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Source: Willdenowia, 50(1) : 29-37

Published By: Botanic Garden and Botanical Museum Berlin (BGBM)

URL: <https://doi.org/10.3372/wi.50.50104>

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Transfer of Cuban *Marsdenia* to *Ruehssia* (Apocynaceae–Asclepiadoideae), and two new species in *Ruehssia*

Version of record first published online on 4 March 2020 ahead of inclusion in April 2020 issue.

Abstract: The cosmopolitan genus *Marsdenia* R. Br. in its conventional circumscription has been shown to be strongly polyphyletic, with all New World species grouping in a single clade. Therefore, the genus *Ruehssia* H. Karst. was recently reinstated to encompass the 42 Brazilian species, initially. In the present study, the nine Cuban species currently classified under *Marsdenia* are transferred to *Ruehssia*, and two species, *R. lindenii* and *R. yamanigueyensis*, both endemic to Cuba, are described as new. *Ruehssia yamanigueyensis* is characterized by very thin, wiry stems and small leaves and flowers, while *R. lindenii* is like *R. clausa* in habit, but differs strongly in the shape of the staminal corona. Illustrations and a distribution map for two new species are provided, as well as a key to all *Ruehssia* species on Cuba. Lectotypification is performed where necessary.

Key words: Apocynaceae, Asclepiadoideae, Cuba, Flora de la República de Cuba, lectotypification, *Marsdenia*, *Marsdenieae*, new species, *Ruehssia*, taxonomy

Article history: Received 30 July 2019; peer-review completed 29 October 2019; received in revised form 4 December 2019; accepted for publication 10 December 2019.

Citation: Reuss S. J., Meve U., Mangelsdorff R. D. & Liedt-Schumann S. 2020: Transfer of Cuban *Marsdenia* to *Ruehssia* (Apocynaceae–Asclepiadoideae), and two new species in *Ruehssia*. – Willdenowia 50: 29–37. doi: <https://doi.org/10.3372/wi.50.50104>

Introduction

All Cuban species of Asclepiadoideae (Apocynaceae) possessing erect pollinia were always treated under *Marsdenia* R. Br., tribe Marsdenieae. *Marsdenia* was originally described by Brown (1810a) for five Australian species that are equipped with an urceolate corolla, a staminal corona of five flat, undivided lobes, anthers with appendages and erect, basifixed pollinia and smooth follicles. In the quasi-simultaneously published paper “On the Asclepiadeae”, Brown (1810b) added two further species from outside Australia, *M. tinctoria* R. Br. from Indonesia and *M. clausa* R. Br. from Jamaica.

Bullock (1957: 510) was well aware that *Marsdenia* in the sense of Brown (1810a, 1810b) did not constitute a homogeneous assemblage. He designated *M. tinctoria* as the type of the generic name, arguing that this species is most closely associated with the patron of the genus, William Marsden, a pioneer of the scientific study of Indonesia. Bullock (1957), however, was not aware that the same choice, albeit without explicit reasoning, had been made earlier by Britton & Wilson (1925).

Over the last 200 years, *Marsdenia* has grown to a heterogeneous genus comprising around 300 of the c. 740 species of the tribe Marsdenieae (Endress & al. 2018). *Marsdenia* is considered pantropical, with some

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130 species occurring in the New World (Espírito Santo & al. 2019). For Cuba, it was Richard (1850) who described the first three species: *M. affinis* A. Rich., *M. longiflora* A. Rich. and *M. saturejifolia* A. Rich. The first revision of *Marsdenia* of Cuba (and the Antilles) dates back to Schlechter (1899), who accepted eight species on the island of a total of thirteen in the West Indies. However, Schlechter (1899) overlooked *M. cubensis*, published earlier by Turczaninow (1853), for which he cited the type (*Linden 1845*) under *M. umbellata* Griseb. Instead, he listed *M. elliptica* Decne., today considered a Puerto Rican endemic, for Cuba, citing *Rugel 381*, a specimen now identified as *M. fusca* Griseb. Later, only *M. micrantha* Alain was added as a new, then ninth species to the flora (Alain 1956). Lastly, Greuter & Rankin Rodríguez (2017) listed nine indigenous and one introduced species (*M. floribunda* (Brongn.) Schltr.).

On the infrageneric level, it was Rothe (1915) who proposed the first and last sectional and subsectional subdivision of New World *Marsdenia* (now *Ruehssia* H. Karst.). However, his classification, mainly based on corolla and corona characters, is artificial, as our phylogeny shows (Liede-Schumann & al. in prep.). Instead, the Antillean species analysed form a single, well-supported subclade, whereas Rothe (1915) spread the Cuban species alone over four of his nine sections. Molecular studies (Espírito Santo & al. 2019; Liede-Schumann & al. in prep.) have recovered several independent clades within *Marsdenia* s.l. showing that the genus is highly polyphyletic. All species of the New World are retrieved as a monophyletic group, and Espírito Santo & al. (2019) reinstated the genus *Ruehssia* for the New World “*Marsdenia*” species. However, Espírito Santo & al. (2019) focussed their analysis on the 42 Brazilian species, and only transferred these to *Ruehssia* with *R. macrophylla* (Humb. & Bonpl. ex Schult.) H. Karst. as the generic type. Liede-Schumann & al. (in prep.) extended sampling to Cuban *Marsdenia* species, which are retrieved within the neotropical *Ruehssia* clade. In consequence, the Cuban species need to be transferred to *Ruehssia*, and the necessary new combinations are here proposed. Of the nine indigenous species, five are endemic to Cuba: *R. cubensis* (Turcz.) Liede, S. Reuss & Meve, *R. longiflora* (A. Rich.) Liede, S. Reuss & Meve, *R. micrantha* (Alain) Liede, S. Reuss & Meve, *R. umbellata* (Griseb.) Liede, S. Reuss & Meve and *R. vinciflora* (Griseb.) Liede, S. Reuss & Meve; while *R. clausa* (R. Br.) Liede, S. Reuss & Meve, *R. fusca* (Griseb.) Liede, S. Reuss & Meve, *R. linearis* (Decne.) Liede, S. Reuss & Meve and *R. saturejifolia* (A. Rich.) Liede, S. Reuss & Meve are also found on the neighbouring islands: *R. clausa* on Jamaica and Hispaniola, *R. fusca* on Jamaica and *R. linearis* and *R. saturejifolia* on Hispaniola. Here, two new Cuban endemic species are described. During field studies near Yamanigüey, a village in eastern Cuba, north of the Alexander von Humboldt National Park, R. Mangelsdorff discovered an undescribed species of

“*Marsdenia* s.l.”, which differs from all other known species by an exceptionally tiny habit and wiry stems. Later, while comparing his collections with the herbarium material available, he realized that three earlier gatherings in JE (*HFC 11992*, *HFC 11988* and *HFC 11872a*), also from the vicinity of Yamanigüey, represent the new species here named *R. yamanigüeyensis*. A second undescribed species, preliminarily labelled “*Marsdenia lindeni*” (in sched.), came to light during our herbarium studies and is described here.

