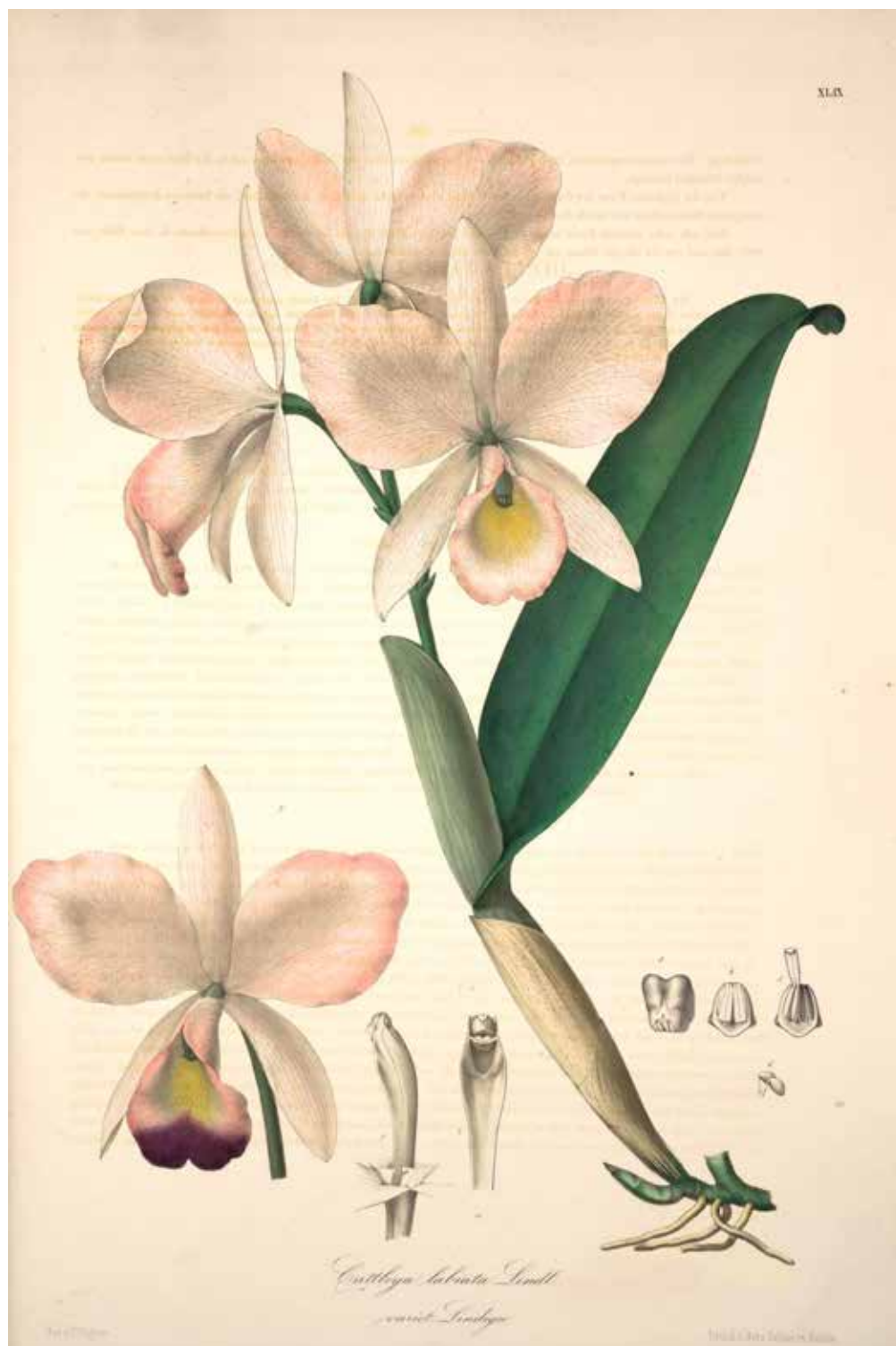


FIGURE 54. *Cattleya labiata* Lindl. In Karsten's *Flora Columbiæ*, vol. 1: plate 99.



FIGURE 55. *Masdevallia coriacea* Lindl. & *Masdevallia caudata* Lindl. In Karsten's Flora Columbiae, vol. 2: plate 42.



FIGURE 56. *Cypripedium roezlii* Regel. Curtis's Botanical Magazine, 1876, vol. 102 (Ser. 3 no. 32): pl. 6217.



FIGURE 57. Friedrich Lehmann, plant collector and German Honorary Consul In Popayan, Colombia. *Gardeners' Chronicle*, ser. 3, Vol. 35, 1904: 106.

he explored the country, making important orchid collections. In 1878 he continued to Panama and Ecuador, dying in Cuenca in 1878. We remember him in *Masdevallia wallisii* and *Neomoorea wallisi*.

Benedikt Roezl (1824–1885), probably the most famous collector of orchids of his time, was a Czech traveller, gardener, and botanist. Roezl travelled through the United States and Mexico (where he collected over 2000 orchids in the vicinity of Acapulco) and then to Caracas, from where he proudly wrote that he had shipped three tons of *Cattleya* plants to Europe. In 1869, Roezl went for the first time to Colombia, where he collected in the Sierra Nevada of Santa Marta. Three years later, he returned to Panama and the Colombian port of Buenaventura. Finally, he visited Peru, Bolivia, and Ecuador. He discovered the Colombian species *Cypripedium roezlii* (Fig. 56) and *Cattleya chochoensis*, among many others. Roezl died in Prague at the age of 61.

FRIEDRICH CARL LEHMANN (1850–1903; collected 1867–1903)

No one could introduce Friedrich Carl Lehmann

(Fig. 57) better than Philipp Cribb: “Friedrich Carl Lehmann collected orchids and other plants in Colombia and Ecuador over almost three decades from 1876 (Rolfe 1904). He was by profession a commercial plant collector. He was also eventually a landowner, a mine-owner, and German Consul in Colombia. His extensive preserved collections of herbarium specimens and illustrations of the plants he collected form one of the most significant archives of the northern Andes plants. His plant-hunting's main target was orchids, and the most important collection of his preserved plants is now held in the Herbarium at the Royal Botanic Gardens, Kew. Here they are all part of the *Herbarium Lehmannianum Colombianum* (Figs. 58–59). His specimens are also to be found in a dozen other significant herbaria in Europe and North America. He collected many living plants, especially orchids, originally for Stuart Low of the nursery firm of Messrs. Hugh Low & Co. of Upper Clapton, London, and for Frederick Sander of Messrs. Sander & Sons of St Albans”.

Lehmann also painted many of the plants he collected; his iconography is now in the Archives of



FIGURE 58. *Pleurothallis urosepala* F.Lehm. & Kraenzl. Herbarium specimen by Lehmann, Kew Herbarium # 742778.

the Royal Botanic Gardens, Kew, where almost 1000 paintings are deposited. Small numbers of his paintings are also found at the Natural History Museums in London and Vienna.” (Cribb 2010: 9). Several of Lehmann’s herbarium specimens are accompanied by pencil or water-color illustrations of the flowers or flower details (Fig. 60–62).

Born in Platkow, Germany, Lehmann received elementary schooling and did an apprenticeship in gardening before travelling in South America, where we first hear of him in 1876, when he was collecting orchids in Ecuador for the London nursery of Hugh Low & Co.

In the same year, he also sent a collection of orchids to Reichenbach, who described among these a number of new species in his *Orchideae F. C. Lehmannianae Ecuadorenses* (Reichenbach 1878b). Several of these were named in Lehmann’s honour, such as *Aeranthes lehmannii*, *Masdevallia lehmannii* (Fig. 63), and *Odontoglossum lehmannii*.

Around 1889, we find Lehmann in Colombia. He married a Colombian lady in the city of Popayán and soon moved there, establishing the headquarters for all



FIGURE 59. *Caucaea phalaenopsis* (Lindl. & Rchb.f.) N.H.Williams and M.W.Chase. Herbarium specimen by Lehmann, Kew Herbarium # 245759.

his future plant collecting expeditions. Shortly after that, he was named German Consul in the city.

Popayán (Fig. 64), in the valley of the Cauca River, the surrounding mountains, and the slopes of the Cordilleras well into adjacent Ecuador offered an astonishing variety of flora and fauna. Lehmann could not have found better ground for his orchid collections. “Paradise for an orchid collector is a trail that runs through the rich orchid habitat. Preferably the trail should decrease in elevation from 3000 to 500 m over a protracted distance, it should be in a high annual rainfall area with the rain distributed evenly throughout the year, it also should be in a region of extremely high biodiversity and very pronounced local endemism. The adjoining forests, cliffs, and embankments would be festooned with the natural epiphytes and terrestrials of the zone.” (C. Dodson in the foreword to Cribb 2010).

Lehmann’s travel journals contained descriptions of the orchids he collected and often pencil drawings of plant and flower details of those which aroused his particular interest (Fig. 65–66). To accompany his plant sales, he also sketched brilliantly, even decorating his



FIGURE 60. *Cochlioda vulcanica* (Rchb.f.) Benth. & Hook. ex B.D. Jacks. Herbarium specimen and color sketch by Lehmann. Kew Herbarium #254448.



FIGURE 61. *Lycaste trifoliata* Lehm. ex Mast. Herbarium specimen and color sketch by Lehmann. Kew Herbarium #251476.



FIGURE 62. *Coryanthes elegantium* Rchb.f. Color sketch by Lehmann. Kew Herbarium #75414.



FIGURE 63. *Masdevallia lehmannii* Rchb.f. Photograph by E. Hunt.

letters with watercolors of orchids (Bynum & Bynum 2017: 55) (Fig. 67–69).

With no prior experience in orchid collecting, Lehmann had to face, as an additional handicap, the

presence in the field of rivals such as Roezl and his nephews Eduard and Franz Klaboch and Gustav Wallis, among others. The competition was fierce, and Lehmann often resorted to following other collectors

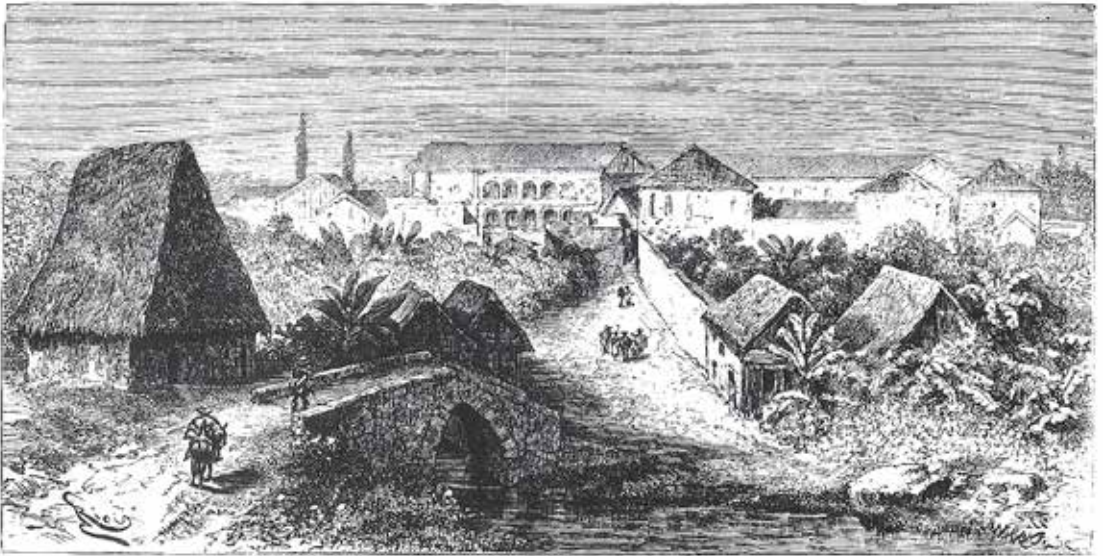


FIGURE 64. Houses at the entrance into Popayán, ca. 1876, after a sketch by Edouard André in his *L'Amérique Équinoxiale*, p. 289.

