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Plagiogyriaceae

The only recorded collection of *Plagiogyriaceae* made by Wendland in Costa Rica was described as a new species.

Plagiogyria costaricensis Mett. ex Kuhn in Linnaea 36: 149. 1869.

Original citation: "Costa Rica, Vulcán de Barva (Wendland 1066)".

= *Plagiogyria pectinata* (Liebm.) Lellinger in Amer. Fern J. 61: 115. 1971.

Notes. – LELLINGER (1971: 116) reported that a drawing of the holotype was at B, and that the holotype was possibly at C, "C? not seen". However, no such specimen has been located there. There are no known specimens at GOET associated with this name. In the absence of any extant specimens, a neotype may be designated. Typification will be best undertaken as part of a comprehensive revision of *Plagiogyria* (Kunze) Mett.

Polypodiaceae

Six collections of *Polypodiaceae* were made by Wendland in Central America, two of which were described as new species.

Polypodium falcoideum Kuhn ex Hieron. in Bot. Jahrb. Syst. 34: 533. 1904.

= *Campyloneurum falcoideum* (Kuhn ex Hieron.) M. Mey. ex Lellinger in Proc. Biol. Soc. Washington 89: 708. 1977.

Original citation: "Costarica: ad arborum truncus silvarum densarum humidarum supra fluvium Río Sucio, alt. s. m. 800 m (L. n. 1741; 17. m. Mart. 1882); prope Desengaño (H. Wendland n. 876: 9. Mayo 1857)".

Lectotypus (designated by MORAN & LABIAK, 2018: 387): **COSTA RICA:** San José, Río Sucio, 800 m, 17.III.1882, *Lehmann* 1741 (US [US00048645]; isolecto-: B [B 20 0087566], BM n.v., K [K000590831], P [P00624630]).

Syntypus: **COSTA RICA:** Paso de El Desengaño, 9.V.1857, *Wendland* 876 (B [B 20 0087571, B 20 0087572]).

Polypodium costaricanum Hieron. in Bot. Jahrb. Syst. 34: 530. 1904.

Original citation: "Costarica; habitat ad arborum truncos in silvis densis humidis montium Tablázos dictorum ab oppido San José meridiem spectantium, alt. s.m. 2000 m (L. n. 1235; 24. m. Dec. 1881); in monte Irazú (H. Wendland n. 644; 16. m. April. 1857)".

Lectotypus (designated by SOTA, 1966: 169): **COSTA RICA:**

Irazú Volcano, 16.IV.1857, *Wendland* 644 (B [B 20 0075608]).

Syntypus: **COSTA RICA:** San José, 2000 m, XII.1881, *Lehmann* 1235 (B [B 20 0075605]).

= *Polypodium myriolepis* Christ in Bull. Herb. Boissier 4: 661. 1896.

Pteridaceae

Four collections of *Pteridaceae* were made by Wendland in Central America, one of which was described as a new species.

Hemionitis pinnatifida Baker, Syn. Fil.: 399. 1868.

Original citation: "Hab. Central America, Wendland, 438."

Holotypus: **EL SALVADOR:** sine loco [San Miguel–Tabanco?], s.d. [19.II.1857?], *Wendland* 438 (BM [BM000936637]).

Notes. – LELLINGER (1989: 133) indicated: "Type: Central America [presumably Costa Rica], *Wendland* 438 (presumably K not seen)". The specimen is desposited at BM, not K, and was collected in El Salvador according to Wendland's collection number.

Angiosperms**Acanthaceae**

Of the nine collections of *Acanthaceae* made by Wendland in Central America, one was described as a new species.

Aphelandra bullata H. Wendl. in Hamburger Garten-Blumenzeitung 19: 30. 1863.

Original citation: "Anfangs August 1857 wurde diese ebenfalls schöne Pflanze in mittlerm Sarapiquíthale zwischen San Miguel und La Muelle in einer Höhe von etwa 3000 Fuss von mir in Blüthe gefunden".

= *Aphelandra aurantiaca* Lindl. in Edwards's Bot. Reg. 31: tab. 10 [12]. 1845.

Notes. – This species was described from a cultivated plant at Herrenhausen Gardens. It was collected as a living plant in Costa Rica at Río Sarapiquí, between San Miguel and Muelle. This name has been neglected in recent treatments of *Aphelandra* R. Br. for Central America (see DANIEL, 1990, 2005, 2010), however, it is a validly published name.

The original material has not been located; the typification of this name should be best undertaken as part of a taxonomic revision of *Aphelandra*.

Araceae

Of the approximately 50 known collections of *Araceae* made by Wendland in Central America, 32 names are treated here. Of these, 24 are typified upon extant Wendland specimens, and eight by other elements although the names are associated with Wendland by unspecified collections or references related to original material. All these were introduced by SCHOTT (1858, 1860, 1861, 1864, 1865), who at the time was director of the Imperial Gardens at Schönbrunn Palace, Vienna, where the world's largest living collection of aroids and herbarium were then maintained (MAYO et al., 1995). Wendland and Schott developed a lasting friendship from an early collaboration. As his father Heinrich L. Wendland had done, Hermann Wendland completed part of his gardener training at Schönbrunn where he was instructed by Schott between September 1846 and July 1847 (PETERS, 2013). To acknowledge Schott's "unselfish and most amicable" assistance with some of his palm research, Wendland named *Phytelephas schottii* H. Wendl. in his honour (WENDLAND, 1860: 119). Schott is considered the most productive taxonomist to have worked on tropical *Araceae* (RIEDL, 1965), and he is responsible for the establishment of about 37 currently accepted genera and the description of about 590 species. SCHOTT (1858: 177) noted the contribution made by Wendland to the study of *Araceae* when he wrote that "it was only through Oerstedt, Wendland and Hoffmann that we became aware of a part of the aroid flora of Central America, which was previously unexplored in this regard".

Schott's herbarium was destroyed in World War II and held Wendland's *Araceae* specimens, many of which represented original material. BRÄUCHLER et al. (2021) reported that *Araceae* were among the families either completely or partly destroyed in a fire at Oberhöfli, a castle in Lower Austria, where they were in storage in May 1945. Based on records of specimens that were held in W prior to World War II, RIEDL & RIEDL-DORN (1988) established a list of those that were destroyed, including species based on collections made by Wendland and cited by Schott in the respective descriptions. Many of the lost specimens have duplicates or associated material at GOET, although some that have been reported to be there have not been located following extensive searches.

For the new species described by Schott based on Wendland collections, it is accepted here that those specimens in W were the ones that Schott examined. However, the status of destroyed specimens is problematic as it is not known which ones Schott examined, or if indeed he did examine them, or if there were multiple specimens of the same collection. What is certain is that they were destroyed and that there are no surviving Wendland specimens of *Araceae* at W. In this case, ICN Art. 9.11 rules that a lectotype may be designated among the extant original material, if such exists.

Schott's type citations mostly give the location (in Central America or cultivation) and the collector (Wendland), but neither field collection numbers nor the herbarium or herbaria where the specimens were held. If a specimen with those same data is extant, it would be expected that it was part of a single gathering and therefore qualifies as original material. Such specimens are considered isotypes and with the loss of the holotypes are suited to serve as lectotypes whether they were studied by Schott or not (in the case of GOET specimens, this is not possible to determine).

Although Schott's herbarium was lost, a series of illustrations and paintings, collectively known as *Schott's Icones*, survived and are extant at W. They have been published as a microfiche edition (SCHOTT et al., 1984). The *Icones* consist of a set of 3,400 line drawings of herbarium specimens and paintings of living collections, and which were only partly published during Schott's lifetime (CROAT, 1998).

Because of the loss of Schott's herbarium, a number of researchers have examined the possibility of accepting *Schott's Icones* as original material and therefore their eligibility as lectotypes, or if not original material, then as neotypes (SAKURAGUI et al., 2005; MAYO & SAKURAGUI, 2011; SAKURAGUI et al., 2011; CARDOZO et al., 2014). RIEDL & RIEDL-DORN (1988) suggested that in the absence of actual specimens, *Schott's Icones* should serve as types. On the other hand, GRAYUM (1996) "generally excluded" them as original material as they are undated and depict unvouchered material. For those species associated with Wendland's Central America expedition, there are a number of examples for which the *Icones* have been designated as types. For example, CROAT (1997) designated icones as neotypes for *Philodendron acrocardium* Schott (tab. 2498), *P. gracile* Schott (tab. 2687–2688), *P. schottianum* H. Wendl. ex Schott (tab. 2735–2736), *P. wendlandii* Schott (tab. 2079) and *Syngonium salvadorensis* Schott (tab. 3231), as well as for *Acontias wendlandii* Schott (tab. 3470–3471) in recent times (CROAT et al., 2017). In this work we accept *Schott's Icones* as suitable neotypes unless it can be proven that the *Icones* were created as part of the original description, and therefore they might potentially serve as lectotypes. However, there are no instances where Wendland's collections have an accompanying illustration and therefore neotypification by that process is not applicable.

Most of the annotations on *Araceae* specimens in GOET have, in addition to Wendland's original collection label, a second label with only the name of the species that is written in an unknown hand. In the protoglosses associated with the Wendland types, Schott used two abbreviations that are relevant to understanding typification and his examination of specimens: *v.v.*, *vidi vivum* – seen in the living state; *v.s.*, *vidi siccum* – seen in the dried state. These annotations are relevant when determining if species were described from wild collected specimens or from cultivated plants.

A further six new species were described from cultivated plants. The species were collected by Wendland as living specimens and grown at both, or either, Herrenhausen and Schönbrunn. Although they do not involve original material collected by Wendland in Central America, they are included here for historical completeness.

Acontias wendlandii Schott in Oesterr. Bot. Z. 8: 178. 1858.

= *Xanthosoma wendlandii* (Schott) Schott in Oesterr. Bot. Z. 15: 33. 1865.

Original citation: "Wurde von Wendland bei S. Ramón entdeckt".

Lectotypus (designated here): **COSTA RICA**: San Ramón, 26.VI.1857, *Wendland* 1130 (GOET [2-part specimen: GOET000261, GOET000262]) (Fig. 8 → p. 37).

Notes. – CROAT & ACEBEY (2015: 209) accepted a Wendland specimen at GOET as the holotype, but most probably Schott based his description on material kept at W. Therefore, the specimen at GOET is designated here as the lectotype.

Anthurium dolosum Schott in Oesterr. Bot. Z. 8: 179. 1858.

Original citation: "In Guatemala bei St. Pedro und St. Lucía. Wendland".

Lectotypus (designated by CROAT & BAKER, 1979: 81): **GUATEMALA**: near San Pedro and Santa Lucía, 20.I.1857, *Wendland* 273 (GOET [GOET000229]; isolecto-: K [K000434061 fragm.]).

= *Anthurium scandens* (Aubl.) Engl. in Mart., Fl. Bras. 3(2): 78. 1878 (Fig. 9A → p. 38).

Anthurium flexible Schott in Oesterr. Bot. Z. 8: 180. 1858.

Original citation: "Wendland fand diese Art bei Pedregal in Costa-rica".

Lectotypus (designated by CROAT & BAKER, 1979: 49): **COSTA RICA**: Pedregal, 25.V.1857, *Wendland* 932 (GOET [GOET000230]).

Anthurium formosum Schott in Oesterr. Bot. Z. 8: 181. 1858.

Original citation: "Costa-rica bei Naranjo. Wendland".

Lectotypus (designated by CROAT & BAKER, 1979: 50): **COSTA RICA**: Naranjo [Juan Viñas], 27.III.1857, *Wendland* 583 (GOET [3-part specimen: GOET000231, GOET000232, GOET000233]).

Anthurium lancifolium Schott in Oesterr. Bot. Z. 8: 180. 1858.

Original citation: "Auf dem Vulkan von Turrialba in Costa-rica von Wendland entdeckt".

Lectotypus (designated by CROAT & BAKER, 1979: 55): **COSTA RICA**: Turrialba Volcano, 24.III.1857, *Wendland* 518 (GOET [GOET000235]).

Anthurium obtusilobum Schott in Oesterr. Bot. Z. 8: 181. 1858.

Original citation: "Wendland fand dasselbe bei St. Miguel in Costa-rica".

Lectotypus (designated by CROAT & BAKER, 1979: 63): **COSTA RICA**: San Miguel, 12.V.1857, *Wendland* 777 (GOET [GOET000237]).

Anthurium pallens Schott in Oesterr. Bot. Z. 8: 180. 1858.

Original citation: "Costa-rica bei Desengáno von Wendland gefunden".

Lectotypus (designated by CROAT & BAKER, 1979: 65): **COSTA RICA**: near Paso de El Desengáno, s.d. [9.V.1857?], *Wendland* 840 (GOET n.v.).

Notes. – The specimen designated by CROAT & BAKER (1979: 65) has not been located either at GOET or as a loan specimen at MO.

Anthurium panduriforme Schott, Prodr. Syst. Aroid.: 536. 1860 [nom. nov.].

= *Anthurium panduratum* Schott in Oesterr. Bot. Z. 8: 182. 1858 [nom. illeg., non Mart. ex Schott 1855].

Original citation: "Costa-rica. Wendland. – v.s. exemplaria spontan. in Herb. Wendl.".

Lectotypus (designated by CROAT & BAKER, 1979: 66): **COSTA RICA**: San Miguel, 12.V.1857, *Wendland* 776 (GOET [GOET000238]; isolecto-: K [K000434052 fragm.]).

Notes. – K000434052 consists of a few fragments of flowers from the type plus a drawing by N.E. Brown dated 25.V.1881, annotated as an "Impression of the type specimen! in Wendland's herbarium".

Anthurium porrectum Schott in Oesterr. Bot. Z. 8: 180. 1858.

Original citation: “Von Oersted bei Cartago, von Wendland bei Desenganno in Costa-rica gesammelt”.

Lectotypus (designated by CROAT & BAKER, 1979: 61): **COSTA RICA:** Paso de El Desengaño, 9.V.1857, *Wendland* 841 (GOET [GOET000236]; isolecto-: K [K00043456 fragm.]).

Syntypus: **COSTA RICA:** sine loco, s.d., *Oersted* s.n. (W†).

= *Anthurium microspadix* Schott in Oesterr. Bot. Z. 8: 180. 1858.

Notes. – CROAT & BAKER (1979: 61) were the first to unite *Anthurium porrectum* Schott and *A. microspadix* Schott at the same rank, and therefore, treated the former having priority over the latter (ICN Art. 11.5). Earlier, ENGLER (1879: 112) published the combination *A. porrectum* var. *microspadix* (Schott) Engl. but did not unite them at the same rank.

K000434056 consists of a packet containing a few fragments of flowers from the type; it also bears a drawing by N.E. Brown dated 25.V.1881 and annotated as an “Impression of the type specimen! in Wendland’s herbarium”.

Anthurium spectabile Schott in Oesterr. Bot. Z. 8: 181. 1858.

Original citation: “Von Wendland auf dem Vulkan Turrialba in Costa-rica entdeckt”.

Lectotypus (designated by CROAT & BAKER, 1979: 88): **COSTA RICA:** Turrialba Volcano, 25.III.1857, *Wendland* 506 (GOET [2-part specimen: GOET000239, GOET000240]).

Anthurium subcordatum Schott in Oesterr. Bot. Z. 8: 181. 1858.

Original citation: “Guatimala, auf dem Gebirge “Las-nubes” von Wendland aufgefunden”.

Lectotypus (designated by CROAT, 1983: 330): **GUATEMALA:** Las Nubes, 2440 m, 11.I.1857, *Wendland* 330 (GOET [GOET000241]).

Anthurium subsignatum Schott in Bonplandia (Hannover) 9: 368. 1861.

Original citation: “Von Hermann Wendland einge führt erhielten wir ein *Anthurium*, das sich nunmehr als ausgezeichnete Art erweiset. Wir nennen es: *Anthurium subsignatum* S. Amer. Central. (Wendland)”.

Lectotypus (designated by CROAT & BAKER, 1979: 91): **COSTA RICA:** Pedregal, 25.V.1857, *Wendland* 919 (GOET [GOET000242]).

Anthurium wendlandii Schott in Oesterr. Bot. Z. 8: 181. 1858.

Original citation: “Bei St. Miguel fand Wendland in Costa-rica diesen parasitischen Schmuck der Bäume”.

Lectotypus (designated by CROAT, 1983: 277): **COSTA RICA:** San Miguel, 21.V.1857, *Wendland* 957 (GOET [4-part specimen: GOET000243, GOET000244, GOET000245, GOET000246]).

= *Anthurium clavigerum* Poepp., Nov. Gen. Sp. Pl. 3: 84. 1845 (Fig. 9B → p. 38).

Notes. – Specimens K000434072, K000434073, K000434074 and K000434075 were taken from a cultivated plant at Kew Gardens, 19 August 1887, reportedly sent to Kew by Wendland. These specimens are not original material.

Dieffenbachia wendlandii Schott in Oesterr. Bot. Z. 8: 179. 1858.

Original citation: “In einem Bache bei St. Anna in Salvador von Wendland aufgefunden”.

Lectotypus (designated here): **EL SALVADOR:** Santa Ana, 9.II.1857, *Wendland* 410 (GOET n.v.).

Notes. – At the time of writing, the GOET specimen was on loan to MO, and not able to be located. The specimen was considered as “holotype” by CROAT (2004: 758).

Three photographs of this collection deposited at MO are cited in the Tropicos database [<http://legacy.tropicos.org/specimen/357105>].

Homalomena wendlandii Schott, Prodr. Syst. Aroid.: 308. 1860.

= *Adelonema wendlandii* (Schott) S.Y. Wong & Croat in Syst. Bot. 41: 43. 2016.

Original citation: “Amer. centr. Wendland. – v.v. cultam.”.

Neotypus (designated here): **[CENTRAL AMERICA]:** cultivated at Herrenhausen or Schönbrunn, IV.1861, *Wendland* s.n. (GOET [4-part specimen: GOET045058]).

Notes. – Described from a cultivated plant most likely at Herrenhausen or Schönbrunn but originally collected as a living plant by Wendland in Central America. There is no known original material. The holotype at B accepted by WONG et al. (2016: 43) is not a Wendland collection and post-dates publication. In the absence of original material, a specimen at GOET taken from a cultivated plant, undoubtedly to have originally been collected by Wendland, is proposed to serve as neotype.

Philodendron acrocardium Schott in Oesterr. Bot. Z. 8: 179. 1858.

Original citation: “Guatimala. Wendland”.

Lectotypus (designated here): **GUATEMALA**: Las Nubes, 12.I.1857, *Wendland* 322 (GOET [GOET000255]).

= *Philodendron hederaceum* (Jacq.) Schott in Wiener Z. Kunst 1829(3): 780. 1829.

Notes. – CROAT (1997: 461) suggested that the type specimen was at W and possibly destroyed, and he accordingly designated the illustration Schott's *Icones* tab. 2498 as a neotype. However, material collected by Wendland at GOET is extant, which is here designated as the lectotype of the name superseding Croat's proposal (ICN Art. 9.19).

Philodendron anisotomum Schott in Oesterr. Bot. Z. 8: 179. 1858 (Fig. 9D → p. 38).

Original citation: “Guatimala. Wendland”.

Lectotypus (designated by CROAT, 1997: 397): **GUATEMALA**: Las Nubes, 12.I.1857, *Wendland* 321 (GOET [2-part specimen: GOET000250, GOET000251]).

Philodendron aurantiifolium Schott in Oesterr. Bot. Z. 8: 178. 1858.

Original citation: “*Philodendra* bringen die angezeigten Sammlungen fünf neue. Von allen hier erwähnten Sammlern wurde die hier zuerst genannte Art in Costa-Rica getroffen”.

Lectotypus (designated by GRAYUM, 1996: 190): **COSTA RICA**: Naranjo [Juan Viñas], 3.VII.1857, *Wendland* 1136 (GOET [GOET000252]; isolecto-: K n.v., MO-2904716).

Notes. – The GOET specimen *Wendland* 1136 was cited as the holotype by GRAYUM (1996: 190). However, SCHOTT (1858) did not cite a collector in the protologue, but only later stated “Costa Rica. Wendland, etc.” when dealing with the same species in a subsequent treatment (SCHOTT, 1860: 230). Furthermore, the phrase “Spatha hellockerfarbig [spathe light-yellow-ocher-colored]”, which does appear in the protologue, is handwritten on the label of *Wendland* 1136. This is adequate evidence to accept the Wendland specimen as original material and Grayum's proposal is corrected here to lectotype (ICN Art. 9.10).

Philodendron gracile Schott, Prodr. Syst. Aroid: 244. 1860.

Original citation: “America centralis. Wendland. – v.v. cult. a Wendlandio communicat”.

Neotypus (designated by CROAT, 1997: 539): [icon] Schott's *Icones*: tab. 2687–2688 (W).

= *Philodendron tenue* K. Koch & Augustin in Index. Sem. (Berlin), App. 7. 1854.

Philodendron impolitum Schott, Prodr. Syst. Aroid.: 291. 1860.

Original citation: “Amer. centr. Wendland. – v.v. cult.”.

= *Philodendron radiatum* Schott in Oesterr. Bot. Wochenschr. 3: 378. 1853.

Notes. – Described from a cultivated plant either at Herrenhausen or Schönbrunn, grown from a collection by Wendland from Central America. As there are no known specimens at GOET or other herbaria, resolution of typification will be best undertaken as part of a comprehensive revision.

Philodendron ligulatum Schott, Prodr. Syst. Aroid.: 224. 1860.

Original citation: “Amer. centralis. Wendland. – v.v. cult.”.

Neotypus (designated by CROAT, 1997: 479): **COSTA RICA**: Limón: Refugio Nacional de Vida Silvestre Barra del Colorado, between Río Chirripocito and Río Sardina (Sardinal), 10°38'N 83°45'W, 12 m, 22.IV.1990, Grayum 9823 (MO n.v.; isoneo-: INT n.v.; CR [CR149638]).

Philodendron schottianum H. Wendl. ex Schott in Oesterr. Bot. Z. 15: 72. 1865.

Original citation: “Patria?”.

Neotypus (designated by CROAT, 1997: 523): [icon] Schott's *Icones*: tab. 2735–2736 (W).

Notes. – There is no evidence that Wendland collected this species either in Central America or from a cultivated source. A search at GOET did not locate any specimens associated with this name. Schott's inclusion of Wendland as author cannot be explained although it is undoubtedly a name proposed by Wendland.