The present work summarizes the treatment prepared for the account of the *Asclepiadoideae* in the *Flora de la República de Cuba* (Liede-Schumann & al. in prep.).

Material and methods

For our study, we analysed c. 200 specimens from the herbaria B, FR, GOET, HAC, HAJB and JE (herbarium codes according to *Index herbariorum*; <http://sweetgum.nybg.org/science/ih/>). The terminology for morphological descriptions follows Endress & al. (2018).

Results and Discussion

Ruehssia H. Karst. in Verh. Vereins Beförd. Gartenbaues Königl. Preuss. Staaten 19: 304. 1849. – Type (designated by Espírito Santo & al. 2019: 5): *Ruehssia macrophylla* (Humb. & Bonpl. ex Schult.) H. Karst.

Remarks — Karsten (1849) placed four Venezuelan species in *Ruehssia*, characterized by broadly elliptic leaves and shortly pedunculate, many-flowered sciadioids. The corolla tube of these species is short and rotate and the carnos, lanceolate-subulate staminal corona is almost completely adnate to the gynostegium. The follicles are exceptionally large and the pericarp is coriaceous. Presently these four species are considered synonyms of the widespread *R. macrophylla* (Bernal & al. 2015). Espírito Santo & al. (2019) broadened the concept of *Ruehssia* to accommodate all Brazilian species, so that the genus now comprises a wide range of growth forms, leaf shapes and floral structures. All species possess white latex, a corona of five lobes that are fused at least partially to the dorsal side of the anthers and mostly not exceeding the apex of the style-head, erect pollinia attached to the caudicles by their bases, and solitary follicles.

Key to the Cuban species of *Ruehssia*

1. Stems wiry (to 1 mm in diam.), lamina to 10 mm long **11. *R. yamanigüeyensis***
- Stems not wiry (thicker than 1 mm), lamina more than 10 mm long **2**
2. Lamina linear **3**

- Lamina lanceolate, cordate, ovate or elliptical, but not linear 4
- 3. Inflorescences with 1(or 2) flowers; corolla lobes lanceolate and twisted; style-head rostrate, bilobed ..
..... 7. *R. saturejifolia*
- Inflorescences with 4(or 5) flowers; corolla lobes triangular; style-head rostrate, not bilobed .. 4. *R. linearis*
- 4. Shape of staminal corona lobes deltate, to 0.3 mm wide 10. *R. lindenii*
- Shape of staminal corona lobes not deltate 5
- 5. Inflorescences many-flowered (> 12) 6
- Inflorescences few-flowered ($\leq$ 12) 7
- 6. Lamina ovate, apex acuminate, petiole 20–30 mm long; peduncle 70–80 mm long 3. *R. fusca*
- Lamina obovate, base cuneate, petiole to 8 mm long; peduncle less than 40 mm long 6. *R. micrantha*
- 7. Corolla lobes at most 2 mm long 1. *R. clausa*
- Corolla lobes at least 4 mm long 8
- 8. Corolla tube at least 15 mm long ... 9. *R. vinciflora*
- Corolla tube at most 10 mm long 9
- 9. Adaxial face of leaves basally with at least 3 colleters on midvein; corolla lobes obovate, longer than corolla tube, 10–12 mm long 5. *R. longiflora*
- Adaxial face of leaves basally with 1 or 2 colleters on midvein; corolla lobes ensiform to lanceolate, to 6 mm long 10
- 10. Adaxial face of leaves basally with 2 colleters on midvein; flower at most 8 mm long; corolla tube urceolate, corolla lobes ensiform 2. *R. cubensis*
- Adaxial face of leaves basally with 1 colleter on midvein; flower at least 12.5 mm long; corolla tube infundibuliform, corolla lobes lanceolate
..... 8. *R. umbellata*

1. *Ruehssia clausa* (R. Br.) Liede, S. Reuss & Meve, **comb. nov.** $\equiv$ *Marsdenia clausa* R. Br., Asclepiadaceae: 19. 1810; and in Mem. Wern. Nat. Hist. Soc. 1: 30. 1811 $\equiv$ *Pergularia clausa* (R. Br.) Spreng., Syst. Veg. 1: 844. 1825. – Holotype: Jamaica, *O. P. Swartz s.n.* (BM 000952935; isotype: S 04-1242).

= *Apocynum agglomeratum* Poir., Encycl. Suppl. 1: 407. 1811 $\equiv$ *Marsdenia agglomerata* (Poir.) Decne. in Ann. Sci. Nat., Bot., ser. 2, 9: 276. 1838. – **Lectotype (designated here)**: St. Domingo, *P. A. Poiteau s.n.* (P 00645931; islectotype: P 00645932).

= *Marsdenia affinis* A. Rich. in Sagra, Hist. Fis. Cuba, Bot. 11: 100. 1850 $\equiv$ *Marsdenia obovata* Turcz. in Bull. Soc. Imp. Naturalistes Moscou 25(3–4): 321. 1853. – **Lectotype (designated here)**: Cuba, 1844, *J. Linden 1846* (KW 001001590; islectotypes: BM 00952936, BR 0000013081423, GENT 10157589, K 000438706, K 000438707, K 000438708, P 00645928, P 00645929, P 00645930).

= *Marsdenia campanulata* Griseb., Pl. Wright. 2: 521. 1862 $\equiv$ *Marsdenia clausa* var. *campanulata* (Griseb.) M. Gómez in Anales Soc. Esp. Hist. Nat. 23: 275. 1894. – **Lectotype (designated here)**: Cuba, 24 Jan

1861, *C. Wright 1375* (GOET 000734; islectotypes: BM 000952938, GH 00076465, GOET 000294, MO 711582, MO 711583, NY 00111047, PH 00017052, S 12-13267, S 12-13268).