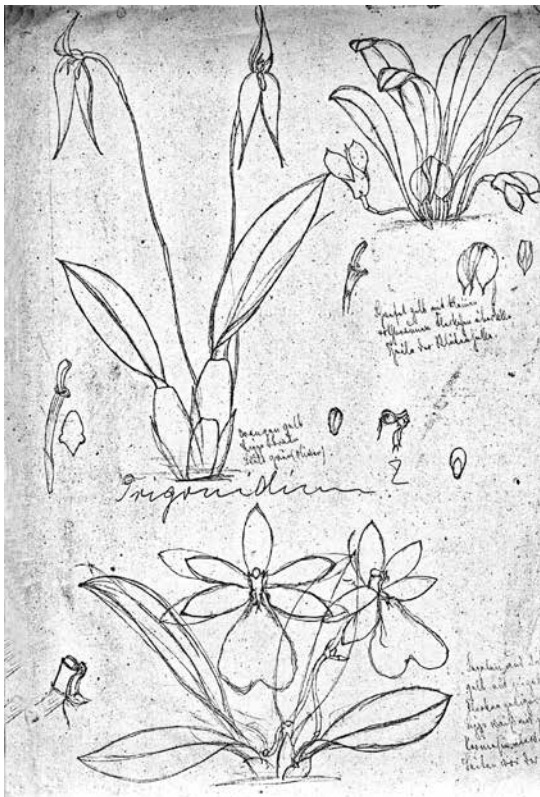


FIGURE 65. Sketch of orchids [*Mormolyca* (= *Maxillaria*), *Masdevallia*, *Trichocentrum*] in Lehmann's travel journals. Archives of Rudolf Jenny



FIGURE 66. Sketch of an orchid [*Vanilla* sp.] in Lehmann's travel journals. Archives of Rudolf Jenny.



FIGURE 67. Watercolor made on location by Lehmann of *Pescatoria lehmannii* Rehb.f. (Bynum & Bynum 2017: 54).

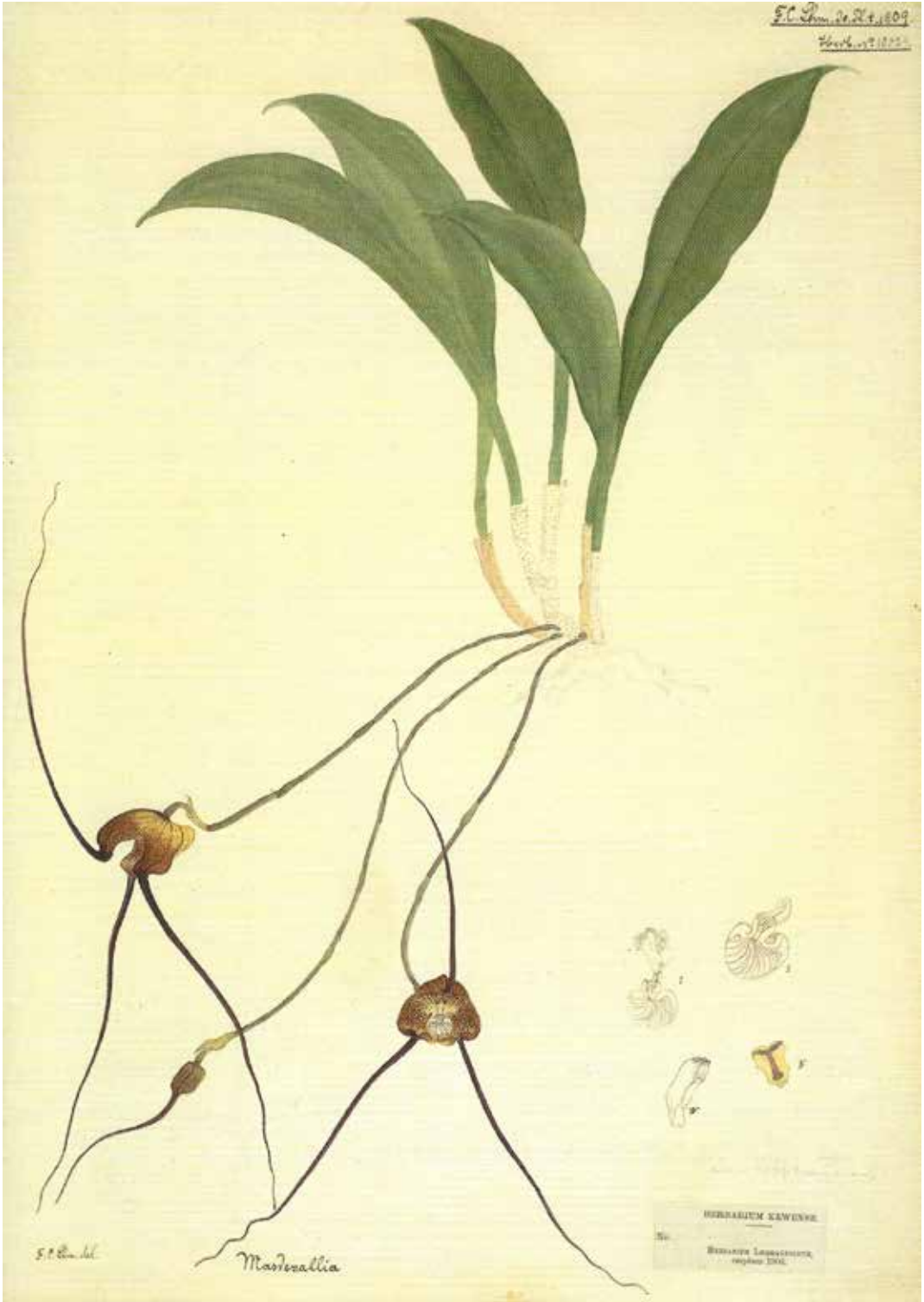


FIGURE 68. Watercolor made on location by Lehmann of *Masdevallia radiosa* Rchb.f. (Bynum & Bynum 2017: 54).

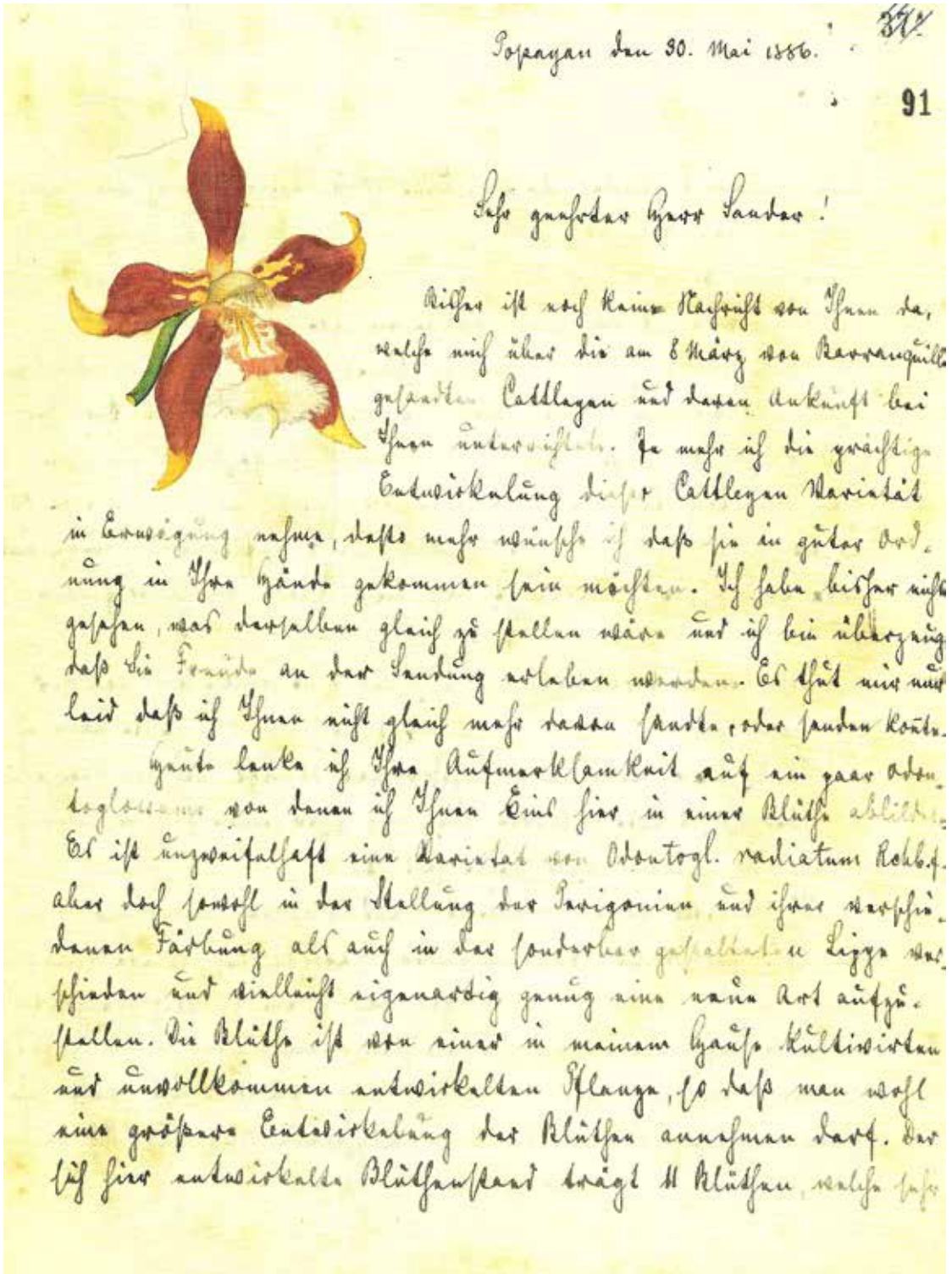


FIGURE 69. Decorated letter to F. Sander, 30 May 1886. (Bynum & Bynum 2017: 58).



FIGURE 70. *Gongora* sp. Color sketch by Lehmann. Kew Herbarium #75416.



FIGURE 71. *Restrepia striata* Rolfe. Color sketch by Lehmann. Kew Herbarium #75438.

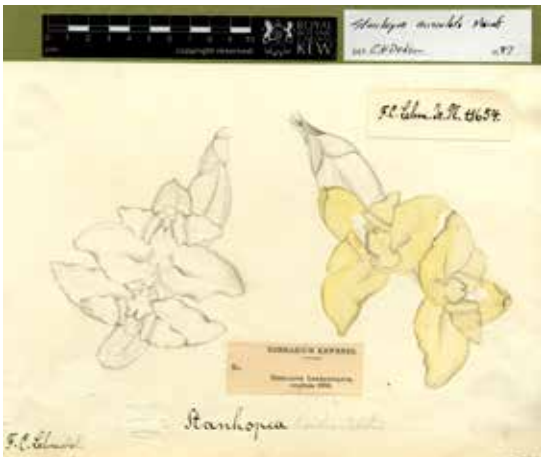


FIGURE 72. *Stanhopea annulata* Mansf. Color sketch by Lehmann. Kew Herbarium #75412.



FIGURE 73. *Sigmatostalix lehmanniana* Kraenzl. Unknown photographer.

to their favorite locations. Nevertheless, he gained experience and sent thousands of both living plants and herbarium specimens to Europe over the years.

“Friedrich Lehmann was a competent artist, and the completed watercolour paintings are accurate and attractive representations of the orchids that he saw

and collected. Many of the partly-colored ones are also worth publishing, being good representations of the plants that are easily recognisable.” (Cribb 2010: 3). During his lifetime, he painted hundreds of orchids, of which the collection at Kew is a part (Fig. 70–72).



FIGURE 74. *Cyrtorchilum lehmannianum* Kränzl. as *Cyrtorchilum retusum* (Lindl.) Kränzl. Photograph by E. Hunt.

After the first consignment of orchids to Reichenbach, Lehmann repeated this strategy and presented plants to other orchidologists and botanic Gardens, such as Kew and Berlin. He “hoped for identifications that would allow him to present new plants to both the learned and the commercial world”. (Bynum & Bynum 2017: 55).