Philodendron wendlandii Schott, Prodr. Syst. Aroid.: 221. 1860 (Fig. 9E → p. 38).

Original citation: “America centralis. Wendland. v.v. cultam.”.

Neotypus (designated by CROAT, 1997: 558): [icon] *Schott's Icones*: tab. 2079 (W).

Rhodospatha wendlandii Schott in J. Bot. 2: 52. 1864.

Original citation: “America centralis (Wendland!)”.

Lectotypus (designated by CROAT & ACEBEY, 2015: 158): **CENTRAL AMERICA**: sine loco, s.d., *Wendland s.n.* (GOET).

Spathiphyllum atrovirens Schott in Oesterr. Bot. Z. 8: 179. 1858.

Original citation: “*Spathiphylla* wurden drei neue Arten, alle von Wendland in Costa-rica gesammelt. Pedregal [Wendland]”.

Lectotypus (designated here): **COSTA RICA**: Pedregal, 10.VIII.1857, *Wendland 1264* (GOET).

Notes. – BUNTING (1960: 43) indicated that *Wendland 1264*, possibly at either B or W, was destroyed and designated *Pittier 9053* at US [US-936751] as a neotype. This action is superseded by the extant material at GOET, which is designated here as the lectotype.

Spathiphyllum fulvovirens Schott in Oesterr. Bot. Z. 8: 179. 1858.

Original citation: “*Spathiphylla* wurden drei neue Arten, alle von Wendland in Costa-rica gesammelt. Bei Pedregal [Wendland]”.

Lectotypus (designated here): **COSTA RICA**: near Pedregal, 25.V.1857, *Wendland 939* (GOET [GOET000257]).

Notes. – BUNTING (1960: 27) indicated that *Wendland 939* was destroyed and designated *von Wedel 2198* as a neotype at GH with isoneotypes at F and MO. Bunting's proposal is superseded by the extant original material at GOET designated here as the lectotype.

Spathiphyllum wendlandii Schott in Oesterr. Bot. Z. 8: 179. 1858.

Original citation: “*Spathiphylla* wurden drei neue Arten, alle von Wendland in Costa-rica gesammelt. Bei Cariblanco und St. Miguel. [Wendland]”.

Lectotypus (designated here): **COSTA RICA**: Cuesta de Congo, between Cariblanco and San Miguel, 10.V.1857, *Wendland 772* (GOET [GOET000258]) (Fig. 10 → p. 39).

Notes. – BUNTING (1960: 42) indicated that *Wendland 772* was lost. However, a duplicate of this collection is extant at GOET and it is therefore designated here as the lectotype.

Syngonium peliocladum Schott, Prodr. Syst. Aroid.: 202. 1860.

= ***Syngonium podophyllum*** var. ***peliocladum*** (Schott) Croat in Ann. Missouri Bot. Gard. 68: 636. 1982.

Original citation: “Costa-rica. Wendland. – v.v.”.

Neotypus: (designated by CROAT, 1981: 636): [icon] *Schott's Icones*: tab. 3215–3216 (W).

Syngonium salvadorens Schott in Oesterr. Bot. Z. 8: 179. 1858.

Original citation: “Im Staate San Salvador bei St. Anna von Wendland entdeckt”.

Lectotypus (designated here): **EL SALVADOR**: Santa Ana, 9.II.1857, *Wendland 408* (GOET [GOET000259]).

Notes. – CROAT (1981: 637) indicated that a Wendland specimen was possibly at P, but it has not been located, and he cited an illustration, *Schott's Icones*: tab. 3231 [NYBG negative 4331] as the type. That proposal is superseded by the lectotype designated here based on the original material extant at GOET.

Syngonium schottianum H. Wendl. ex Schott, Prodr. Syst. Aroid.: 199. 1860.

Original citation: “Costa-rica. Wendland. – v.v.”.

Notes. – CROAT (1981: 602) stated: “Type: Costa Rica, Wendland (destroyed, type photo seen FM-12301)”. A search at GOET did not locate any specimens. The typification of this name should be best undertaken as part of a taxonomic revision of *Syngonium* Schott.

Syngonium wendlandii Schott in Oesterr. Bot. Z. 8: 178. 1858 (Fig. 9F → p. 38).

Original citation: “Wendland fand dieselbe bei St. Anna in Costa-rica”.

Lectotypus (designated here): **COSTA RICA:** Santa Ana, 9.IV.1857, *Wendland* 619 (GOET [GOET000260]) (Fig. 11 → p. 40).

Notes. – CROAT (1981: 645) indicated that the Wendland collection had been at B but was destroyed, and that there was a Schott drawing that he had seen [nº 3243]. *Wendland* 619 at GOET has remained overlooked and, as it is original material, is designated here as the lectotype.

Tornelia dissecta Schott in Oesterr. Bot. Z. 8: 179. 1858.

≡ *Monstera dissecta* (Schott) Croat & Grayum in Ann. Missouri Bot. Gard. 74: 659. 1987 (Fig. 9C → p. 38).

Original citation: “Von Wendland auf dem Vulkan Turrialba entdeckt”.

Lectotypus (designated by CROAT & GRAYUM, 1987: 659): **COSTA RICA:** Turrialba Volcano, 24.III.1856 [1857], *Wendland* 500 (GOET).

Notes. – The GOET specimen was cited as the holotype by CROAT & GRAYUM (1987: 659). This is treated here as an error to be corrected to lectotype (ICN Art. 9.10).

The recent revision of *Monstera* Adans. by CEDEÑO-FONSECA et al. (2022: 70) also accepted the GOET specimen as the holotype. In addition, they discussed a supposedly lost specimen at W that may have been just a single leaf taken from the GOET specimen and would represent an isotype. There is no clear evidence to support that; hence, the GOET specimen is here considered as the lectotype.

Arecaceae

Of the c. 75 known collections of *Arecaceae* made by Wendland in Central America, 30 were described as new species. The taxonomic treatments in which they were included are those by ANDRÉ (1871), SPRUCE (1871), SCHÄDTLER (1875b–d), HEMSLEY (1885), DAMMER (1904, 1905) and BURRET (1930, 1934).

Among the primary aims of Wendland’s excursion to Central America was to acquire living palms or seeds for Herrenhausen Gardens, and dried specimens for the Herrenhausen herbarium. The living palm collection at Herrenhausen at that time was rapidly developing (WENDLAND, 1852d). Of the palms collected by Wendland in Central America it was reported by ANON. (1857a: 640) that:

Among his acquisitions of both living and dried plants, the palms deserve a mention, which Wendland particularly focused on studying. He has collected over 80 species of which almost a quarter seems to be new. The splendid palm house at Herrenhausen, the property of the King of Hanover, which, as is well known, has no equal in Germany in terms of the number of living palm trees and the beauty of the specimens, received a considerable increase from him.

The living palm collection grew rapidly through the 1860s and 1870s and by 1875 was reported to include 435 species (SCHAEDTLER, 1875a–f), making it the largest collection of cultivated palms in the world. The development of the collection was demonstration of Wendland’s unwavering focus on the family and his consummate skill as a propagator and cultivator of tropical plants grown under heated conditions in an otherwise unfavourable climate (DOWE, 2019).

In Wendland’s Central American expedition reports (see Part II), palms are the most frequently referred to plants. He described their appearance, how he collected them and some of the local uses. They were the first plants mentioned in his reports, when he wrote for 16 December 1856: “while sailing up the Río Dulce I noticed about 12 different species of palms through binoculars, but the distance prevented me from identifying them” (WENDLAND, 1857e: 179). He mainly described palms in general terms in his reports, writing, for example, that “among the plants gathered at Turrialba there is also an *Iriartea*. Such a plant looks glorious in God’s free nature; the roots emerge from eight feet up the trunk. The chamaedoreas also grow roots downwards from above” (WENDLAND, 1857g: 363).

In regards to the gathering of herbarium specimens, Wendland commented on the problems associated with the making of good palm specimens, noting the difficulties compared to collecting other plant forms. He wrote on one occasion that the “vasculum, which was already over packed anyway, is rarely large enough to hold instructive palm samples” (WENDLAND, 1857h: 513). However, the overall quality of Wendland’s palm specimens is reasonable, considering the difficulties experienced in collecting, drying and transporting them over long distances and especially in the wet seasonal conditions encountered in Central America during his time there.

Richard Spruce: Palmae Amazonicae

One of the most productive taxonomic outcomes from Wendland’s palm collections from Central America was completed by Richard Spruce (1817–1893), an English botanist who had traveled extensively in South America, arriving in Brazil in 1849 and returning to Britain some 15 years later in 1864. One of his major works was *Palmae Amazonicae* (SPRUCE, 1871), written during the seven years after his return. In this, Spruce provided a detailed taxonomic and ethnographic account of the palms of the Amazon basin and adjacent areas (HENDERSON,

1995). SPRUCE (1871: 104) noted that the “fine Geonomas discovered by Wendland in Central America are not always represented in the Kew Herbarium by specimens perfect enough to enable one to classify them with certainty”. *Palmae Amazonicae* included 13 new species of *Geonoma* based on names given by Wendland on the specimens of those examined by Spruce. The label annotations invariably give the collection date as 1862, which appears to be when the specimens were made from palms growing at Herrenhausen Gardens. Although it was not explicitly indicated as such on any of the labels, it is a reasonable assumption to make because of the neatness and quality of the specimens and the knowledge that about 30 species of *Geonoma* were then reported to be grown at Herrenhausen. SCHÄEDTLER (1875d), in his account of the palms cultivated at Herrenhausen, noted that the Geonomas were of a dainty, dwarf growth and were particularly suitable for culture in the glass houses, but they required both high humidity and high temperature in order to flourish. Additional information about Wendland’s wild collected specimens is also provided on the labels. As Spruce based his descriptions on the specimens of cultivated palms, these are accepted as holotypes. Although the wild collected specimens (of which most are extant) often have additional information on the labels, they are not candidates for use as types because they were not used when preparing the account of the new taxa. For these instances, the specimens are listed here under the heading of “Additional specimens”.

Georg Schaedtler: Herrenhausen palm collection catalogue

In a descriptive catalogue of palms then under cultivation at Herrenhausen, horticulturist SCHÄEDTLER (1875b–d) included new names most likely under the direction of Wendland as a means of inventorization or ‘announcing’ undescribed species that Wendland proposed to publish. Included were species that Wendland had collected in Central America. Schaedtler’s descriptions provided valid publication for many of them, however, no specimens were cited and typification has been problematic. We here accept that specimens in GOET represent holotypes (when unicates) for new names proposed by Schaedtler, as it is most probable that the specimens are implicitly associated with the names as they have been annotated by Wendland.

William Botting Hemsley: Biologia Centrali-Americana

A comprehensive documentation of the flora of Central America was presented in the monumental *Biologia Centrali-Americana*, coordinated by Kew Gardens and published progressively between 1879 and 1888. The palms were treated in volume 3 (HEMSLEY, 1885). William B. Hemsley (1840–1918), who was then Principal Assistant at K, noted in the introduction of the aforementioned contribution that “the work was substantially restricted to the Kew Herbarium and Library” (HEMSLEY, 1888: iv). It was therefore from that collection that

the palms were mostly described. Similar to the new species described by Spruce (see above), those described by Hemsley were based on specimens that Wendland had made from cultivated plants at Herrenhausen. Hemsley’s palm treatment dealt with 25 genera and 107 species. Six new names based on specimens collected by Wendland were presented, however none was validly described and therefore are *nomina nuda*. These names are included here as a record of Wendland’s Central American collections. Hemsley also included many other names in his account, especially in *Geonoma*, that had been previously introduced by Wendland in *Les Palmiers* (KERCHOVE DE DENTERGHEM, 1878). However, Hemsley listed them explicitly as *nomina nuda* and therefore typification is not applicable.

Udo Dammer and Max Burret: Posthumous descriptions

DAMMER (1904, 1905) collaborated with Wendland on some palm taxonomy, and after Wendland’s death in 1903 published an account of *Chamaedorea* that was based on manuscripts given to him by Wendland (DOWE, 2019; DOWE & HODEL, 2021). All the species attributed to Dammer included here are in that genus and the specimens are mainly held at GOET.

Other species were posthumously described by BURRET (1930, 1934) based on specimens at B that had been annotated by Wendland as well as the unpublished manuscripts that were held at B, having previously been kept in Dammer’s personal estate. The specimens held at B were destroyed during World War II so details about them must be deduced from Burret’s treatments. These mostly are accepted as the holotypes although by their loss a lectotype as a substitute for it may be designated (ICN Art. 9.11). The genera involved include *Bactris* Jacq. ex Scop., *Calyptrogyne* H. Wendl. and *Geonoma*. Of the latter genus, BURRET (1930: 123) noted that many had previously been described by Spruce (see above) but that other specimens held at B were annotated with Wendland’s manuscript names and were accompanied by short descriptions and represented new species. Burret noted that the specimens lacked information on provenance and appeared to be duplicates. On the evidence, they were most likely duplicates of those at GOET.

Specimen annotation

Most of Wendland’s Central American palm specimens held at GOET have a distinctive label in comparison to other families. There are very few surviving original field labels for the palms although many original labels have survived for most other families. It is assumed that the palm labels were rewritten after Wendland had returned from Central America as they are on a specially printed label and consistently neat in style, unlike his field labels that are mostly brief and untidy. The annotations are all in Wendland’s hand.

The labels for the specimens held in K are different. It is apparent that the specimens were taken from cultivated plants at Herrenhausen as they are mostly dated as 1862. These labels

are mostly annotated in Wendland's hand but where there are additional specimens of the same species there is a second label in an another unknown hand. When there are two sheets, these represent a single specimen (2-part specimen), and that the second sheet was to accommodate the extra material that would otherwise crowd a single sheet. An examination by present Kew staff of these labels to determine the author was inconclusive but nevertheless excludes William Hooker or George Bentham. Some labels display writing in both Wendland's hand and the other unknown hand when "H. Wendland 1862" or similar is added.

The palm specimens are numbered independently of all other families that he collected in Central America. The lowest known label number is 3 and the highest known label number is 102. The actual number of specimens known to have a written number on the label is about 47, and there are about 28 specimens that lack a number. The numbered specimens are more or less in chronological order as verified by the collection dates and the known location sequence (in the absence of a date) as determined from Wendland's published reports (see Part II). The shortfall between the actual number of surviving specimens, being either numbered or unnumbered (i.e. 75 (47+28) [total number of known specimens]), and the potential total number of specimens (i.e. 102 [highest known number on a label]) is most likely the result of the loss or the discarding of deteriorated specimens.

Photos of many of Wendland's Central American palm specimens are held in the herbarium of the Field Museum of Natural History, Chicago (F). These were facilitated by J. Francis Macbride prior to 1940 as part of a project to photograph type specimens of tropical American plants in European herbaria (DAHLGREN, 1959: 1).

Bactris caudata H. Wendl. ex Burret in Repert. Spec. Nov. Regni Veg. 34: 230. 1934.

Original citation: "Costarica: Sarapiquí, San Miguel (H. Wendland)".

Lectotypus (designated by DE NEVERS et al., 1996: 175): **COSTA RICA:** San Miguel, Río Sarapiquí, V.1857, *Wendland* 53 (GOET [5-part specimen: GOET025051]).

Notes. – The isolectotype at K indicated by DE NEVERS et al. (1996: 175) is excluded from the type material because it comes from a cultivated plant at Herrenhausen sent to Kew by Wendland in 1862. It is most likely that the destroyed specimen at B was a duplicate of the GOET specimen as Burret referred to the name "*Bactris caudata* H. Wendl. nomen in scheda.", thus suggesting that the specimen seen by him was associated with GOET. In addition, Burret included locality information that was on the GOET specimen but not on the K specimens.

Additional specimens. – [COSTA RICA]: cultivated at Herrenhausen Gardens [originating from Río Sarapiquí, San Miguel, 1857], 1862, *Wendland* s.n. (K [K000526392]); cultivated at Herrenhausen Gardens, 1862, *Wendland* s.n. (K [K000526393]).

Bactris longiseta H. Wendl. ex Burret in Repert. Spec. Nov. Regni Veg. 34: 213. 1934.

Original citation: "Costarica: Río Sarapiquí, Pedregal und San Miguel (H. Wendland)".

Lectotypus (designated by DE NEVERS et al., 1996: 197): **COSTA RICA:** Pedregal, Río Sarapiquí, V.1857, *Wendland* 81 (GOET [5-part specimen: GOET025075]). **Syntypus:** **COSTA RICA:** San Miguel, Río Sarapiquí, V.1857, *Wendland* 60 (GOET [4-part specimen: GOET025074]).

Bactris obovata H. Wendl. ex Schaedtler in Hamburger Garten- Blumenzeitung 31: 67. 1875 (Fig. 12A → p. 41).

Original citation: "Die verkehrteirundfruchtige Stachelpalme. Costa Rica. Ueber einen Meter hohes Exemplar mit dünnem, bambusartigen, oberhalb bestachelten Schaft und langen, breitblättrigen, an der Spitze gabelig getheilten Blattwedeln".

Lectotypus (designated here): **COSTA RICA:** San Miguel, Río Sarapiquí, V.1857, *Wendland* 54 (GOET [5-part specimen: GOET025058]).

Notes. – HENDERSON (2000: 168) indicated *Bactris obovata* H. Wendl. as a synonym of *B. hondurensis* Standl. Henderson, unaware of Schaedtler's earlier publication, was referring to Wendland's publication in KERCHOVE DE DENTERGHEM (1878: 234) where this name is not validly published. Schaedtler did not cite any specimens and GOET025058 is designated here as the lectotype. With acceptance of valid publication of *B. obovata* H. Wendl. ex Schaedtler, *B. hondurensis* becomes a later heterotypic synonym.

SCHAEDTLER (1875b: 67) reported that this species was cultivated at Herrenhausen and he provided a brief description of a cultivated individual, the common name of which translates as the round-fruited prickly palm.

Bactris subglobosa Lindl. ex Schaedtler in Hamburger Garten- Blumenzeitung 31: 68. 1875.

Original citation: "Die halbkugelige Stachelpalme. Ein Meter hohes Exemplar. Schaft und Rückseite der Blattstiele mit über 3 Centim. langen Stacheln und regelmäßig stehenden, bis zur Wedelspitze kammförmig gestellten Fiedern".

Holotypus: [EL SALVADOR]: cultivated at Herrenhausen Gardens [originating from San Salvador, 1857], 1862, *Wendland s.n.* (K [K000526391]) (Fig. 13 → p. 42).

= *Bactris major* Jacq., Select. Stirp. Amer. Hist., ed. 2: 135. 1780.

Notes. – DE NEVERS et al. (1996: 209) treated *Bactris subglobosa* Lindl. ex Schaeadtler as an invalidly published name. HENDERSON (2000: 167) treated it as a doubtful, excluded name. However, the brief but distinguishing description provided by SCHAEDETLER (1875: 68) validated the name. Schaeadtler attributed *B. subglobosa* to Lindley but is likely a typographical error to be corrected to Wendland as *B. subglobosa* H. Wendl. ex Schaeadtler.

Bactris wendlandiana Burret in Repert. Spec. Nov. Regni Veg. 34: 198. 1934.

Original citation: “Costa Rica: Sarapiquí (H. Wendland)”.

Lectotypus (designated by DE NEVERS et al., 1996: 192): **COSTA RICA:** Río Sarapiquí, 1857, *Wendland s.n.* (K n.v.).

= *Bactris obovata* H. Wendl. & Schaeadtler in Hamburger Garten- Blumenzeitung 31: 67. 1875.

Notes. – DE NEVERS et al. (1996: 192) accepted that the holotype at B was lost and designated a specimen at K as the lectotype. A search of GOET has not located any specimens related to this name. Similarly, specimens could not be located at K (W.J. BAKER, pers. comm., 21.IV.2021).

Calyptrogyne brachystachys H. Wendl. ex Burret in Bot. Jahrb. Syst. 63: 132. 1930.

Original citation: “[Burret quoting Wendland’s manuscript] Im nördlichen Costarica im Sarapiquí-Tale fand ich diese Art in Gemeinschaft mit *G. ferruginea* und *G. versiformis*”.

Lectotypus (designated here): **COSTA RICA:** Caribalco, Río Sarapiquí, V.1857, *Wendland 45* (GOET [3-part specimen: GOET025614]).

= *Calyptrogyne ghiesbreghtiana* (Linden & H. Wendl.) H. Wendl. in Bot Zeitung (Berlin) 17: 72 (1859).

Notes. – The specimen seen by Burret at B was most likely destroyed during World War II. The duplicate at GOET is designated here as the lectotype. This specimen has two labels annotated in Wendland’s hand, one of them matching the protologue information.

HENDERSON (2005: 79), on the assumption that no original material was extant, designated a neotype for this name.

However, this is superseded as original material is extant at GOET.

Calyptrogyne sarapiquensis H. Wendl. & Burret in Bot. Jahrb. Syst. 63: 129, 134. 1930 [nom. illeg.]

– *Calyptrogyne sarapiquensis* Schaeadtler in Hamburger Garten- Blumenzeitung 31: 110. 1875 [nom. illeg. superfl.].

Original citation: “Diese Art ist sehr häufig im unteren Sarapiquí-Tale zwischen La Virgen und Pedregal im nördlichen Costarica, wo sie in großen Mengen als Unterholz auftritt”.

Lectotypus (designated here): **COSTA RICA:** Pedregal, Río Sarapiquí, V.1857, *Wendland 85* (GOET [6-part specimen: GOET009067]).

= *Calyptrogyne ghiesbreghtiana* subsp. *glauca* (Oerst.) A.J. Hend. in Syst. Bot. 30: 81. 2005.

Notes. – HENDERSON (2005: 81) accepted the specimen GOET009067 as the holotype. However, the holotype was most likely at B and destroyed during World War II, and therefore the GOET specimen is designated here as the lectotype.

Calyptrogyne sarapiquensis Schaeadtler (SCHAEDTLER 1875: 110) is an illegitimate name under ICN Art. 52.1 because it definitely includes the type of *C. spicigera* (K. Koch) H. Wendl. On the other side, *C. sarapiquensis* H. Wendl. ex Burret is a nom. illeg. under Art. 53.1. This name is included in this treatment for historical completeness and because it remains in use in horticultural circles.

Chamaedorea amabilis H. Wendl. ex Dammer in Gard. Chron., ser. 3, 36: 245. 1904.

