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FOREWORD

Paradise for an orchid collector is a trail that runs through rich orchid habitat. Preferably the trail should decrease in elevation from 3000 to 500 meters 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.

In the Western Hemisphere, prior to the development of roads and highways, such trails from the lowlands to the Andean highlands existed from northwestern Colombia to southern Ecuador and northern Peru and provided the means of communication for people traveling by foot or mule back. Each of those trails might have had more than 1,000 orchid species distributed along their length. Curiously, each trail may have had a very different species' composition from the next closest trail. The mountains of this region were clothed in mature montane wet forest that appeared to provide very similar conditions from one locality to the next. Yet, careful analysis and comparison of the composition of the orchid flora of several parallel trails reveals a very low commonality of the species. Recent reports suggest that the highest orchid diversity on earth may be in this region.

Many collectors visited the zone from the time of Humboldt and Bonpland, C. Mutis, Ruiz & Pavón and Juan Tafalla at the turn of the 18th century. A wave of horticultural collectors were sent out from Europe by the major plant nurseries up through the turn of the 19th century. Most of those collectors were Europe-based and did not remain in the rich regions for prolonged periods of time. Very few actually lived in the orchid-rich regions, partly because those areas were inhospitable climate-wise.

By establishing his home near Popayan in southern Colombia, Friederich Carl Lehmann (1850-1903) lived in the midst of those orchid populations, but in quite agreeable climate. He married a local girl, Doña Maria Josefa Mosquera and established a family. He arrived in Colombia about 1876 and collected for about 28 years. That period coincided with the fashion of maintaining large orchid collections by the wealthy of Europe.

Lehmann communicated with Professor H.G. Reichenbach f., the leading orchid taxonomist of the time, and after Reichenbach died in 1884, worked with Dr. F. Kraenzlin describing new species of orchids from Colombia and Ecuador. He also sent a large set of his collections to Kew, where many were identified by Robert A. Rolfe.

Lehmann travelled by trail and by boat for much of western Colombia and Ecuador, and made a brief plant-collecting trip to Costa Rica and Guatemala. Between 1880 and 1902 he made 7 trips to Ecuador. On those trips he collected live orchids and shipped them to Europe to be sold in the great auction houses such as Hugh Low & Co., Steven's salesroom and Sanders. The nurseries established the plants and sold them as soon as they flowered at substantial prices. Some were sent home to Popayan where he grew them on to flower. He prepared dry herbarium specimens (collection numbers exceeding 10,000). He also produced paintings of excellent quality of outstanding species. The majority of his paintings have been housed in the orchid herbarium at Kew. Unfortunately, other than for visiting scientists and the staff of Kew, they have not been available to the public. Most have not been published until now. Lehmann's herbarium specimens were prepared in abundance so that he was able to sell sets to several of the major herbaria of Europe. The orchid specimen collections prepared by Lehmann in the Neotropics over a 25 year period have made a major contribution to the knowledge of the orchids of the region.

Calaway Dodson
Sarasota, Florida
June 2004

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THE ORCHID COLLECTIONS AND ILLUSTRATIONS OF CONSUL FRIEDERICH C. LEHMANN

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Preface. The Herbarium of the Royal Botanic Gardens, Kew, is one of the largest and most significant collections of the plants of the world, one of the few collections with a truly worldwide scope and a history of curation and improvement that can be traced back over a century and a half since it was first brought together by Sir William Jackson Hooker, the first official Director of Kew. Its historical collections are incomparable, containing specimens collected by many of the most famous botanists and explorers of the past, including Charles Darwin, David Livingstone, Alfred Wallace, Ernest Wilson and Richard Spruce. The associated Archives contain much of historical importance, placing the collections in perspective and often providing detailed accounts of the

ACKNOWLEDGEMENTS. The improved accessibility to Kew's incomparable archives and collections has been the inspiration for this project, the idea for this project having been many years in gestation. However, it only really became possible through the interest of His Excellency Sr. Alfonso Lopez, the Colombian Ambassador to the United Kingdom, and Sr. Roberto Arango, the Colombian Consul-General in London. Both supported this project from its inception and have provided much-needed encouragement and contacts along the way.

I would like to thank Professor Stephen Hopper, the Director of the Royal Botanic Gardens, Kew, for permission to use Lehmann's drawings and the facilities of Kew; and other Kew staff, especially Professor Simon Owens and Professor David Mabberley the past and present Keepers of the Herbarium at Kew, John Flanagan and Christopher Mills, the past and present Librarians, Peter Taylor, Alec Pridgeon, Mark Chase, Jeffrey Wood, David Roberts, Claire Moyle, Marilyn Ward, James Kay, Henry Oakeley, Kate Pickard, Michèle Losse, Gina Fullerlove and John Harris for access, facilities, help and encouragement. I am particularly grateful to Andrew McRobb for photographing Lehmann's illustrations; Justin Moat for the maps; and Dudley Clayton for kindly compiling the bibliographic notes.

Leslie Garay first introduced me to the significance of Lehmann's collections. Calaway Dodson, whose knowledge of the orchids of the northern Andes is incomparable, encouraged me in this project to make F.C. Lehmann's collections and illustrations more widely known. I am particularly grateful to him for providing the Foreword. His magnificent series of books on Ecuadorian orchids have provided many clues to the identities of Lehmann collections as have the series on Colombia orchids, edited with Rodrigo Escobar, to which he contributed. Likewise, Dr Carlyle Luer has been immensely supportive, not least for his *Icones Pleurothallidinarum* series and other publications that have clarified the taxonomy of so many Andean orchids. Previous curators at Kew, notably Robert Rolfe, Victor Summerhayes and Peter Taylor, named many hundreds of Lehmann's collections. Many visiting botanists to Kew have also identified and named his collections and, to a certain extent, I have relied upon their expertise, especially in poorly studied genera. Notably amongst these have been Leslie Garay, Calaway Dodson, Carl Luer, Robert Dressler, Norris Williams, Eric Hagsater, Mark Whitten, Günter Gerlach, Gerardo Salazar, Gustavo Romero, Alex Hirtz, Rudolf Jenny and Eric Christenson.

I would like to thank Juan Felipe Posada of Colomborquideas in Medellín, José Portilla and his family in Gualaceo, Ecuador and Alex Hirtz and Harry Zelenko in Quito for their support.

The text would have been much the poorer were it not for the language skills of Maren Talbot who has translated from the German, often almost illegible, the letters sent by Lehmann and the Klaboch brothers to Frederick Sander. I am deeply indebted to her. Likewise, although I never met her, I have freely used the translation of Lehmann's collecting notes made in the early 20th century by the late Mrs. Durham, of whom I have been unable to find any biographical information.

Alec Pridgeon has kindly and thoroughly edited the text, although any mistakes are the author's.

I have dedicated this account of Lehmann's work to Peter Taylor, my predecessor as Curator of Kew's Orchid Herbarium and my first boss and mentor at Kew. His deep knowledge of plants and his skills as a botanist and botanical draughtsman are a constant inspiration to me.

expeditions when the plants were discovered and collected. One of the most comprehensive of these collections is that of Consul Friedrich Carl Lehmann (1850-1903) who collected orchids and other plants in Colombia and Ecuador over a period of 27 years from 1876.

Lehmann was by profession a prospector and commercial plant collector. However, he made extensive preserved collections of herbarium specimens and illustrations of the plants that he collected and these form one of the most significant archives of the plants of the northern Andes. The main target of his plant hunting was orchids and the most important collection of his preserved orchids is in the Herbarium at the Royal Botanic Gardens, Kew. His specimens are also to be found in a dozen other major herbaria in Europe and North America. He collected many living plants, especially orchids, mainly for the nursery of Frederick Sander of St Albans. He also painted many of the plants that he collected and his iconography is now at the herbarium of the Royal Botanic Gardens, Kew, where almost 600 paintings are deposited. Significant collections of additional paintings are also to be found in London at the Natural History Museum, and in Vienna. Kew also possesses his correspondence with Frederick Sander and letters from other Sanderian collectors that tell of Lehmann's life and exploits.

Friedrich Carl Lehmann was born in Platkow in Germany in December 1850. He trained as a gardener in Germany. He arrived in the New World in 1870 and started work as a geologist prospecting for gold. His earliest recorded collections in South America were made in 1876 in Ecuador. He sent a collection of herbarium specimens to the eminent German orchid specialist Heinrich Gustav Reichenbach in Hamburg. 76 species are listed and 31 new taxa described as new to science (Reichenbach, 1878). On his return to the Americas from Europe in June 1880, he resumed plant collecting in Colombia and collected his first Colombian plant, a palm, in July 1880. His first Andean orchid collection was an un-named species growing on a mangrove (*Lehmann* 9) and his second a *Vanilla* (*Lehmann* 10). His illustration of the latter is his first recorded orchid painting.

He began to send living plants to the famous British nurseries of Messrs. Hugh Low & Co. of Upper Clapton, London, and later to Messrs. Frederick Sander & Sons of St. Albans. He also sent plants to the Royal Botanic Garden, Glasnevin and to several botanists including Professor H.G. Reichenbach in Hamburg, F. Kränzlin in Berlin, R.A. Rolfe at Kew and H. Ridley at the British Museum. He courted the botanists to provide names for his plants. Lehmann's most productive spell of collecting came between 1880 and June 1903, the date of his last recorded plant collection. In all, he collected almost 14,000 numbered collections and a large quantity of un-numbered ones as well. His numbering of collections was distinctly odd, his series not being sequential by date of collection. It seems likely that he numbered his herbarium collections some years after he had collected them. Not all were orchids but the orchid collections numbered in thousands and formed a considerable part of his work. The majority of his illustrations were of orchids, although occasionally he painted other plants, such as *Passiflora*, *Pinguicula* and *Eucharis* species.

He continued to prospect for precious metals but it ultimately led to his death in 1903 when he was crossing the Rio Timbiqui in Colombia. It is possible that robbers murdered him because they thought that he was carrying gold.

Lehmann's collections that were described by Reichenbach are now in the Natural History Museum in Vienna as part of the Reichenbach herbarium. He later sent, in 1893, some herbarium collections to the British Museum (Natural History). Another part of his herbarium was sold to Geneva at about the same time. After his death, the bulk of his herbarium, his illustrations, and most of his collecting notebooks were purchased by the Royal Botanic Gardens, Kew, for £200 in 1906. These remaining collections comprised 7200 herbarium collections of which 3172 were orchids, and some 600 paintings and drawings of orchids.

Lehmann had many orchids named in his honour including *Ada lehmannii*, *Catasetum lehmannii*, *Chrysocynis lehmannii*, *Dichaea lehmannii*, *Dracula lehmannii*, *Lepanthes lehmannii*, *Masdevallia lehmannii*, and *Pescatoria lehmannii*. He is also commemorated by the orchid genera *Lehmannia* and *Neolehmannia*.

The unpublished Lehmann iconography is an important source of knowledge of the rich orchid flora of Colombia and Ecuador. The paintings and drawings, some complete, some parti-coloured, others uncoloured, correspond to Lehmann's herbarium collections, many of which are type collections. A type is the specimen that a botanist uses to describe a plant as new to science and, as such, represents an essential standard for checking the

application of a plant name by other botanists. Lehmann discovered many new orchid species on his expeditions. Therefore, his herbarium collections and illustrations are critical in the identification of those species that were described by scientists based upon his collections.

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 parti-coloured ones are also worth publishing, being good representations of the plants that are easily recognisable. The illustrations, being unpublished, have never been available to orchid scientists apart from those who have been able to visit Kew and examine the original materials. One of the intentions of this book is to make some of his drawings available to a wider audience and to alert those interested of Lehmann's legacy at Kew.

I hope that through this book we will alert naturalists to the unrivalled work of Lehmann who, despite many privations, has established for himself a unique place in the pantheon of plant hunters in the American tropics.

Phillip Cribb

Royal Botanic Gardens, Kew

ANDEAN VEGETATION AND ORCHID DIVERSITY

The majority of Lehmann's active plant hunting took place in the northern Andes of Colombia and Ecuador. The account of the region, its vegetation and orchid diversity that follows sets the scene for the account of his life that follows.

Geography

Colombia is the fourth largest country in South America with a land surface of about 1,138,600 km², whereas Ecuador, straddling the Equator, is much smaller at about 238,500 km². Despite their disparity in size, they have much in common. Each has a distinct lowland western region, an Andean region of Cordilleras dissected by deep inter-Andean valleys, and an eastern lowland region. I will consider each in turn. The majority of the population, in both countries, lives in the mountains, and the lowlands are relatively less populated.

The western lowlands

A coastal plain runs more or less all the way from Ecuador's southern border with Peru to the north-western border of Colombia. It is variable in width, and its soils are partly alluvial and partly volcanic. In Ecuador, the region is called the Costa and runs for 685 km north to south and up to 100 km in width between the sea and the western Cordillera. This area of 263,000 km² is immensely bio-diverse with an estimated 5,100 species growing there. In the south it is dry with a rainfall of about 2000 mm south of the Equator, influenced by the Humboldt Current that keeps most of coastal Peru arid. The vegetation in the drier areas comprises tropical thorn scrub and even desert. Rainfall rises to 8,800 mm on the Colombian border and, in the wetter areas, the forest cover changes from tropical dry forest to tropical moist forest north of Quevedo. Unfortunately, only a single national park has been gazetted in this region. It is, nowadays, intensively cultivated and very little of the original vegetation remains outside this protected area (Dodson and Escobar 1993).

The western lowlands of Colombia are more extensive and in a better state of preservation. For 320 km north of the Ecuadorian border the lowlands are wide, marshy and sparsely inhabited. Lehmann collected extensively in these forests, especially on the Rio Dagua and Rio Timbiqui, and found many rarities there. He also met his untimely end while trying to cross the latter. The Serrania de Baudó runs along the coast north of Buenaventura. East of this range the forested lowlands taper into a narrow region, the Choco, which drains south into the Pacific by the Rio San Juan and north into the Caribbean by the Rio Atrato. The climate is hot and rainfall high with torrential daily rain so that lowland forests are well developed there.

A narrow strip of perhumid cloud-forest clothes the lower Andean slopes of Ecuador between 300 and 900 m elevation, merging into the Choco forests of Colombia where the forests are more extensive.

The sierras

Above 900 m elevation, extensive areas of montane habitat exist in both Ecuador and Colombia forming a mountainous backbone to both countries. In Ecuador, two ranges of mountains, cordilleras, run north to south, separated by a broad, dry central valley. Both ranges boast high volcanoes: Chimborazo at 6310 m is the highest but several others, including Cayembe, Illiniza, Altar, Cotopaxi, Tunguragua, Antisana and Sangay, top 5000 m. Tunguragua (5016 m), overshadowing the town of Baños, and Sangay (5230 m) are currently extremely active. The western slopes are somewhat drier than the eastern ones and have suffered almost as much deforestation as the western lowlands. The forests of eastern flanks of the Eastern Cordillera are in far better condition, protected by a number of national parks and reserves. Lehmann traversed the Ecuadorian cordilleras many times while collecting. The mountains around Quito, Baños and Loja proved to be especially rich and rewarding for masdevallias and odontoglossums.

Ecuador's inter-Andean valleys, ten basins in all, lie between 2100 and 2750 m elevation, often lie in the rain-shadow of the cordilleras, suffering periodic droughts. Grassy páramo vegetation covers extensive areas but most of the flatter areas and many of the steeper ones are now cultivated.

In Colombia, the two Ecuadorian ranges persist into the southern part of the country, and the valley between

them is filled with volcanic ash. Lehmann was based at Popayan, which lies at the head of a fertile alluvial, black-soil valley that runs northwards to Cali and Cartago, draining to the north by the Cauca River. Many of his collections came from the mountains and riverine forests of the region. A low pass west of Cali crosses the western cordillera and links it to Buenaventura on the coast. Lehmann traversed it many times, often en route to deliver his plant collections to the ships that would transport them to Europe. He collected as he travelled and found many fine orchids, especially huntleyas, bolleas and pescatorias here. In the Western Cordillera only five peaks are 4000 m or more high, and none reaches 5000m. At Cartago, the two cordilleras approach each other and form a steep gorge that runs all the way north to the Caribbean lowlands.

In the Central Cordillera, Medellin, the capital of Antioquia, lies at an elevation of 1540 m and is the centre of coffee production. North of Medellin, it splits into three branches separated by rivers that all run into the Caribbean. This region, in the state of Antioquia, proved to be a fertile collecting ground for Lehmann and produced fine cattleyas, odontoglossums and masdevallias in abundance.

The Eastern Cordillera arises some 2° N of the Ecuadorian border and moves north, bifurcating at 7° N into two branches, one becoming the western rim of the Maracaibo basin, the other running north-east into Venezuela. The Magdalena River separates the Eastern from the Central Cordillera and runs north into the Caribbean at Barranquilla. Some of the peaks of the Sierra Nevada de Cocuy in the Eastern Cordillera rise to over 5200m, Ritacuba Blanca being 5493 m high. Bogota, the capital, lies in a high fertile basin of the Eastern Cordillera at more or less the same latitude as Cartago.

The Sierra Nevada de Santa Marta lies isolated from the main Andean cordilleras and on the shores of the Caribbean. Its greatest peaks, the highest in Colombia, rise to 5800 m and are less than 50 km from the sea.

The Eastern lowlands

About a third of Ecuador and over half of Colombia lie to the east of the Andes. In both Ecuador and Colombia, the country drops abruptly east of the Eastern Cordillera to the lowlands of the Amazon and Orinoco basins. Most of these areas are very wet. The soils on the Andean slopes can be rich and in the high rainfall can support fine rain-forests. The Amazon basin in Ecuador begins at the 300 m contour and runs all the way to the Atlantic Ocean, while the Orinoco basin runs all the way to the Caribbean. Both regions are characterized by poor thin soils in the lowlands. Tall forests follow the meandering river margins and are interspersed with ox-bow lakes, seasonally wet grasslands and swamp forests. Rainfall is high, and temperatures are hot. Lehmann seems to have spent little time and effort collecting in these regions which are relatively poor in orchid diversity, although he did navigate the Orinoco to its mouth en route to the Caribbean, collecting plants (but few orchids) along the way.

Orchid diversity

Colombia and Ecuador are undoubtedly amongst the most biodiverse countries in the world. They are also rich in orchids, containing between them an estimated fifth to a quarter of all the world's species. The latest figure shows that Ecuador has 3,259 species in 214 genera (Dodson and Escobar, 1993), but Luer (2003, 2004) has alone already added 200 new species of *Stelis*. Colombia has currently fewer described species, but Dodson (1994) estimates that it will be as rich as, if not richer than, Ecuador. The orchids account for an estimated 10% of the floras of each country (Kress, 1986).

Orchids are distributed in every habitat from the coast to the permanent snow-line on the highest mountains. Factors driving orchid evolution have been the tremendous variety of available habitats, the diverse topography and climate of the region, the unstable geology and the availability of pollinators, and mycorrhizal fungi. It seems likely that hybridisation and possibly polyploidy have also been influential.

Three Andean cordilleras in Colombia merge into two in Ecuador Andes. The precipitation varies greatly in each cordillera and in the inter-Andean valleys depending upon prevailing winds and the rain-shadow effect of neighbouring mountain ranges.

Some orchids are widespread, especially lowland species but, in the Andean cordilleras, most are more

restricted in their distribution and some are narrowly endemic. Dodson and Escobar (1993) have estimated that only about 8% of the orchids of Ecuador are found in the lowland forests below 300m whereas about 18% occur above the 3000m contour. Thus almost three-quarters of all the orchids are found between 300 and 3000 m in less than half the surface area of the country. The same would apply in Colombia.

Endemism

Gentry (1982) defined endemics as those plant species confined to a distribution range of less than 75,000 km². As Dodson and Escobar (1993) indicate, most Andean orchids are much more restricted in their distribution, many to less than 20,000 km² and often occur in only one or two ecologically appropriate forest types. Both Gentry (1982) and Dodson and Escobar (1994) estimate that 20% of the flora of western Ecuador is endemic, the same figure approximately applying to both the dry and the wet forests.

However, in the mountains, endemics can be far more restricted in their distribution. Many of these narrow endemics have been described as new to science by authors such as Luer and Dodson and their collaborators in recent years. The recent discovery by Lou Jost (2004) of many new species of *Teagueia*, a genus previously represented by only six species, on a mountain in east-central Ecuador confirms suspicions that the northern Andes are particularly rich in endemics. Dodson (1994) gives a vivid example from the Centinela Ridge in western Ecuador where 10% of the plant species were endemic in an area 20km by 1 km in extent and ranging from 500 to 800m in elevation. The area is now deforested, and species' extinctions have certainly occurred.

Lehmann's main collecting areas

Lehmann covered a remarkable area while collecting orchids in South America, from the Ecuadorian border to the Colombian Caribbean coast and east to the Venezuelan capital of Caracas. He travelled by boat or ship, using the extensive river network in the lowlands but mule or horse in the highlands.

The state of Antioquia in Colombia proved to be amongst his most prolific hunting grounds. He first collected there between September and November 1884, returning from August to December 1891 and in November 1896. The region produced fabulous cattleyas, including *C. aurea*, *C. trianaei* and *C. warscewiczii*, and odontoglossums such as *O. harryanum*, *O. lindleyanum*, *O. luteopurpureum* and *O. wallisii*. *Dracula chimaera*, *D. pholeodytes* and *D. velutina*, *Masdevallia bicolor*, *M. cucullata*, *M. torulosa*, *M. peristeria*, *M. ventricularia*, *M. molossus* and *M. platyglossa*. Fine forms of *Phragmipedium schlimii* were also collected in the forests around Frontino and Medellin. Other notable discoveries in the region included *Trichopilia rostrata*, *Rodriguezia lehmannii*, *Otoglossum coronarium*, *Anguloa ruckeri*, *Oerstedella wallisii*, *Oliveriana egregia*, *Cyrtorchilum fallens* and *Stanhopea wardii*. The spectacular orange-brown flowered *Neomoorea wallisii* was found on the Rio Nuz between Pavas and Alto Grande. But perhaps his finest collections here were of *Miltoniopsis vexillarius*, the pansy orchid. Lehmann noted: "This plant, distributed all over Antioquia, varies rather strongly in different localities. The plants occurring on the western salient of the West Cordilleras – around Uruma, Musinga, Frontino, Urrao etc., produce the largest flowers. The latter are of a very pale lilac-pink colour, occasionally almost white. The plants growing around Ituango, on the Rio San Jorge, above San Andres, and around Briceno, have somewhat smaller flowers but these are of a much deeper pink, and the plants are considerably stronger and usually larger. The plants growing below Sonson and around Amalfi, produce the smallest flowers, but these are the most vividly coloured. The latter variety agrees almost completely with the variety *rubellum* from Cauca."

He extensively explored the Cauca valley and was richly rewarded, especially with masdevallias and draculas: including *Masdevallia amanda*, *M. bicolor*, *M. stenantha*, *M. maculata*, *M. pachyantha*, *M. racemosa* and *M. pantherina*, and *Dracula chimaera* and *D. vespertilio*. Other notable collections included *Coryanthes mastersii*, *Pescatoria klabochorum* and *Cattleya chochoensis*. The mountains around Cali produced *Bollea coelestis*, *Ada chlorops* and *Dracula chimaera*. But it was the Popayan highlands, his base from 1878 onwards, that yielded some of the finest orchids, including *Odontoglossum pardinum*, *O. ramossissimum*, *O. angustatum* and *O. luteopurpureum*, *Maxillaria lepidota*, *M. grandiflora*, *Comparettia falcata*, *Eriopsis biloba*, *Warrea tricolor* and *Cyrtorchilum undulatum*. His most notable discovery thereabouts was in the Andes west of Popayan were he

discovered in 1896 the strange green-flowered epiphyte *Trevoria chloris*, the type of a new genus exuberantly described by Lehmann in the *Gardeners' Chronicle* of the following year.

Closer to the Ecuadorian border, the Tuquerres highlands, visited first in September 1877 and several times subsequently, produced *Odontoglossum angustatum* and *O. pardinum*, *Helcia sanguinolenta*, *Pescatoria lehmannii*, *Chondrorhyncha chestertonii* and *Phragmipedium caudatum*.

On his frequent visits to the western lowlands, especially en route to Buenaventura and to his mine on the Rio Timbiqui, he found *Miltoniopsis roezlii*, *Huntleya citrina*, *Pescatoria klabochorum*, *Dracula inaequalis*, *Phragmipedium longifolium*, *Peristeria elata* and *Chondrorhyncha chestertonii*.

Some of Lehmann's earliest collections came from the area around Quito in the Ecuadorian Andes where he first arrived in May 1876. There he found *Cyrtorchilum genuiculatum*, *Cochlioda vulcanica* and *Maxillaria lehmannii*. Farther south, the eastern slopes of the Andes between Sigisig and Cuenca were rich in masdevallias and other choice species, such as *Odontoglossum cirrhosum*, *O. cruentum*, *O. angustatum*, *Maxillaria lehmannii* and *Cyrtorchilum macranthum*.

To reach the Ecuadorian highlands, Lehmann used the ports of Esmeraldas and Guayaquil. His collections from the Ecuadorian lowlands included *Huntleya wallisii*, *Stanhopea tricornis*, *Coryanthes wolfii*, *Cycnoches lehmannii* and *Odontoglossum denticulatum*. Lehmann's label notes of *Cattleya maxima* state "The species occurs here [in north-western coastal Ecuador] on *Rhizophora mangle*, in brackish marshes. Further to the south, around Pichota and Jipijapa, the lowermost boundary begins only at 200-300m above the sea, and reaches up to 1000m. To the south from Guayaquil it occurs only very seldom below 1000m. The so much sought-after variety "*Backhouseana*" grows around Zaruma in south-east Ecuador."

The highlands of southern Ecuador were one of Lehmann's earliest and most productive hunting grounds to which he returned many times. Between June and November 1876 he first collected in the eastern Andes around Loja and Zamora, a region which yielded many masdevallias and also *Phragmipedium boissierianum*, *Phragmipedium wallisii*, *Cyrtorchilum retusum* and *Cochlioda rosea*. The Tunguragua volcano, first visited in March 1877, proved particularly rich in showy orchids with many species growing in abundance on the old lava flows, including *Phragmipedium lindenii*, *Cyrtorchilum macranthum*, *Brassia longicuspis*, *Cochlioda vulcanica*, *Odontoglossum cristatellum*, *Chrysocycnis lehmannii* and *Oncidium tunguraguense*.

Lehmann considered the beautiful *Masdevallia rosea* to be one of the most valuable and desirable plants that he collected. He first found it in June 1877, growing on Tunguragua at 3100m, and later between Loja and Zamora and in the east Andes of Cuenca.

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THE LIFE AND TRAVELS OF FRIEDRICH CARL LEHMANN

Friedrich Carl Lehmann (1850-1903) (Figs. 1, 2) collected orchids and other plants in Colombia and Ecuador over a period of almost three decades from 1876 (Rolfe, 1904). He was by profession a commercial plant collector, and also eventually a land-owner, a mine-owner and German Consul in Colombia. His extensive preserved collections of herbarium specimens and illustrations of the plants that he collected form one of the most significant archives of the plants of the northern Andes. The main target of his plant-hunting was orchids, and the most important collection of his preserved plants is now held in the Herbarium at the Royal Botanic Gardens, Kew. His specimens are also to be found in a dozen other major herbaria in Europe and North America. He collected many living plants, especially orchids, originally for the nursery firm of Stuart Low of Messrs Hugh Low & Co. of Upper Clapton, London, and for Frederick Sander (Fig. 3) of Messrs Sander & Sons of St Albans. He also painted many of the plants that he collected, and his iconography is now in the Archives of the Royal Botanic Gardens, Kew, where almost 1000 paintings are deposited. Small numbers of his paintings are also to be found at the Natural History Museums in London and Vienna.

The early years

Lehmann was born in Platkow, Germany on 27th December 1850 in humble circumstances, the eldest son in a large family. He received elementary schooling before being apprenticed as a gardener in Germany. He arrived in the New World in 1876 to collect plants for the Low nursery of Upper Clapton, London, then the leading English nursery specializing in orchids and other tropical plants.

A glimpse of this can be seen in Reichenbach's introduction to his account of new discoveries by Lehmann, published in *Otia Botanica Hamburgensia* of 1878:

On behalf of the famous company H. Low & Co, Upper Clapton, London, Mr. Lehmann from Werder has travelled a part of western South America, mainly to collect living plants. In agreement with Mr. Low, this courageous, skilled and happy botanist has sent me several collections of dried orchids, which count amongst the most excellent contributions I have ever received. There were not just single flowers without descriptions but mostly entire plants even of genera like *Stanhopea*, *Cycnoches*, and *Catasetum*, requiring a certain amount of heroism.

As a result, we are able to regard Lehmann, who clearly possessed a thorough knowledge of the known (species), as the discoverer of many species, whose collection may have been avoided by many of his predecessors, especially Jamieson [Jameson]. In addition I received many useful notes. I don't believe it to be timely to publish the exact co-ordinates of localities. Given the hot competition in orchid collection it would lead to the destruction of many plants. We do not wish to support the vandalism with which some self-made collectors, following others, proceed to destroy everything. I know that some do not share my views and demand, "in the interest of science", that all details be made public – in order to go and earn lots of guineas without much effort. It seems that science is to horticulture as religion to politics. As Messrs. Low and F.C. Lehmann risked money and health to achieve their goals, I do not feel I have the right to abuse their trust. It is due to my unbreakable confidence that I tend to know about the London-based explorations and geographical results.

Furthermore, I wish to point out that there seems to be a remarkable harmony between the orchid floras of Costa Rica and Ecuador. This is evident from a comparison with Endres' orchids. Generally, the species appear very similar, however, on close inspection they turn out to be different. It would be helpful to learn about oreographical and climatological data. Modern theorists will not require this. A cloud of organic seedlings, which poured over Costa Rica and saved some for Ecuador. This is probably what happened – how many million years ago ?

His earliest recorded collections of both living and dried specimens were made in Ecuador in 1876. Herbarium specimens of his collections were sent to H. G. Reichenbach, the eminent German orchid specialist in Hamburg, who identified and named them, describing many new species based on his collections. At about the same time or a little later, Lehmann engaged Eduard Ortgies, the Superintendent of the Zürich Botanic Garden as his agent, selling plants to private growers in Europe. Ortgies offered some consignments of orchids for sale through Stevens auction rooms in Covent Garden.



FIGURE 1. Friedrich Lehmann (1850 -1903), plant collector and German Honorary Consul In Popayan, Colombia. Oil painting courtesy of the late Sra Amalia Lehmann de Sarría, the great-granddaughter of Consul Lehmann. Photograph Henry Oakeley.

Establishment as a plant collector

Lehmann's arrival in South America presented him with several problems. He did not know the country nor had he any previous collecting experience. He also had rivals with a great deal more experience than himself. Also in the field at this time were Gustave Wallis, William Boxall, John Carder, Chesterton, Eduard André, Benedict Roezl and his nephews Eduard and Franz Klaboch. Of these, only Boxall was collecting for Low. Lehmann's own correspondence to Messrs Low & Co. from the period has disappeared but the letters of Eduard and Franz Klaboch to Frederick Sander survive and provide a vivid insight into Lehmann's strategy. He decided to stick like a limpet to the brothers and to collect from their choice localities. Of course, they were aware of his strategy and motives but, in the small community of expatriot collectors, they were unable to keep their movements secret for long. Lehmann either anticipated their moves or dogged their steps. The frustration frequently boiled over in their correspondence with Sander. Thus, in successive letters sent from Guayaquil on 1 and 21 July 1876, Eduard wrote:

I have just despatched Franz to Cuenca where he will travel today and I shall go to my old location for the *cirrhosum*.

Unfortunately I am too late because Low has his collector Lehmann here already since 15th May and he has sent a consignment of *cirrhosum* with today's mail. He tells me that he only collected 300. If I can believe him, that's not too many, but if he has sent more, then my task is in doubt. I believe that by August you should receive a few hundred from me.

As Lehmann described the location, he has been collecting at the same place as I did last year. Now I am going there again and he also wants to go there."

"Franz departs tomorrow, Lehmann will follow him, I don't know how I shall cope here.

Lehmann also sought out their collectors and made better offers to them to secure choice plants:

Can you imagine, today there arrived a man who usually collects (*Odontoglossum hallii* and *cirrhosum* for us, and Lehmann found out about this in a strange way. He went to see him and told him that he would pay one dollar more than we per 100 plants, and he wanted him to collect for him. The man did not agree and came to me straight away and told me about it. I gave him \$20 advance and told him that he should pay me for this with plants.

Of course, I could not keep this a secret from Lehmann; so he started making excuses and said that this man was a liar, that he had not discussed anything like this with him. He did not realise that this man can be a disadvantage for him for he is an Indian like the rest of the people in the village. If asked to collect, he will ask if you are coming also; if not, he will not go anywhere, nor will the rest of the village. Since Lehmann had annoyed me so much, I told him that the man had talked about him and that he is quite hostile. This means that he may not receive any plants from there, which would be the best thing for us. I don't trust him, he appears very friendly but I notice that that does not go far. He says that ambition has driven him to collect. If that is so, why doesn't he go to find something new? for with *cirrhosum*, there is no more honour to be gained. I knew that the *cirrhosum* are much easier to find at the other location, I told him that Franz was going there to find *Onc. macranthum* and I went with him to collect the *cirrhosum*. I couldn't get a room in the hotel and rented an apartment at some distance. He even found out about that and turned up last night when I had the whole room full of *cirrhosum*. He stood as if hit by lightning. I didn't exactly enjoy his visit, but now we are ahead of him by 3,000. He had no idea. Franz left another 1,000 *cirrhosum* there because he could not carry them; we are also ahead of him by 500 *hallii*. Today I paid in advance. A few hundred *Mesospinidium sanguineum* will probably be in our next consignment.

The rivalry was intense and Eduard Klaboch could not resist crowing when he felt that he had outwitted Lehmann:

Luck had it that Franz and I arrived at the same time. I arrived with Lehmann, each of us brought 1000 plants which we collected with great difficulty. But Franz brought 3,000, so that we have more than Lehmann.

Frederick Sander, using the intelligence from Klaboch's letters, conspired to make Lehmann's and Low's life difficult, publishing two advertisements in the *Gardeners' Chronicle* intimating that Lehmann had offered plants for sale falsely under the name *Odontoglossum cirrhosum*. Eduard Klaboch's letter of 27 September 1876 considered the matter:



FIGURE 2. Friedrich Lehmann, photograph published in the *Gardener's Chronicle* 1904.



FIGURE 3. Frederick Sander, the self-styled 'Orchid King', nurseryman of St. Albans, England, and Bruges, Belgium.

I have received your letters dated 17th and 29th July including the *Gardener's Chronicle* with the advertisements of Wallis'. Low sent the two advertisements to Lehmann, he could not have been very happy that you published them, but it will damage us. Lehmann says I have exaggerated the matter. All the same, as we decided to take no further plants, he is getting another 6,000. I told him that I had done it only for his sake. Fortunately he did not get very many the first time round. Now he is sick, but not very seriously, it's just a fever.

You ask me about his movements; so far they are the same as mine except for a trip to Sitambas {?}. Otherwise he is always going with me. Every day he talks about making different journeys but he changes his plans daily. I believe Lehmann does not have the courage to go to an unknown destination and Low does not have the courage to fund such journeys. For I believe if Lehmann felt confident enough to make an independent journey, he would not forever cling to me. He wants to know everything about localities of plants. Whenever he talks about a plant, he pulls out his special map, as if he could find it on there. And when he then puts the map back into his pocket he says: "Yes, that's where it is."

He is also looking for *Nanodes medusae*, but that does not seem to be on his map.

I don't know where he intends to go next, but God willing, his next journey will be to hospital.

By now, it was clear that the Klabocho considered Lehmann a serious rival and kept close tabs on his movements. Their letters contain many references to his activities, thus on 20 January 1877, Eduard wrote:

You ask if Lehmann knows anything about the *Odontoglossum*? He knows nothing, and if he did it would not matter much because I believe they are merely *Od. roseum* and so rare that he would find it impossible to collect them. Regarding the white *Maxillaria*, I don't know if he had an order for them or if he sent the right ones, he knows where it grows for he has it in flower and will collect more. I found it in Molleturo, three plants in box No. 5 are from there. Also in the same box are a few *Nanodes*, they grow together with the *Maxillaria*. Lehmann has departed for Cauca,

probably to collect *Bollea* and *Masdevallia chimaera*....You ask for more *Od. macranthum* and *Od. cirrhosum*, but it is too late for that for the rainy season has started. If Lehmann stays here he will not be able to send anything before June, because the dry season starts in May and before then he can't do anything. We can be back here by May.

However, it seems that the relationship between them was not entirely antagonistic for, on 31 July 1877, Eduard Klaboch wrote:

Mr Lehmann accompanied me during the entire trip [to Ecuador], during which Lehmann suffered very severely from dysentery.

At the end of the trip Klaboch also

suddenly got so ill that I thought I would die.

Lehmann's generously gave them details of localities of showy orchids with Klaboch acknowledging that:

...together with the *Odontoglossum karwinskii*, *Selenipedium wallisii* grows by the Zamora River....I shall collect them because Lehmann has indicated the location very precisely.

Nevertheless, the relationship remained tense. Eduard wrote from Guayaquil on 14 October 1877 that:

Lehmann is going to Cauca and told me that he intends to go to Popayan where he will look for *Oncidium superbiens*. It is perfectly possible that he will find it because he has a letter from the old General Alosquera, and they were found on his estate before.

Only for him to add the following day in a postscript that:

Lehmann has deceived us all, he did not want to admit that he was going to Colombia, but in the end he could no longer keep the secret for I was present when he departed.

The rewards for Lehmann as an orchid collector are difficult to gauge by today's standards. However, amongst the letters from the Klaboch brothers to Sander is an account for the year 1878. The Klabochs' plants fetched almost £1,100 at auction or by direct sale to nurseries in England and on the Continent. This is the equivalent today of £66,000. However, their expenses, including payments to Sander and Roezl as agents, each of 10%, came to £1,015, or the equivalent of today's £60,900. The profit for the Klabochs seems so small as to be scarcely worth all the effort and danger.

Marriage and property

Sometime after 1880, Lehmann married Sra Maria Josefa de Mosquera, a lady from a prominent family who held estates in and around Popayan, Cauca province, Colombia. From that time, he settled in Popayan, using it as a base from which to launch his subsequent explorations. His wife inherited property in Popayan and a country estate nearby in Cauca Province which Lehmann improved and managed. Gold was found on land owned by his wife's family soon afterwards (Kraenzlin, 1904). Lehmann consequently acquired considerable skills as a geologist and prospector. He certainly had long-standing interests in mining in Colombia. Documents in the possession of his family suggest that he was involved in the sale of a mine to a company based in New York but retained an interest in it. Indeed, he was visiting a mine he managed beside the Rio Timbiqui when he was so tragically killed.

Orchid business

In 1880 Lehmann visited Europe to enhance his business connections, especially those with Low and other orchid nurseries. At the time, orchids were rapidly becoming the most popular of all plants for cultivation by royalty, the landed gentry and wealthy businessmen throughout Europe, but especially in England. Lehmann went to Germany and England, visiting botanists, nurserymen and private growers, making many new contacts.

He resumed plant collecting in the Andes in June 1880, following his return from Europe. The first plant he collected on his return was a palm, in July 1880, in Colombia. His first sequentially numbered Andean orchid collection (*Lehmann 9*) was an un-named species growing on a mangrove and his second a *Vanilla* (*Lehmann 10*). His illustration of the latter is his first recorded orchid painting.

From 1880 he divided his efforts between the English nurseries of Low and Sander, both of whom he had met in London. His relationship with Low deteriorated and by 1882 was almost finished. Eduard Klaboch met Lehmann at Coban in Guatemala in April 1882 and related to Sander his opinion on Lehmann's relationship with Low:

Now I have found how he [Lehmann] operates. First there was no better man than Low, then Ortgies, and of course his friend Polko. Now he is no longer so fond of Low, he has broken with Polko and he has nothing good to say about Ortgies. But he is not honest, for when he was travelling for Low, he sent things to Polko, and that made a bad impression on me, for he did this at the expense of Low, the journey to Barbacoas, where he found all the new things and did not send a single one to Low, which means he defrauded him. And now I understand that he went to Costa Rica for Low, but he also sent plants to you. I can therefore not find it in me to trust him. If he cheats others, he will not make an exception with me. Of course, none of this is any of my business, but it annoys me when he is dishonest with me.

Of course, Klaboch was no friend of Lehmann and certainly sought to harm any budding relationship that he had with Sander.

Lehmann's correspondence with Sander between 1880 and 1888 survives in the Archives of the Royal Botanic Gardens, Kew, and traces a stormy relationship that eventually failed. Towards the end of the relationship, Lehmann began to offer plants for sale directly through advertisements in the *Gardeners' Chronicle*, a weekly gardening magazine with a wide British and European circulation. Sander would certainly have considered this as serious competition, undercutting his own business.

Hard times

Lehmann collected thereafter for his private clients and also for the Liverpool Horticultural Company, another nursery specializing in wild-collected orchids. A letter of 6 May 1893 to Henry Ridley succinctly describes the end of the latter relationship and some of Lehmann's current problems:

I losed (sic) nearly all my means for the continuation of my work by the bankruptcy of the Liverpool Hortic. Company.

Heinrich Gustav Reichenbach

Lehmann relied upon taxonomic botanists to name and describe his collections, essential if he was to obtain the best prices for his many discoveries. However, the botanists had conflicting priorities and seldom were able to keep up with Lehmann's prodigious rate of collection of novelties. Needless to say, his relationships with his botanical contacts were often as stormy as those he had with nurserymen.

Undoubtedly, Heinrich Gustav Reichenbach (1824-1889) (Fig. 4), the acknowledged orchid authority of the day who had assumed the mantle held by John Lindley on the latter's death in 1865, was the botanist who most influenced Lehmann. Lehmann held an implicit belief in the ability and integrity of Reichenbach, that is, until Reichenbach's death, when the provisions of his eccentric will produced a stunned reaction amongst all those who had known and collaborated with him.

Lehmann sent herbarium specimens to Reichenbach from the late 1870s until the latter's death. Reichenbach responded, identifying and describing Lehmann's orchid collections. His earliest description based on a Lehmann collection, that of *Masdevallia lehmannii* in the *Gardeners' Chronicle* of 1878 (ii: 38), is accompanied by a paean of praise and a dig at English orchid collectors:

It was discovered in Ecuador by Mr Lehmann, who sent many good Ecuadorian things . . . to Mr Low. Mr Lehmann's name gives me hope of his being my compatriot. There is, however, a strong indication of his having been in contact with English. Not because he sent a very beautiful collection of dried specimens – specimens indeed, not scraps! of Ecuadorian orchids to Mr Low for me. No, no! I am sorry to say *cetemps n'est plus* – collecting specimens is no more



FIGURE 4. Heinrich Gustav Reichenbach (1824-1889), German botanist and orchid authority, of Hamburg.

the general custom of English collectors, as in the glorious days of both the Lobbs, Purdie, the Cunninghams, and Gardner. No! It would seem that the English do not acknowledge a plant to be a specimen unless it is glued down. I have obtained splendid specimens glued down abroad on the most miserable grey blotting paper. I could not help thinking of the old general who declared a mantle was a very useful thing for a soldier, provided it was neatly rolled on his back. After all it is much better to obtain a glued, or fastened specimen, than none at all, and I recommend myself to Mr Lehmann for all such niceties by dedicating to him most thankfully this lovely *Masdevallia*

A second species, *Masdevallia triglochis*, was described in the same volume, again with praise for Lehmann:

I knew very well that Mr Lehmann, the zealous Orchidist, had discovered a new *Masdevallia* of the *Triaristella* group in the hunting grounds of Hall, Jameson, Wallis, Krause, Spruce, Roezl, Klaboch, Sodiro, and Andre, for I possess a very satisfactory set of dry specimens (not miserable scraps) in my herbarium, where the lovely genus *Masdevallia* is not very poorly represented.It was in June when Mr Lehmann found this novelty, at an elevation of 5500 feet. All Orchidists will be very pleased to thank him for the discovery, and Mr Low for the lucky introduction. (p. 648)

In 1878 he published a catalogue of a further 76 Lehmann's discoveries in *Orchideae F.C. Lehmannianae ecuadorenses* (Reichenbach, 1878). Of these, 31 were new taxa (28 new species and three new varieties). Notable amongst them were new species of *Cranichis*, *Odontoglossum*, *Maxillaria*, *Cycnoches*, *Aeranthes*, *Epidendrum* and *Masdevallia* named in the collector's honour.

The following year, Reichenbach (1879) described the fine *Pescatoria lehmannii* in the *Gardeners' Chronicle*, calling it:

A glorious discovery. A grand violet flower, with some white stripes at the base. It is thus that Inspector Ortgies (of Zürich B.G.), who has before him Mr F.C. Lehmann's careful representation, which I have not yet seen, describes it. My richest curiosity is a complete dried plant and three flowers, one of which I have softened with great care to judge it with certainty. . . .I feel pleased to dedicate this grand species to the keen and very intelligent traveller, my friend Mr F.C. Lehmann, who does so much for the progress of botany and agriculture. No doubt the best wishes of all lovers of Orchids follow him in the wild and often unwholesome deserts of the Andes, where he is already known to have braved so many dangers.

Lehmann must have swelled with pride to read such a glowing endorsement. He was undoubtedly proud of the connection, boasting to Sander that

Reichenbach wrote succinctly: the orchids of F.C. Lehmann are close to my heart, the wonderful collection, full of new discoveries (letter of 30 January 1880).

However, Reichenbach was a hard taskmaster, and a year later Lehmann wrote that:

Has Prof. Reichenbach not yet published the *Pescatoria trevoriana*? He seems to be cross with me; he has not yet written to me. He wanted me to stay in Europe and to give him my diary so that he could use it for the *Plantae Lehmannianae Americae meridionalis* which was the name of the work he was going to publish next spring.

It appears that this was never published, but Reichenbach continued occasionally to describe Lehmann's novelties until his death in 1889, mostly in the journals *Linnaea* and *Flora*.

Reichenbach's poisoned legacy

On Reichenbach's premature death, Lehmann turned to Fritz Kränzlin in Berlin, Henry Ridley (Fig. 5) at the British Museum (Natural History) and Robert A. Rolfe (Fig. 6) at Kew to name his orchid collections. Adolf Engler in Berlin coordinated the description of his other plant collections. The orchid specialists were, however, all faced with the same dilemma, the terms of Reichenbach's will. This gave his collection to whichever museum promised to keep it under lock and key for a period of 25 years after his death. The major museums refused to have anything to do with a will that was unprecedented in denying access to material needed for taxonomic research. Critical analysis of Reichenbach's many new species without access to the original material was impossible. This was especially irritating because so many collectors, growers and institutions had given Reichenbach free access to their collections for his studies over many years. Eventually, the Natural History Museum in Vienna accepted the Reichenbach Herbarium on the terms laid out in his will. Thus, the herbarium was due to open again in 1914, but the First World War intervened, and it was not made available again until 1921. Of course, all of Lehmann's early collections were in the Reichenbach Herbarium, which might have influenced him to spread his collections more liberally. Indeed,

Lehmann sent extensive herbarium collections to the British Museum (Natural History), Kew, Berlin and Geneva over the succeeding 14 years.

Lehmann wrote in a letter to Henry Ridley on 10 August 1889, shortly after Reichenbach's death, in which he sums up his and most others' views of the will:

Of the death of Prof. Reichenbach you will have heard long before this. But what your opinion is about his will I really should like to know. Fancy the idea to seal up his herbarium for 25 years! Is it that he does not like others to look in to his work, who also know something about it, or is it only to crown his egoism. I think few after him will hold his theory upright as exclusively on the foundation of the genera on the arrangement and existence of the pollinaries. I for one do not adhere to it in its all-umscribing (sic) extent. Up to now I incline rather to accept Lindley; than Rchb.'s foundations, of course with some moderations. I, for instance, cannot well see how *Pilumna* possibly could be separated from *Trichopilia*. How it is with *Helcia* I do not decide yet.

Ridley's reply obviously struck a chord. In a letter of 6 May 1893, Lehmann replied as follows:

What you say about Reichenbach... is sadly true. I often wondered what he meant by putting up genera such as *Bollea*, *Pescatorea*, *Kefersteinia* and all at once they go to *Zygopetalum*..... But what is far more sad with Rchb. than all his changes, is that malevolent grudge not to let any man occupy himself with orchids which not led him to be untrue. There is an instance! Your *Ponthieva grandiflora* – which bye-the-bye I recognise and as such have named it in all the herbaria to which I have given duplicates – Rchb. said he had received it long before your publication from me and it was his *P. andicola*. Now this is in plain English a lie.... I only hope you and myself may live long enough to enjoy the interesting revelations of the Irish stew now being pirkled (sic) up for 25 years at Vienna.

Rolfe fared little better in this exchange:

What you say about Rolfe are my own views. I therefore omit any further observation. Of all that I know closer and who work with orchids at the present day I think Kränzlin is one of the best. Very very sadly he is to (sic) shifty, wants to catch everything in moment and seeks others instead of letting him be caught.

Henry Ridley and Robert Rolfe

A small number of letters from Lehmann to Henry Ridley (Fig. 5) survive in the Archives at Kew. Ridley, later Director of the Singapore Botanic Garden, is best remembered for his introduction of rubber trees to Malaya and is generally considered to be the founding father of the rubber industry in the region. However, he was fascinated by orchids and published extensively on the orchids of South-east Asia. In 1886, he contacted Lehmann enquiring about the purchase of herbarium specimens for the British Museum in London. Lehmann replied on 22 October offering specimens, either directly at £10 per hundred with notes in English or via Fritz Kränzlin in Gross-Lichterfelde near Berlin at £2 per hundred with notes in German. Lehmann's pride in his collections surfaces yet again:

As to the specimens themselves, I may observe that I dry good ones only. Prof. Reichenbach, Dr Kraenzlin and others who have seen them, often said that they are unique as to quality and arrangements.

On 7 February 1887 he explained his methodology for his collections and expanded his litany of praise for his collections in an attempt to get Ridley to identify and name them:

The notes I, II etc. on the different tickets to my herbarial (sic) collections are mere indication as to the range of distribution (geographically). The specimens from different localities reappear under numbers by themselves, which I consider a very important and significant necessity in order to show the range of variation, occasioned by geographical distances, and moreover prove the geographical distribution of the species. 100 specimens mean specimens, not species including the varieties.

I may mention here that my Herbarium has few or no equal. The notes as to colour, character, habit, utility of flowers, leaves, fronds, wood, etc. and the elevation above the sea-level, in which the species grows, of the 6000 specimens of the series from 1880 to date, fill already several volumes. To the Orchideae over 400 coloured sketches explain differences of colour, variations etc.

Today I beg you to tell me, under which conditions you would accept to classify and publish the whole of my orchids, if I make you the owner of an entire series of them, and allow you use of all sketches. The latter remain my property.