= *Marsdenia campanulata* var. *bifida* Griseb., Cat. Pl. Cub.: 178. 1866 $\equiv$ *Marsdenia clausa* var. *bifida* (Griseb.) M. Gómez in Anales Soc. Esp. Hist. Nat. 23: 275. 1894. – **Lectotype (designated here)**: Cuba, 1860–1864, *C. Wright 2973* (GOET 000295; islectotypes: GH 00076466, MA 609050, MO 711581, S 12-13865, YU 065841).

Remarks — Typification of all taxa associated with *Ruehssia clausa* needs some explanation. Because Robert Brown stated explicitly (Brown 1811: 18) that he worked on the personal collections of Sir Joseph Banks, now housed in BM, the BM specimen of *O. P. Swartz s.n.* (BM 000952935) can be regarded as the holotype of *Marsdenia clausa*.

Of the synonymous names, *Marsdenia affinis* and *M. obovata* are homotypic because Richard (1850) as well as Turczaninow (1853) cited a single gathering, *J. Linden 1846*, in the respective protologues. However, neither author indicated a herbarium in which a specimen (syntype) of this gathering was housed. The KW specimen (KW 001001590), which Turczaninow probably saw, is richer and better preserved than the P specimen (P 00645929), which probably served Richard for his description, and is therefore designated as the lectotype for both names.

For lectotypification of the Grisebach names, remarks of Gray (1860) are to be considered. In his preface to the *Plantae Wrightianae*, Gray (1860) stated that Grisebach examined the specimens of Wright (except lost numbers added by Gray in brackets) sent by him to Göttingen. Therefore, selection of lectotypes should use GOET specimens, as suggested by Howard (1988). Of *Marsdenia campanulata*, two isotypes are found in GOET, GOET 000294 and GOET 000734. Of these, GOET 000734 bears a dissected flower, a drawing and several handwritten notes, and is therefore designated as the lectotype. Finally, of the two syntypes of *M. campanulata* var. *bifida*, *C. Wright 2973* and *F. I. X. Rugel 393*, the specimen of Wright GOET 000295 is designated as the lectotype, again following a suggestion by Howard (in sched.). This specimen is furnished with a flower drawing and handwritten notes of Grisebach, and islectotypes are extant in several herbaria, whereas *F. I. X. Rugel 393* has only been located in MO (MO 2381344).

2. *Ruehssia cubensis* (Turcz.) Liede, S. Reuss & Meve, **comb. nov.** $\equiv$ *Marsdenia cubensis* Turcz. in Bull. Soc. Imp. Naturalistes Moscou 25(3–4): 322. 1853. – **Lectotype (designated here)**: Cuba, Santiago, May 1844, *J. Linden 1845* (KW 001001587; islectotypes: BM 000017074, BM 000952933, BR 0000013081430, G 00177064, GENT 10157572, K 000438647, P 00645944, P 00645945).

Remarks — Because in the protologue Turczaninow (1853) did not indicate a herbarium in which any specimen was housed, lectotypification is necessary. We designate the specimen in KW, because it is certainly the one with which Turczaninow worked.

Schlechter (1899) included in his work for the Antilles *Marsdenia elliptica* Decne., originally a Puerto Rican taxon (cf. Rothe 1915), and cited *Rugel 381* (K 000438703) as reference for this species in Cuba. However, *Rugel 381* represents *M. fusca*. Another specimen, *J. Linden 1845* (BR 0000013081430, isoelectotype of *M. cubensis*), was misidentified (in sched.) as *M. elliptica*. In consequence, there is no proof left for the occurrence of *M. elliptica* on Cuba.

The collections of *C. Wright* distributed under his no. 2972 cover two different species: *Ruehssia cubensis* and *R. umbellata*. The specimen seen by Grisebach (1866) was correctly assigned to *Marsdenia umbellata* in his *Catalogus plantarum cubensium*, whereas other extant specimens of *Wright 2972* show *R. cubensis*. *Ruehssia cubensis* can be easily distinguished from *R. umbellata* even on scans (cf. JSTOR Global Plants; <https://plants.jstor.org/>) by its much shorter flowers not exceeding 8 mm long (vs. more than 12 mm long in *R. umbellata*).

3. *Ruehssia fusca* (C. Wright ex Griseb.) Liede, S. Reuss & Meve, **comb. nov.** $\equiv$ *Marsdenia fusca* C. Wright ex Griseb., Cat. Pl. Cub.: 178. 1866. – **Lectotype (designated here):** Cuba, 1860–1864, *C. Wright 2976* (GOET 000731; isoelectotypes: BM 000952932, GH 00076467, GOET 000296, K 000438704, MA 609047, MO 711585, NY 00076731, S 03-2290, YU 001855).

Remarks — Of the two specimens of *C. Wright 2976* in GOET, we designate GOET 000731 as the lectotype because it displays, besides flowers and a follicle, a flower drawing and handwritten notes, whereas GOET 000296 is a sterile specimen.

4. *Ruehssia linearis* (Decne.) Liede, S. Reuss & Meve, **comb. nov.** $\equiv$ *Marsdenia linearis* Decne. in Candolle, Prodr. 8: 617. 1844. – **Lectotype (designated here):** St. Domingo, *H. Nectoux s.n.* (P 00645951).

= *Marsdenia linearis* var. *brevifolia* Kitan. in God. Sofijsk. Univ., Biol. Fac., Kn. 2, 64: 63. 1972. – Holotype: Cuba, prov. Oriente, Sagua-Baracoa, charrascos entre Cayo Fortuno y Cupeal, alt. 600 m, 20 Apr 1970, *B. Kitanov 1671* (SOM 42361).

= *Marsdenia stenophylla* Turcz. in Bull. Soc. Imp. Naturalistes Moscou 21(1–2): 260. 1848, **syn. nov.** – Holotype: Haïti, *B. Jæger 192* (not traced).

– *Marsdenia linearis* var. *latifolia* Kitan. in God. Sofijsk. Univ., Biol. Fac., Kn. 2, 64: 63. 1972, nom. inval. (Turland & al. 2018: Art. 40.1, 40.2) (Cuba, *B. Kitanov 1668*, SOM 42362; *B. Kitanov s.n.*, not traced).