Near the end of the century, Friedrich Kränzlin published an extensive work about Lehmann's orchids, under the title *Orchidaceae Lehmannianae in Guatemala, Costa-Rica, Columbia et Ecuador collectae, quas determinavit et descripsit* (Kränzlin 1899). Among the many new species that he described, a large number was dedicated to their collector: *Sigmatostalix lehmanniana* (Fig. 73) *Pinellia lehmanniana*, *Leochilus lehmannianus*, *Diotonea lehmanniana*, *Goodyera lehmanniana*, *Habenaria lehmanniana*, *H. lehmannii*, *Notylia lehmanniana*, *Pelexia lehmanniana*, *Cyrtorchilum lehmannianum* (Fig. 74), *Dichaea lehmannii*, *Bulbophyllum lehmannii*, *Ornithidium lehmannii* and *Ornithocephalus lehmannii*.

Although he never met Lehmann in person, Rudolf Schlechter always showed great interest in his orchid collections. Lehmann began to sell herbarium specimens to the British Museum in 1888, and Robert A. Rolfe was engaged in describing them at Kew. When Schlechter arrived in London in 1898 after his first South African expedition, the British Museum already had a significant number of Lehmann's Colombian orchid specimens. Lehmann's



FIGURE 75. *Dichaea lehmannii* Schltr. Photograph by the Sociedad Colombiana de Orquideología

collections were the first to open Schlechter's eyes to the botanical richness of South American continent.

In a letter to Oakes Ames dated 22 October 1919, Schlechter wrote: *My list of Colombian Orchids is ready for print, and I hope to bring the whole volume out before the end of the year. [...] I have described over 250 new Colombia Orchids and 5 or 6 new genera. Quite a lot of Lehmann's things are included...* And again a few weeks later (11 November 1919): *I have not made a list of the Lehmann determinations, but Cogniaux before he died has sent me, as he wished that I should continue his work on the South-American orchids, a book in which he had entered all the determinations that he has found of the different collectors in literature and that he made himself.*

Schlechter made frequent reference to specimens collected by Lehmann in his works of 1920 and 1924 on the Colombian orchid flora; he dedicated several of them to the German Consul: *Dichaea lehmannii* (Fig. 75), *Lepanthes lehmannii*, *Ornithocephalus lehmannii*, *Pleurothallis lehmanniana* and *Telipogon lehmannii*.

Friedrich Lehmann advertised his living plants in the *Gardeners' Chronicle*: One of his wealthy clients was the Marquess of Lothian, who had a passion for orchids of which he had a remarkable collection at his home, Newbattle Abbey in Scotland. *Masdevallia* plants were the Marquess' favorites, and thus, he conceived the idea of publishing a book on this genus. *The Genus Masdevallia*, in the words of Cribb, “is considered by many to be one of the finest illustrated orchid books of the Victorian age” (Cribb 2010: 21).



FIGURE 76. Florence Woolward. Unknown photographer.

Florence Woolward (1854–1936) (Fig. 76), a freelance artist and botanical illustrator, was commissioned by the Marquess to illustrate the book, and Friedrich Lehmann wrote the description and the geographical distribution for each plant. Kränzlin, who had published a treatise of this genus (*Die Gattung Masdevallia*, 1925), wrote in the introduction to his work: “Then occurred a crowning element of luck which rarely happens to a group of plants. The Marquis of Lothian -Newbattle Abbey- made a sacrifice to science by commissioning one of the most precious monographs, which to this day is unsurpassed.”

The book contained 87 illustrations and was published in nine parts between 1891 and 1896 (Fig. 77–78). Lehmann often sent copies of his drawings of *Masdevallia* to Woolward. Three of these would appear in the book: *Masdevallia fractiflexa* (Fig. 79), *M. ophioglossa*, and *M. ventricularia* (Fig. 80) (Cribb 2010: 23). Friedrich C. Lehmann described two new orchid genera: *Trevoria* and *Gorgoglossum* (= *Sievekingia* Rehb.f.).



FIGURE 77. Title page of “The Genus *Masdevallia*”, 1896.

WILHELM HENNIS (1856–1943; collected 1876–1889 / imported plants into Germany 1891–1943 / business continued by his successors to the present day)

“It is said with right of the second third of the nineteenth century, that in was in this period that the great revolution in Europe’s flower culture and plant breeding industry began. Especially England, France, and Germany took up with enthusiasm all those novelties that scientific explorers of the eighteenth century had brought from the tropics of the old and new world, mainly to the botanical gardens. From the original scientific interest in the flora of the tropics arose soon a demand from the wealthy garden friends [...] European gardeners became aware of the great possibilities and tasks with which they were entrusted through the exploitation of the tropical flora.” (Hennis & Hennis 1966: 2).

Wilhelm Hennis (Fig. 81) would establish the first commercial orchid nursery in Germany in 1891. The company, “Hennis Orchideenkulturen” has survived for over four generations.



FIGURE 78. *Masdevallia coccinea* Linden ex Lindl. By Florence Woolward in “The Genus *Masdevallia*”.



FIGURE 79. *Masdevallia fractiflexa* Lehm. & Kraenzl. By Florence Woolward after a drawing by F.C. Lehmann in "The Genus *Masdevallia*".



FIGURE 80. *Masdevallia ventricularia* Rchb.f. By Florence Woolward after a drawing by F.C. Lehmann in *The Genus Masdevallia*?



FIGURE 81. Wilhelm Hennis. In Hennis & Hennis 1966.



FIGURE 82. Specimen of *Stanhopea anfracta* Rolfe. Kew Herbarium.

In 1875, after having learned the gardening trade with several of the most distinguished European gardening firms, Hennis was hired by the great Henry Frederick Conrad Sander at his establishment in Brügge, in Belgium. He progressed rapidly, and one year later, Sander suggested sending him as an orchid collector to Colombia. The ‘suggestion’ was rather imperative: “In two weeks you are to embark for Colombia, to take over the work in the departments of Tolima and Cundinamarca.” (Hennis & Hennis 1966: 10).

“Everything then happened very rapidly - the young Hennis had only three days to say farewell to his parents in Germany, and in late autumn 1876, he landed for the first time on South American territory.” (Manning 2010: 350).

Hennis travelled for three years through Colombia and did not return to England until 1879. He concentrated his efforts on living orchids and thus seldom prepared herbarium material. In 1881, Hennis

left Sander & Co. and joined Joseph Charlesworth in Bradford, Yorkshire, who was starting his commercial nursery. Charlesworth and Hennis then travelled together to South America, where they explored, sometimes individually, sometimes together, vast regions of Colombia, Ecuador, and Peru. From a living plant collected by Charlesworth and Hennis in Peru, Rolfe described a new species: *Stanhopea anfracta*, a specimen of which is kept at Kew together with a note from Charlesworth to Rolfe relating the circumstances and locality of its collection (Figs. 82–83).

Wilhelm Hennis later wrote about some of his experiences in Colombia in a vivid relation of orchid collecting in the 19th century, which showed total indifference to the destruction of forests and orchid habitat: “Winter 1892/93. From the department of Tolima [Colombia] I sent some 200 crates of *Cattleya trianaei*. I have thrown away three times as many plants, those which were damaged either during transit to my

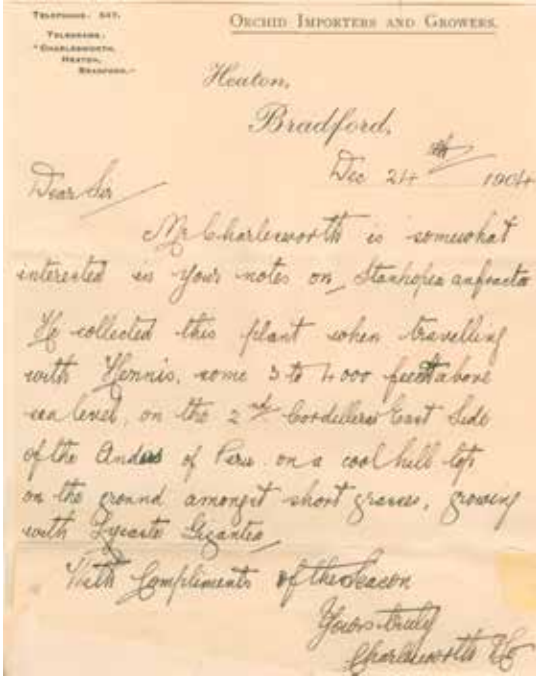


FIGURE 83. Note from Charlesworth to Rolfe, Dec. 24, 1904.



FIGURE 84. Hennis nurseries in 2001. Photograph by Thilo Hennis.



FIGURE 85. *Odontoglossum hennisii*. Photograph by Guido Deburghgraeve.



FIGURE 86. *Trichopilia hennisiana* Kränzl. Photograph by Svetlana Bogatyrev.



FIGURE 87. *Acineta hennisiana* Schltr. Photograph by Lourens Grobler.



FIGURE 88. *Maxillaria hennisiana* Schltr. Photograph by Ecuagenera.

headquarters or during the felling of the trees on which they grew.” (In Manning 2010: 350). After having travelled through South America and Southeast Asia until 1899, always under contract with Charlesworth, Hennis decided to settle in his hometown. In 1891 opened his nursery in Hildesheim to the public.

The demand for Colombian orchids rose continuously, and Hennis decided to send his own collector to explore northern South America. Hermann Hopf (see later), with an apprenticeship in gardening at the renowned Pfitzer nursery in Stuttgart, established himself in Bogotá. There he found in his countrymen Kalbreyer and Bungeroth, at the former’s nursery “La Flora”, support and advice during the first months of his stay (Hennis & Hennis 1966). The most important German orchidologists of their time, the eternal rivals Kränzlin and Schlechter, were frequent guests of Wilhelm Hennis. However, following the ‘rule’ established when they visited the Wolter nurseries, they planned their visits to not clash with each other.

But the time came when Europe especially began to realize that orchid habitats and virgin tropical forests had to be preserved. “... large importations of orchids from the tropics were no longer possible, so Hennis had to use his other horticultural skills. Patience coupled with tedious and difficult work resulted in many orchids being raised from seed, but taking from four to six years to flower.” (Manning 2010: 352). Hennis’s efforts were continued by his son Heinrich and his grandson Kurt. In March 1945, everything seemed lost: the city of Hildesheim was destroyed during an allied bombing raid. The Hennis nurseries were burned to the ground. Heinrich and Kurt Hennis, under indescribable difficulties, built new greenhouses which -once again- slowly filled up with orchids (Fig. 84). Thilo Hennis, old Wilhelm’s great-grandson, became the last link to the now almost 130-year-old traditional enterprise (Knott 1986).

Besides *Stanhopea anfracta*, Rolfe described from Hennis’s collections in South America *Cattleya*

hennisiana (1889) and *Odontoglossum hennisii* (1891) (Fig. 85). Collected by Hennis, these plants reached Rolfe through Charlesworth's nursery. All other contributions by Wilhelm Hennis to the knowledge of the Colombian orchid flora were made after he had returned from South America in 1889. It was from his imports of living plants that first Kränzlin and then Schlechter received a critical number of specimens that they described as new orchid species in 1906–1908 and 1920, respectively. And then there were the collections of Hennis's collector Hermann Hopf, which Schlechter would describe in 1924 in his *Beiträge zur Orchideenkunde von Colombia*.

Two new South American orchid species were dedicated to Hennis by Friedrich Kränzlin: *Trichopilia hennisiana* Kränz. (1906) (Fig. 86), and *Lycaste hennisiana* Kränz. (1908). Schlechter added several new Colombian orchids that he named after Hennis: *Stelis hennisiana* Schltr., *Maxillaria hennisiana* Schltr., *Gongora hennisiana* Schltr., and *Acineta hennisiana* Schltr. Finally, Walter Sandt contributed *Stenorrhynchos hennisianum* in 1928.

WILHELM KALBREYER (1847–1912; collected 1877–1912)

According to Hortus Veitchii, the Veitch family history: “Guillermo Kalbreyer, a promising young man, twenty-nine years of age, entered Messrs. Veitch's service as a plant collector in 1876, and his first trip was to the West Coast of Africa in search of tropical flowering and foliage plants, very popular at that time.” (Veitch 1906: 70).