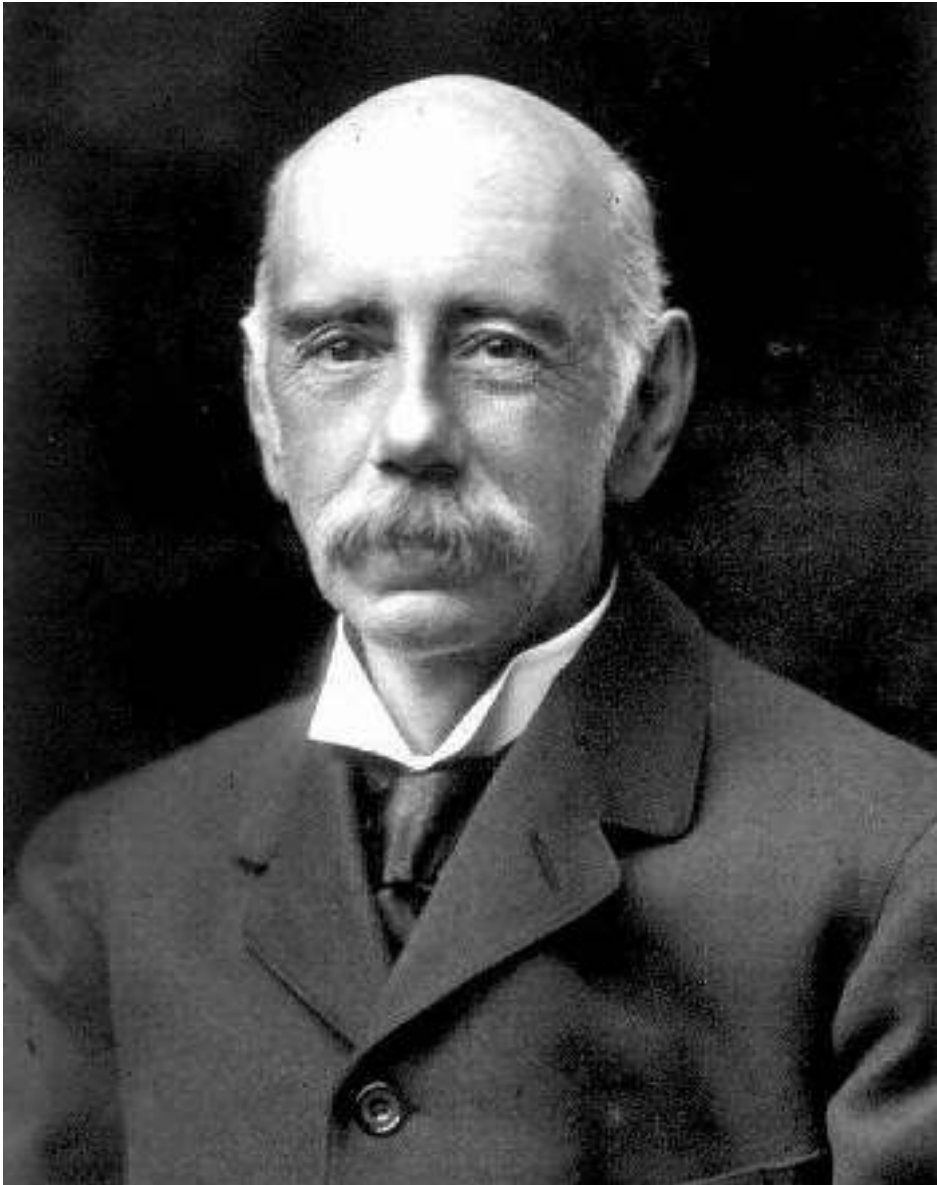


FIGURE 5. Henry Ridley (1852-1953), British botanist, British Museum (Natural History), now the Natural History Museum, erstwhile Director of the Singapore Botanic Garden.

In letters of March and 22 June, Ridley agreed and a letter from Lehmann of 30 August expressed his gratitude agreeing to dispatch forthwith a small number of specimens of novelties by the next mail and promising to send the rest, another 800 species, the following spring. The letter reproduced here of 2 December 1887 shows Lehmann's sketch of a *Utricularia jamesonii* (Fig. 7), a member of a genus in which Ridley was particularly interested. Ridley, however, gained the post of Director of the Singapore Botanic Garden in 1888 and was unable to fulfil his promise to Lehmann, lacking access to the major European herbaria that contained the bulk of Andean material needed for comparing Lehmann's collections. Nevertheless, they continued an amicable correspondence.



FIGURE 6. Robert Allen Rolfe (1855-1921), Kew botanist and first curator of the Kew Orchid Herbarium.

Robert Rolfe (Fig. 6) occasionally described new Lehmann species, *Ada lehmannii* in the *Gardeners' Chronicle* (Rolfe, 1891) and *Lueddemannia triloba* and *Scelochilus carinatus* in the *Kew Bulletin* (1895), but these were based upon Lehmann collections that flowered in cultivation in Europe, rather than herbarium collections.

Fritz Kränzlin

Eventually, Kränzlin (1899) bit the bullet and published *Orchidaceae Lehmannianae in Guatemala, Costarica [sic], Colombia et Ecuador collectae, quas determinavit et descripsit*. This included 107 new species, all but nine under the joint authorship of Lehmann and himself. The largest number of new species were in the genera *Epidendrum* (40), *Pleurothallis* (18) and *Masdevallia* (9), but new species were described in 23 genera. Two of the genera, *Neolehmannia* and *Pterostemma*, were newly established by him.

Kränzlin waited over a quarter of a century until his next foray into Lehmann's collections. This was almost certainly the result of Kew's successful offer to Lehmann's widow for his herbarium and illustrations' collections in 1903. Kränzlin had most of the material in Berlin at the time of Lehmann's death, and he claimed ownership of it for Berlin (Kraenzlin, 1904). However, he had only lent the material to Berlin, and it duly came to Kew. Kränzlin visited Kew after the First World War and began a detailed study of *Masdevallia* and its allies in the Lehmann collection. He described a few species in 1921 and established the genus *Lothiana* (Kränzlin, 1924) to commemorate the Marquess of Lothian, one of Lehmann's best clients. Some 30 new taxa based on Lehmann collections were described in his monograph of *Masdevallia* and its allies (Kränzlin, 1925). The latter were mostly under Kränzlin's authorship but with a smattering also posthumously attributed to Lehmann.

The Marquis of Lothian's *The Genus Masdevallia*

From the Introduction to his Monograph of *Masdevallia* by F. Kränzlin in Fedde's *Repertorium* of 1925:

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 text and drawings are the work of Miss Florence Woolward of Belton, the descriptions of geographical distribution are by F.C. Lehmann. The work was not diminished by the fact that its authoress was not a trained botanist; she has given her best and whoever studies the work from beginning to end, as I have done several times, will have to acknowledge the immensely dedicated and detailed work of which it is a testament. If a writer of monographs and trained botanist happens to be of a different opinion regarding one or other species, this does not diminish the admiration for what Miss Woolward has achieved.

The Genus Masdevallia, commissioned by the Marquis of Lothian and with text and illustrations by Florence Woolward, is considered by many to be one of the finest illustrated orchid books of the Victorian age. The book's genesis was the result of the Marquis's passion for orchids, particularly the Andean masdevallias of which he had a renowned collection at his home, Newbattle Abbey, in Scotland. He had obtained most of them directly from Friedrich Lehmann, who advertised his tempting wares in the pages of the weekly magazine *The Gardeners' Chronicle*. Florence Woolward, who was commissioned by the Marquis to paint his orchids as they flowered, was a botanical artist working freelance and later at the British Museum (Natural History), now the Natural History Museum, where the majority of her work is preserved today in their extensive archives. Pressed flowers from the Marquis's collection at Newbattle Abbey are preserved in the collection of the Natural History Museum (Figs. 8-9). Over a period of ten years and on frequent visits to the Marquis's home, she painted over 350 orchid portraits, some 85 of which were of *Masdevallia* species. The originals survive today at the present home of the Marquis of Lothian, where they are justifiably treasured.

The Genus Masdevallia was conceived by the Marquis as an opportunity to monograph a group of remarkable and diverse orchids that were little known to contemporaries and, in particular, to profile his own remarkable collection of them. New species began to flood into Britain from the northern Andes, especially in the 1870s and 1880s. Lehmann was a major source of novelties and of spectacular species from Colombia and Ecuador. The Marquis searched for an author and approached Robert Rolfe, then the foremost orchid specialist of his day, who was based at the Royal Botanic Gardens, Kew. Rolfe was Kew's first Curator of the Orchid Herbarium, an incomparable resource based on the extensive collection of John Lindley, the father of orchid taxonomy. Lindley had been Assistant Secretary of the Horticultural Society of London, later the Royal Horticultural Society, which

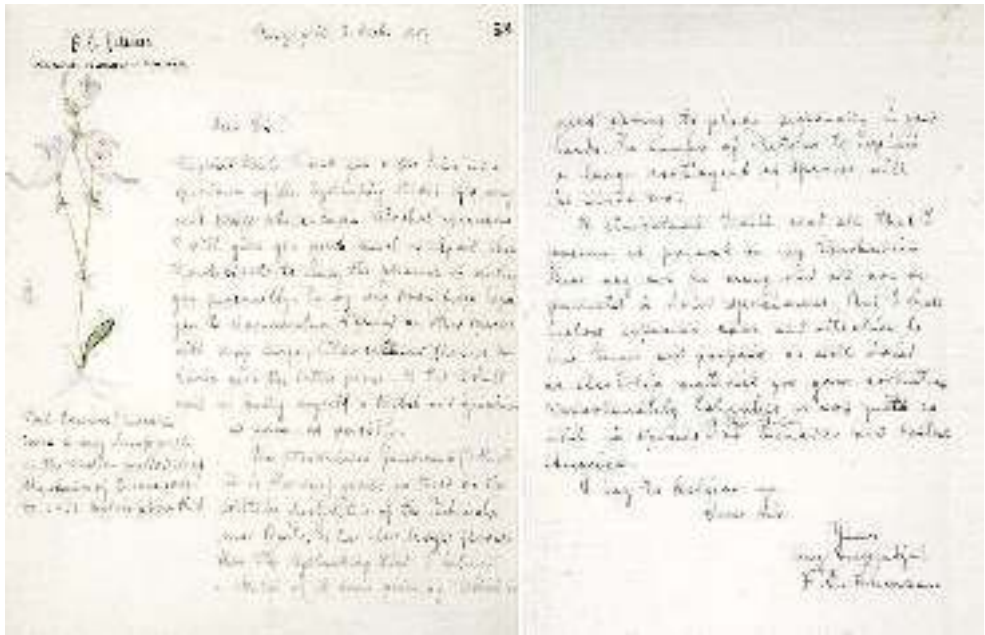


FIGURE 7. Letter of 2 December 1887 from Lehmann to Ridley. Archive, Royal Botanic Gardens, Kew.



FIGURE 8. Left, *Masdevallia rosea*, flowers preserved on 13th June 1890 from a plant cultivated by the Marquis of Lothian. Right, *Masdevallia coccinea*, flowers preserved from a plant cultivated by the Marquis of Lothian. Both at the Natural History Museum, London.



FIGURE 9. Top, *Masdevallia ephippium*. Bottom, *Masdevallia xanthina*. Flowers preserved from plants cultivated by the Marquis of Lothian, accompanied by vignettes drawn by Florence Woolward . Both at the Natural History Museum, London.

was a major sponsor of plant collecting expeditions in the tropics. In his position, he gained first sight of all the novelties introduced by its collectors, especially the orchids that fascinated him most. He described nearly 2000 species and over 180 genera during his lifetime. Rolfe, after initially agreeing, apparently declined to write the text to accompany Miss Woolward's illustrations. Consequently, she decided to write the text herself, no doubt with some help from other botanists on her frequent visits to the British Museum.

The book eventually appeared in nine parts between 1891 and 1896. Each part contained ten plates and text, except the last which had seven plates. Each was priced at £1 10s, making a total of £13 10s for the set. Today, it sells at auction, when it rarely appears, for thousands of pounds.

A distinctive feature of the book is its detailed accounts of the localities in the Andes where the plants grow wild. They were contributed by Lehmann. A few of his original contributions, in the form of hand-written descriptions, survive in the possession of his family in Popayan (Escobar and Robledo, 1975). A letter from Miss Woolward to Lehmann also survives in this collection:

Belton, Grantham,
Lincolnshire
February 17th 1891

Dear Consul Lehmann,

I send you tracings from my drawings of two species of *Masdevallia*, for which I much wish to have a note from you, as I intend to substitute them for two of the ten on the list which I sent you in my letters of Dec. 18th and Feb. 2nd. They are rare and will create more interest than the commoner species which I intend to include in Part II. If you could tell me, by the return mail, where you found the two species, their altitude etc. I think and hope that I might receive your letter in time to have your note printed for part II of the Monograph.

I have got complete drawings ready, and a photograph and descriptions. *M. guttulata* was first described by Reichenbach in *Linnaea* XLI (1977) p. 118. No locality given, except "Ecuador"? No name of discoverer. Of course it is of the same section as *M. ephippium* etc. In the Gardeners' Chronicle Sept. 6th 1890, p. 267 to my great amusement, Mr Rolfe described *M. guttulata* as a new species! having quite overlooked the fact that Professor Reichenbach described it in 1877. No locality or discoverer is given in the latter reference.

M. picturata was first described by Reichenbach in *Otia Bot. Hamb.* 16. Collected by Wagener, Fendler and Arnold. Locality, Venezuela? Flowered first with Mr. F. Sander, 1882. There seems to have been a recent importation of this species, for I have lately heard of more than one instance of its flowering this year, apparently for the first time since 1882. I should be glad if you would be kind enough to tell me your experience with these two species, for so little is known about them that it would be most useful and interesting. I shall soon have completed the lithographing for Part II and I shall then go to London to collect information for the text, which your notes, so anxiously expected by me, will complete for printing.

Hoping that you are well, and with kind regards I am yours very truly

Florence H. Woolward (See Escobar and Robledo, 1975)

Lehmann duly obliged, not once but many times. He also sent copies of his own drawings of *Masdevallia* species to Miss Woolward, three of which, *Masdevallia fractiflexa*, *M. ophioglossa* and *M. ventricularia*, eventually appeared in the book. The original paintings of them are in the Natural History Museum attached to the respective herbarium specimens (Figs. 18, 19). His detailed descriptions of habitats were added for over half of the species. A few of the descriptions of orchid habitats survive in the collection of his family in Popayan. His detailed description of the habitat of *Masdevallia maculata* is a good example:

The trunks of the trees are covered with small lichens, in a lesser degree with mosses and but little frequented by ferns, bromeliads etc. The orchids that frequent these woods belong to the genera *Pleurothallis*, *Lepanthes*, *Stelis*, *Restrepia*, *Masdevallia* (the species: *auropurpurea* Rchb.f., *maculata* Klotzsch et Karst., *ephippium* Rchb.f., *amanda* Rchb.f.), *Compartmentia*, *Burlingtonia*, *Oncidium* (the species *obryzatum* Rchb.f., *panduratum* H.B.Kth., *globuliferum* H.B.Kth.), *Epidendrum*, *Sobralia*, *Evelyna* and a few others.

The climatic conditions of this region are characterized by dense fogs and heavy rains with frequent and very heavy electric discharges. During the rainy season it is highly interesting to observe these meteorological [sic] phenomena. Towards daybreak dense fogs form themselves and lay [sic] close above the woods, appearing, if observed from the higher regions of the Cordilleras, like immense loose [sic] cotton heaps or masses. At about 8

o'clock these fogs begin to rise and to form large cumulus clouds. From 2 o'clock p.m., the latter begin to condense and to fall in heavy showers by severe electric discharges and lasting as a rule until late at night. A dry season in this region takes place in Venezuela during the months of January to the end of March and in the Cauca from July until September. The annual mean temperature of the region ranges between 18 and 19° Centigrade and the extremes between 15 and 25° Centigrade. In its natural habitat *Masdevallia maculata* flowers from August until December. Cultivated at Popayan it is never without flowers.

It is quite clear that *The Genus Masdevallia* would have been a far poorer work but for the efforts of Lehmann. He contributed plants, watercolours and detailed habitat notes for the volume and surely deserved co-authorship. Woolward admits as much in the Foreword:

Drawings also of numerous species entirely unknown in this country, or known only hitherto as dried specimens, are generously promised by Consul F.C. Lehmann, whose exceptional advantages as a skilled botanist collecting for many years in those regions of Central and South America where alone *Masdevallias* are to be found, place him at the head of the authorities upon the genus. His drawings will be published in later parts of the works, with names and descriptions supplied by him, and with a chapter on the geographical distribution of the genus, accompanied by a map. For each species which he has himself collected, he contributes a note stating the temperature and elevation of the locality in which he has found the plant.

In the event, she failed to live up to her promise, stating in the Introduction that was published in the last part of the work:

It was originally proposed that more of his (Lehmann) drawings should be included in the present work, but many of those lent to me by him for that purpose, although in themselves, were sent without dissections, names, notes, or descriptions, and were, therefore, useless for publication.

We know a little of Lehmann's view on the partnership from a letter to Henry Ridley, of the Singapore Botanic Garden, of 6 May 1893:

Within shortly I intend to go to Europe for a short stay chiefly to repack my Herbarium and look a little closer into the matter of the monograph of the genus *Masdevallia*. Miss Florence Woolward goes on a little to (sic) quick and to my great dislike introduces items in the work which were better left out.... In the way of new discoveries of late I have nothing to note of any great horticultural interest. The new species of botanical interest however are numerous enough. If the monograph on the *Masdevallia* is completed it will not be short of 150 species.

Nevertheless, *The Genus Masdevallia* can be considered Lehmann's finest monument to a lifetime's exploration.

Lehmann the botanist

Apart from his shadowy collaboration with Kränzlin and his ecological and geographical descriptions for the Marquis of Lothian's *The Genus Masdevallia*, he occasionally contributed descriptions of new taxa to the *Gardeners' Chronicle*. His account of the discovery of the genera *Trevoria* (Fig. 10) and *Gorgoglossum* in that journal of 1897 is well worth quoting, illustrating his botanical knowledge and the extent and danger of his endeavours as a collector:

This is the second of a number of new genera of orchids which I have discovered during the twenty one years of my travels in the Andes. Both *Trevoria* and my *Gorgoglossum* are old acquaintances of mine; but owing to their great rarity, and their growth in habitats very difficult to reach, insufficient floral material have made it hitherto impossible to publish them.

Gorgoglossum Reichenbachianum Lehmann (MS, 1879) was met with in December, 1879, in one single specimen on the Western Andes of Ecuador, at an elevation of 300 to 600 metres above sea level. The single specimen was duly given to the late Professor Reichenbach; but the flowers, having lost their pollinia, he did not venture to describe the plant, and it wandered with some 3000 other numbers of the herbarium for twenty-five years to the grave at Vienna. Some eleven years later, when I knew already the fate of my *Gorgoglossum*, I undertook an especial journey to the locality in order to secure a few plants for cultivation in one of my estates in the Cauca. Only five plants were found, of which one exists in my possession, and another in that of Sir Trevor Lawrence, the rest having been lost on the sea voyage.



FIGURE 10. *Trevoria chloris*. Top, type specimen at the Royal Botanic Gardens, Kew. Bottom, detail of drawing of orchid seeds from the type specimen.

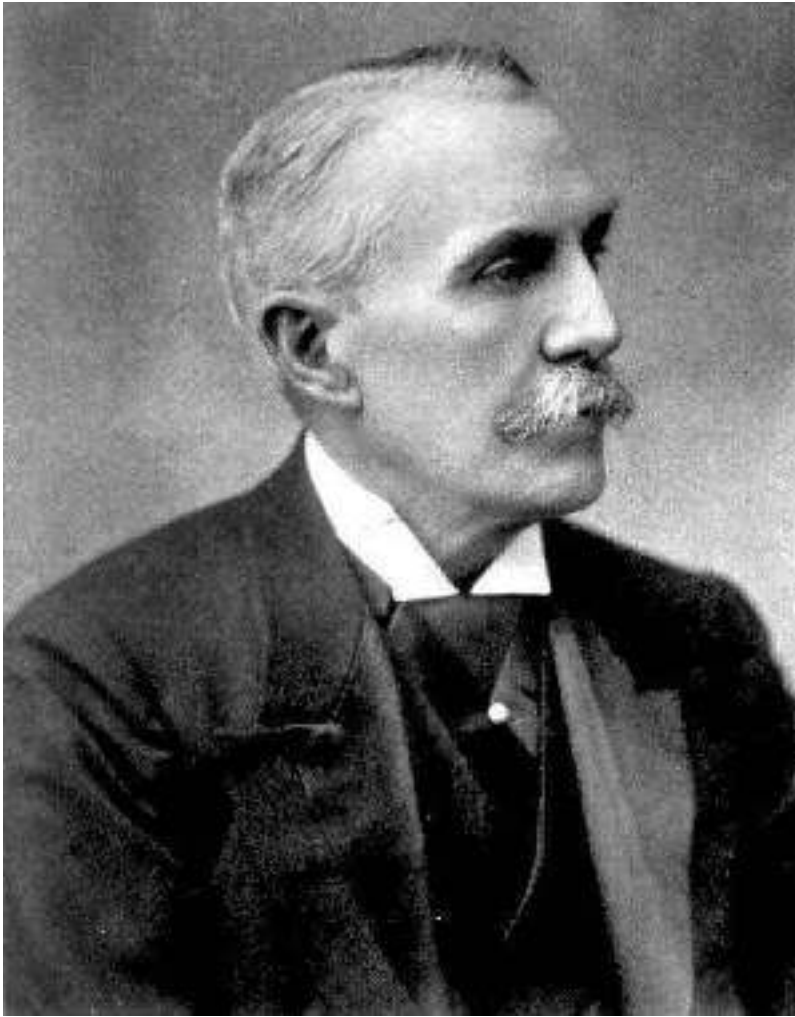


FIGURE 11. Sir Trevor Lawrence (1831-1913), President of the Royal Horticultural Society and a keen orchid grower.

My first acquaintance with *Trevoria* occurred in 1887. Only three specimens were seen, bearing thin, drooping spikes, about 40 cm long, of thickly set seed vessels but, not flowers. The plants I tried to take to Cauca for cultivation, but, alas! They were stolen from me by some rascal at Esmeraldas during my absence from the steamer, together with a number of other botanical treasures. Nothing more was seen or heard of this plant, which, by-the-by, when during an exploration of a certain portion of the western Andes of Colombia, with a view of projecting a map on behalf of the Cauca Government, a few plants of this species of Orchid were observed. The species found in Colombia is, however, quite distinct from that of Ecuador. The latter grows at an elevation of 500 metres above the sea, and produces flower-spikes of from twenty to thirty flowers, the size and character being as yet unknown, while the Colombian one inhabits a region from 1,500 to 1,700 metres above the sea (as far as observed), and bears racemes of only three to five – commonly only three flowers.

...I have named this genus of Orchidaceae in honour and commemoration of Sir Trevor Lawrence, one of the most enthusiastic orchidists that ever lived.... May Sir Trevor's love of Orchids *perdure sempervirent* as Chloris the goddess of flowers. Popayan, February 1897.

Sir Trevor Lawrence (Fig. 11) became one of Lehmann's most important clients as he strove to improve his fine orchid collection at Burford Bridge, near Dorking in Surrey. It is a shame, indeed, that Lehmann did not formally describe more of his discoveries.

Lehmann's Herbarium

Lehmann sent herbarium specimens to Professor Heinrich G. Reichenbach in Hamburg until the latter's death in 1889 and to several botanists including Fritz Kränzlin in Berlin, Robert Allen Rolfe at Kew and Henry Ridley at the British Museum. He courted the botanists to provide names for his plants. His most productive spell of collecting came between 1880 and June 1903, the date of his last recorded plant collection. In total, after 1880, he collected almost 14,000 numbered collections and a large quantity of un-numbered ones as well. Not all were orchids but the orchid collections numbered in their thousands and formed the main thrust of his collecting. The numbering of collections was distinctly odd. His early collections between 1876 and 1879 were either un-numbered or received Roman numbers; his series from 1880 onwards were sequentially numbered, but that did not necessarily reflect their collection date. In addition, herbarium materials sent to Kew in the 1880s were un-numbered and subsequently received numbers in H.K. and B.T. series. It seems likely that he numbered a proportion of his herbarium collections some time after he had collected them. The majority of his illustrations were of orchids, although occasionally he painted other plants, such as showy species of *Passiflora*, *Aristolochia*, *Pinguicula* and *Eucharis*.

Lehmann's early collections, a small proportion of which were described by Reichenbach, are now in the Natural History Museum in Vienna as part of the latter's herbarium. Later, in 1893, he sold a set of herbarium collections and drawings to the British Museum (Natural History) and another to Boissier in Geneva at about the same time. After his death, the bulk of his herbarium and illustrations and most of his collecting notebooks were purchased by the Royal Botanic Gardens, Kew, for £2500 in 1906. These remaining collections comprised 7200 herbarium collections, of which 3172 were orchids, and about 600 paintings and drawings of orchids and another 400 or so of other Andean plants.

Lehmann had many orchids and other plants named in his honour. The orchids include *Ada lehmannii*, *Catasetum lehmannii*, *Chrysocycnis lehmannii*, *Dichaea lehmannii*, *Dracula lehmannii*, *Lepanthes lehmannii*, *Masdevallia lehmannii*, and *Pescatoria lehmannii*. He is also commemorated by the orchid genera *Lehmannia* and *Neolehmannia*.

Lehmann's botanical illustrations

Lehmann took his botanical illustration seriously, asking Sander to buy art paper from Europe and berating him when it proved to be of inferior quality. He was a competent artist, and the completed watercolour paintings are accurate and attractive representations of the orchids he saw and collected. Not all are complete, many being part-coloured or pencil drawings. All are good representations of the plants which, for the most part, are easily recognisable.

Sauvêtre (2009) states that his wife was a skilful watercolour artist and illustrated some of his new species. However, the majority of Lehmann's orchid illustrations bear his own signature.

The unpublished Lehmann iconography is an important source of knowledge of the rich flora of Colombia and Ecuador, especially its orchids. The paintings and drawings, some complete, some parti-coloured, others uncoloured, correspond to Lehmann's herbarium collections, many of which are type collections. A type is the specimen that a botanist uses to describe a plant as new to science and, as such, represents an essential standard for checking the application of a plant name by other botanists. Lehmann discovered many new orchid species on his expeditions. Therefore, his herbarium collections and illustrations are critical in the identification of those species that were described by scientists based upon his collections. The illustrations, being unpublished, have never been available to orchid scientists apart from those who have been able to visit Kew and examine the original materials.

Health, sickness and death

Despite occasional sickness from dysentery and malaria, Lehmann lived a vigorous and healthy life and expounded his rules of conduct in a conversation (Anon, 1904):

I attribute my good health, and even my life, mainly to two things. First, when in danger, either from natives or, worse still, from lawless white men, I never produce a revolver or other weapon. Scores have lost their lives for showing a revolver, for when guns are about it is always the aim to get the first shot in; so instead of terrifying, the production of a revolver may be your own death warrant. Secondly, I never drink water without first boiling it. Often I have gone thirsty for hours before I could get a chance to boil water, but I preferred that to the risk. If I had coffee (and coffee has had to be boiled over and over again sometimes), I would stir a pinch or so, or more if I thought I could replenish the store soon. But in any case the water had to be boiled unless I was satisfied it was beyond suspicion.

Civil-war raged in Ecuador and Colombia in the 1870s and flared again at the turn of the 20th century. He and his family were inevitably caught up in it, restricting their movement beyond Popayan and affecting their lives in general. A letter from the time, dated 24 March 1903, survives:

We have been several times without any communication for several months. Even to send letters by post was so uncertain that the last lot of important papers I sent by express mule rider all the way down to Buenaventura to make sure that they would get on board a mail steamer. Orchid collecting and travelling have been hampered during the time of the civil war. Officially it has been pronounced ended over and over again, but while reading the announcement, if you were favourably situated, you would still hear the cracking of the rifles. I have been tied down by my consular duties, and also by having to rebuild the house on my country estate; but the latter will soon be finished now, and then I shall be able to roam over hill and valley again and look up some of the many pretty new things which I would like to get into European gardens, especially my discoveries in Masdevallias, most of which are as yet undescribed, for I am an enemy of making new species, and this often carries me to the other extreme.....But I would like to get some of them into gardens, and though my power of endurance is not quite what it was many years ago, for it is no trifle to travel twenty-seven long years in these climates, I am still resolved to do something if it pleases the Lord.

Sadly it did not for he died shortly afterwards, crossing a river that he must have forded many times before with no problem. Kränzlin's (1904) comments in the obituary have led some later commentators to suggest that Lehmann's death may have been more than an accident:

There, in fording the Timbique River, he met with his death, whether by an unhappy accident or by malice is not known.

The legacy

Lehmann's legacy is substantial, particularly for a man of evidently humble origins and little formal education. Throughout his life, he was well aware of the disadvantages of his circumstances and sensitive to perceived slights and the possibility that others might take unfair advantage of him. Nevertheless, he produced an impressive list of achievements and ended his days as a respected mine-owner, plant collector, botanist and diplomat. His botanical achievements are impressive and important contributions to cataloguing the flora of the richest area for plant diversity anywhere in the world. His extensive herbarium and archive of illustrations of Andean plants are still yielding novelties a century after his death. Their continuing relevance as a record of where plants grew, particularly in areas that have been deforested or currently inaccessible because of civil unrest, is invaluable to present-day botanists. The many novelties he discovered are still being assessed by modern researchers and the number of unnamed specimens shows that there is still considerable work to complete.

The Lehmann herbarium collections have never been fully assessed. They undoubtedly contain a wealth of novelties and records from habitats that no longer survive. Many of Lehmann's favourite hunting grounds are now converted to pasture, plantation or wasteland. A considerable proportion of his collections still remains unidentified and unnamed to this day. The American botanist Carlyle Luer is one of the few active taxonomists to have studied Lehmann's collections in depth. His interests are *Masdevallia*, *Dracula*, *Pleurothallis* and their allies, genera that fascinated Lehmann and in which he made efforts to discover novelties to introduce into cultivation. Luer has based many of his new species on Lehmann's material, including the magnificent *Dracula vampira*, surely the most sinister of all in that genus.

Lehmann's contribution to our knowledge of tropical American orchids has been immense. He taught himself the rudiments of botany and became competent at identifying and describing orchids and other plants.

Undoubtedly, if he had survived longer his contribution would have been greater. Novelties will continue to be discovered in the *Herbarium Lehmannianum* in its now scattered locations. So much of his herbarium and the accompanying illustrations have only been available for study after his premature death. His rich collections will prove a treasure-trove for future generations of botanists.

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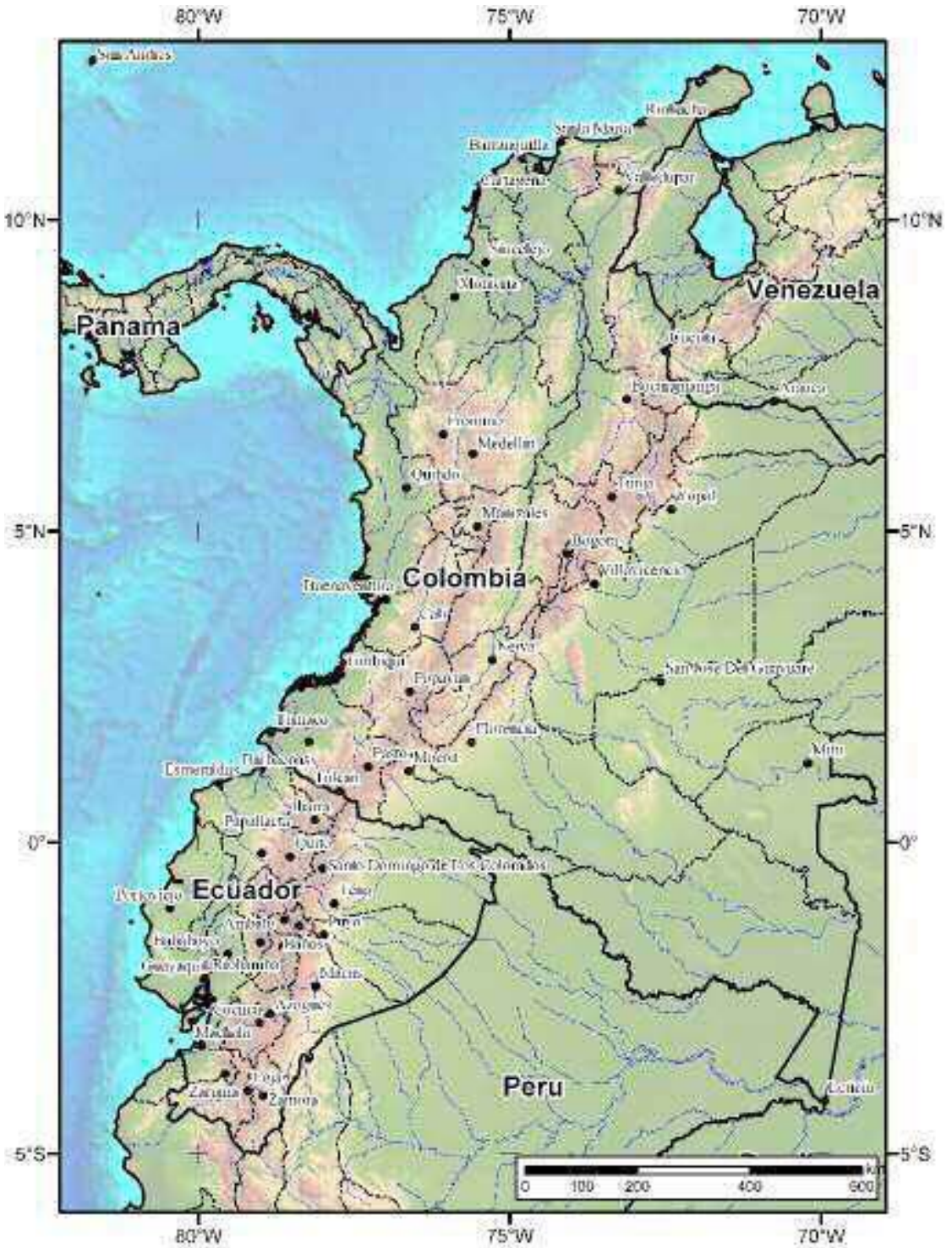


FIGURE 12. Map of northwestern South America and eastern Panama, showing several of Lehmann's collecting localities.

**THE ITINERARIES OF F. C. LEHMANN
IN COLOMBIA AND ECUADOR
1876-1899
COMPILED
FROM F. C. LEHMANN'S COLLECTING NOTES AND HERBARIUM COLLECTIONS**

Year	Date	Country	Place	Lehmann Herbarium numbers	
1850			Platkow	born	
1876	May	Ecuador	Ebene, Guayaquil, Chimborazo, Corazon, Cuenca, Alausi, Yimborra, Quito	I, 4301, 4330, 4457	
	June		Guayaquil, Chimborazo, Rio de Chimbo, Puente de Chimbo, Molleturo, Huashihuaico, Cuenca, Sisne, Loja	4213, 4299, 4378, 4467	
	July		Guayaquil, Loja	4335	
	Aug.		Guayaquil, Chagal, Yuerba-buena, Cayandelea, Sibambe	4209, 4324, 4416-4418	
	17 Sept.		Cuenca		
	Sept.		Prov. Azuay: Sayausi, Contrayerba, Huaihuaico, Molleturo, Llamacancha, Yerbabuena; Prov. Cañar: Huairacaja, Chaning, Taday, Pindilic, Yuanguang; Prov. Azuay: Sigsig, Rio Minas; Interandine valley: Maraviña, Tinajilas, Nabon, Oña; Prov. Loja: Zamora, Cerro San Francisco		
	Oct.		Guayaquil, Loja, Las Yuntas, Rio Dagua	4434, 4435	
	Nov.		Loja Prov.: Zamora, Zaraguro, Ramos-urcu, Juntas, Loja	4432, 4433	
	1877	Feb.	Ecuador	Prov. Pichincha: Quito, Tulcan, Rio Puru, Tusa, Rio Chota, Niebli, Auque, Calacali, Guallabamba, Nanegal	321
		March		Quito, Tunguragua, Baños, E. & W Cordillera, Cotopaxi, Huminahui, Corazon, Nudo di Tiupullo, Rio Blanco, San Florencio, Colorados de Santo Domingo, Corazon, Chimborazo, Rio Pastaza	XXIII, 32, 74, 4210, 4300, 4325, 4448, 4468
24 March			W slopes of Pichincha	24	
April			Chimborazo, Tunguragua	4322	
May			Guaranda, Chimborazo	4436-4440, 4443-4447	
June			Quito, Tunguragua, Cuenca, Alausi, Puente de Chimbo, Banos, Rio Pastaza, Guaranda, Guayaquil, Loja	67, 74, 4311, 4334, 4351, 4368, 4376, 4394, 4459, 4460	
July			Tunguragua		
Aug.			San Florencio, Colorados de Santo Domingo, Corazon, Rio Silande	32, 4323	
24 Aug.			Loja to Zamora	s.n.	
Sept.		Colombia	W. Cordillera of Cali, Cordova, Playa-larga, Rio Dagua, Pichincha, Quebrada de Cuyambe, San Francisco, Cordillera de Tuquerres	23, 7653	
Oct.			Cali, Pureto, Juntas, Rio Dagua, Cordova, Buenaventura, Naranja, Dagua, Las Kavas	203, 4332, 4461, 4462, 4469	
Nov.			Buenaventura, Sucre, Las Juntas, Rio Dagua	4331, 7001	

Year	Date	Country	Place	Lehmann Herbarium numbers
1878	April	Colombia	Popayan	BT 177
	May		Popayan, San Antonio de Cali, Paramo de Moras, Paramo de Delicias, Paramo de Guanacas, Purace	966, 4233, 4453, 6746, 6750, 6751, HK 334, s.n.
	28 May		Popayan	
	June		Las Playas, Babahoyo	4321
	Aug.		Cerro Pulla, Ramao-urcu, Cerro Acacana, Zaraguro, Loja, Cuenca	8060
	Sept.	Colombia	Quebrada de Cuyambe, San Francisco, W Andes of Tuquerres	
	Oct.	Col/ Ecu	Popayan, Yuerbabuena, West Andes of Cuenca	4214, 7635
1879	July	Col/ Ecu	Tuquerres, Ricaurte, Quito, Cuenca, San Pablo, Pasto	146, 8288
	March	Ecuador	Quito	XXXVI
	25 July	Ecuador	San Pablo, Barbacoas to Pasto	
	Aug.		Tuquerres	
	Sept.	Ecuador	Guayaquil	
	29 Sept.		Montana de Chongon, Guayaquil	8179
	Oct.		Cuenca, Yerba-buena, El Cocite, Molleturo, Cuenca	4318, 8304
	17 Oct.		Puebla, Laguna, Pasto	
	18 Oct.		Loja	4157
	22 Oct.		Pasto, Cocha	
	24 Oct.		Las Cruces	
	Nov.		Chacayacu, Cuenca	4381
1880	4 Jan.	Ecuador	Prov. Quito: Pirca, Peruchu,	422, 8180
	24 Jan		Pichincha, Quito	
	30 Jan.		Quito	
	Feb.		Imbabura Prov., Paramo de Inza	4244, 7997
	2 Feb.		Prov. Tuchabuna, Tinajillas, El Puntal, Inza	479
	8 Feb.		Tulcan, Villa de Ibarra	479
	11 Feb.		Laguna, Pasto	522
	March		San Miguel, Pususquer, Tuquerres	8055
	6 March		Narino, San Pablo, Pususquer, W slopes of volcan Arzufra	146
	25 April	UK	London	
	29 April	France	Paris	
	16 June	UK	Medway	
	20 June	Jamaica	St Andrews, Newcastle	1-3
	29 June	Colombia	Buenaventura	4-10
	3 July		Tumaco, Rio Chahui	13, 14
	4 July		Tumaco, Barbacoas, Rio Patia	11, 12, 22

Year	Date	Country	Place	Lehmann Herbarium numbers
1880	6 July		Barbacoas, Rio Telembi, Tumaco, Altaquer, Cuaiquer, San Pablo, W Andes of Tuquerres	15, 21, 34
	8 July		Pilruan, Piplalte, above Barbaroas	44
	10 July		Pipalte, Pilruan, Barbaroas, Paloquemado, Palpis, Rio Cuaiquer, San Pablo, San Miguel de Churunes	16-20, 24, 27, 45, 46
	11 July		San Pablo, San Miguel de Churunes	47
	12 July		San Francisco, San Miguel de Churunes, W Andes of Tuquerres, Azurfral	29, 33
	13 July		Paramo de Frailejon, Tuquerres, Cumbal	28, 31, 32, 35, 38, 53- 55
	14 July		Rio Yascual, Samanego, Panga	37, 38
	15 July		Pasto prov., Samanego, Sotomayor	36, 40, 41
	16 July		Panga, W Andes of Pasto, Cerro Sotomayor	43, 56, 57, 73-75
	19 July		San Pablo, San Miguel de Churunes, W Andes of Tuquerres, Rio Imbi, Cuaiquer	26
	20 July		San Pablo	30
	21 July		Quebrada de Cuyambe, nr Altaquer	58
	25 July		Altaquer, Cuaiquer, W Andes of Tuquerres	39
	26 July		Altaquer, Pususquer	85-87
	27 July		Quebrada Imbi, Rio Cuaiquer, Altaquer, San Pablo	76-79, 84
	2 Aug.		Altaquer, W Andes of Tuquerres	80
	3 Aug.		El Paramo, Cuyambe, Altaquer, Pususquer, W Andes of Tuquerres, Buenavista	62-64, 81
	4 Aug.		Buenavista, Altaquer	61
	5 Aug.		Buenavista	60
	6 Aug.		Rio Telembi, Rio Huahui, Barbaroas	65, 66, 82, 88, 89
	10 Aug.		Rio Telembi, nr Barbaroas	51
	11 Aug.		Rastradero, Lagunas de Chimbusa	42, 68
	12 Aug.		Rastradero	90-92
	14 Aug.		Tumaco	50, 67, 83
	16 Aug.		Buenaventura	48, 49, 93
	20 Aug.		Panam	69-72
	29 Oct.		Buenaventura	94-98, HK 329
	1 Nov.		Tumaco	99
	8 Nov.	Ecuador	Quito, Babahoya, Guayas, Naranjal, Sta Rosa	105, 106, 111, 116
	9 Nov.		Playas, Balsapampa, Hualashay, Cuesta de Chuchi, El Putzu, Tamboloma, Guaranda Prov.	110, 117, 119-121
	10 Nov.		Guaranda, Chimbo, Chapacoto, Ambato	107-109, 111
	11 Nov.		Chimborazo	113-115
	12 Nov.		Ambato, Tacunga	112

Year	Date	Country	Place	Lehmann Herbarium numbers
1880	14 Nov.		Ruminahui, Iliniza, Corazon, La Tacunga, Ambato, Tumbaco, Guaranda, Machachi, Chimborazo, Pichincha, Quito	100-103
	28 Nov.		Calacali	322
	29 Nov.		Anque, Calacali, Pelagallo, W Andes of Calacali	123-126, 128-130, 132, 133
	30 Nov.		Calacali, W Andes of Calacali	127, 131
	8 Dec.		Quito	
1881	5 Jan.	Ecuador	Pichincha, Quito	
	13 Jan.		W slopes of Pichincha	310
	14 Jan.		Corazon, Rio Pilaton	227, 314
	31 Jan.		Fusagasuga	318
	Jan		Cotopaxi	
	4 Feb.		Tulcan	257
	20 Feb.		Nariño, Pasto	203
	March		Cumbal	
	5 July	Jamaica		
	23 July	Ecuador	Quito	
	Aug.	Colombia	Popayan, Parano de Guanacas	4229, 4430
	13 Nov.	Germany	Gladbach	
	17 Nov.	UK	London	
	5 Dec.	Jamaica		
	16 Dec.	Costa Rica	San José, above San Isidro	1073
28 Dec.		Rio Buga	814	
1882	5 Jan.	Costa Rica	Aguas Calientes	1076
	26 Feb.		Port Limon	
	16 March		Port Limon	
	March	Guatem.		1141
	23 April	Guatem.	Coban	
	30 May	Guatem.	Antigua, above Santa Cruz de Quiché	
	5 Aug.	Panama	Panama City	
	28 Aug.	Colombia	Buenaventura	
	Sept.		Popayan. Paramo de Guanacas	4262
	10 Sept.		Cali	
	Oct.		Sucre, Pureto, Rio Sucre	
	29 Oct.		Paramo de Moras	2062, 2098
	Nov.		Paramo de Guanacas, Popayan, Corrales, La Ceja, Inza	4264, 4287, 4308, 4383, 4413-4415, 4420-4422, 4425-4429, 4431, 4451, 4463
6 Nov.		Popayan		
8 Nov.		Tatama	2204	

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1882	10 Nov.		La Ceja, Paramo de Guanacas, Cauca	4094
	11 Nov.		La Ceja, Popayan, Paramo de Guanacas	5096
	16 Nov.		Popayan	
	22 Nov.		Popayan	
	Dec.		Popayan, Inza	4423
1883	9 Jan.	Colombia	Rio Cabrera	2334, 2335
	10 Jan.		Rio Cabrera	2344
	13 Jan.		Rio Cabrera	
	18 Jan.		Bogota	
	21 Jan.		Boqueron de San Francisco, nr. Bogota	2360, 2452
	29 Jan.		Sabano de Bogota	2639
	Feb.		Salto de Tequendama, , E Andes of Bogota, Paisol, Tolima, Tena, Bogota, la Boca del Monte	4353, 4355
	2 Feb.		Paramo de Moras	2619, 2628
	March		San Antonio, Cali, Bogota, Rio Paez, La Topa, Patico, Inza, La Vibora, Tolima	4352, 4372, 4382, 4403, 4405, 4406, 4411, 4412,
	3 March		Paramo de Moras, Paramo de Guanacas	2700
	5 March		Santander de Quilichao, Rio Ambalé, Popayan	2667
	8 March		Cali	
	10 March		Tocota, Rio de Salado	2732
	26 March		Popayan	
	28 March		Buenaventura	
	10 April		Cali	
	26 April		Popayan	3266
	May		Paisbamba, Popayan	4456
	3 May		San Antonio, Munchique, El Tambo	2787, 2976
	8 May		Popayan	
	12 May		Cali	
	27 May		Cali	
	30 May		Las Pavas	2978
	6 June		Salado	
	12 June		Cali	
	17 June		La Vitretera, Palmira	2977
	4 July		Cali	
13 July		Buenaventura		
14 July		Juntas, Cordova, Dagua (Purette)	2951, 2959, 2961, 2962	
15 July		San Antonio de Cali, Dagua, Naranjo	2964-2966	
16 July		San Antonio	2967	

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1883	20 July		Quebrada del Alto de las Cruces, Cali, San Antonio de Cali	2968-2970
	27 July		Cali	
	Aug.		Rio Sucio, El Jardin	7318
	2 Aug.		San Antonio de Cali	3289
	4 Aug.		San Antonio de Cali	3288
	5 Aug.		San Antonio de Cali, Tocota	2940, 2960, 2989, 2990, 2995-2997
	6 Aug.		Salado, Dagua (Platanares), Cali, Queremal	2941, 2946, 2947, 2971, 2973, 2975, 2981-2984, 2987, 2988, 2991-2994, 3016-3020, 3031, 3264, 3287, 3290
	7 Aug.		Papagall, Pavas, Rio Bitaco, Las Pavas	2943, 2945, 2957, 2985, 2986
	8 Aug.		Las Pavas, San Antonio, Cristagallo	2939, 2943, 2944, 2956, 2958, 2972, 2974, 2979, 2980, 3268
	12 Aug.		Cali	
	14 Aug.		San Antonio de Cali	3265
	15 Aug.		San Antonio, Tocota	2948, 2999-3001, 3004, 3021-3023, 3026
	16 Aug.		Tocota, above Cali, San Antonio de Cali	2949, 2950, 2952, 2954, 2955, 3002, 3303, 3005-3015, 3024, 3025, 3027-3030, 3033-3037
	18 Aug.		Cali, Cauca valley	3039
	24 Aug.		Palmira	3044
	27 Aug.		Buga	3049, 3050
	28 Aug.		Rio Buga, Magdalena, La Bolsa	3038, 3042-3043, 3045, 3048, 3051, 3059, 3110
	30 Aug.		Cauca, La Paila, Tulua	3046, 3047, 3058, 3060, 3065, 3066, 3072
	31 Aug.		Tulua, Cartago, Paila	3063, 3089, 3090, 3104
	1 Sept.		Cartago	3052, 3064
	6 Sept.		Cartago	3086
	7 Sept.		Santa Rosa de Cabal, Marmato	3053, 3055-3057
	8 Sept.		Cordillera de Dagua, San Antonio	958
	10 Sept.		Above Manizales, Rio Chinchina	3071, 3073, 3103
	11 Sept.		Paramo de Ruiz, Termales, above Manizales	3054, 3062, 3063, 3067-3070, 3074-3078, 3080, 3081, 3087, 3088, 3091-3093, 3096-3102, 3105-3109, 3111-3113, 3144-3165, 3171-3173
	14 Sept.		Rio Guacaica, Manizales	3094, 3095, 3116
	15 Sept.		Aranzazu, Rio La Honda, Rio Pozo	3083, 3136, 3139, 3140, 3250

Year	Date	Country	Place	Lehmann Herbarium numbers
1883	16 Sept.		Rio San Lorenzo, nr Talamina	3082
	17 Sept.		Pacora, Aguadas	3079, 3115, 3117-3123, 3129, 3132, 3135, 3169, 3175, 3190, 3191, 3196, 3200, 3202, 3233, 3245, 3246
	18 Sept.		Aguadas	3189, 3212
	19 Sept.		Aguadas	3193
	20 Sept.		Abejoral, La Ceja, Rio Piedras, Rio Negro, Rio Buey, Sta Catalina	3084, 3085, 3114, 3124-3128, 3130, 3131, 3133, 3134, 3137, 3141-3143, 3168, 3170, 3174, 3176-3183, 3187, 3188, 3192, 3194, 3195, 3197-3199, 3201, 3203-3206, 3249
	21 Sept.		Rio Negro	3184-3186
	28 Sept.		Caldas, Amaga	3229-3232
	29 Sept.		Amaga	3242
	2 Oct.		Cerro Brava	3228
	5 Oct.		Passo de Carmanta, Fredonia	3223, 3225, 3227, 3234
	6 Oct.		Caramanta, Higuerones, Valparaiso, Salado	3208, 3218, 3222, 3224, 3235, 3236, 3262
	7 Oct.		Alto de Taiza (Louiza), Marmato	3207, 3209, 3210, 3237, 3240, 3241, 3244, 3251, 3252, 3306
	10 Oct.		Rio Sucio	3247, 3248
	12 Oct.		Rio Sucio, Cerro Batero	3307, 3308, 3310
	13 Oct.		Rio Quinchia	3243
	15 Oct.		Rio Opirama	3258
	20 Oct.		Arrayanal, Rio Risaralda, Risaralda, Chami	3211, 3213-3217, 3219, 3226, 3238, 3239, 3254-3257, 3259, 3260, 3263, 3267, 3271, 3273, 3277, 3278, 3284, 3296, 3298-3300, 3310-3328, 3361, 3362, 3376, 8038
	24 Oct.		Arrayanal	3282, 3359
	26 Oct.		Anserma Vieja, Guatica, Arrayanal	3272, 3274, 3276, 3373
	27 Oct.		Guatica, Rio Cauca, Sierrania de Belalcazar, Anserma Nueva	3261, 3270, 3275, 3280, 3281, 3297, 3302, 3344, 3360, 3363
	28 Oct.		Rio Belalcazar	3220, 3221, 3305, 3329, 3350, 3351, 3356, 3358
	29 Oct.		Canaverales, Rio Belalcazar	3291, 3349, 3357
	31 Oct.		Anserma	3286
	1 Nov.		Anserma	3279, 3336, 3337, 3341
	2 Nov.		Roble, Anserma Nueva	3285, 3304, 3330, 3331, 3342, 3343, 3385, 3406

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1883	3 Nov.		Cauca, Hatillo	3283, 3352
	6 Nov.		Roldanillo	3309
	8 Nov.		Cajamarca	3293
	10 Nov.		Cajamarca	3334
	11 Nov.		Cajamarca, Dobio	3301, 3338, 3339, 3346, 3348, 3353, 3354, 3370, 3381, 3383, 3388
	12 Nov.		Cajamarca, Rio Ojas, Las Tapias, Dobio	3332, 3340, 3347, 3355, 3364-3366, 3374, 3377, 3380
	14 Nov.		Cauca	3333
	15 Nov.		Riofrio, Cauca	3292, 3303, 3335, 3412
	16 Nov.		Cauca	3389
	26 Nov.		Cali	
	27 Nov.		Belalcazar	3295
	28 Nov.		Sierrania de Belalcazar	3294
	12 Dec.		Cali	3387
	15 Dec.		Cali	3384, 3386
	28 Dec.		Cali	3407-3409, 3411, 3427, 3428
30 Dec.		Tocota, San Antonio, Farallones de Cali	3390-3405, 3410, 3413-3426, 3429-3431, 3436, 3437-3440, 3443, 3344, 3346	
31 Dec.		San Antonio, Tocota	3432-3425, 3432-3435, 3441, 3442, 3445	
1884	12 Jan.		Cali	
	19 Jan.		Quilichao, Cauca Valley, Corinto	3449, 3457, 3554
	20 Jan.		Rio Mandiva, Quilichao	3453-3456
	21 Jan.		Rio Ovejas, Pescador	3448
	22 Jan.		Popayan	4129, 3450, 3452, 7891
	25 Jan.		Popayan	3500, 4123
	26 Jan.		Popayan	3447, 3451, 3458
	27 Jan.		Popayan	3468-3471
	28 Jan.		Rio Molino	3489
	29 Jan.		Popayan	3491
	31 Jan.		Popayan	3459, 3477
	Feb.		Popayan	7935
	1 Feb.		San Antonio, Pueblo de Purace	3460, 3467, 3472, 3478, 3483-3486, 3503, 3504, 3510, 3511, 3517, 3571
	3 Feb.		Coconuco, Purace, Rio Grande, Popayan	3473, 3474, 3479-3481, 3487, 3488, 3493, 3494, 4124