Remarks — Of the three syntypes of *Marsdenia linearis* cited in the protologue, we designate the specimen collected by *H. Nectoux* and housed in P (P 00645951) as the lectotype because *J. Decaisne* worked in Paris and therefore his description of *M. linearis* is most likely based on this specimen. The second syntype, *C. G. Bertero s.n.*, is extant in G-DC (G 00137092), while the third syntype, *P. A. Poiteau s.n.*, could not be traced.

Marsdenia stenophylla, collected by *B. Jæger* in Haïti, is here synonymized with *M. linearis*. Although the type was not seen, the protologue of the former is almost identical to the description of *M. linearis*. In particular, the linear leaves, the urceolate corolla with adaxially densely pubescent lobes and the ovate lobes of the staminal corona clearly point to this species.

5. *Ruehssia longiflora* (A. Rich.) Liede, S. Reuss & Meve, **comb. nov.** $\equiv$ *Marsdenia longiflora* A. Rich. in Sagra, Hist. Fis. Cuba, Bot. 11: 100. 1850 $\equiv$ *Stephanotis longiflora* (A. Rich.) M. Gómez in Anales Soc. Esp. Hist. Nat. 23: 276. 1894. – **Lectotype (designated here):** Cuba, *R. de la Sagra s.n.*, Herb. Richard (P 00645952).

Remarks — In the protologue of *Marsdenia longiflora*, neither a specimen nor a housing institution is cited, only a note “Crescit circa Canasi”. However, a single specimen of the Herbarium Richard in P (P 00645952) is encountered, bearing in La Sagra’s own handwriting the inscription: “*Marsdenia longiflora* nob. sp. nov.” as well as a short description. This specimen is designated as the lectotype of *M. longiflora*, according to the recommendation of McNeill (2014). This specimen obviously belongs to the original material seen by Richard, and not *Wright 2974* (see Gómez 1894), actually housed in GOET and K, which was collected ten years after the publication of *M. longiflora*.

6. *Ruehssia micrantha* (Alain) Liede, S. Reuss & Meve, **comb. nov.** $\equiv$ *Marsdenia micrantha* Alain in Revista Soc. Cub. Bot. 13: 59. 1956. – Holotype: Cuba, 2/7 Apr 1956, *Hno. Alain, J. Acuña & M. López Figueiras 5678* (HAC; isotypes: HAC, HAJB 000670, S).

– *Marsdenia wrightiana* Rendle, nom. inval., nom nud., in sched. (Turland & al. 2018: Art. 38.1(a)) (Cuba, *C. Wright 1374*, BM 000514282).

Remarks — Alain (1956) chose the specimen of *Hno. Alain & al. 5678* in LS as the [holo]type, and the one in SV as the isotype. Meanwhile, both herbaria have been included in HAC, but the specimens bear the handwritten annotations “Tipo” and “Isotipo”, clearly indicating the designation by Alain.

Grisebach listed *Marsdenia clausa* R. Br. in his *Catalogus plantarum cubensium* (Grisebach 1866: 178), citing the gathering *Wright 1374*, which is in fact *Ruehssia micrantha* (BM 000514282, BM 000952934, GOET,

S 05-1242). The specimen in GOET is labelled as *M. clausa*, while the specimen BM 000514282 is labelled as “*Marsdenia Wrightiana* Rendle”, which is in fact a *nomen nudum*.

7. *Ruehssia saturejifolia* (A. Rich.) Liede, S. Reuss & Meve, **comb. nov.** $\equiv$ *Marsdenia saturejifolia* A. Rich. in Sagra, Hist. Fis. Cuba, Bot. 11: 100. 1850 [as “*satureiaefolia*”] $\equiv$ *Marsdenia pauciflora* Turcz. in Bull. Soc. Imp. Naturalistes Moscou 25(3–4): 321, 1853. – **Lectotype (designated here):** Cuba, 1844, *J. Linden* 2165 (P 04055872; isoelectotypes: BM 000952931, BR 0000013081447, G 0039943, G 0039944, GENT 10166222, GOET, K 000438649, KW 001001588).

Remarks — Richard (1850) and Turczaninow (1853) described *Marsdenia saturejifolia* and *M. pauciflora*, respectively, based on duplicates of the same gathering, *J. Linden* 2165. The specimen in Herb. Richard in P (P 04055872), which bears a handwritten description, is the richer one, and is therefore designated as the lectotype of *M. saturejifolia*.

8. *Ruehssia umbellata* (Griseb.) Liede, S. Reuss & Meve, **comb. nov.** $\equiv$ *Marsdenia umbellata* Griseb., Cat. Pl. Cub.: 178. 1866. – Holotype: Cuba, 1860–1864, *C. Wright* 582 / 2972 (GOET 000732; isotypes: BM 000017076, GH 00076469, NY 01499749, S 03-2288, YU 001856).

Remarks — Grisebach (1866) cited “Wr. 2972; conferatur Wr. 582” under *Marsdenia umbellata*. GOET 000732 bears a label stating: Coll. C. Wright, 1860–1864, No. 2972 with “2972” heavily crossed out and the note “sent ... as : 582. ...” exactly corresponding to the protologue remark of Grisebach (1866). This specimen, used and annotated by Grisebach, can be regarded as the holotype of *M. umbellata*. The gathering *Wright* 2972 includes two different species: *R. cubensis* and *R. umbellata* (see above under *R. cubensis*).

9. *Ruehssia vinciflora* (Griseb.) Liede, S. Reuss & Meve, **comb. nov.** $\equiv$ *Marsdenia vinciflora* Griseb., Cat. Pl. Cub.: 179. 1866 $\equiv$ *Stephanotis vinciflora* (Griseb.) M. Gómez in Anales Soc. Esp. Hist. Nat. 23: 276. 1894 [“*Vincaeflora*”]. – Holotype: Cuba, 29 Jun 1861, *C. Wright* 2975 (GOET 000299; isotypes: G 00039945, G 00039946, GH 00076470, K 000438646, MO 711584, P 00645969, S 03-2289, UC 936664, YU 001857).

Remarks — Howard (in sched., 17 Jun 1988) considered GOET 000299, bearing a long, handwritten description and an analytical flower drawing, as the holotype of *Marsdenia vinciflora*. Considering also that no second specimen of *C. Wright* 2975 was found in GOET, and that this was the only gathering cited in the protologue, Howard’s conclusion seems justified.