Original citation: “I am doubtful whether this species is still in cultivation, as the plants once grown at Herrenhausen are no longer alive. But as this species is found in Costa Rica, it could easily be introduced into gardens again”.

Holotypus: [COSTA RICA]: cultivated at Herrenhausen Gardens [originating from Costa Rica, 1857], 1862, *Wendland s.n.* (K [K000462933]; iso-: L [L0042054]).

Notes. – HODEL (1992: 57) indicated the specimen at K as the holotype with an isotype at L, which is accepted here.

Chamaedorea exorrhiza H. Wendl. ex Dammer in Gard. Chron., ser. 3, 38: 44. 1905.

Original citation: “The species with 10 to 22 segments on each side of the leaf-rachis, whose segments are broader than 5 cm. (2 inches), are *C. wendlandiana* with 5-nerved segments, *C. tepejilote* with 7-nerved segments, and *C. exorrhiza* with 9-nerved segments”.

Lectotypus (designated by DOWE & HODEL, 2021: 96): **COSTA RICA:** San Miguel near Río Sarapiquí, 16.V.1857, *Wendland* 71 (GOET [6-part specimen: GOET025396]).

= *Chamaedorea tepejilote* Liebm. in Mart., Hist. Nat. Palm. 3: 308. 1849.

Chamaedorea homomalla H. Wendl. ex Dammer in Gard. Chron., ser. 3, 38: 43. 1905.

Original citation: “...and *C. homomalla* have 5 to 7 segments on each side of the rachis”.

Lectotypus (designated by DOWE & HODEL, 2021: 97): **COSTA RICA:** Turrialba, 24.III.1857, *Wendland* 27 & 32 (GOET [2-part specimen: GOET025302]; isolecto-: GOET [2-part specimen: GOET025301]).

= *Chamaedorea warszewiczii* H. Wendl. in Bonplandia 10: 37. 1862.

Notes. – GOET025302 has two labels annotated in Wendland's hand: (1) “*Morenia warszewiczii* N. 27 & 32. Turrialba. 24.3.57” and (2) “32 27. *Ch. homomalla*”. The isolectotype GOET025301 has a single label with “27 *Ch. homomalla*”.

Chamaedorea inaequilateralis H. Wendl. ex Dammer in Gard. Chron., ser. 3, 38: 43. 1905.

Original citation: “... those [pinnae] of *C. inaequilateralis* are 1½ to 1½ inches”.

Lectotypus (designated by DOWE & HODEL, 2021: 97): **COSTA RICA:** above Turrialba, 25.III.1857, *Wendland* 24 (GOET [3-part specimen: GOET025266]).

= *Chamaedorea costaricana* Oerst. in Vidensk. Meddel. Dansk Naturhist. Foren. Kjøbenhavn 1859: 19. 1859.

Chamaedorea pumila H. Wendl. ex Dammer in Gard. Chron., ser. 3, 36: 246. 1904.

Original citation: “Wendland detected this dwarf species at the foot of another new palm, which on the contrary

is a giant, viz., *Iriartea gigantea*, Wendland, in northern Costa Rica, in the valley of the Río Sarapiquí”.

Holotypus: **[COSTA RICA]:** cultivated at Herrenhausen Gardens [originating from Costa Rica, 1857], 1862, *Wendland* s.n. (K [K000462928]).

Notes. – A search at GOET has not located any specimens or photos related to this name but there is a photo at F [F20805] that purports to be a Wendland collection [annotated as H. 41].

Geonoma congesta H. Wendl. ex Spruce in J. Linn. Soc., Bot. 11: 112. 1871 (Fig. 12B → p. 41).

Original citation: “Hab. Amer. Centralis Costa Rica (Wendl.)”.

Holotypus: **[COSTA RICA]:** cultivated at Herrenhausen Gardens [originating from Costa Rica, 1857], 1862, *Wendland* s.n. (K n.v.).

Additional specimen. – **COSTA RICA:** between Pedregal and San Miguel at Río Sarapiquí, 22.V.1857, *Wendland* s.n. (GOET [4-part specimen: GOET025567]).

Geonoma cuneata H. Wendl. ex Spruce in J. Linn. Soc., Bot. 11: 104. 1871.

Original citation: “Hab. Amer. Centr. Costa Rica (Wendl.)”.

Holotypus: **[COSTA RICA]:** cultivated at Herrenhausen Gardens [originating from Costa Rica, 1857], 1862, *Wendland* s.n. (K [K000526474]).

Notes. – K000526474 is annotated in Wendland's hand as: “*Geonoma cuneata* Hrm. Wendl. Wendl. leg. 1857. Costa Rica. Flum. Sarapiquí”. The information “Dedit Wendland 1862” was added in an unknown hand.

Additional specimens. – **COSTA RICA:** Río Sarapiquí, between Cari blanco and San Miguel, 10.V.1857, *Wendland* 46 (GOET [3-part specimen: GOET025568]); Turrialba, 27.III.1857, *Wendland* 31 (GOET [2-part specimen: GOET025569]).

Geonoma decurrens H. Wendl. ex Burret in Bot. Jahrb. Syst. 63: 162. 1930.

Original citation: “[quoting Wendland's manuscript] Ich fand diese Art im nördlichen Costarica oberhalb La Muella am Sarapiquí-Fluss im August 1857”.

Lectotypus (designated here): **COSTA RICA**: near Muelle, Río Sarapiquí, 9.VIII.1857, *Wendland s.n.* (GOET [3-part specimen: GOET025615]).

= *Geonoma cuneata* H. Wendl. ex Spruce in J. Linn. Soc., Bot. 11: 104. 1869.

Notes. – The specimen used by Burret was most likely at B and destroyed during World War II. The specimen at GOET [GOET25615] bears the same collection data and is designated here as the lectotype.

Geonoma edulis H. Wendl. ex Spruce in J. Linn. Soc., Bot. 11: 106. 1871.

= *Geonoma undata* subsp. *edulis* (H. Wendl. ex Spruce) A.J. Hend. in Phytotaxa 17: 158. 2011.

Original citation: “Hab. Amer. Centr. Costa Rica”.

Holotypus: **[COSTA RICA]**: cultivated at Herrenhausen Gardens [originating from Costa Rica, 1857], 1862, *Wendland s.n.* (K [K000526463]).

Notes. – SPRUCE (1871: 106) did not cite a collector in the protologue. It is reasonable to assume that the collector was Wendland, as cited later by HEMSLEY (1885: 408) for a specimen at K. The only known specimen at K is annotated in Wendland’s hand and considered here as the holotype of the name *Geonoma edulis* H. Wendl. ex Spruce.

Additional specimen. – **COSTA RICA**: above Turrialba, III.1857, *Wendland* 26 (GOET [4-part specimen: GOET025572]).

Geonoma ferruginea H. Wendl. ex Spruce in J. Linn. Soc., Bot. 11: 110. 1871.

Original citation: “Hab. cum priore (Wendl.)”.

Holotypus: **[COSTA RICA]**: cultivated at Herrenhausen Gardens [originating from Costa Rica, 1857], 1862, *Wendland s.n.* (2-part specimen: K [K000526469, K000526470]).

Additional specimen. – **COSTA RICA**: Río Sarapiquí, 19.V.1857, *Wendland s.n.* (GOET [4-part specimen: GOET025573]).

Geonoma flaccida H. Wendl. ex Spruce in J. Linn. Soc., Bot. 11: 108. 1871.

Original citation: “Hab. Amer. Centralis Costa Rica et Guatemala”.

Holotypus: **[COSTA RICA]**: cultivated at Herrenhausen Gardens [originating from Costa Rica, 1857], 1862, *Wendland s.n.* (K [2-part specimen: K000526466, K000526467]).

= *Geonoma deversa* (Poit.) Kunth, Enum. Pl. 3: 231. 1841.

Notes. – SPRUCE (1871: 108) did not cite a collector in the protologue, but it is reasonable to assume that the collector was Wendland, as a specimen at K was cited later by HEMSLEY (1885: 408) with Wendland as the collector.

Geonoma gracilis H. Wendl. ex Spruce in J. Linn. Soc., Bot. 11: 105. 1871.

Original citation: “Hab. Amer. Centr. Costa Rica (Wendl.)”.

Holotypus: **[COSTA RICA]**: cultivated at Herrenhausen Gardens [originating from Costa Rica, 1857], 1862, *Wendland s.n.* (K [K000526473]).

= *Geonoma cuneata* H. Wendl. ex Spruce in J. Linn. Soc., Bot. 11: 104. 1869.

Notes. – *Geonoma gracilis* Linden ex Schaedler (SCHAEDTLER 1875d: 165) is a later heterotypic homonym that corresponds to a distinct taxonomic entity.

Additional specimen. – **COSTA RICA**: near Pedregal, Río Sarapiquí, 9.VIII.1857, *Wendland s.n.* (GOET [GOET025574]).

Geonoma hoffmanniana H. Wendl. ex Spruce in J. Linn. Soc., Bot. 11: 106. 1871.

= *Geonoma orbigniana* subsp. *hoffmanniana* (H. Wendl. ex Spruce) A.J. Hend. in Phytotaxa 17: 113. 2011 (Fig. 12C → p. 41).

Original citation: “Hab. Amer. Centr. Costa Rica (Wendl.)”.

Holotypus: **[COSTA RICA]**: cultivated at Herrenhausen Gardens [originating from Costa Rica, 1857], 1862, *Wendland s.n.* (K [2-part specimen: K000526464, K000526465]).

Additional specimens. – **COSTA RICA**: Barva Volcano, III.1857, *Wendland* 37 & 102 (GOET [4-part specimen: GOET025575]); near Desengao, c. 450 m, V.1857, *Wendland* 40 (GOET [4-part specimen: GOET025619]).

Geonoma longevaginata H. Wendl. ex Spruce in J. Linn. Soc., Bot. 11: 109. 1871.

Original citation: “Hab. Amer. Centralis Costa Rica. – An certe ad hoc sectionem pertinent?”.

Holotypus: [COSTA RICA]: cultivated at Herrenhausen Gardens [originating from Costa Rica, 1857], 1862, *Wendland s.n.* (2-part specimen: K [K000526461, K000526462]).

Notes. – SPRUCE (1871: 109) did not cite a collector in the protologue. It is reasonable to assume that the collector was Wendland, as a specimen at K was cited later by HEMSLEY (1885: 408) as collected by Wendland.

Additional specimen. – **COSTA RICA:** Río Sarapiquí near Pedregal, V–VIII.1857, *Wendland* 86 & 95 (GOET [3-part specimen: GOET025585]).

Geonoma membranacea H. Wendl. ex Spruce in J. Linn. Soc., Bot. 11: 106. 1871.

= *Geonoma pinnatifrons* subsp. *membranacea* (H. Wendl. ex Spruce) A.J. Hend. in Phytotaxa 17: 120. 2011.

Original citation: “Hab. Guatemala (Wendl.)”.

Holotypus: [GUATEMALA]: cultivated at Herrenhausen Gardens [originating from Guatemala, s.d. (1857)], 1862, *Wendland s.n.* (K [2-part specimen: K000526459, K000526460]).

Notes. – A description of *Geonoma membranacea* H. Wendl. ex Spruce in Wendland's hand is held at GOET [GOET026037]. This indicates that the collection date was 20 January 1857, from near St. Lucía in Guatemala (Fig. 14 → p. 43). However this does not match with the known specimens, and therefore the specimens and the description are unconnected.

The label on GOET025590 includes two numbers although it is only a single specimen.

Additional specimen. – **GUATEMALA:** between St. Pedro and Hacienda de Zapota [Zapote], in the west at the foot of the mountain, I.1857, *Wendland* 7 & 8 (GOET [8-part specimen: GOET025590]).

Geonoma microspadix H. Wendl. ex Spruce in J. Linn. Soc., Bot. 11: 110. 1871.

= *Geonoma ferruginea* subsp. *microspadix* (H. Wendl. ex Spruce) A.J. Hend. in Phytotaxa 17: 74. 2011.

Original citation: “Hab. Amer. Centralis Costa Rica”.

Holotypus: [COSTA RICA]: cultivated at Herrenhausen Gardens [originating from Costa Rica, 1857], 1862, *Wendland s.n.* (K [K000526468]).

Notes. – SPRUCE (1871: 110) did not cite a collector in the protologue. It is reasonable to assume that the collector was Wendland as HEMSLEY (1885: 409) later cited a specimen at

K with Wendland as the collector. The only known specimen at K is annotated in Wendland's hand.

Geonoma microstachys H. Wendl. ex Burret in Bot. Jahrb. Syst. 63: 228. 1930.

Original citation: “Wächst um San Miguel im Sarapiquí-Tale des nördlichen Costa Rica”.

Lectotypus (designated here): **COSTA RICA:** Río Sarapiquí, San Miguel, 17.V.1857, *Wendland* 75 (GOET [3-part specimen: GOET025618]).

= *Geonoma ferruginea* H. Wendl. ex Spruce in J. Linn. Soc., Bot. 11: 110. 1871.

Notes. – HENDERSON (2011: 174) cited an unseen specimen at K as the holotype, but this was most likely at B and destroyed during World War II. The extant specimen GOET025618 is designated here as the lectotype.

Geonoma obovata H. Wendl. ex Spruce in J. Linn. Soc., Bot. 11: 104. 1871.

Original citation: “Hab. Americae Centralis Costa Rica (Wendl.)”.

Holotypus: [COSTA RICA]: cultivated at Herrenhausen Gardens [originating in Costa Rica, 1857], 1862, *Wendland s.n.* (K [K000526472]).

= *Geonoma cuneata* H. Wendl. ex Spruce in J. Linn. Soc., Bot. 11: 104. 1869.

Additional specimen. – **COSTA RICA:** Pedregal, Río Sarapiquí, 9.VIII.1857, *Wendland* 92 (GOET [2-part specimen: GOET025592]).

Geonoma procumbens H. Wendl. ex Spruce in J. Linn. Soc., Bot. 11: 105. 1871.

= *Geonoma cuneata* subsp. *procumbens* (H. Wendl. ex Spruce) A.J. Hend. in Phytotaxa 17: 60. 2011.

Original citation: “Hab. Amer. Centr. Costa Rica (Wendl.)”.

Holotypus: [COSTA RICA]: cultivated at Herrenhausen Gardens [originating from Costa Rica, 1857], 1862, *Wendland s.n.* (2 part-specimen: K [K000526457, K000526458]).

Additional specimen. – **COSTA RICA:** San Miguel, Río Sarapiquí, 13.V.1857, *Wendland* 58 (GOET [3-part specimen: GOET025596]).

Geonoma versiformis H. Wendl. ex Spruce in J. Linn. Soc., Bot. 11: 109. 1871.

Original citation: “Hab. Amer. Centralis Costa Rica (Wendl. in hb. Kew)”.

Holotypus: [COSTA RICA]: cultivated at Herrenhausen Gardens [originating from Costa Rica, 1857], 1862, *Wendland s.n.* (K [K000526471]).

= *Geonoma ferruginea* H. Wendl. ex Spruce in J. Linn. Soc., Bot. 11: 110. 1871.

Additional specimens. – COSTA RICA: Turrialba, III.1857, *Wendland* 22 (GOET [5-part specimen: GOET025607]); near Cariblanco, V.1857, *Wendland* 48 (GOET [3-part specimen: GOET025608]).

Iriartea gigantea H. Wendl. ex Schaedtler in Hamburger Garten- Blumenzeitung 31: 168. 1875.

Original citation: “*Iriartea gigantea*. Riesenhafte Stelzenpalme”.

Holotypus: COSTA RICA: San Miguel, Río Sarapiquí, 20.V.1857, *Wendland* 78 (GOET [8-part specimen: GOET025661]).

= *Iriartea deltoidea* Ruiz & Pav., Syst. Veg. Fl. Peruv. Chil.: 298. 1798.

Pholidostachys pulchra H. Wendl. ex Hemsl. in Biol. Cent.-Amer., Bot. 3: 410. 1885 (Fig. 12D → p. 41).

Original citation: “Costa Rica, on the Río Sarapiquí (Wendland)”.

Holotypus: [COSTA RICA]: cultivated at Herrenhausen Gardens [originating from Costa Rica, 1857], 1862, *Wendland s.n.* (2-part specimen: K [K000526418, K000526419]).

Notes. – TURNER (2016: 289) designated K000526418 as the lectotype. We consider the two sheets at K as a single specimen and accept it as the holotype (see comments under *Arecaceae* above).

Pholidostachys pulchra H. Wendl. ex Hemsl. was validly published by Hemsley by reference to the diagnosis of the monotypic genus *Pholidostachys* H. Wendl. ex Benth. & Hook. f. published by HOOKER (1883: 915), who cited the nom. nud. in sched. “*Geonoma pulchrum*, Wendl. ms.” in the protologue information (ICN Art. 38.5; N. Turland, pers. comm.).

Additional specimen. – COSTA RICA: Pedregal, La Virgen & San Miguel, Río Sarapiquí, V–VIII.1857, *Wendland* 65 (GOET [3-part specimen: GOET025606]).

Welfia georgii H. Wendl. ex André, Ill. Hort. 18: 94. 1871.

Original citation: “Je ne connais actuellement que deux espèces: *Welfia georgii* et *W. regia*. Le premier vient de Costa-Rica; le second de la Nouvelle-Grenade”.

Holotypus: COSTA RICA: Río Sarapiquí, San Miguel – Pedregal, 27.V.1857, *Wendland* 74 (GOET [6-part specimen: GOET025880]).

= *Welfia regia* H. Wendl. ex André, Ill. Hort. 18: 93. 1871.

Lectotypus: (designated by HENDERSON & VILLALBA, 2013: 39): [icon] (André in Ill. Hort. 18; tab. 62. 1871) (Fig. 15A → p. 44).

Notes. – HENDERSON & VILLALBA (2013: 39) designated the illustration in ANDRÉ (1871: tab. 62) as the lectotype of *Welfia regia* H. Wendl. ex André presuming that the holotype had been destroyed. The same authors indicated the holotype of *W. georgii* H. Wendl. ex André at HBG, although not seen. Such a specimen is not kept at that herbarium (M. Schultz, pers. comm.).

The acceptance of GOET025880 as the holotype of the name *Welfia georgii* H. Wendl. ex André is supported by Wendland’s direct involvement with the description and the annotations by him on that specimen. The validating description of *W. georgii* by André was included as a direct quote of a letter sent by Wendland to him.

The first published use of the name *Welfia georgii* was in WITTE (1862: 2): “Herr Hofgarten – Inspector Wendland: Ueber die Palmen Amerikas, insbesondere über die von ihm neu entdeckte *Welfia Georgii*” [Mr. Hofgarten – Inspector Wendland: About the palm trees of America, especially about the newly discovered *Welfia Georgii*]. This was an announcement of a lecture given by Wendland at the Natural History Society of Hanover during 1861, but this use of the name has no nomenclatural standing. With regard to *W. regia*, the Gardeners’ Chronicle and Agricultural Gazette, 1869: 1236 [November 27] stated: “A new species, named *Welfia regia*, is extremely pretty in its young state. It has smooth slender leaf-stalks and bilobed leaves, which, when young, are of a pleasing bronzy chocolate colour” (MOORE & MASTERS, 1869; 1236). This cannot be accepted as validly published, among other reasons, because it is not attributed to an author. The validating descriptions of both names were made in ANDRÉ (1871: 93–94), who attributed them to Wendland. Illustrations of flowers of *W. regia* held in GOET are attributed to Wendland (GOET0025880) (Fig. 15B → p. 44).

Additional specimen. – [COSTA RICA]: cultivated at Herrenhausen Gardens [originating from Costa Rica, 1857], 1862, *Wendland* s.n. (K [K000574520]).



Fig. 4. – Lithograph of *Anthurium scherzerianum* Schott.
[LEMAIRE & VERSCHAFFELT, 1866: tab. 484] [Bibliothèque, Conservatoire et Jardin botaniques de Genève] → p. 13



Fig. 5. – *Anthurium scherzerianum* Schott at GOET.
[Wendland 821, GOET045591] [© Universität Göttingen] → p. 14

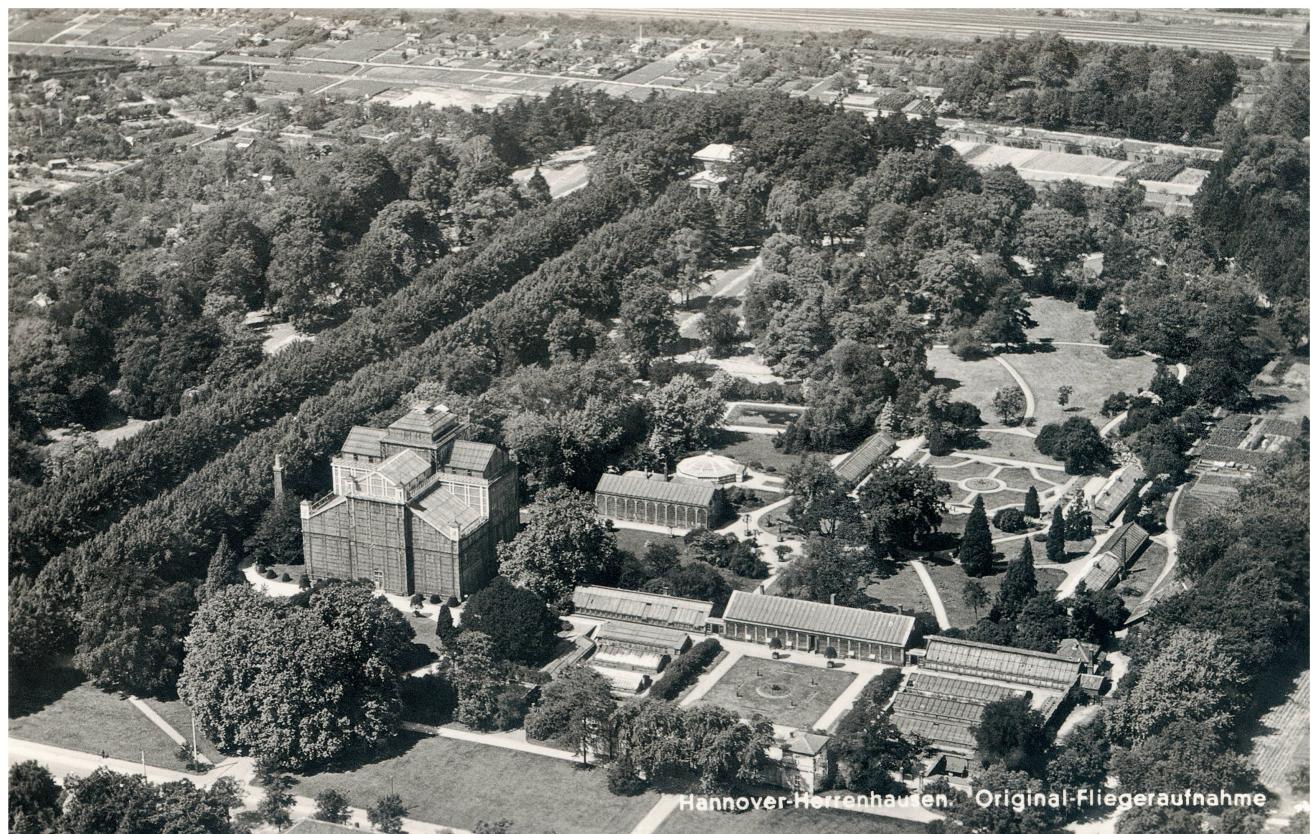


Fig. 6 – Aerial photo of Herrenhausen Gardens showing the Berggarten, 1935. The Costa Rica House is the middle building of the three low buildings in the centre foreground (roof is half grey, half white). The Palm House, to the left, was still standing at this time, but was destroyed during World War II.