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1884	4 Feb.		Coconuro	3466, 3509, 3529-3531, 3541, 7899
	5 Feb.		Paletara, Coconuco, Rio Hondo, Popayan,	3461, 3472, 3476, 3482, 3496-3499, 3501, 3502, 3505, 3507, 3513, 3515, 3518, 3523, 3532-3534, 3537, 3568, 3570, 3578, 3579, 3619
	6 Feb.		Paletara, Coconuco	3506, 3508, 3519-3522, 3524, 3525, 3528, 3535, 3539, 3540, 3542, 3543, 3550, 3667, 3572, 3582
	7 Feb.		Paletara, Rio Cauca, Coconuco, Popayan	3462-3465, 3512, 3514, 3526, 3536, 3538, 3545, 3546
	10 Feb.		Popayan	3544, 3547-3549, 3551-3553, 4003, 4125-4128
	15 Feb.		Popayan, Cali	3555-3560, 3707, 3724, 4002
	16 Feb.		Popayan	3564-3566, 3569, 3573-3576
	17 Feb.		Popayan	3527, 3561, 3562, 3577, 3580, 3581, 3583, 3584
	18 Feb.		Popayan	3563
	20 Feb.		Rio Quilcase, Quilcase, Tambo, Alto de Marques, Dolores	3603, 3668-3671, 3677-3680, 3718, 3737, 3740
	21 Feb.		Alto de los Motilones, Sotara, Pitayo	3673-3676, 3681, 3684-3687, 3690-3706, 3719, 3720, 3738
	22 Feb.		W. Sotora, Paisbamba	3672, 3708-3714, 3716, 3717, 3736
	23 Feb.		Paisbamba, Popayan, Chiribio	3613, 3614, 3688, 3689, 3715
	24 Feb.		Paisbamba	3655
	28 Feb.		Popayan	
	29 Feb.		Chapa, Popayan, Tambo	3585-3602
	March		Aganche, Hatice, Popayan	4129, 4370, 7850, 7903
	1 March		Popayan, Munchique	3611, 3635, 3664
	2 March		Bellavista, Sintura, La Cueva, W Munchique,	3621, 3622, 3627, 3630, 3650, 3666, 3667, 3683, 3723, 3741
	3 March		Bellavista, La Laguna, E Munchique	3604, 3605, 3607, 3608, 3620, 3628, 3629, 3632-3634, 3636, 3637, 3643-3646, 3657-3663, 3665, 3721, 3722, 3729, 3742
	4 March		Popayan, Poblazon, Munchique, Tambo, Chapa	3606, 3609, 3612, 3617, 3618, 3623, 3640, 3641, 3647-3649, 3653, 3654, 3656, 3725-3727, 3739
	5 March		Rio Hondo, Piagua	3610, 3638, 3639, 3642, 3651
	8 March		Munchique	3626, 3631

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1884	10 March		Coconuco	3615
	11 March		Poblazon, Popayan	3682, 3728, 3730-3735, 3743, 3744
	15 March		Penon de Pitayo	3759
	16 March		Pitayo, Kluckhuata	3746, 3748, 3750, 3752, 3755-3758, 3763-3765, 3768, 3761, 3783, 3788
	17 March		Pitayo, Horqueta de San Francisco, Ambalo	3775, 3776, 3779-3781, 3784, 3785
	18 March		Caloto	3747, 3749, 3772, 3774, 3787
	20 March		C Cordilleras of Popayan	3760
	23 March		Tocota, Cali, Juntas, Rio Dagua	3745, 3751, 3761, 3762, 3767, 3769, 3770, 3777, 3778, 4001
	26 March		Naranjo, Rio Dagua	3786
	27 March		Sucre	3782
	2 April	Panama	Panama	3766
	6 June	Germany	Lueben	
	18 June		Berlin	
	15 July	UK	London	
	16 July		London	
	4 Aug.	Jamaica	Bog Walk	3789-3791, 3794-3800, 3831, 3862
	5 Aug.		Kingston	3792
	8 Aug.	Colombia	Cali	4101
	10 Aug.		Buenaventura, Las Juntas	3810, 3811, 3815-3821, 3823-3827
	11 Aug.		Cordova, Rio Dagua	3802, 3804, 3851
	12 Aug.		Las Juntas, Rio Dagua, Cordova	3854, 4110-4112
	13 Aug.		Las Juntas	3801, 3803, 3805, 3809, 3813, 3814
	14 Aug.		Naranjo, Rio Dagua	3806-3808, 3829, 3830, 3832
	15 Aug.		Cali	3822, 3831
	16 Aug.		Naranjo, Rio Dagua	4109
	17 Aug.		Cali	3844
	18 Aug.		Cali	4107
	20 Aug.		Carrito, Manta, Cauca	3855, 3856, 3864-3866
	21 Aug.		Caucana, Carrito	3867, 3871, 3880
	23 Aug.		Cali, Tulua, Paila, Zarzal	3793, 3861, 3874-3876
	24 Aug.		Cauca, Cordillera de Belalcazar	3857, 3859, 4144
	25 Aug.		Cartago	3863

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1884	27 Aug.		Paso de la Virginia	3837
	28 Aug.		Havana, Serrania de Belalcazar, Paso de la Virginia	3836, 3845, 3858, 3869, 3870, 3873, 4140
	29 Aug.		Anserma Vieja, Belalca	3840, 3852, 3872
	30 Aug.		Anserma Vieja, Michmich, Guatica	3841, 3860, 3877
	Sept.	Colombia	San Pedro, Entre-Rios, Antioquia Prov., Yolombo, Canca, Caramanta, Carolina	7789, 8146, 8182, 8183, 8213
	2 Sept.		Caramanta, Antioquia Prov., Alto del Poleal, San Miguel, Caldas	3833-3835, 3842, 3843, 3849, 3850, 4043, 4044, 7790
	3 Sept.		Paraiso, Atillo, Caramanta, Alto de Poleal, Fredonia	3838, 3846, 3847, 3878, 3879, 4045, 5003
	5 Sept.		Caldas	3848
	22 Sept.		Amalfi	3881-3885
	27 Sept.		Carolina	4011
	29 Sept.		San Pedro	3852, 4013
	30 Sept.		Hato-viejo, Medellin, San Pedro	4019, 8240
	Oct.		San Jeronimo, Antioquia, Alto de Alegrias, Abriaquia	4029, 7955, 8155, 8166, 8184
	1 Oct.		Medellin	4012
	2 Oct.		Sta Elena, Medellin,	4015, 4017
	5 Oct.		Medellin	4031
	6 Oct.		Barbosa	4018
	10 Oct.		Antioquia, Abriaqui, Barbosa, San Jeronimo	4007, 4020, 4026, 4038, 4039, 8199
	12 Oct.		Cerro, Frontino, Antioquia	4036
	14 Oct.		W. Cordilleras of Antioquia	4042, 8189
	15 Oct.		Antioquia, Abriaqui	4034, 4037
	16 Oct.		Abriaqui, Frontino	4046
	20 Oct.		Frontino, Rio Sucio	4021, 4028, 4035
	23 Oct.		Frontino	4305, 4136
	25 Oct.		Canas Gordas, Antioquia	4024, 4025
	26 Oct.		Antioquia	4023
	27 Oct.		Medellin, Antioquia	
	30 Oct.		Cerro, Frontino	4009, 4010, 4027, 8190
	2 Nov.		Antioquia, Rio Cauca, Rio Verde, Rio Sucio	4032, 4033, 4050, 7996
	8 Nov.		Frontino	4051
15 Nov.		Jirardota, Barboza	4053, 4054	
20 Nov.		Sta Elena, Medellin, El Retiro	4308	
Dec.		Rio Nuz, Savaletas, Puerto Berrio, Barbosa	4360, 7758, 7909-7911, 8116, 8162, 8188	

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	10 Dec.		Barboza	
	12 Dec.		Savaletas	4041, 4104
	13 Dec.		Santo Domingo, Barboza	4016, 4040, 4047-4049, 4057
	15 Dec.		San Julian, Alto Grande, Rio Nus, Amalfi, Barboza, Santo Domingo	4006, 4008, 4014
	16 Dec.		Savalettas, Altogrande, Rio Nuz	4030, 4055, 4098-4100
	17 Dec.		Antioquia, Altogrande, Santo Domingo, Savaletas, Puerto Berrio to Rio Nus	4004, 4005, 4155
	18 Dec.		Savaletas, Puerto Berrio, Rio Nuz	4056, 4102
	28 Dec.		Bolivar State, Barranquilla	4058-4069, 4103
1885	Jan.	Colombia	Popayan	
	25 Jan.		Bahia de Caraquez	
	26 Jan.		Bahia de Caraquez, Manabi Prov.	7912, 7913
	27 Jan.		Bahia de Caraquez	7844
	5 Feb.		San Antonio, Cali	4079, 4080, 4159
	10 Feb.		Cali	4108, 4158, 4165
	26 Feb.		Bahia de Caraquez	4070, 4071, 4076-4078
	27 Feb.		Bahia de Caraquez	4072-4075
	March	Colombia	Popayan, Chiribio, Paisbamba, Paniquita	4248, 4284, 4317, 4377, 4449, 4450, 7979, 8186
	4 March		Cauca, Popayan	4081, 4162
	5 March		Popayan	4121, 4163, 4167, 4170-4173
	6 March		Popayan	4113, 4114, 4118, 4176, 4177
	10 March		Chiribio, Paniquita, Presidente, Tambo, Popayan	4082-4084, 4105, 4115-4117, 4119, 4120, 4161, 4164, 4166, 4169, 4174, 4175, 4178-4180
	15 March		Popayan	4156
	April		San Gregorio, Aganche, Popayan, La Porquera	4388, 4390, 4408, 8111, 8115
	3 April		Popayan	4154
	20 April		Juntas, Rio Dagua	4085, 4086
	25 April		Juntas, Rio Dagua, Tocota, Popayan	4087-4093
	26 April		La Porquera, upper Rio Dagua	4136
	10 May		Rio Dagua, Cauca	4302
	29 June	Germany	Platkow	
	25 Aug.	Colombia	Popayan	4153
	20 Sept.		Cali, Rio Ovejas, Rio Teta	4151
	25 Sept.		Cauca State	
	Oct.		Piendamio, Palace, Popayan, Cerro de la Teta, Aganche, El Tambo, Chapa, Tocota, W Andes of Cali, Rio Ortega	4206, 6749, 7880, 7897, 7933, 7982, 7993, 8098, 8165, 8239

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1885	2 Oct.		La Porquera, upper Rio Dagua	4131
	10 Oct.		Rio Cofre, La Teta, Rio Ovejas, Popayan	4132, 4133, 4135, 4147, 4148, 4152
	12 Oct.		Rio Ovejas, Cali, Popayan	4137, 4140-4142, 4149, 4150
	15 Oct.		Hatico, Popayan	4138, 4139
	16 Oct.		La Teta, Jelima	4143, 4144
	20 Oct.		Popayan	4134
	5 Nov.		Cauca State	
	10 Nov.		Cauca State	
	15 Nov.		Popayan	4130, 4146
	20 Nov.		Popayan	4145
	Dec.		Popayan	4207
	15 Dec.		Popayan	
	28-29 Dec.		Popayan	
1886	Jan.	Colombia	Upper Magdalena, Paicol, Rio Paez, Popayan, Dolores, Tolima, Yaguara, Prado, Neiva, Iquira, Tinajitas	4249, 4268-4272, 4302, 4315, 4316, 4326, 4359, 4402, 4441, 4442, 8000, 8141
	2 Jan.		Popayan	
	3 Jan.		Popayan	
	4 Jan.		Popayan	
	6 Jan.		Popayan	
	8-11 Jan		Paramo de Guanacas, Rio Paez	
	12 Jan.		Caruicerias, Tolima, Paicol	
	20 Jan.		La Union, Rio de Villavieja, Tolima, Neiva	
	24 Jan.		Tinajitas, Dolores	
	25-27 Jan.		Dolores, Tolima	
	28-29 Jan.		Dolores, Tolima, Prado, Dolores	
	Feb.		Tolima, Dolores, Alpujarras, Popayan, Poblazon, Paisbamba, Paramo de Guanacas, Prado, Rio Paez, Rio Magdalena, Paicol	4217, 4218, 4386, 4387,
	1 Feb.		Purificacion, Garollan	
	2 Feb.		Cundinamarca, Randavu	
	3 Feb.		La Boca del Monte, Bogota, Cundinamarca	
	4 Feb.		Cundinamarca, Tena, La Boca del Monte, Bogota	
	8 Feb.		La Boca del Monte, Bogota	
11 Feb.		La Boca del Monte, Bogota		
15 Feb.		Hatico		

Year	Date	Country	Place	Lehmann Herbarium numbers
1886	20 Jan.		Neiva, Carnicerias, Rio Paez	
	21 Feb.		Tolima Prov., Neiva, Piacol,	
	23 Feb.		Carnicerias, Tolima, La Plata	
	25 Feb.		La Topa, El Patico, Rio Paez, Tolima, Rio Paez, La Plata	
	27 Feb.		Cauca, La Ceja, Paramo de Guanacas, Inza, La Vibora	4095
	28 Feb.		La Ceja, Paramo de Guanacas, Cauca, Inza	4106, 7932
	March		Popayan, Inza, Chiribio, Paisbamba, Paniquita, Poblazon, Rio Paez, Tolima, Paramo de Guanacas, Cauca, San Antonio, Cali, La Vibora, Inza, Popayan, La Ceja	4243, 4250, 4261, 4273, 4275, 4288, 4293, 4332, 4384, 4392, 4395-4399, 4404, 4452, 4464, 7704, 7710, 7797, 7807, 102
	1 March		Paramo de Guanacas, Corrales	
	2 March		Paramo de Guanacas, Sotara	
	5 March		Paramo de Guanacas	
	8 March		Popayan	
	10 March		Popayan, Cauca	
	15 March		Cali prov., La Teta, Buenos Aires	
	April		Popayan	4339, 7879
	5 April		San Antonio de Cali	
	10 April		La Porquera, Cali High Cordillera, Rio Dagua, Las Juntas del Dagua	8224
	May		Popayan	4251, 4266, 4285
	3 May		Popayan	
	10 May		Sucre, Purreto, Rio Dagua	8167
	30 May		Popayan	
	June		Popayan	
	1 June		Cauca State	
20 June		Popayan		
28 June		Popayan		
July	Ecuador Colombia	Quito, Paramo de Mojanda, Huaca, Otavalo, Tulcan, Paramo de Barbillas, Popayan, Almaguer, Pansitara, Guachicono, Pansitara, San Antonio de Lulumba, Rio Chota, Huara, Tusa, Sotara, La Cruz, Alto de Achupallas, Alto de las Cebollas, Pasto	4236, 4297, 4409, 7779, 7867	
3 July	Colombia	Sotara, Presidente, Paisbamba, Popayan		
4 July		Sotara, Chapa, Rio Blanco		
5 July		Pasto, Huila		
6 July		Guachicono, Pansitara, Almaquer, Pisatumba, Paramo de Barbillas, Paramo de las Tapas		
8 July		Almaguer, Rio Ruiz, Rio San Jorje, Almaguer, Pisatumba, Sotara		

Year	Date	Country	Place	Lehmann Herbarium numbers
1886	9 July	Ecuador	Pisatumba, El Divisio de la Mesa, Tajumbina, Sotora	
	10 July		Almaguer, La Cruz, Paramo de las Achupallas, Rio Mayo	
	13 July		Rio Zuanambu, Tablon, Toldapamba, Buesaco, La Cruz	
	14 July		Pasto, Paramo de las Cebollas, Tablon, Tajumbi, Tablon	
	15 July		Alto de Chollas, Pasto	
	20 July		Pasto	
	25 July		Pasto, Yacuanquer	
	27 July		Huaca, Tusa	
	28 July		Imbabura Prov., Huaca, Quito, Bodan, Rio Chota, Paramo de Boliche, Tulcan, Tusa, Paramo de Mojanda, Huaca	
	29 July		Imbabura Prov., Imbabura, Mojanda, Rio Chota, San Antonio de Lulubamba, Calacali, Hatuntaqui, Gubirtan	
	30 July		Imbabura, Paramo de Mojanda	
	Aug.		Calacali, Alausi, Puente de Chimbo, Rio Paez, Paramo de Guanacas, Corrales, Tusa	4230, 4310, 4319, 4320, 8094
	1 Aug.		Quito, Calacali	
	2 Aug.		Quito, Cuenca, Calacali, Silante, Miligalle	
	3 Aug.		Quito, Imbabura, Calacali, Paramo de Boliche, Pelagalla, Isobamba, Pishkubamba	
	4 Aug.		Quito Prov., Calacali	
	5 Aug.		Quito, Calacali	
	10 Aug.		Quito	
	15 Aug.		Pululagua	
	18 Aug.		Calacali	
	19 Aug.		Quito	
	21 Aug.		Imbabura, Rio Chota, St Vicente de Chota	
	22 Aug.		Imbabura, Paramo de Boliche, Tulcan, Inza, Otabalo	
	23 Aug.		Ipiales	
	24 Aug.		Ipiales, Yacuanquer, Pasto	
	28 Aug.		Imbabura	
	30 Aug.		Bernacos, Cauca Prov.	
Sept.	Colombia	Popayan, Paramo de Guanacas	4228	
1 Sept.		Cauca State, Patia		
2 Sept.		Rio Esmita, Guachicano, Falfan, Dolores		
20 Sept.		Popayan		
28 Sept.		La Porquera		
29 Sept.		Alto de Cebols, Pasto		

Year	Date	Country	Place	Lehmann Herbarium numbers
1886	Oct.		Cali, Rio Dagua, Rio Cofre, Palace, Popayan Highlands, Las Pavas, Dapa	4283, 4313, 8036
	1 Oct.		Popayan	
	5 Oct.		Popayan	
	Nov.		Popayan	4309, 8282
	15 Nov.		Popayan	
	20 Nov.		Popayan	
	25 Nov.		Cali, Topa, Cauca	
	1 Dec.		Popayan	
	28 Dec.		Cali	
1887	2 Jan.		Popayan	
	Feb.		Popayan	4401, 8028
	March	Colombia Ecuador	Quito, Colorados de Santo Domingo, Gabriel Lopez, Paramo de Guanacas, La Vibora, La Plata, Inza	4374, 4385, 4389
	30 March	Colombia	Popayan	
	April	Ecuador	Yunguilla-huaico, Huasi-Huaico, Cuenca, Chagal, Yuerbabuena, Molleturo	4286
	2 April		Sigsig, Churrucos, Chiguinda, Rio Tigripungo, Rio Blanco	
	5 April		Chiguinda, Sigsig	
	8 April		Cuenca, Sigsig, Chiguinda	
	9 April		Cuenca	
	10 April		Los Hornos, Rio Dagua	
	11 April		Puretto, Sucre, Rio Dagua	
	12 April		Cuenca, Pante	
	15 April		Pindilio, Huarainac, Rio Paute	
	19 April		Shoray, Yavilcay, Naranjal	
	20 April		Chagal, Chacayacu, Entable, Huahindocal, Naranjal, Savanetas, Pisagnas, Tipijapa	
	21 April		Molleturo, Therasi, Yunguilla-huaico, Huasi-huaico	
	22 April		Huasi-huaico, Molleturo, Paramo del Cajas, Cuenca	
	25 April		Cuenca, Zubones	
	28 April		Sigsig, Cuenca, San Bartolo, Puente de Samar	
	30 April		Sisig, Cuesta del Ducal	
	May		Sigsig, Paramo de Matanga, Chiguinda, Rio Sangurima, Popayan, Zurucucho, Quinoa, Cuesta del Ducal, Gualaquiza, Huasi-huaico, Chimborazo	4247, 4256, 4453, 8003, 8010, 8164
	1 May		Chimborazo, Cuenca, Tigripungo, Rio Blanco, Chiguinda, Rosario	

Year	Date	Country	Place	Lehmann Herbarium numbers
1887	2 May		Sigsig, Churrucos, Rio Tigripungo, Rio Blanco, Chiguinda, Gualaquiza, Cuchipamba	
	3 May		Gualaquiza, Cuenca	
	4 May		Gualaquiza	
	5 May		Sigsig, Chiguinda, Cuchipamba, Cuenca	
	6 May		Cuenca, Chiguinda	
	7 May		Cuenca, Chiguinda	
	8 May		Cuenca, Sigsig, Chiguinda	
	9 May		Paramo de Matanga, Yavilcay, Rio Paute, Churrucos, Granadillas	
	12 May		Cuenca, Paute, Rio Paute	
	14 May		Rio Boclon, Rio paute, Huarainac	
	15 May		Pindilic, Huarainac, Rio Paute	
	18 May		Pindilic, Cerro de Pulpite, Rio Masar, Rio paute	
	19 May		Shoray, Yavilcay, Cuenca, Paute, Azogues, Taday, Chanin, Huairacaja	
	20 May		Shoray, Paute, Cuenca, Azogues, Rio Paute, Gualacco	
	25 May		Cauca, Contra-yerba, Huaira-machai, Paramo del Cajas, Cuenca, Zurucucho, Quinua	4212
	28 May		Cuenca	
	June		Tunguragua, Riobamba, Puente de Chimbo, Banco, Colorados de Santo Domingo, Rio San Florencio, Banos, Cansacoto, Miligalle, Corazon, Enselladas, Chimborazo, Tiupullo, Cotopaxi, Nudo de Tiupullo, Tortorillas, Arrenal, Chapacoto, Guaranda, Tunguragua, Pelileo, Patato, Ambato, Chuechi, Yerba-buenas, Molleturo, Alausi, Rio Badcun	4195, 4196, 4198-4201, 4203, 4204, 4211, 4226, 4227, 4245, 4246, 4252-4255, 4257-4259, 4274, 4282, 4283, 4303-4307, 4311, 4366, 4367, 4393, 7804, 7864, 8107, 8109
	9 June		Guayaquil, Puente de Chimbo, El Entable, Naranjal	
	10 June		Puerta de Chimbo	8170
	17 June		Naranjal, Guayas	
	24 June		Tunguragua	
	29 June		Tunguragua	
	July		Quito, San Florencio, Paramo de Guanacas, Corrales, San Nicolas, Pasto, Rio Guitara, Otabalo, Paramo de Mojanda	4260, 4292, 4356, 4358
	5 July		Guayaquil	
	Aug.	Colombia	Popayan, Paramo de Guanacas, Rio Ullucos, Rio Paez, Tolima, Patico, Rio Paez, Inza, Patia, Corazon	4231, 4232, 4237-4242, 4265, 4267, 4278, 4280, 4289, 4290, 4294-4296, 4298, 4327, 4328, 4410, 4454, 7802, 7968, 7985, 7986

Year	Date	Country	Place	Lehmann Herbarium numbers
1887	Sept.		Popayan, Corrales, Upper Magdalena, Paramo de Guanacas, Chagal, Huahuidocal	4281
	October		Cordova, Buenaventura, Popayan, Chacayacu, Sigsig	4197, 4202, 4365, 6561
	Nov.	Colombia Ecuador	Juntas, Rio Dagua, Cali, Yerba-buena, Cuenca, Galal, Huahuidocal, Rio Paez, Inza, Guayas, Rio Naranjal, Chacayacu, Guayaquil	4205, 4215, 4216, 4263, 4291, 4354, 4357, 4364, 4458, 8014, 8157
	1 Nov.		Naranjal	
	2 Nov.	Colombia	Cali	
	Dec.		Cordova, Buenaventura, Cauca, Rio de la Teta, Buenos Aires, Cordova, Rio Dagua	4194, 4350, 8019
1888	Jan.		Guaranda	
	2 Jan.		Popayan	
	Aug.	Ecuador	Yerba-buena, Molleturo	7316, 7317
	Oct.		Ramos-urcu, Zaraguro, Shoray, Yavilcay, Cuenca Prov.	8173, 8289
	Nov.		Zamora, Guaranda	8158, 8172
1890	March	Colombia	Patico, La Topa, Rio Paez, Popayan	7594-7599
	July		Cali, Tocota	8176
	Aug.		Montana de Caramanta	7205
	Oct.	Ecuador	Hornillos, Loja Prov., Rio Luiz, Rio Amaryllo, Zaruma, Zamora, Naranjal, Cuenca	8181, 8286
	Nov.		El Entable, Naranjal	8191
	Dec.		Rio Calera, Zaruma, Zamora, Loja Prov., Sta Rosa	8178, 8187
1891	Jan.	Colombia	Zipaquira	
	Feb.		Zipaquira	
	March		Zipaquira	
	July		Cauca Prov., Montana de Caramanta, Rio Sucio, El Jardin, Cauca, Cartago, Tuluá, Paso de la Virginia, Altos de Mismis, Montana del Oro, Cordillera de Belalcazar, Anserma-vieja, Cauca valley, Altos de Mismis, Montana de Caramanta, El Cerrito, Cordillera de Belalcazar, Las Juntas del Dagua, Supia	7215-7224, 7226, 7361, 7385, 7438, 7440, 7512, 7520, 7549, 7550, 7560, 7564, 7576, 7612, 8169, 8231, 8308
	Aug.		Montana de Caramanta, Rio Sucio, El Jardin, Alto de Toyo, Ciudad Antioquia, Pinguru, Toyo, Montana del Oro, Montana de Caramanta, Supia, Frontino,	7206, 7207, 7209-7214, 7225, 7227, 7228, 7230-7236, 7322, 7323, 7356, 7358, 7416, 7418, 7441-7443, 7515, 7534, 7539, 7548, 7559, 7606, 7627, 7633
	5 Aug.		Montana de Caramanta, Rio Sucio, El Jardin	7208
	Sept.		Antioquia Prov., Frontino	7237-7251, 7325, 7359, 7360, 7362, 7366, 7374-7376, 7382, 7388, 7405, 7406, 7413, 7419, 7435, 7504, 7517, 7518, 7525, 7528, 7534, 7553, 7569, 7584, 7620, 7624

Year	Date	Country	Place	Lehmann Herbarium numbers
1891	Oct.		Frontino, Dabeiba, Uramita, Cerro Plateado, Giraldo, El Roblarcito, Sonson	3538, 7252, 7266, 7354, 7367, 7368, 7377, 7386, 7387, 7398, 7419, 7444, 7459, 7472, 7500, 7503, 7532, 7578, 7607, 7621, 7625, 7626
	Nov.		El Palmichal, Malabrigo, Yarumal, Santa Rosa, Palmichal, Malabrigo, Manizales, Morro de Yarumal, La Bramadora, Briceño	7230, 7254, 7255, 7256, 7258-7261, 7264, 7267, 7357, 7381, 7390-7392, 7395, 7396, 7409, 7411, 7412, 7415, 7435, 7446, 7447, 7460, 7463, 7478, 7488, 7505, 7507, 7513, 7521, 7535, 7542, 7546, 7535, 7542, 7551, 7570, 7631, 7640, 8238, 8291-8293, 8303, 8548
	19 Nov.		El Yarumal, Santa Rosa	7278
	Dec.		Santa Rosa de Osos, Savaneta, El Roblarcito, Sonson, Rio San Miguel, Mesopotamia, La Union, Antioquia, Paramo de Sonson, San Felis, San Gregorio, Rio Samana, Nariño, Pensilvania, San Gregorio, Rio Palmas, Rio Dulce, Rio Dolores, Pensilvania, Angostura, Yarumal, Rio San Pedro, Envigao, San Gregorio, Santa Rosa	7033, 7039, 7268, 7269-7291, 7321, 7355, 7364, 7365, 7373, 7380, 7383, 7384, 7393, 7394, 7397, 7399, 7400, 7402, 7410, 7432-7434, 7448, 7452-7458, 7465, 7471, 7479, 7489, 7501, 7502, 7508-7510, 7523, 7540, 7541, 7547, 7554, 7571, 7574, 7575, 7582, 7586, 7587, 7589-7592, 7604, 7609, 7610, 7622, 7629, 7630, 7634, 8290, 8302, 8329
1892	Jan.	Colombia	Pacho, Cundinamarca, Zipaquira, Vergara	7292-7296, 7314, 7320, 7340, 7341, 7352, 7370, 7371, 7424, 7426, 7449, 7462, 7465, 7475, 7480-7482, 7492, 7494, 7496, 7514, 7519, 7522, 7524, 7529, 7530, 7538, 7561, 7565, 7567, 7568, 7579, 7580, 7588
	Feb.		Rio Tobia, Rio Pinsaima, Rio Negro, Cundinamarca, Veragua Grande, Bogota, Zipaquira	7297, 7301, 7353, 7470, 7477, 7552, 7573, 7615, 7616, 7628
	March		Pacho, Cundinamarca, Quytasol, Boqueron, Rio Sumapaz, Sibate, Fusagasuga, Melgar, Dolores, Tolima Prov., Paramo de la Pradera	7299, 7300, 7302-7308, 7324, 7328, 7330, 7343, 7378, 7427-7429, 7431, 7461, 7466-7469, 7473, 7483, 7485-7487, 7497-7499, 7511, 7516, 7526, 7531, 7533, 7537, 7544, 7548, 7556, 7558, 7562, 7566, 7572, 7577, 7603, 7605, 7608, 7608, 7617-7619, 7632, 8331
	April		Dolores, Tolima Prov., Honda, Rio Guarino, La Yegua, R. Magdalena, Purification, Prado, Puerto-nacional, Sibate, Melgar, El Carmen, Dolores	7309, 7311, 7327, 7331-7334, 7338, 7339, 7342, 7348-7351, 7430, 7545, 7563, 76'3, 7614

Year	Date	Country	Place	Lehmann Herbarium numbers
1892	May		Sierra Nevada de Santa Marta, Riofrio, Minca, Fusagasuga	7312, 7313, 7315, 7335, 7336, 7344-7346, 7506
	Sept.	Ecuador	Cajas de Cuenca, Shagal, Cuenca	7641
	Oct.		Shagal, Molleturo, El Entable, Naranjal, Loja, Cuenca	7642, 7883, 8175
	Nov.		Santa Rosa	7651
	Dec.		Santa Rosa, Guayaquil, Silante, Milifalli, El Cucho, Rio Pitapongo, Santa Rosa, Zamora, Loja Prov., Corazon	7646, 7649, 8185, 8192, 8225, 8229
1893	Jan.	Ecuador	Corazon	
1894	Aug.	Colombia	Tuquerres, Guataquer, Cerro Gualcala	8345, HK 342
	Aug.	Ecuador	Callo, Lacatunga	
	Sept.		E Andes of Sigsig, Cuchipamba, Chiguinda	8642
	Oct.		Oso-cocha, Gualaquiza, Sigisig, Chiguinda, Cuchipamba	8287
1895	June	Colombia	W Andes of Popayan, W Andes of Roldanillo, Cajamarca	8582, 8960
	July		W Andes of Popayan	
	Aug.		W. Andes of Roldanillo, Rio Garrapatas	
1896	May	Colombia	Timbiqui	8640
	Nov.		El Yarumal, Antioquia Prov.	
1897	8 July	Colombia	Boqueron de Chipaque, E Andes of Bogota	8772, 8812, 8867, 8868
	9 July		Chipaque, Caqueza	8764, 8854, 8859, 8860
	10 July		Quetame, Mesa-grande, Rio Negro, E Andes of Bogota, Quebrada Chirajara	8763, 8810, 8811, 8813, 8822, 8827-8829, 8842, 8843, 8856-8858, 8862-8864, 8866
	11 July		Piperl, Mesa-grande, E Andes of Bogota, Quetame, Buenavista, Quebrada Chirajara	8788, 8848
	12 July		Rio Caqueza, Chipaque, E Andes of Bogota, Villavicencio, Piperals, Buenavista, Rio Negro	8778, 8790, 8792, 8855, 8861
	14 July		Villavicencio, Llanos	8839, 884, 8850
	15 July		Villavicencio, Llanos	8845
	16 July		Barrancas, Rio Meta, Rio Guatiquia	8841
	17 July		Rio Gatiquia, Cabuyaro	8769, 8809
	19 July		Barrigon, Rio Gatiquia	8825
	20 July		Rio Gatiquia, Barrigon	8761, 8830, 8831
24 July		Rio Meta, Orocne	8747-8753, 8781, 8782, 8797, 8819-8821, 8824, 8846, 8851, 8869	
25 July		Rio Meta, Orocne	8755, 8774-8777, 8789, 8791, 8796, 8807, 8808, 8814, 8815, 8844	

Year	Date	Country	Place	Lehmann Herbarium numbers
1897	26 July		Rio Meta, Orocne	8762, 8766, 8784-8787, 8816-8818, 8837, 8853
	28 July		Rio Meta, Llanos, Rio Casanare	8757, 8795, 8849
	30 July	Venez.	Orinoco, Rio Meta, Randal de Cariben, Caicara	8756, 8767, 8783, 8794, 8806, 8826
	2 Aug.		Rio Arauca	8865
	3 Aug.		Cuidad Bolivar, Rio Orinoco	8773, 8833, 8834
	7 Aug.	Trinidad	Pitch Lake, La Brea	8754, 8765, 8768, 8770, 8771, 8793, 8823, 8836, 8847, 8852
	9 Aug.	Venez.	Puerto Cabello	8759, 8760, 8779, 8780, 8798
	15 Aug.		Caracas	8805, 8832
	17 Aug.		Rio Guaire, Petare	8799, 8803, 8838
	19 Aug.		Puerto Cabello	8800-8802, 8804, 8835
	Dec.	Colombia	Cali	8976
1898	Jan.	Colombia	Rio Timbiqui	8979
	March		Rio Timbiqui, Playas	9001
	May		Rio Palace, Rio Cofre, Popayan Highlands, Cali	
	June		Rio Dagua	8913, 8933, 8940
	Aug.		Rio Timbiqui, Buenaventura	8909, 8910, 8915
	Nov.		Timbiqui, Rio Timbiqui, Coteje, Guapi, Rio Cajambre, Buenaventura, Guapi,	8917, 8935, 8941, 8942, 8954, 8958, 8982, 8985, 9014, 9016, 9017, 9020, 9022, 9025, 9027, 9029, 9030
	Dec.		Buenaventura, Guapi, Rio Timbiqui, Coteje	8923, 8930, 8931, 8936, 8939, 8947, 8969, 8977, 8978, 8981, 8990, 9009, 9018, 9019
1899	Jan.	Colombia	Buenaventura, Rio Timbiqui, Coteje	8911, 8932, 8961, 8991, 8995, 9000
	Feb.		Rio Timbiqui, Coteje	8919, 8943, 8945, 8946, 8948, 8953, 8992, 9005, 9028
	March		Rio Timbiqui, Coteje, Playas, Micay, Naya	8916, 8918, 8920, 8924-8928, 8934, 8950, 8955-8957, 8986, 8987, 9004, 9006, 9007, 9100-9013, 9015, 9031, 9034, 9035, 9039
	April		Rio Timbiqui, Coteje	9002
	May		Rio Timbiqui	8988, 8989, 9003, 9037
	June		Rio Timbiqui	8914, 8984
	May		Rio Timbiqui	
	Nov.		Rio Timbiqui, Rio Micay, W Andes of Popayan	9033

Year	Date	Country	Place	Lehmann Herbarium numbers
1899	Dec.		W Andes of Popayan, Rio San Joaquin, Agua-clara, Rio Micay, Penol	8921, 8922, 8929, 8937, 8938, 8944, 8949, 9023, 9024
	22 Dec.		Penol, W Andes of Popayan	8884
1901	Oct.		Highlands of Popayan	BT184

Notes: The places and collection numbers cited above have been taken from Lehmann's collection notebooks at Kew, from letters sent by Lehmann to Frederick Sander and to Henry Ridley (both in the Archives at Kew), and from herbarium specimens at BM, G, K and W. Lehmann did not number his collections consecutively in the field. It seems probable that he numbered specimens retrospectively, sometimes months or even years after they had been collected. The collection notes at Kew do not include the sequences 134-2618 or 9038 onwards. The former specimens were sent to Reichenbach in Hamburg (now in Vienna) and to Ridley at the Natural History Museum and British Museum (Natural History), in London, the latter are at Kew. He occasionally gave the same number to different species and this is particularly apparent in the 4000s. He frequently placed two or more collections from different localities under the same number. An example would be Lehmann 6749(K) of *Dracula vespertilio* where three collections can be found on the same sheet from respectively: Los Anayes and Río Ortega, 1300-1600m, October 1885; Los Anayes, 1300-1600 m, flowering in October and November; and highlands of Popayán, 1400-1800m, flowering in December and January. Kew received two collections of un-numbered specimens from Lehmann which were given numbers in the series HK (Herbarium Kewense) and BT. Several of these were used by Kraenzlin and Rolfe as types of Lehmann species. Some, at least, of the BT numbers appear to have been collected in 1901, shortly before his death.

THE ILLUSTRATIONS



FIGURE 13. *Acianthera casapensis*.



FIGURE 14. *Acianthera sicaria*.



FIGURE 15. *Acineta erythroxantha*.



FIGURE 16. *Ada aurantiaca*.

FIGURE 17. *Ada* cf. *chlorops*.FIGURE 18. *Anathallis angustilabia*.FIGURE 19. *Anguloa virginalis* var. *turneri*.FIGURE 20. *Aspasia principissa*.



FIGURE 21. *Anguloa clowesii*.



FIGURE 22. *Barbosella cucullata*.



FIGURE 23. *Barbosella prorepens*.



FIGURE 24. *Barkeria specatbilis*.



FIGURE 25. *Bifrenaria coronaria*.



FIGURE 26. *Benzingia cornuta*.



FIGURE 27. *Brachionidium sp. nov.*



FIGURE 28. *Bractia andina*.



FIGURE 29. *Bulbophyllum antioquiense*.



FIGURE 30. *Bulbophyllum lehmannianum*.



FIGURE 31. *Bulbophyllum pachyrhachis*.

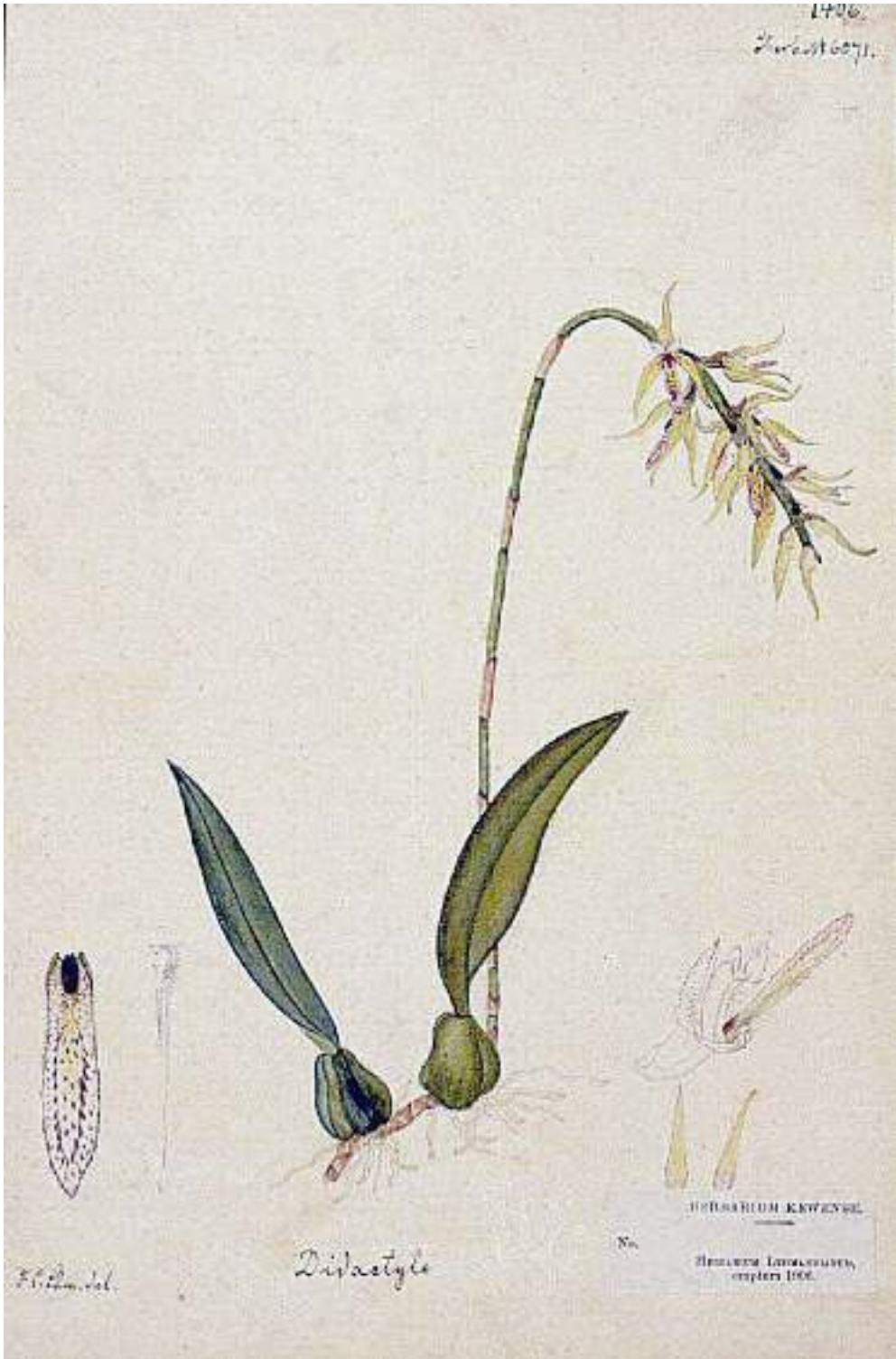


FIGURE 32. *Bulbophyllum popayanense*.



FIGURE 33. *Catasetum tabulare*.



FIGURE 34. *Cattleya aurea*.



FIGURE 35. *Cattleya trianaei*.

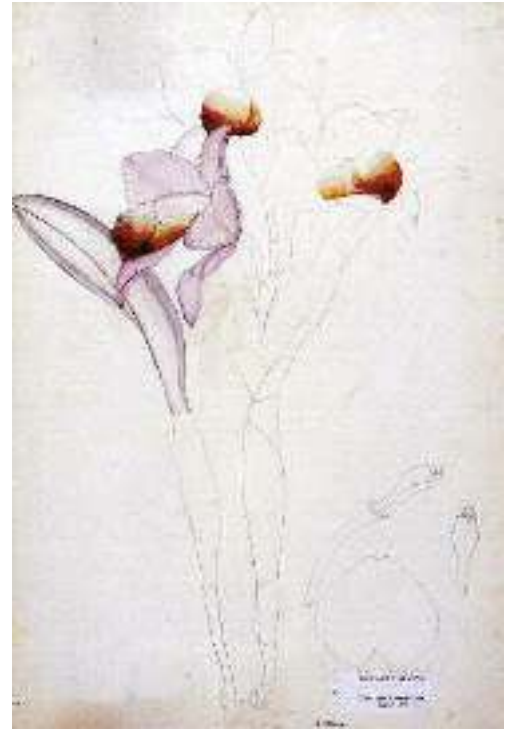
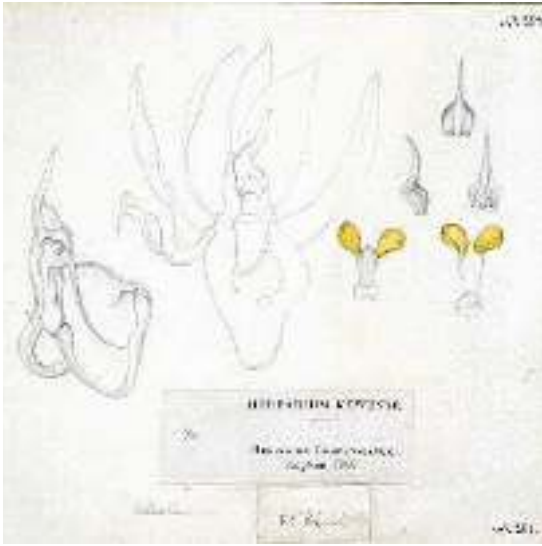


FIGURE 36. *Cattasetum maculatum*.

FIGURE 37. *Cattleya quadricolor*.



FIGURE 38. *Caucaea radiata*.



FIGURE 39. *Caucaea tunguraguensis*.



FIGURE 40. *Caucaea nubigena*.



FIGURE 41. *Chondropscaphe chestertonii*.



FIGURE 42. *Chondroscephe fimbriata*.



FIGURE 43. *Chrysocynis lehmannii*.



FIGURE 44. *Comparettia falcata*.



FIGURE 45. *Comparettia jamesonii*.



FIGURE 46. *Coryanthes elegantium*.



FIGURE 47. *Cryptarhena kegelii*.



FIGURE 48. *Cyrtidiorchis rhomboglossa*.



FIGURE 49. *Cyrtochilum halteranum*.



FIGURE 50. *Cyrtochilum ventilabrum*.



FIGURE 51. *Dichaea morrisii*.

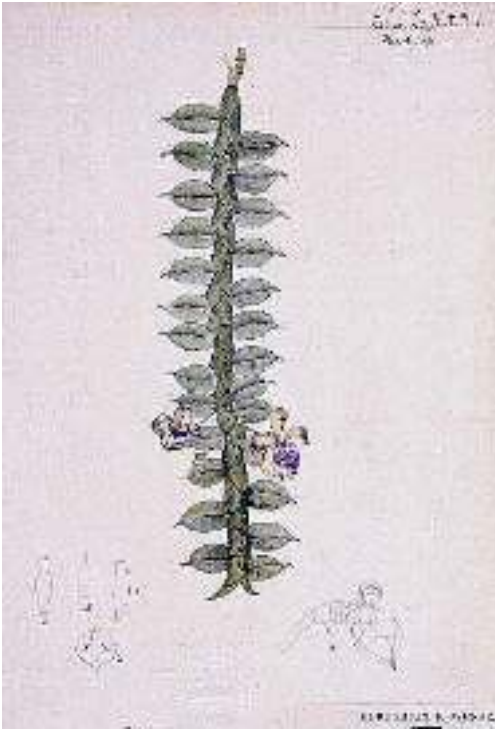


FIGURE 52. *Dichaea cf. histrio*.



FIGURE 53. *Dichaea richii*.



FIGURE 54. *Dracula chestertonii*



FIGURE 55. *Dracula inaequalis*.

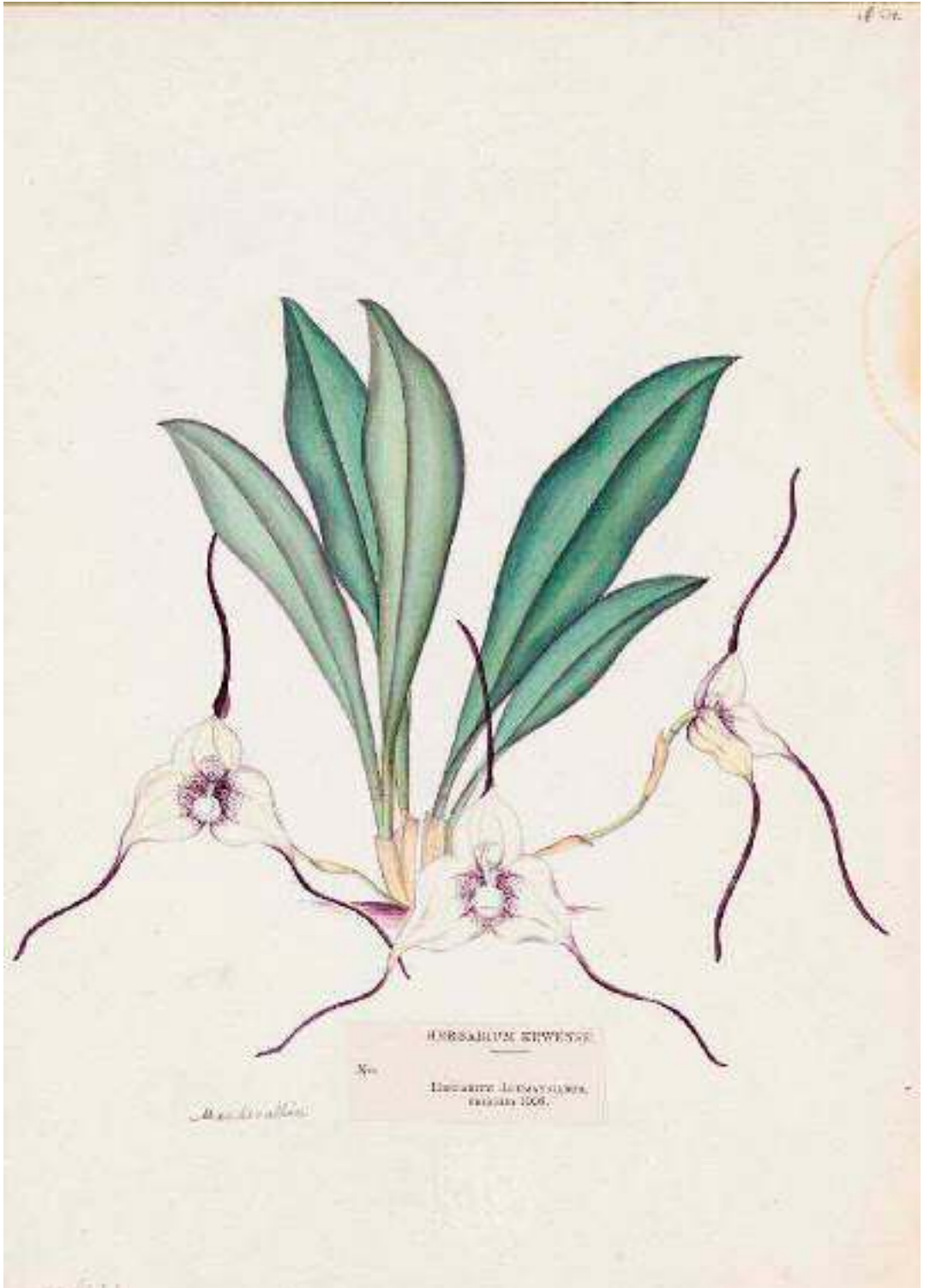


FIGURE 56. *Dracula amaliae*.

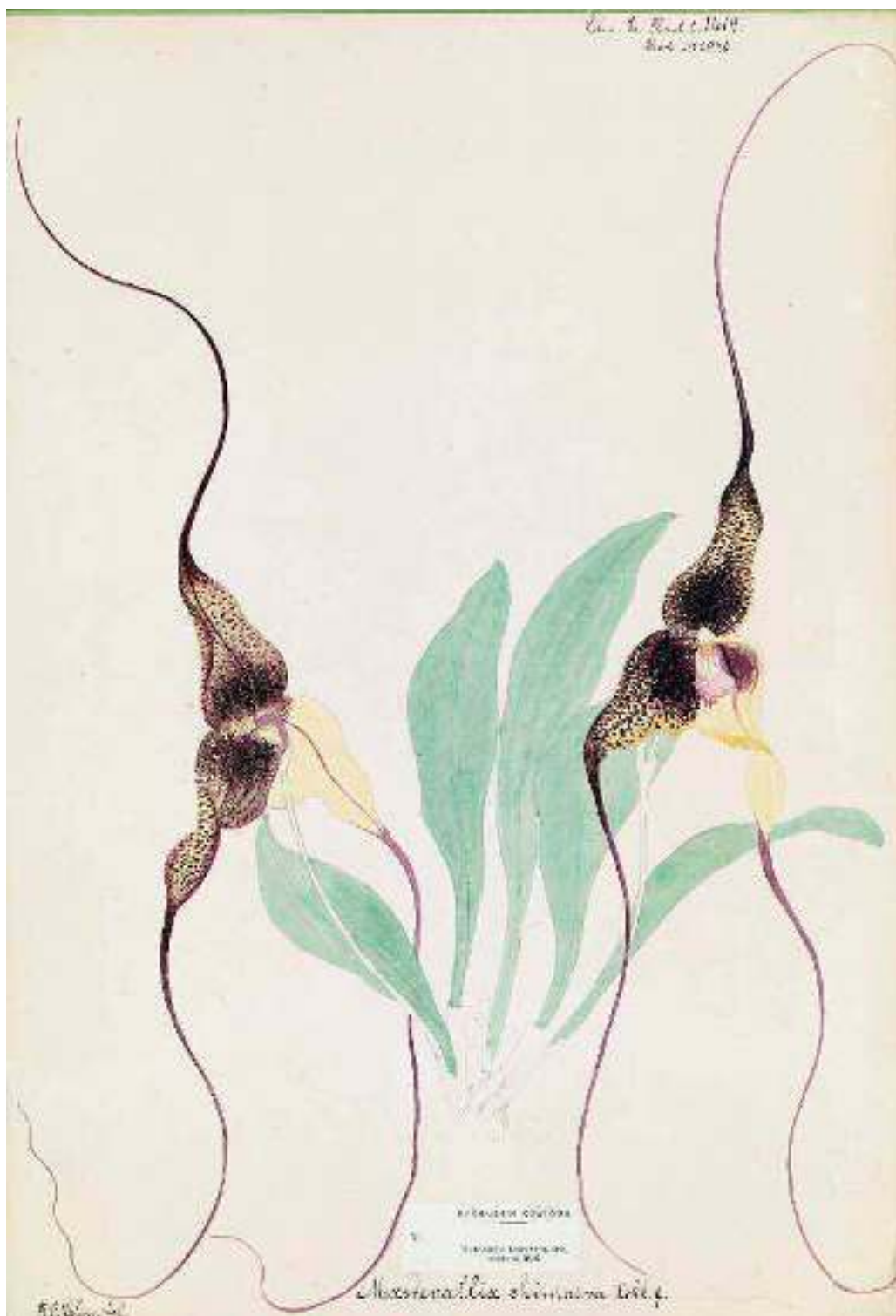


FIGURE 57. *Dracula chimaera*.