Wilhelm Kalbreyer (Fig. 89) was born in the German city of Hildesheim and did an apprenticeship in gardening with Justus Ludewig von Uslar, who owned a well-known plant nursery in the city. After serving as his apprentice, he was engaged as an assistant at the famous gardens of Herrenhausen, near Hannover, where he worked under the direction of Hermann Wendland (well-known to the reader for his expedition to Central America in 1856). Wendland, who soon discovered Kalbreyer's talent, gave him letters of recommendation, which allowed him to gain his early experience in several important gardens until in 1876, he was engaged by Messrs. James Veitch and Sons in Chelsea (Anonymous 1912: 26). Thus, he travelled for the first time to the tropics and collected

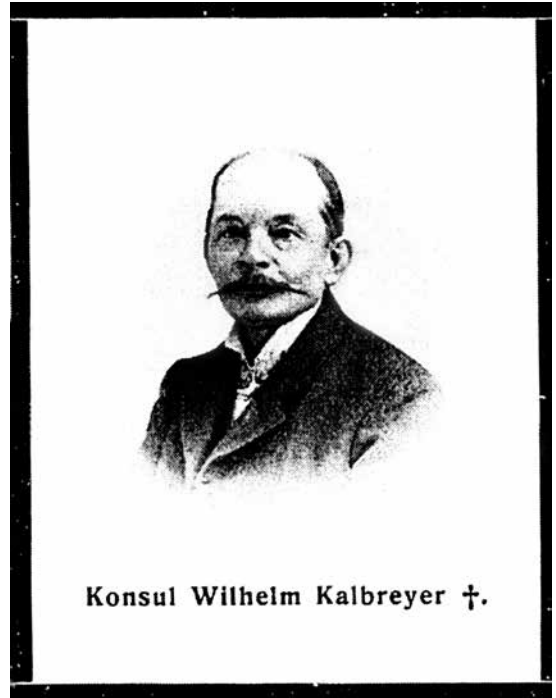


FIGURE 89. Wilhelm Kalbreyer. In Hennis, 1912: 479.

in the mountains of Cameroon, returning to Chelsea in 1877 with a rich collection of plants, among them two new orchid species described by Reichenbach in his *Orchideae Kalbreyerianae* (Reichenbach 1878).

In October 1877, Veitch sent Kalbreyer to Colombia on the first of several collecting expeditions to that country. The village of Ocaña, in north-eastern Colombia on the border with Venezuela formed by the Eastern Cordillera, was chosen by Kalbreyer as his headquarters and he returned to the same location in July 1878. The third expedition to Colombia was undertaken in 1879, but this time Kalbreyer explored western Colombia, mainly the department of Antioquía. This was his most successful expedition; in the spring of 1879, Kalbreyer was back in England carrying with him significant botanical treasures. His last journey to Colombia under contract with Veitch began in December 1880, and he reached Ocaña once more in January 1881, when he sent orchids to Veitch. He continued southwards through the departments of Santander, Boyacá, and Cundinamarca to Bogotá (Fig. 90), a city that would become his residence for the remainder of his life. In June 1881, he travelled to England and cancelled his contract with Veitch,

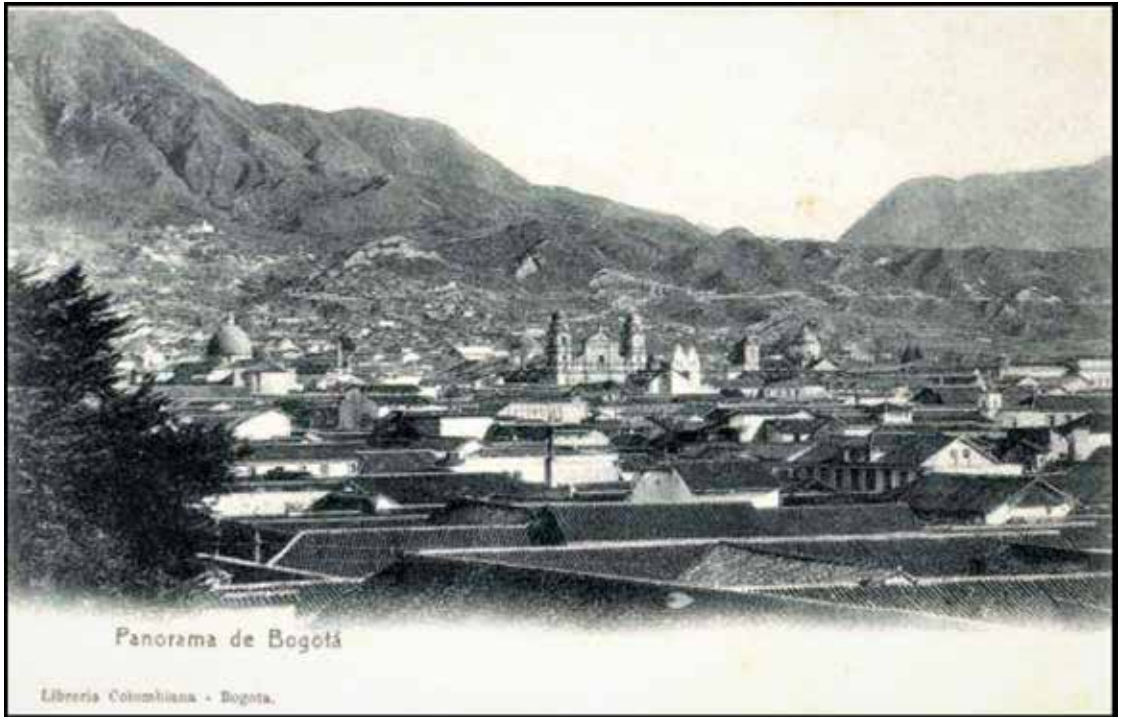


FIGURE 90. Panorama of Bogotá, ca. 1890. Unknown photographer.

returning immediately to Bogotá, where he established a plant nursery which he named “La Flora”.

Only twice did Kalbreyer return to his native Hildesheim: in 1888 when he married a lady from Hannover with whom he returned to Bogotá and in 1908, to visit his only sister and his son, who studied at the local highschool. He returned to Bogotá the following year, and the Colombian government named him Consul for the district of Hildesheim. His business was managed in the meantime by the well-known orchid collector Erich Bungeoth, whom we will read later (Hennis 1912: 479–480).

Kalbreyer published two articles in the German *Deutsche Gärtner-Zeitung* (Kalbreyer 1899, 1903). In the first, he gave a brief account of the development of “Orchidomania” in Germany and described several of the showiest Colombian orchids. The second was about the problems he had encountered establishing his nursery in Bogotá, especially when trying to acclimatize European plants to the Andean climate.

Reichenbach would describe further new orchid species among Kalbreyer’s Colombian collections, including *Maxillaria kalbreyeri* and *Odontoglossum*

kalbreyeri (a hybrid between *O. pescatorei* and *O. luteopurpureum*) (Fig. 91).

In 1920, Friedrich Kränzlin published a long list of orchids collected by Kalbreyer in Colombia under the title *Orchidaceae Kalbreyerianae* I. He dedicated a number of them to their collector: *Telipogon kalbreyerianus*, *Zygopetalum kalbreyerianum*, *Houlletia kalbreyeriana*, *Microstylis kalbreyeriana*, *Oncidium kalbreyerianum*, *Ornithocephalus kalbreyerianus*, and *Masdevallia kalbreyeri* Rchb.f. ex Kränzl. (Fig. 92).

Schlechter described *Sobralia kalbreyeri* (Fig. 93); H. G. Hills and L. Garay followed respectively with *Dressleria kalbreyeri* and *Elleanthus kalbreyeri*.

GUSTAV SCHMIDTCHEN (–?; collected ca. 1880)

In the words of Steve Manning (2010: 347), Gustav Schmidtchen was one of the “shadowy figures” in the history of orchidology. Very little is known about him. The only information we have about Schmidtchen comes from H. G. Reichenbach. In his description of *Restrepia falkenbergii*, he wrote: “My recent specimens were gathered by two fresh collectors,

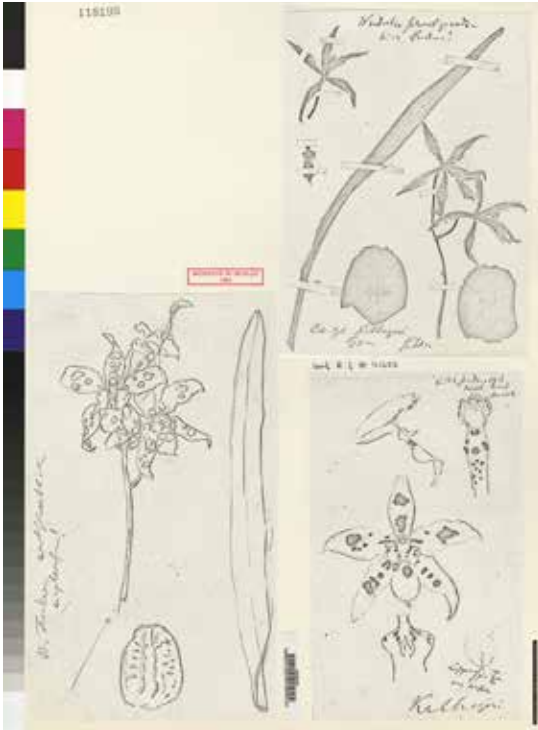


FIGURE 91. *Odontoglossum kalbreyeri* Rchb.f. Drawing of type by Reichenbach at the Oakes Ames Orchid Herbarium, Harvard University Herbaria, #00102249.



FIGURE 92. *Masdevallia kalbreyeri* Rchb.f. ex Kränzl. as *Masdevallia urceolaris* Kraenzl. Photograph by Lourens Groler.

Messrs. Falkenberg and Schmidtchen. [...] As to Mr. Schmidtchen, from Dresden, he has just made his *début*. Mr. F. Sander has kindly sent sketches of flowers, dried specimens, some highly curious itinerary sketches, and a living *Restrepia*, all evidences which speak highly in favour of the young traveller, to whom I wish good success, provided he is not yet tired of the career. This, however, is a rare case. Usually, the traveller loses the peace of mind necessary for domestic life, preferring the adventurous risks of a nomadic career.” (Reichenbach 1880a: 232). Reichenbach wrote some 10 months later in a commentary about *Masdevallia roezlii*: “The plant that has now flowered was obtained from Mr. F. Sander, hence it may have been collected by Messrs. Klaboch, Schmidtchen, and Falkenberg, two of whom fell as victims for the benefit of those in the trade.” (Reichenbach 1880b: 778). Manning (2010: 348) concluded that Schmidtchen died in 1880: “as the Klaboch brothers were still alive, he could only be referring to Schmidtchen and Falkenberg—so both were now dead, just ten short months later.”

This, however, is not conclusive: Eduard Klaboch was still alive at the time [Eduard lived until August 1915, when he passed away in the Czech city of Smichov], but his brother Franz had died the year before in Mexico, on 24 January 1879, another victim of yellow fever (see Anonymous 1879: 369). Falkenberg, according to Sander (1880: 173), died in June 1880 on the Caribbean island of St. Thomas. Therefore, one would tend to believe that Franz Klaboch and Carl Falkenberg were Reichenbach’s “two victims”, and Gustav Schmidtchen, the sole survivor.

What became of Gustav Schmidtchen after 1880? Nothing else is known, except for Schlechter’s words when he complained that Schmidtchen’s considerable orchid collection “still lies undetermined in Reichenbach’s herbarium in Vienna” (Schlechter 1924: 149). And further on, in the dedication of *Stelis schmidtchenii*: “I am happy to dedicate this species to Mr. G. Schmidtchen, whose merits in the exploration of Colombia’s orchid flora have not yet been sufficiently acknowledged.” (Schlechter 1924: 157). Both

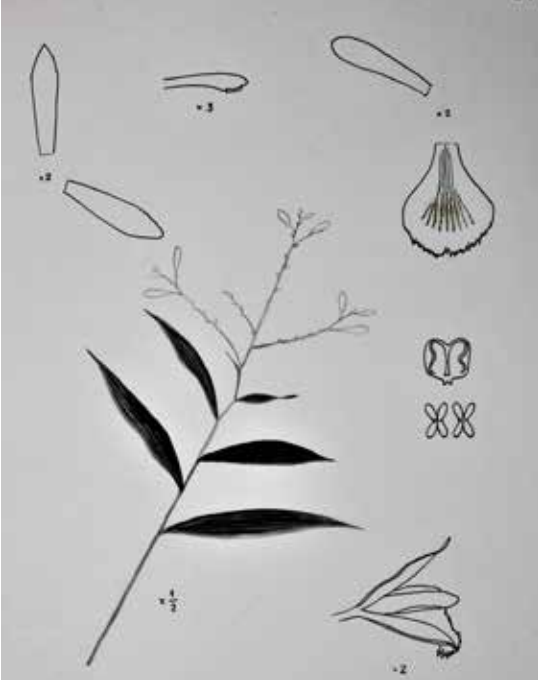


FIGURE 93. *Sobralia kalbreyeri* Schltr. as *Sobralia sobralioides* (Kränzl.) Garay. Specimen and drawing by Pedro Ortiz.