Two new species of *Ruehssia* in Cuba

10. *Ruehssia lindenii* S. Reuss, Manitz & Liede, **sp. nov.** – Fig. 1.

Holotype: Cuba, Holguín, Calentura del Medio, Farallones de Moa, 30 Apr 1981, *J. Bisse*, *H. Dietrich*, *L. González Géigel* & *L. Lepper* HFC 45141 (JE [sheet I]; isotypes: B 10 0374603, HAJB [4 sheets], JE [sheet II]).

Diagnosis — With lanceolate leaves and urceolate corolla, this new species resembles *Ruehssia clausa* in habit, but the staminal corona lobes in *R. lindenii* have a deltate shape, whereas they are almost completely reduced to scales in *R. clausa*.

Morphological description — Woody vine. *Stems* c. 2 mm in diam., bifariously pubescent, older branches up to 6 mm in diam., glabrescent, with scattered lenticels. *Leaves* petiolate; petiole 7–9 mm long, adaxially pubescent; stipular rudiments triangular, brown to black; lamina 40–80 × 12–22 mm, lanceolate (obcordate to obovate when young), discolorous, basally with 2 colleters on midvein, margin revolute, apically mucronate-apiculate, adaxially green, abaxially with protuberant midvein and 12–15 lateral veins on each side, bright green. *Inflorescences* extra-axillary, many-flowered, sciadioid; peduncle 7–10 mm long, bifariously pubescent; pedicels 4–5 mm long, bifariously pubescent. *Sepals* c. 1.5 mm long, reaching more than one third of corolla tube length, ovate, ciliate. *Corolla* c. 4 mm in diam.; corolla tube urceolate, c. 2.2 × 2.2 mm, almost glabrous inside; corolla lobes 1–1.2 mm long, ovate with obtuse apex, margin membranous, adaxially densely bearded. *Staminal corona lobes* c. 0.5 × 0.5 mm, deltate. *Anther wings* completely parallel over whole length, forming guide-rails of c. 0.4 mm length; connective appendages c. 0.4 mm long, trapezoidal. *Pollinaria* with pollinia c. 0.25 × 1.7 mm, obovoid, corpusculum c. 0.22 × 0.075 mm, ellipsoidal, caudicles c. 0.16 µm long, U-shaped. *Style-head* c. 0.45 mm in diam., pulvinate. *Fruits* and *seeds* unknown.

Phenology — Recorded as flowering from April to June.

Distribution and ecology — *Ruehssia lindenii* occurs all over Cuba. As far as reported, it can be found in drier to humid, semi-deciduous, sublittoral to hilly bushland near the coast, or in cliffs (Fig. 3).

Conservation status — Occurring all over Cuba, this species could be categorized as Least Concern (LC). However, because the species seems to be nevertheless rare, and actual data on flourishing populations are missing, the category Data Deficient (DD) according to IUCN Red List categories and criteria (IUCN 2012) seems appropriate.

Etymology — This new species is named *Ruehssia lindenii* to honour the heritage of Jean Jules Linden

(1817–1898), a Belgian botanist, who made many collections not only in Cuba (especially eastern Cuba), picking up a misnomer / erroneous labelling present in the Berlin herbarium (“*Marsdenia lindenii*?”, in sched., B 10 0374603; H. Manitz, pers. comm.). Linden is known as the father of modern orchid horticulture. He initiated the construction of greenhouses in Gent and Brussels to cultivate tropical plants that were sold even to the Russian Tsar. Linden also collected the type specimens of *M. affinis*, *M. cubensis* and *M. saturejifolia*.

Remarks — *Ruehssia lindenii* resembles *R. clausa* in habit, pubescence, leaves, and even inflorescences and flowers. However, the staminal corona in *R. lindenii* differs significantly in its deltate shape (Fig. 1D), whereas the staminal corona in *R. clausa* is almost completely reduced to scales. And while *R. clausa* occurs in wet bushlands of low to medium elevation, *R. lindenii* is presently only known from coastal areas of low elevation.

Additional specimens examined (paratypes) — CUBA: MATANZAS / CIENFUEGOS: Península de Zapata, montes secos entre Guasasa y Juraguá, por el camino, c. 0 m, 23 Apr 1977, A. Areces, J. Bisse, H. Dietrich & L. Lepper HFC 34641 (HAJB [2 sheets], JE [2 sheets]). — ISLA DE LA JUVENTUD: Sierra de Colombo, 12 Apr 1974, A. Areces, R. Berazaín HFC 24775 (HAJB). — MAYABEQUE: Lomas al este de Boca de Canasí, c. 100 m, 12 Apr 1980, J. Bisse, L. González Géigel & F. K. Meyer HFC 42094 (HAJB [4 sheets], JE [2 sheets]). — PINAR DEL RÍO: Cabo San Antonio, Guanahacabibes, 14 Jun 2001, H. Stenzel, A. Urquiola Cruz & J. Ferro Diaz 1196 (JE).

11. *Ruehssia yamanigüeyensis* Mangelsdorff, sp. nov. — Fig. 2.