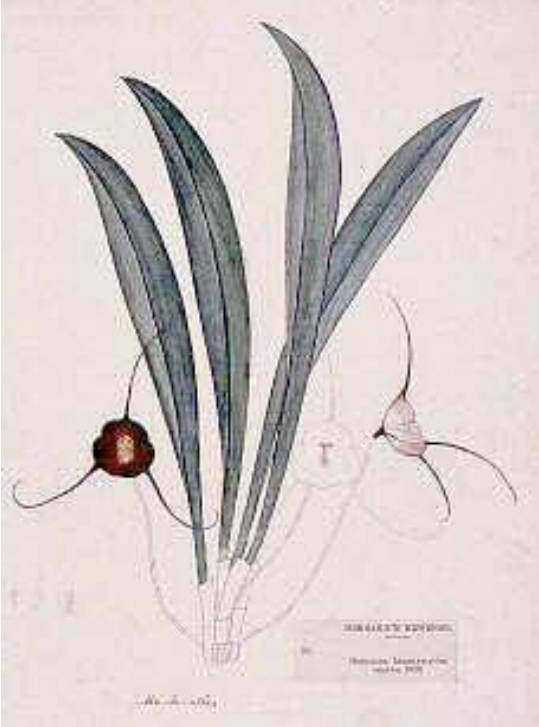


FIGURE 58. *Dracula phaeolodites*.



FIGURE 59. *Dracula platycrater*.



FIGURE 60. *Dracula sodiroi*



FIGURE 61. *Dracula vampira*.



FIGURE 62. *Dracula mopsus*.



FIGURE 63. *Dracula radiosa*.



FIGURE 64. *Dracula velutina*.



FIGURE 65. *Dracula wallisii*.

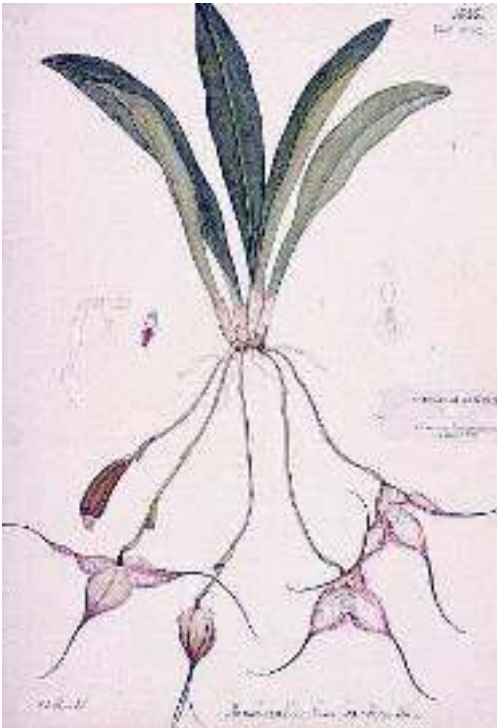


FIGURE 66. *Dracula woolwardii*.



FIGURE 67. *Dryadella hirtzii*.



FIGURE 68. *Dryadella simula*.



FIGURE 69. *Dryadella simula*.



FIGURE 70. *Epidendrum porpax*.



FIGURE 71. *Eriopsis biloba*.



FIGURE 72. *Euryblema andreae*.



FIGURE 73. *Gongora* cf. *fulva*.



FIGURE 74. *Helcia sanguinolenta*.



FIGURE 75. *Houletia odoratissima*.

FIGURE 76. *Huntleya citrina*.FIGURE 77. *Ixyophora viridisepala*.FIGURE 78. *Jacquiniella teretifolia*.FIGURE 79. *Kefersteinia gemma*.

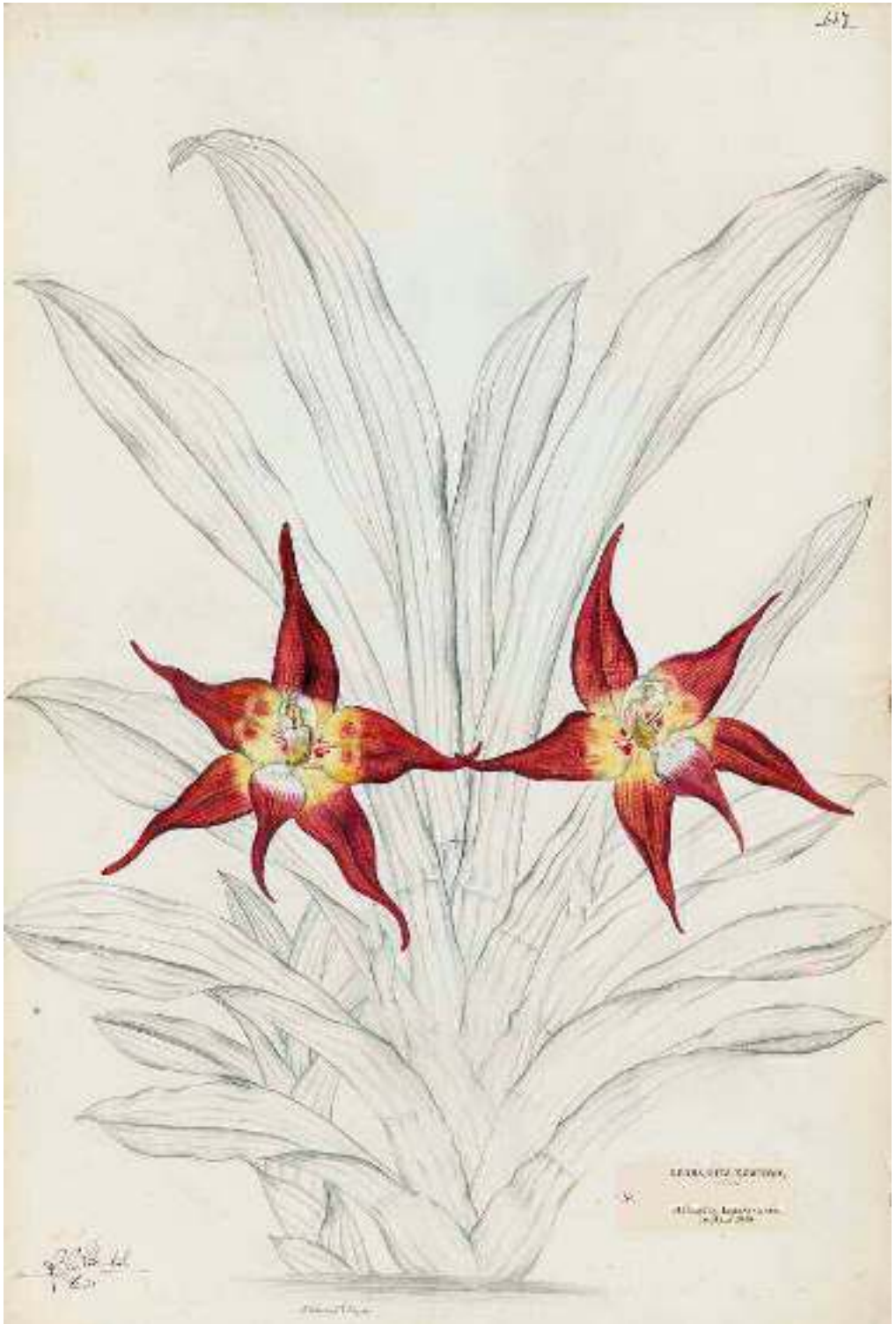


FIGURE 80. *Huntleya wallisii*.



FIGURE 81. *Kefersteinia lehmannii*.



FIGURE 82. *Kefersteinia ocellata*.



FIGURE 83. *Koellensteinia graminea*.



FIGURE 84. *Leochilus labiatus*.



FIGURE 85. *Leochilus scriptus*.



FIGURE 86. *Liparis nervosa*.



FIGURE 87. *Lycaste cruenta*.



FIGURE 88. *Malaxis* sp.



FIGURE 90. *Masdevallia amanda*.



FIGURE 91. *Masdevallia anachaeta*.



FIGURE 92. *Masdevallia angulata*.



FIGURE 93. *Masdevallia aphanes*.

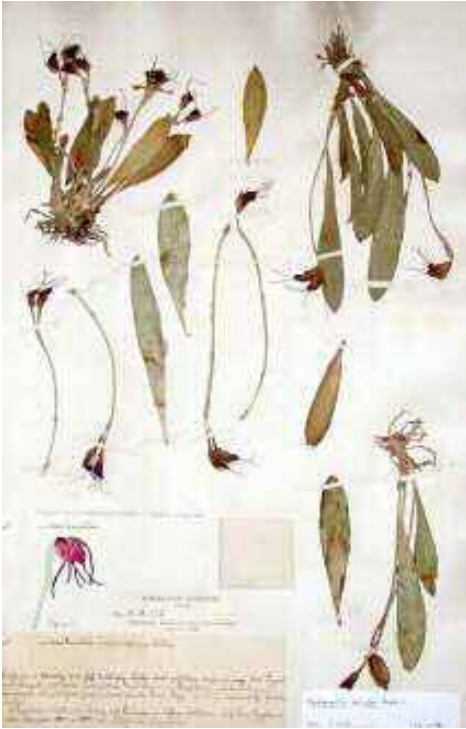


FIGURE 94. *Masdevallia bicolor*.



FIGURE 95. *Masdevallia bonplandii*.



FIGURE 96. *Masdevallia brachyura*.



FIGURE 97. *Masdevallia campyloglossa*.



FIGURE 98. *Masdevallia campyloglossa*.



FIGURE 99. *Masdevallia carruthersiana*.



FIGURE 100. *Masdevallia caudata*.



FIGURE 101. *Masdevallia chimboensis*.

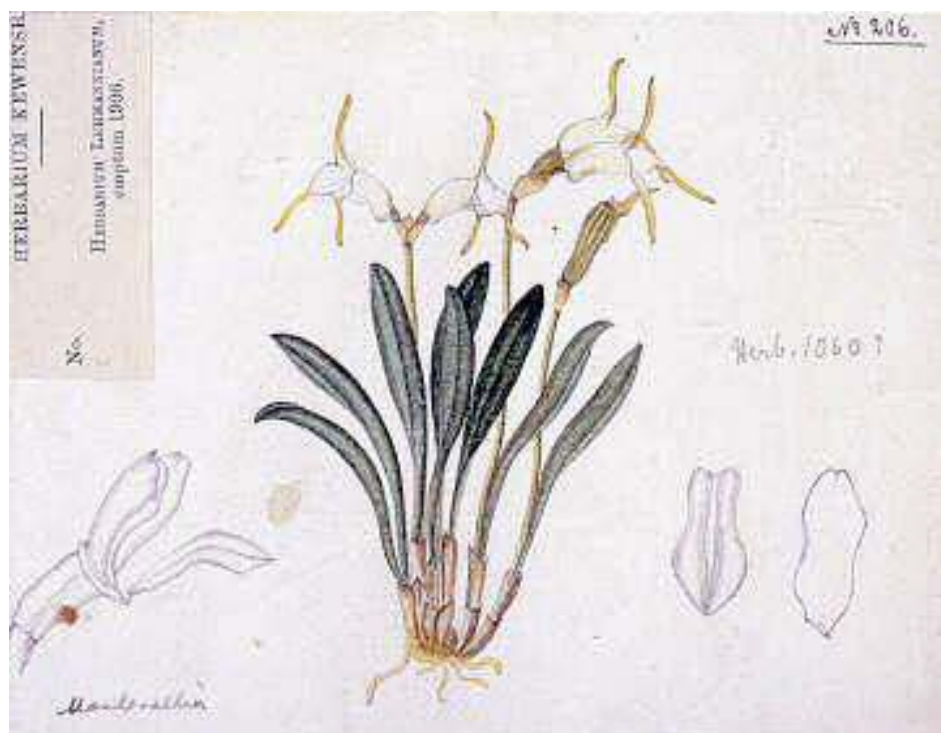


FIGURE 102. *Masdevallia chontalensis*.



FIGURE 103. *Masdevallia corazonica*.



FIGURE 104. *Masdevallia corazonica*.



FIGURE 105. *Masdevallia corderoana*.



FIGURE 106. *Masdevallia crescenticola*.



FIGURE 107. *Masdevallia dynastes*.



FIGURE 108. *Masdevallia (Diodonopsis) erinacea*.



FIGURE 109. *Masdevallia (Diodonopsis) erinacea*.

FIGURE 110. *Masdevallia (Diodonopsis) erinacea*.



FIGURE 111. *Masdevallia estradae*.

FIGURE 112. *Masdevallia fasciata*.



FIGURE 113. *Masdevallia filaria*.

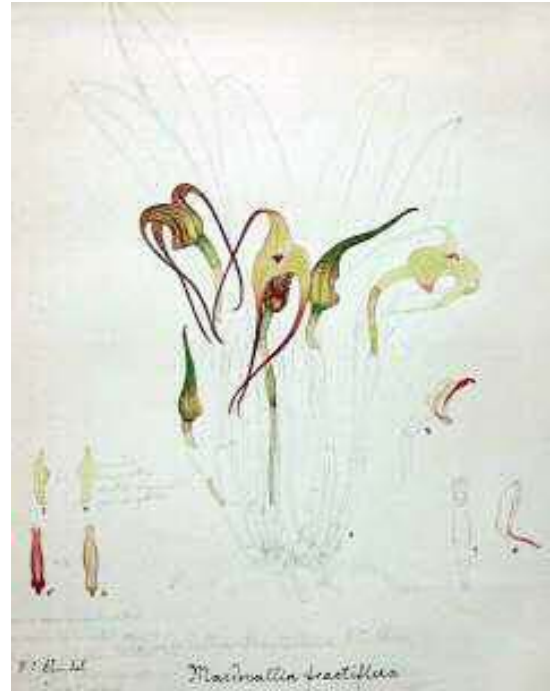


FIGURE 114. *Masdevallia fractiflexa*.



FIGURE 115. *Masdevallia herradurae*.

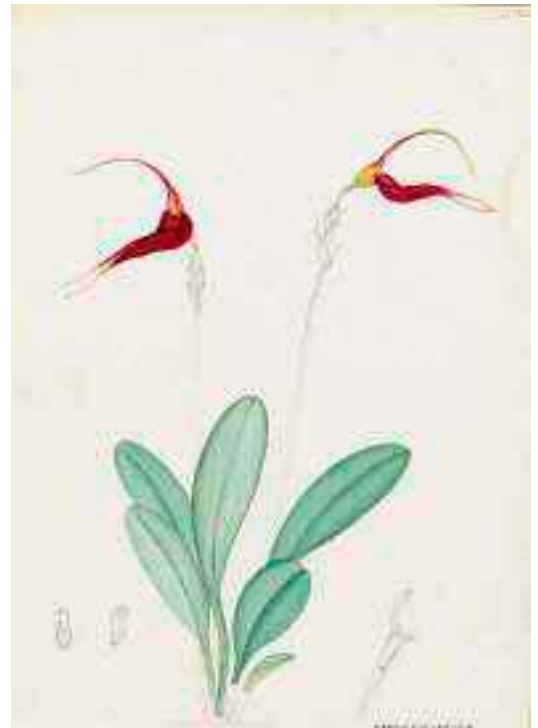


FIGURE 116. *Masdevallia impostor*.



FIGURE 117. *Masdevallia macropus*.



FIGURE 118. *Masdevallia megalosoma*.



FIGURE 119. *Masdevallia molossus*.



FIGURE 120. *Masdevallia nidifica*.



FIGURE 121. *Masdevallia nidifica*.

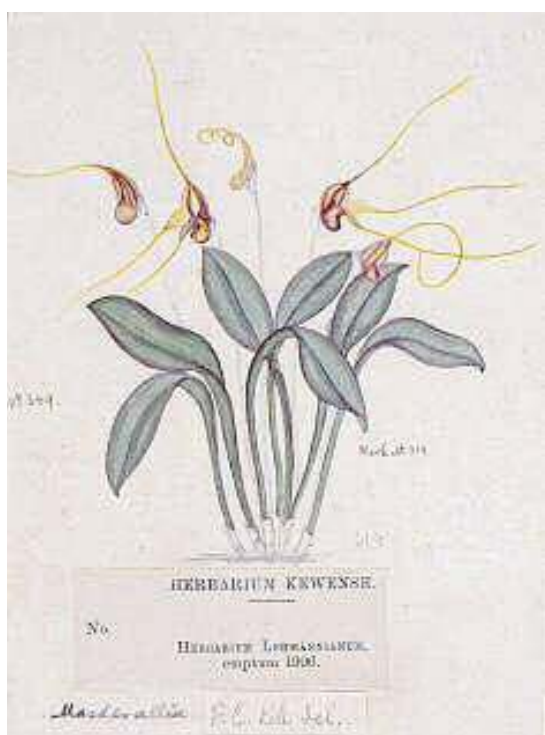


FIGURE 122. *Masdevallia nidifica*.



FIGURE 123. *Masdevallia nidifica*.



FIGURE 124. *Masdevallia ophioglossa*.



FIGURE 125. *Masdevallia pachyantha*.



FIGURE 126. *Masdevallia pachyantha*.



FIGURE 127. *Masdevallia peristeria*.



FIGURE 128. *Masdevallia picturata*.



FIGURE 129. *Masdevallia picturata*.



FIGURE 130. *Masdevallia picturata*.

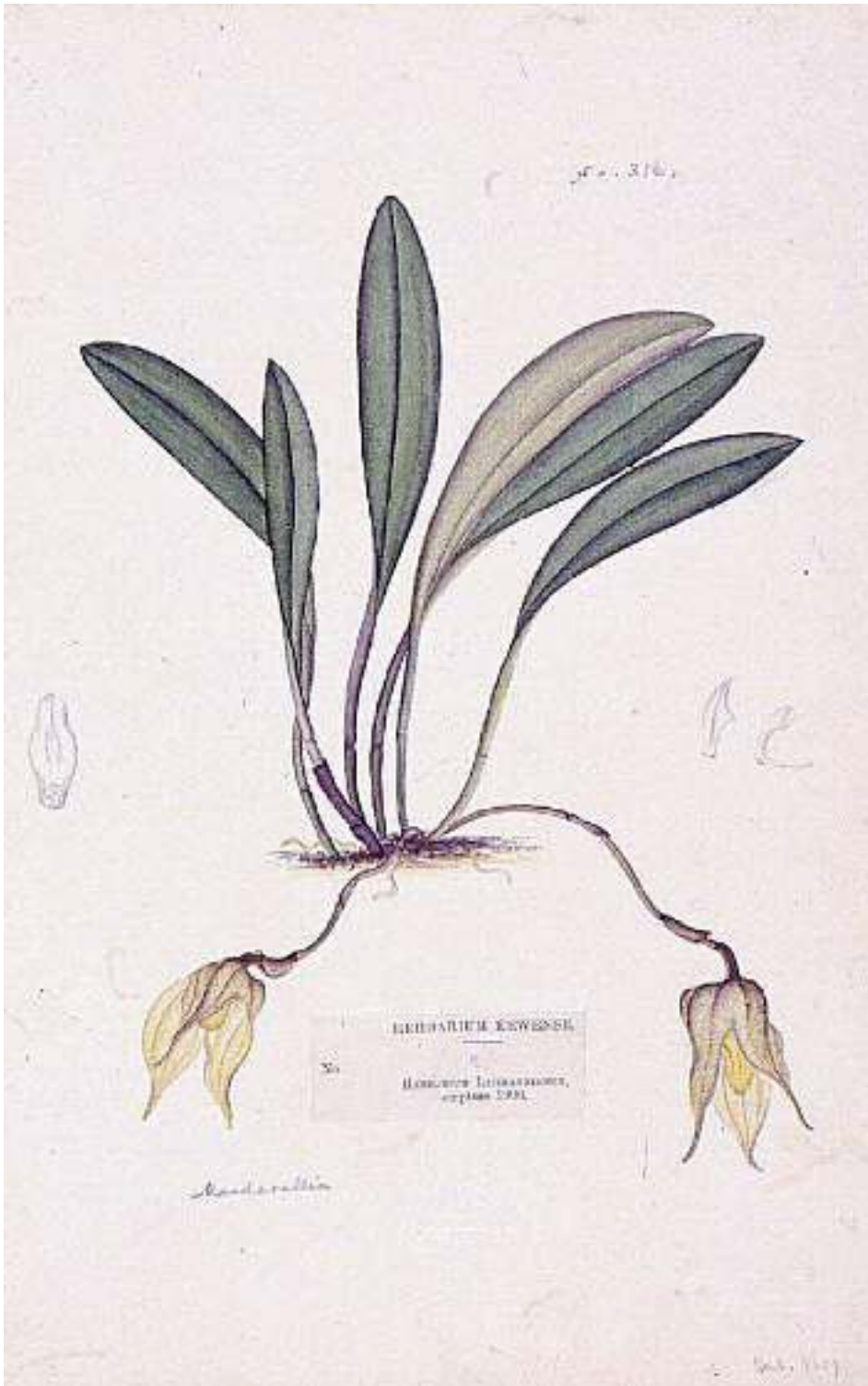


FIGURE 131. *Masdevallia platyglossa*.



FIGURE 132. *Masdevallia polysticta*.



FIGURE 133. *Masdevallia pterygiophora*.



FIGURE 134. *Masdevallia (Diodonopsis) pygmaea*.

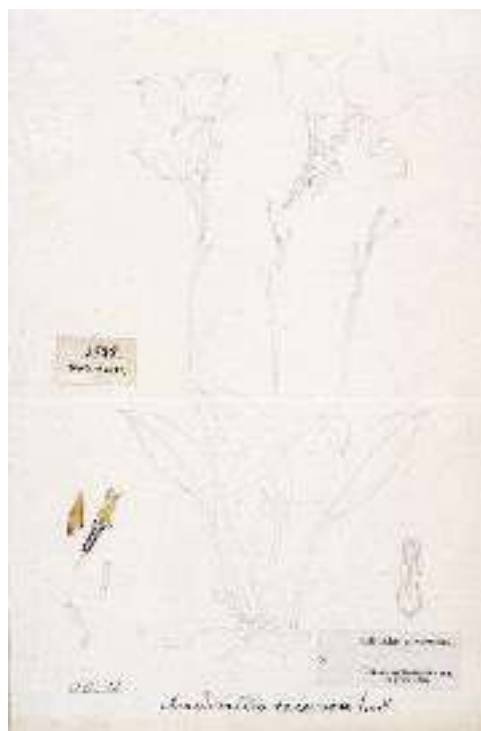


FIGURE 135. *Masdevallia racemosa*.



FIGURE 136. *Masdevallia reichenbachiana*.

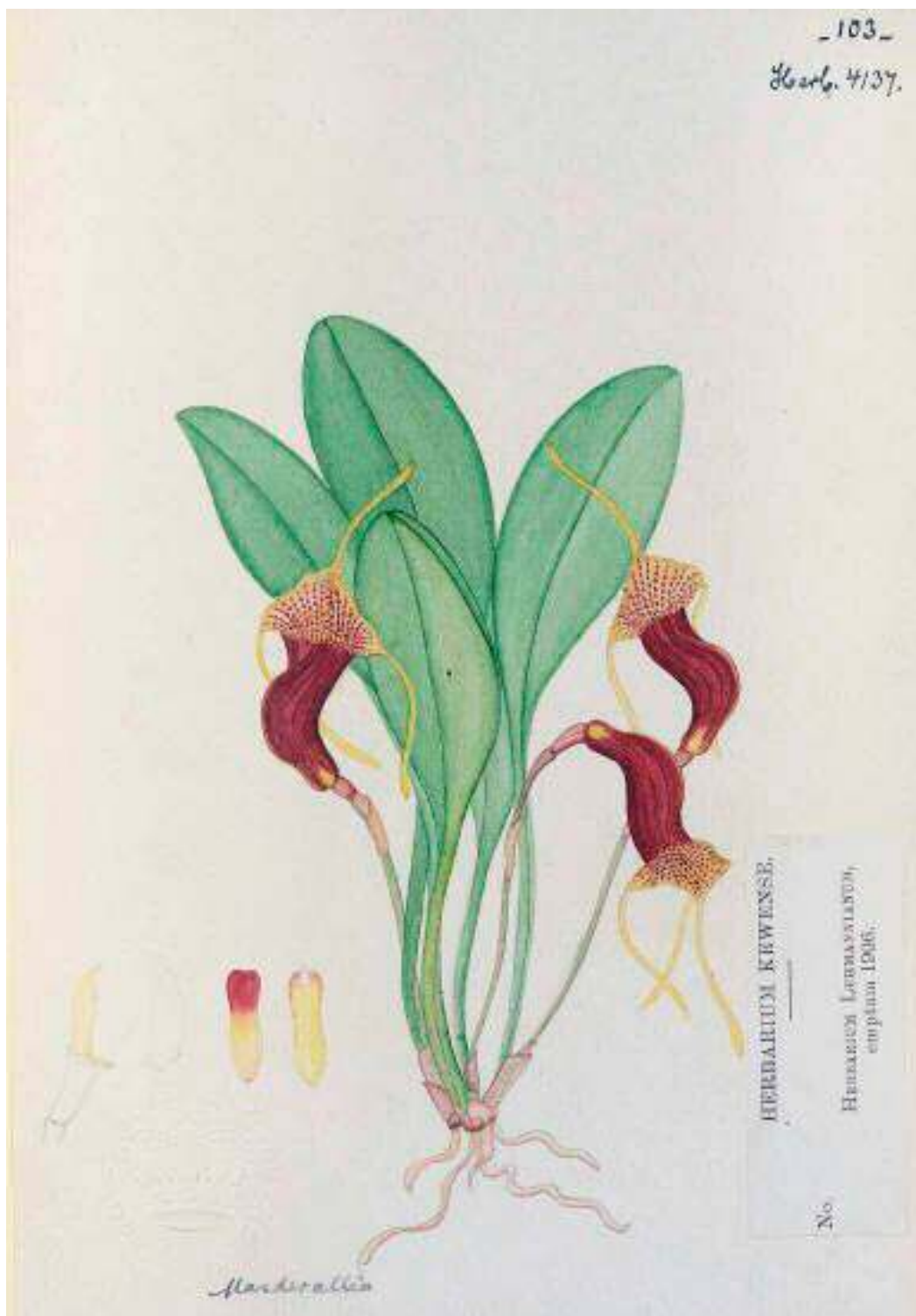


FIGURE 137. *Masdevallia saltatrix*.



FIGURE 138. *Masdevallia saltatrix*.

FIGURE 139. *Masdevallia schizopetala*.



FIGURE 140. *Masdevallia strumifera*.



FIGURE 141. *Masdevallia strumifera*.



FIGURE 142. *Masdevallia trochilus*.



FIGURE 143. *Masdevallia tubulosa*.



FIGURE 144. *Masdevallia ustulata*.



FIGURE 145. *Masdevallia ventricularia*.



FIGURE 146. *Masdevallia wagneriana*.



FIGURE 147. *Masdevallia xanthina*.



FIGURE 148. *Masdevallia xanthina*.



FIGURE 149. *Masdevallia xanthina*.



FIGURE 150. *Masdevallia zahlbruckneri*.



FIGURE 151. *Maxillaria cf. acuminata*.



FIGURE 152. *Maxillaria aggregata*.



FIGURE 153. *Maxillaria alpestris*.



FIGURE 154. *Maxillaria augustevictoriae*.



FIGURE 155. *Maxillaria brunnea*.



FIGURE 156. *Masdevallia callichroma*.



FIGURE 157. *Maxillaria fractiflexa*.



FIGURE 158. *Maxillaria friedrichstalii*.



FIGURE 159. *Maxillaria grandiflora*.



FIGURE 160. *Maxillaria hastulata*.



FIGURE 161. *Maxillaria huebschii*.



FIGURE 162. *Maxillaria cf. lepidota*.



FIGURE 163. *Maxillaria lepidota*.



FIGURE 164. *Maxillaria lepidota* fma. *lutea*.

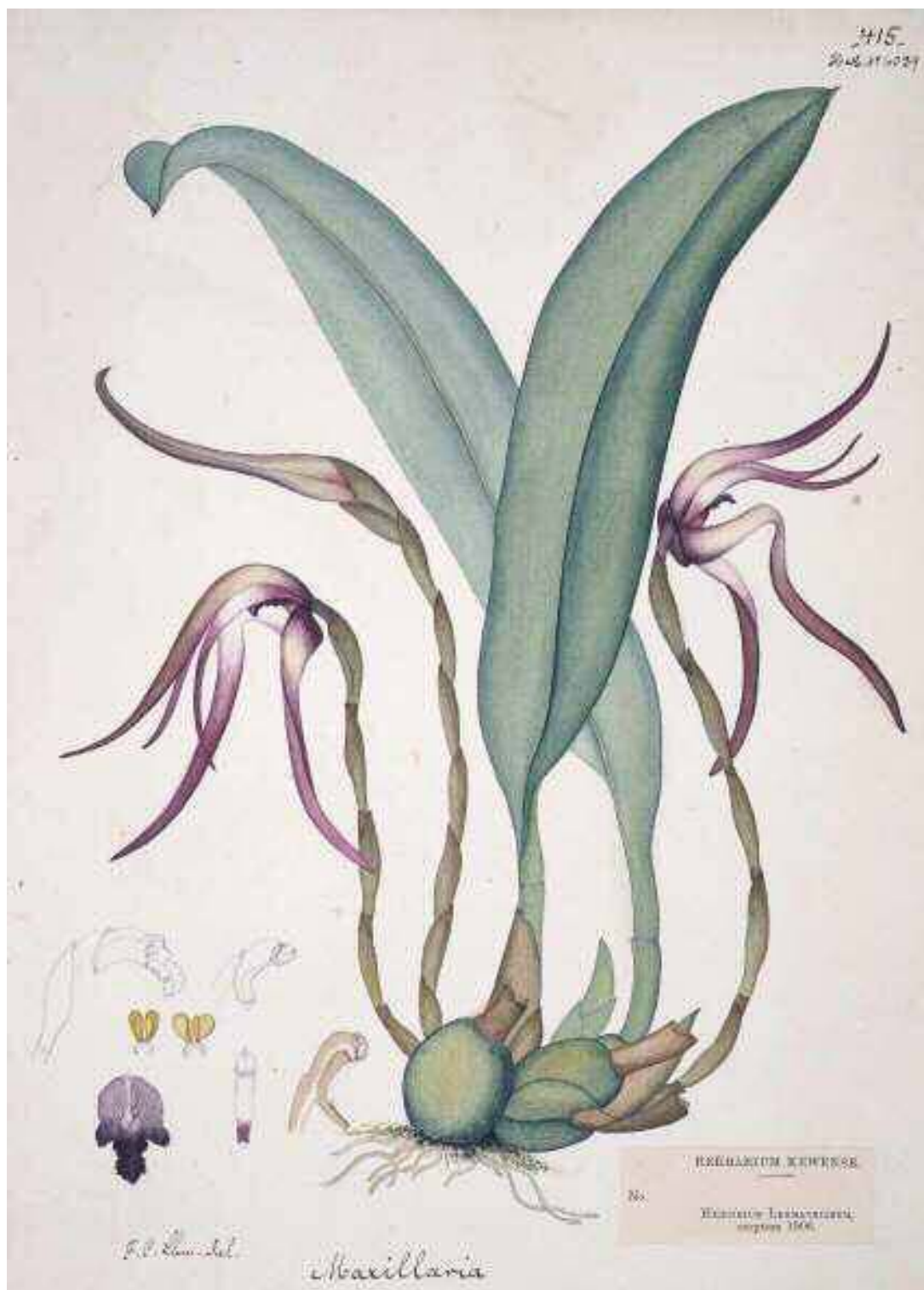


FIGURE 165. *Maxillaria longissima*.



FIGURE 166. *Maxillaria luteoalba*.



FIGURE 167. *Masdevallia parvibulbosa*.



FIGURE 168. *Maxillaria cf. poicilotheca*.



FIGURE 169. *Maxillaria ponerantha*.



FIGURE 170. *Maxillaria porrecta*.



FIGURE 171. *Masdevallia procurrens*.



FIGURE 172. *Maxillaria ramosa*.



FIGURE 173. *Maxillaria rufescens*.

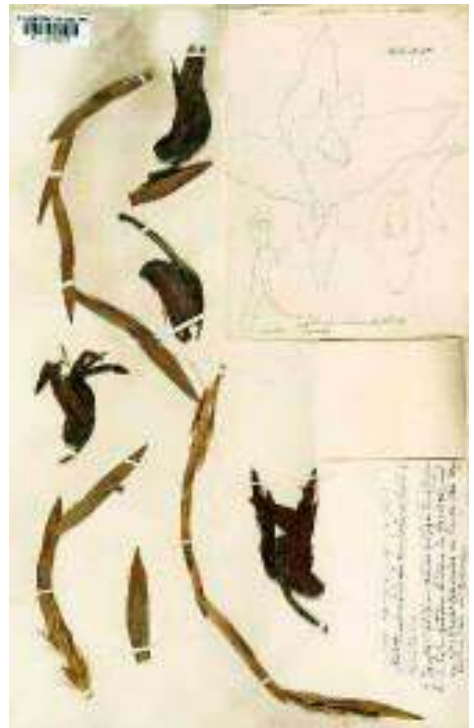


FIGURE 174. *Maxillaria sanderiana*.



FIGURE 175. *Maxillaria speciosa*.



FIGURE 176. *Meiracyllium trinastutum*.



FIGURE 177. *Miltoniopsis vexillaria*.



FIGURE 178. *Nidema boothii*.



FIGURE 179. *Oerstedella endresii*.



FIGURE 180. *Oerstedella wallisii*.



FIGURE 181. *Oliveriana egregia*.



FIGURE 182. *Oncidium aspidorhinum*.



FIGURE 183. *Oncidium alexandrae*.



FIGURE 184. *Oncidium alexandrae*.



FIGURE 185. *Oncidium praestanoides*.



FIGURE 186. *Oncidium cristatum*.



FIGURE 187. *Oncidium cruentoides*.



FIGURE 188. *Oncidium cuculligerum*.



FIGURE 189. *Oncidium eliae*.



FIGURE 190. *Oncidium harryanum*.



FIGURE 191. *Oncidium lehmannii*.



FIGURE 192. *Oncidium luteopurpureum*.



FIGURE 193. *Oncidium luteopurpureum*.



FIGURE 194. *Oncidium pictoides*.



FIGURE 195. *Oncidium mirandum*.



FIGURE 196 *Oncidium rhynchanthemum*.



FIGURE 197. *Otoglossum globuliferum*.

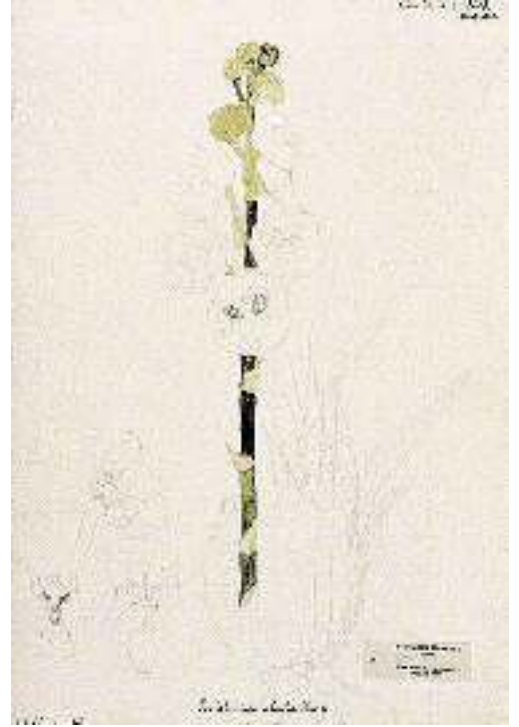


FIGURE 198. *Peristeria elata*.



FIGURE 199. *Pescatoria coelestis*.



FIGURE 200. *Pescatoria dayana*.



FIGURE 201. *Pescatoria klabochorum*



FIGURE 202. *Pescatoria lehmannii*



FIGURE 203. *Phragmipedium boisserianum*.

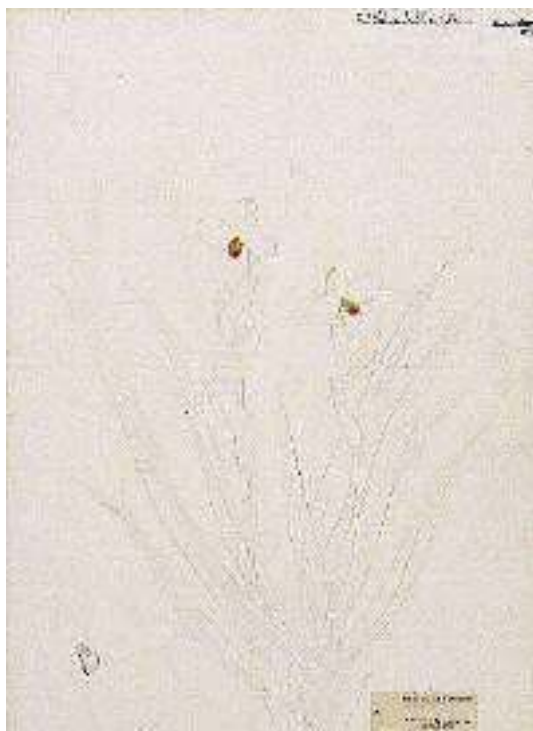


FIGURE 204. *Phragmipedium schlimii*.



FIGURE 205. *Phragmipedium wallisii*.



FIGURE 206. *Phragmipedium wallisii*.



FIGURE 207. *Plectrophora alata*.



FIGURE 208. *Pleurothallis ciliata*.



FIGURE 209. *Pleurothallis reginae*.



FIGURE 210. *Pleurothallis scoparium*.

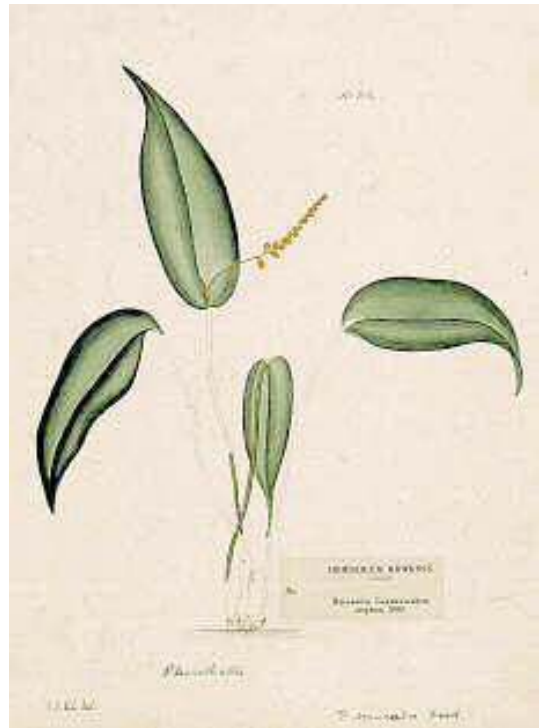


FIGURE 211. *Pleurothallis truncata*.



FIGURE 212. *Pleurothallis talpinaria*.



FIGURE 213. *Ponthieva grandiflora*.



FIGURE 214. *Ponthieva pseudoracemosa*.



FIGURE 215. *Porroglossum mordax*.



FIGURE 216. *Porroglossum muscosum*.



FIGURE 217. *Psymorchis pumilio*



FIGURE 218. *Restrepia antennifera*.



FIGURE 219. *Rodriguezia lehmannii*.



FIGURE 220. *Sobralia dichotoma*.



FIGURE 221. *Sobralia violacea*.



FIGURE 222. *Specklinia grobyi*.



FIGURE 223. *Stanhopea carchiensis*.



FIGURE 224. *Stanhopea florida*.



FIGURE 225. *Stanhopea frymirei*.



FIGURE 226. *Stanhopea jenischiana*.



FIGURE 227. *Stellilabium andinum*.



FIGURE 228. *Stellilabium astroglossum*.



FIGURE 229. *Stanhopea frymirei*.



FIGURE 230. *Stellilabium ecuadorense*.



FIGURE 231. *Telipogon nervosus*.



FIGURE 232. *Telipogon obovatus*.



FIGURE 233. *Tesucheria elegans*.



FIGURE 234. *Ticoglossum krameri*.



FIGURE 235. *Telipogon oerstedii*.



FIGURE 236. *Trichocentrum longicalcaratum*.



FIGURE 237. *Trevorcia chloris*.



FIGURE 238. *Trichocentrum tigrinum*.



FIGURE 239. *Trichoceros antennifer*.



FIGURE 240. *Trichopilia conceptionis*.



FIGURE 241. *Trichopilia fragrans*.



FIGURE 242. *Trichopilia laxa*.



FIGURE 243. *Trichopilia rostrata*.



FIGURE 244. *Trichosalpinx multispidata*.

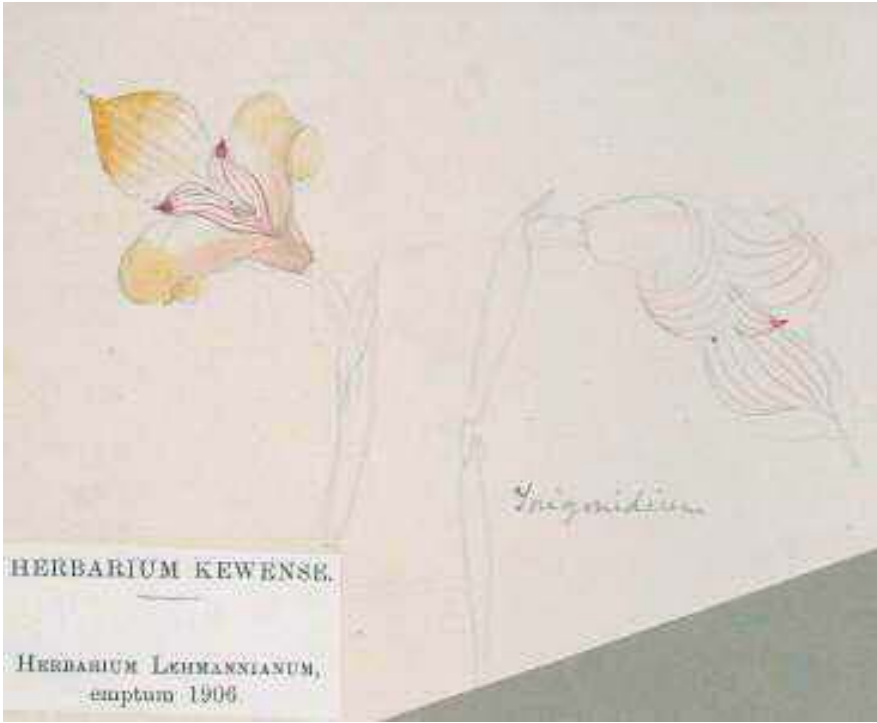


FIGURE 245. *Trigonidium insigne*.



FIGURE 246. *Trisetella triglochis*.

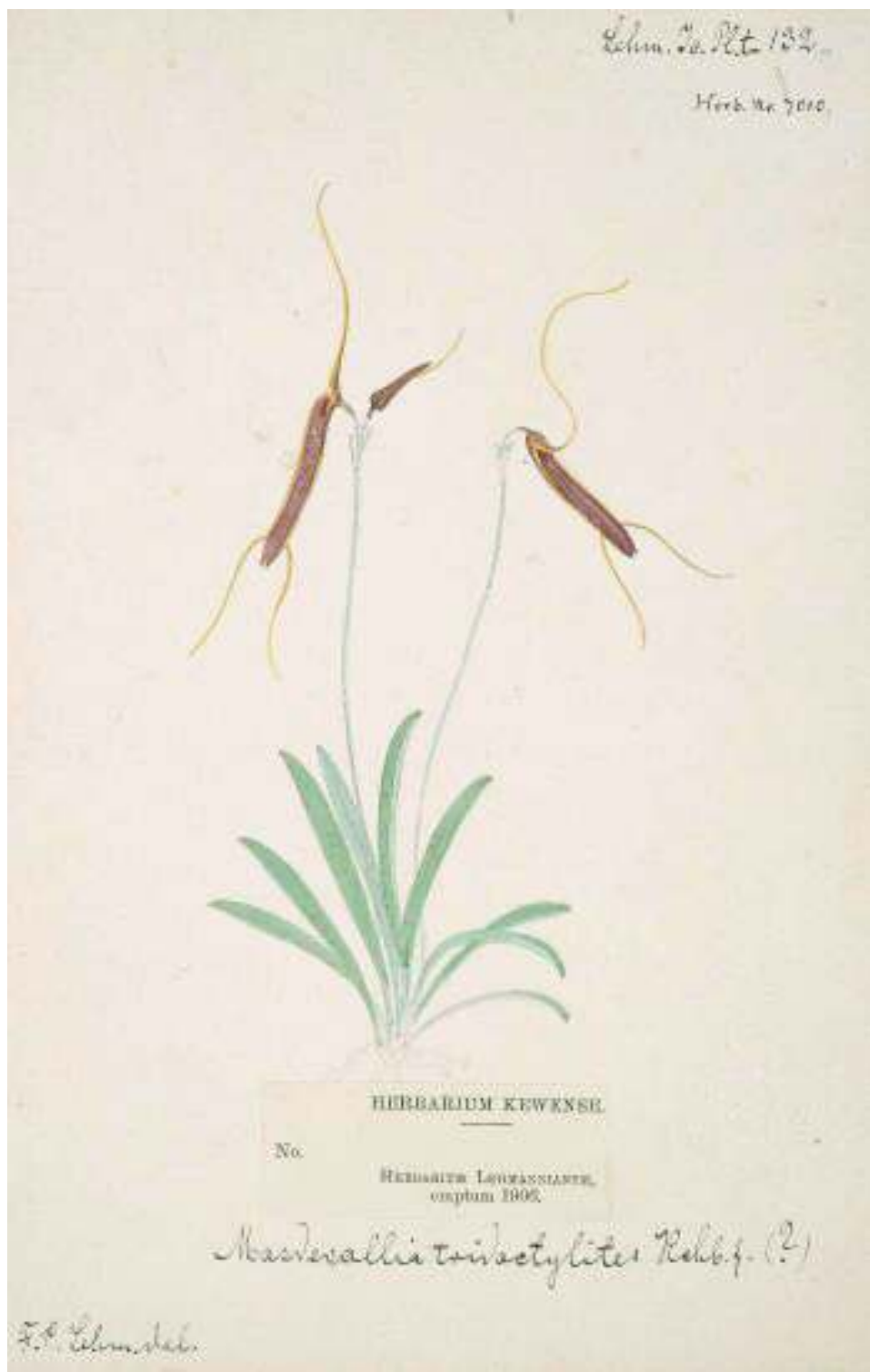


FIGURE 247. *Trisetella triaristella*.



FIGURE 248. *Vanilla palmarum*.



FIGURE 249. *Warrea warreana*.



FIGURE 250. *Warscewiczella discolor*.



FIGURE 251. *Warscewiczella ionoleuca*.

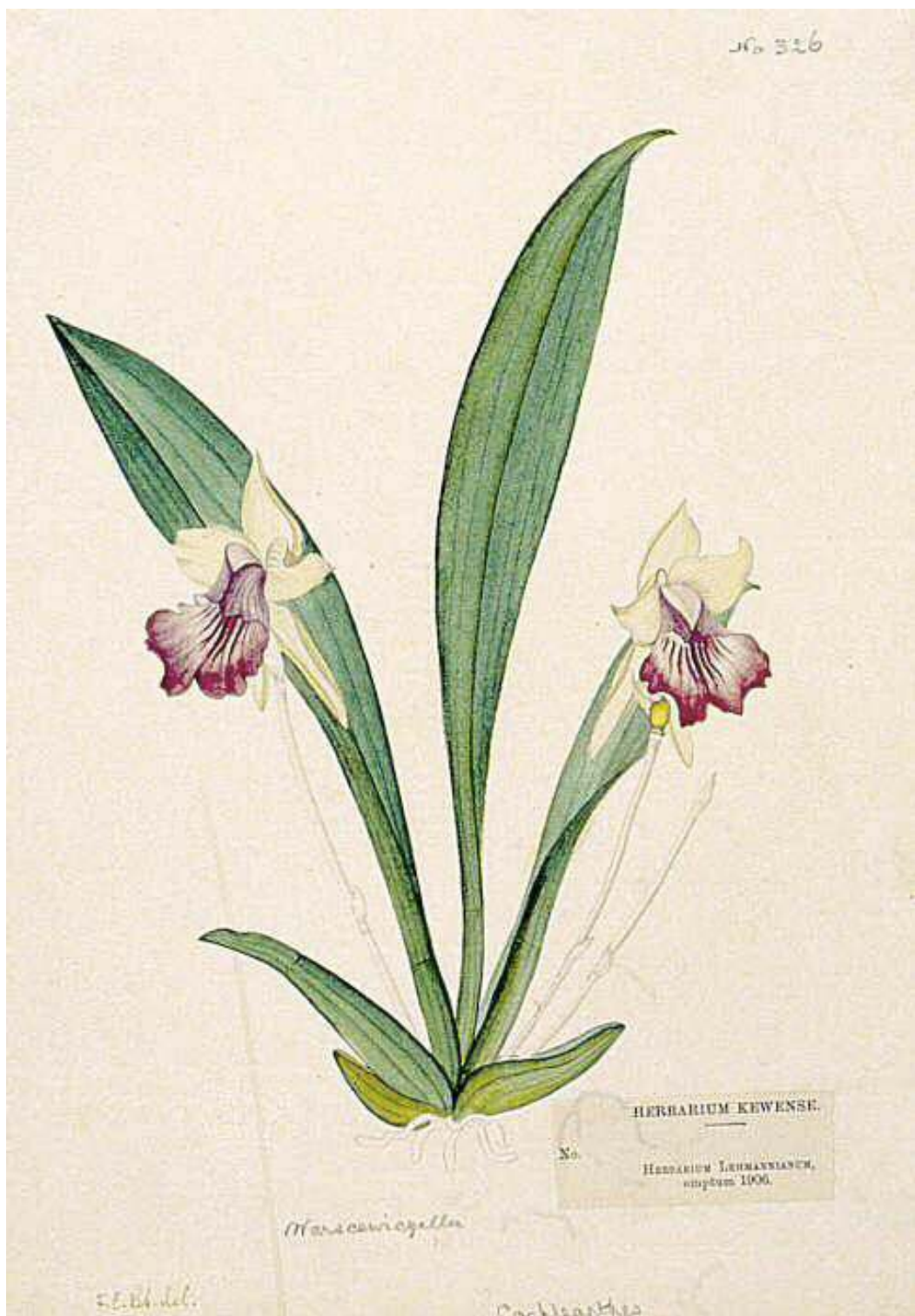


FIGURE 252. *Warscewiczella amazonica*.



FIGURE 253. *Warscewiczella marginata*.



FIGURE 254. *Xylobium colleyi*.



FIGURE 255. *Xylobium corrugatum*.