[Reproduced with permission from Historisches Museum Hannover] → p. 14



Fig. 7. – Holotype of *Danaea wendlandii* Rchb. f. at W.
[Wendland 744, W0154116; © Natural History Museum Vienna] → p. 18



Fig. 8. – Sheet 1 of lectotype of *Acontias wendlandii* Schott [= *Xanthosoma wendlandii* (Schott) Schott] at GOET. [Wendland 1130, GOET000261] [© Universität Göttingen] → p. 21



Fig. 9.—Araceae. **A.** *Anthurium scandens* (Aubl.) Engl., cultivated, Herrenhausen Gardens; **B.** *Anthurium clavigerum* Poepp, cultivated, Fairchild Tropical Garden, Florida; **C.** *Monstera dissecta* (Schott) Croat & Grayum, Costa Rica, Guanacaste, Cerro Cacao; **D.** *Philodendron anisotomum* Schott, cultivated, Costa Rica; **E.** *Philodendron wendlandii* Schott, cultivated, Herrenhausen Gardens; **F.** *Syngonium wendlandii* Schott, cultivated, private collection, Cairns, Australia.
[C: Grayum & García 12690] [Photos: A, E, B.O. Schlumpberger; B, S. Zona; C, M. Grayum; D, B. Hammel; F, J.L. Dowe]
→ pp. 21, 22, 23, 24, 25



Fig. 10. – Lectotype of *Spathiphyllum wendlandii* Schott at GOET. [Wendland 772, GOET000258] [© Universität Göttingen] → p. 24



Fig. 11. – Lectotype of *Syngonium wendlandii* Schott at GOET.
[Wendland 619, GOET000260] [© Universität Göttingen] → p. 25



Fig. 12.—Arecaceae. A. *Bactris obovata* H. Wendl. ex Schaeadtler, Costa Rica, Limón; B. *Geonoma congesta* H. Wendl. ex Spruce, Costa Rica, Limón; C. *Geonoma orbigniana* subsp. *hoffmanniana* (H. Wendl. ex Spruce) A.J. Hend., Costa Rica, San José; D. *Pholidostachys pulchra* H.Wendl. ex Hemsl., Costa Rica, Heredia.

[Photos: D.R. Hodel] → pp. 27, 29, 30, 32



Fig. 13. – Holotype of *Bactris subglobosa* Lindl. ex Schaedtler at K.
[Wendland s.n., K000526391; © Board of Trustees of the Royal Botanic Gardens, Kew] → p. 28

Fig. 14. – Handwritten description by Hermann Wendland of *Geonoma membranacea* H. Wendl. & Spruce. [GOETO26037] [© Universität Göttingen] → p. 31

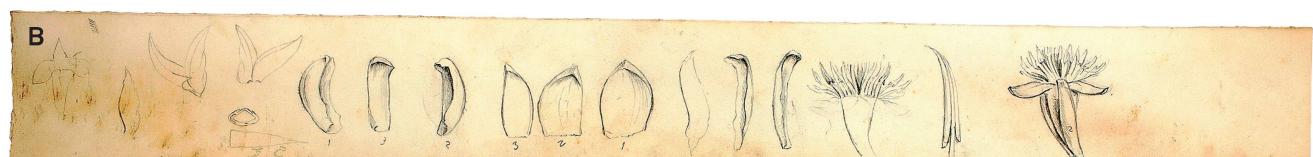


Fig. 15. – A. Lectotype of *Welfia regia* H. Wendl. ex André; B. Illustrations of the flowers of *Welfia regia* H. Wendl., attributed to Wendland.
[A: ANDRÉ, 1871: tab. 62] [B: GOET0025880; © Universität Göttingen] → p. 32



Fig. 16. – Holotype of *Aechmea mariae-reginae* H. Wendl. at GOET. [Wendland 968, GOET 045062] [© Universität Göttingen] → p. 49



Fig. 17. – Neotype of *Tillandsia gladioliflora* H. Wendl. [= *Werauhia gladioliflora* (H. Wendl.) J.R. Grant]
[ANTOINE, 1884: tab. 15] [Bibliothèque, Conservatoire et Jardin botaniques de Genève] → p. 49



Fig. 18. – Lectotype of *Vriesea viminalis* E. Morren.
[MORREN, 1878: tab. 14–15] [Bibliothèque, Conservatoire et Jardin botaniques de Genève] → p. 49



Fig. 19. – Lectotype of *Siphocampylus regelii* Vatke at B.
[Wendland 679, B 10 0244148] [© Botanic Garden and Botanical Museum Berlin-Dahlem] → p. 50

Asteraceae

Wendland made 43 collections of *Asteraceae* in Central America, of which one was described as a new species.

Calyptocarpus wendlandii Sch. Bip. in Bot. Zeitung (Berlin) 24: 165. 1866.

Original citation: “Costa Rica, S. José, 17. Juli 1857: Wendland! n. 1078”.

Lectotypus (designated by BLAKE, 1940: 257): COSTA RICA: San José, 17.VII.1857, *Wendland* 1078 (P [P00709872]; isolecto-: GOET [GOET037219], US [US1802854 fragm.]).

Bromeliaceae

Although *Bromeliaceae* are among the most widespread plant families in Central America, Wendland only made six known collections from which three new species were described. *Aechmea mariae-reginae* H. Wendl. is the only species for which there is a wild collected specimen; the others were described from cultivated plants.

Aechmea mariae-reginae H. Wendl. in Hamburger Garten-Blumenzeitung 19: 32. 1863.

Original citation: “Die Pflanze fand ich im Sarapiquíthale in Costa Rica auf Bäumen in der Nähe von San Miguel, sie wird in San José, wo ich sie zur Decoration der Altäre am Frohnleichnachmstage verwendet fand, Flor de Santa María genannt”.

Holotypus: COSTA RICA: sine loco [Costa Rica, Río Sarapiquí near San Miguel], 1.VI [1857], *Wendland* 968 (GOET [GOET045062]) (Fig. 16 → p. 45).

Notes. – The specimen here accepted as the holotype has only a scant annotation in Wendland’s hand on the collection label, “1.6”. We interpret this to be 1 June 1857, the date on which Wendland was in the vicinity of San Miguel, the locality in which this bromeliad is known to occur. In notes associated with the protologue, Wendland wrote that the species was used to decorate the altars on the day of the Corpus Christi (late May to mid-June), and in Costa Rica was known as the flower of Santa María. It cannot be determined unequivocally if Wendland’s collection was from a wild plant or a cultivated plant in Costa Rica. In either case, the specimen represents original material and is suitable to be accepted as the holotype.

This species entered horticulture soon after Wendland returned from Central America (REGEL, 1864) and was later illustrated in Curtis’s Botanical Magazine (BAKER, 1879). It is now a popular ornamental plant in many parts of the world.

Tillandsia gladioliflora H. Wendl. in Hamburger Garten-Blumenzeitung 19: 31. 1863.

= *Werauhia gladioliflora* (H. Wendl.) J.R. Grant in Trop. Subtrop. Pflanzenwelt 91: 31. 1995.

Original citation: “Junge Pflanzen keimten an Farnstämmen, die ich aus dem nördlichen Costa-Rica mitgebracht hatte”.

Neotypus (designated here): [icon] (Antoine in Phyto-Iconogr. Bromel.: 23, tab. 15. 1884) (Fig. 17 → p. 46). Holotypus: HBG†.

Notes. – GRANT (1995: 31) accepted a specimen at HBG as the holotype, but that has not been located (M. Schultz, pers. comm.) and appears to be an error. In the absence of any known original material, one of the earliest most diagnostically complete illustrations in ANTOINE 1884: 23, tab. 15, is designated here as a neotype.

Vriesea viminalis E. Morren in Belgique Hort. 28: 257. 1878.

Original citation: “Les grains dont elle est issue ont été récoltées par M. H. Wendland lui-même sur le volcan Iresu, près de Cartago dans l'état de Costa-Rica”.

Lectotypus (designated here): [icon] (Morren in Belgique Hort. 28: tab. 14–15. 1878) (Fig. 18 → p. 47).

= *Werauhia viridiflora* (Regel) J.R. Grant in Trop. Subtrop. Pflanzenwelt 91: 38. 1995.

Notes. – Without reference to any original material in the protologue and reference only to cultivated plants, this name is lectotypified on the illustration with analysis provided in the protologue (MORREN, 1878: tab. 14–15). According to Morren, Wendland collected seeds at Irazú Volcano, Costa Rica.

HEMSLEY (1884: 323) cited a specimen [Costa Rica, Volcan de Irazú (Wendland)], presumably at K, but this has not been found.

Campanulaceae

Wendland made about 19 collections of *Campanulaceae* in Central America, of which two were described as new species. Of relevance to Wendland’s Central American collections was Vatke’s study of the specimens of *Campanulaceae* at B (HOFFMANN, 1889), where some of Wendland’s specimens were held.

Burmeistera macrocalyx E. Wimm. in Repert. Spec. Nov. Regni Veg. 30: 19. 1932.

Original citation: “Costarica: Desengano, (H. Wendland 839, sp. orig. in Hb. Berl.); sine loco accuratius indicato (A.C. Brade 2359, Warscewicz 14 (Hb. Berl.)”.

Lectotypus (designated here): **COSTA RICA:** Paso de El Desengano, 9.V.1857, *Wendland* 839 (GOET [GOET037180]). Syntypi: *Brade* 2359 (B†); *Warscewicz* 14 (B†).

= *Burmeistera vulgaris* E. Wimm. in Repert. Spec. Nov. Regni Veg. 30: 27. 1932.

Notes. – WIMMER (1932: 27) cited three collections in the protologue. It is most likely that all the specimens at B were destroyed during World War II. The specimen GOET037180 is therefore designated here as the lectotype.

Siphocampylus regelii Vatke in Linnaea 38: 732. 1874.

Original citation: “In Costarica ad Irazu apr. (H. Wendland! n. 679) et nov. (C. Hoffmann! n. 109)”.

Lectotypus (designated here): **COSTA RICA:** Irazú Volcano, 15.IV.1857, *Wendland* 679 (B [B 10 0244148]) (Fig. 19 → p. 48). **Syntypus:** **COSTA RICA:** Irazú Volcano, *Hoffmann* 109 (B n.v.).

= *Centropogon ferrugineus* (L. f.) Gleason in Bull. Torrey Bot. Club 52: 11. 1925.

Notes. – VATKE (1874: 732) cited two specimens in the protologue, *Wendland* 679 and *Hoffmann* 109. The former, extant at B [B 10 0244148], is designated here as the lectotype. *Hoffmann* 109 has not been located.

Costaceae

There is only one known Wendland collection of *Costaceae* from Central America, and it was described as a new species.

Costus malortieanus H. Wendl. in Hamburger Garten-Blumenzeitung 19: 30. 1863.

Original citation: “Im Walde in der Nähe des Sarapiquíflusses und nahe bei la Muelle im nördlichen Costa-Rica fand ich diese prächtige Pflanze noch am Tage vor meiner Rückkehr nach Europa Mitte August 1857”.

Neotypus (designated here): [icon] (Hooker in Bot. Mag. 97: tab. 5894. 1871) (Fig. 20 → p. 65).

Notes. – This species was described from a cultivated specimen at Kew and no wild collections are known. HOOKER (1871: tab. 5894) wrote that “This was regarded by its discoverer, Wendland, as the finest of the many remarkable plants he obtained during his travels in Northern Costa Rica, in 1857; it was introduced by him into the Royal Gardens of Herrenhausen, in Hanover, whence a plant was sent to Kew, where it flowered in September, 1862”. No original material has been located and therefore a neotype is designated here on Hooker’s illustration.

The name *Costus malortieanus* was in use in horticultural publications before it was formally described in 1863. Motivated by those circumstances, Wendland described it to formalise the name. It was displayed at horticultural expositions in 1862 under that name in Berlin (KOCH, 1862; REGEL, 1862) and Hamburg (ORTO, 1862).

Fabaceae

Wendland made 34 collections of *Fabaceae* in Central America, of which one was described as a new species.

Calliandra wendlandii Benth. in Trans. Linn. Soc. London 30: 556. 1875.

Original citation: “Hab. Tropical America: Guatemala, Wendland”.

Holotypus: **GUATEMALA:** sine loco, 4.I.1857, *Wendland* 113 (GOET [GOET004925]).

= *Calliandra houstoniana* var. *anomala* (Kunth) Barneby in Mem. New York Bot. Gard. 74: 179. 1998.

Notes. – Although this species was described by Bentham at K, no specimens related to this name have been located there. It is probable that the specimen was on loan from Wendland. It is known that Bentham routinely returned specimens once he had finished with them (DOWE, 2018), although there are no annotations on the specimen to indicate this.

Gentianaceae

Wendland made two collections of *Gentianaceae* in Central America, both of which were described as new species.

Cicendia stricta Griseb. in J. Proc. Linn. Soc., Bot. 6: 143. 1862 [nom. rej. prop.].

Original citation: “Hab. In Guatemala, pr. Las Nubes (Wendl.) mense Januar; forma minus elongata in volcano Irazu, Costricae, alt. 9000 ped. (Wendl., m. April.)”.

Lectotypus (designated by ÇİÇEK, 2014: 105): **GUATEMALA:** Las Nubes, 11.I.1857, *Wendland* 120 (GOET [GOET003994]).

Syntypus: COSTA RICA: Irazú Volcano, 15.IV.1857, *Wendland* 673 (GOET [GOET003995, GOET003996]).

= *Gyrandra brachycalyx* (Standl. & L.O. Williams)
G. Mans. in *Taxon* 53: 722. 2004.

Notes. – A formal proposal for rejection of the name *Cicendia stricta* Griseb. was recently published by PRINGLE (2019). Although *C. stricta* has priority, it had remained long-unused, and the latter name *G. brachycalyx* (Standl. & L.O. Williams) G. Mans., in common use since 1952, is preferred to avoid nomenclatural conflicts in regard to generic realignments.

Symbolanthus rubroviolaceus Gilg in *Bot. Jahrb. Syst.* 22: 345. 1896.

Original citation: “Costa-Rica, prope “la Paz” inter Desengao et Cari Blanco (Wendland n. 974. im Mai und August blühend)”.

Lectotypus (designated here): COSTA RICA: near La Paz between Paso de El Desengao and Cariblanco, 31.V.[1857], 7.VIII.1857, *Wendland* 974 (GOET [GOET004037]; isolecto-: GOET [GOET004036]).

= *Symbolanthus pulcherrimus* Gilg in *Bot. Jahrb. Syst.* 22: 344. 1896.

Notes. – There are two specimens at GOET bearing the same collection number “974” and one bears no date but the other two dates “31/5 [1857]” and “7/8. 57”. These are treated as duplicates and GOET004037 designated as the lectotype for being more complete.

Gesneriaceae

Of the approximately 46 collections of *Gesneriaceae* made by Wendland in Central America, 16 were described as new species by HANSTEIN (1865) in his monograph of the family. Johannes von Hanstein (1822–1880) was the first curator of Berlin Herbarium, 1860–65, when it was located in Schöneberg (HIEPKO, 1987). It is during that time that Hanstein prepared his work on specimens that were held by the “Königlichen Herbariums und der Gärten zu Berlin”. A number of treatments (MORTON, 1938; LEEUWENBERG, 1958; SKOG, 1978; SKOG & KVIST, 2000) suggest that all Wendland’s *Gesneriaceae* specimens at B were destroyed when the Berlin Herbarium was bombed during World War II. The specimens at B were undoubtedly seen by Hanstein and are here accepted as holotypes. The respective species names are therefore subject to lectotypification (see Introduction), mainly involving specimens at GOET and which were cited by Hanstein in the protologues.

Labels on GOET specimens have Wendland’s original field label to which has been added, also in Wendland’s hand, the species name. Invariably the names have been attributed to “Hanst.”. This suggests that the species names were written on the labels prior to, or at least around, the time that they were described in Hanstein’s monograph as he implicitly cited the specimens in Wendland’s herbarium using the same number. It has to be assumed that Wendland had prior knowledge of the names to be published by Hanstein. It is also assumed that the names were chosen by Hanstein and not by Wendland, and therefore Hanstein is the sole author of all the new names. It is pertinent to note that Hanstein regularly included specimen collection numbers in the protologue, thus providing unequivocal identification of relevant specimens. This greatly facilitates the application of type specimens for his names. Hanstein’s references to “Plant. Wendl.” and “Herb. Wendl.” refer to various material held by, or obtained from, Wendland at Herrenhausen. Note that examples of Hanstein’s handwriting have not been located.

Alloplectus ichthyoderma Hanst. in *Linnaea* 34: 372. 1865.

= *Glossoloma ichthyoderma* (Hanst.) J.L. Clark in *Selbyana* 25: 203. 2005.

Original citation: “Patria: Costa Rica: Wendland n. 833. *A. ichthyoderma* Hanst. in *Plant. Wendl.* n. 833”.

Lectotypus (designated here): COSTA RICA: between Paso de El Desengao and Cariblanco, 10.V.1857, *Wendland* 833 (GOET [GOET003866]). Holotypus: B†.

Notes. – CLARK (2005: 203) accepted *Wendland* 833 as the holotype. This cannot be treated as an error to be corrected to lectotype following ICN Art. 9.10 because of Art. 9.23. The GOET specimen is designated here as the lectotype.

Besleria columneoides Hanst. in *Linnaea* 34: 322. 1865.

Original citation: “Patria: Costa Rica: Wendland. *B. columnoides* m. in *Plant. Wendl.* n. 762”.

Lectotypus (designated by MORTON, 1938: 1151): COSTA RICA: San Miguel, 14.V.1857, *Wendland* 762 (GOET [GOET003867]). Holotypus: B†.

Besleria princeps Hanst. in *Linnaea* 34: 317. 1865.

Original citation: “Patria: Costa Rica: Wendland. *B. princeps* Hinst. in *Plant. Wendl.* n. 1273”.

Lectotypus (designated by MORTON, 1939: 465): COSTA RICA: between Paso de El Desengao and Cariblanco, 5.VIII.1857, *Wendland* 1273 (GOET [GOET003869]). Holotypus: B†.

Besleria wendlandiana Hanst. in Linnaea 34: 318. 1865.

≡ *Gasteranthus wendlandianus* (Hanst.) Wiehler in Selbyana 1: 156. 1875 (Fig. 21A → p. 66).

Original citation: “Patria: Costa Rica: Wendland n. 568. 922; Warszewicz n. 24. *G. wendlandiana* Hanst. in plant. Wendland”.

Lectotypus (designated by MORTON, 1939: 461): **COSTA RICA**: Cariblanco, 30.V.1857, *Wendland* 922 (GOET [GOET003896]). **Syntypus**: **COSTA RICA**: Turrialba, 23.III.1857, *Wendland* 568 (GOET [GOET003895]); Warszewicz 24 (B†).

Notes. – SKOG & KVIST (2000: 102) reported that the specimen at B was destroyed and designated the GOET specimen as the lectotype. Precedence for lectotypification however remains with MORTON (1939: 461).

Columnea consanguinea Hanst. in Linnaea 34: 383. 1865.

Original citation: “Patria: Costa Rica, Turrialva: Wendl. n. 509. *C. consanguinea* Hanst. in Plant. Wendl. n. 509”.

Lectotypus (designated by MORTON, 1971: 177): **COSTA RICA**: Turrialba, 24.III.1857, *Wendland* 509 (GOET [GOET003873]). Holotypus: B†.

Columnea lepidocaulis Hanst. in Linnaea 34: 411. 1865 (Fig. 21B → p. 66).

Original citation: “Patria: Costa Rica: Valentini; Wendland n. 917. *C. lepidocaula* Hanst. in herb. Schldl. et Pl. Wendl. n. 917”.

Lectotypus (designated by MORTON, 1938: 1165): **COSTA RICA**: sine loco, s.d., *Valentini s.n.* (HAL [HAL0116066]). **Syntypus**: **COSTA RICA**: Paso de El Desengaño, 9.V.1857, *Wendland* 917 (GOET [GOET003875]).

Notes. – HANSTEIN (1865: 411) cited two specimens in the protologue, *Valentini s.n.* and *Wendland 917*. Interestingly, both of these specimens had been annotated by Wendland: GOET003875 as “917. *Columnea lepidocaula* Hnst. Epiph. Desengaño. 9.5.57. C.R” and HAL0116066 as “*Columnea lepidocaula* Hanst. Cost rica leg. Valentini”.

Columnea microcalyx Hanst. in Linnaea 34: 408. 1865.

Original citation: “Patria: Costa Rica, Wendland n. 910. *C. microcalyx* Hanst. in Plant. Wendl. n. 910”.

Lectotypus (designated here): **COSTA RICA**: Cariblanco, 10.V.1857, *Wendland* 910 (GOET [GOET003876]) (Fig. 22 → p. 67). Holotypus: B†.

Notes. – Both SKOG (1978: 869) and WIEHLER (1978: 78) stated that the type collection was lost. This refers to the specimen at B that was destroyed in World War II and they were apparently unaware of the specimen at GOET[GOET003876], which is designated here as the lectotype.

Columnea oxyphylla Hanst. in Linnaea 34: 405. 1865.