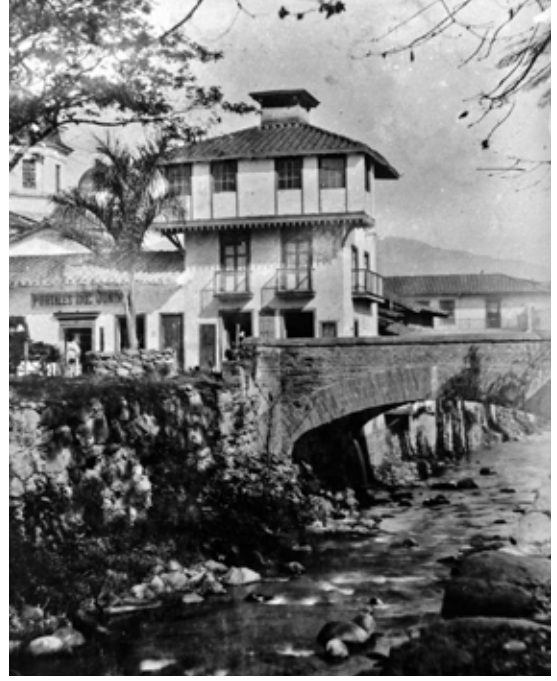


FIGURE 94. Junin bridge in Medellín (Antioquia), ca. 1900. Unknown photographer.

expressions seem to indicate that Schmidtchen spent a prolonged period collecting orchids in Colombia, perhaps even during Schlechter's time.

Schmidtchen collected chiefly for Frederick Sander, 'the Orchid King', who confirmed this when he wrote in 1888 of "our collectors Schmidtchen and Hennis." (Sander 1888); yet another indication that Schmidtchen was still alive at that time. According to Manning, he collected chiefly near the city of Medellín in the department of Antioquia (Fig. 94), a place that "seems to have been almost a rendezvous for German plant collectors in the 1880s." (Manning 2010: 347).

Gustav Schmidtchen contributed to the knowledge of the Colombian orchid flora by collecting an important number of new species, among them: *Platystele schmidtchenii* Schltr., *Stelis schmidtchenii* Schltr., *Elleanthus formosus* Garay, *Telipogon radiatus* Rchb.f., *Epidendrum carautaense* Hágsater & L. Sánchez, *Epidendrum schmidtchenii* Hágsater & E. Santiago (Fig. 95), *Epidendrum corallinum* Hágsater, *Masdevallia fasciata* Rchb.f. (Fig. 96), *Restrepia falckenbergii* Rchb.f., *Telipogon*



FIGURE 95. Herbarium label of *Epidendrum schmidtchenii* Hágsater & E. Santiago. Natural History Museum, Vienna, #W 0027141.



FIGURE 96. *Masdevallia fasciata* Rchb.f. Unknown photographer.



FIGURE 97. *Masdevallia schmidtchenii* Kränzl. as *Masdevallia mollossus* Rchb.f. Photograph by A. Sijm.



FIGURE 98. K. Sonntag – Herbarium label from Colombia (June 1888). National Natural History Museum, Paris, specimen MNHN-P-P06725820.

schmidtchenii Rchb.f. ex Kränzl., and *Masdevallia schmidtchenii* Kränzl. (Fig 97.)

KARL RENSCH (1837–1905) and **K. SONNTAG** (–?; collected 1888)

Karl Rensch, a school-teacher in the German city of Eisleben, moved to Halle after finishing his education. There he studied botany under Professor Diederich Franz Leonhard von Schlechtendahl. In 1867 he was named director of the Berliner school in the 101 district, which he held until his death.

A passionate plant collector, Rensch founded the “Plant Exchange Club” of Berlin in the 1870s, which was under his direction for several years. He formed a rich herbarium in this position, complemented with plants sent by other botanical collectors for distribution. His collection encompassed plants from most tropical floras (Ascherson & Retzdorff 1906).

Karl Rensch was responsible for the commercial distribution of many exotic plants and, at some point,

came in contact with K. Sonntag (–?), an obscure plant collector whom he engaged in collecting plants in Colombia. Sonntag arrived in Colombia in 1888, collecting (mainly in the department of Santander) from June through August of that year. His herbarium labels all bear the stamped inscription “comm. Rensch” (“commissioned by Rensch”) (Fig. 98).

According to Ignaz Urban (1903: 59), in 1888, the Berlin Botanical Garden received a collection of 73 Colombian species collected by K. Sonntag. The Harvard University Herbaria holds a specimen of *Epidendrum ciliare* L., allegedly collected a few years earlier (1880) by K. Rensch in Jamaica. However, Rensch either bought or traded this plant since he never travelled outside Germany.

From collections in Africa by J.M. Hillebrandt (whose plants had been distributed in Europe by Rensch), a new orchid species, *Nervilia renschiana* (Rchb.f.) Schltr. (Fig. 99), and *Solanum renschii* Vatke in the Solanaceae were named in his honour.

Among Sonntag's Colombian collections, Rudolf Schlechter described one new orchid species, *Galeandra leptoceras* (Fig. 100).

ERICH BUNGEROTH (ca. 1850–1937; collected 1891–1921)

“Among the Germans I was especially fond of seventy-year-old Mr. Bungeoth, who had been for forty years an orchid collector in South America and had explored during the last ten years the “white spots” on the map of the South American Andean states under contract with well-known English nurseries. He



FIGURE 99. *Nervilia renschiana* (Rchb.f.) Schltr. Photograph by Elke Faust.



FIGURE 100. *Galeandra leptoceras* Schltr. Photograph by Danny Lentz.



FIGURE 101. *Catasetum bungerothii* N.E.Brown. Archives of Rudolf Jenny.



FIGURE 102. *Catasetum bungerothii* N.E.Brown. Type specimen, Kew Botanic Garden, #K00588863.



FIGURE 103. *Coryanthes bungeorothii* Rolfe as *Coryanthes bruchmuelleri* Rchb.f. Lindenia – Iconographie des Orchidées, plate 244 (1890).



FIGURE 104. *Notylia bungeorothii* Rchb.f. Photograph by Dalton Holland Baptista.

was in a very difficult situation: his noble patrons had broken up all relations with him immediately after the outbreak of the war.

“Bungeroth came often to the brewery to chat with me since I was the only German who showed an interest in botany, especially in his favorites, the



FIGURE 105. *Cattleya labiata* Lindl. Unknown photographer.

orchids. Sometimes, when we had a drink together, he told me stories from his travels on the Casiquiare River, this mysterious connection between the Orinoco, the Río Negro and the Amazon. There, in the midst of the tropical forest, he discovered the splendid *Catasetum bungeorothii*. Now he sat, poor as a beggar, dressed like a Colombian peasant, in Bucaramanga. His only income were 30 Dollars which he received monthly from a rich German-American orchid enthusiast from California” (Werner Hopp 1944: 29, about his encounter with Erich Bungeroth around 1918).

Nothing is known about Bungeroth's early years. We first learn of him in 1886, when he collected plants in the Amazon region for the Cowan Nursery near Liverpool. He was to assist and receive botanical training from Carl Kramer, a German plant collector who lived in Manaus after years of travels through Asia and Central America.

Bungeroth was later sent to Colombia, but due to the revolution devastating that country was forced to return to England. He offered his services to the Linden firm and was sent to Venezuela, exploring the Orinoco River for three years (Menezes 2002: 67). Apart from *Catasetum bungeorothii* N.E.Brown (Fig. 101–102), Bungeroth collected in Venezuela many other orchids named in his honour, such as *Coryanthes bungeorothii* (Fig. 103), *Notylia bungeorothii* (Fig. 104), *Rodriguezia bungeorothii*, and *Oncidium bungeorothii*.

In 1889, Erich Bungeroth went again to Colombia. After a few months, he started on an expedition that would take him to Brazil, navigating the Amazon to



FIGURE 106. *Cattleya rex* O'Brien. In Reichenbachia, second series, vol. 2: plate 72 (1894)

Peru. In the state of Pará he met a group of rubber gatherers who revealed to him the existence of “parasites” with beautiful large red flowers in the forest of that northeastern state. So, it came about those thousands of plants of *Cattleya labiata* Lindl. (Fig. 105) collected in Pernambuco were sent by Bungeroth to Europe, where they were grown as a new species, called *Cattleya warocqueana* Linden. (Menezes 2002: 69–70)

Erich Bungeroth was an important link in Schlechter's South American network. As we have seen, he covered large territories during his botanical expeditions and collected in Brazil, Venezuela and Colombia before arriving in Peru. In 1921, in the fourth volume of his series on the orchid floras of the Andean states, Schlechter wrote: “Erich Bungeroth made an important contribution to the exploration of the orchid flora of Peru. After he had rediscovered *Cattleya labiata* in 1890, he travelled on the Amazon to Iquitos, then to Yurimaguas and Huallagua, and then overland to Moyobamba. Here, he discovered the new *Cattleya rex* O'Brien (Fig. 106). Trying to find more plants of this species, he went on a long excursion along the Río Mayo, however with little success, although he discovered the new *Oncidium sanderae* Rolfe (Fig. 107). In October 1892, he was again in Yurimaguas and in his letters expresses the hope to return finally to Europe. However, he shared the fate of many other orchid collectors and was soon defrauded by his patrons. He was told that most of his deliveries had been damaged during transport; at the same time, his orchids were offered on the market, without mention of his name. Deeply disappointed, Bungeroth soon left Peru. His contract with the Belgian firm that had betrayed him so often was cancelled; he had unfortunately similar experiences during his later journeys through Venezuela and Colombia with other European nurseries.” (Schlechter 1921b: 10–11).

The demand for *Cattleya rex* was increasing and the supply of new plants scarce. This moved German nursery owner Robert Blossfeld (1882–1944) to plan, together with his son Harry, a new expedition into the Andean region where Bungeroth had collected the first plants.

After studying botany at the University of Berlin, Harry Blossfeld (1913–1976) left Germany before the ascent of the Nazi party to the German government



FIGURE 107. *Oncidium sanderae* Rolfe as *Psychopsis sanderae* (Rolfe) Lückel & Braem. Photograph by I. Rolando.

and took part in several botanical expeditions through South America (Fig. 108). He established himself in São Paulo and founded an orchid nursery in 1937.

It was from São Paulo in 1935 that Blossfeld started on his expedition in search of Bungeroth's famous *Cattleya*. Erich Bungeroth, at the time living in Bucaramanga, Colombia, took an interest in this expedition. Being unable to travel with Blossfeld because of his advanced age, he supplied him with all his notes, sketches, and maps from his first expedition decades before. Harry Blossfeld travelled mainly by airplane but still faced enormous difficulties. He managed, however, to collect 800 plants in about two months. The plants were shipped to São Paulo and, after a long journey through the Panama Canal, arrived at their destination, 40% of them having unfortunately perished on the way. (Maatsch, 1976: 37–38).

HERBERT HUNTINGTON SMITH (1851–1919; collected 1898–1902)

On 22 March 1919, Herbert Huntington Smith (Fig. 109), Curator of the Alabama Museum of Natural History, was walking to work when he was hit by a freight train. Smith's deafness, magnified by a recent



FIGURE 108. Harry Blossfeld in the province of Salta, Argentina (1938). Archives of the Cactus and Succulent Society of America.



FIGURE 109. Herbert Huntington Smith. Unknown photographer. In *The Nautilus*, 1919–1920.

bout of flu, was the cause of the accident. The tragic spot on the University of Alabama campus was known for years afterwards amongst students and staff as “Smith’s Crossing”.