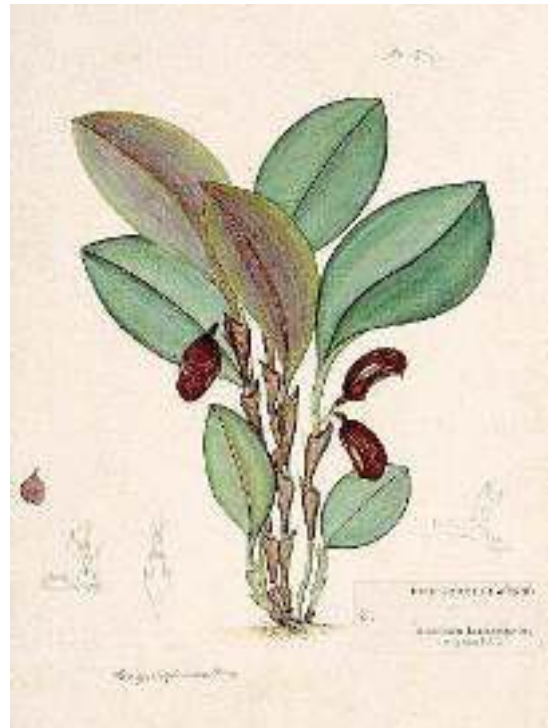


FIGURE 256. *Zootrophion dayanum*.

SPECIES ACCOUNTS

Lehmann's orchid illustrations fall into three categories: fully coloured; part-coloured and black-and-white pencil drawings. They are arranged here alphabetically (with a few exceptions) by their currently accepted names. He numbered most with a prefix 'L', indicating Lehmann, followed by a number. The L has been misinterpreted as a figure 1, thus Lehmann L522 has been labelled by some as Lehmann 1522. His illustration numbers (as **Icon. t.**) are indicated where available. Some of the illustrations are also provided with a collection number that corresponds to one of his own herbarium collections. The majority of the herbarium specimens referred to are to be found at Kew, but some of the earlier numbers are at the Natural History Museum in London or in Vienna. Other herbarium specimens related to the same species are also cited, together with their provenance and any notes provided by Lehmann on the labels.

Lehmann identified and named many of his orchid illustrations. However, his intention to describe many as new species is obvious because he used unpublished names many of which were never validated. Only in the case of species which were jointly described with Fritz Kränzlin, and some which were published separately by him during his lifetime, bear his validly published names.

FIGURE 13. *Acianthera casapensis* (Lindl.) Pridgeon & M.W.Chase.

Icon t. 159. No given provenance.

OTHER LEHMANN COLLECTIONS: **345** as *Pleurothallis chamensis*. Colombia, above Pasto, 2000m. 18 February 1881. **4509** as *Pleurothallis chamensis*. Colombia, above Pasto, 2800-3000 m. **7099** as *Pleurothallis casapensis*. Colombia, grows on trees in the dense forests above Pacho, Dept. of Cundimarca, 2000-2600 m. Flowers in February. **7100** as *Pleurothallis casapensis*. Colombia, grows on trees in the dense forests on the Alto de Pesares above Popayán, 2400-2900 m. Flowering in February and March. **BT 96 & 97 & HK 77.** Colombia, Highlands of Popayán, 1600-2000 m. Flowering in December; **BT 344.** Colombia, Cassilla; **BT 345.** Colombia, Highlands of Popayán, 1700-2000 m. Flowering in November and December; **HK 95.** Colombia, Cabasgordas, West Andes of Antioquia, 1600-2000 m; **HK 98.** Colombia, Piedracucha.

FIGURE 14. *Acianthera sicaria* (Lindl.) Pridgeon & M.W.Chase.

BT 347 as *Pleurothallis*. Colombia, grows on trees in savanna woodland at Tocota, West Andes of Cali, 1400-1800 m. Flowers in November. **Icon. t. 482.**

OTHER LEHMANN COLLECTIONS: **1091** as *Pleurothallis*. Without provenance. **Icon. t. 227; 7132** as *Pleurothallis*. Colombia, grows on trees in the dense forests around Papagalleros and Tocota, West Andes of Cali. Flowers in April and May and in Oct. and Nov. Plants generally small, squarrose-caespitose. Leaves leathery, yellow-green. Flowers pale yellow striped with red.

FIGURE 15. *Acineta erythroxantha* Rchb.f.

3839. Colombia, Antioquia Prov., Caramanta. **Icon. t. 650.**

FIGURE 16. *Ada aurantiaca* Lindl.

6906 as *Ada lehmannii* F.Lehm. Plants always small, loosely caespitose. Pseudobulbs oblong, slightly compressed. Leaves almost herbaceous-leathery, dark sea green. Flowers of a luminous yolk of egg yellow,

lip with yellow-white callus. Colombia, grows on trees in the moderately dense forests around Cajamarca on the western slopes of the West Andes of Roldanillo, 1400-1800 m. Flowers in Nov. and Dec. **Icon. t.601.**

FIGURE 17. *Ada* cf. *chlorops* (Endrés & Rchb.f.) N.H.Williams

7714 as *Brassia*. Tufts of plants frequently large and close. Bulbs moderately compressed, rarely over 5 cm in length. Leaves robust, yellow-green. Floral shoot from three to seven-flowered. Sepals and petals yellow, marbled with cinnamon-brown at the base. Lip white punctuated with brick-red. Column greenish. Colombia. Grows on trees in the dense and damp forests around Tocota, West Andes of Cali, 1800-2200 m, June-July. **Icon. t. 405.**

FIGURE 18. *Anathallis angustilabia* (Schltr.) Pridgeon & M.W.Chase

9076 as *Pleurothallis angustilabia* Schltr. Colombia, grows on trees in dense woods on the Rio Huangobio in the highlands of Popayán, 1700-2000 m. Flowering in Dec. 1883 and Jan. 1884. **Icon. t. 165.** Also **HK 115** – loc. cit., 1600-2200 m.

OTHER LEHMANN COLLECTION: **BT 313** as *Pleurothallis*. Flowers lemon-yellow. Colombia, Capilla.

FIGURE 19. *Anguloa virginalis* Lindl. var. *turneri* (B.S.Williams) Schltr.

HK 718 Colombia, Cali, June 1881, 1200-1600 m.

FIGURE 20. *Aspasia principissa* Rchb.f.

HK 1031 Colombia, Buenaventura, May 1899. **Icon. t. 503.**

FIGURE 21. *Anguloa clowesii* Lindl.

HK 107 Colombia, La Plata. **Icon. t. 820.**

FIGURE 22. *Barbosella cucullata* (Lindl.) Schltr.

6883 *R. antennifera* var. *angustifolia* Kraenzl (type). Plants forming large, dense and somewhat loose tufts. Leaves thickly fleshy, leathery, almost triangular, yellow-green. Flowers solitary on thin, round peduncles up to 15 cm in height, ochre-yellow washed with copper-red. Colombia, grows on trees and on the ground among scrub on the Paramo de Guanacas on the Central Andes of Popayan, 3000-3500 m. Flowers from May to Aug. **Icon. t. 137.**

OTHER LEHMANN COLLECTIONS: **286** Colombia, La Laguna above Pasto, 3500m, 21 February 1881; **466** Ecuador, Rio Maspa below Papallacta, 2500 m, 16 Jan. 1880 & 2850 m, 23 June 1878; **2046** Colombia, Paramo de Moras above Popayan, 2900-3400 m, 29 Oct. 1882; **6885** Ecuador, grows on trees and on the ground in the dense forests at Cerro Yanghuang near Pindilic, East Andes of Cuenca, 2800-3000 m, Flowers in Oct. and Nov. 1889; **s.n. & HK 313** Colombia, La Laguna above Pasto, 3500 m, 7 November 1878; **s.n.** Ecuador, Montaña de Aujel near Tuza, 2850 m, 23 June 1878. **s.n.** Ecuador, West slope of the Corazon, Silante, 2300-2500 m, Jan. 1883.

FIGURE 23. *Barbosella prorepens* (Rchb.f.) Schltr.

Icon. t. 703. No given provenance.

OTHER LEHMANN COLLECTIONS: **2379** Colombia, Alto de Oteras, 2600-3000 m, 11 Dec. 1887; **3305** Colombia, Serrania de Belalcazar, 1500-1600 m, 28 Oct. 1883. Tufts large. Flowers light yellow; **3610** Colombia, Rio Honda near Popayan, 1650 m, 5 March 1884. Tufts large. Flowers light yellow. Lip red at the base; **8367** Colombia, grows on trees, generally on the lower part of the trunks, in dense forests on the highlands of Popayan, 1500-2000 m. The plants form small, dense and somewhat irregular tufts. Leaves, thick, fleshy,

leathery, light green. Lateral sepals entirely connate with each other, forming a long oviform trough, light yellow. Dorsal sepal and petals linear, light yellow. Lip reddish. Flowers in Oct. and Nov.

FIGURE 24. *Barkeria spectabilis* Lindl.

1505 Guatemala, near Antigua and above Santa Cruz de Quiché, 1500-1800 m, 30 May 1882. **Icon. t. 308.**

FIGURE 25. *Bifrenaria coronaria* (Rchb.f.) Hoehne

3885 Colombia, Antioquia, grows on trees and on the ground in dense woods on the east side of the mountain chain between Cancan and Amalfi, 1800 m, 19 Sept. 1884. **Icon. t. 604.**

FIGURE 26. *Benzingia cornuta* (Garay) Dressler

10026 as *Chondrorhyncha*. Colombia, no exact provenance. **Icon. t. 806.**

FIGURE 27. *Brachionidium* sp. nov.

No provenance given.

FIGURE 28. *Brachtia andina* Rchb.f.

Icon. t. 318. Described by Reichenbach in 1856 in *Bonplandia*. It is found in Colombia and northern Ecuador at elevations up to 2800 m. Lehmann's drawing, reproduced here, does not have a corresponding herbarium collection as far as I have been able to determine.

FIGURE 29. *Bulbophyllum antioquiense* Kraenzl. (type)

7234 as *Didactyle*. Colombia, grows on trees thickly overgrown with lichens, in the region of the mountain steppes above Ciudad Antioquia and around Hato-Viejo near Medellín, 700-1600 m. Flowers from Aug. to Oct. Tufts loose and small. Pseudobulbs from 1 to 1.5 cm in length and breadth, pentagonal, rugose, covered with whitish grey scales. Leaves leathery, yellow-green. Flowers numerous, arranged in two rows on a thin and geniculate scape growing thicker towards the top. Sepals light yellow, thickly striped with very fine red stripes from the middle towards the base. Lip red or red-brown. **Icon. t. 713.**

OTHER LEHMANN COLLECTIONS: **7311** as *Didactyle*. Colombia, grows on rocks of sandstone and on trees in the open bushy woods around Dolores, Tolima, 1000-1700 m; **BT 59** Colombia, grows on trees in woods in the highlands of Popayán, 1200-1800 m. Flowering in Nov. and Dec. 1882; **HK 417** Colombia, Rio Las Vueltas, Tigante.

FIGURE 30. *Bulbophyllum lehmannianum* Kraenzl. (type)

8070 as *Didactyle*. Colombia, grows in open chapparal woods around Hato-Viejo near Medellín, Antioquia, 1400-1800 m. Flowering in Oct. Plants loosely caespitose. Pseudobulbs pear-shaped, with four deep furrows. Leaves leathery, yellow-green. Inflorescence up to 15 cm in height, wire-like, the upper part bearing flowers somewhat thickened, always bending over to one side so as to stand at a right angle to the lower part. Flowers pendent; sepals and petals green-yellow, spotted with brown at the base. Lip red-brown. **Icon. t. 96.**

FIGURE 31. *Bulbophyllum pachyrhachis* (A.Rich.) Griseb.

Icon. t. 243. This strange orchid was described in 1861, as, by Achille Richard in Ramon de la Sagra's *Historia Física de Cuba*. August Grisebach transferred it to the present genus three years later in his orchid account in the *Flora of the British West Indies*. Its distribution ranges from Florida, the Caribbean islands and Central America south to Guiana and Ecuador. Lehmann's drawing of it bears no reference to a herbarium collection, nor has one been traced in his herbarium at Kew.

FIGURE 32. *Bulbophyllum popayanense* Kraenzl. (type)

6071 Colombia, grows on trees in open forests on the western side of the plateau of Popayán, 1200-1800 m. Flowers in Sept. and March. Clumps of plants moderately large. Pseudobulbs ovoid, quadrangular, up to 3 cm in length, one-leaved, soft-fleshy. Leaves thick, leathery, yellow-green. Floral shoot up to 40 cm in height, slightly thickened towards the top, the portion bearing the flowers bent over at a right angle. Sepals and petals light yellow-green. Lip greenish white, transversely spotted with lilac-red flecks closely packed together. **Icon. t. 406.**

OTHER LEHMANN COLLECTIONS: **8071** as *Didactyle*. Colombia, grows on rocks and on trees around Dolores, Tolima, 1300-1700 m. Flowers in Jan. and Feb.; **HK 411**. Colombia, Hato-viejo near Medellin, 1000-1600 m, Dec. 1884.

FIGURE 33. *Catasetum tabulare* Lindl.

6828 Colombia, grows on trees, occasionally on rocks also, in the open woods in the valley of the Cauca and on the Rio Dagua, 300-1200 m. Flowers from Oct. to Jan. Masses of plants dense, generally fairly large. Pseudobulbs cylindrical, up to 25 cm in length and from 3 to 4 cm thick. Leaves almost herbaceous, light sea-green. Inflorescence up to 50 cm in height, bearing 5 to 15 flowers. Flowers water-white, very thickly spotted with transverse lilac-brown flecks, the strongly protruding callus on the lip yellowish white. **Icon. s.n.**

FIGURE 34. *Cattleya aurea* Rchb.f.

4035, 8044 Colombia, Antioquia, on trees in moderately dense forests on the Rio Sucio below Frontino, 300-500 m, 20 Oct. 1884. Plant attains fairly large proportions. Bulbs enveloped in black sheaths. Leaves thick, yellow-green. Flowers up to three on a scape, light yellow. Lip yellow-striped with brown-red. **Icon. t. 615.**

FIGURE 35. *Cattleya trianaei* (Duchartre) Rchb.f. and var. *popayanensis*

8355 as *Cattleya trianaei* var. *albida*. Colombia, grows generally on trees, occasionally also on rocks, very solitarily mixed with the typical species on the Rio Paez and Rio de la Plata, Tolima, 800-1200 m. Flowers in Nov. Plants from every point of view comparable with the typical species, except that the sheaths of the inflorescences are of a delicate light yellow-green, and not punctuated with brown-red as generally is the case in the typical species. Sepals and petals of a delicate white colour. Lip white, yellow in the throat, the outspread and curly tip washed over at the margins with a delicate pink colour. **Icon. t. 614.**

OTHER LEHMANN COLLECTIONS: **6012** Colombia, grows on trees in the forests on the banks of the Rio Paez, Tolima, 1000-1300 m. Flowers in Nov. and May. 'Flor de Mayo'; **6013** as *Cattleya trianaei* var. *alba*. Occurs in very isolated specimens together with the foregoing species; **HK 600, 601, 601A** Colombia, La Teta; **BT 118, 119**. Colombia, Inaza; **BT 1300**. Colombia, Patico.

FIGURE 36. *Catasetum maculatum* Kunth.

Icon. tt. 250 & 712. One of the many orchid discoveries of Alexander von Humboldt and Aimé Bonpland who found it in 1801 near Turbaco just south of Cartagena in northern Colombia, is a common species widespread in the mountains of Central and South America from Costa Rica to Venezuela and Ecuador. Carl Kunth formally described it in 1822 in *Synopsis Plantarum*. Lehmann's detailed drawings of the male flower gives no indication of the provenance of his source materials.

FIGURE 37. *Cattleya quadricolor* Batem.

Icon. s.n. No given provenance.

OTHER LEHMANN COLLECTIONS: **1885** Colombia, Tuluá, 1000 m, Oct. 1882; **3064**. Colombia, Cauca, from Tuluá to Cartago, 800-1200 m, 31 Aug. 1883; **3064** as *C. chocoensis* var. *rosea*. Colombia, Cauca, from Tuluá to

Cartago, 800-1200 m, 31 Aug. 1883; **3138** as *C. chocoensis* var. *alba*. Colombia, Cauca, la Paila and Naranja, 1000 m, 31 Aug. 1883; **8356** as *Cattleya candida*. Colombia, grows on trees in the dense forests on the Rio Cauca between Cartago and Tuluá, 800-1100 m. Flowers in Aug. and Sept.; **HK 601B** Palmira, collected by Robert B. White.

FIGURE 38. *Caucaea radiata* (Lindl.) Schltr.

HK 1330 as *Abola*. Colombia, Coconuco, 2000-2600 m. Flowers in May and June. **Icon. t. 491.**

OTHER LEHMANN COLLECTIONS: **3616** as *Caucaea obscura* Schltr. (type). Colombia, Paisbamba and Coconuco, 2000-2500 m, 23 Feb. 1884. Also above Coconuco, 2600 m, Feb. 1884; Peñon de Pitayo, 2800-3000 m; Túquerres, 3000 m; **3541** as *Leochilus lehmannianus* Kraenzl. (syntype). Colombia, above Coconuco, 2700 m, 4 Feb. 1884; **9997** Colombia, Central Andes of Popayán, 2400-2600 m.

FIGURE 39. *Caucaea tunguraguensis* (Stacy) M.W.Chase & N.H.Williams

8562 as *Oncidium nubigenum* var. *tunguraguense*. Ecuador, grows on trees in the dense forests on the upper slopes of Volcán Tunguragua, 3000-3400 m. Flowers in Aug. and Sept. Sepals and petals light lilac-red. Lip white, thickly striped and marbled at the base with lilac-red. Plants moderately large, close but untidy. Pseudobulbs oval, slightly compressed., longitudinally plicate, two-leaved. Leaves robust, light sea green. Inflorescence two-sided, spike-like, racemose, five- to none-flowered, the flowers standing at the bent-over and nutant tip, beautifully open. **Icon. tt. 478, 710.**

FIGURE 40. *Caucaea nubigena* (Lindl.) M.W.Chase & N.H.Williams

5758 as *Oncidium nubigenum* Lindl. Ecuador, grows on trees and on rocks in dense bush-woods and in the uppermost forest region around Tamboloma and Huasi-Huaico, West Andes of Cuenca, 2800-3300 m. Flowering May to Oct. Tufts often very large, almost always loose and straggling. Pseudobulbs ovoid-oblong, longitudinally corrugate, slightly compressed, up to 4-5 cm in length, bearing two leaves. Leaves dull bluish green. Floral shoot not branched, bearing from three to ten flowers. Sepals and petals light lilac-red or brown. Lip white, later light lilac, spotted with lilac-red flecks all around the callus. **Icon. t. 478.**

OTHER LEHMANN COLLECTION: **6574**. Ecuador, grows on trees in moderately close mountain forest on the western slopes of the Páramo de Matanga, East Andes of Cuenca, 2900-3300 m. Flowering April to Aug.

FIGURE 41. *Chondroscaphe chestertonii* (Rchb.f.) Senghas & Gerlach

Icon. t. 836. No given provenance.

OTHER LEHMANN COLLECTIONS: **1903** as *Chondrorhyncha chestertonii* Rchb.f. Colombia, grows on trees in the dense and damp forests above Naranjo and La Venta del Dagua, Cauca, 500-1200 m; **8374** Colombia, grows on trees in woods at Cajamarca, West Andes of Roldanillo, 1400-1800 m. Flowers Dec.

FIGURE 42. *Chondroscaphe fimbriata* (Linden & Rchb.f.) Dressler

10024 Colombia, without exact provenance. **Icon. t. 134.**

FIGURE 43. *Chrysochrysis lehmannii* Rolfe

8252 Ecuador, grows solitarily on banks of lava around Baños on the volcano of Tunguragua, 1600-2300 m. Flowers in June and in Sept. Rhizome hard, cauliform, varying in thickness from that of a pencil to that of a finger, up to 2cm in height, forming at intervals 10 to 25 cm apart linear, oblong, slightly compressed, rimose and oblique pseudobulbs from 3 to 4cm in length and 1 to 1.5 cm in breadth. Leaves single on the pseudobulbs, broadly ovate-oblong, sharply pointed, leathery, with five sharply marked veins on each side, yellow-green. Flowers single on a stalk, the latter from 4 to 8 cm in length, closely sheathed, generally

appearing in groups of several on small excrescences at the base of the bulbs. Flower flatly spreading. Dorsal sepal oblong-boat-shaped, porrect, 3cm in length and 8mm in breadth. Lateral sepals obliquely oblong with slightly inrolled, can-nozzle-shaped tips, 3cm in length and from 1 to 1.2cm in breadth. Petals longly cuneate, slightly sickle- or sword-shaped, sharply pointed, with slightly undulate margins. Lip spatulate or ligulate, at the base arm-like winged, strongly convex, with two small obliquely angular standing warts in the middle, the strongly convex base and wings densely tomentose, the tip smooth, 1cm in length, the ligulate tip 5mm in breadth, the winged base 1cm in breadth. Column claviform, terete, the slightly prolonged base dilated, the clinandrium flattened out at right angles to the axis, always bent in a half-circle. Sepals and petal light copper red, the latter striped with red at the base. Lip orange-yellow, base and wings dark purple-red. Column yellow-green striped with cinnamon-brown. **Icon. t. 512.** Also **HK 920.** Loc.cit., 1800-2200m.

OTHER LEHMANN COLLECTIONS: **8289.** Ecuador. Grows on trees in the dense forests around Shoray and Yavilcay, East Andes of Cuenca, 1800-2200 m. Flowering in Oct. 1888. **HK 805** Colombia. Grows on trees in the dense and damp woods between El Peñol and La Paz, West Andes of Popayán, 1500-1800m. Flowering in Dec. 1891.

FIGURE 44. *Comparettia falcata* Poepp. & Endl.

8385 Colombia, grows on trees, particularly on guayavas and on Arrayan trees, in open forests on the highlands of Popayan, 1400-1800 m. Flowers from Oct. to Jan. Plants almost always small. Bulbs linear, moderately compressed. Leaves thick, hard-leathery, brown-green. Flowers of a beautiful crimson. **Icon. t. 411.**

FIGURE 45. *Comparettia jamesonii* (Lindl. & Paxt.) M.W.Chase & N.H.Williams

HK 1122 as *Scelochilus jamiesoni*. Ecuador, Pacay-urcu, Zaruma. **Icon. t. 502.**

OTHER LEHMANN COLLECTION: **8079** *Scelochilus jamiesoni* Lindl. & Paxt. Ecuador, grows on trees in the dense bush-woods on the Rio Chambo, on Tunguragua, 2000-2400 m. Flowers in March and April, in solitary cases up to June. The fairly large masses hang downwards always. Leaves thick and leathery, yellow-green. Flowers light yellow, the petals striped with red. **Icon. s.n.**

FIGURE 46. *Coryanthes elegantium* Linden & Rchb.f.

6824 as *Coryanthes wolfii* F. Lehm. (type). Ecuador, Naranjal, Feb.-March. **Icon. t. 610.**

FIGURE 47. *Cryptarrhena kegelii* Rchb.f.

Icon. t. 257. No provenance given.

OTHER LEHMANN COLLECTIONS: **8574.** Ecuador, Rio Zamora, nr Loja, 500-1100 m; **8687.** Colombia, las Juntas del dagua, Cali, 300-1000 m; **HK 1132.** Colombia, Paso de las Virginia, Cauca, 800-1000m, July 1891; **HK 1323.** Colombia, Popayan, Junta.

FIGURE 48. *Cyrtidiorchis rhomboglossa* (F.Lehm. & Kraenzl.) Rauschert (type)

8133 as *Chrysocycnis rhomboglossa*. Colombia, Highlands of Popayán. **Icon. t. 327.**

OTHER LEHMANN COLLECTIONS: **BT 232** Colombia, grows on trees in woods in highlands of Popayán, 1500-1900 m. Flowers from Oct. to Dec.; **HK 856** Colombia, grows on trees in woods at Anserma-vieja, Cauca, 1500-1800 m. Flowering in Aug. 1891.

FIGURE 49. *Cyrtochilum halteratum* Kraenzl.

3546 as *Oncidium undulatum*. Colombia, Popayan, 2500 m, 23 Feb. 1884. **Icon. t. 292.**

OTHER LEHMANN COLLECTIONS: **6243** Colombia, Pomplaya and Paisbamba, Popayan, 2000-2600 m; **7205** Colombia, Montana de Caramanta, 2200-2700 m, Aug. 1890.

FIGURE 50. *Cyrtochilum ventilabrum* (Rchb.f.) Kraenzl.

Icon. t. 636. No provenance given.

OTHER LEHMANN COLLECTION: **8439** as *Oncidium tenense* Rchb.f. Colombia, Popayan, 1700-2300 m.

FIGURE 51. *Dichaea morrisii* Fawcett & Rendle

Icon. t. 1001. Without given provenance.

OTHER LEHMANN COLLECTIONS: **HK 842** Colombia, La Bramadora, near Yarumal, Antioquia, 1000-2200 m, Nov. 1891.

FIGURE 52. *Dichaea* cf. *histrion* Rchb.f.

Icon. t. 711. No provenance given.

OTHER LEHMANN COLLECTIONS: **5333** Colombia, in thick woods at Cuquier and Ricaurte on the western slopes of the West Andes of Tuquerres, Flowering in June and July; **7624**. Colombia. Grows on trees in the moderately close forests around Urumita, 600-1500 m. Oct. 1891. Also around Frontino, West Andes of Antioquia, 1500-1900 m, Sept. 1891; **BT 219** Colombia, Capilla. Lip blue.

FIGURE 53. *Dichaea richii* Dodson

Icon. t. 145. Ecuador, without exact provenance.

FIGURE 54. *Dracula chestertonii* (Rchb.f.) Luer (as *Masdevallia chestertonii*)

3436 Colombia, Salado, western slopes of Fallarones de Cali, 1800 m, 30 Dec. 1883. Tufts very large. Flowers yellowish white, spotted with red-brown. **Icon. t. 310.**

FIGURE 55. *Dracula inaequalis* (Rchb.f.) Luer & Escobar

7001 Colombia, grows on trees in the dense and damp forests above las Juntas del Dagua on the lower slopes of the West Andes of Cali, 400-1000 m. Was observed for the first time in Nov. 1877. Plants moderately large, densely caespitose. Leaves robust, grass-like, stiffly erect, dark sea-green. Flower stalks terete, of irregular length and with sheaths reaching to irregular height, one-flowered, frequently many-flowered, the flowers appearing in succession. The sepaloid perianth almost bell-shaped, milky-white, outside smooth, inside closely covered with redish papillae resembling felted hairs, and with a couple of purple spots at the bottom of the dull orange-yellow tails. Petals yellow-white with orange coloured middle nerve and similar tip. Lip and column white. **Icon t. 135.**

OTHER LEHMANN COLLECTION: **4302** as *Masdevallia carderi*. Colombia, Dept. of Valle de Cauca, Rio Dagua, 10 May 1885.

FIGURE 56. *Dracula amaliae* Luer & Escobar

Icon. t. 334. Although only described in 1978, it was illustrated by Lehmann a century earlier. Carl Luer and Rodrigo Escobar described it in the journal Colombian journal *Orquideologia* based on a collection by J. Miranda the headwaters of the Rio Naya in the Department of Cauca, Colombia which was flowered by M. and O. Robledo at la Ceja on 9 Dec. 1976. Coincidentally, the collector is the son of Senora Amalia Lehmann de Sarria, the great-granddaughter of Consul Lehmann, and the orchid was appropriately named in her honour.

FIGURE 57. *Dracula chimaera* (Rchb.f.) Luer

2970 Colombia, Cauca, San Antonio de Cali, 1800-2500 m, 20 July 1883; also woods above Tocota, West Cordillera of Cali, Oct. 1883, 1700-2200 m. Flowers yellow-white, spotted with brown. **Icon. t. 619.**

OTHER LEHMANN COLLECTIONS: **958** as *Masdevallia chimaera*. Briceño, 1700-2200 m, Nov. 1891; **2816**

Cauca, Buenavista, 2200-2800 m, 23 April 1883; **4136** Colombia, Munic. of Frontino, 2000 m, 23 Oct. 1884; **7255** Colombia, grows on trees close to the ground and on the ground in the dense and damp forests on the northern slopes of the Morro de Yarumal and Alto Chimborazo, Antioquia, 1700-2200 m. Also Cordillera de Dagua, near San Antonio, 2000 m, Sept. 1881. Also Quebrada Bramadora and at Briceño near Yaruma; **7271**. Colombia, grows on trees close to the ground and on the ground in the dense and damp forests between Rio San Miguel and Mesopotamia, Antioquia, 2200-2400 m, Dec. 1881. Also Cordillera de Dagua, near San Antonio, Sept. 1881. **10029** Colombia, grows on trees in dense forests at Pusuquer. Flowering in Sept. and Oct. Also Dept. of Narino, Tuquerres, 1500-2200 m; **HK372 & BT176** Colombia, Tocota; **s.n.** Colombia, on trees in dense and damp woods of Cordillera near Toyo, West Andes of Antioquia, 1700-2200 m, Oct. 1891; **s.n. var. similis**. Colombia, West Andes of Popayan, 1600-2000 m. Flowers in Dec. and Jan.; **s.n.** Colombia, near Cali, 1700-2200 m, Oct. 1891, 1800-2200 m. Flowers in Oct. and Nov. 1877.

FIGURE 58. *Dracula pholeodytes* Luer & Escobar

Icon. t. 313. The type collection of was made by Helmut Schmidt-Mumm in 1962 in a forested valley near Arcabuco in the Department of Boyaca in northern Colombia and it was described by Carl Luer and Rodrigo Escobar in 1982 in the journal *Selbyana*. A plant of his collection was flowered in cultivation in Colombia by M. and O. Robledo on 10 Oct. 1977. Carl Luer and Rodrigo Escobar described it in the journal *Selbyana* in 1982. Lehmann's painting of this spidery-flowered orchid appears not to have an accompanying herbarium collection but it is certain that he discovered it almost a century before it was described.

FIGURE 59. *Dracula platycrater* (Rchb.f.) Luer

3340 (type) Colombia, Belalcazar Ridge, 1500-1700 m. 27 Oct. 1883. Tufts fairly large. Flowers white, spotted with chocolate-brown. **Icon. t. 313.**

OTHER LEHMANN COLLECTION: **7041** as *Masdevallia trinema*. Colombia, grows on trees in the dense and damp woods around Canasgordas and Frontino, West Andes of Antioquia. Flowers in Oct. and Nov. Plants fairly large, densely caespitose. Leaves robust. Herbaceous, sea-green. Flower stalks thin, terete, up to 30 cm in length, bending downwards, but curving up again from the middle of their length, many-flowered; flowers blossoming successively. Sepaloid tube split into almost entire large sepals, the latter separated from each other up to the base, yellowish white, thickly spotted up to three-quarters of their length from the base with small transverse lilac-red flecks. **Icon.**

FIGURE 60. *Dracula sodiroi* (Schltr.) Luer

34 as *Masdevallia microstoma* Lehm. ined. Ecuador, Western slopes of the Corazon. **Icon t. 621.**

OTHER LEHMANN COLLECTION: **7043** Ecuador, grows as very isolated specimens on damp banks of lava rubble on the Rio Silante, on the, 2100-2400 m. Flowering in Jan. Plants generally forming small and dense tufts. Leaves long-cuneate-linear, herbaceous-robust, light green. Flower stalks thin, terete, stiffly erect, up to 45cm in height, drooping down in an arch at the top, from two- to five-flowered. Sepaloid tube long-bell-shaped with strongly contracted margin, somewhat lighter in colour towards the margin, elsewhere scarlet. Tails red-brown. Petals light scarlet with yellow borders. Lip light yellow with somewhat raised scarlet zonal lines running out into lenticular spots on the inside. Column reddish.

It is truly surprising that the distinctive *Dracula sodiroi* was not described by Lehmann or one of the botanists who received his collections. Its red-bell-like flowers are very distinctive in the genus and unlikely to be confused with any of the many flatter-flowered species. The herbarium number (*Lehmann* 34) does not correspond to that of his main collecting series and may relate to his pre-1880s collections.

Padre Sodiro, whose herbarium survives in Quito, collected the type in June 1900 on the west slopes of Pichincha, near Quito in Ecuador. It was described as *Masdevallia sodiroi* by Rudolf Schlechter in the

journal *Fedde's Repertorium Specierum Novarum Regni Vegetabilium* in 1915. Carl Luer transferred it to the present genus in 1978 in the journal *Selbyana*. It is confined to the wet forests on the western slopes of the western Cordillera of northern Ecuador where it is still locally common today.

FIGURE 61. *Dracula vampira* (Luer) Luer

7042 as *Masdevallia lothiani* Lehm. *ined.* Ecuador, grows in very solitary specimens on trees and on damp heaps of lava rubble on the western slopes of the Corazon, 1800-2300 m. Flowers in Oct. and Nov. For the first time observed in Aug. 1877. Plants generally large, densely caespitose. Leaves robust, herbaceous, undulate at the margins, dark green. Flower stalk terete, strong, up to 35cm in height, erect, many-flowered. Flowers blossoming in succession. Sepaloid tube slightly cup-shaped, light yellow, thickly striped and spotted with black-brown, and with an almost entirely black-brown zone in the middle of each of the sepals; tails black-brown. Petals yellowish white with a brown stripe in the middle and a similar papillary tip. Lip light pink; hypochile white, with small red dots around the opening. Column whitish. **Icon t. 620.**

FIGURE 62. *Dracula mopsus* (F. Lehm. & Kraenzl.) Luer

7016 (type) Ecuador, grows on trees in the dense and very damp forests on the Cuesta de Amboca and around Pacayurcu near Zaruma, 1200-1500 m. Flowers in May and June. Tufts of plants generally large and very dense. Leaves robust, grass-like, dark sea-green. Flower stalks thin, terete, of a very irregular length (5 to 12 cm), generally but one-flowered. Sepaloid tube ventriculose-cup-shaped, on the outside green-yellow, tigered with faded brown, on the inside of a delicate light yellow colour tigered with brick red, the margins covered with papillary hairs, and the short tails brown. Petals yellow with a brown zone at the base and on the saddle of the two-lobed tip. Lip yellow spotted with dark red, the base white. **Icon. t. 524.**

FIGURE 63. *Dracula radiosa* (Rchb.f.) Luer

10029 No provenance given. **Icon. t. 809.** Gustav Wallis discovered it near Frontino in the department of Antioquia, Colombia in 1873, growing at about 2600 m elevation. He sent plants to Messrs James Veitch & Sons who flowered it in 1876 and sent flowers to H.G. Reichenbach who described it as *Masdevallia radiosa* in the *Gardeners' Chronicle* of the following year. Carl Luer transferred it to the present genus in 1978 in *Selbyana*. It is a widely distributed orchid in the Western Cordillera of the Andes, found all the way from Antioquia south to northern Andes of Ecuador. It was one of Lehmann's late collections and he illustrated it towards the end of his days.

FIGURE 64. *Dracula velutina* (Rchb.f.) Luer

Icon. t. 311. No given provenance.

OTHER LEHMANN COLLECTIONS: **3217.** Colombia, Risaralda, 2000-2300 m; **7004** as *Masdevallia houtteana*. Colombia, grows on trees and on the ground in the dense and damp forests between Toyo and Canasgordas, on the West Andes of Antioquia, 1700-2300 m. Flowers in Oct and Nov.

FIGURE 65. *Dracula wallisii* (Rchb.f.) Luer

3607 as *Masdevallia aff. chimaera*. Colombia, from Bellavista to the Sintura, 2300-2800 m, 2 March 1884. Flowers light yellow, densely spotted with brown-red.

Icon. t. 335.

FIGURE 66. *Dracula woolwardiae* (F. Lehm. & Kraenzl.) Luer

7003 as *Masdevallia woolwardiae*. Ecuador, grows on trees in the dense and very damp forests on the mountain slopes around Zaruma, 1200-1700 m. Flowers in April and May. Masses of plants densely caespitose, frequently up to 15 cm in diameter. Leaves robust, almost leathery, yellow-green. Flower stalks

thin, terete, up to 20 cm in length, directed downwards, many-flowered, the flowers blossoming in succession. Sepaloid perigine dull yellow-white or white-yellow transversely striped with fine brown-re lines, covered on the inside with soft papillary hairs and running out into four to 5 cm long red-brown tails. Petals white-yellow, at the base red and at the tip spotted with red. Lip reddish white. **Icon. t. 525.**

FIGURE 67. *Dryadella hirtzii* Luer

312 Ecuador, no exact provenance. **Icon. t. 216.**

FIGURES 68 and 69. *Dryadella simula* (Rchb.f) Luer

BT 333 Colombia, Popayan, 1600-2000 m. **Icon. t. 722 and 723.**

OTHER LEHMANN COLLECTIONS: **7044** Colombia, Caldas & Tretonia, Antioquia, 1600-2000 m; **s.n.** Colombia, Popayan, 1700-2300 m.

FIGURE 70. *Epidendrum porpax* Rchb.f.

8339 Colombia. Grows on trees in the dense forests in the savannas around Tocota, West Andes of Cali, 1400-1800 m. Flowers in May. Plants forming large, flexuous and loose tufts. Stems rarely over 5 cm in length. Leaves thick, fleshy, of a metallic light green colour with reddish margins. Sepals and petals reddish light yellow, the former reddish on the outside. Lip copper-red with yellow margins. Column copper-red with a greenish tip. **Icon. t. 46.**

FIGURE 71. *Eriopsis biloba* Lindl.

8125 as *Eriopsis rutidibulbon*. Colombia, grows on trees in the open oak forests on the highlands of Popayan, 1600-1800 m. Flowers in March and April. Masses of plants moderately large, caespitose. Pseudobulbs pear-shaped, up to 15 cm in length, finely longitudinally rugose, form two- to three-leaved. Leaves leathery, yellow-green. Inflorescence up to 60 cm in height. Flowers arranged in densely beset spike-like racemes; sepals reddish Indian yellow, brick-red on the outside petals light Indian yellow with red borders. Lip reddish yellow, with a white tip punctuated with red. Column white. **Icon. t. 817.**

FIGURE 72. *Euryblema andreae* (P.Ortiz) Dressler

10025 as *Chondrorhyncha*. Colombia. Grows on trees and on the ground in the dense and damp woods at Ricaurte, West Andes of Tuquerres, 1000-1500 m. Flowers in July and Aug. **Icon. t. 805.**

FIGURE 73. *Gongora* cf. *fulva* Lindl.

1090. Colombia, without exact locality. **Icon. t. 465.**

FIGURE 74. *Helcia sanguinolenta* Lindl.

8569 Colombia, grows on trees in the dense forests around Pipulquer, on the western slopes of the West Andes of Túquerres, 1500-2000 m. Flowers in May and June. Sepals and petals thickly fleshy, greenish on the outside, yellow and spotted with brick-red on the inside. Lip white striped with a fan-like pattern of broken carmine lines, the basal part yellow and lined with red. Plants dense, caespitose, somewhat untidy. Leaves leathery, bluish green, single on long drop-shaped and not compressed pseudobulbs from 8 to 12 cm in length. **Icon. t. 465.**

OTHER LEHMANN COLLECTION: **HK 1022** Ecuador, Zaruma, Piedra to Aricha, Chiguinda.

FIGURE 75. *Houlletia odoratissima* Rchb.f.

8576 Colombia, West Andes of Cali, 1600-2100 m. June to Oct. **Icon. t. 651.**

OTHER LEHMANN COLLECTION: **BT 80** Colombia, near Cali, 1700-2100 m.

FIGURE 76. *Huntleya citrina* Rolfe

96 Colombia, grows on trees in dense forests around Buenaventura. 29 Oct. 1880. Plants mostly small. Rhizome very short, throwing out at close intervals above one another leaf-fans consisting of 3-5 leaves. Leaves spathe-like at the base, long-cuneate from a very narrow base, sharply pointed, 18-24 cm long, 2.5 cm broad at the widest point, of a thin membranous texture, with distinctly prominent nerves, bluish light green. Flower stalk bearing one flower, 2-2.5 cm long; wrapped in 2 spathes. Flowers flat, salver-shaped, up to 5 cm in diameter, coloured all over a very delicate lemon or Indian-yellow, the teeth of the hypophyll reddish. **Icon. t. 323.**

OTHER LEHMANN COLLECTIONS: **HK 633 as Batemannia.** Colombia, grows on trees in the dense and damp forests of Barbaocoas; **HK 634 as Huntleya.** Colombia, grows on trees in the dense and damp forests of Rio Timbiqui, 100-1000 m, flowering in March 1899. **Icon. s.n.; HK 635 as Huntleya.** Colombia, grows on trees in the dense and damp forests of rivers near Buenaventura. Flowering in November.

FIGURE 77. *Ixyophora viridisepala* (Senghas) Dressler

s.n. as *Warscewiczella ventricosa* F.Lehm. Ecuador, grows on trees in dense and damp forests between Chiguinda and Cuchipamba on the east side of the east Andes of Cuenca, 1500-1700 m. Flowers in Dec. **Icon. t. 493.**

FIGURE 78. *Jacquinella teretifolia* (Sw.) Britton & P.Wilson

Icon. t. 432. No provenance given.

OTHER LEHMANN COLLECTIONS: **4408** type of *Epidendrum aporoides* Lehm. & Kraenzl. Colombia, Cajibío, Popayan; **HK 436** Colombia, Popayan, 1600-1800 m. May.

FIGURE 79. *Kefersteinia gemma* Rchb.f.

8602 Colombia, Popayan. **Icon. t. 492.**

FIGURE 80. *Huntleya wallisii* Lindl.

26 as *Huntleya burtii* var. *wallisii*. Colombia, grows on trees in dense, damp forests on the Rio Timbiqui and Cuaiquer on western slopes of Western Andes of Túquerres, 900-1000 m, 19 July 1880. Also Rio Timbiqui. 0-500 m. Flowering in May and June. **Icon. t. 617.**

OTHER LEHMANN COLLECTIONS: **6800** as *Huntleya burtii* var. *ecuadorensis* Lehm. ined. Ecuador, grows on trees in dense and very damp forests around Chacuyacu at the foot of the West Andes above Naranjal. Flowering May; **6879** as *Huntleya burtii* var. *wallisii*. Colombia, grows on trees in dense and very damp forests around Córdoba in the littoral region of Buenaventura. Flowering in June and July.

FIGURE 81. *Kefersteinia lehmannii* P.Ortiz

Icon. t. 172. Without provenance given.

FIGURE 82. *Kefersteinia ocellata* Garay

8602 Colombia, grows on trees in the dense and damp forests around Ricaurte, West Andes of Tuquerres, 1000-1400 m. Flowers in June and July. Masses of plant generally small, caespitose, with a slightly elongated rhizome. Leaves grass-like, yellowish leek-green. Flowers white-yellow with small dull brown spots. **Icon. t. 469.**

OTHER LEHMANN COLLECTION: **HK 681**, same locality.

FIGURE 83. *Koellensteinia graminea* (Lindl.) Rchb.f.

8153 Colombia, grows on damp clay banks, occasionally also raised roots of trees bordering rivers, Poreto on the Rio Dagua in the littoral region, 0-300 m. Flowering continuously. Plants always small. Leaves grass-like but robust, dark green. Inflorescence longer than the leaves, thin, terete, rarely branched, from three- to ten-flowered. Flowers thin-textured, yellow-white, striped with dark red. **Icon. t. 407.**

FIGURE 84. *Leochilus labiatus* (Sw.) O.Kuntze

1116 Without exact provenance. **Icon. t. 247.**

OTHER LEHMANN COLLECTIONS: **8086** as *Leochilus depauperatus* (type). Ecuador, grows on *Psidium guyava* around El Entable above Naranjal, sea level to 300 m. Flowers in Oct. The same species, or probably a species closely related to it, was also observed around Balsapamba at the foot of the West Andes of Guaranda; **HK 1141** Colombia, Popayán; **HK 1326**. Colombia. Antioquia, Roblarcito, Sonsón; **HK 1325**. Without provenance.

FIGURE 85. *Leochilus scriptus* (Scheidw.) Rchb.f.

1096 Colombia, without exact provenance. **Icon. t. 246.**

FIGURE 86. *Liparis nervosa* (Thunb.) Lindl.

Icon. t. 719. No given provenance.

OTHER LEHMANN COLLECTIONS: **2246** Colombia, Tolima. 28 November 1882. Also grows in the woods at El Pedregal, near Inza, Popayán, 1200-1600 m. Flowering in Dec. and Jan.; **2782** Colombia, on the Rio Paez and Rio de la Plata, State of Tolima, 1000-1600 m. 22 Feb. 1883; **7620** Colombia, grows on the ground in the dense bushwoods around Frontino, 1200-1600m. Flowering in Sept.; **8863** Colombia, grows on steep heaps of rocks in mountain savannas below Quetame, East Andes of Bogotá, 1200-1500 m. 10 July 1897; **BT 61** Colombia, Popayán, 1500-1800 m. Flowering Dec. and Jan.

BT 60 and **1309**. Colombia, without exact provenance.

FIGURE 87. *Lycaste cruenta* (Lindl.) Lindl.

s.n. Guatemala, on the mountains of Chaoiño, Cerro Salama, 1300-2000 m. 12 May 1882. **Icon. t. 329.**

FIGURE 88. *Malaxis* sp.

Icon. t. 720. Without exact locality.

FIGURE 89. *Lycaste ciliata* (Ruiz & Pavon) Rchb.f.

7250 Colombia, grows solitarily on the ground, very rarely on trees, in the dense forests around Frontino, Antioquia, 1600-1800 m. Sept. 1891. Masses of plants frequently very large. Pseudobulbs oblong, angular, up to 12 cm in length and from 6 to 8 cm in breadth, two-leaved. Leaves long-cuneate, plicate, up to 60 cm in length and from 12 to 15 cm in breadth, grass-green. Flowers appearing in large numbers on the terminal bulb, on short and closely sheathed stalks, greenish white, very sweetly scented. **Icon. t. 605.**

FIGURE 90. *Masdevallia amanda* Warsc. & Rchb.f.

3490 Colombia, Popayan, 1740 m, 28 Jan. 1884. Flowers white, spotted with red, and with yellow bristles. **Icon. t. 217.**

OTHER LEHMANN COLLECTIONS: **2360** Colombia, Rio Cabrera, 2800 m, Jan. 1883; **3123** Aguada, 2200 m. 17 Sept. 1883; **4234** Colombia, Alto de Poleal above Caramanta, 3 Sept. 1884; **5003** Colombia, Grows on trees in park-like woods on the plateau of Popayan, 1700-2300 m, flowers in October and November; **7014**

Colombia, above Popayan, 1700-2200 m, 1891; **7020** Colombia, grows on trees and on steep earth banks in the dense and damp forests on the highlands between Envigado and El Retiro, 1700-2300 m, Flowers in Nov. and Dec. 1891; **s.n. (HK 368)** Colombia, above Pupalquer, West Andes of Tuquerres, 1600-2000 m, Aug. 1894.

FIGURE 91. *Masdevallia anachaeta* Rchb.f. (type)

306 as *M. nutans* (type). Ecuador, damp forest near Rio Silante, western slopes of Corazon, 7500 ft. **Icon t. 347.**

OTHER LEHMANN COLLECTIONS: **32** Ecuador, Santo Domingo de los Colorados, in volcanic soil; **7025** as *M. falcata* F.Lehm. Ecuador, grows, in so far as it has been observed up to now, only in one place on banks consisting of lava rubble in the dense and damp forests around Milligalle on the western slopes of the Corazon, 2200 m. Flowers in Sept. Plants forming dense and small tufts. Leaves thick, leathery, yellow-green, from 1.5 to 3 cm in height. Flower stalks twice as long as the leaves, thin, terete, one-flowered. Sepaloid tube closed up to half of its length, the free parts elongated into sickle-like hooked laciniae directed upwards, red-brown at the base, the tips yellowish. Petals white. Lip and column purple-red. **Icon. t. 312; s.n.** as *M. vulcanica* (type) Ecuador, damp forest near Rio Silante, western slopes of Corazon, 7500 ft.

FIGURE 92. *Masdevallia angulata* Rchb.f.

10028 Colombia, Pupalquer, western slopes of West Andes of Tuquerres. **Icon. t. 808.**

OTHER LEHMANN COLLECTIONS: **7013** Ecuador, grows on trees and on heaps of volcanic rubble in the dense forests around Milligalle, Canzacoto and Silante on the western slopes of Corazon, 1800-2500 m. Flowers from Sept. to March; **Icon. tt. 519 & 113; s.n.** Ecuador, occasionally on rocks near Santo Domingo de los Colorados, 6800 ft, March 1877.

FIGURE 93. *Masdevallia aphanes* Koeniger

10016 as *M. trifurcata* F.Lehm. Ecuador, without exact provenance. **Icon. t. 127.**

OTHER LEHMANN COLLECTIONS: **7015** as *M. trifurcata* F.Lehm. No provenance given. **Icon. t. 128.**

This dwarf orchid was described by Willibald König based on his own collection in Aug. 1878 from cloud forest at 2000m between Chachapoyas and Pomacochas in northern Peru. Its distribution extends northwards into northern Ecuador.

Lehmann drew it twice but the collection number on his earlier drawing is the same as that of a collection of *Masdevallia peristeria* and it is obvious that he muddled the numbers. The second drawing is one of late collections and no corresponding specimen has been located.

FIGURE 94. *Masdevallia bicolor* Poepp. & Endl.

6742 as *M. aurorubra* Colombia, grows on trees in the park-like dense forests on the highlands of Popayan, 1400-1800 m, Flowers from March to May. Plants generally small, densely caespitose. Leaves thick, leathery, yellow-green, with a sharp keel and rolled back margins. Flowers appearing in twos on not very long triangular peduncles, but little open, dark carmine-brown, the dorsal sepal and the tails orange-yellow. **Icon. t. 337**

OTHER LEHMANN COLLECTIONS: **74** Ecuador, Rio Pastaza, c. 1900 m, March 1877; **814** as *M. aurorepurea*. Colombia, Rio Buga, 1500 m, 28 Dec. 1881; **3280** as *M. aurorepurea*. Colombia, on trees in open forests on the high ridge of Belalcazar, above Anserma Vieja, 1800 m, 27 Oct. 1883; **4129** as *M. subumbellata* (type). Colombia, Highlands of Popayan, 1400-1800 m, 22 Jan. 1884; **4303** as *M. aurorepurea*. Colombia, Anserma Vieja, 2000 m, 29 Aug. 1884.

FIGURE 95. *Masdevallia bonplandii* Rchb.f.

6741 as *M. endotrachys* (type). Ecuador, grows on volcanic Cangahua soil around Tuza, El Puntal and Pucara,

200 m. Flowers in Feb. and March. Plants forming dense and frequently large tufts. Leaves thick, leathery, yellow-green. Flowers light yellow, thickly spotted with dull purple-brown. Lip red-brown. **Icon. tt. 134 & 520.**

OTHER LEHMANN COLLECTIONS: **318** Ecuador, Paramo de Tuza, 2800 m, 31 Jan. 1881. Also Colombia, Paramo de Fusagasuga, 2800 m, 31 Jan. 1881; **479** Ecuador, Villa de Ibarra, Tulcan, between Rumicacha and Ypiales, 2000-2500 m, 8 Feb. 1880.

FIGURE 96. *Masdevallia brachyura* F. Lehm. & Kraenzl.

6522 as *M. chrysonota* (type). Ecuador, Grows on trees and on rocks in the dense and very damp forests around Chiguinda, on the eastern slopes of the East Andes of Sigsig, 1600-1800 m. Flowers in April and May. Occurs very rarely. **Icon. t. 124.**

FIGURES 97 and 98. *Masdevallia campyloglossa* Rchb.f.

3655 Colombia, Paisbamba, 2600 m. 4 March 1884. Flowers water-white, sprinkled and striped with lilac. **Icon. t. 340.**

7037 as *M. fertilis* (type). Colombia, grows very abundantly on trees in the dense forests of the Rio Chico above San Pedro and around El Valle between Santa Rosa de Osos and El Yarumal, Antioquia, 2200-2600 m. Flowers in May and June; **8369** Colombia, grows abundantly on trees in the dense forests above Poblazon near Popayan, 2000-2600 m. Flowers in Oct. and Nov. **Icon. t. 531.**

OTHER LEHMANN COLLECTIONS: **3276** Colombia, above Anserma-vieja, Guatica, Arrayanal etc. 1600-2000 m. 26 Oct. 1883. Tufts fairly large, dense. Flowers water-white with brownish nerves; **10041** as *M. sarcophylla* (type). Colombia, grows on trees in dense woods on Rio Huangobio, highlands of Popayan, 1700-1800 m. Flowers from May to Nov.

FIGURE 99. *Masdevallia carruthersiana* F. Lehm. & Kraenzl.