Holotype: Cuba, Holguín, Moa, charrascal al este de

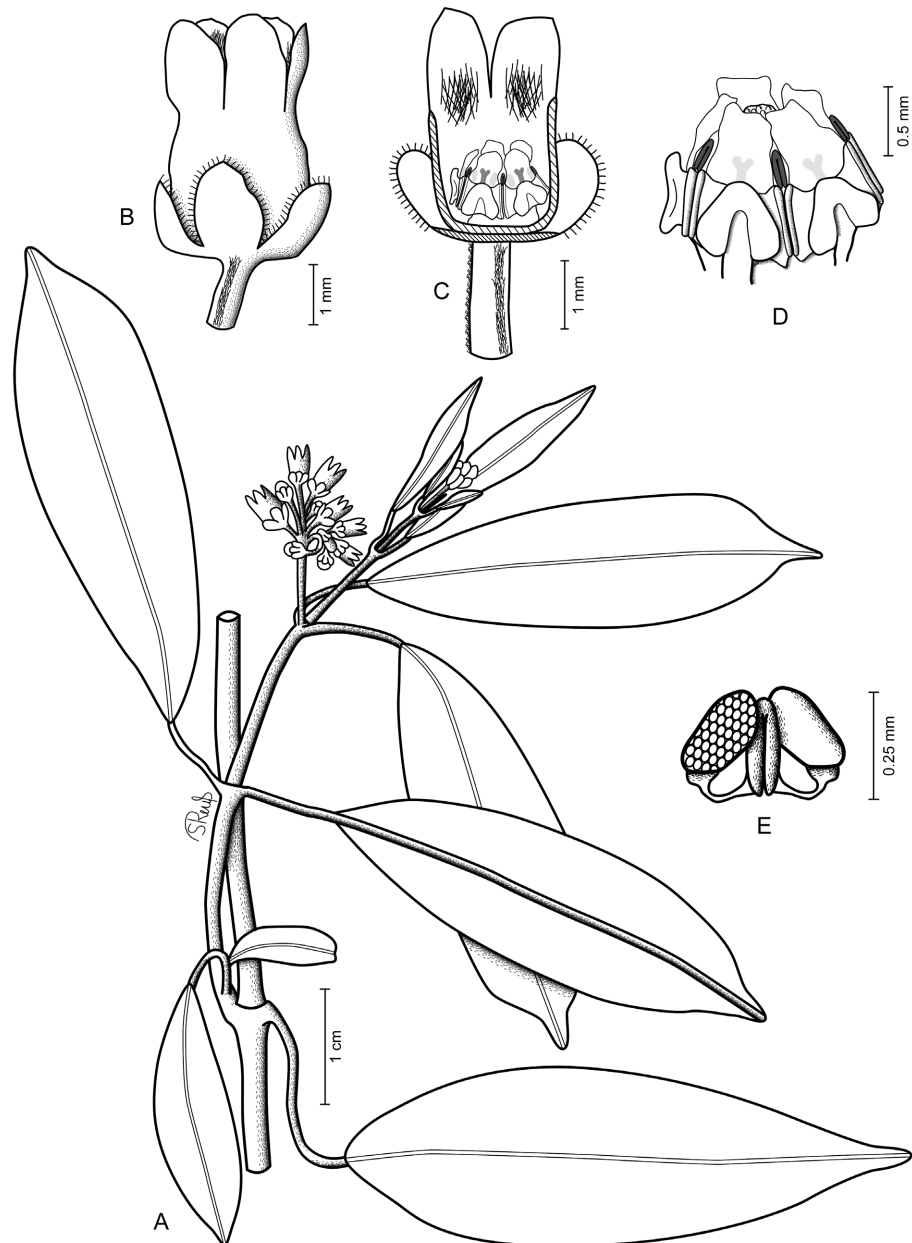


Fig. 1. A–E: *Ruehssia lindenii*; A: habit; B: flower; C: flower, with part of corolla removed to expose gynostegium inside; D: gynostegium with staminal corona; E: pollinarium. — Drawn by S. Reuss after J. Bisse & al. HFC 45141 (JE [A, B], B 10 0374603 [C–E]).

Yamanigüey, 6 Jan 1969, J. Bisse & H. Lippold HFC 11992 (JE).

Diagnosis — This species can easily be distinguished from all other Cuban species of *Ruehssia* by its wiry stems and leaves of around 10 mm long (the smallest within the genus in Cuba).

Morphological description — Woody vine. *Stems* wiry, c. 1 mm in diam., scabridulous. *Leaves* petiolate; petiole c. 1.4 mm long, adaxially canaliculate; stipular rudiments triangular to linear, brown to black; lamina c. 10 × 2.5 mm, oblanceolate to linear, apex rounded with minute mucro, discolourous, colleters absent, margin revolute, adaxially

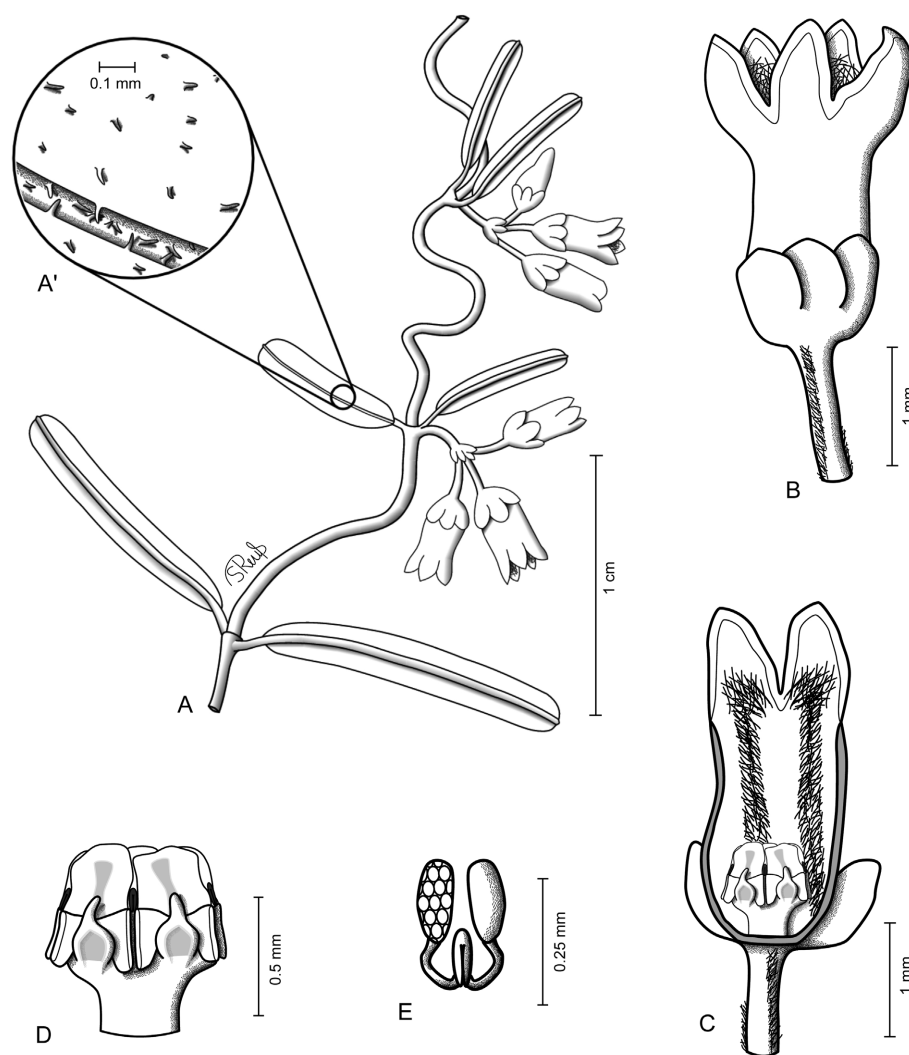


Fig. 2. A–E: *Ruehssia yamanigüeyensis*; A: habit; A': scabridulous leaf surface; B: flower; C: flower, with part of corolla removed to expose gynostegium inside; D: gynostegium (note apical tooth of staminal corona); E: pollinarium. – Drawn by S. Reuss after J. Bisse & H. Lippold HFC 11992 (JE).