Original citation: “Patria: Costa Rica: Wendland n. 778. *C. oxyphylla* Hanst. in Plant. Wendl. n. 778”.

Lectotypus (designated by MORTON, 1938: 1167): **COSTA RICA**: San Miguel, 12.V.1857, *Wendland* 778 (GOET [GOET003877]). Holotypus: B†.

Columnea purpurata Hanst. in Linnaea 34: 386. 1865.

Original citation: “Patria: Costa Rica: Wendland n. 548: Warszewicz n. 242 (6?) Valentini. *C. purpurata* Hanst. in Plant. Wendl. n. 548”.

Lectotypus (designated by MORTON, 1938: 1168): **COSTA RICA**: Turrialba, 24.III.1857, *Wendland* 548 (GOET [GOET003878]). **Syntypus**: **COSTA RICA**: sine loco, s.d., *Valentini s.n.* (HAL [HAL0116067]); Warszewicz 242 (B†).

Notes. – HANSTEIN (1865: 386) cited three specimens in the protologue, *Wendland* 548, Warszewicz 242 and *Valentini s.n.* MORTON (1938: 1168) indicated the Wendland specimen as the type, thereby providing an indirect lectotypification.

Columnea wendlandiana Hanst. in Linnaea 34: 402. 1865.

Original citation: “Patria: Costa Rica: Wendland n. 1270. *C. wendlandiana* Hanst. in Plant. Wendl. n. 1270”.

Lectotypus (designated by SKOG, 1978: 869): **COSTA RICA**: Cariblanco, 6.VIII.1857, *Wendland* 1270 (GOET [GOET003882]). Holotypus: B†.

Drymonia conchocalyx Hanst. in Linnaea 34: 360. 1865.

Original citation: “Patr.: Costa Rica, inter Desengaño et Cari Blanco (fl. Majo): Wendland n. 954, 966. *D. conchocalyx* Hanst. in Pl. Wendl. n. 954, 966”.

Lectotypus (designated by MORTON, 1938: 1172): **COSTA RICA**: between Paso de El Desengaño and Cariblanco, 10.V.1857/31.V.1857, *Wendland* 954/966 (GOET [GOET003910, GOET003911]). Holotypus: B†.

Notes. – The specimen at GOET consists of only a single collection, which is mounted with two accompanying labels that have different collection numbers and dates. Each label has been given a separate barcode. There is no way to differentiate which label belongs to the collection.

Drymonia mucronulosa Hanst. in Linnaea 34: 353. 1865.

Original citation: “Patria? (In horto Herrenhausen exculta.) Guatimala?). *D. mucronulosa* Hnst. in herb Wendl. (Specimen a Sei in Guatimala lectum, cuius flores et folium vidi singular, hoc referendum videtur)”.

Lectotypus (designated by GIBSON, 1974: 275): **[GUATEMALA]**: cultivated at Herrenhausen Gardens [originating from Guatimala, 1857], 1859, *Wendland* s.n. (GOET [GOET003887]). Holotypus: B†.

= *Drymonia macrophylla* (Oerst.) H.E. Moore in Baileya 3: 112. 1955.

Notes. – HANSTEIN (1865: 354) described this taxon from a cultivated plant at Herrenhausen Gardens and cited a specimen in Wendland's herbarium originating from Guatimala. This specimen bears a Wendland label indicating the year 1859, which provides the fact that this collection was cultivated.

GIBSON (1974: 275) cited: “Type specimen in Herb. Wendland said to have been collected in Guatimala by “Sell””. This is accepted here as an implicit lectotypification. “Sell” probably is a typographical error for “Wendl.”.

Drymonia turrialvae Hanst. in Linnaea 34: 359. 1865.

Original citation: “Patria: Costa Rica, in Vulcano Turrialva (fl. Mart.): Wendland no. 517. ?952. *D. turrialvae* Hanst. in Plant. Wendland n. 517”.

Lectotypus (designated by LEEUWENBERG, 1958: 398): **COSTA RICA**: Turrialba Volcano, 24.III.1857, *Wendland* 517 (GOET [GOET003890]). Holotypus: B†. **Syntypus: COSTA RICA**: Paso de El Desengaño, 30.V.1857, *Wendland* 952 (GOET [GOET003891]).

Episcia lanceolata Hanst. in Linnaea 34: 346. 1865.

= *Drymonia lanceolata* (Hanst.) C.V. Morton in Publ. Field Mus. Nat. Hist., Bot. Ser. 18: 1173. 1938 (Fig. 21C → p. 66).

Original citation: “Patria: Costa rica, Cari-Blanco (fl. Majo): Wendland n. 902, *E. lanceolata* Hanst. in Plant. Wendl. n. 902”.

Lectotypus (designated here): **COSTA RICA**: Cariblanco, 10.V.1857, *Wendland* 902 (GOET [GOET003886]). Holotypus: B†.

Notes. – SKOG (1978: 905) wrote: “Type: Cariblanco, Costa Rica, Wendland 902 (not seen)” but this cannot be considered as an effective lectotypification because no herbarium was cited. The extant specimen GOET003886 is designated here as the lectotype.

Episcia lilacina Hanst. in Linnaea 34: 342. 1865.

Original citation: “Patria: Costa rica, ad flum. Serepigui prope St. Miguel; in silva aboriginariis umbrosis (flor. Majo); Wendland n. 782”.

Lectotypus (designated here): **COSTA RICA**: San Miguel, Río Sarapiquí, 13.V.1857, *Wendland* 782 (GOET [GOET003892]). Holotypus: B†.

Notes. – SKOG (1978: 920) proposed typification as: “Type: Río Serepigüe, near San Miguel, Costa Rica, Wendland 782 (B, not seen)” but the specimen at B was destroyed. The extant specimen GOET003892 is designated here as the lectotype.

Hypocyrta nummularia Hanst. in Linnaea 34: 381. 1865.

= *Pachycaulos nummularia* (Hanst.) J.L. Clark & J.F. Sm. in Syst. Bot. 38: 461. 2013 (Fig. 21D → p. 66).

Original citation: “Patria: Costa Rica: Wendland n. 1272. *H. nummularia* Hanst. in Herb. Wendl.”.

Lectotypus (designated by WIEHLER, 1978: 63): **COSTA RICA**: Paso de El Desengaño and Alajuela, 4.VIII.1857, *Wendland* 1272 (GOET [GOET003927]). Holotypus: B†.

Notes. – WIEHLER (1978: 63) indicated that the holotype was at GOET, but as the holotype was at B, and destroyed, the GOET specimen is to be considered as the lectotype.

Gunneraceae

Wendland made two collections of *Gunneraceae* in Central America, one of which was described as a new species.

Gunnera wendlandii Reinke ex Schindl. In Engl., Pflanzenr. 23: 127. 1905.

Original citation: “Costarica: Bei Desengano (Wendland n. 829, im Mai blühend). – Herb. Berlin”.

Lectotypus (designated here): **COSTA RICA**: Paso de El Desengano, 9.V.1857, *Wendland* 829 (GOET [GOET037345]) (Fig. 23 → p. 68). Holotypus: B†.

= *Gunnera insignis* (Oerst.) A. DC. in Prodr. 16(2.2): 597. 1868.

Notes. – *Wendland* 829 at B was destroyed during World War II. The specimen at GOET [GOET037345] is designated here as the lectotype.

Lamiaceae

Wendland made 15 collections of *Lamiaceae* in Central America, one of which was described as a new species.

Scutellaria costaricana H. Wendl. in Hamburger Garten-Blumenzeitung 19: 29. 1863.

Original citation: “Im Mai 1857 fand ich diese prächtige neue Pflanze an der Norbseite des Gebirges, welches die Hochebene von Costa-Rica vom Flussgebiete des San-Juan-Stromes trennt, im oberen Thale des wilden Sarapiquí, wo sie in einer Höhe von 6000–8000 Fuss gruppenweise an lichten Stellen des Weges wächst”.

Neotypus (designated here): [icon] (Hooker in Bot. Mag. 90; tab. 5439. 1864) (Fig. 24 → p. 69).

Notes. – In the absence of any known original material, Hooker's illustration with analysis is designated here as a neotype. HOOKER (1864: tab. 5439) accompanied the illustration with this comment: “It is a native of Costa Rica, and was introduced into Europe, we believe, by Mr. Wendland, to whom we are indebted for our living plants, which flowered in a warm stove in June, 1863”.

The name *Scutellaria costaricana* H. Wendl. was known in horticulture before it was formally published. Plants under this name were reported to have been displayed at the Berlin Flower Exhibition, Feb. 22–23, 1862 (REGEL, 1862).

Loganiaceae

Wendland made five collection of *Loganiaceae* in Central America, of which one was described as a new species.

Spigelia splendens H. Wendl. ex Hook. in Bot. Mag. 87: tab. 5268. 1861.

Original citation: “Of this beautiful plant we can find no published description, and we are unaware from what country it was procured”.

Lectotypus (designated here): [icon] (Hooker in Bot. Mag. 87: tab. 5268. 1861) (Fig. 25 → p. 70).

Notes. – There are two specimens at K that have been informally annotated as type material: (1) Hort Kew, ex Central America, May 1863, *Anon. s.n.* (K [K000573397]); (2) Guatemala, 1841, *Friedrichsthal s.n.* (K [K000573396]). Neither of these specimens can be directly associated with the protologue whereas the illustration published by HOOKER (1861: tab. 5268) as part of the protologue is considered as original material and therefore, designated here as the lectotype. It is apparent that Wendland collected this plant as a living specimen but whether he made a herbarium collection is not known.

The name *Spigelia splendens* H. Wendl. ex Hook. had been applied by Wendland to a plant that he displayed in 1860 at the Royal Society of Agriculture and Botany of Ghent Plant Show. ANON. (1860: 49) provided this account: “Envoyée, hors concours, une gracieuse petite plante, aux fleurs pourpres, le *Spigelia splendens*, par M. Wendland, jardinier du roi de Hanovre, a obtenu de même une médaille d'argent (Grand module)”. It is most likely that plants were thence distributed under that name.

Malpighiaceae

Wendland made seven collections of *Malpighiaceae* in Central America, of which one was described as a new variety.

Mascagnia vacciniifolia var. *hispidula* Nied. in Arbeiten Bot. Inst. Konigl. Lyceums Hosianum Braunsberg 3: 11. 1908.

Original citation: “Costa Rica (Wendland [C. Hoffmann] 788 [12.V.1857]: San Miguel [*Heteropteryx purpurea* e Griseb.])”.

Lectotypus (designated by ANDERSON, 2007: 90): **COSTA RICA**: San Miguel, 12.V.1857, *Wendland* 788 (NY [NY2331690 fragm.]); isolecto-: GOET [GOET007646]). Holotypus: B†.

= *Mascagnia vacciniifolia* Nied. in Arbeiten Bot. Inst. Konigl. Lyceums Hosianum Braunsberg 3: 11. 1908.

Notes. – NIEDENZU (1908: 11) also included “[C. Hoffmann]” as collector of the type material. GOET007646 has the original collection label annotated in Wendland's hand, but does not have Hoffmann's name on it. The specimen in NY is labeled, in an unknown hand, as “Costa Rica Hoffmann 788. ex herb. Berol.”. The number “788” is in sequence for Wendland's

collections from that date and location and is accepted as the correct attribution. It is known that Wendland and Hoffmann met in Costa Rica and Hoffmann organized the dispatch of Wendland's collections to Germany (HOFFMANN, 1858; DOWE, 2019). It is possible that the name Hoffmann became connected to the specimen through this association.

Anderson appears to have been unaware of the specimen at GOET when typifying the name (ANDERSON, 2007: 90). Despite the NY specimen being only a fragment, it stands as the lectotype, despite the complete and well preserved specimen at GOET.

Melastomataceae

Of the 20 collections of *Melastomataceae* made by Wendland in Central America, 8 were described as new species by COGNIAUX (1891a, b). Célestin Alfred Cogniaux (1841–1916) was a Belgian botanist associated with the National Botanic Garden of Belgium and a specialist in *Melastomataceae* as well as *Orchidaceae* and *Cucurbitaceae* (CRIBB, 2010: 187).

Most of Wendland's specimens cited by Cogniaux are extant at both BR and GOET. Cogniaux's monograph of *Melastomataceae* covered all known taxa and described many new species. He noted in the introduction that he had at his disposal specimens on loan as well as specimens held in his herbarium. Although Wendland was not mentioned by name, COGNIAUX (1891a: 2) included Göttingen in the list of herbaria that were involved in providing specimens. After his death in 1916, Cogniaux's herbarium was acquired by the National Botanic Garden of Belgium (BR).

Cogniaux's citing of "herb Götting," and "herb. Griseb." refers to the herbaria respectively at Göttingen University and the herbarium of August Heinrich Rudolph Grisebach (1814–1879), who was a professor at Göttingen University and who is best known for his work on *Gentianaceae* and several floras of Central and South America. Both herbaria are now part of GOET.

Most of the Wendland specimens came to Göttingen with the herbarium of the Herrenhausen Gardens in Hanover, which was donated to GOET in 1969. Interestingly, all but one (the holotype of *Miconia paleacea* Cogn.) of the *Melastomataceae* type specimens at GOET do not belong to the donation but they were given to GOET much earlier and probably directly from Wendland to Grisebach.

The majority of the type specimens of *Melastomataceae* at GOET have Wendland's original field label, to which has been added the species name in Cogniaux's hand. The duplicate specimens at BR do not have any original Wendland labels, but a label headed "Herbier Alfred Cogniaux" on which has been transcribed Wendland's field notes as per his original labels. The BR duplicates are generally sparse or fragmentary, and

most are in a state of deterioration compared to the original specimens preserved at GOET.

Centradenia bernoullii Cario ex Cogn., Monogr. Phan. 7: 118. 1891.

= *Centradenia floribunda* subsp. *bernoullii* (Cario ex Cogn.) Almeda in J. Arnold Arbor. 58: 100. 1977.

Original citation: "In San-Salvador (Bernoulli n. 2 in herb. Gotting. et Kew., Wendland n. 418 in herb. Gotting.)".

Lectotypus (designated by ALMEDA, 2009: 187): **EL SALVADOR:** San Salvador, XII.1860, *Bernoulli* 2 (BR [BR0000005222773]; isolecto-: BR [BR0000005192748], GOET [GOET007899], K [K000530682]). **Syntypus:** **EL SALVADOR:** San Salvador, 10.II.1857, *Wendland* 418 (BR [BR0000005193073], GOET [GOET007897], GOET007898]).

Conostegia bernoulliana Cogn., Monogr. Phan. 7: 698. 1891.

Original citation: "In Guatemala (Bernoulli et Cario n. 2884 in herb. Gotting.); in Costa-Rica ad Naranjo (Wendland in herb. Griseb.)".

Lectotypus (designated by KRIEBEL, 2016: 95): **GUATEMALA:** Sarnayara, IV.1877, *Bernoulli* & *Cario* 2884 (GOET [GOET007922]; isolecto-: K [K000535799]). **Syntypus:** **COSTA RICA:** near Naranjo [Juan Viñas], 23.III.1857, *Wendland* 545 (GOET [GOET007923], GOET007924]).

= *Conostegia icosandra* (Sw. ex Wikstr.) Urb. in Repert. Spec. Nov. Regni Veg. 17: 404. 1921.

Conostegia lanceolata Cogn., Monogr. Phan. 7: 708. 1891.

Original citation: "In Costa-Rica ad S. José (Wendland n. 639 et 1092 in herb. Griseb. nunc Gotting., Schwalbe, Pittier), Aquacate (Ersted in herb. Haun.) et Salitral de Desamparados (H. Pittier)".

Lectotypus (designated by KRIEBEL, 2016: 311): **COSTA RICA:** Salitral de Desamparados, 1.V.1889, *Tonduz* 1144 (BR [BR0000005187898]; isolecto-: BR [BR0000005188871], LE n.v., M [M0165422]). **Syntypus:** **COSTA RICA:** San José, 26.IV.1857, *Wendland* 639 (BR [BR000000518888], GOET [2-part specimen: GOET007928, GOET007929]); San José, 17.VII.1857, *Wendland* 1092 (BR [BR0000005187928 fragm.], GOET [GOET007931]); Mt. Aguacate, XI.1846, *Oersted* 2836 (C [C10014560], [C10014561]); San José, 20.IV.1890, *Tonduz* 2352 (US [US00120710]).

= *Conostegia xalapensis* (Bonpl.) D. Don ex DC. in Prodr. 3: 175. 1828.

Notes. – This taxon, as in others, was described as “sp. nov.” a second time by COGNIAUX (1891b: 253) in which he cited two collections, i.e. Pittier 114[4] and Pittier 2352. It appears he was providing a notice about the status of the name rather than necessarily proposing it as a new species a second time. Publication in COGNIAUX (1891a: 708) has precedence as it was published first.

Conostegia puberula Cogn., Monogr. Phan. 7: 703. 1891.

Original citation: “In Nicaragua ad Chontales (Seemann n. 30 in herb. Hort. Petropol.): in Costa-Rica ad S. Miguel (Wendland in herb. Gotting.”).

Lectotypus (designated by KRIEBEL, 2016: 158): NICARAGUA: Chontales, 1867, Seemann 30 (BM [BM001008042]; isolecto-: BR n.v., K [K00535796], LE n.v., W n.v.). **Syntypus:** COSTA RICA: Naranjo [Juan Viñas], s.d., *Wendland* s.n. (GOET n.v.).

= *Conostegia rufescens* Naudin in Ann. Sci. Nat. Bot., sér. 3, 16(2): 108. 1850.

Leandra fulva Cogn., Monogr. Phan. 7: 658. 1891.

Original citation: “In Costa-Rica altit. 3000 m. (Wendland in hb. Griseb.”).

Holotypus: COSTA RICA: Irazú Volcano, c. 2750 m, 14.IV.1857, *Wendland* 668 (GOET [2-part specimen: GOET007952, GOET007953]; iso-: BR [BR0000005190249]).

= *Miconia melanodesma* (Naudin) Michelang. & R. Goldenb. in Brittonia 71: 104. 2018.

Leandra grandifolia Cogn., Monogr. Phan. 7: 690. 1891.

Original citation: “In Costa-Rica ad San-Miguel (Wendland in hb. Griseb.”).

Holotypus: COSTA RICA: San Miguel, 12.V.1857, *Wendland* 784 (GOET [2-part specimen: GOET007954, GOET007955]; iso-: BR [BR0000005190140]).

= *Miconia secungrandifolia* G. Ocampo & Almeda in Brittonia 71: 113. 2018.

Notes. – ALMEDA (2009: 234) already indicated the specimen at GOET as the holotype.

Miconia costaricensis Cogn., Monogr. Phan. 7: 887. 1891.

Original citation: “In Costa-Rica ad Desengaño et Cari-Blanco (Wendland in hb. Griseb.”).

Holotypus: COSTA RICA: Paso de El Desengaño and Cariblanco, 31.V.1857, *Wendland* 936 (GOET [GOET045057]; iso-: BR [BR0000005190805]) (Fig. 26 → p. 71).

Notes. – GOLDENBERG et al. (2013: 38) already indicated the specimen at GOET as the holotype and that at BR as an isotype.

Miconia paleacea Cogn., Monogr. Phan. 7: 757. 1891.

Original citation: “In Costa-Rica prope Desengaño et Cari-Blanco (Wendland in hb. Griseb.”).

Holotypus: COSTA RICA: near Paso de El Desengaño and Cariblanco, 11.V.1857, *Wendland* 816 (GOET [GOET008011]; iso-: BR [BR0000005213719]).

Notes. – The specimen at GOET was already indicated by GOLDENBERG et al. (2013: 86) as the holotype and that at BR as an isotype.

Meliaceae

Wendland made three collections of *Meliaceae* in Central America, of which one was described as a new species.

Guarea hoffmanniana C. DC., Monogr. Phan. 1: 70. 1878.

Original citation: “In Costa Rica (Hoffmann n. 755 in herb. Berol.”).

Lectotypus (designated by GRAYUM, 2006: 1007): COSTA RICA: Pedregal, 25.V.1857, *Wendland* 755 [as “Hoffmann 755”] (GOET [2-part specimen: GOET007839, GOET007840]). **Holotypus:** B†.

Notes. – CANDOLLE (1878: 570) cited “Hoffmann 755” in the protologue. However, the lectotype in GOET has Wendland’s original collection label, numbered “755” and does not include the name Hoffmann as collector. As known from photos deposited at F and MO of the destroyed holotype at B, the specimen had an original label annotated in Wendland’s hand, “755. Pedregal”. As already mentioned under *Mascagnia vacciniifolia* var. *hispida* Nied., Wendland and Hoffmann met in Costa Rica and Hoffmann organized the dispatch of Wendland’s collections to Germany (HOFFMANN, 1858; DOWE, 2019).

Orchidaceae

Orchidaceae were the most collected family by Wendland in Central America. Of the approximately 140 collections, 68 were described as new taxa by Reichenbach. Most of these names were published in *Beiträge zu einer Orchideenkunde Central-Amerika's* in 1866, an account of the orchids collected by botanists who had been active in the Americas. In the part dedicated to Wendland [*Orchideae Wendlandianae*], REICHENBACH (1866: 61) wrote:

“[Wendland's collections are] extremely important because the smallest forms were sought out with the greatest love. That a whole number of them are entirely new to science remains all the more noteworthy as no one except Professor Oersted has ever tracked them down in the field. The older collections of Ruiz and Pavón, Hinds, Cuming, Hartweg, and those of the Indians who worked for Mr. Skinner seem to contain almost nothing of this kind.”