6530 (type) Ecuador, grows in isolated specimens on trees in the dense, damp forests around Chiguinda on the eastern slopes of the East Andes of Sigsig, 1700-2000 m. Flowers in May 1887. Plants moderately large, densely caespitose. Leaves softly leathery with an extremely sharp carina, yellow-green. Inflorescence somewhat taller than the leaves, sharply triangular, bearing up to 10 flowers, the later developing in succession. Dorsal sepal orange-yellow, punctuated on both sides with red; the 3.5cm long cauda yellow. The lateral sepals dark carmine-brown, yellow at the base, tails yellow. Petals white with yellow tips. Lip dark carmine. **Icon. t. 442.**

FIGURE 100. *Masdevallia caudata* Lindl.

Icon. t. 211 No provenance given.

OTHER LEHMANN COLLECTIONS: **2639** as *M. shuttleworthii*. Colombia, western slopes of Sabana de Bogota, 2000-2600 m, 29 Jan. 1883. Also near Alejandria at Tequendama, on the Penon de Fusagasuga above Pasca; **7031** as *M. caudata* Lindl. var. *xanthocorys*. Colombia, grows on trees in the dense forests above Pacho, Cundinamarca, 1800m, January 1882. Also above Pacho on way from Zipaquira, 2000-2400 m. Flowers from May to Oct.; **HK 341** as *M. caudata* var. *xanthocorys*. Colombia, State of Cundinamarca, grows in damp forests between Libate and Fusagasuga, 1800-2400 m.

FIGURE 101. *Masdevallia chimboensis* Kraenzl. (type)

6748 as *M. daguensis* F. Lehm. Colombia, grows in very solitary specimens on trees in the dense and very damp forests on the Rio Dagua, in the littoral region of Buenaventura. Flowers in Dec. Plants dense, caespitose, generally small. Leaves robust, leathery, dark green. Flower stalks thin, terete, considerably longer than the leaves, multi-flowered. Flowers appearing in succession, yellowish, thickly spotted with transverse red-

brown spots; dorsal sepal orange at the base. Petals yellow. Lip purple-brown. **Icon. t. 129.** Also Ecuador. Forests of Puente de Chimbo, Western Andes of Milagro, 200-300 m.

FIGURE 102. *Masdevallia chontalensis* Rchb.f.

1060 No provenance given. **Icon. t. 206.**

FIGURES 103 and 104. *Masdevallia corazonica* Schltr.

311 as *M. anachaeta*. Without exact provenance. **Icon. t. 346.**

6744 as *M. anachaeta* (type of *M. sphenopetala* Kraenzl.). Ecuador, grows as solitary specimens on trees in the dense forests around Silante on the western slopes of the Corazon, similarly on lava soil, 2000-2300 m. Flowers in March and July. Tufts very small, dense. Leaves on long petioles, leathery, light green, brownish at the margins. Flowers up to 5 on peduncle somewhat longer than the leaves, directed towards the inside, yellowish white, the short tails greenish brown. **Icon.**

FIGURE 105. *Masdevallia corderoana* F.Lehm. & Kraenzl.

6561 (type). Ecuador, grows on damp rocks and on trees in the dense bush woods around Churrucos on the upper eastern slopes of the East Andes of Sigsig, 3000-3200 m. Flowers in April and May, and in Sept. and Oct. Plants moderately large, densely caespitose. Leaves thick, leathery, on comparatively long petioles, oblong-elliptical, with obtusely pointed tips strongly bending downwards, yellow-green; entire length from 12 to 18 cm by 3 cm breadth; petiole from 8 to 12 cm in length, sharply carinate and deeply sulcate. Flowers solitary on thin and round peduncles shorter by from 2 to 4 cm than the leaves. Peduncles supplied at the base with a small, obliquely opened, sharply pointed paleaceous sheath and with another one of similar shape under the ovary. Sepaloid cupule fleshy, tubularly concrescent for 1.3 cm of its length, slightly bent, with sharply a protruding mentum. Dorsal sepal widely cucullate, from 1 to 1.3 cm in length, 1.5 cm in breadth, abruptly tapering into a 4 cm long and somewhat fleshy cauda. Lateral sepals long-cuneate and falciform, with slightly undulate margins, from 2.5 to 3 cm in length and 2 to 1.3 cm in breadth and elongated into 4 cm long and fleshy tails. Petals 1 cm in length and 4 mm in breadth, liguliform-sigmoid, with abruptly rounded tips terminating in laciniae, the underside thickly fleshy angular, warty at the base, white with red middle nerve and red underside acies. Lip 1.5 cm in length, 0.7 cm in breadth, fusiform-lingulate, at the base angular-cordiform, at the tip slightly panduriform, angularly pointed, underside with one carinate decurrent callus, upperside with two carinate decurrent calli broadening out towards the tip, the narrower portion of the tip slightly warty on the upper side. Sepals light yellow, each with 3 purple-red stripes; lip crimson-brown. Column semicircular, at the base elongated into a long bent foot and an acute-angular isthmus part directed upwards, white with a red back and red wing margins. **Icon t. 440.**

FIGURE 106. *Masdevallia crescenticola* F.Lehm. & Kraenzl.

230 (type). Ecuador. Common on *Crescentia* trees, Rio Bogota near Concepción in the plains. 18 Sept. 1874. **Icon. t. 84.**

FIGURE 107. *Masdevallia dynastes* Luer

317 Ecuador, without given provenance. **Icon. t. 275.**

FIGURES 108—110. *Masdevallia erinacea* Rchb.f.

7002 as *M. torulosa* Lehm. Colombia, grows on trees in the dense and damp forests around Frontino on the western slopes of the West Andes of Antioquia, 1000-1600 m. Flowers in Oct. Plants densely caespitose, generally small. Leaves thick, leathery, linear-long-cuneate, dark yellow-green. Flowers in twos appearing one after the other on thin stalks, somewhat longer than the leaves. Flower stalks filiform, thin, of the same

length as the leaves, one-flowered, occasionally two-flowered. Sepaline-tube at the bottom cup-shaped, connate; the dorsal sepal free, yellow, traversed by greenish and hairy nerves. Lateral sepals considerably larger, vesiculose-torulose, obtusely pointed and running out into 1cm long and drop-shaped tails, light yellow, thickly punctuated with brick-red. Petals yellow. Lip yellow punctuated with red. **Icon. t. 111.**

OTHER LEHMANN COLLECTIONS: **23** as *M. clavicaudata* F.Lehm. ined. Colombia, grows on trees very little above ground in dense forests on the boundaries of the mangrove forests near Buenaventura, 16 Aug. 1880. Also Buenaventura near the coast, 29 Oct. 1880; **2634** as *M. heteromorpha*. Colombia, Buenaventura near the coast, 16 March 1883; **4138** Colombia, Frontino, 2000 m, 23 Oct. 1884; **7049** Ecuador, grows on trees and on rocks in the dense and damp forests around El Cucho at the western foot of the West Andes above Santa Rosa, 400-600 m, Dec. 1892; **7252** as *M. antennifera* F.Lehm. ined. Colombia, grows on trees in the dense and very damp forests at Cerro Platrado above Frontino, 1800-2000 m, October 1891. **Icon. t. 110; HK 329 & HK 347** Colombia, Grows on trees in forests near Buenaventura, Nov. 1880. **Icon. t. 343; HK 331, 334** Colombia, Tela.

FIGURE 111. *Masdevallia estradae* Rchb.f.

4020 Colombia, grows in Antioquia, in moderately dense woods between Antioquia and Abriaqui, 2200 m. 15 Oct. 1884. Tufts moderately large, dense. Leaves thick, dark green. Stalks black. Flowers white, washed over with lilac-violet. Tails yellow. **Icon. t. 474.**

OTHER LEHMANN COLLECTIONS: **4131** Colombia, grows on trees in the dense forests of Quillao on the Rio Tonusco above Antioquia, 1800-2200 m, Oct. 1884. Also in dense damp woods of El Roblarcito near Sonson, Antioquia, 2200-2500 m, Dec. 1891. Rhizome creeping. Leaves thick, robust, yellow-green.

7030 as *Masdevallia ludibunda*. Colombia, grows on trees, almost always close to the ground, in the dense forests on the western slopes of the Paramo de Guerrero between pacho and Zipaquira, 2000-2500 m. Flowers in Oct. **Icon. t. 121**; Also **HK 338** Without locality.

FIGURE 112. *Masdevallia fasciata* Rchb.f.

4286 as *M. palmensis* Kraenzl. (type). Colombia, around La Palma above Envigado, 2000-3000 m. Oct. 1884. **Icon. t. 443.**

FIGURE 113. *Masdevallia filaria* Luer & Escobar

7032 as *Masdevallia ventricularia* var. Colombia, grows on trees in the dense forests around La Bramadora near El Yarumal in Antioquia, 2000-2100 m. Flowers in Nov. Tufts of plants dense, always small. Leaves leathery, dark green. Flowers solitary on thin stalks freely rising above the leaves, dark cherry-brown with veins of a faded yellow colour and with yellow tails. **Icon. t. 203.**

OTHER LEHMANN COLLECTIONS: **2006** as *Masdevallia ventricularia* var. *longicaudata*. Colombia, grows on trees in dense forests on West Andes of Cali, 1700-2200 m, Oct. 1882; **HK 328** as *Masdevallia ventricularia* var. Colombia, grows on trees at la Conga, western slopes of West Andes of Popayan, 1800-2500 m. Flowers in Oct.

FIGURE 114. *Masdevallia fractiflexa* F.Lehm. & Kraenzl.

10020 (type). Ecuador, Grows on trees in dense and damp forests between Loja and Zamora, 1800 m. **Icon. s.n.**

FIGURE 115. *Masdevallia herradurae* F.Lehm. & Kraenzl. (type)

4139 (type). Colombia, grows in dense savannah woods on Rio Herradura between Frontino and Cañasgordas, 1400-1700 m, Oct. 1884. Also on trees in dense forests at Frontino, West Andes of Antioquia, 1200-1600 m, Oct. 1891. **Icon. t. 184.**

FIGURE 116. *Masdevallia impostor* Luer & Escobar

6746 as *Masdevallia maculata* var. *popayanensis*. Colombia, grows on trees in the park-like woods on the highlands of Popayan, 1600-1900 m. Flowers in March, and in Aug. and Sept. Tufts of plants generally small and dense. Leaves leathery, yellow-green. Flower stalks somewhat longer than the leaves, sharply triangular, many-flowered. Flowers appearing in succession. Dorsal sepal orange-yellow finely spotted with red-brown in the middle. Lateral sepals dark carmine-brown with yellow tails. Petals white-yellow. Lip purple-red. **Icon. t. 338.**

OTHER LEHMANN COLLECTIONS: **s.n.** Colombia, near Hatico, near Popayan, 1800 m, 19 Nov. 1878; **BT 177** Highlands of Popayan, 1500-1900m, 21 Aug. 1881.

FIGURE 117. *Masdevallia macropus* F.Lehm. & Kraenzl.

6562 (type). Ecuador, grows on wet rocks covered with moss and mud around Churrucos, on the upper eastern slopes of the Paramo de Matanga, 3000-3200 m. Flowers in April and May. Tufts of plants somewhat loose, squarrose, moderately large. Leaves leathery, dark green, with black petioles, the younger ones standing in large sheaths. Flowers solitary on thin, terete peduncles somewhat shorter than the leaves, and appearing from 2 to 3 on the stem. Dorsal sepal yellow striped with brown, the cauda yellow. Lateral sepals yellowish, thickly spotted transversely with dull brown. Petals white. Lip red-brown. **Icon. t. 441.**

FIGURE 118. *Masdevallia 'megalosoma'* Lehm. ined.

6507 (Icon. t. 125). No given provenance.

FIGURE 119. *Masdevallia molossus* Rchb.f.

7227 as *Masdevallia mucronata* (type of *M. antioquiensis* F.Lehm. & Kraenzl.). Colombia, grows on trees in the dense forests on the West Cordillera of Antioquia, on the Alto de Toyo, 1800-1900 m. Only a few specimens were found. 31 Aug. 1891. Also at Santo Gregorio and Nariño, 1800-2200 m. Tufts very small. Leaves moderately thick, dark yellow-green. Flowers solitary on thin stalks somewhat shorter than the leaves, brownish red with a yellow border and tails. Lip dark carmine. **Icon. t. 107.**

FIGURES 120—123. *Masdevallia nidifica* Rchb.f.

7028 Ecuador, grows on trees and on heaps of lava rubble in the dense forests around Milligalle and Canzacoto, western slopes of the Corazon, 1600-2100 m. Flowers in March. This form represents the type on which Reichenbach created the species. **Icon. t. 204.**

OTHER LEHMANN COLLECTIONS: **24** Ecuador, West slopes of Pichincha, 6000 ft, March 1877; **131** Colombia, San Pablo between Barbaças and Pasto, 1300 m, 25 July 1879; **314** Ecuador, Rio Silanti, western slopes of Mt Corazon, 1800-2000 m, 11 Jan. 1881. **Icon. t. 349**; **322** Colombia, Calicali, 1800-2000 m, 28 Nov. 1880. **3435** Colombia, from the watershed above Cali, 1800-2000 m, 31 Dec. 1883. Small. Flowers yellow, with red brown; **6743** as *Masdevallia nidifica* var. *minuta*. Ecuador, grows on trees in the dense and very damp forests around Puente de Chimbo near Guayaquil, 200 m, Flowers in May and June. 8 June 1887; **7027** Colombia, grows on trees in the dense and damp forests around Frontino, western slopes of the West Andes of Antioquia, 100-1700m. Flowers in Sept. and Oct. 1881. Plants forming small and dense tufts. Leaves leathery, dark green, frequently brownish with red borders. Flowers solitary on filiform stalks somewhat longer than the leaves, reddish pale yellow, with reddish longitudinal nerves and brown-red tails. **Icon. t. 105**; **7029** Ecuador, grows on trees and on rocks in the dense and damp forests around El Cucho and Savoijan at the foot of the West Andes above Santa Rosa, 400-1000 m. Flowers in Dec. and Jan. **Icon. t. 104**; **HK 334** Colombia, Highlands of Popayan, 1600-2100 m, May 1878; **HK 343** Colombia, grows on trees in woods at Ricaurte, West Andes of Tuquerres, 1000-1800 m, Flowers in July; **HK 346** Colombia. West of Tuquerres, 1500-2000 m.

FIGURE 124. *Masdevallia ophioglossa* Rchb.f. (type)

7026 Ecuador, grows on damp banks consisting of lava rubble, occasionally on trees in the dense and very damp forests around Milligalle and Canzacoto on the western slopes of the Corazon, 1800-2200 m. Flowers in March. Plants forming small and dense tufts. Leaves thick, almost fleshy, yellow-green. Flowers appearing in great abundance, solitary on thin, terete stalks considerably longer than the leaves, white with a yellow border and yellow tails. **Icon. t. 109.**

OTHER LEHMANN COLLECTIONS: **27** Ecuador, western slopes of Pichincha, 1850 m, March 1877. **310** Ecuador, grows on trees near Canzacoto and Silante, western slopes of Corazon, 2000-2400 m, 13 Jan. 1881. **Icon. t. 348.**

FIGURES 125—126. *Masdevallia pachyantha* Rchb.f.

6750 Colombia, grows very abundantly on trees and on the ground in the dense forests above Pitayo, Silvia, Tortoto and on the volcano of Puraes on the western slopes of the Central Andes of Popayan, 3000-3400 m. Flowering continuously. May 1878. Plants dense, caespitose, attaining large dimensions. Leaves thick, leathery, yellow-green. Flowers on peduncles considerable shorter than the leaves, fleshy, reddish light yellow, very faintly punctuated with brown. Lip red-brown. **Icon. tt. 339, 473.**

OTHER LEHMANN COLLECTIONS: **2062** Colombia, Paramo de Moras, 3000 m, 29 Oct. 1882; **4126** Colombia, Paramo de Guanacas, 3000-3600 m, 16 March 1884; **4205** Colombia, Paramo de Guanacas, 3000-3600 m, 16 March 1884.

FIGURE 127. *Masdevallia peristeria* Rchb.f.

150 Colombia, Pasto, near Cucuel and Pusuquer, 1400 m, 31 July 1879. **Icon. t. 85.**

OTHER LEHMANN COLLECTIONS: **7015** Colombia, grows on trees in the dense forests, especially on trees bordering river banks, around Frontino on the western slopes of the West Andes of Antioquia, 1500-1800 m. Flowers in Oct. and Nov. Tufts of plants dense and moderately large. Leaves thick, leathery, dull sea-green. Flowers stalks somewhat shorter than the leaves, one-flowered. Sepaloid tube fleshy, on the outside whitish green-yellow thickly spotted with dull lilac-red and with strongly standing out greenish veins, on the inside dull reddish light yellow spotted with small spots of a somewhat deeper lilac-red colour. Petals yellowish white. Lip of the same ground colour but thickly spotted with lilac-red. Column greenish white, with reddish margins. **Icon. t. 479.**

FIGURES 128—130. *Masdevallia picturata* Rchb.f.

Icon. tt. 120, 210 & 205. No given provenance.

OTHER LEHMANN COLLECTIONS: **1076** Venezuela, Aguas Calientes, 1500 m, 5 Jan. 1882; **2344** Colombia, Rio Cabrera, 2000 m, 10 Jan. 1883; **2732** as *Masdevallia picturata* var. *minor* (type). Colombia, Tocota, Rio de Salado, 1600-1800 m, 10 March 1883 & 2000 m, 10 Jan. 1883. Small, belonging to the fimbriata; **2787** Colombia. El Tambo, 2000 m, 3 May 1883. Also Boca del Monte above Chapa, 2000 m; **4309** Colombia, West Andes of Cali, 1800 m, 21 April 1885; **HK 348**, same locality, 1800-2200 m. Flowers from Oct. to Dec.; **7011**. Colombia. Grows on trees and on earth banks in the dense forests around Tocota, West Andes of Cali, 1600-2000 m. Flowers in Nov. and in May; **BT 178, 179** belong here; **7024** Colombia, grows very abundantly on steep banks of crumbling earth in the dense park-like forests on the highlands of the Rio Negro, la Ceja, El Retiro, Abejoral etc. in Antioquia, 1700-2200 m. Flowers in Dec. and in May.

FIGURE 131. *Masdevallia platyglossa* Rchb.f.

7039 as *Masdevallia macroglossa*. Colombia, grows on trees, always close to the ground, in the dense and damp forests on the Rio Dolores between Angostura and Santa Rosa de Osos, Antioquia 1800-2200 m.

Flowers in Nov. and Dec. Plants somewhat loosely caespitose, generally small. Leaves on short peduncles, leathery, dark yellow-green with blackish peduncles. Flower stalks thin, terete, one-flowered, from 4 to 7cm in length, directed downwards. Sepaloid tube fleshy, light yellow, on the outside punctuated with very small blackish dots. Petals yellow. Lip brownish. **Icon. t. 102 & 316.**

OTHER LEHMANN COLLECTIONS: **2334** Colombia. Rio Cabrera, 2000 m, 9 Jan. 1888; **3761** as *Lothiana bilabiata* F. Lehm. (type). Colombia. West Cordilleras of Cali, 2000 m, 23 March 1884.

FIGURE 132. *Masdevallia polysticta* Rchb.f.

7017 as *M. spathulifolia* Kraenzl. (type). Ecuador, grows on trees and on damp banks around Milligalle and Canzacoto on the western slopes of the Corazon, 2000-2500 m. Flowers in Oct. Plants moderately large, densely caespitose, of a beautiful symmetrical shape. Leaves robust, leathery, yellow-green, strongly bent backwards at the tips. Flower stalks up to 25 cm in height, longer than the leaves, thin, terete, light green marked with red lines. Flowers in a two-sided, alternate, spike-like raceme bearing from four to weight flowers. Sepaloid tube white transversely spotted with lilac-red, the tails of a delicate yellow colour. The dorsal sepal free, considerably larger, hood-shaped. Petals light pink on the inside, outside white spotted with red. Lip of a delicate light pink colour speckled with red. Column white with crimson borders. **Icon. t. 523.**

OTHER LEHMANN COLLECTIONS: **227** as *Masdevallia spathulifolia*. Ecuador, grows on trees and on the ground around Milligalle, western slopes of Mt Corazon, 2000 m, 14 Jan. 1881; **406** as *Masdevallia spathulifolia*. Ecuador, grows on trees near Tamboloma and La Palma, near Guaranda, 1900-2500 m, 23 Dec. 1879.

FIGURE 133. *Masdevallia pterygiophora* F.Lehm. ex Luer & Escobar

7275 Colombia, grows on trees in the dense and damp forests around San Gregorio, on the road from Sonson to Nariño, Antioquia, 2200 m. Was found only once. Dec. 1891. Tufts small and dense. Leaves up to 5 cm in length and 4 mm in breadth, long-cuneate, distinctly three-toothed at the tip, dark green with black petioles. Flowers greenish yellow with three brown nerves in each one of the three sepals. Petals greenish yellow with a red-brown nerve in the middle. Lip yellowish spotted with red. Column yellow. **Icon. t. 166.**

FIGURE 134. *Masdevallia pygmaea* Kraenzl.

Icon. t. 108. No provenance given.

OTHER LEHMANN COLLECTIONS: **1073** Costa Rica, above San Isidro, 1600 m, 29 Dec. 1881; **2734** *Masdevallia muriculata* F.Lehm. (type). Colombia, grows on trees in damp forest at Salado above Papagalleros, Rio Dagua, 1800 m, 10 March 1883; **4143** Colombia, Frontino, 1400-1800 m, 7 Nov. 1884.

FIGURE 135. *Masdevallia racemosa* Lindl.

6751 Colombia. Grows generally on the ground, and on trees in the dense forests above Pitayo, Silvia, Tortoto and San Isidro, on the western slopes of the Central Andes of Popayan, 3000-3400 m. Flowers continuously. May 1878. Also Paramo de Guanacas and Paramo de las Delicias, 3000-3300 m, January 1886 and Paramo de Guanacas and Paramo de Moras, Central Andes of Popayan, 2900-3400 m, May 1878. Rhizome elongated, creeping, with squarrose branches, up to 30cm in length, hard and brittle. Leaves thick, leathery, greenish dark coppery brown. Inflorescence bearing up to 18 flowers, rarely more, thin, terete, up to 30cm in height; flowers opening in succession, orange-scarlet with strongly protruding veins lighter in colour. Petals and lip white. **Icon. tt. 528 & 326.**

OTHER LEHMANN COLLECTIONS: **966** Colombia, Paramo de Moras, 2900-3600 m, 16 March 1884. Also above Pitayo and Silvia, Central Andes of Popayan, 2900-3400 m, August 1881; **HK 319 & 320** may be same collection. **2098** Ecuador. Grows on trees in dense montane forests of Paramo de Moras, 3000-3800 m, 29 Oct. 1882; **BT 183** may be the same collection.

FIGURE 136. *Masdevallia reichenbachiana* A. Endres ex Rchb.f.

1048 Costa Rica, Candelaria near La Palma, Irazu, 1800-2000 m, 24 Dec. 1881. **Icon. t. 208.**

FIGURES 137 and 138. *Masdevallia saltatrix* Rchb.f.

4137 (type). Colombia, 2000 m, Cerro de Plateado near Frontino, Antioquia, 25 Oct. 1884. Also Cauca state, in small riverside formations on the Rio Ovejas between Cali and Popayan, 1200-1400 m. 12 Oct. 1885. **Icon. tt. 103 & 521.**

FIGURE 139. *Masdevallia schizopetala* Kraenzl. (type)

3836 as *Masdevallia onychosepala* Lehm. ined. Colombia, between Cartago and Anserma Vieja, 1200-1600 m. **Icon. t. 101.**

FIGURES 140 and 141. *Masdevallia strumifera* Rchb.f.

7034 as *Masdevallia chrysochaete* F.Lehm. (type). Colombia, grows on trees in the dense and damp forests on the Paramo de Guerrero above Zipaquira, 2600-3000 m. Flowers in Feb. Plants densely caespitose, moderately large. Leaves robust, leathery, dark green with black petioles. Flowers appearing in great abundance, solitary on thin and terete stalks somewhat taller than the leaves. Sepaloid tube white, the base and the long tails yellow. Petals white. Lip yellow, the base and tip orange. **Icon. t. 114.**

OTHER LEHMANN COLLECTIONS: **3720** Colombia, Highlands of Volcan Sotora and Pitayo, Cauca State, 2900-3200m. 21 Feb. 1884. Tufts fairly large. Flowers white, at the base and tips yellow. **Icon. t. 342; 8868** as *Masdevallia chrysochaete* F.Lehm. Colombia, grows on trees, occasionally also on rocks, on the western slopes of the east Andes of Bogota, 2600-3000 m. Flowers in July. Collected 8 July 1897 at Boqueron de Chipaque. Tufts small. Leaves dark green. Flowers white, with tails yellow.

FIGURE 142. *Masdevallia trochilus* Rchb.f.

3889 as *M. ephippium*. Colombia, Sonson, 18 Oct. 1884. **Icon. t. 414.**

OTHER LEHMANN COLLECTIONS: **3538** as *M. mosquerae*. Flowers brown with orange-coloured tails. Colombia. Forests above Popayan, 1700-2200 m, 7 Feb. 1884 & 1750-2000 m, 23 Feb. 1884; **6529** as *M. ephippium* var. *acrochodonia*. Ecuador, grows as isolated specimens on trees in the dense and very damp forests around Chiguinda, on the eastern slopes of the East Andes of Sigsig, 1700-2000 m. Flowers in April and May 1887.

FIGURE 143. *Masdevallia tubulosa* Lindl.

6740 as *M. stenantha* F.Lehm. (type). Colombia, grows on trees in the dense forests around the Hacienda de Sotara and around Poblazon, above Popayan, 2000-2300 m. Flowers in May and June. Plants densely caespitose, occasionally fairly large. Leaves leathery, dark green with blackish petioles. Flowers white with light yellow tails, and somewhat yellowish at the base of the cupule. **Icon. t. 115.**

OTHER LEHMANN COLLECTION: **7033** as *M. cyphoselenium* F.Lehm. ined. Colombia, grows on trees in the dense and damp forests around La Ceja, above Tuza, on the eastern slopes of the central Andes of Popayan, 1700-2300 m. Flowers in Nov. Also forests of Rio Dulce between Nariño and Pensilvania, Antioquia, 2000-2400 m, Dec. 1891.

FIGURE 144. *Masdevallia ustulata* Luer

Icon. t. 183. This widespread and rather common orchid gets its name from the scorched appearance of its flowers, "ustulata" being the Latin for burnt. Carl Luer described it in 1983 in the journal *Phytologia* based on his own and Padre Andreetta's collection from 1700 m in cloud forest east of Paute in southern Ecuador. It is widespread in the Andes from northern Colombia where it is rare to central Peru. It is commonest in

Ecuador, growing as an epiphyte between 1500 and 3000 m elevation. Flower colour can vary from yellow through tan and brown to purple with darker stripes. Although only described in 1983, *Masdevallia ustulata* was known to Lehmann. His drawing had previously been misidentified as the Venezuelan *M. ensata*. No corresponding herbarium specimen has been located.

FIGURE 145. *Masdevallia ventricularia* Rchb.f.

231 Ecuador, grows on trees and liana, in woods and in dense damp forests at Anque, Calacali to Naranjal, West Andes of Quito, 1800-2000 m. Nov. 1880 & Feb. 1883. **Icon. t. 274.**

OTHER LEHMANN COLLECTION: **23 (type)** Ecuador. Angue, near Nanegal, 6000-7000 ft, Sept. 1877.

FIGURE 146. *Masdevallia wagneriana* Lindl.

s.n. Without provenance. **Icon. t. 263.**

OTHER LEHMANN COLLECTIONS: **s.n.** *Masdevallia*. Without provenance. **Icon. tt. 341 & 706.**

H. Wager, collecting for the Linden establishment in Brussels, discovered this pretty orchid at Carabobo in Venezuela in July 1850. It was described by John Lindley two years later in Paxton's *Flower Garden*. Neither of Lehmann's drawings of it is accompanied by any reference to herbarium material.

FIGURES 147—149. *Masdevallia xanthina* Rchb.f.

4287 Colombia, Rio Chico, near San Pedro, Antioquia, 2000-2300 m. **Icon. t. 475.**

6090 Colombia, Cauca, grows on trees in the dense forests around La Ceja above Tuza, eastern slopes of the Central Andes of Popayan, 1700-2200 m. Flowers between March and Aug. **Icon. t. 122.**

OTHER LEHMANN COLLECTIONS: **422** Ecuador, West slopes above Penachu near Quito, 2800 m, 4 Jan. 1880; **4130** Colombia, Santa Elena above Medellin, 2000 m, 10 Nov. 1884; **HK 342** Colombia, above Gutaquer, highlands of Cerro Gualcala, 2000-2400 m. Aug. 1894.

FIGURE 150. *Masdevallia zahlbruckneri* Kraenzl.

7022 as *M. zamorensis* F.Lehm. ined. Ecuador, grows as very isolated specimens on trees in the dense and damp forests around Zamora on the eastern slopes of the East Andes of Loja, 800-1200 m. Flowers in Dec. Plants densely caespitose, always small. Leaves robust, leathery, yellow-green. Flower stalks thin, terete, directed downwards, up to 6cm in length, many-flowered; flowers blooming in succession. Dorsal sepal yellowish, the lateral ones white, very finely spotted with red. **Icon. t. 126.**

FIGURE 151. *Maxillaria cf. acuminata* Lindl.

8134 as *Maxillaria reptans* F.Lehm. ined. Colombia, grows on trees in the dense and very damp forests around Buenaventura on the coast. Flowering in Oct. and Nov. Rhizome long and creeping, thin, closely clothed in papery sheaths, forming at intervals from 5 to 8cm apart, oblong, slightly compressed pseudobulbs up to 2 cm in length. Leaves hard, leathery, dark yellow-green. Flowers of a delicate white colour, lip light yellow. **Icon. t. 81.**

FIGURE 152. *Maxillaria aggregata* (Kunth) Lindl.

Icon. t. 579. Carl Kunth described this species in his *Nova Genera et Species Plantarum* in 1815 as *Dendrobium aggregatum* based on a collection by Alexander von Humboldt and Aimé Bonpland from between Meneses and Pasto in Colombia. It was transferred to *Maxillaria*, as in *Genera and Species of Orchidaceous Plants* in 1832. It is a widespread and variable Andean species, ranging from Venezuela to Peru. I have not been able to trace any Lehmann herbarium collection but the illustration reproduced here appears to be of the above species.

FIGURE 153. *Maxillaria alpestris* Lindl.

6566 Ecuador, grows on trees in the dense and damp forests around Chiguinda, East Andes of Cuenca, 1600-2000m. Flowering in April and May 1887. Rhizome erect, elongate, up to 60cm in length, forming at intervals of 5 to 10cm small rounded, scarcely noticeable compressed pseudobulbs. Leaves robust, reddish yellow-green. Flowers yellowish brown, petals yellower. **Icon. t. 420.**

OTHER LEHMANN COLLECTIONS: **3896** Plant from Porse. **8292** Colombia, grows on trees in the dense forests between Mesopotamia and Sonsón, Antioquia, 2000-2500 m. Flowering in Dec. 1891.

FIGURE 154. *Maxillaria augustae-victoriae* F. Lehm. & Kraenzl.

6500 (type) Ecuador, grows on trees and on rocks in the dense and very damp forests around Chiguinda, on the eastern slopes of the East Andes of Sigisig, 1600-2000 m. Flowers in April and May. Occurs very rarely. Tufts of plants always small. Pseudobulbs flat, rhomboidal, from 5 to 6 cm in length and 3 to 3.5 cm in breadth, entirely hidden in large and dry sheaths. Leaves on short petioles, elliptic-linear, obtusely pointed, up to 50 cm in length and 8 cm in breadth, robust, almost leathery, light green. Flowers widely open, very sweetly scented, and up to 5 on a bulb, standing on stalks from 25 to 35 cm in length, procumbent at the base and enveloped in large sheaths. Sepals and petals of a delicate white, pink on the backside of the tips, the latter always rolled backwards. Petals white, longitudinally veined with dark pink. Lip inside yellow, outside crimson-pink, striped longitudinally with purple-red towards the sides. Column white with longitudinal brown-red lines on the flat side. **Icon. t. 606.**

FIGURE 155. *Maxillaria brunnea* Linden & Rchb.f.

7194 Colombia, grows on trees in the dense and very damp forests around Ricaurte, on the West Andes of Túquerres, 1000-1500 m. Flowers from July to Aug. Tufts of plants always small, laxly caespitose. Pseudobulbs egg-shaped, flat. Leaves almost leathery, dull sea-green. Flowers light yellow with reddish tips. Lip yellow with two red spots close under the lip on the outside. **Icon. t. 546.**

FIGURE 156. *Maxillaria callichroma* Rchb.f.

8274 as *Maxillaria luteo-alba* var. *grandiflora*. Colombia, grows on trees in the dense forests San Antonio de Cali on the West Andes of Cali and at Munifique near Popayán, 1500-2000 m. Plants generally forming large and dense masses. Pseudobulbs oblong-ellipsoidal, from 5 to 7 cm in length and 3 to 4 cm in breadth. Sepals white with yellow margins and tips. Lip yellow spotted with dark carmine. **Icon. t. 838.**

OTHER LEHMANN COLLECTION: **2249** Colombia. Tolima, Rio de la Plata. 1 Dec. 1882. Plant large. Leaves robust, yellow-green.

FIGURE 157. *Maxillaria fractiflexa* Rchb.f.

7192 Colombia. Grows on trees and on the ground in the dense and damp forests on both slopes of the West Andes of Popayán, 1500-2000 m. Flowering in May. Plants always forming small and dense tufts. Pseudobulbs oblong-ellipsoidal, flat, the angles rounded, up to 6 cm in length and from 2.5 to 3 cm in breadth, running out into long petioles. Leaves almost leathery, dark yellow-green. Sepals of a delicate Isabel-yellow colour, spotted with red-brown at the base on the outside. Petals of a delicate yellow-white. Lip yellow, spotted with dark red on both the outside and inside. **Icon. t.644.**

OTHER LEHMANN COLLECTIONS: **9080** Colombia, Rio Huangobio, highlands of Popayán, 1700-1800 m. Flowering in March and April; **HK919** Colombia, grows in woods on trees in the dense damp woods of the West Andes of Cali, 1600-2000 m; **BT194** Colombia. Highlands of Popayán, Rio Huangobio, 1600-2000m. Flowering in Jan. and Feb. 1886.

FIGURE 158. *Maxillaria friedrichsthallii* Rchb.f.

1098 Colombia. **Icon. t. 253.**

8107 Colombia, Popayan, 1600-1800 m, 10 Oct. 1887; **8285** Colombia, Popajane, Rio Palace, 1700-2300 m.

FIGURE 159. *Maxillaria grandiflora* (Kunth) Lindl.

8136 as *Maxillaria carruthersiana* F.Lehm. ined. Ecuador, grows on the ground, readily also on heaps of rocks overgrown with sphagnum moss, in the dense forests around El Dictamo on the eastern slopes of the East Andes of Loja, 1600-1800 m. Flowering in Dec. and Jan. Plants small and densely caespitose. Pseudobulbs oblong, flat, up to 5 cm in length and 3 cm in breadth. Leaves on long petioles, obtusely pointed, of a thick and robust texture, bluish light green, the leaf lamina up to 35 cm in length and from 6 to 8 cm in breadth. Flowers on stalks from 25 to 35 cm in length and generally spreading on the ground. Sepals and petals white, frequently washed over with pink. Lip striped with purple on a white ground, yellow on the inside. **Icon. t. 641.**

OTHER LEHMANN COLLECTIONS: **3760** Colombia, on the eastern slopes of the Central Cordillera of Popayán, 2300-3000 m. 20 March 1884; **5189** Colombia, grows on trees in dense, damp forests around Corrales, middle eastern slopes of the Páramo de Guanacas, Central Andes of Popayán, 2200-2700 m. Flowers from June to Aug.; **6262** Colombia, grows on tree and rocks around Corrales on the Rio Ullucos (state of Cauca), 2000-2600 m, Jan. to May 1885

FIGURE 160. *Maxillaria hastulata* Lindl.

6896 Discovered by Carl Theodor Hartweg near Popayán and described by John Lindley in Bentham's *Plantae Hartwegianae* in 1845. It seems probably that Lehmann's collection also came from the same region, an area where he collected extensively over many years. **Icon. t. 73**

FIGURE 161. *Maxillaria huebschii* Rchb.f.

6602 as *Maxillaria pachyantha*. F.Lehm. ined. Ecuador, grows on trees and on the ground in the dense forests on the Rio Masar around Shoray, East Andes of Azogues, 1800-2400 m. Flowering in May and June. Plants large, forming dense and massive tufts. Leaves up to 50 cm in length, from 3.5 to 5 cm in breadth, leathery, bluish green, the petioles covered with small scales. Flowers appearing in great numbers, standing on peduncles somewhat shorter than the leaves. Sepals and petals white with reddish tips. Lip whitish yellow striped with brown. **Icon. t. 642.**

OTHER LEHMANN COLLECTION: **HK 941** Colombia, Zeunachacas.

FIGURES 162—164. *Maxillaria lepidota* Lindl.

4190 Ecuador, grows on trees in damp woods around Auque, western slopes of Pichincha, 1800-2200 m. Flowers in February and March and from June to Sept. Tufts moderately large, very dense. Pseudobulbs almost cylindrical. Leaves robust, blue-green. Perianth yellow, the sepals with brown tips. Lip yellow spotted with brown. **Icon. t. 330.**

OTHER LEHMANN COLLECTIONS: **4645** Colombia, grows on trees in dense, damp forests around Santo Domingo, Antioquia, 1800-2200 m. Flowering in April and May; **6894** Colombia, grows on trees in the dense forests around La Ceja on the eastern slopes of the Central Andes of Popayán, 1700-2200 m. **Icon. t. 67;** **6895** Ecuador, without exact provenance; **7189** Ecuador, grows on trees in the dense forests around Chagal on the western slopes of the West Andes of Cuenca, 1800-2400 m. Flowering from March to May; **8145** Colombia, grows on trees around Corrales on the Rio Ullucos, eastern slopes of the Central Andes of Popayan, 2000-2500 m. Flowers in August. **Icon.;** **8146** Colombia, grows on trees around Corrales on the Rio Ullucos, eastern slopes of the Central Andes of Popayán, 2000-2500 m. Flowers in Aug.; **BT 193** Colombia. Highlands

of Popayán, 1600-2000 m. Flowering in Jan., Feb. and May 1886; **BT 198** Colombia. Ricaurte, Altaquer; **HK 889** Colombia, Capilla; **HK 906** Colombia, Conga; **6456** as *Maxillaria lepidota* var. *albida*. Ecuador, grows on trees and on rocks in the dense and very damp forests around Chacayacu and Huahuiducal, on the western slopes of the West Andes of Cuenca, 500-1600 m. Flowers from April to June; **7190** *Maxillaria lepidota* var. *albida*. Colombia, grows on trees in the dense and very damp forests around Ricaurte, on the West Andes of Túquerres, 1000-1400 m. Flowers in Aug.; **3841** as *Maxillaria lepidota* Lindl. var. *lutea*. Colombia, above Guatica. 30 Aug. 1884. Flowers yellow. **Icon. t. 413.**

FIGURE 165. *Maxillaria longissima* Lindl.

6029 Colombia, grows on trees in the dense, damp forests on the western slopes of the Páramo de Guanacas, Central Andes of Popayán, 2300-2600 m. Flowers in Jan. Forming moderately large, dense tufts. Pseudobulbs small, ellipsoidal, compressed. Leaves leathery, dull sea-green. Flowers appearing in fairly large numbers on stalks shorter than the leaves. Sepals and petals white, purple-brown from the middle up to the tip. Lip dull light yellow punctuated with brown. **Icon. t. 415.**

FIGURE 166. *Maxillaria luteo-alba* Lindl.

HK 928 Colombia. Grows on trees in dense forests on West Andes of Cali, 1500-1800 m. **Icon. t. 314.**

FIGURE 167. *Maxillaria parvibulbosa* C.Schweinf.

3893. Without exact provenance. **Icon. t. 416.** The Lehmann drawing reproduced here agrees well with the type collection and description of this species described in the *Botanical Museum Leaflets of Harvard University* in 1945 while Schweinfurth was preparing the orchid account for the *Flora of Peru*. He based it on a collection made by G. Klug from Zepelacio near Moyobamba in Peru in May 1934.

FIGURE 168. *Maxillaria* cf. *poicilotheca* Schltr.

8373 Colombia, grows on trees in the dense and damp forests on the western slopes of the West Andes of Popayán, 1400-1700 m. Flowers in Oct. The plants form large, dense, somewhat loose tufts. Pseudobulbs small, elliptical, somewhat compressed, hidden by large dry and thin-textured sheaths. Leaves robust, leathery, dark yellow-green. Flowers on very short and thin stalks, dull chrome yellow transversely speckled with chestnut brown, the tips cinnamon-brown. Lip yellow, spotted with red at the tip. **Icon. t. 558.**

OTHER LEHMANN COLLECTION: **7195** Colombia, grows on trees in the dense and damp forests on the western slopes of the West Andes of Popayán, 1300-1600 m. Plants generally large, loosely tufted. Pseudobulbs oblong-elliptic, up to 3 cm in length and from 1 to 1.5 cm in breadth, slightly compressed. Leaves scarios, leathery, dark yellow-green.

FIGURE 169. *Maxillaria ponerantha* Rehb.f.

8372 Colombia, grows on trees in the dense forests on the highlands of Popayán, 1600-2000 m. Flowering in Nov. The plants form small, dense, erect tufts up to 30 cm in height. Rhizome stem-like, erect, forming oblong-ovoid compressed pseudobulbs at short intervals apart. Leaves robust, dark green and shiny. Sepals and petals yellowish white. Lip of a beautiful red colour on the inside, the tip white, lined with reddish on the outside. Column light yellow. **Icon. t. 1005.**

FIGURE 170. *Maxillaria porrecta* Lindl.

7254 Colombia, grows on trees and amongst low scrub in the dense and very damp forests around Palmichal and Malabtigo, on the northern declivity of the highlands of Santa Rosa, Antioquia, 2000-2500 m. Flowering in Nov. 1891. Rhizome thick, stem-like, up to 50 cm in length, at intervals forming many-bulbed tufts. Pseudobulbs small, ovoid-oblong, slightly compressed, longitudinally rugose. Leaves leathery, brown-greeb

with red-brown margins. Flowers appearing in very large numbers, of a deep yellow and spotted with red on the outside. Lip black-brown at the tip. **Icon. t. 510.**

FIGURE 171. *Maxillaria procurrens* Lindl.

8361 as *Ornithidium*. Colombia, grows solitarily on trees in the open forests on the highlands of Popayán, 1600-2000m. Flowering in Oct. and Nov. Rhizome stem-like, erect, elongate, up to 30 cm in height, forming small, flat, elliptical pseudobulbs at short distances apart. Leaves robust, of a fresh yellow-green colour. Sepals red-brown, yellowish at the tips. Petals of a somewhat fresher brown-red colour. Lip dark carmine-brown. **Icon. t. 559.**

FIGURE 172. *Maxillaria ramosa* Ruiz & Pavon

BT 230 Colombia, Popayan, 1600-2000 m, March 1884. **Icon. t. 1005.**

FIGURE 173. *Maxillaria rufescens* Lindl.

10005 Without exact provenance. **Icon. t. 511.**

FIGURE 174. *Maxillaria sanderiana* Rchb.f.

6900 Ecuador, Yavilcay & Chiquinda, Rio Paute of Agogues and Rio Masor, 1600-2200 m. Oct.-Nov.

FIGURE 175. *Maxillaria speciosa* Rchb.f.

10023 as *Maxillaria scurrilis* F.Lehm. ined. Colombia. Conga. **Icon. t. 803.**

OTHER LEHMANN COLLECTION: **HK 909** as *Maxillaria scurrilis* F.Lehm. ined. Colombia, Cauca Valley.

FIGURE 176. *Meiracyllium trinasutum* Rchb.f

t. 206 as *Meiracyllium*. A small genus of two Central American species, was established by H.G. Reichenbach in 1854 in the first volume of his *Xenia Orchidacea*. The type of the genus is *M. trinasutum* Rchb.f. which was based on a specimen in José Pavon's herbarium in the possession of Edmund Boissier in Geneva. It is likely that the Pavon specimen came from Mexico. Lehmann's excellent illustration, reproduced here, was almost certainly drawn during his expedition to Guatemala in 1882. No accompanying herbarium specimen is indicated nor has one been traced.

FIGURE 177. *Miltioniopsis vexillaria* (Rchb.f.) Godefr.-Leb.

Icon. t. 19. Without given provenance.

OTHER LEHMANN COLLECTIONS: **4136** as *Odontoglossum vexillarium* var. *rubellum*. Colombia, grows in the state of Cauca: on trees in dense, damp woods above La Porquera, on the upper Rio Dagua, 1600-2000 m, 26 April 1885. Flowers dark crimson-pink with a white red-striped ocellus in front of the yellowish base of the lip. **4625** as *Odontoglossum vexillarium*. Colombia, grows in trees in dense, damp forests around San Andres and Bricene on the northern salient of the plateau of Santa Rosa de Osos, Antioquia, 1400-1800 m, Flowers in May 1884. Tufts fairly large and dense. Flowers 3 to 9 on the shafts, lilac -pink. Lip with a white zone in front of the base; **6524** as *Odontoglossum vexillarium* var. *ecuadorensis*. Ecuador, grows as isolated specimens on trees in the dense and very damp forests around Chiguinda and Cuchipamba, on the eastern slopes of the East Andes of Sigsig, 1200-1800 m. 5 May 1887. Flowers up to 5 in the inflorescence, dark crimson pink, frequently crimson. Lip with a small, oblong white zone striped with red in front of the yellow lamina of the base. **Icon.** See diary 5 April 1887.

FIGURE 178. *Nidema boothii* (Lindl.) Schltr.

1119 as *Epidendrum*. Guatemala. 1882 expedition. **Icon t. 240.**

FIGURE 179. *Oerstedella endresii* (Rchb.f.) Hágsater

1141 as *Epidendrum endresii*. Costa Rica. March 1878. **Icon. t.239**

FIGURE 180. *Oerstedella wallisii* (Rchb.f.) Hágsater

Icon. t. 560. No given provenance.

OTHER LEHMANN COLLECTIONS: **4027** as *Epidendrum wallisii*. Colombia, without exact provenance. **Icon. t. 657. 7236** as *Epidendrum wallisii*. Colombia, grows on trees in the dense and damp park-like forests around Frontino, Antioquia, 800-1400 m. Flowers almost continuously, Oct. 1884 and Aug. 1891; **8190** as *Epidendrum wallisii*. Colombia, grows on trees in open forests, particularly readily in the vicinity of rivers, around Frontino, West Andes of Antioquia, 1000-1600 m, 30 Oct. 1884.

FIGURE 181. *Oliveriana egregia* Rchb.f.

Icon. t. 501. No given provenance.

OTHER LEHMANN COLLECTIONS: **7280** as *Chrysocycnis*. Colombia, grows in dense forests on the Rio Palmas and Rio Dulce, eastern slopes of the Páramo de Sonsón, Antioquia, 1500-2000 m. Dec. 1891. Sepals and petals reddish light yellow with dull brown veins. Lip light yellow. Column brownish, connate with the lip; **BT 231** Colombia, Minas Inza; **HK 807** Colombia, grows on trees in dense woods of Popayán, 1700-2600 m. Dec. 1891; **HK 904.** Without exact locality.

FIGURE 182. *Oncidium aspidorrhinum* (F.Lehm.) M.W.Chase & N.H.Williams

10021 *Odontoglossum aspidorrhinum* (type). Colombia, western slopes of the West Andes of Cauca, 2000-2500 m.

OTHER LEHMANN COLLECTION: **7267** as *Odontoglossum aspidorrhinum* F. Lehm. Colombia, grows on trees in the dense forests around Briceno and Santa Barbara, near Yarumal, Antioquia. 1800-2000 m. Nov. 1891.

FIGURES 183 and 184. *Oncidium alexandrae* Bateman

HK 160. No given provenance.

OTHER LEHMANN COLLECTIONS: **201** as *Odontoglossum crispum* Lindl. var. *lehmannii* Rchb.f. Colombia, Dense woods between Isala and Sebondoy, Pasto, 2500 m. Flowers Dec. to March; **494** as *Odontoglossum crispum* Lindl. Colombia, grows on trees between Santiago to Sebondoy, Eastern Cordillera of Pasto, 2000 m, 20 Feb. 1880. **2397** Colombia, Tolima, near La Arenosa on the Rio Cabrera, 2000-2400 m, 9 Jan. 1883; **6004** Colombia, grows on trees in dense forests on the eastern slopes of the Central Andes of Popayán, 1800-2500 m. Flowers from January to March. Also on Páramo de las Delicias. NOTE This is the variety with the smallest flowers. It is smaller than the real variety *lehmannii*, which originates from the East Andes of Pasto; **8059** Colombia, grows on trees in the dense woods around Santiago, Putumayo and Sebondoy, East Andes of Pasto, 1800-2300 m. Flowers Jan. and Feb.; **8552** Colombia, woods above Pacho, western highlands of Zipaquia, 1800-2500 m. Flowers in Feb. and March. Also between Fasataria and Chiquiniquira, highlands of Bogotá; **HK 3** Colombia, on trees in dense forests around Pasto; **HK 4** Colombia. State of Cundinamarca, above Fusagasuga and Pasca, 2000-2500 m, March 1892; **BT 138, 139** Without provenance.

FIGURE 185. *Oncidium praestanoides* M.W.Chase & N.H.Williams

10009. Icon. t. 633. No provenance given.

FIGURE 186. *Oncidium cristatum* (Lindl.) Beer

HK 4 – Ecuador, grows on trees in dense woods at Pacayurcu above Zaruma and above Ayabamba and Paccha, 1300-1700 m. Flowers in May. **Icon. t. 1012.**

OTHER LEHMANN COLLECTIONS: **6263** Ecuador. Grows on trees in the dense forests between Huaca and

Tuza, 2500-2800 m. Flowers in June and July 1886. Clumps of plants almost always small. Pseudobulbs ovoid-oblong, longitudinally plicate, bearing two flowers. Leaves dark yellow-green. Inflorescence a spike-like raceme with a slight tendency to branch and bearing up to 12 or more flowers. Sepals dull chestnut brown with yellow base and tips. Petals yellow spotted with red-chestnut brown. Lip yellow with a brownish zone in front of the crests; **6270** as *Odontoglossum denticulatum*. Ecuador, grows on tall trees in the dense, damp forests on the western slopes of the West Andes of Quito, 2000-2500 m. Flowers in June and July. Clumps of plants small and dense. Pseudobulbs ovoid-oblong, strongly compressed, rugose, longitudinally plicate, brown-green. Leaves longly cuneate, narrow, sharply pointed, dark green. Inflorescence a loose spike-like raceme with from 5 to 12 flowers. Sepals ochre-brown. Petals ochre-brown, spotted and transversely striped with yellow. Lip yellow with a small reddish brown longitudinal zone in the middle. **HK 21, 24** Ecuador, no exact provenance; **HK 25** Ecuador, grows on trees above Zaruma and Paccha.

FIGURE 187. *Oncidium cruentoides* M.W.Chase & N.H.Williams

6550 as *Odontoglossum cruentum* Rchb.f. Ecuador, grows on trees in the dense woods between Granadillas and Churrucos, on the eastern slopes of the East Andes of Sigsig, 2000-2500 m. Flowers in April and May. Clumps of plants generally small, densely caespitose. Pseudobulbs ovoid-oblong, strongly compressed, rugose and longitudinally plicate, brown-green, from 7 to 11 cm in length and 3 to 4 cm in breadth, two-leaved. Leaves robust, brown-green. Inflorescence a simple scape-like raceme, up to 50 cm in height. Sepals and petals red-brown with yellow tips and base. Lip yellow with a red-brown zone in front of the crests. **Icon. t. 629.**

FIGURE 188. *Oncidium cuculligerum* (Schltr.) M.W.Chase and N.H.Williams

Icon. t. 701 as *Sigmatostalix*. Colombia, Tocota, W Andes of Cali, 1700-2000 m, March-April.

OTHER LEHMANN COLLECTION: **8074** Colombia, Tocota, W Andes of Cali, 1700-2000 m.