green, scattered scabridulous with conical hair-papillae of 0.05–0.08 mm length, midvein abaxially protuberant, adaxially sunken. *Inflorescences* extra-axillary, with 2–4 flowers, sciadioid; peduncle c. 1.5 mm long, bifariously pubescent; pedicels 1–1.2 mm long, bifariously scabrid. *Sepals* c. 0.7 mm long, reaching one third to half of corolla tube length, ovate, apex rounded. *Corolla* c. 2 mm in diam.; corolla tube urceolate, 1.7–2 × 1–1.2 mm, inside with 5 lines of trichomes extending to base of lobes; corolla lobes c. 1 mm long, triangular, proximal half adaxially densely bearded with whitish-translucent trichomes, margin membranous. *Staminal corona* lobes c. 0.4 mm long, ovate, erect, appressed to gynostegium, apically acuminate into a small, free, lanceolate tooth incurved on basal back of connective appendage. *Anther wings* completely parallel over whole length, forming guide-rails of c. 0.3 mm length; connective appendages to 0.35 mm long, trapezoidal. *Pollinaria*: pollinia c. 0.17 × 0.08 mm, obovate, corpusculum c. 0.1 × 0.025 mm, ellipsoidal,

caudicles c. 0.12 mm long, bent upward. *Style-head* c. 0.4 mm in diam., pulvinate. *Fruits and seeds* unknown.

Phenology — Flowering from January to April.

Distribution and ecology — To date, *Ruehssia yamanigüeyensis* has been collected only in the province of Holguín (Moa), where it seems to be limited in distribution to the surroundings of Yamanigüey. It typically grows in charrascal (bosque esclerófilo humedo), a moist, sclerophyllous bushland on ultramafic soil at low elevations of up to 400 m (Fig. 3).

Conservation status — With an area of occupancy of less than 500 km² and just two gatherings from one (or two?) locations known, *Ruehssia yamanigüeyensis* could be categorized as Endangered (EN). However, because the data are so poor, the category Data Deficient (DD) according to IUCN Red List categories and criteria (IUCN 2012) seems appropriate.

Etymology — This species is named after the type locality in the province of Holguín, near the village of Yamanigüey.

in the province of Holguín, near the village of Yamanigüey.

Remarks — *Ruehssia yamanigüeyensis* is clearly separated from all other species of *Ruehssia* in Cuba by its wiry habit and adaxially scabridulous leaves (Fig. 2A) of just about 10 × 2.5 mm (making it the tiniest of all Cuban species of *Ruehssia*). Likewise, the flowers are diminutive, hardly reaching 3 mm in length (Fig. 2).

Additional specimens examined (paratypes) — CUBA: HOLGUÍN: Moa, charrascales al este de Yamanigüey, 6 Jan 1969, J. Bisse & H. Lippold HFC 11872a (JE) and HFC 11988 (JE).

Acknowledgements

We would like to thank the herbaria B, FR, GOET, HAC, HAJB and JE for providing their specimens; Dr.

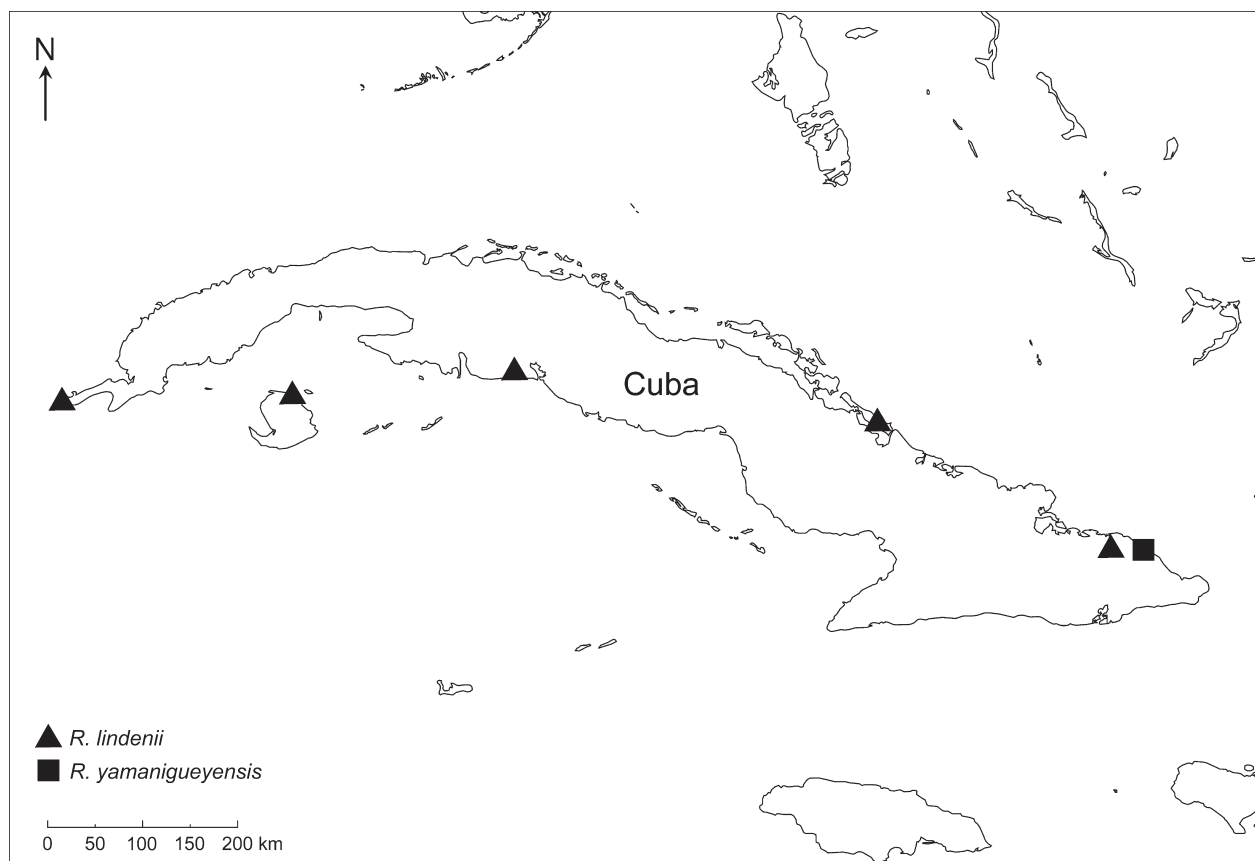


Fig. 3. Distribution of *Ruehssia lindenii* and *R. yamanigüeyensis* in Cuba.