At the time, Reichenbach was professor of botany and director of the botanical garden in Hamburg. Reichenbach and Wendland were close friends (PETERS, 2013; SCHWERIN, 2013), and it was noted in Wendland's obituary that they were indeed 'bosom friends' (ANON., 1903). On Reichenbach's death in 1889, his herbarium was bequeathed to the Natural History Museum in Vienna on the condition that it was not to be accessed by botanists for 25 years, until 1914. Because of the restrictions imposed by World War I, it was not until 1921 that botanists were able to examine specimens (OSSENBACH, 2009; BRÄUCHLER et al., 2021). In comparison to the unfortunate destruction of Schott's *Araceae* herbarium during World War II, Reichenbach's orchid herbarium survived and has largely remained intact. It is, however, not kept separated but integrated in the general collection and must be cited as W. The Acronym W-R found in literature was never officially registered. Reichenbach's orchid herbarium specimens are stamped with "Reichenbach: Herb. Orchid. Nr. [1 to 55433]" whereas those from his general herbarium bear another stamp "HERB. MUS. PALAT. VINDOB. Collectio Reichenbach fil. Acqu. 1889 No. [1 to 394000?]", where 1889 is the year of formal incorporation into the collections (a standard at W since 1879) (BRÄUCHLER et al., 2021: 309, fig. 2A, B). Since the year often was not considered as part of the specimen number in literature or databases "W-R [1 to 55433]" could not refer with certainty to one of Reichenbach's collections. Because of the complex history of numbering, the absence of an official acronym for Reichenbach's orchid herbarium, and to avoid further confusion, since 2020 QR-code numbers have been assigned to all objects at W to give them a unique and persistent identifier [see BRÄUCHLER et al. (2021) for more details]. Those QR-code numbers are cited below in square brackets as

in the case of barcodes. All corresponding datasets are accessible on the JACQ website by adding "<https://jacq.org>" before the Q-R code number.

Compared to other families, *Orchidaceae* are a much simpler taxonomic proposition, as the specimens examined by Reichenbach survived the ravages of World War II and are mostly still extant at W. The duplicates at GOET have a determinavit in Reichenbach's hand with the imprint "H.G.Rchb. f." (Fig. 27A, B → p. 72). Because Reichenbach studied Wendland's material at Herrenhausen (REINER-DREHWALD et al., 2022), the GOET duplicates have to be considered as syntypes. When lectotypifying, one should give preference to the specimens at W, if well preserved, because these originated from Reichenbach's personal herbarium. When no original material has been located at GOET, the specimen at W, originating from Reichenbach's herbarium, is considered as the holotype.

Of further relevance, the American orchidologist Oakes Ames (1804–1873) gathered at Harvard a series of drawings, tracings, photos and fragments of Wendland's Central American orchid collections. Those involving Wendland collections were mostly labeled as "Record of Type" and "Records from Herb. Reichenbach" (Fig. 28 → p. 73). Some have additional labels indicating that tracings were done by R. Schlechter and are also "from Herb. Reichenbach". There is no indication where the original specimens were located, whether at Wendland's herbarium at Herrenhausen or at Reichenbach's herbarium in Hamburg (pre-1889) or Vienna (post-1889). Ames's herbarium is fully integrated in the general herbarium of Harvard with its own acronym (AMES). Most of them consist of drawings and/or photographs of original material mounted on a sheet. Some of those specimens contain fragments of original material and only those will be cited below. They mostly consist of a single flower or parts of flowers and are barely informative.

Arpophyllum medium Rchb. f., Beitr. Orchid.-K. C. Amer.: 89. 1866.

= *Arpophyllum giganteum* subsp. *medium* (Rchb. f.)
Dressler in Novon 10: 193. 2000.

Original citation: "Las Nubes in Guatemala. 9.I.1857".

Lectotypus (designated by DRESSLER, 2000: 193):
GUATEMALA: Las Nubes, 9.I.1857, *Wendland* 190
(W [W0112566]; isolecto-: GOET [GOET008364]).

Notes. – DRESSLER (2000: 193) cited *Wendland* 190 at W as the holotype. This is treated here as an error to be corrected to lectotype (ICN Art. 9.10).

Bletia wendlandii Rchb. f. in Ann. Bot. Syst. 6: 431. 1862.

= *Myrmecophila wendlandii* (Rchb. f.) G.C. Kenn. in Orchid Digest 43: 211. 1979 (Fig. 27C → p. 72).

Original citation: “Guatemala. Wendland”.

Holotypus: GUATEMALA: sine loco [La Puente-San José], 26.XII.1856, *Wendland* 338 (W [W0112512]).

Notes. – The type at W was originally annotated as *Laelia anceps* Lindl. by Reichenbach, but stored under the manuscript name “*Laelia wendlandii*” in his herbarium. *Bletia wendlandii* Rchb. f. was cited as “*Bletia (Laelia) Wendlandii*” in REICHENBACH (1866: 87).

A second sheet including a pencil/ink drawing of flower details of the type by Reichenbach [W0154114] and a Skinner collection with corresponding drawing [W0154115] is extant at W.

Catasetum dilectum Rchb. f., Beitr. Orchid.-K. C. Amer.: 73. 1866.

= *Dressleria dilecta* (Rchb. f.) Dodson in Selbyana 1: 132. 1975 (Fig. 29A → p. 74).

Original citation: “Cari Blanco in Costa Rica. 10.5.1857”.

Lectotypus (designated here): COSTA RICA: Cariblanco, 10.V.1857, *Wendland* 833 (W [W0154121]). **Syntypus:** ibid. loco, *Wendland* 833a (GOET [GOET008370]).

Notes. – Wendland’s collections at GOET and W bear the protologue locality and date but have different collection numbers. We designate *Wendland* 833 at W as the lectotype.

Cranichis reticulata Rchb. f., Beitr. Orchid.-K. C. Amer.: 62. 1866.

Original citation: “Desengano in Costa Rica. 5.8.1857”.

Lectotypus (designated here): COSTA RICA: Paso de El Desengano, 5.VIII.1857, *Wendland* 1252 (W [W0154113]; isolecto-: GOET [GOET008380]).

Dichaea brachypoda Rchb. f., Beitr. Orchid.-K. C. Amer.: 78. 1866.

Original citation: “San Miguel in Costa Rica. 14.5.1857”.

Holotypus: COSTA RICA: San Miguel, 14.V.1857, *Wendland* 809 (W [W0078121]).

Epidendrum barbae Rchb. f., Beitr. Orchid.-K. C. Amer.: 83. 1866.

Original citation: “Vulcan de Barba in Costa Rica. 10,000'. 11.7.1857”.

Lectotypus (designated by Hágster et al. in ULLOA ULLOA et al., in press): COSTA RICA: Barva Volcano, c. 3000 m, 11.VII.1857, *Wendland* 1046 (W [W0112560]; isolecto-: GOET [GOET008405, GOET008406]).

Notes. – SANTIAGO & HÁGSATER (2007: sub tab. 911) cited *Wendland* 1046 at W as the holotype. Hágster in ULLOA ULLOA et al. (in press) properly lectotypify this name.

Epidendrum exasperatum Rchb. f., Beitr. Orchid.-K. C. Amer.: 87. 1866.

Original citation: “Naranjo-Cartago. 4.7.1857”.

Lectotypus (designated by Hágster et al. in ULLOA ULLOA et al., in press): COSTA RICA: Naranjo-Cartago, 4.VII.1857, *Wendland* 1121 (W [W0112558]; isolecto-: GOET [GOET008412, GOET008413], W [W0112559]).

Notes. – Two specimens of *Wendland* 1121 are deposited at W. SANTIAGO & HÁGSATER (2006a: sub tab. 831) cited the collection “W-R 50049” [now W0112558] as holotype and “W-R 50047” [now W0112559] as isotype. Hágster in ULLOA ULLOA et al. (in press) properly lectotypify this name.

Epidendrum firmum Rchb. f., Beitr. Orchid.-K. C. Amer.: 87. 1866.

Original citation: “Naranjo-Cartago. 4.7.1857”.

Lectotypus (designated by Atwood, 1989: sub tab. 1317): COSTA RICA: Naranjo-Cartago, 4.VII.1857, *Wendland* 1135 (W [W0112557]; isolecto-: GOET [GOET008408, GOET008409]).

Epidendrum flavovirens Rchb. f., Beitr. Orchid.-K. C. Amer.: 85. 1866 [nom. illeg., non Regel 1856].

Original citation: “Las Nubes in Guatemala. 11.1.1857”.

Holotypus: GUATEMALA: Las Nubes, 11.I.1857, *Wendland* 321 (W [W0112556]).

= *Epidendrum clowesii* Bateman ex Lindl. in Edward’s Bot. Reg. 30: misc. 16. 1844.

Notes. – Although this name is a later homonym, it is included here for historical completeness.

Epidendrum microdendron Rchb. f., Beitr. Orchid.-K. C. Amer.: 84. 1866.

Original citation: “Vulcan de Barba in Costa Rica. 11.7.1857”.

Lectotypus (designated by Hágster et al. in ULLOA ULLOA et al., in press): **COSTA RICA**: Barva Volcano, c. 2750 m, 11.VII.1857, *Wendland* 1048 (W [W0112555]; isolecto-: GOET [GOET008421]).

Epidendrum myodes Rchb. f., Beitr. Orchid.-K. C. Amer.: 86. 1866.

Original citation: “Naranjo in Costa Rica. 3.7.1857. Turrialba in Costa Rica. 23.3.1857”.

Lectotypus (designated by Atwood, 1989: sub tab. 1321): **COSTA RICA**: Naranjo, 3.VII.1857, *Wendland* 1111 (W [W0154119]; isolecto-: GOET [GOET008430, GOET008431]). **Syntypus**: Turrialba, 23.III.1857, *Wendland* 504 (W [W0154120]).

Notes. – Atwood (1989: sub tab. 1321) cited *Wendland* 1111 as the holotype. This is treated here as an error to be corrected to lectotype (ICN Art. 9.10).

Epidendrum nitens Rchb. f., Beitr. Orchid.-K. C. Amer.: 82. 1866.

Original citation: “Las Nubes. 17.1.1857”.

Lectotypus (designated by Hágster et al. in ULLOA ULLOA et al., in press): **GUATEMALA**: Las Nubes, 17.I.1857, *Wendland* 324 (W [W0112554]; isolecto-: GOET [GOET008424]).

Epidendrum nubium Rchb. f., Beitr. Orchid.-K. C. Amer.: 81. 1866.

Original citation: “Las Nubes in Guatemala. 10.1.1857”.

Lectotypus (designated here): **GUATEMALA**: Las Nubes, 10.I.1857, *Wendland* 332 (W [W0112553]; isolecto-: GOET [GOET008402, GOET008403]).

= *Epidendrum arbusculum* Lindl., Pl. Hartw.: 93. 1842.

Notes. – SANTIAGO & HÁGSTER (2006b: sub tab. 808) cited *Wendland* 332 at W as the holotype. This cannot be treated as an error to be corrected (ICN Art. 9.10, 9.23). The specimen *Wendland* 332 at W is designated here as the lectotype.

Epidendrum pallens Rchb. f., Beitr. Orchid.-K. C. Amer.: 82. 1866.

Original citation: “Vulkan de Barba in Costa Rica. 9000’. 11.7.1857”.

Holotypus: COSTA RICA: Barva Volcano, c. 2750 m, 11.VII.1857, *Wendland* 1052 (W [W0112552]).

Epidendrum pergameneum Rchb. f., Beitr. Orchid.-K. C. Amer.: 86. 1866.

Original citation: “Desengaño in Costa Rica. 5.8.1857”.

Lectotypus (designated by Hágster et al. in ULLOA ULLOA et al., in press): **COSTA RICA**: Paso de El Desengaño, 5.VIII.1857, *Wendland* 1251 (W [W0112551]; isolecto-: GOET [GOET008426, GOET008427]).

Epidendrum platystigma Rchb. f., Beitr. Orchid.-K. C. Amer.: 83. 1866.

Original citation: “Cari Blanco – San Miguel in Costa Rica. 6.8.1857”.

Lectotypus (designated by Atwood, 1989: sub tab. 1324): **COSTA RICA**: Cariblanco-San Miguel, 6.VIII.1857, *Wendland* 1250 (W [W0112550]; isolecto-: GOET [GOET008428, GOET008429]).

Epidendrum pratense Rchb. f., Beitr. Orchid.-K. C. Amer.: 84. 1866.

Original citation: “Feuchte Wiesen am See von Dueñas in Guatemala. 18.1.1857”.

Lectotypus (designated by HÁGSTER, 1990: sub tab. 40): **GUATEMALA**: Dueñas, 18.I.1857, *Wendland* 271 (W [W0112548]; isolecto-: GOET [GOET008417]).

= *Epidendrum radicans* Pav. ex Lindl., Gen. Sp. Orchid. Pl.: 104. 1831.

Notes. – The W specimen was cited as the holotype by HÁGSTER (1990: sub tab. 40). This is treated here as an error to be corrected to lectotype (ICN Art. 9.10).

Epidendrum ramonense Rchb. f., Beitr. Orchid.-K. C. Amer.: 81. 1866.

Original citation: “San Ramón in Costa Rica. 25.6.1857”.

Lectotypus (designated here): **COSTA RICA**: San Ramón, 25.VI.1857, *Wendland* 1009 (W [W0024651]; isolepto-: GOET [GOET008400]) (Fig. 30 → p. 75).

= *Encyclia ceratistes* (Lindl.) Schltr. in Repert. Spec. Nov. Regni Veg. Beih. 6: 74. 1919 (Fig. 27D → p. 72).

Notes. – The lectotype at W contains a pencil drawing of flower details by Reichenbach and a colour drawing done at a later stage.

A line drawing of the type by Dariusz L. Szlachetko is extant at W [W0154112].

Epidendrum turialvae Rchb. f. in Gard. Chron. 52: 1678. 1871.

Original citation: “*Epidendrum* n. sp. ? Rchb. fil. Beitr. Cent. Am. p. 85. When I wrote the above-cited pamphlet, I did not dare to propose this as a new species, since the flowers and the interior part of the plant were not consistent. And yet they had been given me by that most honest observer, Hermann Wendland. I am not at all surprised to find that he was completely justified for having put the fragments together, since the plant has now reappeared in the Saundersian collection (N. 2124). Mr. W. Saunders also introduced it from Costa Rica”.

Lectotypus (designated by SANTIAGO & HÁGSATER, 2008: sub tab. 1193): **COSTA RICA**: Turrialba, 24.III.1857, *Wendland* 539 (W [W0027213]). **Syntypi**: **COSTA RICA**: S. José, s.d., *Carmiol* s.n. (W [W0027214]); sine loco, s.d., *Carmiol* s.n. [Saunders collection 2124] (W [W0027215]).

Notes. – Wilson Saunders received orchids collected by Carmiol in Costa Rica [see WARRIOR (1905: 46) for an example]. One syntype collected by Carmiol at W [W0027215] was incorporated in the Saundersian collection under the number “2124” and cited as such in the protologue. The other syntype at W [W0027214] may have been communicated to Reichenbach directly by Carmiol or, more likely, simply represent an unnumbered duplicate of the same collection.

Govenia quadruplicata Rchb. f., Beitr. Orchid.-K. C. Amer.: 75. 1866.

Original citation: “Irazú in Costa Rica. 14.4.1857”.

Holotypus: **COSTA RICA**: Irazú, 14.IV.1857, *Wendland* 816a (W [W0112546]).

Notes. – Wendland's type collection is mounted on a sheet along with a later collection by Hellmuth Polakowsky [W0112547].

Habenaria lactiflora var. *buccalis* Rchb. f., Beitr. Orchid.-K. C. Amer.: 61. 1866.

Original citation: “Aladhuella-Desengano. 4.8.57”.

Notes. – BATISTA et al. (2011: 40) stated: “TYPE: COSTA RICA OR GUATEMALA: Aladhuella-Desengano, 4 August 1857, *Wendland* ? (Holotype: presumably W [not seen])”. A search at W did not locate any specimens. The typification of this name should be best undertaken by specialists of *Habenaria* Willd.

Hexadesmia brachyphylla Rchb. f., Beitr. Orchid.-K. C. Amer.: 89. 1866.

Original citation: “Turrialba in Costa Rica. 23.3.1857”.

Holotypus: **COSTA RICA**: Turrialba, 23.III.1857, *Wendland* 512 (W [W0112528]).

= *Scaphyglottis fusiformis* (Griseb.) R.E. Schult. in Bot. Mus. Leafl. 17: 205. 1956.

Lepanthes blepharistes Rchb. f., Beitr. Orchid.-K. C. Amer.: 92. 1866.

Original citation: “Desengano in Costa Rica. 5.8.1857”.

Lectotypus (designated here): **COSTA RICA**: Paso de El Desengano, 5.VIII.1857, *Wendland* 1253 (W [W0077406]; isolepto-: GOET [GOET008552]).

Notes. – According to a determination slip by C.M. Smith dated December 2012 on W0077406, it was not clear to him whether the collection number is “1252” or “1253”. Reichenbach used “1253” on a line drawing attached to W0077406 and 1252 is the collection number of the type of *Cranichis reticulata* Rchb. f. with the same locality and date. Wendland himself corrected “1252” to “1253” on W0077406. Therefore, *Wendland* 1253 at W is designated here as the lectotype with a duplicate at GOET.

Lepanthes elata Rchb. f., Beitr. Orchid.-K. C. Amer.: 90. 1866 (Fig. 29B → p. 74).

Original citation: “Desengano in Costa Rica. 9.5.1857”.

Holotypus: **COSTA RICA**: Paso de El Desengano, 9.V.1857, *Wendland* 844 (W [W0077407]).

Lepanthes horrida Rchb. f., Beitr. Orchid.-K. C. Amer.: 91. 1866.

Original citation: “Desengano in Costa Rica. 9.5.1857”.

Lectotypus (designated here): **COSTA RICA**: Paso de El Desengaño, 9.V.1857, *Wendland* 896 (W [W0077409]; isolepto-: GOET [GOET008554, GOET008555]).

Lepanthes tipulifera Rchb. f., Beitr. Orchid.-K. C. Amer.: 91. 1866.

Original citation: “Desengaño in Costa Rica. 9.5.1857”.

Holotypus: **COSTA RICA**: Paso de El Desengaño, 9.V.1857, *Wendland* 908 (W [W0077411]).

Lepanthes wendlandii Rchb. f., Beitr. Orchid.-K. C. Amer.: 91. 1866.

Original citation: “Vulkan de Barba in Costa Rica. 11.7.1857”.

Lectotypus (designated here): **COSTA RICA**: Barva Volcano, 11.VII.1857, *Wendland* 1050 (W [W0077413]; isolepto-: GOET [GOET008558, GOET008559]).

Liparis wendlandii Rchb. f., Beitr. Orchid.-K. C. Amer.: 98. 1866.

= *Crossoliparis wendlandii* (Rchb. f.) Marg. in Acta Soc. Bot. Poloniae 78: 299. 2009.

Original citation: “San José in Costa Rica an Bäumen. 17.7.1857”.

Lectotypus (designated here): **COSTA RICA**: San José, 17.VII.1857, *Wendland* 1103 (W [W0112544]; isolepto-: GOET [GOET008589, GOET008590]).

Masdevallia cupularis Rchb. f., Beitr. Orchid.-K. C. Amer.: 93. 1866.

Original citation: “Desengaño in Costa Rica. 5.8.1857”.

Holotypus: **COSTA RICA**: Paso de El Desengaño, 5.VIII.1857, *Wendland* 1254 (W [W0019511 specimen at top right corner]).

Maxillaria atrata var. *brachyantha* Rchb. f., Beitr. Orchid.-K. C. Amer.: 78. 1866.

Original citation: “Unter Desengaño in Costa Rica. 6000'. 8.5.1857”.

= *Maxillaria obscura* Linden & Rchb.f., Beitr. Orchid.-K. C. Amer.: 31. 1866.

Notes. – A single sheet at W [W0154110, W0112543] contains two line drawings, one labeled with “*Maxillaria atrata* var. *brachyantha*” in Reichenbach’s hand, with their respective fragment packets. It is not clear whether the material of both capsules has been mixed. No original material has been located at GOET. Typification of this name should be done by specialists.

Maxillaria inaudita Rchb. f., Beitr. Orchid.-K. C. Amer.: 76. 1866.

Original citation: “Cartago bei Naranjo in Costa Rica. 4.7.1857”.

Holotypus: **COSTA RICA**: Cartago-Naranjo [Juan Viñas], 4.VII.1857, *Wendland* 1140 (W [W0112539]).

Notes. – Line drawings of the type specimen by Szlachetko [W0112567] and Reichenbach [W0112540] are extant at W.

Maxillaria vaginalis Rchb. f., Beitr. Orchid.-K. C. Amer.: 77. 1866.

Original citation: “Desangaño in Costa Rica. 5.8.1857”.

Holotypus: **COSTA RICA**: Paso de El Desengaño, 5.VIII.1857, *Wendland* 1247 (W [W0112538]).

Meiracyllium wendlandii Rchb. f., Beitr. Orchid.-K. C. Amer.: 73. 1866.

Original citation: “Río Sucio in Guatemala [correctly El Salvador]. 10.2.1857”.

Lectotypus (designated here): **EL SALVADOR**: Río Sucio, 10.II.1857, *Wendland* 421 (W [W0154109]; isolepto-: GOET [GOET008608]).

= *Meiracyllium trinasutum* Rchb. f., Xenia Orchid. 1:12. 1854 (Fig. 27E → p. 72).

Microstylis crispifolia Rchb. f., Beitr. Orchid.-K. C. Amer.: 100. 1866.

= *Malaxis crispifolia* (Rchb. f.) Kuntze, Revis. Gen. Pl. 2: 673. 1891.

Original citation: “Desengaño in Costa Rica. 9.5.1857”.

Holotypus: **COSTA RICA**: Paso de El Desengaño, 9.V.1857, *Wendland* 820 (W [W0112537]).

Microstylis hastilabia Rchb. f., Beitr. Orchid.-K. C. Amer.: 101. 1866.

Original citation: “Vulcan de Barba in Costa Rica. 8000’. 11.7.1857”.

Lectotypus (designated here): **COSTA RICA**: Barva Volcano, c. 2450 m, 11.VII.1857, *Wendland* 1057 (W [W0131194]; isolecto-: GOET [GOET008581, GOET008582], SI [SI001666 fragm.]).

= *Malaxis excavata* (Lind.) Kuntze, Revis. Gen. Pl. 2: 673. 1891.

Notes. – A line drawing of the type by Szlachetko is extant at W [W0131193].

Microstylis lagotis Rchb. f., Beitr. Orchid.-K. C. Amer.: 101. 1866.

= *Malaxis lagotis* (Rchb. f.) Kuntze, Revis. Gen. Pl. 2: 673. 1891.

Original citation: “Vulcan de Barba in Costa Rica, 9000’, 11.7.1857”.

Lectotypus (designated by Dressler in ULLOA ULLOA et al., in press): **COSTA RICA**: Barva Volcano, c. 2750 m, 11.VII.1857, *Wendland* 1053 (W [W0154118]; iso-: GOET [GOET008585, GOET008586]).

Microstylis parthonii var. *denticulata* Rchb. f., Beitr. Orchid.-K. C. Amer.: 100. 1866.