An amateur conchologist, Smith was born in Manlius, New York. He showed an interest in natural history from an early age, a subject in which he graduated from Cornell University in 1872. As a student, Smith had the opportunity to be part of the famous Morgan Expedition to Brazil in 1870 (named after one of its sponsors, Col. Edwin B. Morgan), accompanying its leader, Smith’s professor Charles Frederick Hartt. The expedition explored the basin of the Tapajós River in the state of Pará and was mainly of a geological nature. This encounter with the tropics would act as a constant attraction to bring Smith back to Brazil in the following years in many capacities.

Smith would later concentrate on studying insects and molluscs, of which he collected thousands of specimens. A successful collector and preserver, he assembled extensive collections found in many of the world’s natural history museums (Fig. 110–111). Besides the zoological material, Smith also collected ethnographic and botanical material, completing approximately 500,000 natural history specimens during his lifetime.

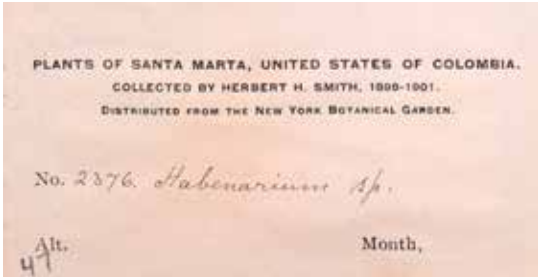


FIGURE 110. H. Smith herbarium label (New York Botanical Garden).

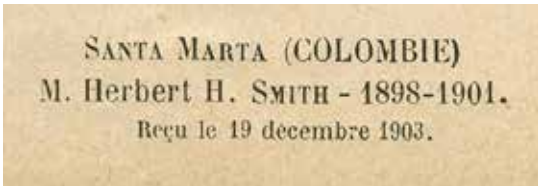


FIGURE 111. H. Smith herbarium label (National Natural History Museum, Paris).

Smith went to Brazil in 1874 to collect the insects and molluscs of the Amazon and, in 1876 was invited by Hartt to form part of the Geological Commission of the Empire of Brazil. Smith stayed with the commission for almost a year, exploring the valleys of the Amazon and Tapajós (Kunzler *et al.* 2011).

Smith departed to the United States in 1881 and, after his marriage to Amelia Woolworth, returned to Brazil, where they lived until 1886. Smith signed a contract with the National Museum of Brazil, under which he was to explore the interior of the country to collect specimens of natural history. The contract was extended several times, and Smith and his wife travelled widely. Their explorations took them to Paraguay and Matto Grosso. Smith's journal of this adventure was published years later under *Do Rio de Janeiro a Cuyabá: notas de um naturalista* (Smith, 1922).

Smith collected in Mexico in 1889 and he was then commissioned by the Royal Society to collect in the West Indies (1889–1895) (Clapp 1919, Holland 1919).

After a short time as Curator of the Carnegie Museum, Smith was sent to Colombia, where he would stay from 1898 to 1902, collecting for the American Museum of Natural History. It was during this expedition that Smith dedicated himself to the collection of plants. In his collections are many new



FIGURE 112. Type of *Epidendrum macroceras* Schltr. National Natural History Museum, Paris.

orchid species, many of which Schlechter described in his orchid flora of Colombia (Schlechter 1920). Among these, the great German orchidologist determined as new to science *Pleurothallis leptantha*, *Physurus procerus*, *Pleurothallis schistopetala*, *Scaphyglottis sanctae-martae*, *Epidendrum macroceras* (Fig. 112), *Govenia platyglossa* (Fig. 113), *Habenaria smithii*, *Elleanthus smithii*, *Prescottia smithii*, *Pleurothallis smithii*, *Epidendrum smithii* and *Sarcoglottis smithii*.

Other orchids collected by H.H. Smith in Colombia include *Habenaria petalodes* Lindl., *Ponthieva diptera* Linden & Rchb.f., *Ponthieva racemosa* (Walter) C. Mohr, *Pleurothallis setigera* Lindl. (Fig. 114), *Epidendrum paniculatum* Ruiz & Pav., *Scaphyglottis behrii* (Rchb.f.) Benth. & Hook.f. ex Hemsl., *Trichopilia subulata* (Sw.) Rchb.f., *Odontoglossum nevadense* Rchb.f., *Lockhartia pallida* Rchb.f., *Sobralia violacea* Linden ex Lindl., *Maxillaria miniata* (Lindl.) L.O. Williams, and *Sacoila lanceolata* (Aublet) Garay.



FIGURE 113. *Govenia platyglossa* Schltr. as *Govenia superba* Lindl. Edwards's Botanical Register, volume 21 plate 1795.

In 1902, in poor health, Smith and his wife returned to the United States, where he resumed his position as Curator of the Carnegie Museum. Soon, however, and looking for a warmer climate, Smith moved to Alabama, where he was hired as Curator of the Alabama Natural History Museum in 1910.

EUGÈNE LANGLASSÉ (ca. 1865–1900; collected 1898–1900)

“The results of this second expedition, so unfortunately ended, will at the end prove not to be very important. Many dry plants have suffered from humidity and are mouldy; as for living plants, packed in moss in humid conditions, the majority has perished. We could only save several Orchids and a few Aroids which began to sprout and among which we will find, hopefully, some interesting types.” So wrote M. Micheli (1900: 415) about the end of Eugène Langlassé's



FIGURE 114. *Pleurothallis setigera* Schltr. as *Muscarella zephyrina* (Rchb.f.) Luer. Photograph by Andreas Kay.



FIGURE 115. Langlassé herbarium label, MNHN (Isotype of *Epidendrum eugenii* Schltr.)

expedition to Colombia from September 1899 to January 1900. He found death from yellow fever in the coastal town of Buenaventura, from where he shipped his last consignment of plants to Europe. (MacVaugh, 1951: 167). As we will see, Langlassé's expedition was at least in part quite successful. Among his Colombian botanical specimens, at least a dozen new orchids were described by Cogniaux and Schlechter, not counting a critical number of Orchidaceae he collected in Mexico from 1888 1889, before his short-lived South American adventure. His collections can be found in several of the most important European herbaria, but mainly at the National Natural History Museum, Paris (Fig. 115).

Little is known of Langlassé's young years. He was the son of a gardener who lived near Paris. From around 1892 to 1895, he travelled to Ceylon [Sri Lanka], Cochinchina, Singapore, Borneo, and the Philippines. These journeys were sponsored by



FIGURE 116. Alexandre Godefroy–Lebeuf. Archives of Rudolf Jenny.

Alexandre Godefroy-Lebeuf (1852–1903) (Fig. 116) of Paris, a wealthy horticulturist interested in tropical plants. After returning to France in the summer of 1895 and until 1897, shortly before travelling to America, Langlassé wrote several short articles in the *Revue Horticole*, all related to some aspect of the vegetation of Southeast Asia.

Early in February 1898, Langlassé left France for Mexico, this time under contract with the French mining company *Compagnie de Inguarán*, to explore the mineral resources of this Mexican region. Co-sponsored by Marc Micheli (1844–1902) (Fig. 117), the celebrated botanist and horticulturist of Geneva, he also made important collections all along the Gulf of Mexico, the eastern slopes of the Sierra Madre. After this, and through a recommendation by Eduoard André, the French horticulturist who had travelled extensively through Colombia, Ecuador, and Peru some 25 years before, he prepared to travel to Colombia.

Langlassé followed André's advice and from Panama took a boat to the small village of Tumaco, on Colombia's Pacific coast, where he arrived in the second half of July 1899. André unwittingly sent Langlassé to his death: no other region in Colombia



Phototypie Sadag, Genève

FIGURE 117. Marc Micheli. Archives of Rudolf Jenny.

was so heavily infested with yellow fever as the coastal strip between Panama (which was still part of Colombia) and Buenaventura.

Langlassé travelled to Tumaco in the erroneous assumption that he would find a French consulate in the village. Thus he had to arrange to have his funds sent from France through the Chilean consul in Barbacoas, about 165 kilometers away, a complicated process that hindered him during his whole stay in Colombia.

Langlassé began his exploration of Colombia by a trip to Barbacoas, continuing then to Altaquer (Fig. 118), a "miserable village composed of eighteen houses of sordid aspect, with 60 inhabitants, ugly, lazy and a hundred times less interesting than the savages I had seen before" (André 1999: 366–367).

From Altaquer he explored the mountains to the southwest, at elevations between 1400 and 1700 meters, close to the Ecuadorean border (MacVaugh, 1959: 170). As he wrote to Micheli from Tumaco on 14 September 1899, he collected 33 living plants (mostly orchids, aroids, and bromeliads) in these mountains, which he shipped via Panama. After exploring the rivers Mira and Nulpe, Langlassé travelled west over the mountains to Cali and Popayán. It was there that he



FIGURE 118. Church of Altaquer, ca. 1876, after a sketch by Edouard André in his *L'Amérique Équinoxiale*, p. 366.

collected most of the over 100 herbarium specimens known from his Colombian expedition.

A letter to Micheli written from Popayán and dated 16 November was Langlassé's final communication before his death. In this, he discussed his plans for the following weeks.

Several orchids were named in honour of Langlassé, the first being *Stanhopea langlasseana* by A. Cogniaux (Figs. 119–120). "At the request of M. Micheli, I name this species in memory of the courageous and unfortunate collector Langlassé, who found it, in September 1899, on a mountain to the S.E of Altaquezo [= Altaquer] in the valley of the Río Mira, at about 1700 m altitude" (Cogniaux 1901, in the protologue to *Stanhopea langlasseana*).

In his orchid flora of Colombia, Schlechter dedicated to Langlassé *Scelochilus langlassei* (Fig. 121), *Isochilus langlassei* (Fig. 122), *Maxillaria langlassei* (Fig. 123), *Pleurothallis langlassei*, *Stelis langlassei*, *Cyclopogon eugenii*, *Epidendrum eugenii*, and *Stelis eugenii*. Other new species collected by Langlassé and described by Schlechter are *Epidendrum ionodesme*, *E. melinanthum*, and *Maxillaria plicata*.

OTTO BEYRODT (1870–1923; Imported orchids into Germany ca. 1906–1917)

As one of the founders of the German Society of Orchidology, Otto Beyrodt (Fig. 124) became one of the leading orchid growers in Germany in the first decade of the 20th century.

Beyrodt was born in Erfurt. Following his father's footsteps, he began an apprenticeship in gardening at the Olberg firm in Dresden and expanded his knowledge by travelling as a young man to England, then to Belgium, and finally to the United States. He returned to Germany in 1893 and in 1900, after a time spent managing his brother's farm, decided to establish himself by building a modern nursery in Marienfelde, a suburb of Berlin (Fig. 125).

"Already in its first year, Beyrodt's nursery had around 50,000 orchids, among them 20,000 *Odontoglossum* (especially *O. crispum*), 10,000 *Paphiopedilum*, 3000 *Oncidium*, 15,000 *Cattleya*, 500 *Vanda coerulea*, and a number of other species, varieties, and hybrids." (Anonymous 1976: 3) Some years later, in 1907, the local garden club visited Beyrodt's nursery. It was then reported that thousands



FIGURE 119. Type specimen of *Stanhopea langlasseana* Cogn. National Botanical Garden of Belgium, Brussels.



FIGURE 120. *Stanhopea langlasseana* Cogn. as *Stanhopea tricornis* Lindl. Archives of Rudolf Jenny.



FIGURE 121. *Scelochilus langlassei* Schltr. Photographed by Sociedad Colombiana de Orquideología.



FIGURE 122. *Scelochilus langlassei* Schltr. as *Isorchilus linearis* (Jacq.) R.Br. Photograph by Luis Filipe Varela.



FIGURE 123. *Maxillaria langlassei* Schltr. as *Maxillaria longissima* Lindl. Photograph by Michael Graupe.

of orchids were under cultivation, mainly for the production of cut-flowers; among them were 25,000 *Odontoglossum crispum*, 50,000 *Cattleyas* of different species, 10,000 *Oncidium*, and as many *Cypripedium*, *Laelia*, *Phalaenopsis*, etc. ...“ (Amelung 1907: 436).