FIGURE 189. *Oncidium eliae* (Rolfe) MW.Chase & N.H.Williams

6558 as *Sigmatostalix eliae* Rolfe. Ecuador, grows on trees in the dense and very damp forests around Chiguinda, East Andes of Cuenca, 1600-1900 m. Flowers in April and May. **Icon. t. 169.**

OTHER LEHMANN COLLECTION: **HK 1123** Same locality. March and April. Tufts of plants generally small. Pseudobulbs flat, compressed, smooth. Leaves dark green. Flowers yellow spotted with red-brown. **Icon. t. 717.**

FIGURE 190. *Oncidium harryanum* (Rchb.f.) M.W.Chase & N.H.Williams

7253 as *Odontoglossum harryanum* Rchb.f. Colombia, grows on trees in the dense and damp forests around La Bramadora, near Dolores, on the Alto de Guanacas and in other places on the northern highlands of Santa Rosa, Antioquia, 1800-2300 m. Flowers in May and June. Tufts of plants rarely large. Pseudobulbs oviform, flat, plicate from 4 to 8 cm in length and 3 to 4 cm in breadth, two-leaved. Leaves robust, almost leathery, bluish light green. Floral shoot three- to twelve-flowered, simple. Flowers up to 9 cm in diameter, very sweet-scented. Sepals and petals red-brown, almost olive-brown with a few yellow-green transverse spots, the latter striped with yellow at the base. Lip the basal half purple-red with whitish nerves, the hairy crests yellow, the apical half white or yellow-white. Column white-yellow. nom. vern. in Antioquia. 'La Reina'. **Icon. t. 624.**

FIGURE 191. *Oncidium lehmannii* (Rchb.f.) M.W.Chase & N.H.Williams

10005. No provenance given.

OTHER LEHMANN COLLECTIONS: **282** as *Odontoglossum cristatellum* Rchb.f. Ecuador, Nariño, Laguna Cocha; **491** Ecuador, Putumayo, Sibundoy; **s.n.** *Odontoglossum lehmannii* (type). Ecuador, Tunguragua, 2700 m.

FIGURES 192 and 193. *Oncidium luteopurpureum* (Lindl.) Beer

6786 as *Odontoglossum luteopurpureum* var. *sceptrum*. Colombia, grows on trees in the dense and damp forests of the Central Andes of Popayán, 2200-2600 m. Flowers from July to Sept. Plants moderately large, densely caespitose. Pseudobulbs ovoid-oblong, moderately compressed, rugose and flatly plicate, up to 10 cm in length and from 4 to 4.5 cm in breadth. Flower stalk up to 1 m in height, spike-like, racemose, rarely with a branch, bearing 12 to 30 flowers. Sepals almost entirely dark chestnut brown, the tips yellow. Petals of similar colour but somewhat more yellow at the tips and at the base. Lip yellowish white. **Icon. t. 627.**

FIGURE 194. *Oncidium pictoides* MW.Chase & N.H.Williams

8257 Ecuador, grows on trees in the dense forests around Pacay-urcu above Zaruma. 1300-1700 m. Flowers in May. Plants very small, rarely having more than three bulbs on the rhizome. Pseudobulbs elliptical, flat, from 2.5 to 3 cm in length and 2 cm in breadth, one-leaved. Leaves thick, grass-like, from 5 to 9 cm in length and 1 to 1.5 cm in breadth, dark green on the upperside, greenish purple-red on the underside. Inflorescence spike-like, racemose, bearing from 5 to 10 flowers alternately standing on both sides. Sepals and petals brownish. Lip brick-red with a yellow tip. **Icon. t. 159.**

OTHER LEHMANN COLLECTION: **4337** as *Sigmatostalix picta* Rchb.f. Ecuador, forests of Nanegal, West Andes of Quito, 1000 m.

FIGURE 195. *Oncidium mirandum* (Rchb.f.) M.W.Chase & N.H.Williams

7208 *Odontoglossum mirandum* Rchb.f. Colombia, grows on trees in the dense and damp forests in the Montaña de Caramanta between Rio Sucio and El Jardin, Cauca-Antioquia, 2400-2800 m. 5 Aug. 1891. Plants moderately large. Pseudobulbs ovoid-oblong, flat with three deep plications on each side, two-leaved. Leaves robust, dark yellow-green, up to 15 flowers in closely arranged unbranched and overhanging panicles, from 40 to 50 cm in length. Flowers very sweetly scented. Sepals and petals cinnamon-brown with yellow borders and tips; lip of a delicate yellow colour at the base, borders and tip lemon-yellow with a cinnamon-brown zone in front of the large, two-toothed and white wart. Column of a delicate yellow colour with some brown at the tip. **Icon. t. 631.**

OTHER LEHMANN COLLECTION: **HK 18** as *Odontoglossum mirandum*. Colombia, San Pedro, Antioquia.

FIGURE 196. *Oncidium rhynchanthemum* (Rchb.f.) M.W.Chase & N.H.Williams

8551 as *Odontoglossum rhynchanthemum* Rchb.f. Colombia, grows around Pacho from 1900 to 2400 m altitude, on trees in the dense forests and flowers in Feb. and March. Sepals and petals of a delicate gamboge yellow colour, the former with a chestnut-brown zone in the middle and a few similar lines at the base; the latter with three such stripes at the base. Lip white, greenish at the base of the claw. Column white, greenish at the base. Plants moderately large, dense and firm. Bulbs but slightly compressed, rugose and longitudinally plicate, brownish and shiny. Leaves hard-papery, dark green. Inflorescence a spike-like raceme, very loosely arranged, 3- to 7-flowered. **Icon. t. 626.**

FIGURE 197. *Otoglossum globuliferum* (Kunth) N.Williams & M.Chase

Icon. t. 261. Colombia, no given provenance.

8561 as *Oncidium globuliferum*. Colombia, grows on trees in the open forests around Pacho, department of Cunidinamarca, 1700-2300 m. Flowers in January. Rhizome wire-like, thin, up to 4 m in length, winding. Pseudobulbs oblong-elliptic, very flat, up to 3cm in length and from 2 to 2.5 cm in breadth, brown and shiny. Flowers single, rarely in twos, on very short stalks, of a luminous gamboge yellow colour, the sepals and petals striped at the base with carmine, the lip with a few brick red spots around the crest.

FIGURE 198. *Peristeria elata* Hook.

8152. Colombia, Las Juntas del Dagua, 0-600 m, Oct. **Icon. t. 613.**

FIGURE 199. *Pescatoria coelestis* (Rchb.f.) Dressler

6878 as *Bollea coelestis* Rchb.f. Plants generally forming large and somewhat loose masses. Rhizome elongated up to 30cm in length, forming at intervals of dense and many-leaved fans of leaves from 5 to 10cm apart. Leaves membranaceous-herbaceous, with strongly protruding ribs on the underside, yellow-green. Flower-stalks up to 25cm in height, round. Flowers fleshy, brownish violet with a somewhat darker zone in the anterior half of the sepals and petals. The callus of the lip yellowish. Colombia. Grows on trees in the dense and damp forests on the upper western slopes of the West Andes of Cali, 1700-2200m. Flowers from March to July. **Icon. t. 645.**

OTHER LEHMANN COLLECTIONS: **2849** Colombia. Salado, Western Andes of Cali, 1600m. **Icon. 2971** Colombia. Between Rio Dagua and Rio Digua, Salado, 1500m, 6 August 1883. **8036** Colombia. Grows on trees, always some 1 to 3m above the ground, in the dense and damp forests around Tocota on the upper western slopes of the West Andes of Cali, 1600-2100m. Flowers from May to July. **BT 103** Without exact locality.

FIGURE 200. *Pescatoria dayana* Rchb.f.

HK666 Without given provenance. *Pescatoria* is a small genus of about 16 species distributed in the mountains of the tropical Americas from Costa Rica south to Ecuador. Reichenbach named it after M. V. Pescatore of the Chateau Celle St. Cloud (near Paris), who had a fine collection of orchids at the time. The spelling of the generic name is problematic. Reichenbach used *Pescatoria* but many subsequent authors have treated that as an orthographic error and have corrected it to *Pescatorea*. Reichenbach, who considered it a “very curious novelty”, described *Pescatoria dayana* in the *Gardeners' Chronicle* of 1872, naming it for John Day, the well-known London-based orchid grower, who flowered the type collection. He thought that it came from Colombia, having also received a preserved flower from Gustave Wallis. The provenance of Lehmann's collection (**HK666**) is unknown. **Icon. t. 608.**

FIGURE 201. *Pescatoria klabochorum* Rchb.f.

4085 as *Pescatoria dayana*. The plant forms fairly large tufts. Leaves of a soft texture, yellow-green. Flowers milky white, reddish violet at the tips of the sepals and petals. Lip beset with villous papillae, reddish-violet. Grows in Colombia, in the state of Cauca: on trees in damp, dense woods around Juntas on the Rio Dagua, 50-400 m, 20 April 1885. **Icon. s.n.**

OTHER LEHMANN COLLECTIONS: **960** Colombia, without exact provenance, 1877. **2986** Colombia, Las Pavas, 1500-2000m. 7 Aug. 1883. Flowers white with crimson tips. **6877** as *Pescatoria dayana*. Colombia, grows on trees in the dense and damp forests above La Naranja and Las Juntas on the Rio Dagua, 500-1600m. Flowers from May to Aug. **Icon. 8039** Colombia, grows on trees in the dense and damp forests on the Rio Dagua, 400-1300 m. Flowers from May to Aug. **HK659** Colombia, grows on trees in woods at Papagalleros, 1000-1500 m.

FIGURE 202. *Pescatoria lehmannii* Rchb.f.

25 Colombia, grows on trees much above the ground, in dense damp forests between Quebrada de Colombia. Cuyambi and San Francisco on western slopes of Western Andes of Túquerres, 900-1300 m, Sept. 1878. **Icon. t. 609.**

OTHER LEHMANN COLLECTIONS: **42** as *Pescatoria lehmannii* var. *albida*. Colombia, grows on trees in dense forests between Rastradero and the Lagunas of Chimbusa on the coast of Tumaco, 11 Aug. 1880. **8037** Colombia, grows on trees close to the ground, in the dense and very damp forests on the Quebrada Cuyambi, and on the Rio Imbi and Cartagena, western slopes of the Andes of Túquerres, 800-1300 m. Flowers from April to Aug. 1878.

FIGURE 203. *Phragmipedium boissierianum* (Rchb.f.) Rolfe

8045 as *Selenipedium reticulatum*. Ecuador, grows on wet accumulations of rubble on the steep river banks of the Rio Bambusaro and Timbara, East Andes of Loja, 800-1200 m. Plants always small. Leaves leathery, dark yellow-green, up to 1m in length. Inflorescence up to ten-flowered, the flowers developing in succession. Sepals light greenish yellow with sharply marked darker veins forming a net pattern. Petals greenish white, veined with darker colour, whitish on the inside. **Icon. t. 660.**

FIGURE 204. *Phragmipedium schlimii* (Linden & Rchb.f.) Rolfe (as *Selenipedium schlimii*)

8048 as var. *album* Colombia, grows on damp heaps of rubble, readily on landslips, in the deep mountain dales around Barbosa and Don Matías, also around Angostura, Antioquia, from 1400 to 1700 m. Grows together with 8047. Flowers of a pure white colour, with only this red frame around the opening of the slipper. **Icon. t. 658.**

OTHER LEHMANN COLLECTIONS: **7259** Colombia, grows on rocks or on slopes covered with rubble on which have collected masses of clay, on the Rio Grande near Don Matías, 1500-1800 m. This species occurs also around Santo Domingo and around Sonson in Antioquia. Large and beautiful specimens also occur around Angostura and on the Rio Canaverales. Sepals reddish light green. Petals reddish white, frequently of a pure white. Lip white or pink, with crimson stripes around the opening. **8047** as *Selenipedium schlimii* var. *roseum*. Sepals greenish white-pink. Petals and slipper white, the latter with a dark crimson frame around the opening. Column yellow. Colombia. Grows on damp heaps of rubble, readily on landslips, in the deep mountain dales around Barbosa and Don Matías, also around Angostura, Antioquia, from 1400 to 1700m.

FIGURE 205 and 206. *Phragmipedium wallisii* (Rchb.f.) Garay (neotype)

6868 as *Selenipedium caudatum* var. *wallisii*. Ecuador, grows on trees in the dense and very damp forests on the Rio Zamora, East Andes of Loja, 800-1200 m. Flowers in Oct. and Nov. Plants generally small. Leaves leathery, dark yellow-green, shiny. Inflorescence from two- to five-flowered. Sepals yellowish white with sharply standing out yellowish green veins. Petals greenish white at the base with reddish veins, lilac-brown in the lower part of the tips. Slipper reddish white with lilac-pink veins, the inside of a very delicate white colour with carmine dots on the border. **Icon. t. 659.**

10027 No provenance given. **Icon. t. 1007.**

FIGURE 207. *Plectrophora alata* (Rolfe) Garay

8380 Colombia, grows on trees in the dense forests around Cajamarca, West Andes of Roldanillo, 1000-1600 m, August 1895. Flowering from July to Nov. The plants form very dense, small, caespitose tufts. Leaves leathery, light green. Flowers on short and thin stalks. Sepals yellowish white. Petals white. Lip white in the throat, yellowish, thickly spotted with beautiful light red dots. **Icon. t. 163.**

FIGURE 208. *Pleurothallis ciliata* Knowles & Westc.

1120 as *Pleurothallis*. No provenance given. **Icon. t. 229.**

FIGURE 209. *Pleurothallis reginae* Garay

7075 as *Pleurothallis*. Colombia, Antioquia Prov. **Icon. t. 480**

FIGURE 210. *Pleurothallis scoparum* Rchb.f.

4513 as *Pleurothallis*. Ecuador, grows on moist rocks in dense, very damp forests around Chaca-yacu, at the foot of the West Andes of Cuenca, 500-800 m. Flowering in Oct. Tufts moderately large, dense. Leaves

leathery, light green. Flowers at the tips of the leaves. Sepals white, lilac at the tips. Petals and lip white flushed with lilac. **Icon. t. 450.**

OTHER LEHMANN COLLECTION: **s.n.** as *Pleurothallis*. Ecuador, Province of Pichincha, West Andes, c. 500 m.

FIGURE 211. *Pleurothallis truncata* Lindl.

Icon. t. 364. No provenance given.

OTHER LEHMANN COLLECTION: **332** as *Pleurothallis*. Ecuador, Calacali, 2800-3000 m, 28 Nov. 1880.

FIGURE 212. *Pleurothallis talpinaria* Rchb.f.

Icon. t. 356. No provenance given.

OTHER LEHMANN COLLECTION: **6920** Colombia Volcano of Sotara, Cauca, 2800-3300 m, June-July. **7063** Colombia, Paramo de Guerrero, near Zipaquira. Jan.-March.

FIGURE 213. *Ponthieva grandiflora* Rchb.f.

5318 Ecuador, grows on trees covered with mosses, in dense forests around Yerbabuena, upper western slopes of the West Andes of Cuenca, 2600-2800 m, flowering in Sept. and Oct. Tuber caterpillar-like, up to 6 cm in length. Leaves of a soft texture, slightly hairy, of a greasy light yellow-green colour. Flowers up to 10 on a simple stalk, opening in succession. Dorsal sepal greenish; lateral sepals greenish at the base, otherwise pinky white. Petals yellow, striped with ochre-brown. **Icon. t. 452.**

OTHER LEHMANN COLLECTION: **7635** Ecuador, Yerbabuena, West Andes of Cuenca, Oct. 1878. **HK 1227** Ecuador, between Yerbabuena and Pangor, West Andes of Cajabamba, 2600-2900 m, Dec.

FIGURE 214. *Ponthieva pseudoracemosa* Garay

Icon. t. 84. No given provenance.

OTHER LEHMANN COLLECTION: **6455** Ecuador, grows on heaps of porphyraceous rubble in the dense forests around Chagal on the western slopes of the West Andes of Cuenca, 2300-2700 m. April – Oct. 1888; **7110** Ecuador, grows on steep and damp mountain slopes around Shoray on the western slopes of the East Andes of Azogues, 1800-2400 m, Oct.; **7130** Ecuador, grows on steep slopes covered with rubble on the Rio Pastaza between Punapi and Baños, 1800-2400 m. Aug. and Sept. 1894.

FIGURE 215. *Porroglossum mordax* (Rchb.f.) Sweet

3620 Colombia, Dept. of Cauca, western slopes of Munchique near Popayan, 2300 m. **Icon. t. 350.**

FIGURE 216. *Porroglossum muscosum* (Rchb.f.) Schltr.

2810 Colombia, from Munchique, 2000-2300 m. With long-haired flower stalks. **Icon. t. 351.**

FIGURE 217. *Psygmorechis pumilio* (Rchb.f.) Dodson & Dressler

Icon. t. 258. No provenance given.

OTHER LEHMANN COLLECTIONS: **HK 1052** Colombia, Frontino, Antioquia, 1200-1600 m. **HK 1053** Colombia, Soledad, Sayja and Timbiqui, June 1901.

FIGURE 218. *Restrepia antennifera* H.B.K.

Icon. tt. 353, 354. No given provenance.

OTHER LEHMANN COLLECTIONS: **6247 (in part)** Colombia, grows on trees in the dense forests on the western

slopes of the volcano of Sotara and above Almaguer, 2000-2800 m. Flowers in June and Oct. and Nov. **6257** Colombia, grows on trees in the dense forests of the Tajumbina between La Cruz and El Tablon, province of Pasto, 2500-2800 m. Flowers in June and July.

FIGURE 219. *Rodriguezia lehmannii* Rchb.f.

3638 Colombia, grows in woods on the highlands of Popayán, 1500-1800m. Flowers in April and May. Also 1000-1750m, April 1878 & near Piagua, 1740m. 5 March 1884. **Icon. t. 409.**

OTHER LEHMANN COLLECTIONS: **4266** Colombia, grows on Mimosa near Popayán at Rio Ambato and Palo, 1000-1750m, 18 March 1884. **7251** Colombia. Grows fairly abundantly on the ground, very rarely on trees, in the dense forests around Frontino, Antioquia, 1600-1800 m, Sept. 1891. **Icon. t. 408; HK 1006** Colombia, grows on trees in woods at La Tapa and Inza.

FIGURE 220. *Sobralia dichotoma* Ruiz & Pav.

BT 50 as *Sobralia mosquerae* Lehm. ined. Colombia, Pipulquer. **Icon. t. 839.**

OTHER LEHMANN COLLECTIONS: **8599** Colombia, grows in bush formations in the mountain savannahs on the Rio Paez, Tolima, 1000-1600 m. Flowering in March. Masses of plants large and caespitose. Stems up to 4 m in height, rarely thicker than the thumb, leafy on both sides. Leaves leathery, firm, yellow-green and shiny. Flowers arranged in loose and broad racemes standing in the axils of the leaves in the vicinity of the top, very sweetly scented. Sepals and petals white, slightly washed over with pink, the former reddish on the outside. Lip lilac-brown, yellowish in the throat; **BT 1202** Colombia, without exact provenance; **BT 1206** Colombia, Patico.

FIGURE 221. *Sobralia violacea* Lindl.

6114 Colombia, grows frequently on ground covered with rocks in the open bush-wood formations around Dolores and above Melgar, Tolima, 1400-1700 m. Flowering in Jan. and Feb. Tufts of plants for the most part small only, fairly dense. Stems the thickness of a quill and up to 1 m in height. Leaves leathery, slightly plicate, yellow-green. Flowers crimson, the lip darker. **Icon. t. 454.**

FIGURE 222. *Specklinia grobyi* (Batem. ex Lindl.) F.Barros

48 as *Pleurothallis*. Colombia, grows on trees in dense woods near Buenaventura. 16 Aug. 1880. Plants forming small, dense, graceful tufts. Stems thin, up to 1.3 cm long, entirely clothed in membranous, paleaceous sheaths. Leaves distinctly stalked, long-elliptic, sharply pointed, dark green, 1.5-2 cm long, 0.5-0.8 cm wide. Inflorescence filiform, up to 6cm high, two-sided, alternately bearing small flowers on a stalk 3 cm in length. Flowers gaping; dorsal sepal long, hood-shaped, yellow with a reddish base, up to 5 mm long; lateral sepals connate, navicular with the point directed downwards, of the same size and colour as the former, only considerably wider. Petals a delicate light yellow. Lip narrowly tongue-shaped, curved downwards, lilac-red. **Icon. t. 280, t. 295.**

OTHER LEHMANN COLLECTIONS: **4520** as *Pleurothallis*. Colombia, grows on trees, especially on oaks, in dense park-like woods around Piendamó and Palace, plateau of Popayán, 1600-1800 m. Flowering in Sept. and Oct; **BT 329** as *Pleurothallis*. Colombia, on trees and rocks in woods at Buenaventura, 9 Feb. 1900; **HK 151** as *Pleurothallis*. Colombia, Rio Dagua.

FIGURE 223. *Stanhopea carchiensis* Dodson

Icon. t. 468. No provenance given.

FIGURE 224. *Stanhopea florida* Rchb.f.

6821 No provenance given. **Icon. t. 655.**

OTHER LEHMANN COLLECTIONS: **6579** Ecuador, E Andes of Sigsig, 1500-1800 m, April and May; **HK 786** Colombia, Popayan, Santo Domingo de los Colorados.

FIGURE 225. *Stanhopea frymirei* Dodson

8614 Colombia, no exact provenance given. **Icon. t. 467.**

FIGURE 226. *Stanhopea jenischiana* F.Kramer ex Rchb.f.

6491 Colombia, Cauca, Torito.

OTHER LEHMANN COLLECTIONS: **3651** Colombia, Popayan, 1500-1700 m. **HK 784** Santo Domingo de los Colorado; **HK 778, 785, 786, 792, 793** Popayan.

FIGURE 227. *Stellilabium andinum* (L.O.Williams) Garay & Dunst. (type)

8358 as *Trichoceros*. Colombia, grows on *Psidium guayava* in the moderately dense and damp forests around Pipulquer, western slopes of the West Andes of Tuquerres, 1500-1700 m. Flowering in July and Aug. Plants small. Leaves herbaceous, yellow-green. Flowers blooming in succession. Sepals and petals reddish-light yellow, veined with dull red. Lip chestnut-brown, darker at the base. **Icon. t. 144.**

FIGURE 228. *Stellilabium astroglossum* Schltr.

8357 as *Trichoceros*. Ecuador, grows on trees, usually on *Psidium guyava*, in the dense and damp forests around Chiguinda on the eastern slopes of the East Andes of Sigsig, 1000-1700 m. Flowering in Aug. and Sept., rarely still in Oct. Plants very small. Leaves sword-shaped, herbaceous, brownish dark green. Flowers appearing in succession. Sepals and petals greenish yellow, washed over with brown. Lip dark brown. **Icon. t. 718.**

OTHER LEHMANN COLLECTION: **10012** Ecuador, grows on trees in dense forests at Zamora, East Andes of Loja, 800-1200 m. **Icon. t. 43.**

FIGURE 229. *Stanhopea pozoi* Dodson & D.Bennett

Icon. t. 543.

FIGURE 230. *Stellilabium ecuadorensis* (Schltr.) Dodson et Escobar **comb. nov.**

Sodirolella ecuadorensis Schltr. in Fedde, Repertorium Specierum Novarum Regni Vegetabilium, Beihefte 8: 108 (1921). Type: Ecuador, Chimborazo, *A. Sodiro* s.n. (holo. B†).

8359 as *Trichoceros*. Ecuador, grows on trees, usually *Psidium guayava*, in the dense bushy woods around Guamampata and Palletanga, West Andes of Alausi, 600-1500 m. Flowering in Sept. and Oct. Plants tiny. Leaves herbaceous, yellow-green, frequently reddish. Flowers blooming in succession, arranged in two-sided, spike-like racemes. Sepals and petals lemon-yellow. Lip and column white, the former yellow at the tip. **Icon. t. 145.**

FIGURE 231. *Telipogon nervosus* (L.) Druce

6874 Colombia, grows on trees and amongst bushes in the dense forests around La Boca del Monte on the western slopes of the highlands of Bogotá, 2400-2600 m. Flowering in Jan. and Feb. Flowers dull yellow longitudinally striped with thin brown-red stripes. **Icon. t. 40.**

FIGURE 232. *Telipogon obovatus* Lindl.

4566 Ecuador, grows on trees in the dense forests around Yuerbabuena and Molleturo, West Andes of Cuenca,

2600-2800 m. Flowering in Aug. and Sept. 1876. Plants small. Leaves herbaceous, yellow-green. Flowers lemon-yellow, the exceptionally large, hairy column red-brown. **Icon. t. 143.**

OTHER LEHMANN COLLECTION: **HK 1175** Ecuador, Rio Hondo, Yuerbabuena.

FIGURE 233. *Teuscheria elegans* Garay

7244 as *Maxillaria*. Colombia, grows on trees on the banks of the rivers around Frontino, Antioquia. 1000-1600 m. Flowering in Sept. 1891. Rhizome thin, up to 50cm in length, forming small oviform pseudobulbs at short intervals apart. Pseudobulbs hidden in large and dry sheaths, one-leaved. Flowers solitary on short and thin stalks. Sepals and petals milky white with pink tips, entirely of this colour on the outside and yellowish at the base. Lip trilobed, the middle-lobe white, the lateral ones orange striped with red. Column white. **Icon. t. 515.**

FIGURE 234. *Ticoglossum oerstedii* (Rchb.f.) Halbinger

1056 as *Odontoglossum*. Costa Rica, Volcán Irazú, 2800m. 20 Jan. 1882. **Icon. t. 202.**

OTHER LEHMANN COLLECTION: **s.n.** same locality, Dec. 1881.

FIGURE 235. *Ticoglossum krameri* (Rchb.f.) Halbinger

Icon. t. 15 Lehmann's illustration, drawn while he was in Costa Rica in 1881 and 1882, does not have an accompanying herbarium specimen as far as can be determined. It is endemic to montane forests, between 600 and 1200 m elevation, on the Pacific slope in Costa Rica. This zone has now largely been destroyed for coffee and sugar cane plantations so that this orchid is now largely confined to gallery forests.

FIGURE 236. *Trichocentrum longicalcaratum* Rolfe

3330 Colombia, Los Robles, near Anserma Nueva, Cauca, 1500-1600 m, Nov. 1884. **Icon. t. 312.**

OTHER LEHMANN COLLECTION: **8379** Colombia, Cajamarca, Roldanillo, 1400-1800 m, July – Nov.

FIGURE 237. *Trevoria chloris* F.Lehm.

10035 (type). Colombia, West Andes of Cauca, 1500-1700 m. **Type. Icon. 827.**

FIGURE 238. *Trichocentrum tigrinum* Linden & Rchb.f.

HK 1002 Ecuador, Jipijapa, Santa Rosa & Rio Calena, between Ayabam and Zaruma, 0-1000 m, Sept. 1876. **Icon. t. 504.**

OTHER LEHMANN COLLECTION: **HK 1001** Ecuador, Santa Rosa.

FIGURE 239. *Trichoceros antennifer* (Humboldt & Bonpland) Kunth

6869 Ecuador, grows on the ground, especially readily on agaves in hedges around Cuenca and Sigsig, 2200-2800 m. Flowers almost continuously, especially in May and June. The plants forming loosely squarrose and small tufts. Rhizome stems thin, brittle, up to 20 cm in length. Leaves thick, leathery, brown-green, frequently entirely copper brown. Inflorescences up to 36 cm in height, bearing up to 10 flowers, thin-terete. Flowers opening in succession, widely open. Sepals and petals dull Indian yellow, thickly longitudinally striped with lilac-red. Lip of a similar ground colour. Wings striped with red, the middle lobe striped and spotted at the base. Column black-brown. **Icon. t. 545.**

OTHER LEHMANN COLLECTION: **HK 1168** Ecuador, grows on rocks near Loja, 200-2400 m. Flowering in Aug.

FIGURE 240. *Trichopilia conceptionis* Kraenzl.

Icon. t. 1011 Colombia, Rio Huangobio, highlands of Popayán, 1600-1800 m. Flowering in Nov. and Dec. 1890. Fritz Kränzlin described *Trichopilia conceptionis* in 1920 in *Notizblatt den Botanischer Garten Berlin-Dahlem* based upon a Colombian collection made by Kalbreyer from Concepcion, Medellín, in the department of Antioquia.

FIGURE 241. *Trichopilia fragrans* (Lindl.) Rchb.f.

6794 Colombia, grows on trees in the dense forests above Inza, 1600-2000 m. Flowering in April and May. Plants moderately large, densely caespitose. Pseudobulbs linear-oblong, flat, 10cm in length and from 2 to 3.5 cm in breadth. Leaves leathery, dark steel-green. Inflorescence two- to three-flowered. Flowers sweetly scented. Sepals and petals greenish white with undulate-curlly margins. Lip of a delicate white with an orange-yellow zone in the throat of the lip. **Icon. t. 401.**

OTHER LEHMANN COLLECTIONS: **4018** Colombia, State of Antioquia, grows on trees and rocks above Barbosa, 1800m, 6 Oct. 1884; **6792** Colombia, grows on trees in the moderately dense forests on the highlands of Popayán, 1600-2000 m. Flowering in Oct. and Nov. Also Andes of Santiago, Putumayo and Sibandoy, Pasto Province, 2000-2200 m. Also Pasto, 1800-2400 m; **6795** Colombia, grows on trees in the dense forests around Santiago and Putumayo, East Andes of Pasto Province, 2000-2200 m. Flowering in April and May; **6796** Ecuador, grows on trees and frequently on lava soil between open bushes on Volcán Tunguragua, 1600-2000 m. Flowering from March to May; **10030** Without provenance. **Icon.;** **BT 90 & HK 1016** Colombia, Piedra Aricha; **BT 91** Colombia, grows on trees in dense woods on Rio Huangobio and in the highlands of Popayán, 1700-1800 m. Flowering in Nov.; **HK 1015** Colombia. Popayán.

FIGURE 242. *Trichopilia laxa* (Lindl.) Rchb.f.

BT 92 Colombia, grows in woods on the highlands of Popayán, 1700-2200 m. Flowering in Oct. and Nov. **Icon. t. 466.**

FIGURE 243. *Trichopilia rostrata* Rchb.f.

Icon. t. 402. Described in 1872 in Saunders' *Refugium Botanicum*, naming it for its erose, rostrate column-apex. He based his description on two specimens imported from Colombia, the first in 1866 by Messrs Hugh Low & Co. of Upper Clapton, and the second by Jean Linden of Brussels in 1871 or 1872. It is found in both Colombia and Ecuador, although Lehmann's drawing is without an accompanying herbarium collection, and its provenance is unknown.

FIGURE 244. *Trichosalpinx multicuspidata* (Rchb.f.) Luer

2386 as *Pleurothallis* Colombia, Department of Tolima, west slopes of Alto de Osevas, 2800-3200 m, 11 Jan. 1883. **Icon. t. 283.**

FIGURE 245. *Trigonidium insigne* Rchb.f. ex Bentham & Hook.f.

BT 235 Colombia, Rio Timbiqui, 0-400 m. **Icon. t. 1104.**

OTHER LEHMANN COLLECTIONS: **HK 806** Colombia, Timbiqui, Aug. 1903; **HK 806** Colombia, grows on trees in the dense forests at Barbacoas, Hylaea. Flowering in March.

FIGURE 246. *Trisetella triaristella* (Rchb.f.) Luer

7010. Ecuador, Rio Zamora, 800-1200 m, Oct.-Jan. 1888. **Icon. tt. 132, 207.**

FIGURE 247. *Trisetella tridactylites* (Rchb.f.) Luer

1187 Costa Rica, without exact provenance.

1980 Costa Rica, without exact provenance.

FIGURE 248. *Vanilla palmarum* Lindl.

8378 Colombia, Roldanilla, Cauca valley, 1000 m, Sept. **Icon. t. 555.**

FIGURE 249. *Warrea warreana* (Lodd. ex Lindl.) C. Schweinf.

8610 Colombia, Highlands of Popayan, 1000-1400 m, Jan.-Feb. **Icon. t. 648.**

OTHER LEHMANN COLLECTIONS: **8611** Colombia, near Inza, 1300-1600 m, Feb.-March; **s.n.** Rio Orejas and Rio Mondamo, Cauca, 1200-1500 m. Jan.-Feb. 1884.

FIGURE 250. *Warczewiczella discolor* (Lindl.) Rchb.f.

8040 as *Chondrorhyncha*. Colombia, grows on trees in the dense and damp forests around Las Juntas del Dagua, West Andes of Cali, 300-600 m. Flowers in July. Masses of plants small but dense. Leaves of a soft grass-like texture, light green. Flowers of a delicate greenish white colour. **Icon. t. 53.**

FIGURE 251. *Warczewiczella ionoleuca* Rchb.f.

Icon. t. 506. H.G. Reichenbach described this orchid as *Zygopetalum ionoleucum* in 1865 in the *Botanisches Zeitung* based on a collection by Blunt from Colombia and flowered by Messrs Hugh Low & Co. of Upper Clapton, London. It was transferred to the present genus in 1920 by Rudolf Schlechter in the *Beihefte* of Fedde's *Repertorium* as *Warszewiczella ionoleuca* Rchb.f. No reference to a Lehmann collection is provided on his illustration reproduced here.

FIGURE 252. *Warczewiczella amazonica* Rchb. f. & Warsz.

Icon. t. 326. No provenance given.

FIGURE 253. *Warczewiczella marginata* Rchb.f.

Icon. t. 325. No given provenance.

OTHER LEHMANN COLLECTIONS: **3357** as *Warszewiczella velata* Rchb.f. Colombia, grows on trees in the dense woods of the Cauca valley and at Belalcazar, near Anserma-vieja, 1000-1500 m. Flowers from July to November. Also at Anserma-nueva, 1000 m, 27 Oct. 1883; **8600** as *Warszewiczella velata*. Colombia, grows on trees in the dense bushy woods on the Cesta de Limon and around Uramita, West Andes of Antioquia, 1000-1500 m. Flowers in Oct.; **HK 663** as *Warszewiczella velata*. Colombia, dense woods of Cali valley, near Tulua, 800-1000 m; **HK 664** as *Warszewiczella velata*. Colombia, grows on trees in dense woods at las Juntas del Dagua, West Andes of Cali, 300-1000 m; **BT 1318** as *Warszewiczella velata*. Colombia, grows on trees in the dense woods on the Rio Cajamarca and Rio Garrapatos, West Andes of Roldanillo. 1000-1600 m. Flowers from Sept. to Nov.

FIGURE 254. *Xylobium colleyi* (Batem. ex Lindl.) Rolfe

8440 Ecuador, grows on trees in the dense forests near Zamora on the eastern slopes of the East Andes of Loja, 1700-1800 m. Plant forming a close and firm caespitose mass. Pseudobulbs ovoid-oblong, smooth, not compressed, from 4 to 5 cm in length and from 2 to 2.5 cm in diam. Leaves robust, stiff, slightly plicate, yellow-green. Flowers in a densely packed raceme sitting close to the pseudobulb, half-closed. Sepals and petals reddish white, the tips on the outside slightly reddish. Lip white-yellow, the thick and spoon-shaped tip thickly striped with dull lilac-brown on the outside and inside. Column yellow-white, the staminode yellow, lined with brown on the front. **Icon. t. 561.**

FIGURE 255. *Xylobium corrugatum* (Lindl.) Rolfe

4529 Colombia. West Andes of Cali, 1500-2000 m. **Icon. t. 484.**

OTHER LEHMANN COLLECTIONS: **4329** Colombia, grows on trees in dense woods at Inza and La Ceja on the Rio Ullucos, 1600-1800 m. Flowering in April and May; **HK 692** as *Xylobium* Colombia, grows on trees at Tocota, 1500-2000 m.

FIGURE 256. *Zootrophion dayanum* (Rchb.f.) Luer

6933, 6934 as *Cryptophoranthus argus* Ecuador, Amboea, 1200-1700 m. **Icon. t. 301.**

OTHER LEHMANN COLLECTION: **7050** Ecuador, W Andes of Tuquerres, Pipulquer, 1500-1800 m.

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BIOGRAPHIES

ANDRÉ, Edouard François (1840 - 1911)

Born in Bourges, Cher, France.

Plant collector and landscape architect.

Born July 17th 1840. Collected in Ecuador in 1870s with Benedict Roezl. Died at La Croix, near Bléré in France.

Herbarium specimens and some coloured drawings at Kew.

BARBOSA RODRIGUES, João (1842 - 1909)

Born in Minas Gerais State, Brazil.

Botanist.

One of the first native-born Brazilian botanist, taxonomist and explorer. He was first interested in orchids but his other main interest was palms. Later Director of the Rio de Janeiro Botanical Garden. Floods destroyed his herbarium in the 1940s. His watercolour illustrations in six volumes survive, five in the Rio de Janeiro Botanical Garden, one volume in the Oakes Ames Herbarium, Harvard University. Copies of all of them are at Kew.

Commemorated by the orchid genera *Barbosa* Becc., *Barbosella* Schltr. and *Rodriguezia* and *Rodrigueziella* O. Ktze.

Herbarium specimens have not been located and may have been destroyed.

Major Publications: *Genera et Species Orchidarum Novarum*, 2 Vols. (1877-1882).

BATEMAN, James (1811 - 1897)

Born in Bury, Lancashire, England.

Orchid grower and author.

After making his fortune in iron, engineering and banking, he became fascinated with tropical plants as a young man and employed Thomas Colley to collect for him in British Guiana. He also received plants from George Ure Skinner in Guatemala and successfully grew and flowered many orchids at his home at Biddulph Grange. He was a friend and patron of the leading orchid authorities. His monumental *Orchidaceae of Mexico and Guatemala* did much to popularise orchid growing as a hobby and introduced a large audience to the beauties of Central American orchids. Flowers from Bateman's early successes are preserved in John Lindley's herbarium at Kew. He died at Worthing, West Sussex, England.

Commemorated in the genus *Batemannia* Lindl. and many orchid species.

Herbarium specimens at Kew.

Major Publications:

Orchidaceae of Mexico and Guatemala (1837-43).

Guide to Cool Orchid Growing (1964).

Monograph of *Odontoglossum* (1864-74).

Second Century of Orchidaceous Plants (1867).

BENTHAM, George (1800 - 1884)

Born in Stoke, Plymouth, Devonshire, England.

Plant taxonomist.

LLD Cantab 1874; Fellow of the Royal Society (FRS) 1862; Fellow of the Linnean Society (FLS) 1826. He was the nephew of Jeremy Bentham and became one of the leading taxonomists of his day. He was Secretary of the Horticultural Society of London (1829-40). He was a great friend and collaborator of Joseph Hooker. Bentham was wealthy in his own right and worked for many years at the Royal Botanic Gardens where he was largely self-financed. President of the Linnean Society (1861-74).

Commemorated by orchid genera *Benthamia* Lindl., *Neobenthamia* Rolfe and others.

Herbarium specimens at Kew.

Major Publications: Orchidaceae in Joseph Hooker's *Genera Plantarum* (1862-83).

BLUNT, Henry (fl.1860 - 1870)

Born in UK.

Plant collector.

Prolific collector in Brazil and the northern Andes for Messrs Hugh Low & Co. and later for Richard Bullen.

BONPLAND, Aimé-Jacques-Alexandre (1773 - 1858)

Born in La Rochelle, France.

Plant collector.

Best known for being the loyal companion of Alexander von Humboldt on his South American expedition. He wrote little in his life and returned to South America where he died.

Commemorated by the genera: *Bonplandia* Wild. and *Bonplandia* Cav.

Herbarium specimens in Paris and Berlin (partly destroyed).

BOXALL, William (1844 - 1910)

Born in England.

Plant collector.

He was one of Messrs Hugh Low & Co.'s most successful collectors. However, he was first employed by their rivals Messrs James Veitch & Sons at Chelsea and also worked in private gardens before joining Low's as a foreman gardener. His deep knowledge of orchids was quickly recognised by his employers who sent him to Burma to consolidate the collecting and successes of Parish and Benson. *Dendrobium boxallii* was one of his earliest discoveries, described in his honour by Reichenbach in 1874. In 1877 he sent back *Cymbidium lowianum*, *Paphiopedilum boxallii*, *P. bellatulum* and *Vanda coeruleascens* var. *boxallii*. He subsequently collected in the Philippines from where he dispatched large quantities of *Paphiopedilum ciliolare*, *Vanda amesiana*, *V. boxallii*, *Phalaenopsis amabilis*, *P. boxallii*, *P. stuartiana* and *P. schilleriana* using his own plant cases glazed with the ground shells of oysters. He later visited Borneo, Java, Brazil and Central America. *Cattleya schofieldiana* and *Dracula bella* were amongst his most notable American collections.

Commemorated by *Dendrobium boxallii* Rchb.f. and *Paphiopedilum boxallii* (Rchb.f.) Pfitzer.

BRITTON, Dr. Nathaniel Lord (1859 - 1934)

Born in New Dorp, Staten Island, USA.

Botanist and geologist.

He was Botanical Advisor to the Carnegie Institution, Washington and on three occasions held the position of President of the Botanical Society of America. He was also the founder of the Horticultural Society of New York and was, at a time, President of the New York Academy of Science and the New York Forestry Association. He was the founder and first Director of the New York Botanical Garden and when he first took

up this duty, he took charge of a neglected area of about 150 acres; when he retired, the area had expanded to 400 acres containing 1.7M specimens and 44,000 volumes (1896-1929).

Major Publications:

Co-author with Addison Brown of *An illustrated flora of northern United States* (1896-1898).

Co-editor during his lifetime with L.M. Underwood and others of the 34 volumes of the *North American Flora* (1905-1957).

Co-author with C.F. Millspaugh of *The Bahama Flora* (1920).

BROWN, Robert (1773 - 1858)

Born in Montrose, Angus, Scotland.

Botanist.

Studied medicine at Edinburgh. DCL Oxon 1832; Fellow of the Royal Society (FRS) 1811; Associate of the Linnean Society (ALS) 1798; Fellow of the Linnean Society (FLS) 1822. Surgeon's mate on HMS *Flintshire* and travelled, as botanist, with Matthew Flinders on the first circumnavigation of Australia, also visiting Timor and the Cape en route to Australia (1801-5). Librarian to Sir Joseph Banks (1810-25) and to the Linnean Society. First Keeper of Botany at the British Museum (Natural History). He was President of the Royal Society (1849-53). He is generally accepted as the most accomplished botanist of his day. He described many orchids, especially Australian ones, and established a number of orchid taxa. He died in London, England 10th June 1858.

Commemorated by *Brunonia* Smith.

Herbarium collections at Edinburgh and the British Museum (Natural History), London.

Major Publications: *Prodromus Flararum Novae Hollandiae* (1810).

BULL, William (1828 - 1902)

Born in Winchester, Hampshire.

Nurseryman.

He bought John Weeks nursery in King's Road, Chelsea, in 1861, making him a close neighbour of Messrs James Veitch and Sons. Like them he also specialised in orchids. Shuttleworth and Carder were amongst his collectors in Colombia. As well as growing orchids he was also amongst the first to hybridise them. He died in Chelsea. His son William succeeded him.

BURKE, David (1854 - 1897)

Born in Kent, England.

Plant collector.

He entered the service of Messrs James Veitch & Sons as a young gardener and then became a collector. His first trip for them in 1880 was to north Borneo in the company of Charles Curtis. In 1881 he was sent to British Guyana where he discovered *Zygopetalum burkei*. He subsequently made two visits to the Philippines to collect *Phalaenopsis* species, two to New Guinea and one to Upper Burma. Between 1894 and 1896 he was in Colombia where he collected *Cattleya mendelii*, *C. schroederarum*, *C. trianaei* and *Odontoglossum crispum*. Finally, in 1896, he sailed for Sulawesi and the Moluccas (Maluku) where he died in Ambon on 11th April 1897. Commemorated by *Zygopetalum burkei*.

CARDER, John (died 1908)

Born in England.

Plant collector and nurseryman.

He collected orchids in Central America and the northern Andes of Colombia for William Bull of King's

Road, Chelsea. He then went into partnership with his fellow orchid collector Edward Shuttleworth and set up a nursery at Park Road, Clapham. The nursery specialised in recently imported orchids. Commemorated by *Masdevallia* (now *Dracula*) *carderi* Rchb.f.

CATTLEY, William (1788 - 1835)

Born in Garlickhythe, City of London, England.

Horticulturist and businessman.

A merchant whose business interests were in East Anglia, London and St. Petersburg, Russia. He lived in Barnet, Middlesex to the north of London where he had his orchid collection. The Cattley family were prominent in St. Petersburg, Moscow and other major cities in Russia. John Prescott, was a cousin who ran the St Petersburg firm involved in the 'Russia Trade'. John Lindley named *Prescottia* after Prescott, who was an enthusiastic collector of plants in Russia. William Cattley was one of the first enthusiastic collectors of orchids and other tropical plants who became a benefactor of horticulture. He was the first patron of the young John Lindley and paid him a salary.

Lindley's *Collectanea Botanica* (1821) is based upon Cattley's collection. John Lindley ceased to receive a salary in 1821 and whilst the reasons were not explicitly stated in the letter to Lindley, it would seem that the family needed to be adjust its financial commitments. He died in Chipping (High) Barnet, Middlesex 8 August 1835.

Commemorated by the genus *Cattleya* Lindl.

CAVENDISH, William George Spencer, 6th Duke of Devonshire (1790 - 1858)

Born in Paris, France.

Notable amateur orchid grower.

He became one of the greatest patrons of horticulture in his day and was President of the Horticultural Society of London (1838-1858). Perhaps his major achievement was his part in establishing the Royal Botanic Gardens at Kew as a national botanic garden. He employed Joseph Paxton to manage his celebrated garden at Chatsworth in Derbyshire where the finest orchids were grown.

Commemorated by the species *Oncidium cavendishianum* Batem., *Stanhopea devoniensis* Lindl. *Cymbidium devonianum* Lindl & Paxt. and many others.

CHARLESWORTH, Joseph (1851 - 1920)

Born in England.

Nurseryman.

In the 1880s at Heaton, Bradford as an orchid grower and importer. Collected plants in the Andes (1889). Most noted for his famous orchid nursery which he set up with E. Shuttleworth at Haywards Heath, Sussex, England in 1908. He died at Haywards Heath 2nd August 1920.

Commemorated by the species *Paphiopedilum charlesworthii* (Rolfe) Pfitzer.

CHESTERTON, J. Henry (?-1883)

Born in England.

Plant collector.

He collected plants for Messrs James Veitch and Sons in South America from 1870 until 1878. He then worked as a freelance collector, supplying inter alia, Frederick Sander. He died at Puerto Berrio in Colombia on January 26th 1883.

Commemorated in *Chondroscape chestertonii* (Rchb.f.) Senghas & Gerlach and *Dracula chestertonii* (Rchb.f.) Luer.

CLOWES, Reverend John (1777 - 1846)

Born in Broughton Hall, nr. Manchester, Lancashire, England – 1st May 1777

Notable amateur orchid grower

Inherited the Broughton Estate from his brother Samuel Clowes (1775-1811). He resigned from the Collegiate Church in 1833 where he had been an astute administrator. He was a popular local figure and generous to both his family and good causes. He became interested in botany and horticulture during the last 10 years of his life. His gardener, William Hammond, compiled ‘Catalogue of Orchidaceous Plants in Collection of Rev. J. Clowes’ (1842). This included 115 genera and a total of 491 plants. This was the period before the first hybrids were to appear. In collaboration with George Barker of Springfield and Sigmund Rucker, they engaged Jean Linden to collect orchids in Colombia. He was the first to grow orchids in the County of Lancashire. He made many friends in the orchid world including Bateman, Sir William Hooker, George Loddiges, Jean Linden, John Lindley, Joseph Paxton and the Duke of Devonshire. He died at Broughton Hall, Manchester. After his death, his outstanding collection of orchids went to form part of the Royal collection at Kew.

Commemorated by *Clowesia* Lindl., *Anguloa clowesii* Lindl., *Brassia clowesii*; *Epidendrum clowesii*; *Odontoglossum clowesii*.

Plant collection given to Kew.

Major Publications:

W. Hammond, Catalogue of Orchidaceous Plants in Collection of Rev. J. Clowes (1842).

COGNIAUX, Célestin Alfred (1841 - 1916)

Born in Robechies, south of Hinault, Belgium.

Botanist.

His early botanical studies were made on cryptograms and in 1872 he became Conservator of the Brussels Botanic Gardens. He published many works on families as diverse as Cucurbitaceae and Melastomataceae but he is best remembered in the orchid world for his contribution of the Orchidaceae for Martius’s *Flora Brasiliensis*. This work is still a standard reference for those interested in South American orchids.

Commemorated by the genera *Cogniauxiocharis* and *Neocogniauxia* and numerous species.

Herbarium specimens are in Brussels, New York, Liège, Utrecht.

Major Publications:

Orchidaceae in Martius’s *Flora Brasiliensis* - 3 Vols. (1893-1896).

Collaborated with A. Gossens in Dictionnaire Iconographique des Orchidées (1896-1907).

Orchidaceae in 6th Vol. I. Urban’s *Symbolae Antillanae* (1910).

CUMING, Hugh (1791 - 1865)

Born in West Alvington, Devonshire, England.

Plant collector.

A traveller and collector for Messrs Loddiges & Son. He began his travels in 1819 when he sailed for Buenos Aires. There he set himself up as a dealer in Natural History objects. In 1817-8 he sailed for Juan Fernandez, Easter Island, Tahiti and Pitcairn in a yacht that he had designed himself. He made a second voyage between 1828 and 1830 visiting the west coasts of Mexico and Chile where he made large collections of plants and zoological specimens. He returned to England in 1831 and then made a long expedition to the Philippines from 1836 until 1840. He was a prolific collector there for Messrs Loddiges & Son, discovering and sending back *Dendrobium anosmum*, *Grammatophyllum scriptum* var. *multiflorum*, *Phalaenopsis aphrodite* and many other beautiful plants. His success was a result of his careful packing of plants so that most arrived home in good condition. He died in London.

Commemorated by many plants including the Philippine genus *Cumingia* Vidal in the Bombacaceae and *Bulbophyllum cumingii* and *Coelogyne cumingii*.
Herbarium specimens at Kew, Oxford and the British Museum.

DARWIN, Charles (1809 - 1882)

Born in Shrewsbury, Shropshire, England.

Zoologist, botanist and evolutionary theorist.

The best-known naturalist who throughout his life was an inspiration to many of his fellow scientists, including John Lindley and both Joseph and William Hooker. His voyage in the research vessel HMS Beagle (1831-36) is renowned and he brought back raw material for a lifetime's work including his revolutionary ideas on plant and animal evolution. His 'Origin of the Species' (1859) and 'The Various Contrivances by which British and Foreign Orchids are Fertilised' (1862) have seldom been equalled as a piece of astute observational research and most of the ideas outlined are still valid today.

Herbarium specimens at Cambridge.

Major Publications:

Origin of the Species (1859).

The Various Contrivances by which British and Foreign Orchids are Fertilised (1862).

DAVIS, Walter (1847 - 1930)

Born in Amport, Hampshire, England.

Plant collector and gardener.

He trained as a gardener on the estates of the Marquis of Winchester and Lady Herbert and entered the service of Messrs Veitch & Sons as a gardener and orchid collector in 1870. They sent him to Peru in 1873 to collect plants, especially orchids. His collections included many *Masdevallias*, including *Masdevallia barlaeana*, *Masdevallia davisii* and *Phragmipedium reticulatum*, all drawn by Day. He wrote on plant propagation under the pseudonym of Charles Bennett. He was secretary to the Geological and Royal Geographic Societies. He died in Fulham, London.

Commemorated by *Masdevallia davisii* Rchb.f.

DAY, John (1824 - 1888)

Born in City of London, England.

Notable amateur orchid grower.

He was born in the parish of St Dunstons in the East, City of London where his father was in business as a Wine Merchant. The Day family moved to Tottenham, Middlesex in 1840 but retained their business premises in the City of London where John Day followed his father into business. He was introduced to orchid growing by his father and this interest, along with his interest in ferns was to sustain him for the rest of his life. His orchid growing grew considerably after the death of his wife in 1857 when he sold the old family home in Tottenham and went to live with his sister Emma and her husband Dr Henry Wolstenholme in 1858. He became an orchid grower of considerable repute and in 1881 his collection was sold for the princely sum of £1000. Following illness, he travelled widely in India, Ceylon, Malaya, Brazil and Jamaica. His 'Orchid Scrapbooks' consisting of 53 volumes containing a huge array of drawings and watercolour paintings, which flowered in his and other collections, are at Kew. Their importance to taxonomy lies in the fact that Day was a friend of H.G. Reichenbach and Reichenbach in the Gardeners' Chronicle later described many of the orchids painted by Day. He died in Tottenham. Most of the Cornelius Durham (fl.1820-1860) orchid paintings commissioned and owned by him were purchased by Sir Jeremiah Colman of Gatton Park, Reigate, Surrey on Day's death.