Original citation: “Ueber Azari in Costa Rica. 16.6.1857”.

Holotypus: **COSTA RICA**: above Aserri, 16.VI.1857, *Wendland* 1010 (W [W0112535]).

= *Malaxis wercklei* (Schltr.) Ames in Proc. Biol. Soc. Washington 35: 85. 1922.

Microstylis simillima Rchb. f., Beitr. Orchid.-K. C. Amer.: 101. 1866.

= *Malaxis simillima* (Rchb. f.) Kuntze, Revis. Gen. Pl. 2: 673. 1891.

Original citation: “Desengaño in Costa Rica. 31.5.1857”.

Holotypus: **COSTA RICA**: Paso de El Desengaño, 31.V.1857, *Wendland* 975 (W [W0112534]).

Mormodes wendlandii Rchb. f., Ann. Bot. Syst. 6: 581. 1863.

Original citation: “Ex America centrali misit amiciss, Wendland fil.”

Neotypus (designated here): **[COSTA RICA]**: cultivated at Herrenhausen Gardens [originating from Costa Rica, 1857], s.d., *Wendland* s.n. (GOET [GOET045066]) (Fig. 31 → p. 76). Holotypus: ?W†.

= *Mormodes colossa* Rchb. f. in Bot. Zeitung (Berlin) 10: 636. 1852 (Fig. 27F → p. 72).

Notes. – REICHENBACH (1863: 581) noted in the protologue that he had received this orchid from Wendland. Later REICHENBACH (1866: 74) added: “Naranjo in Costa Rica (Specimina sicca spontanea non prostant. Habeo pedunculum, qui floruit in horto Herrenhusano)”. This means that dried specimens collected in the wild were not available and that he only had an inflorescence cultivated at Herrenhausen Gardens coming from Naranjo in Costa Rica. It is unknown whether the mentioned inflorescence, illustrated in REICHENBACH (1866: tab. 7), was pressed or not. The annotations on GOET045066 are in Wendland’s hand but do not match with Wendland’s usual field labels, thus suggesting that it likely comes from a cultivated plant. In the absence of known original material, the specimen at GOET [GOET045066] is designated here as the neotype.

Odontoglossum schlieperianum Rchb. f. in Gard. Chron. 46: 1082. 1865.

= *Rossioglossum schlieperianum* (Rchb. f.) Garay & G.C. Kenn. in Orchid Digest 40: 143. 1976.

Original citation: “More recently we have obtained flowers grown by Mr. Linden [Jean J. Linden (1817–1898)], and subsequently by Mr. Moritz Reichenheim of Berlin [Moritz Reichenheim (1815–1872)], by Consul Schiller of Hamburgh [Gustav W. Schiller (1803–1870)], and by Adolph Schlieper, Esq., of Elberfeld [Adolf Schlieper (1825–1887)], a zealous collector of Orchids, to whom it is inscribed. [...] Odontoglossum Schlieperianum is probably confined to Costa Rica, from which place came the plants of the above-mentioned sale. It has also been observed and collected by Mr. Wendland the younger, whose very interesting Orchids will soon be published”.

Lectotypus (designated here): **COSTA RICA**: above Cartago, 4.VII.1857, *Wendland* 1138 (W [W0154122]; isolecto-: GOET [GOET013868]) (Fig. 32 → p. 77). **Syntypus** [probable]: Naranjo [Juan Viñas], 3.VII.1857, *Wendland* 1138 (GOET [GOET013869]).

Notes. – Mora de Retana in ATWOOD & MORA DE RETANA (1999: 159) cited a specimen at W as the possible holotype: “?Wendland (W, not seen)”.

We do not accept this nomenclatural act here because the single sheet extant at W contains three collections: W0154122, W0154123 and W0154124. Only W0154122 is with certainty a Wendland collection with the locality “über Cartago, 4.7.1857” in his hand. This collection is designated here as the lectotype with a duplicate at GOET. A second specimen at GOET, which has the same collection number, corresponds to a different collection since date and locality are different to those of the lectotype. It is here considered as a probable syntype. None of the remaining material cited in the protologue was found.

Oncidium tricuspidatum Rchb. f., Beitr. Orchid.-K. C. Amer.: 72. 1866.

= *Leochilus tricuspidatus* (Rchb. f.) Kraenzl., Pflanzenr. IV. 50: 297. 1922.

Original citation: “Cartago in Costa Rica. 30.3.1957”.

Holotypus: COSTA RICA: Cartago, 30.III.1857, *Wendland* 606 (W [W0112533]).

Notes. – On the same sheet as the holotype, a fragment packet [W0112532] includes another collection which is not part of the original material of the name *Oncidium tricuspidatum* Rchb. f.

Ornithidium anceps Rchb. f., Beitr. Orchid.-K. C. Amer.: 75. 1866.

Original citation: “Cartago in Costa Rica. 4.7.1857”.

Lectotypus (designated by Atwood in ATWOOD & MORA DE RETANA, 1999: 71): COSTA RICA: Cartago, 4.VII.1857, *Wendland* 1139 (W [W0154108]; isolecto-: GOET [GOET008623, GOET008624]).

= *Maxillaria pseudoneglecta* J.T. Atwood in Lindleyana 8: 30. 1993.

Ornithidium fulgens Rchb. f., Beitr. Orchid.-K. C. Amer.: 76. 1866.

= *Maxillaria fulgens* (Rchb. f.) L.O. Williams in Ann. Missouri Bot. Gard. 28: 425. 1941.

Original citation: “Naranjo in Costa Rica. 3.7.1857”.

Lectotypus (designated by Atwood, 1989: sub tab. 1338): COSTA RICA: Naranjo [Juan Viñas], 3.VII.1857, *Wendland* 1110 (W [W0154106]; isolecto-: GOET [GOET008625]).

Notes. – A line drawing of the type specimen by Szlachetko is extant at W [W0154107].

Physurus calophyllus Rchb. f., Beitr. Orchid.-K. C. Amer.: 64. 1866.

= *Microchilus calophyllus* (Rchb. f.) Ormerod in Lindleyana 17: 216. 2002.

Original citation: “Costa de Congo, zwischen Cari Blanco und San Brigen in Costa Rica. 6.8.1857”.

Lectotypus (designated here): COSTA RICA: Cuesta de Congo, between Cariblanco and San Miguel, 6.VIII.1857, *Wendland* 1257 (W [W0020375]; isolecto-: GOET [GOET008440]).

Notes. – The collection *Triana* 1547 (W [W0154104]) mounted on the same sheet as the lectotype at W is not part of the original material of the name *Physurus calophyllus* Rchb. f.

A line drawing of the type specimen by Szlachetko is extant at W [W0154105].

Physurus loxoglottis Rchb. f., Beitr. Orchid.-K. C. Amer.: 63. 1866.

= *Kreodanthus loxoglottis* (Rchb. f.) Garay in Bradea 2: 199. 1977.

Original citation: “Barranca bei Guatemala. 16.1.1857”.

Holotypus: GUATEMALA: barranca near Guatemala City, 16.I.1857, *Wendland* 340 (W [W0112530]).

Physurus tridax Rchb. f., Beitr. Orchid.-K. C. Amer.: 64. 1866.

= *Microchilus tridax* (Rchb. f.) Ormerod in Lindleyana 17: 223. 2002.

Original citation: “Desengaño in Costa Rica, 5.8.1857”.

Holotypus: COSTA RICA: Paso de El Desengaño, 5.VIII.1857, *Wendland* 1255 (W [W0154102]).

Notes. – ORMEROD (2002: 223) indicated: “Type: Costa Rica. Desengaño, 5. Aug. 1857, Wendland s.n. (holotype: W; isotype: GOET”. No specimens have been located at GOET and the specimen at W is considered as the holotype.

A line drawing of the type specimen by Szlachetko is extant at W [W0154103].

Physurus vesicifer Rchb. f., Beitr. Orchid.-K. C. Amer.: 63. 1866.

= *Microchilus vesicifer* (Rchb. f.) Ormerod in Lindleyana 17: 223. 2002.

Original citation: “Vulkan von Barba in Costa Rica. 9000’. 11.7.1857”.

Lectotypus (designated by KOLANOWSKA, 2014: 24): COSTA RICA: Barva Volcano, c. 2750 m, 11.VII.1857, *Wendland* 1055 (W [W0154100]; isolepto-: GOET [GOET008442, GOET008443]).

Notes. – A line drawing of the type specimen by Szlachetko is extant at W [W0154101].

Pleurothallis fuegi Rchb. f., Beitr. Orchid.-K. C. Amer.: 97. 1866.

= *Specklinia fuegi* (Rchb. f.) Solano & Soto Arenas in Icon. Orchid. 5–6: x–xi. 2003.

Original citation: “Vulcan de Fuego in Guatemala. 20.1.1857”.

Lectotypus (designated here): GUATEMALA: Fuego Volcano, 20.I.1857, *Wendland* 294 (W [W0154099]; isolepto-: GOET [GOET008637, GOET008638]).

Pleurothallis naranicensis Rchb. f., Beitr. Orchid.-K. C. Amer.: 96. 1866.

Original citation: “Naranjo in Costa Rica. 29.3.1857”.

Lectotypus (designated by LUER, 1998: 47): COSTA RICA: Naranjo [Juan Viñas], 29.III.1857, *Wendland* 593 (W [W0154097]; isolepto-: AMES [AMES00074492 fragm.], GOET [GOET008645, GOET008646]).

= *Stelis pulchella* Kunth, Nov. Gen. Sp. 1: 364. 1816.

Notes. – A line drawing of the type specimen by Carlyle A. Luer is extant at W [W0154098].

Pleurothallis phyllocardia Rchb. f., Beitr. Orchid.-K. C. Amer.: 97. 1866.

Original citation: “Desengano in Costa Rica. 31.5.1858 [correctly 1857]”.

Lectotypus (designated by KOLANOWSKA, 2014: 168): COSTA RICA: Paso de El Desengano, 31.V.1857, *Wendland* 973 (W [W0154096]; isolepto-: GOET [GOET008648, GOET008649]).

Notes. – KOLANOWSKA (2014: 168) cited Wendland’s collection at W as unnumbered. This does not affect the acceptance of this nomenclatural act as a single specimen is deposited at W.

Ponera bilineata Rchb. f., Beitr. Orchid.-K. C. Amer.: 88. 1866.

= *Scaphyglottis bilineata* (Rchb. f.) Schltr. in Beih. Bot. Centralbl., Abt. 2, 36: 456. 1918.

Original citation: “San Miguel in Costa Rica. 14.5.1857”.

Holotypus: COSTA RICA: San Miguel, 14.V.1857, *Wendland* 810 (W [W0112529]).

Ponthieva guatemalensis Rchb. f., Beitr. Orchid.-K. C. Amer.: 63. 1866.

Original citation: “In einer Barranca bei Guatemala. 16.1.1857”.

Lectotypus (designated here): GUATEMALA: barranca near Guatemala City, 16.I.1857, *Wendland* 243 (W [W0154117]; isolepto-: GOET [GOET008663, GOET008664]) (Fig. 33 → p. 78).

= *Ponthieva racemosa* (Walter) C. Mohr in Contr. U.S. Natl. Herb. 6: 460. 1901.

Sobralia lepida Rchb. f., Beitr. Orchid.-K. C. Amer.: 68. 1866.

Original citation: “Desengano in Costa Rica. 1.6.57”.

Holotypus: COSTA RICA: Paso de El Desengano, 1.VI.1857, *Wendland* 972 (W [W0025011]).

= *Sobralia amabilis* (Rchb. f.) L.O. Williams in Ann. Missouri Bot. Gard. 33: 30. 1946.

Sobralia leucoxantha Rchb. f., Beitr. Orchid.-K. C. Amer.: 68. 1866.

Original citation: “Desengano, Cari Blanco in Costa Rica. 6.8.1857”.

Lectotypus (designated here): COSTA RICA: Paso de El Desengano – Cariblanco, 6.VIII.1857, *Wendland* 1246 (W [W0154092]; isolepto-: GOET [GOET008689]).

Notes. – A line drawing of the type specimen by Szlachetko is extant at W [W0154093].

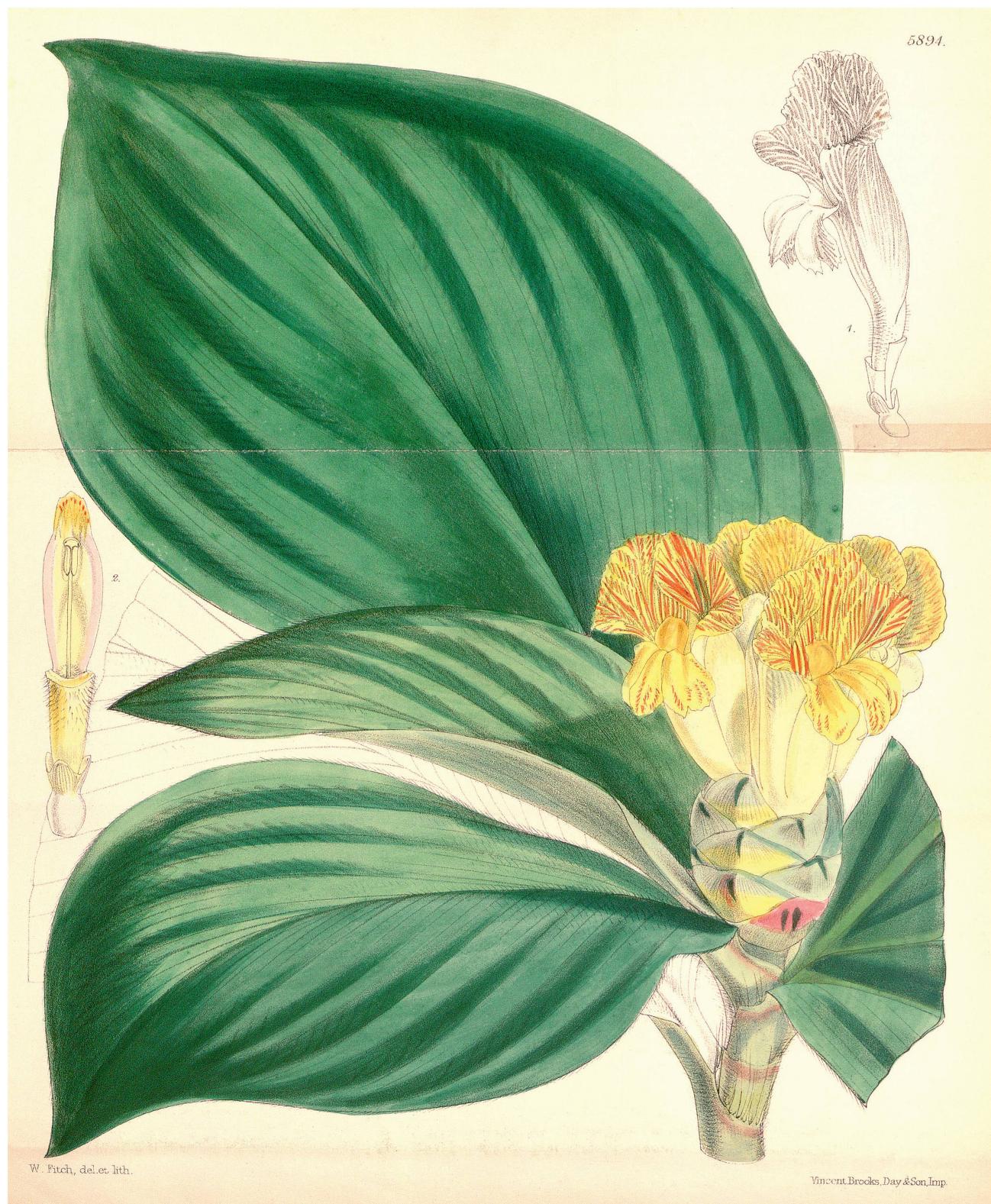


Fig. 20. – Neotype of *Costus malortieanus* H. Wendl.
[HOOKER, 1871: tab. 5894] [Bibliothèque, Conservatoire et Jardin botaniques de Genève] → p. 50



Fig. 21.—Gesneriaceae. A. *Gasteranthus wendlandianus* (Hanst.) Wiehler, Costa Rica, Limón, Pococí, Guapiles; B. *Columnea lepidocaulis* Hanst., Costa Rica, Heredia, San Isidro; C. *Drymonia lanceolata* (Hanst.) C.V. Morton, Costa Rica, San José, Braulio Carrillo highway; D. *Pachycaulos nummularia* (Hanst.) J.L. Clark & J.F. Sm., Costa Rica, San José, Dota, Santa María.

[A: Hammel 22730; B: Hammel & Pérez 27812; D: Hammel 23719] [Photos: B. Hammel] → pp. 52, 53

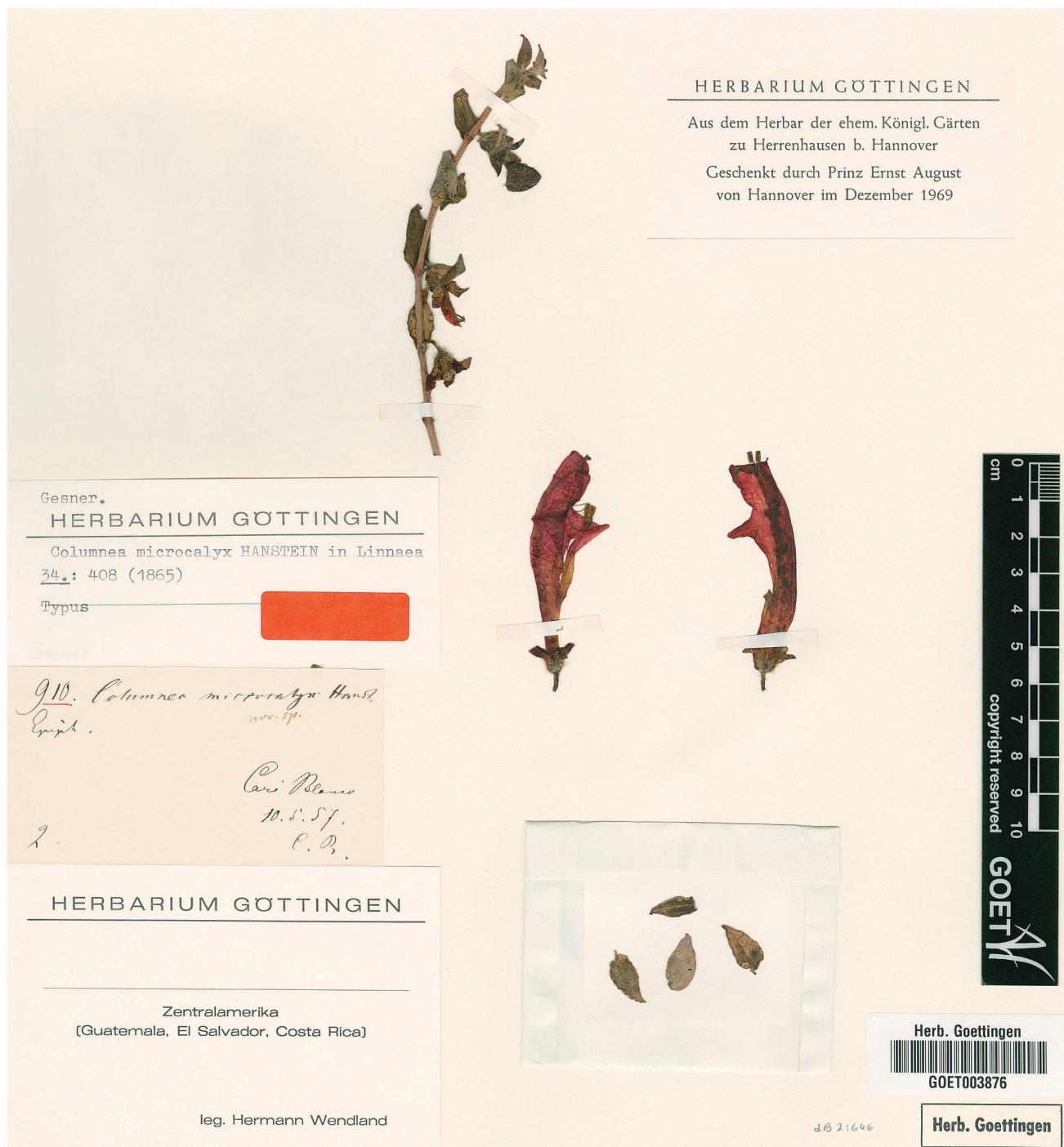


Fig. 22. – Lectotype of *Columnea microcalyx* Hanst. at GOET.
[Wendland 910, GOET003876] [© Universität Göttingen] → p. 52



Fig. 23. – Lectotype of *Gunnera wendlandii* Reinke ex Schindl. [= *Gunnera insignis* (Oerst.) A. DC.] at GOET. [Wendland 829, GOET037345] [© Universität Göttingen] → p. 54



Fig. 24. – Neotype of *Scutellaria costaricana* H. Wendl.
[HOOKER, 1864: tab. 5439] [Bibliothèque, Conservatoire et Jardin botaniques de Genève] → p. 54



Fig. 25. – Lectotype of *Spigelia splendens* H. Wendl. ex Hook.
[HOOKER, 1861; tab. 5268] [Bibliothèque, Conservatoire et Jardin botaniques de Genève] → p. 54



Fig. 26. – Isotype of *Miconia costaricensis* Cogn. at BR.
[Wendland 936, BR0000005190805; © Botanic Garden Meise] → p. 56