Hermann Manitz (Jena, JE) is owed our gratitude for an introduction to the Cuban geo mapping; we thank Dr. Martin Feulner (Bayreuth) for producing the distribution map; and we are grateful to Fabio da S. do Espírito Santo (Universidade Federal do Sul da Bahia), Cecilia Ezcurra (Universidad Nacional del Comahue, BCRU) and Hermann Manitz for their comments on an earlier version of this article.

References

- Alain H. 1956: Novedades en la flora cubana, IX. – Revista Soc. Cub. Bot. **13**: 59–61.
- Bernal R., Gradstein S. R. & Celis M. (ed.). 2015: Catálogo de plantas y líquenes de Colombia. – Bogotá: Instituto de Ciencias Naturales, Universidad Nacional de Colombia. – Published at <http://catalogoplantasdecolombia.unal.edu.co> [accessed 6 Nov 2019].
- Britton N. L. & Wilson P. 1925: Botany of Porto Rico and the Virgin Islands. – Sci. Surv. Porto Rico & Virgin Islands **6**(1): 1–158.
- Brown R. 1810a: Prodrum florae Novae Hollandiae et Insulae Van-Diemen [...]. **1**. – Londini: typis Richardi Taylor et socii.
- Brown R. 1810b: On the *Asclepiadeae* – London [preprint of Brown 1811].
- Brown R. 1811: On the *Asclepiadeae*. – Mem. Wern. Nat. Hist. Soc. **1**: 12–78.
- Bullock A. A. 1957: Notes on African *Asclepiadaceae* – VIII. – Kew Bull. **1956**: 503–522.
- Endress M. E., Meve U., Middleton D. J. & Liede-Schumann S. 2018: *Apocynaceae*. – Pp. 207–411 in: Kaderweit J. W. & Bittrich V. (ed.), The families and genera of vascular plants. Edited by K. Kubitzki Volume **XV**. Flowering plants. Eudicots. *Apiales*, *Gentianales* (except *Rubiaceae*). – Cham: Springer.
- Espírito Santo F. S., Rapini A., Ribeiro P. L., Liede-Schumann S., Goyder D. J. & Fontella-Pereira, J. 2019: Phylogeny of the tribe *Marsdenieae* (*Apocynaceae*), reinstatement of *Ruehssia* and the taxonomic treatment of the genus in Brazil. – Kew Bull. **74**: 30 [1–79].
- Gómez de la Maza D. M. 1894: Catálogo de las periantíadas Cubanas. – Anales Soc. Esp. Hist. Nat. **23**: 276–302.
- Gray A. 1860: [Preface]. – P. 153 in: Grisebach A. (ed.), *Plantae wrightianae, e Cuba orientali*. Pars. **I**. – Cantabrigiae Nov. Angl. [Preprinted from Mem. Amer. Acad. Arts, n.s., **8**: 153–192. 1861].
- Greuter W. & Rankin Rodríguez R. 2017: Plantas vasculares de Cuba Inventario preliminar. Segunda edición, actualizada, de Espermatófitos de Cuba con inclusión de los Pteridófitos. – Berlin: Botanischer Garten & Botanisches Museum Berlin; La Habana: Jardín

- Botánico Nacional, Universidad de La Habana. – Published at <https://doi.org/10.3372/cubalist.2017.1>
- Howard R. A. 1988: Charles Wright in Cuba, 1856–1867. – Alexandria: Chadwyck-Healey.
- IUCN 2012: IUCN Red List categories and criteria. Version 3.1, ed. 2. – Gland & Cambridge: IUCN.
- Karsten H. 1849: Beschreibung einer neuen Gattung der Familie der Asclepiadeen aus der Gruppe der Hoyaen. – Verh. Vereins Beförd. Gartenbaues Königl. Preuss. Staaten **19**: 304–307.
- McNeill J. 2014: Holotype specimens and type citations: General issues. – Taxon **63**: 1112–1113.
- Richard A. 1850: Phanerogamia ó plantas vasculares, 2. – In: Sagra R. de la, Historia física, política y natural de la Isla de Cuba. Segunda parte. Historia natural. Tomo **XI**. Botánica. – Paris: en la libreria de Arthus Bertrand.
- Rothe W. 1915: Über die Gattung *Marsdenia* R. Br. und die Stammpflanze der Condurangorinde. – Bot. Jahrb. Syst. **52**: 354–434.
- Schlechter R. 1899: IV. *Asclepiadaceae*. – Pp. 236–290 in: Urban I. (ed.), Symbolae antillanae seu fundamenta florum Indiae occidentalis **1**. – Berolini: Fratres Borntraeger; Parisiis: Paul Klincksieck; Londini: Williams & Norgate.
- Turczaninow N. S. 1853: *Asclepiadeae* quaedam hucusque indscriptae. – Bull. Soc. Imp. Naturalistes Moscou **25(3–4)**: 310–325.
- Turland N. J., Wiersema J. H., Barrie F. R., Greuter W., Hawksworth D. L., Herendeen P. S., Knapp S., Kuster W.-H., Li D.-Z., Marhold K., May T. W., McNeill J., Monro A. M., Prado J., Price M. J. & Smith G. F. (ed.) 2018: International Code of Nomenclature for algae, fungi, and plants (Shenzhen Code) adopted by the Nineteenth International Botanical Congress Shenzhen, China, July 2017. – Glashütten: Koeltz Botanical Books. – [Regnum Veg. **159**].

Willdenowia

Open-access online edition bioone.org/journals/willdenowia



Online ISSN 1868-6397 · Print ISSN 0511-9618 · 2018 Journal Impact Factor 1.156

Published by the Botanic Garden and Botanical Museum Berlin, Freie Universität Berlin

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