Commemorated by the species *Coelogyne dayana* Rehb.f.

Major Publications: Co-operator in Veitch's Manual of Orchidaceous Plants.

DOMINY, John (1816 - 1891)

Born in Gittisham, Devonshire, England.

Gardener and orchid hybridist.

He joined the firm of Messrs James Veitch & Sons of Exeter (1834-41). He became gardener to J.P. Magor of Redruth, Cornwall (1841-46) but moved back to Veitch at their new establishment in Chelsea in 1846 and became a skilled orchid grower and hybridist. *Calanthe* Dominyi, the first artificial orchid hybrid to flower, was made by him and flowered at Chelsea in 1856. Many more followed. When he retired in 1880, a public subscription was made for him, to which John Day donated three guineas. He died at Chelsea.

Commemorated by *Phragmipedium* Dominianum.

DON, George (1798 - 1856)

Born in Doo Hillock, Forfarshire, Scotland.

Plant collector and gardener.

Elder brother of David Don. Foreman of the Chelsea Physic Garden (1812-21) and he collected plants for the Horticultural Society of London in Brazil, the West Indies, Sao Tomé, and Sierra Leone. He died at Kensington.

Herbarium specimens at British Museum, Kew and Cambridge.

DRESSLER, Robert Louis (b. 1927)

Botanist.

American botanist and orchid collector. Based at the Smithsonian Institute's barra Colorado Station in Panama for many years. Professor at the University of Costa Rica and Associate at the Marie Selby and Missouri Botanical gardens. Made seminal studies of the pollination of tropical American orchids, especially in the subtribe Stanhopeinae.

Commemorated in the orchid genera *Dressleria* and *Dresslerella*.

Major Publications:

The Orchids, Natural History and Classification (1981).

Field Guide to the Orchids of Costa Rica and Panama (1991).

DUNSTERVILLE, Galfrid Clement Keyworth "Stalky" (1905 - 1988)

Born in Devonshire, England.

Orchid grower and collector.

His work with Shell took him to Venezuela (1947) where he remained after his retirement as president of Shell Venezuela (1959). With his wife, Ellinor (Nora), whom he had met at the University of Birmingham, he collected over one thousand orchid species throughout the country, particularly following his retirement, and at that time there were no guide books to help them. He painted and drew Venezuelan orchids, initially as a hobby, but latterly to illustrate his articles in the American Orchid Society Bulletin and for his and Leslie Garay's six-volume 'Venezuelan Orchids Illustrated'. His paintings were reproduced as a series of 18 Venezuelan stamps (1962). He received the Order of Miranda, 3rd Class from the Venezuelan Government (1964) and the Order of Henry Pittier for conservation (1982). He died in Caracas, Venezuela.

Commemorated by the orchid genera *Dunstervillea* Garay and *Stalkya* Garay.

Herbarium specimens at Oakes Ames Herbarium, Harvard and at Paris, Berlin and Kew.

Major Publications:

- An Introduction to the World of Orchids (1964).
 Co-author (with Garay) Venezuelan orchids Illustrated - 6 Vols. (1959-76).
 Field Guide to Orchids of Venezuela (1979).
 Orchids of Venezuela (1987).
 Orchid Hunting in Lost World (1988).

EDWALL, Gustaf (1862 - 1946)

Danish botanist. Collected in Brazil between 1885 and 1905. Collected for a period with Alfred Löfgren (1854-1918).
 Herbarium specimens in Sao Paulo, duplicates in Copenhagen and New York.

ENGLER, Heinrich Gustav Adolf (1844 - 1930)

Born in Sagan, Lower Silesia, Germany
 Botanist and plant collector.
 Educated at Breslau University; Professor of Botany respectively at Kiel, Breslau and Berlin. He was also Director of the Botanic Garden and Museum, Berlin. He travelled in Africa, India, Ceylon, the Malay Peninsula and Java (1905-06). He was editor of numerous publications.
 Commemorated by several plants.
 Herbarium specimens at Berlin (partly destroyed).

GARAY, Leslie Andrew (b. 1924)

Born in Hungary.
 Plant taxonomist.
 Emigrated to Canada after the Second World War and then to the USA where he was appointed Curator of the Oakes Ames Herbarium at Harvard University, in succession to Charles Schweinfurth. In addition to being an orchid taxonomist he was an orchid collector. He has written extensively on tropical American and Southeast Asian orchids. He has contributed many revisions of orchid genera, including *Oncidium*, and a survey of the vandoid genera. His ideas on orchid evolution and classification have been influential.
 Commemorated by the orchid genera *Garaya* and *Lesliea*.
 Herbarium specimens in the Oakes Ames Herbarium.

Major Publications:

- Co-author (with G.C.K. Dunsterville) Venezuelan Orchids Illustrated - Vols. 1-6 (1959-76).
 Co-author (with Herman Sweet) Flora of the Lesser Antilles - Orchidaceae (1974).
 Co-author (with Herman Sweet) Orchidaceae for the Flora of Ecuador - Vol. 1 (?).
 Co-author (with Herman Sweet) The Orchids of the Southern Ryuku Islands (1974).

GARDNER, George (1812 - 1849)

Born in Glasgow, Scotland.
 Taxonomist and plant collector.
 Pupil, at Glasgow, of William Jackson Hooker (1785-1865). He collected orchids in Brazil (1836-41) and then in 1843, he assisted H.B. Fielding in arranging his herbarium and he wrote descriptions for *Sertum Plantarum* (1844-49). He was appointed Superintendent Botanic Gardens, Peradeniya, Ceylon in 1844 and he collected plants in Mauritius and Madras, on his way to Ceylon, during 1845. He spent the rest of his life in Ceylon where he died at Neura Ellia.

Commemorated by the genus *Neogardneria* Schltr., *Oncidium gardneri* Lindl., *Neogyna gardneriana* Lindl. and *Gardneria* Wall.

Herbarium specimens at British Museum (Natural History) and Kew.

GRIESEBACH, August Heinrich Rudolf (1814 - 1879)

German botanist at Göttingen where he was Director of the Botanical Garden (1841-1865).

Major Publications: Co-author of the Flora of the British West Indian Islands (1859-1864).

HAENKE, Thaddeus Peregrinus Xavierus (1761-1817)

Born in Kreibitz, Bohemia.

Collected along the Pacific coast of South America in 1790 and travelled to Quito. His herbarium collections were described by C.B. Presl in *Reliquiae Haenkeanae*. His herbarium is in Prague. He died on October 31st 1817 in Cochabamba, Bolivia.

HALL, Colonel Francis

British plant collector who collected plants in Central Ecuador in 1831 and 1832.

HARRISON, Henry, Richard and William (fl.1820s)

British plant collectors.

Henry and William lived in Rio de Janeiro in the 1820s from where they sent orchids to their brother Richard of Aighburgh, near Liverpool. Richard grew a large collection of Brazilian orchids.

Richard commemorated by *Oncidium harrisonianum* and *Cattleya harrisoniana*.

HARTWEG, Carl Theodore (1812 - 71)

Born in Karlsruhe, Germany

Employed from 1836 as a plant collector for the Horticultural Society of London and travelled widely until 1854 collecting plants in Mexico, Guatemala, Ecuador, Jamaica, Madeira and Peru

Commemorated by the genus *Hartwegia* Lindl.

Herbarium specimens at Kew.

HOEHNE, Frederico Carlos (1882 - 1959)

Born in Juan de Flora, Minas Gerais State, Brazil

Brazilian taxonomist at Rio de Janeiro Botanic Gardens (1907-1917) and Director of the Sao Paulo Botanical Institute (1917-1952).

Herbarium specimens are in Sao Paulo.

Major Publications:

Flora Brasílica (1940-1958); unfinished but several volumes on orchids were published.

Album de Orquidáceas Brasilieras (1949).

HOOKE, Sir Joseph Dalton (1817 - 1911)

Born in Halesworth, Suffolk, England - 30/6/1817

The eldest son of Sir William Jackson Hooker (1785-1865) who eventually became the First Director of the Royal Botanic Gardens, Kew. He became the 2nd Director of the Royal Botanic Gardens, Kew. He acted as surgeon and botanist on the HMS Erebus that explored the southern oceans. In 1847, he arrived in India

and over the following four years made the first detailed botanical and geological explorations of the Sikkim Himalayas. There he collected many orchids, including the blue *Vanda coerulea*. His intimate knowledge of Indian orchids eventually led to the publication of the orchid account for the *Flora of British India* (1890-1). His friendship with Charles Darwin was critical for the completion and publication of *The Origin of Species* and he sent orchids to Darwin from Kew for Darwin's *On the various contrivances by which British and Foreign orchids are fertilised* (1862). John Day corresponded with both Sir Joseph and his father and gained permission from the former to draw unusual orchids in the Kew collection. Day drew about 70 orchids at Kew in the 1880s. Throughout his life he was a prolific writer ranging from plant geography, floras travel books and monographs. Appointed Robert Allen Rolfe as Kew's first orchid specialist. He died at Sunningdale, Berkshire.

Commemorated in the orchid genera *Josephia* and *Sirhookera* O. Ktze. and by several orchid species. Herbarium is at Kew.

Major Publications:

Co-author (with George Bentham) *Genera Plantarum*, 3 vols. (1863-83).

Flora of British India, Orchidaceae, 7 vols. (1872-97).

Curtis's Botanical Magazine - Author of many accounts of orchids.

Century of Indian Orchids (1895).

HOOKEER, Sir William Jackson (1785 - 1865)

Born in Norwich, Norfolk, England.

He was appointed Professor of Botany at the University of Glasgow in 1820 and during his tenure began to edit and write the plant accounts for *Curtis's Botanical Magazine*. In 1841 he became the first Director of the Royal Botanic Gardens, Kew, following the report written by John Lindley and Joseph Paxton that recommended the government took over Kew from the Royal household. Hooker served as Director there until his death on May 1st 1865. Hooker described many orchids in the *Botanical Magazine* and was the author of *A Century of Orchidaceous Plants* (1849) that was illustrated by Walter Hood Fitch's magnificent plates. He also founded in 1836, edited and wrote the journal *Icones plantarum*. He was knighted for his services to Botany in 1836. He died at Kew, Surrey.

Herbarium specimens at Kew.

Major Publications:

A Century of Orchidaceous Plants (1849).

Curtis's Botanical Magazine – Editor.

HUMBOLDT, Friederich Heinrich Alexander von (1769-1859)

Born in Berlin, Germany, September 14th 1769.

With Aimé Bonpland he made pioneering explorations in western South America from Venezuela to Ecuador. He visited the Audencia of Quito from late 1801 to early 1803. He died in Berlin. His collections were described by Carl Kunth in *Nova Genera et Species Plantarum*. His herbarium is in Berlin.

JACQUIN, Nicolaus Joseph von (1727 - 1817)

Born in Leiden, Holland.

Appointed Supervisor of the Schönbrunn Palace Gardens which under his care became the most famous and beautiful of his time. In 1763 he was appointed Professor of Chemistry at Chemnitz near Dresden, Germany but five years later he returned to Vienna and became Professor of Botany and Chemistry in Vienna (1769-1817) and Director of the University Gardens. He was greatly influenced by Linnaeus and worked in the immediate post-Linnaean period. He was a prolific author and described and named many new species of

plants including some of the first tropical American orchids He visited the West Indies (1755-1759) and published some of the earliest accounts of the orchids from the region.

His herbarium was purchased by Sir Joseph Banks and is now at the British Museum (Natural History), London. Additional specimens may be found at Oxford, Vienna and Upsala.

Major Publications:

Enumeratio Systematica Plantarum (1760).

Enumeratio Stirpium Plerarumque (1762)

Selectarum Stirpium Americanarum Historia (1763).

Icones Plantarum Rariorum (1781-1793).

JAMESON, William (1796-1873)

Born in Edinburgh, Scotland.

He was appointed as Professor of Botany in Quito in 1827 and later became Director of the Mint there. He collected plants in Argentina, Peru, Ecuador, Colombia and Venezuela. His orchids were mainly described by John Lindley. He died in Quito.

Scelochilus jamesoni Lindl. and *Oncidium jamesoni* Rehb.f. were named in his honour.

KLABOCH, Eduard (fl.1870s)

Born in Bohemia (now Czech Republic).

Orchid collector with his brother in northern Andes, Guatemala and Mexico. Nephew of Benedict Roezl. He carried the news of the death of Gustave Wallis in Cuenca, Ecuador, back to London. He died in Mexico while collecting.

Commemorated by *Odontoglossum edwardii* and *Pescatorea klabochorum*.

KLABOCH, Franz (-1879)

Born in Bohemia (now Czech Republic).

Orchid collector with his brother in northern Andes, Panama and Mexico. Nephew of Benedict Roezl. He died in Colombia while collecting.

Commemorated by *Pescatorea klabochorum*.

KRÄNZLIN, Fritz Wilhelm Ludwig (1847 - 1934)

Born in Magdeburg, Germany

He was a prolific author on orchids throughout the periods dominated by H.G. Reichenbach, R.A. Rolfe, E. Pfitzer and R. Schlechter and he outlived them all. His taxonomic work was never of the same standard as that archived by his contemporaries. He published many weighty volumes on orchids but some were never completed.

Herbarium specimens at Hamburg and Berlin (now mostly destroyed).

Major Publications:

Orchidacearum Genera et Species, Vols. 1 & 2 (1887-1904).

Monographie der Gattungen *Masdevallia* (1925), incomplete.

A. Engler's *Das Pflanzenreich* (1907-23), incomplete.

Monographie der Gattung *Polystachya* (1926), incomplete.

KUNTZE, Carl Ernst Otto (1843 - 1907)

Born in Leipzig, Germany

He travelled widely in Malaya, Turkestan, South America and Africa where he collected a number of orchids

amongst other plants, and these were done for him by H.G. Reichenbach (1823-1889). His work giving an account of his collections developed into his 'Revisio Generum Plantarum' in which he revised thousands of plants in the interest of 'priority and stability of nomenclature' by going back to a period before 1753 when the binomial system of nomenclature was introduced. He is best remembered for this encyclopaedic work. The upheavals created by his work and that of some others led to the International Botanical Congress in Vienna at which he read a protest against the legality of the proceedings and then withdrew. In 1905 he settled in San Remo, Italy where he died.

Major Publications: *Revisio Genera Plantarum*, 2 vols. (1891-98).

LA LLAVE, Pablo de (1773 - 1833)

Mexican cleric and sometime Director of the Madrid Botanical Garden. He returned to Mexico in 1823 and eventually became President of the Senate there.

Major Publications: Co-author (with Lexarza), *Novorum vegetabilium descriptiones* (1824-1825).

LAWRENCE, Sir James John Trevor (1831 - 1913)

Born in London, England.

The son of Louisa Lawrence, the noted orchid grower. He was in the Indian Medical Service (1854-64). Member of Parliament for Dorking, Surrey (1875-92). His orchid collection at Burford, near Dorking was famous for its diversity and the quality of its contents. John Day visited it on September 22nd 1883 (John Day Scrapbook 38, p. 55). Sir Trevor Lawrence served as President of the Royal Horticultural Society from 1885 until his death. He sent plants to John Day to draw (e.g. John Day Scrapbook 26, p. 39; 37, p. 75; 38, pp. 55, 57; 41, p. 87). He died at Burford.

Commemorated by the genus *Trevoria* F.C. Lehmann; the species *Bollea lawrenceana* Rolfe, *Cattleya lawrenceana* Warsc. ex Rchb.f., *Maxillaria lawrenceana* (Rolfe) Garay & Dunst. and *Mormodes lawrenceana* Rolfe

Herbarium specimens at Kew.

LEXARZA DE MARTÍNEZ, Juan José (1785 - 1824)

Mexican physician and botanist.

Major Publications: Co-author (with La Llave), *Novorum vegetabilium descriptiones* (1824-1825).

LINDEN, Jean Jules (1817 - 1898)

Born in Luxemburg.

Orchid collector and nurseryman of Ghent and Brussels, Belgium. He studied biology at the University of Brussels. At the age of 19 in 1835 he accompanied Funck and Ghiesbrecht on an expedition to Brazil where he made extensive explorations in Rio de Janeiro, Sao Paulo, Minas Geraes and Espiritu Santo. In 1837 he explored Cuba and Mexico, Guatemala, the USA, Colombia and Venezuela. In 1841, a syndicate of English growers, including Rucker and Clowes, hired him to collect orchids for them in Colombia and Venezuela where he collected *Odontoglossum crispum* and discovered both *Anguloa ruckeri* and *A. clowesii*. He returned to Europe in 1845 and his discoveries were described by John Lindley. On his return, Linden established a nursery at Ghent but eventually moved it to Brussels where it with his son Lucien he established L'Horticulture Internationale, a nursery that achieved an eminence to match that of the great British establishment such as Veitch, Low and Sander. The nursery financed many expeditions, mainly to the Americas, e.g. that of Funck and Linden's nephew Louis Schlim to the Venezuelan Andes. Many orchids are described in his honour including *Odontoglossum lindenii*, *Phalaenopsis lindenii* and *Cattleyopsis lindenii*. He and his son published *L'Illustration Horticole* and the superb series *Lindenia* in which their finest orchid

discoveries were illustrated in colour. His son, Lucien, named the multi-volume opus *Lindenia* in his honour. Commemorated by many species and his herbarium specimens are at Brussels and Kew.

Major Publications:

Lindenia (1885-91).

Pescatorea (1860).

LINDLEY, John (1799 - 1865)

Born in Catton, near Norwich, England.

Often called the ‘Father of orchidology’. As a boy he knew William Hooker. In 1818 he moved to London and was employed as Librarian by Joseph Hooker in the J. Banks Library. Hooker commended him to William Cattleya, a prominent merchant and grower of exotic plants. Lindley’s first book was *Collectanea Botanica* (1821) a catalogue of Cattley’s rich plant collection. It included Cattley’s first descriptions of orchids, including that of *Cattleya labiata*. In 1822, he became Assistant Secretary to Joseph Sabine at the Horticultural Society of London’s Garden, Chiswick. There, his interest in orchids grew, especially as he had first access to the many novelties that the Society’s collectors were sending from the tropics. Lindley’s first attempt to classify the orchids was published in 1826; many works on orchids followed, including *Illustrations of Orchidaceous Plants* (with Francis Bauer). Lindley co-founded the *Gardeners’ Chronicle* in 1841 and edited its scientific content for many years. He also edited and wrote Edwards’ *Botanical Register* from 1826 until its demise in 1847. Lindley’s final account of orchid classification can be found in the 3rd edition of *The Vegetable Kingdom* (1853), one of his most influential works. Although when John Day began his scrapbooks, Lindley was still alive, he was not a well man and it seems likely that they did not meet or correspond. Lindley died at Turnham Green, Middlesex.

Commemorated in many orchid names, e.g. *Lindleyella*, *Neolindleya*, *Odontoglossum lindleyanum*, *Phragmipedium lindleyanum*, and *Barkeria lindleyana*.

Orchid herbarium was purchased for Kew by Sir William Hooker.

Major Publications:

Collectanea Botanica (1821).

Genera and Species of Orchidaceous Plants (1830-1840).

Sertum Orchidaceum (1837-42).

Co-author (with F. Bauer) *Illustrations of Orchidaceous Plants* (1830-38).

Folia Orchidacea (1852-59).

LOBB, William (1809 - 64)

Born in Perran-ar-worthal, Cornwall, England.

Brother of Thomas Lobb (1817-94). First employed in the stove houses at Carclew, Cornwall, the home of Sir Charles Lemon. He had further employment at various private gardens but he had a wish to travel and at the recommendation of his brother Thomas, he was seen by James Veitch who was impressed with his botanical knowledge. He was then employed by Messrs Veitch & Sons and he collected for them in Brazil, Chile, Patagonia, Peru, Ecuador and Colombia (1840-48) and California and Oregon (1849-57). He severed his connection with Messrs Veitch & Sons in 1857 and settled in San Francisco, USA where he became ill and died in St Mary’s Hospital, San Francisco in May 1864.

Herbarium specimens at British Museum and Kew.

LODDIGES, Conrad (1739 - 1826)

Born in Vristergholtzen, Hanover, Germany.

He trained under the court and kitchen gardener Joseph Conrad in Velzen, near Harlem before travelling to

England to take up a post as a gardener to J.B. Sylvester of Hackney, London (1761-77). Took over the nursery founded by J. Busch, a fellow German, in Hackney where there was an influential clientele. The nursery became famous under Conrad Loddiges. It was the first English nursery to specialise in tropical orchids and they were among the first to cultivate and flower the plants with reasonable success. They bought tropical orchids from collectors in British Guyana and employed Hugh Cuming to collect for them in the Philippines. Their introductions included many beautiful species such as *Phalaenopsis aphrodite*, *Dendrobium loddigesii*. The firm did much to popularise the cultivation of tropical epiphytic orchids due to the success of their cultivation methods and also because of their constant supply of novelties sent to them by their collectors in the tropics. William Loddiges (c.1776-1849) and Georges Loddiges (1784-1846) carried on the nursery as Conrad Loddiges & Sons and then as Messrs. Loddiges. It is not clear how long William remained active in the firm.

Commemorated by *Gongora loddigesii* Lindl.

Herbarium specimens at Kew.

LODDIGES, Conrad (died 1865)

Born in Germany.

Nurseryman of Hackney. The contents of his nursery were sold at Stevens's sales rooms. John Day bought his first orchids from Loddiges (John Day Scrapbook 11, p. 89) and also bought many of the plants at the Loddiges' sale.

LODDIGES, George (1784 - 1846)

Born in Hackney, London, England.

Son of Conrad Loddiges (1784-1826) who took over the nursery with his brother William Loddiges (c.1776-1849). They continued to buy tropical orchids from collectors in British Guyana and employed Hugh Cuming to collect for them in the Philippines. He was responsible for the text and illustrations for Loddiges's *Botanical Cabinet* which published their new introductions between 1817 and 1834. George was a good friend of John Lindley and provided him with many novelties for description. He died in Hackney.

The original preserved specimens are in Lindley's herbarium and Kew.

Plates at the British Museum (Natural History).

Major Publications:

Botanical Cabinet (1817-1834).

Low, Stuart Henry (1826 - 90)

Born in Clapton, London, England.

The younger son of Hugh Low (1793-1863). He took over the nursery at Upper Clapton on his father's death. In 1882, he established a new nursery at Bush Hill Park, Enfield, Middlesex, a few miles north of the original establishment. He was a friend of John Day and supplied Day with orchids to paint for the scrapbooks. He died at Clapton.

Herbarium specimens at Kew and Vienna.

MATHEWS, Andrew (died 1841)

British gardener at the Horticultural Society of London's Chiswick garden. Sent in 1830 by the Society as a plant collector to Chile and Peru. He died in Chachapoyas, Peru in 1841.

Herbarium collections at Natural History Museum, London, Kew and Oxford.

Epidendrum mathewsii Lindl., *Maxillaria mathewsii* Lindl. and *Pleurothallis mathewsii* Lindl. are named in his honour.

MOCIÑO, Jose Mariano (1757 - 1820)

Born in Temascaltepec, Mexico.

He accompanied M. Sessé, on the first botanical exploration of Mexico (1787-1804) and return, with him, to Spain.

Major Publications:

Co-author (with M. Sessé) *Plantae Novae Hispaniae* (1787-90).

Co-author (with M. Sessé) *Flora mexicana* (1791-97).

MOORE, Sir Frederick William (1857 - 1949)

Born in Dublin, Ireland.

The son of David Moore (1807-79) who trained at van Houtte's nursery in Ghent, Belgium and at Leiden, Holland. He became Curator of the Trinity College Botanical Garden (1877-79). He succeeded his eminent father as Curator (designated Director in 1890) of the Glasnevin Botanical Garden where he established a fine collection of neotropical orchids (1879-1922). He died in Dublin.

Commemorated by the genus *Neomoorea* Rolfe and *Coelogyne mooreana* Rolfe.

O'REILLY, ? (fl.1860 - 1870)

Collected orchids in Brazil (John Day Scrapbook 22, p.81) and imported South American orchids.

PABST, Guido João Frederico (1914 - 1980)

Born in Porto Alegre, Rio Grande do Sul, Brazil – 19th September 1914

Brazilian businessman, with the Varig Company in Brazil, and botanist. Although botany and orchids were a hobby, he was the leading Brazilian orchid specialist of his day who wrote 784 works on orchids, mainly those of Brazil (1950-80). He also described many novelties. He was in regular contact with the major Herbaria around the world and studied the types of the native orchids of Brazil which they held. He founded the Herbarium Bradeanum in Rio de Janeiro (1958) and became editor of 'Bradea', the bulletin published by the Herbarium. With Dr Leslie Garay, he made a general revision of the subtribe 'das Spiranthinae dos neotropicos' (1978). He was made Vice-President of the Sociedade Brasileira do Orquidofilos (1978) and he was a member of numerous orchid societies around the world. For 30 years he collaborated with Dr Luys de Mendonca in Rio de Janeiro on 'Revista Orquidea'. He died in Rio de Janeiro.

Commemorated by *Pabstia* Garay (1973).

Herbarium collections in Herbarium Bradeanum in Rio de Janeiro.

Major Publications: Co-author (with Dungs) *Orchidaceae Brasilienses* - 2 Vols. (1975-1977).

PAVÓN, Dr. José Antonio (1754 - 1844)

Spanish botanist who travelled to South America with H. Ruiz and J. Dombey in Peru and Chile (1778-88).

Major Publications:

Co-author (with H. Ruiz, J. Dombey) *Prodromus Florae Peruvianaee et Chilensis* (1794).

Co-author (with H. Ruiz, J. Dombey) *Systema Vegetabilium Florae Peruvianaee et Chilensis* (1798-1802).

Co-author (with H. Ruiz, J. Dombey) *Flora Peruvianaee et Chilensis* (1778-1802).

PAXTON, Sir Joseph (1802 - 65)

Born in Milton Bryant, Bedfordshire, England

In 1823 he became gardener at the Chiswick Garden of the Horticultural Society of London and in 1826 he was

appointed head gardener to the Duke of Devonshire at Chatsworth where he achieved the first blooming of the water-lily *Victoria amazonica*. He became best known as the editor of Paxton's *Magazine of Botany*, Paxton's *Flower Garden* written with John Lindley and he was one of the founders of the *Gardeners' Chronicle* in 1841. He was the designer of the Crystal Palace for the 1851 Exhibition, for which he was knighted and he laid out many Parks around the country.

Commemorated by the genus *Paxtonia* Lindl.

Herbarium specimens at Kew.

Major Publications:

Editor of Paxton's *Magazine of Botany* (1834-53).

Co-author (with J. Lindley) Paxton's *Flower Garden* (1850-53).

POEPPIG, Eduard Friedrich (1798 - 1868)

Born in Plauen, Saxony, Germany

He collected plants, including many orchids, in Chile, Peru, Ecuador and Brazil (1827-?). Co-author (with S.L. Endlicher) of *Nova genera ac species plantarum ...* (1833-35).

Herbarium specimens at Vienna, St Petersburg, Berlin (destroyed) Leipzig, British Museum, Brussels, Goettingen.

PROTHEROE & MORRIS, Messrs

Auctioneers who specialised in plant auctions. Their premises were, latterly, at 8 Broad St., Cheapside in the City of London. A line of succession for the Morris family started with Thomas Morris who established the firm in about 1830. Allister G. Morris was the fourth member of the family, in succession, and a partner in the firm which he joined in 1907 and retired from in 1962. He was the principal auctioneer at the disposal of orchids from Sanders at their sales in 1957 and 1958. In addition a conducted sales for Stuart Low and other well-known growers. He died, whilst on holiday in Germany, on 24th August 1967.

REICHENBACH, Heinrich Gustav (1823 - 1889)

Born in Leipzig, Germany.

The son of a famous father who was also a botanist. He succeeded John Lindley as being the foremost authority on orchids and amassed a large herbarium in Hamburg where he was Professor of Botany and Director of the Botanic Gardens. He described thousands of orchids at a time when novelties were flooding into Europe from all over the world. Nearly all the orchid nurseries and growers, including John Day, sent him flowers for identification. Day was amongst his most prolific correspondents, sending him dozens of flowers each month. Reichenbach responded by naming some of the novelties after him, including such prized species as *Cymbidium dayanum*, *Cypripedium* (now *Paphiopedilum*) *dayanum*, *Bulbophyllum dayanum* and others. Reichenbach was a prolific author, but most of his new orchids were described in the journals the *Gardeners' Chronicle*, *Botanisches Zeitung*, *Flora* and *Bonplandia*. His best-known works on orchids include the first two volumes of *Xenia Orchidacea* (1851-187), *Observations of the Orchids of Central America*, and a synopsis of the family in Walpers, *Annales* (1861-1864). Evidence suggests that Reichenbach has bequeathed his important herbarium to Kew, but shortly before his death he changed his will. When it became public the provisions of his will scandalised the botanical world because he made a provision that whoever took the herbarium had to keep it closed for 25 years after his death. Only the Natural History Museum in Vienna would accept it on such terms. In the event, because of the First World War and its repercussions, it remained unopened until 1921. Consequently, a generation of orchid taxonomists, notably Robert Rolfe, Rudolf Schlechter and Fritz Kränzlin were deprived of the work of Reichenbach, leading to the re-description of many species. The arrival of Day's scrapbooks at Kew gave Robert Rolfe access to

contemporary paintings of many of the new species that Reichenbach had described.

Commemorated by the orchid genus *Reichenbachanthus* and in the species such as *Kefersteinia reichenbachiana*, *Masdevallia reichenbachiana* and *Sievekingia reichenbachiana*. Herbarium specimens in Vienna.

RICHARD, Achille (1794 - 1852)

Professor of Botany in Paris.

His major orchid publication was *Monographie des Orchidées des Isles de France et de Bourbon* (1828). Herbarium in Paris.

RIDLEY, Henry Nicholas (1855 - 1956)

Born in West Herling, Norfolk, England – 10th December 1855

He began as Assistant Botanist at the British Museum (Natural History) (1880-88) and then became Director of the Singapore Botanic Garden (1888-1911). He is best remembered for helping to introduce rubber in Malaya. He worked extensively on the Malayan flora including the orchids. He died at Kew, Surrey, just before his 101st birthday. His major publications were *The Orchideae and Aposasiaceae of the Malay Peninsula* (1886) and orchids for *Flora of the Malay Peninsula* (1924).

Commemorated by the genera *Ridleyella* Schltr. and *Ridleyinda* O. Ktze.

Herbarium specimens at Singapore, Kew and British Museum.

ROEHL, Benedict (1823 -1885)

Born in Prague, Bohemia (now Czech Republic).

He had a life-long interest in horticulture entering the employ of the Count of Thun at Tötschen in Bohemia in 1836. After several other horticultural posts, he entered the service of M. van Houtte in Ghent and became Chef de culture at the School of Horticulture of the Belgian Government in 1852. However, he had always wished to see the tropics and in 1854 the opportunity arose for him to travel to Mexico via the USA. In 1868 he lost his left hand while demonstrating his fibre-extracting machine in Havana, Cuba. Afterwards, he wore a hook in its place. He travelled extensively in the Americas from California south into the Andes as far south as Peru, making extensive collections of orchids and other ornamental plants. In all, he discovered over 800 species new to science, including many orchids such as *Phragmipedium roezlii*, *Miltoniopsis roezlii*, *Masdevallia roezlii* and *Pescatorea roezlii*. Much of his collecting was for Messrs F. Sander & Sons of St Albans. He retired to Prague where he died in October 1885. A monument was erected to him in Prague.

Commemorated by *Miltoniopsis roezlii* (Rchb.f.) Godefroy, *Masdevallia roezlii* and *Bletia roezlii*.

Herbarium specimens at Kew and Vienna.

ROLFE, Robert Allen (1855 - 1921)

Born in Ruddington, Nottinghamshire, England.

Associate of the Linnean Society (ALS) 1885; RHS Victorian Medal of Honour (VMH) 1921. Gardener at Wellbeck Abbey, Nottinghamshire. Orchid specialist at the Royal Botanic Gardens, Kew, (1880-1921). He described many novelties during his career. He wrote the orchid accounts for *Flora Capensis* and the *Flora of Tropical Africa* (1897) and co-authored with C. Curtis the *Orchid Stud Book* (1909), the first catalogue of the parentage of artificial orchid hybrids. He founded and edited the *Orchid Review* in 1893, the longest surviving orchid journal, now run by the Royal Horticultural Society in London.

He is commemorated by the Madagascan orchid genus *Rolfeella*.

Herbarium specimens at Kew.

ROLLISSON, George (1799 - 1875)

Born in Upper Tooting, Surrey, England

The eldest son of William Rollisson (1765-1842). He succeeded to the nursery on his father's death in 1842. He joined the firm with his younger brother William Rollisson (1802-75) but it is not clear what form of relationship existed between the two with regard to the management of the business. The nursery supplied John Day with many orchids over the years. He died in Balham and his nursery was bought by Messrs James Veitch & Sons. James Veitch (1815-1869) completed his apprenticeship with the Rollissons and it was the collection he bought from them which formed the nucleus of his orchid business.

ROLLISSON, William (1765 - 1842)

He founded the famous Springfield Nursery at Upper Tooting, Surrey in the 1780s. He had plant collectors but the only one to get a mention is William Bull (1828-1902). During his day it began to specialise in orchids. He had a reputation for his fine orchids and the condition of his orchid house where the cultivation techniques and control of the environment were renowned. His sons, George Rollisson (1799-1875) and William Rollisson (1802-75), joined the firm and eventually took over the running of the business.

RUCKER, Sigismund (c.1809 - 1875)

Had a large orchid collection at West Hill, his Wandsworth home. Rucker grew orchids for over 40 years and also, from 1844 onwards, had fine collections of trees, shrubs, ericas and azaleas. His patronage of the nursery trade earned him the soubriquet of 'prince of gardeners'. He spent prodigious amounts on rare plants, e.g. a reputed 80 guineas on *Barkeria spectabilis* at a Stevens's sale. He exchanged visits with John Day in the 1860s (John Day's Scrapbook 13, p. 7) and Day acquired a number of plants from his collection (John Day's Scrapbook 22, p. 35), especially on his death at a Stevens's sale of July 8th 1875 (John Day's Scrapbook 19, p. 3). Rucker was co-sponsor with the Rev. John Clowes of Jean Linden's expedition to Colombia and Venezuela in 1841. *Anguloa ruckeri* and *Stanhopea ruckeri*, discovered on that expedition, were described in his honour. On his death the *Gardeners' Chronicle* obituary writer said 'in private life the charms of his conversational thought, his unvarying kindness of disposition, and the quiet and unostentatious readiness to help with kind offices and charity, made him beloved alike by rich and poor'.

RUIZ LÓPEZ, Hipólito (1754 - 1815)

Spanish botanist and explorer who led the Spanish Expedition to Peru (1778-1788). They collected mainly in the Andes from Huanuco in the north to Huancayo and Lima in the south. Later they were in Chile from Aconcagua to Aranco and Malleco. His major publications were *Prodromus Florae Peruvianaes et Chilensis* (1794) and *Systema Vegetabilium Florae Peruvianaes et Chilensis* (1778-1802) both with J. Pavón.

Herbarium specimens in Madrid, British Museum, Oxford, Geneva and Washington.

SANDER, Henry Federick Conrad (1847 - 1920)

Born in Hanover or Bremen, Germany.

He was baptised Heinrich Friedrich Conrad but then changed it to Henry Frederick Conrad but is best known as Frederick Sander. He emigrated to England in 1865 to work for the nursery of James Carter & Co. of Forest Hill. There he met Benedict Roezl and struck a deal to sell Roezl's collections to their mutual profit. He set up in business in St Albans, Hertfordshire, a little to the north of London and by 1873 had built his first greenhouse for tropical plants. So successful was he that, in 1881, he purchased four acres of land in St Albans and built his nursery. He also began to employ more orchid collectors, at one time he had 23 active

in the field. Enormous quantities of orchids began to flow into the nursery and Sander's reputation grew apace. In the 1880's he established an orchid nursery in Summit, New Jersey, USA but sold it to J. Lager & H. Hurrell in 1896. In 1894 he purchased land in St Andre, Bruges, Belgium and established an even larger nursery there to cater for the growing demand on the Continent for his plants. Sander employed many famous collectors. Foerstermann sent back *Paphiopedilum sanderianum* from Borneo, and Carl Roebelin sent back the stupendous *Vanda sanderiana* and the graceful *Phalaenopsis sanderiana* from the Philippines. Wilhelm Micholitz was his most indefatigable collector and still worked for him into the 20th century when the flow of novelties and the demand for species was in severe decline. He discovered many beautiful orchids including *Cymbidium sanderae*, *C. insigne*, *Paphiopedilum gratixianum* and *Dendrobium schroederianum*. He was a great friend of H.G. Reichenbach and regularly sent him novelties to describe, the finest always to be named after Sander himself. In tribute Sander published the magnificent *Reichenbachia*, a set of imperial-sized volumes illustrated by his son-in-law Henry Moon. John Day considered Sander's operation something of an up-start compared to the venerable orchid nurseries of Loddiges, Low and Veitch and did not know him in his prime. However, by the end of the 19th century Sander had outshone them all, partly because of the amazing discoveries introduced by his nursery but also because of his mastery of public relations, after all he was the self-proclaimed "Orchid King". Sander died at St Albans. His Sander's Orchid Guide (1901) and Orchid Hybrids (1906) were also influential.

Herbarium specimens at Kew and Vienna.

Major Publications:

Reichenbachia (1886-94).

SCHLECHTER, Friedrich Richard Rudolf (1872 - 1925)

Born in Berlin, Germany.

German botanist, explorer and collector who has probably been the most influential orchid taxonomist since John Lindley. After an apprenticeship as a horticulturist, he was based in the Berlin Herbarium at Dahlem but left Europe for Africa in 1891. This started his botanical and plant collecting career which took him to South Africa, Mozambique, Cameroon and Togo (1895-98); New Guinea (1901-02 and 1907-09); New Caledonia (1902-03) and also Sumatra, Java, Sulawesi, Borneo and the Bismarck Archipelago. He published extensive accounts of the orchid floras of each region. He also described many novelties from the New World tropics in a series of papers in the journal Fedde's *Repertorium Specierum Novarum*. More than 300 papers came from his hand (1893-1925) and it is estimated that he proposed in excess of 1000 new species of orchids. After his travels he served as curator in the Botanical Museum at Dahlem, Berlin where he worked surrounded by the great herbarium he transferred to the Museum in 1913. His posthumously published classification of the orchids remained influential for much of the following fifty years. His major publications are *Die Orchidaceen von Deutsch-Neu-Guinea* (1911-14) and *Das System der Orchidaceen* (1926) published posthumously.

Commemorated by the genera *Rudolfiella* Hoehne and *Schlechterella* Hoehne and several species.

The main set of his collections were destroyed in Berlin during the Second World War. Duplicates of about half of them are scattered in herbaria throughout the world. Good sets can be found in Ames, Bogor, Brussels, Geneva, Kew and Paris.

SCHOMBURGK, Sir Moritz Richard (1811 - 91)

Born in Fribault, Saxony, Germany.

In 1840 he joined his brother, Robert, in Guyana where they climbed Mt Roraima (the Lost World of Sir Arthur Conan-Doyle). In 1865 he was appointed Director of the Adelaide Botanic Garden.

Herbarium specimens at Kew.

SCHOMBURGK, Sir Robert Herman (1804 - 65)

Born in Frieberg, Germany.

He is best remembered as the discoverer of the water lily, *Victoria amazonica*, in British Guiana (Guyana). He travelled extensively in the West Indies, Guyana (with his brother Moritz Richard), Santa Domingo and Siam (Thailand) collecting plants.

Commemorated by the genus *Schomburgkia* Lindl.

Herbarium specimens at British Museum and Kew.

SCHROEDER, Baron Henry (1824 - 1910)

He was a merchant banker who established a fine orchid collection at Englefield Green, Egham, Surrey. His substantial purse enabled him to buy all the finest orchids at auction, his only rival for the best plants being Sir Trevor Lawrence. *Miltonia schroederiana*, *Cattleya schroederiana* and *Dendrobium schroederianum* were described in his honour. He died at Sidmouth, Devon.

SCHWEINFURTH, Charles (1890 - 1970)

Born in Brookline, Massachusetts, USA.

In 1914 he started tending the living orchid collections to of Professor Oakes Ames. His abilities were evident and he became a personal assistant to Ames and thereafter he was an orchidologist. He worked on the orchids of the Philippines, Mt Kinabalu, North British Borneo (now Sabah) and the various Pacific islands. Later on he worked on the orchids of Honduras, Costa Rica and Panama. In 1936 he co-authored with Ames and Hubbard 'The Genus Epidendrum'. At the invitation of J. Francis MacBride, in 1922 he took on the additional work on the Orchidaceae for the *Flora of Peru*. Amongst his other works, he took on the task of identifying the numerous coloured plates prepared under the supervision of Celestino Mutis during the La Real Expedicion Botanic del Nuevo Reino de Granada between 1760 and 1817. The first volume was published in 1963 and the second in 1969. He was awarded Catedrático Honorario by Universidad Mayor de San Marcos in 1958 and a similar award from Universidad de Cuzco in 1962. In 1966 he was elected Miembro Honorario by Sociedad Colombiana de Orquideología. To commemorate his Golden Jubilee in Orchidology and his huge contribution, he was honoured by Botanical Museum of Harvard University with an illuminated scroll which outlined his successes.

SESSÉ Y LACASTA, Martín de (? - 1809)

In 1787 he led the first botanical expedition to Mexico for King Carlos III of Spain. His companion in Mexico was Jose Mociño and they explored Mexico from 1787 until 1804. He then returned to Spain. Co-author (with J. Mociño) of *Plantae Novae Hispaniae* (1887-90) and *Flora Mexicana* (1891-97).

Herbarium specimens at Madrid, Geneva, British Museum, Kew, New York, Missouri, and Chicago.

SHUTTLEWORTH, Edward (1829 - 1909)

He was employed by William Bull of Chelsea to collect orchids in Colombia (1873). He later set up a nursery specialising in imported orchids with his fellow collector John Carder in Clapham. John Day bought many orchids from them (e.g. John Day's Scrapbook 32, p. 93; 35, p. 1; 34, p. 71). Their business thrived for a few years but afterwards he went into partnership with Joseph Charlesworth at Park Road, Clapham. The business moved to Haywards Heath, Sussex in 1908. He died at Putney, London.

Commemorated by *Masdevallia shuttleworthii* Rchb.f.

SKINNER, George Ure (1804 - 67)

Born in Newcastle-upon-Tyne, Northumberland, England.

In 1831, he went to Guatemala where he set up a trading company. He collected orchids for James Bateman that graced the latter's Orchidaceae of Mexico and Guatemala (1838-1843). John Bateman said of him 'He may truly be said to have been the means of introducing a greater number of new and beautiful orchids into Europe than anyone else. Skinner died in Aspinwall, Panama, on his way home.

Commemorated by *Odontoglossum uro-skinneri*, *Barkeria skinneri*, *Cattleya skinneri* and many others. His herbarium materials are in John Lindley's herbarium at Kew.

SODIRO, Fr. Luis (1836-1909)

Born in Italy.

Fr Sodiro was a Jesuit based at the High School in Quito where his herbarium survives. A duplicate set in Berlin was destroyed during the Second World War. Collected extensively in Ecuador between 1870 and May 1909.

Commemorated by *Dracula sodiroi*.

STEVENS, Messrs

Auctioneers whose sales rooms were at 38 King Street, Covent Garden, London. They were the scene of large and regular orchid sales throughout the second half of the 19th century. Many growers attended regularly and bought orchids there.

SWARTZ, Olof (1760 - 1818)

Born in Nordföping, Sweden

Educated at Upsala where he was a student of Linnaeus' son. He left Sweden in 1783 for North America where he spent a year before moving onto Jamaica, Santo Domingo, the West Indies and the northern shores of South America, returning to Europe in 1786. (1792-1863)(Curator of the Natural History at the Swedish Academy of Sciences and Professor of Botany in Stockholm. Travelled to the West Indies and NE South America (1784-1786). Often considered to be the first orchid scientist.

Herbarium specimens at Upsala and Stockholm. Author of *Prodromus descriptionem vegetabilium in Indiam occidentalem* (1778), *Nova genera et species plantarum* (1788), *Florae Indiae Occidentales* (1797-1806), *Orchidernes Slægter och Arter Upstallde in Kunglia Vetenskaps akademiens Avhandlingar* (1800) and *Genera et species orchidearum* (1805).

VEITCH, James (1792 - 1863)

Born in Killerton, Devonshire, England.

Son of John Veitch (1752-1839) at whose nursery at Killerton he worked. He purchased land at Mount Radford, Exeter (c.1830) for a new nursery. With his son James Veitch (1815-1869) as a partner, he acquired the Knight & Perry nursery in Chelsea (1853). They employed William Lobb as a plant collector. He died at Exeter, Devonshire.

VEITCH, James (1815 - 1869)

Born in Exeter, Devonshire, England.

Son of James Veitch (1792-1863) with whom he was in partnership from 1853 at the nursery bearing the family name in Exeter. In 1853, the partnership acquired another nursery Knight & Perry, King's Road, Chelsea which specialised in tropical plants, especially orchids. He moved to Chelsea in 1853 and ceased all interest in the Exeter branch in 1864. He sent out many collectors to the tropics in search of orchids and other ornamentals. The first of these were the brothers Thomas and William Lobb. Other collectors included Richard Pearce, J. Henry Chesterton, Gustav Wallis, Guillermo Kalbreyer, Frederick Burbidge, Charles

Curtis David Burke and his son, John Gould Veitch. He died at Chelsea, London. The Royal Horticultural Society's VMM was instituted in his honour.

VEITCH, James Herbert (1868 - 1907)

Born in Chelsea, London, England.

Son of John Gould Veitch (1839-1870). Nurseryman at the Veitch establishments: Chelsea, Coombe Wood, Langley and Feltham. He travelled widely, collecting plants for the firm in Japan, India, Australia and many other places (1891-93). He became Managing Director of the firm (1898), following the retirement of his uncle (Sir) Harry James Veitch (1840 - 1924). Shortly after the publication of *Hortus Veitchii* (1906), he became ill and had to give up active work. Harry James Veitch returned to be managing director. He died at Exeter, Devonshire, 13th November 1907.

Herbarium specimens at Kew.

VEITCH, Sir Harry James (1840 - 1924)

Born in Exeter, Devonshire, England.

Second son of James Veitch (1815-1869). He joined the family's nursery in King's Road, Chelsea in 1858 and rapidly established a reputation for hard work and as an excellent businessman. He was admitted to a partnership in the firm (1865). He had been a student of John Lindley in his teens and came to know all the leading orchid nurserymen, growers and botanists of his day. He eventually succeeded his father and brother John as head of Messrs James Veitch & Sons in 1890 by which time Veitch's nursery was one of the world's leading horticultural establishment, specialising not only in orchids and other tropical plants but also in vegetables, fruit trees, hardy trees and shrubs. His most significant orchid publication was the influential *Manual of Orchidaceous Plants* (1887-1894), a book that is still widely quoted. He was chairman of the Royal Horticultural Society's Orchid Committee for many years and sent interesting orchids, especially awarded plants, on a regular basis to John Day to draw. He also provided a suitable well-lit room at the King's Road nursery for Day to draw interesting orchids. He was knighted in 1912 for his services to the Second Great International Horticultural Exhibition in London. He died in Slough, Buckinghamshire.

Commemorated by *Masdevallia harryana* Rchb.f.

VELLOZO, Jose de Mariano da Conceição (1742 - 1811)

Brazilian botanist and Franciscan cleric. Studied the flora of Rio de Janeiro and its environs. Author of *Flora fluminensis* (1790).

Herbarium and types lost.

WALLIS, Gustave (1830 - 1878)

Born in Lüneburg, near Hanover, Germany – 1st May 1830

He became apprenticed to a nurseryman in his teens and then gained employment in Munich as a gardener. In 1856 he was engaged by a German company to start a horticultural business in Brazil but the company went bankrupt and left Wallis destitute in Brazil. In 1858 he was offered work as a plant collector by Jean Linden and thus began a remarkable series of voyages up the Amazon and into the Andes. In 1870 he joined the nursery of Messrs James Veitch & Sons as a collector in the Philippines to collect the splendid *Phalaenopsis* of that archipelago but the expedition was not very successful in financial terms. In 1872, he was sent by Veitch's to Colombia and made many fine collections and several discoveries. On the completion of his contract for Veitch's, he continued to collect orchids commercially in the northern Andes and Panama. He contracted fever in Panama and, although he recovered, he suffered a second attack combined with dysentery

in Cuenca, Ecuador and died on June 20th 1878. John Day bought many of his introductions at auction and drew many of them in his scrapbooks (e.g. Scrapbook 16; p. 14; 19, pp. 23, 24).

Commemorated by many of his discoveries including *Odontoglossum wallisii*, *Dracula (Masdevallia) wallisii*, *Epidendrum wallisii* and *Houlletia wallisii* and many others.

Herbarium specimens at Kew and Vienna.

WARNER, Robert (c.1814 - 96)

Son of Charles Warner (died 1865) of Hoddesdon, a well-known orchid grower. He was one of the early orchid hybridisers, raising plants such as *Cypripedium* (now *Paphiopedilum*) Meirax. Author of *Select Orchidaceous Plants* (1862-91) and co-author of the *Orchid Album* (with T. Moore & B.S. Williams).

Commemorated by the magnificent *Cattleya warneri* T. Moore.

WARSCWICZ, Josef Ritter von RAWICZ (1812—1866)

Born in Wilno, Lithuania.

He left his home in the first Polish revolution and became an assistant in the Berlin Botanic Garden (1840-44). On completion of his studies in Berlin he went to Guatemala where he collected large quantities of orchids and other plants for the nurseryman L.B. van Houtte of Ghent who was his sponsor. For the first time the botanical gardens in Germany at Hamburg, Berlin and Erfurt and in Switzerland at Zürich received directly seeds, tubers and living plants which previously had been received only via England and it opened up a new era of horticulture in those countries. He spent several years collecting in Guatemala and further south into Panama, discovering, en route *Cattleya dowiana*. In 1849 he collected in Colombia but the following year returned to Europe to recover from yellow fever. In Berlin (1850) he met and assisted H.G. Reichenbach but in 1851 he returned to orchid collecting and for the next three years travelled widely in Ecuador, Peru and Bolivia. A second yellow fever attack forced him to return to Europe in 1853 where he became Supervisor in the Cracow Botanic Garden, Poland.

Commemorated by *Warszewiczella* Rchb.f. and many species of *Miltonia*, *Sobralia*, *Brassia*, *Epidendrum*, *Mesospinidium*, *Oncidium* and *Stanhopea*.

Herbarium specimens at Kew and Vienna. His own herbarium at Berlin is now destroyed.

WILLIAMS, Benjamin Samuel (1824—1890)

Born in Hoddesdon, Hertfordshire, England.

The son of James Williams, gardener to John Warner at The Woodlands. After working for his father as a boy he took various gardening jobs before returning to The Woodlands as foreman. He proved so capable that Warner appointed him as his orchid grower. In 1856 he set up in business with Robert Parker at Seven Sisters Road, Holloway, a nursery that survived into the 20th century as the Victoria and Paradise Nursery. Williams began a parallel career as a gardening author in 1851 and published the first edition of his *Orchid Grower's Manual* in 1852, the seventh appearing in 1894. This book introduced the mysteries of tropical orchid cultivation to the Victorians and certainly stimulated orchid growing in England. The seventh edition, published in 1896, is still considered by many the most useful of all orchid books. His other famous orchid book the three volume *Select Orchidaceous Plants* was co-authored with Robert Warner. He died at Holloway, London.

Commemorated by *Dendrobium williamsianum* Rchb.f.

WOOLWARD, Florence H. (1854—1936)

Born in Hammersmith, London, England.

The second of five children to the Reverend Alfred Gott Woolward, Rector of Bilton, nr. Grantham,

Lincolnshire. She spent most of her life in Bilton and was a botanical illustrator at the British Museum (Natural History). Author and illustrator of *The Genus Masdevallia*, one of the finest illustrated orchid books of the 19th century which was commissioned by the Marquis of Lothian. The originals for the book and many other orchid paintings remain the property of the current Marquis of Lothian. Sixty were reproduced as *Thesaurus Woolwardiae* in 1994.

Commemorated by *Dracula (Masdevallia) woolwardiae*.

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