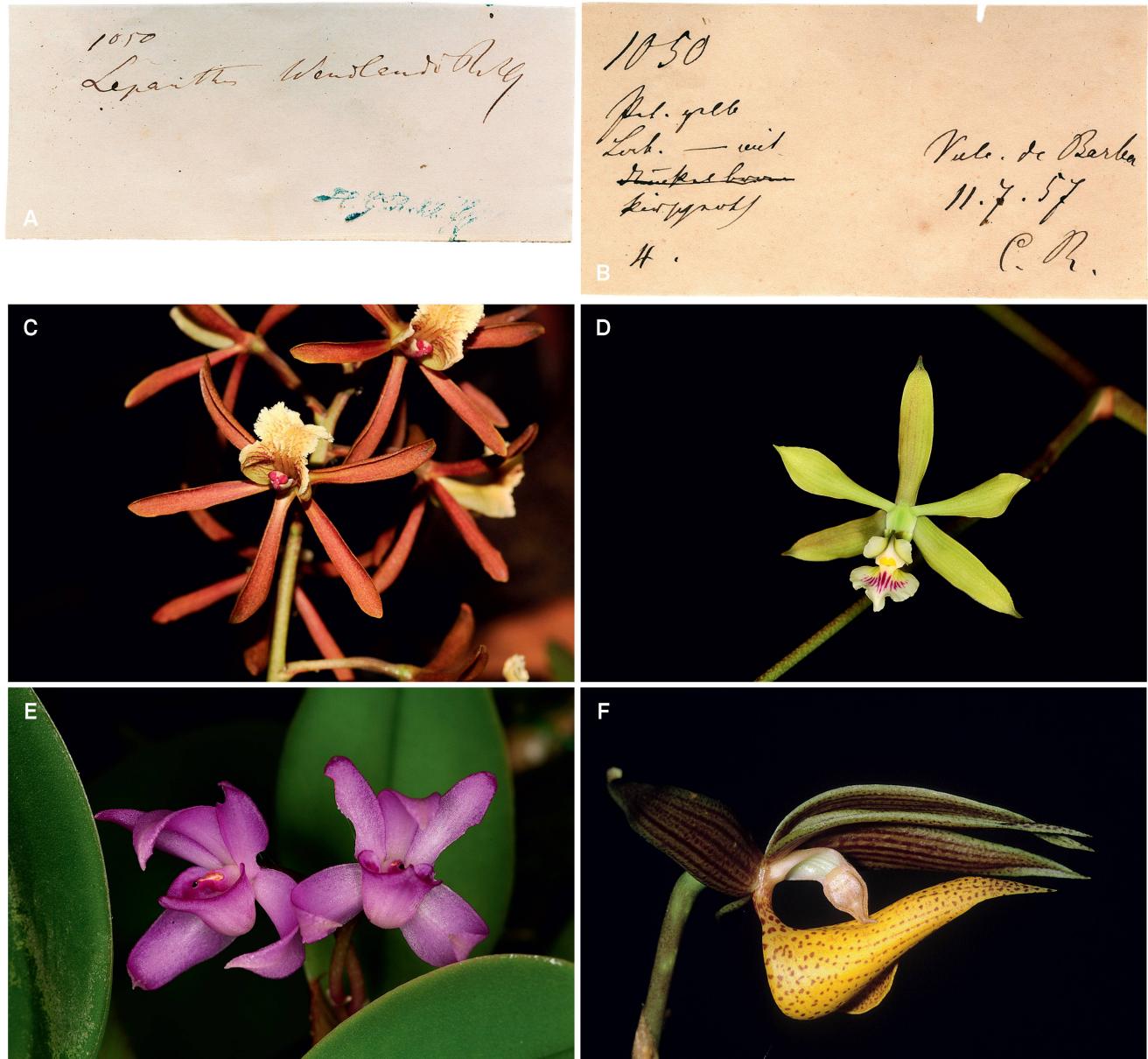


Fig. 27. – *Orchidaceae*. Specimen labels of *Lepanthes wendlandii* Rchb. f. at GOET. **A.** Reichenbach's handwriting; **B.** Wendland's handwriting; **C.** *Myrmecophila wendlandii* (Rchb. f.) G.C. Kenn., cultivated, collection of the Statdgärtnerei Zürich, Switzerland; **D.** *Encyclia ceratistes* (Lindl.) Schltr., cultivated, Herrenhausen Gardens; **E.** *Meiracyllium trinasutum* Rchb. f., cultivated, Herrenhausen Gardens; **F.** *Mormodes colossa* Rchb. f., Costa Rica, Grano de Oro, Moravia de Chirripó, 700 m.

[**A, B:** Wendland 1050, GOET008559; © Universität Göttingen] [Photos: **C, D:** R. Jenny; **E:** B.O. Schlumpberger; **F:** G. Gerlach] → pp. 57, 58, 60, 61, 62, 82



Fig. 28.—An example of the specimens at AMES (here *Stelis microstigma* Rchb. f. [= *Stelis parvula* Lindl.]), with a drawing of the type, a fragment of original material and a photo of a collection by Brade not belonging to original material.
[Wendland 892, AMES00104840] [© The Harvard University Herbaria] → pp. 57, 82



Fig. 29. – Orchidaceae. A. *Dressleria dilecta* (Rchb. f.) Dodson, cultivated, collection of the photographer; B. *Lepanthes elata* Rchb. f., cultivated, Munich Botanical Garden; C. *Pelexia laxa* (Poep. & Endl.) Lindl., cultivated, collection of the photographer; D. *Cochleanthes aromatica* (Rchb. f.) R.E. Schult. & Garay, cultivated, Herrenhausen Gardens.

[Photos: R. Jenny] → pp. 58, 60, 81, 82



Fig. 30. – Lectotype of *Epidendrum ramonense* Rchb. f. at W.
[Wendland 1009, W0024651; © Natural History Museum Vienna] → p. 60



Fig. 31. – Neotype of *Mormodes wendlandii* Rchb. f. [= *Mormodes colossa* Rchb. f.] at GOET. [Wendland s.n., GOET045066] [© Universität Göttingen] → p. 62



Fig. 32. – Lectotype of *Odontoglossum schlieperianum* Rchb. f. [= *Rossioglossum schlieperianum* (Rchb. f.) Garay & G.C. Kenn.] at W. [Wendland 1138, W0154122] [© Natural History Museum Vienna] → p. 62

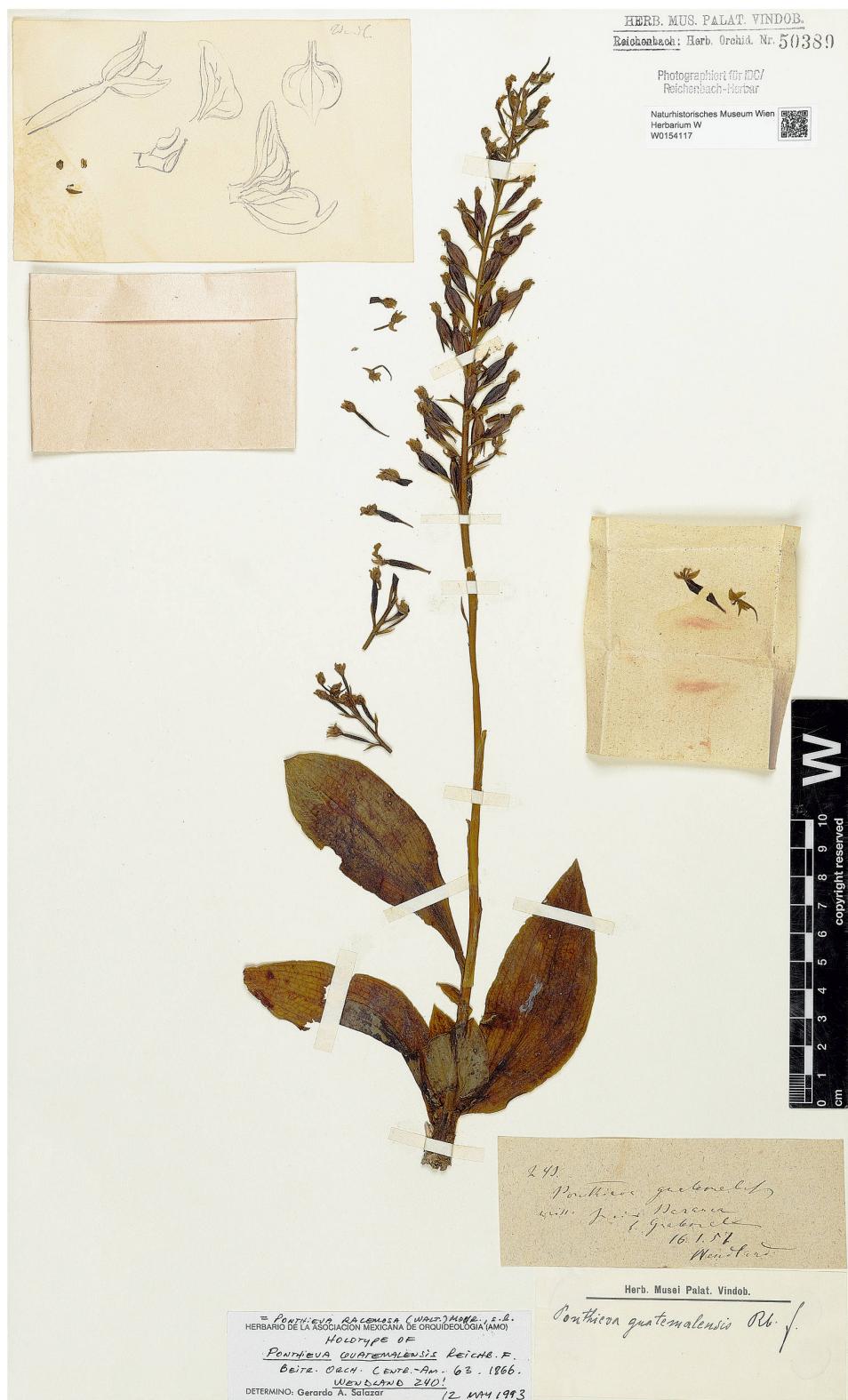


Fig. 33. – Lectotype of *Ponthieva guatemalensis* Rchb. f. [= *Ponthieva racemosa* (Walter) C. Mohr] at W. [Wendland 243, W0154117; © Natural History Museum Vienna] → p. 64



Fig. 34. – Lithograph of *Solanum wendlandii* Hook. f.
[HOOKER, 1887: tab. 6914] [Bibliothèque, Conservatoire et Jardin botaniques de Genève] → p. 83



Fig. 35. – Holotype of *Oreinotinus wendlandii* Ørsted. [= *Viburnum stellatotomentosum* (Ørsted) Hemsl.] at C. [Wendland 657, C10009081; © Museum Botanicum Hauniense, University of Copenhagen] → p. 83

Spiranthes assurgens Rchb. f., Beitr. Orchid.-K. C. Amer.: 66. 1866.

= *Sarcoglossis assurgens* (Rchb. f.) Schltr. in Beih. Bot. Centralbl., Abt. 2, 37: 414. 1920.

Original citation: "Oratoria in Guatemala. 5.2.1857".

Lectotypus (designated here): **GUATEMALA**: Oratorio, 5.II.1857, *Wendland* 375 (W [W0154090]; isolecto-: GOET [GOET008681]).

Notes. – A line drawing of the type specimen by Szlachetko is extant at W [W0154091].

Spiranthes gutturosa Rchb. f., Beitr. Orchid.-K. C. Amer.: 67. 1866.

= *Plexia gutturosa* (Rchb. f.) Garay in Bot. Mus. Leafl. 28: 344. 1982.

Original citation: "St. Vincent Salvador. 13.2.1857".

Holotypus: **EL SALVADOR**: San Vicente, 13.II.1857, *Wendland* 427 (W [W0112526]).

Notes. – Two line drawings of the type specimen by Szlachetko are extant at W [W0112524, W0112525].

Spiranthes longipetiolata Rchb. f., Beitr. Orchid.-K. C. Amer.: 67. 1866.

Original citation: "Turrialba in Costa Rica. 27.3.1857".

Holotypus: **COSTA RICA**: Turrialba, 27.III.1857, *Wendland* 574 (W [W0112523]).

= *Plexia laxa* (Poepp. & Endl.) Lindl., Gen. Sp. Orchid. Pl.: 482. 1840 (Fig. 29C → p. 74).

Spiranthes prasophyllum Rchb. f., Beitr. Orchid.-K. C. Amer.: 65. 1866.

= *Cyclopogon prasophyllum* (Rchb. f.) Schltr. in Beih. Bot. Centralbl., Abt. 2, 37: 393. 1920.

Original citation: "An Stämmen zwischen der Hacienda de Pantaleón und Sapote in Guatemala. 20.1.1857".

Lectotypus (designated by McLEISH et al., 1995: 24): **GUATEMALA**: between Hacienda de Pantaleón and Sapote, 20.I.1857, *Wendland* 297 (W [W0154089]; isolecto-: AMES [AMES00083991 fragm. n.v.], GOET [GOET008387]).

Notes. – McLEISH et al. (1995: 24) cited a *Wendland* s.n. collection at W as holotype. This is treated here as an error to be corrected to lectotype (ICN Art. 9.10).

Two line drawings of the type specimen by Szlachetko are extant at W [W0154094, W0154095].

Spiranthes thelymitra Rchb. f., Beitr. Orchid.-K. C. Amer.: 66. 1866.

= *Schiedeella trilineata* var. *thelymitra* (Rchb. f.) Szlach. in Fragm. Florist. Geobot. 36: 16. 1991.

Original citation: "Bei Oratoria und Yalpatagua in Guatemala. 7.2.1857".

Lectotypus (designated here): **GUATEMALA**: near Oratorio and Jalpatagua, 7.II.1857, *Wendland* 379 (W [W0154088] isolecto-: AMES [AMES00084019 fragm.], GOET [GOET008685]).

Notes. – AMES & CORRELL (1952: 135) and SZLACHETKO (1991: 16) cited the collection date incorrectly as 2 July 1857 instead of 7 February 1857.

Stelis lancilabris Rchb. f., Beitr. Orchid.-K. C. Amer.: 94. 1866.

= *Platystele lancilabris* (Rchb. f.) Schltr. in Repert. Spec. Nov. Regni Veg. Beih. 19: 102. 1923.

Original citation: "Desengáño in Costa Rica. 9.5.1857".

Lectotypus (designated here): **COSTA RICA**: Paso de El Desengáño, 9.V.1857, *Wendland* 904 (W [W0154087]; isolecto-: GOET [GOET008634]).

Stelis leucopogon Rchb. f., Beitr. Orchid.-K. C. Amer.: 95. 1866.

Original citation: "Desengáño in Costa Rica. 10.5.1857".

Lectotypus (designated by GÓMEZ, 1993: 55): **COSTA RICA**: Paso de El Desengáño, 10.V.1857, *Wendland* 895 (W [W0112516]; isolecto-: GOET [GOET008694]).

Syntypus: ibid. loco, 10.V.1857, *Wendland* 888 (GOET [GOET008693], W [W0112525]).

= *Stelis superbiens* Lindl., Fol. Orchid. 8 (Stelis): 8. 1859.

Notes. – Two collections made by Wendland matching the protologue locality and date are deposited at W but with two collection numbers. GÓMEZ (1993: 55) designated *Wendland* 895 as the holotype. This is treated here as an error to be corrected to lectotype (ICN Art. 9.10).

Stelis microstigma Rchb. f., Beitr. Orchid.-K. C. Amer.: 94. 1866.

Original citation: “Desengaño in Costa Rica. 9.5.1857”.

Lectotypus (designated here): **COSTA RICA**: Paso de El Desengaño, 9.V.1857, *Wendland* 892 (W [W0154086]; isolecto-: AMES [AMES00104840 fragm. and drawing], GOET [GOET008695]).

= *Stelis parvula* Lindl., Fol. Orchid. 8 (Stelis): 7. 1859.

Notes. – The specimen AMES00104840 contains a fragment and a drawing. On the same sheet there is a photo of a collection by Brade not belonging to original material (Fig. 28 → p. 73).

Stelis microtis Rchb. f., Beitr. Orchid.-K. C. Amer.: 95. 1866.

Original citation: “Desengaño in Costa Rica. 9.5.1857”.

Lectotypus (designated here): **COSTA RICA**: Paso de El Desengaño, 9.V.1857, *Wendland* 883 (W [W0154085]; isolecto-: AMES [AMES00104842 fragm., AMES00104841 fragm. and drawing, AMES00287025 fragm., AMES00084300 fragm.], GOET [GOET008696, GOET008697]).

= *Stelis parvula* Lindl., Fol. Orchid. 8 (Stelis): 7. 1859.

Notes. – Four sheets in AMES bear fragments of original material. AMES00104841 contains also a drawing.

Stelis obscurata Rchb. f., Beitr. Orchid.-K. C. Amer.: 95. 1866.

Original citation: “Desengaño in Costa Rica. 10.5.1857”.

Lectotypus (designated here): **COSTA RICA**: Paso de El Desengaño, 10.V.1857, *Wendland* 907 (W [W0154084]; isolecto-: GOET [GOET008698]).

= *Stelis parvula* Lindl., Fol. Orchid. 8 (Stelis): 7. 1859.

Stelis pardipes Rchb. f., Beitr. Orchid.-K. C. Amer.: 96. 1866.

Original citation: “Desengaño in Costa Rica. 9.5.1857”.

Lectotypus (designated here): **COSTA RICA**: Paso de El Desengaño, 9.V.1857, *Wendland* 899 (W [W0112514]; isolecto-: AMES [AMES00104895 fragm. and drawing, AMES00084349 fragm. and drawing], GOET [GOET008702]).

Stelis thecoglossa Rchb. f., Beitr. Orchid.-K. C. Amer.: 93. 1866.

Original citation: “Desengaño in Costa Rica. 5.8.1857”.

Lectotypus (designated here): **COSTA RICA**: Paso de El Desengaño, 5.VIII.1857, *Wendland* 1259 (W [W0154083]; isolecto-: AMES [AMES00105008 fragm. and drawing, AMES00084452 fragm. and drawing, AMES00084453 fragm.]; GOET [GOET008700, GOET008701]).

= *Stelis purpurascens* A. Rich. & Galeotti in Ann. Sci. Nat., Bot., sér. 3, 3: 18. 1845.

Notes. – The lectotype is among the few of Wendland’s collections at W that have labels with “H.G.Rchb. fil.” stamped on it like at GOET (Fig. 27A → p. 72).

Trichopilia turrialbae Rchb. f. in Hamburger Garten-Blumenzeitung 19: 11. 1863.

Original citation: “Eine Art aus der Verwandtschaft der *Trichopilia albida* von meinem Freunde, Herrn Hofgärtner Wendland auf dem Turrialba Vulcan entdeckt und im Berggarten zu Herrenhausen zur Blüthe gebracht”.

Lectotypus (designated by Mora de Retana in Atwood & MORA DE RETANA, 1999: 172): **COSTA RICA**: Turrialba, 27.III.1857, *Wendland* 553 (W [W0112513]; isolecto-: GOET [GOET008708]).

Notes. – The W specimen was cited as type by Mora de Retana in Atwood & MORA DE RETANA (1999: 172). This is treated here as an error to be corrected to lectotype (ICN Art. 9.10).

Zygotepetalum wendlandii Rchb. f., Beitr. Orchid.-K. C. Amer.: 74. 1866.

Original citation: “Flores vivos ex horto Herrenhausen. ... In montis Irazu pede (Specimina spontanea non suppetunt)”.

= *Cochleanthes aromatica* (Rchb. f.) R.E. Schult. & Garay in Bot. Mus. Leafl. 18: 323. 1959 (Fig. 29D → p. 74).

Notes. – The protologue indicates that Reichenbach did only study flowers from living plants of Herrenhausen. The specimen W [W0112507] bears a Wendland handwritten label that reads: “Flowers from Hübsch Costa Rica, Kindly give me name of this, Zygotep? aromaticum?”, and this probably corresponds to original material. Because this specimen is a mixed gathering (it contains at least two different collections), the typification

of the name *Zygotetalum wendlandii* Rchb. f. should be undertaken by specialists.

Illustrations of this species, as *Zygotetalum wendlandii* Rchb. f., include those in SANDER (1890), in which was noted that “*Z. wendlandi* is a native of Costa Rica, and was discovered by Mr. H. Wendland during a journey of botanical research undertaken by order of King George of Hanover” and that it was “drawn from a plant in the Royal Gardens at Herrenhausen, Hanover”. It was again illustrated in LINDEN et al. (1895: tab. 471), with the note that “It was discovered by Mr. Wendland at Costa Rica in 1859 [correctly 1857], but remained rare for a long time, and it is quite recently that it was imported again, and became more common in the gardens”.

Rubiaceae

Of the 29 collections of *Rubiaceae* made by Wendland in Central America, one was described as a new species.

Psychotria wendlandiana Oerst. ex Standl. in J. Wash. Acad. Sci. 18: 9. 1928.

Original citation: “Type in the herbarium of the Botanical Museum, Copenhagen, collected at San Miguel, Costa Rica, May 13, 1857, by H. Wendland (no. 781)”.

Holotypus: COSTA RICA: San Miguel, 13.V.1857, *Wendland* 781 (C [C10018337]; iso-: F [F656098 fragm.], GOET [GOET037537], US [00129577]).

= *Psychotria jimenezii* Standl. in J. Wash. Acad. Sci. 15: 288. 1925.

Solanaceae

Wendland made 12 collections of *Solanaceae*, of which one was described as a new species.

Solanum wendlandii Hook. f. in Bot. Mag. 113: tab. 6914. 1887 (Fig. 34 → p. 79).

Original citation: “Living plants of this beautiful *Solanum* were sent to the Royal Gardens in 1882 by Dr. Wendland, Director of the Royal Gardens at Herrenhausen, Hanover, with the information that it is a native of the cold regions of Costa Rica, where it climbs trees”.

Lectotypus: (designated by CLARK et al., 2015: 1127): **[COSTA RICA]:** cultivated at Royal Botanic Gardens Kew [originating from Costa Rica, 1857], 28.VII.1886, *Anon. s.n.* (K [K000195647]; isolecto-: K [K000195646]).

Notes. – CLARK et al. (2015: 1127) designated K000195647 as a neotype. However, an illustration has been published in the protologue which should be considered as original material and

hindering such a nomenclatural act. Hooker filius described a cultivated plant represented today by two herbarium specimens at K. These specimens represent original material and therefore Clark et al.’s designation is corrected here to lectotype. HOOKER (1887) wrote that this species “flowered in the month of August” and the two collections are dated “July 28, 1886”. This slight difference in dates does not contradict the protologue information.

Viburnaceae

Wendland made only one collection of *Viburnaceae* in Central American, and which was described as a new species.

Oreinotinus wendlandii Oerst. in Vidensk. Meddel. Dansk Naturhist. Foren. Kjøbenhavn 1860: 283. 1861.

Original citation: “Crescit in Costa-Rica (Wendland)”.

Holotypus: COSTA RICA: Irazú Volcano, 16.IV.1857, *Wendland* 657 (C [C10009081]; iso-: US [US1841813 fragm.]) (Fig. 35 → p. 80).

= *Viburnum stellatotomentosum* (Oerst.) Hemsl. in Biol. Cent.-Amer., Bot. 2: 3. 1881.