“In recent times [...] numerous Colombian orchids have been found, of which no specimens are known which were collected in the wild, but only inflorescences of plants grown in European collections. Besides the already mentioned English firms, several German gardening enterprises have gained a reputation for importing novelties from Colombia, such as Wilhelm Hennis in Hildesheim, Paul Wolter in Magdeburg, and Otto Beyrodt in Marienfelde. The author wants to express his gratitude to these firms for having supplied him with abundant material of several new species.” (Schlechter 1920: 16).

New orchid species were described among Beyrodt’s imports from several South American countries. So, we have from Brazil *Oncidium beyrodtianum* Schltr. (Fig. 126), from Colombia *Gongora beyrodtiana* Schltr. (Fig. 127), *Acineta beyrodtiana* Schltr. (Fig. 128) and *Pleurothallis beyrodtiana* Kränzl., and from Peru *Cochlioda beyrodtiana* Schltr.

P. BAUMANN & M. MADERO (–?; collected 1909–1911)

“It shall finally be mentioned that through the mediation of one of my acquaintances, commercial traveller P. Baumann, a Colombian orchid collector, M. Madero prepared in the years 1909–1911 an orchid herbarium especially for me. I received the first consignment in the year 1911. It contained many interesting things and was well prepared. A second consignment was announced shortly after the outbreak



FIGURE 124. Otto Beyrodt. Die Gartenwelt, 1923.

of the World War; it must have been lost, like so many other things, on its way to Europe. Since the first shipment promised so much, with several hundred numbers, the loss of the second was an especially hard blow.” (Schlechter 1920: 16).

Baumann is lost in history and only remembered in two orchids named by Schlechter in his honour: *Epidendrum baumannianum* (Fig. 129) and *Maxillaria baumanniana* (Fig. 130), both collected by Madero.

As for Madero, nothing else was known about him until a recent communication from Colombian researcher and orchid conservationist Luis Eduardo Mejía brought a small ray of light into the mystery.

During research into the export of egret feathers, and working through the papers of a famous character – an exporter of gold, Indian artifacts, orchids, shrunken heads, feathers, and other things – whose name was Leocadio María Arango, Luis Eduardo Mejía found several receipts for payments made to Mr. Madero. He had sold to Arango orchids from the department of Cauca. There were other receipts for plants from Antioquía and a receipt by Mr. Madero paying Mr.



FIGURE 125. Beyrodt residence and nursery in Marienfelde. In *Die Orchidee*, 2013, vo. 64(4): 298.



FIGURE 126. *Oncidium beyrodtianum* Schltr. as *Oncidium bifolium* Sims. R. Warner, *Select Orchidaceous Plants*, plate 5.



FIGURE 127. *Gongora beyrodtiana* Schltr. as *Gongora scaphephorus* Rchb.f. & Warsc. Unknown photographer.



FIGURE 128. *Acineta beyrodtiana* Schltr. Photograph by Ecuagenera.



FIGURE 129. *Epidendrum baumannianum* Schltr. Photograph by Diego Bogarín.



FIGURE 130. *Maxillaria baumanniana* Schltr. (= *Sauvetea alpestris* (Lindl.) Szlach. Photograph by Ecuagenera.

Arango for the shipment of botanical specimens to Germany, to the “classifier Rudolf Schlechter” (“classifier” probably meaning “taxonomist”).

Luis Eduardo Mejía also found a short reference to Madero in the Municipal Archives of the village of Pitalito Huila, near San Agustín. He is mentioned as being fined for quarreling in a brothel, and he is referred to as “the plant collector of the Germans” (Luis Eduardo Mejía, pers. comm. 10 April 2020).

Mejía refers here to Locadio María Arango Uribe (1831–1918), a merchant, miner, and banker from the city of Medellín, the capital of the department of Antioquia. A wealthy member of Medellín’s ‘high society’, he amassed a collection of natural history objects, ranging from mineralogy and ethnology to zoology and botany, which constitutes today an important part of the collection of the Museum of the University of Antioquia.

M. Madero, from the little information we have about his life, was probably a professional collector, not only of plants but also of zoological specimens. One can expect that his collecting of orchids for Schlechter was chiefly commercial. Notwithstanding, Madero undoubtedly had a good knowledge of the orchids of his country and a keen eye for novelties. Among his collections, Schlechter described no less than five new orchid genera and 175 new species. Of these, almost half still retain their original names.

Madero’s types were all destroyed during the bombing of the Berlin herbarium in 1943. However, Ames financed the drawing and flower analysis of some 30 of these types, all made under the supervision of Schlechter personally. These are kept today at the Oakes Ames Orchid Herbarium (Fig. 131–132). Madero’s new orchid genera were *Porroglossum* (Fig. 133), *Cyrtoglottis*, *Anthosiphon*, *Caucaea*, and *Sphyrastylis*.

Among his new species, Schlechter dedicated a total of 11 to Madero: *Aa maderoi*, *Cyclopogon maderoi*, *Encyclia maderoi* (Fig. 134), *Epidendrum maderoi*, *Habenaria maderoi*, *Maxillaria maderoi*, *Odontoglossum maderoi*, *Oncidium maderoi*, *Pogonia maderoi*, *Psilochilus maderoi*, and *Stelis maderoi*.

M. Madero surely deserves to be known better. A detailed biography -as far as this is possible- and an account of his life as a plant collector are presently underway, hopefully with the collaboration of renowned Colombian researchers.



FIGURE 131. *Cranichis stictophylla* Schltr. Drawing of type. Oakes Ames Orchid Herbarium #26831.

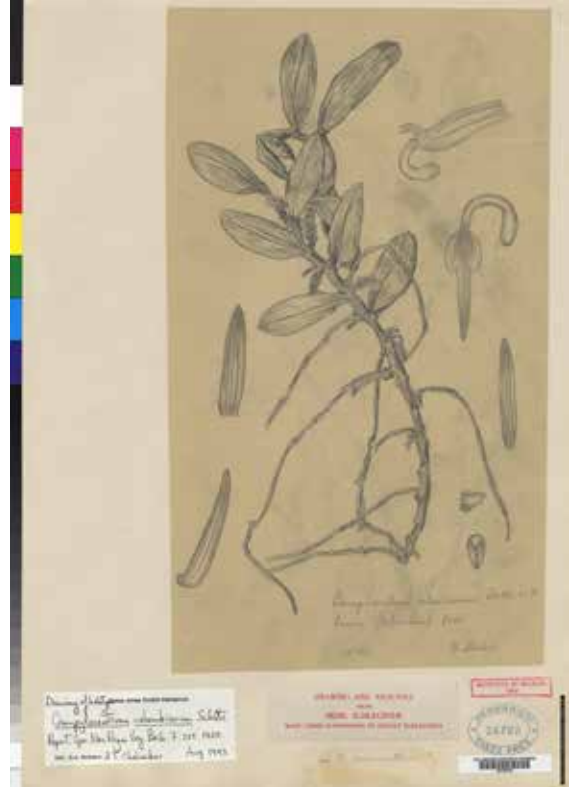


FIGURE 132. *Campylocentrum colombianum* Schltr. Drawing of type. Oakes Ames Orchid Herbarium #26788.



FIGURE 133. *Porroglossum colombianum* Schltr. as *Porroglossum mordax* (Rchb.f.) Luer. Photograph by Marni Turkel

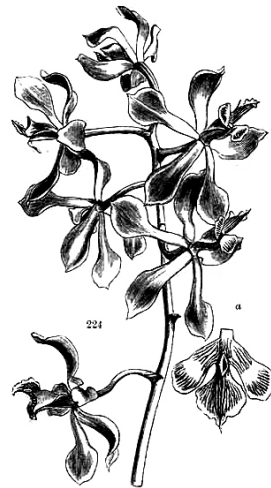


FIGURE 134. *Encyclia maderoii* Schltr., is a synonym of *Encyclia replicata* (Lindl. & Paxton) Schltr.



FIGURE 135. *Pleurothallis schnitteri* Schltr. as *Pleurothallis phalangifera* (C.Presl.) Rchb.f. Photograph by S. Manning.



FIGURE 137. *Epidendrum peperomia* Schltr. Photograph by Orchi.



FIGURE 136. *Stelis oxypetala* Schltr. Photograph by the Species Identification Task Force.

RICHARD ECKARD SCHNITTER (–?; collected 1920–1922)

Volume II of Schlechter's *Orchideenfloren der Südamerikanischen Kordillerestaaten* (Colombia), was published on 31 January 1920. A few months later, he began to receive, at irregular intervals, small packages

with dried orchids from a German horticulturist who had emigrated years earlier to Colombia: Richard Schnitter Eckhard, or simply Ricardo Schnitter, as he was known in his adoptive country. "I received from Mr. R. Schnitter in Bogotá during the past months several small packages with dried orchids, which he had collected in the surroundings of Bogotá, the capital city of Colombia" (Schlechter 1921: 527).

Among Schnitter's orchids Schlechter found and described a few new species, including *Stelis schnitteri*, *Pleurothallis cundinamarcae*, *Pleurothallis platycardium*, *Pleurothallis pulvinipes*, *Pleurothallis schnitteri* (Fig. 135), and *Epidendrum schnitteri*. All these had been collected between April and August 1920.

As in so many other cases, little is known about the life of Richard Schnitter. He left Germany in a new wave of emigration following the disaster of World War I and Germany's hopeless economic situation.



FIGURE 138. Arnold Schultze-Rhönhof. Archives of Rudolf Jenny.

After his arrival in Bogotá, he is frequently mentioned as a well-known horticulturist. A Presidential Decree of 9 December 1914 created the 'National Institute for Agriculture and Veterinary Science'. In March 1915, the first academic staff was named, comprising 10 professors, and among them Richard Schnitter, who was appointed to the Chair of Horticulture. Around the time he started collecting orchids for Schlechter, Schnitter was mentioned as a member of the staff of the National School of Agronomy; some years later, in 1931, he arrived at what was probably his final destination, for a few years occupying the position of Agricultural Expert in the Caribbean archipelago of San Andrés and Providencia.

It was not until 1924, in his *Beiträge zur Orchideenkunde von Colombia*, under III. *Orchidaceae novae vel rariores collectorum variorum*, that Schlechter comes to speak of Schnitter again. He describes here a number of new Colombian orchids, received "mostly from Mrs. R. Schnitter and H. Hopf" (of whom we will read later) (Schlechter 1924: 148).

Thirteen additional species were described from Schnitter's collections, again all from Bogotá, among

them *Stelis cundinamarcae*, *Stelis decipiens*, *Stelis oxipetala* (Fig. 136), *Stelis verecunda*, *Lepanthes schnitteri*, *Pleurothallis bogotensis*, *Pleurothallis nasuta*, *Pleurothallis nutans*, *Epidendrum peperomia* (Fig. 137), *Epidendrum strictum*, *Maxillaria camaridioides*, *Maxillaria schnitteri*, and *Dichaea trachysepala*.

A grandson of Schnitter, Gonzalo Ruíz Schnitter, collected the type of *Epidendrum pomecense* Hágsater in 1996 in the neighbourhood of Boyacá, in the company of Clara Lucía Patiño de Ruíz, his wife, Eric Hágsater and Father Pedro Ortiz Valdivieso.

ARNOLD SCHULTZE-RHÖNHOF (1875–1948; collected 1920–1928 [Colombia] / 1934–1939 [Ecuador])

"In the morning of 5 September an English airplane flew above us. In the afternoon, we were about 300 sea miles southwest of Tenerife, in the Canary Islands, when we were stopped by an English cruiser. Flag order: heave to, stop, set out boats! We were allowed to take only the most necessary personal items and then our little birds. Everything was over in a matter of minutes. Twelve cannon rounds sank our ship with all our belongings, above all our valuable collections. We are now poor as paupers!" (Arnold Schultze-Rhönhof, in a letter to his relatives, shortly after being released from an internment camp in Dakar. - In Zeckau & Zischler 2010: 240).

Arnold Schultze-Rhönhof (Fig. 138) was born in Cologne and was the son of an officer of the German Army. After a short time at the University of Göttingen, where he took courses in Botany, Schultze-Rhönhof enlisted in the German Army in 1896 and was soon commissioned as an artillery officer. After several expeditions to Cameroon in the service of the German Colonial Office, he left the Army in 1906 due to serious health problems. Back in Germany, he studied Geography and Natural Sciences at the University of Bonn. From 1910 to 1911, he went again to Africa, this time as part of the Central-African Expedition led by Adolf Friedrichs, Duke of Mecklenburg. In the company of botanist Gottfried Wilhelm Johannes Midbraed of the Botanical Museum in Berlin, he collected botanical and zoological specimens on the lower Congo, in southern Cameroon, and on the islands of Fernando Poo and Annobon, off the coast of Guinea.



FIGURE 139. Puerto Colombia, ca. 1920. Unknown photographer.



FIGURE 140. Páramo de Sumapaz. Unknown photographer.



FIGURE 141. *Sobralia odorata* Schltr. Photograph by David Haelterman.



FIGURE 142. *Epidendrum arnoldii* Schltr. Illustration by Constanza Rodríguez.



FIGURE 143. *Schomburgkia schultzei* Schltr. Photograph by Dorothy Potter Barnett.



FIGURE 144. *Sievekingia rhonhofiae* Mansf. Photograph by Rudolf Jenny.

After World War I and the loss of all German colonies, Schultze-Rhondorf went to South America in 1920, disembarking on 14 July in Puerto Colombia, near Barranquilla (Fig. 138). He worked in Colombia as a topographer, geologist, and agronomist and was active in writing articles against the devastation of the tropical forests (Anonymous 1950: 271–272).

“In his condition as researcher and expert for new oil fields in the eastern parts of the country, Schultze,

during his extensive expeditions, had the opportunity to gather a small but very interesting orchid collection for me.” (Schlechter 1924: 124) This expedition, the most important for the purposes of this article, took Schultze to the region of the páramo of Sumapaz (Fig. 140), on the border between the department of Cundinamarca and the old Territory of San Martín, to the headwaters of the Orinoco, and further east to the lowlands of the rivers Meta and Orinoco.



FIGURE 145. *Stanhopea annulata* Mans. Photograph by Orchi.



FIGURE 146. *Pleurothallis hopfiana* Schltr. Photograph by Maria and Grzegorz Garbuzowie.



FIGURE 147. *Pleurothallis bogotensis* Schltr. as *Pleurothallis phalangifera* (C. Presl.) Rchb. f. Archives of Rudolf Jenny.

Unfortunately, a bout of malaria forced Schultze to cut short his expedition and to return to Bogotá.

Arnold Schultze's orchid collections were made, with few exceptions, in the Colombian department of Cundinamarca. They were described by Rudolf Schlechter under the title *Orchidaceae Schultzeanae* (Schlechter 1924: 125–147). A large proportion of orchid species were described as new to science by Schlechter from this collection: *Habenaria schultzei*, *Epistephium lamprophyllum*, *Sobralia odorata* (Fig. 141), *S. schultzei*, *Elleanthus leiocaulon*, *Epidendrum anitae*, *E. arnoldii* (Fig. 142), *E. euchroma*, *Schomburgkia elata*, *S. schultzei* (Fig. 143), *Mormodes schultzei*, *Polycynis acutiloba*, *Xylobium modestum*, *Lindleyella saxicola*, *Maxillaria schultzei*, *M. sulfurea*, *Camaridium querciculum*, and *Odontoglossum schultzei*.

Arnold Schultze-Rhonhof returned to Germany in 1928. After a short rest, he left again in 1929 on an entomological expedition to the Congo, and then in

1931 to study the flora of the Balearic Islands. In the last months of 1934, with his wife Hertha, he started on his last long journey, this time to Ecuador, with the sole purpose of making botanical and entomological collections. After a short period in the highlands, they turned to the rain forests on the Pacific coast between the Pastaza River and Napo.

In the spring of 1939, having completed their collections, the Schulze-Rhonhofs started on their way home, travelling on the Putumayo and Amazon Rivers to Pará in northwestern Brazil. Here they embarked in the last days of August on the steam-ship *Inn*. Their fate was described in Schultze's letter that was mentioned at the beginning of these lines.

All botanical collections, among them presumably many orchids, were lost. The exceptions were a few specimens sent for determination to Rudolf Mansfeld from Ecuador; all of these were destroyed during the bombing of the Berlin Museum in 1943. He

published two of these specimens sent to Mansfeld as new species: *Sievekingia rhonhofiae* (Fig. 144) and *Stanhopea annulata* (Fig. 145).

After seeing their scientific harvest of 5 years sink into the Atlantic, Arnold and Hertha Schultze-Rhonhof were taken to Dakar, prisoners of the French Army. However, they were released shortly after that through Théodore Monod's intervention, the famous French explorer of western Africa.

They moved to the city of Funchal, on the Portuguese island of Madeira, never returning to Germany. Arnold Schultze-Rhonhof dedicated the next years to his literary hobbies, writing about his travels and preparing numerous pencil drawings and watercolors that were greatly appreciated when shown at an exhibition in 1946. Meanwhile, he earned his living as an expert in agricultural pests and diseases. He passed away in Funchal on 22 August 1948.

HERMANN HOPF (–?; collected 1900–ca. 1919–1921)

As mentioned above, Hermann Hopf came to Bogotá in 1900 as a collector for the Hennis nurseries in Hildesheim. A catalogue of plants received by Hennis in the year 1907 mentions that he received from Mr. Hopf in Colombia 2500 *Cattleya schroederiae*, 2000 *Cattleya trianae*, 5000 *Odontoglossum crispum*, 1000 *Cattleya gigas* var. 'Sanderiana', and plants of *C. gigas* und *C. aurea*. However, there were no new species among Hopf's collections of these years. Nothing could be found about Hopf in the years following; he presumably returned to Germany at the outbreak of WWI.

He is heard of again in 1919, when he presented a claim to the Colombian Post Service in Barranquilla for excessive shipping charges for two packages posted to a Mr. Ferdinand Hopf, in Germany. He then must have moved to Bogotá, since in 1924 Schlechter described several new orchid species, which, with no exception, are labeled as collected "in the department of Cundinamarca, in the surroundings of Bogotá." The collection dates are invariably 1920 or 1921. They are described in Schlechter's "Contributions to the orchid flora of Colombia" in the third chapter entitled "*Orchidaceae novae vel rariores collectorum variorum*" (Schlechter 1924: 148–183).

Hermann Hopf's new orchid species were: *Elleanthus bogotensis*, *Pleurothallis belocardia*,



FIGURE 148. Schlechter's herbarium label of *Pityphyllum amesianum*. Oakes Ames Orchid Herbarium #22320.

P. hopfiana (Fig. 146), *P. bogotensis* (Fig. 147), *Epidendrum bogotense*, *E. hopfianum*, and *Pachyphyllum bryophyllum*.

WERNER HOPP (1887 –?) AND SANTIAGO ARÉVALO (–?; collected 1921–1923)

In a letter from Berlin dated 26 September 1922, Rudolf Schlechter wrote to Oakes Ames: "Today you have got your birthday, I wish to show you that I have been thinking of you and therefore send you [...] a little thing that, I hope, will give you certain pleasure and show you that you can always be sure of my cooperation in all your work. This time it is a representative of one of my new genera, *Pityphyllum*, of which I found a very characteristic new species in the Colombian collection of Mr. Hopp [...] So please accept this simply as a token of my esteem and a sign that I have not forgotten the day." (from the correspondence files of Oakes Ames, Harvard University, 2018).

With the dedication of *Pityphyllum amesianum* (Fig. 148), Schlechter simultaneously introduced Werner Hopp to the orchid world. Werner Hopp, a young German civil engineer, came to South America for the first time in 1910. In 1914 he made two failed attempts to return to Germany, but WWI forced him to wait until 1919 when he could finally find a ship to carry him back across the Atlantic. In the meantime, he worked in Ecuador, from 1915 to 1917, at the Siemens-Schukert Works in Quito, and then until 1918 in Colombia as chief engineer at the Clausen brewery in Bucaramanga. Once back home in 1919, he soon became disappointed by the difficult economic circumstances in Germany and began planning to return to South America. It was then, in



FIGURE 149. Tunja street, in the city of Pasto, ca. 1920. Unknown photographer.



FIGURE 150. Werner Hopp in Peru, ca. 1932. In the background the Misti Volcano. In Hopp, 1944.

May 1920, that he made the acquaintance of Rudolf Schlechter. “As I found out that Mr. Hopp was not only highly qualified in his profession but also showed great interest in natural sciences, I asked him to collect herbarium specimens of orchids for me during his stay in South America. His response was positive, and it soon became evident that he had prepared himself intensively not only by studying collecting methods and the preparation of herbarium specimens but in becoming familiar with the main Colombian orchid genera” (Schlechter 1924: 5).

Hopp arrived in Bogotá and, during the first months, explored the area around the city. Shortly after that, he was contracted to direct the construction work of a large hydroelectric project near the city of Pasto (Fig. 149) to the southwest of Bogotá, near the Ecuadorian border. He would stay there for the next two years, using his little free time to continue collecting orchids and butterflies, his second interest.



FIGURE 151. *Stanhopea hoppii* Schltr. as *Stanhopea jenischiana* F. Kramer ex Rchb.f.



FIGURE 152. *Houletia clarae* Schltr. as *Houletia sanderi* Rolfe. Photograph by Hans-Gerhardt Seeger.



FIGURE 153. *Diothonea arevaloi* Schltr. as *Epidendrum arevaloi* (Schltr.) Hágsater. Photograph by Jay Pfahl.



FIGURE 154. *Rodriguezia arevaloi* Schltr. Photograph by Laurens Grobler.

Wanting to explore this large region in-depth, he engaged a Colombian plant collector named Santiago Arévalo, an experienced field man, having been in the past the guide to several other expeditions.

Arévalo and Hopp went as far as the department of Chocó and to the ridge of the mountains overlooking Colombia's Pacific Coast. Schlechter would later write about Santiago Arévalo: "We have to thank him for his contribution to the scientific results of Hopp's research" (Schlechter 1924: 6). Werner Hopp left Colombia in 1923 for Peru to lead maintenance work on a hydroelectric plant in Arequipa (Fig. 150). After a short trip to Germany in 1928, Hopp returned to Ecuador to work in Guayaquil in 1930. He then began extensive travels to the Amazon (see his narrative of 1944), collected for several German museums, and was engaged as a zoologist at the Goeldi Museum in Belém from 1934 to 1936.

Werner Hopp worked from 1936 to 1938 as an engineer in different positions in São Paulo and Buenos Aires. Finally, in 1939 he returned "to a mighty and greater Germany", as he wrote (Hopp 1944: v). He would never cross the Atlantic again. In 1957, he published a narrative about his travels and plant collecting in South America, under the title *Blütenzauber der Orchideen* ('Magic of the orchid flowers').

Schlechter described Hopp's and Arevalo's orchid collections in 1924 in *Orchidaceae Hoppianae*

(Schlechter 1924: 5–123). A total of 123 new orchid species were described. We list here only those dedicated by Schlechter to Hopp: *Sobralia hoppii*, *Elleanthus hoppii*, *Microstylis hoppii*, *Masdevallia hoppii*, *Stelis hoppii*, *S. weneri*, *Pleurothallis hoppii*, *P. weneri*, *Epidendrum weneri*, *Stanhopea hoppii* (Fig. 151), *Maxillaria hoppii*, *Cryptocentrum hoppii*, *Odontoglossum hoppii*, *Oncidium hoppii*, *Sphyrastylis hoppii*, *Telipogon hoppii*, and *Houlletia clarae* (dedicated to Clara Hopp, Hopp's mother) (Fig. 152) and to Santiago Arévalo: *Stelis arevaloi*, *Pleurothallis arevaloi*, *Diothonea arevaloi* (Fig. 153), *Epidendrum sculptum* var. *arevaloi*, and *Rodriguezia arevaloi* (Fig. 154).

The following chapters will continue with biographical information on Schlechter's orchid collectors in their principal collecting areas, first following South America's Pacific Coast to Ecuador and Peru (chapter V), then continuing to Bolivia, Chile, Argentina, Uruguay, and Paraguay (chapter VI and final).

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