

## Nomenclatural novelties in Rubiaceae of Old World

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**Abstract:** Replacement names *Canthium lallanii* R.Kr.Singh, *Hedyotis lallanii* R.Kr.Singh, *H. merrillii* R.Kr.Singh, *Ixora merrillii* R.Kr.Singh, *I. wan-chang-koi* R.Kr.Singh, *Knoxia miquellii* R.Kr.Singh, *Ophiorrhiza lallanii* R.Kr.Singh, *O. merrillii* R.Kr.Singh, *Psychotria lallanii* R.Kr.Singh and *P. vishwanathii* R.Kr.Singh are proposed for the illegitimate names *Canthium spinosum* (Klotzsch ex Eckl. & Zeyh.) Kuntze, *Hedyotis microphylla* Merr., *H. laxiflora* Merr., *Ixora propinqua* Merr., *I. insignis* Chun & F.C.How ex W.C.Ko, *Knoxia stricta* Miq., *Ophiorrhiza tenuis* Merr., *O. stenophylla* Merr., *Psychotria arborea* Ridl. and *P. schlechteriana* Valetton respectively. A new combination is made for *Hedyotis oligantha* Merr. under the genus *Scleromitron* (Wight & Arn.) Meisn. as *S. oliganthum* (Merr.) R.Kr.Singh. To fix the identity and to avoid the misapplication of names, lectotypes are designated for *Hedyotis laxiflora* Merr., *H. microphylla* Merr., *H. oligantha* Merr., *Ixora propinqua* Merr., *Ophiorrhiza stenophylla* Merr., *O. tenuis* Merr. and *Plectronia spinosa* Klotzsch ex Eckl. & Zeyh.

**Keywords:** *Canthium*, China, *Hedyotis*, Indonesia, *Ixora*, *Knoxia*, New Guinea, *Ophiorrhiza*, Philippines, *Psychotria*, *Scleromitron*, South Africa

### Introduction

The Old-World genus *Canthium* Lam. consists of about 82 species (POWO, 2024). In Republic of South Africa, the genus is represented by six species, namely *C. ciliatum* (Klotzsch ex Eckl. & Zeyh.) Kuntze, *C. inerme* (L.f.) Kuntze, *C. kuntzeanum* Bridson, *C. spinosum* (Klotzsch ex Eckl. & Zeyh.) Kuntze, *C. suberosum* Codd and *C. vanwykii* Tilney & Kok, of which *C. vanwykii* is endemic (POWO, 2024). However, the name *C. spinosum* (Klotzsch ex Eckl. & Zeyh.) Kuntze (1898: 545) is illegitimate because it is a later homonym of *C. spinosum* (Thunb.) J.St.-Hil. (1805: 444) in accordance with Article 53.1 of the ICN (Turland et al., 2018). Therefore, a new, replacement name is proposed here. In addition, the lectotype for the name *Plectronia spinosa* Klotzsch ex Eckl. & Zeyh. is designated here as per the guidelines and recommendations of Article 9 of ICN (Turland et al., 2018).

The Asian-Pacific genus *Hedyotis* L. consists of about 195 species (POWO, 2024). In Republic of the Philippines, the genus is represented by 34 species, viz. *H. atropurpurea* Merr., *H. bambusetorum* Merr., *H. benguetensis* (Elmer) Elmer, *H. brachyantha* Merr., *H. cagayanensis* Merr., *H. camarinensis* Merr., *H. cardiophylla* Quisumb. & Merr., *H. catanduanensis* Merr., *H. caudata* Merr., *H. diffusissima* Merr., *H. edanoi* Quisumb. & Merr., *H. eucapitata* Merr., *H. hamiguitanensis* Santor, D.D.B.Santiago & Alejandro, *H. humilis* Merr., *H. laxiflora* Merr., *H. longipedunculata* Merr., *H. luzoniensis* Merr., *H. macgregorii* Merr., *H. microphylla* Merr., *H. mindorensis* Quisumb., *H. montana* Merr., *H. papafranciscoi* Alejandro, *H. phanerophlebia* Merr., *H. philippensis* (Willd. ex Spreng.) Merr. ex C.B.Rob., *H. pilosissima* Merr., *H. prostrata* Blume, *H. rigida* (Blume) Walp., *H. scaberrima* Merr., *H. sibuyanensis* Elmer, *H. simplex* Merr., *H. subvelutina* Elmer, *H. subvenosa* Merr., *H. trisecta* Elmer and *H. whiteheadii* Merr. (POWO, 2024). Except *H. benguetensis*, *H. philippensis*, *H. prostrata* and *H. rigida*, the remaining 30 species are endemic to Philippines. However, the names *H. laxiflora* Merr. (1921: 430) and *H. microphylla* Merr. (1906: 239) are illegitimate, because these names are later homonyms of *H. laxiflora* (Benth.) Walp. (1852: 772) and *H. microphylla* Willd. in Roem. & Schult. (1818: 526) respectively. Therefore, a new, replacement name is proposed here for each illegitimate name. Furthermore, a new combination is made for *H. oligantha* Merr. (1921, non 1923) under the genus *Scleromitron* (Wight & Arn.) Meisn. Lectotypes are designated here for *H. laxiflora* Merr., *H. microphylla* Merr. and *H. oligantha* Merr. (1921, non 1923) to fix the identity and to avoid the misapplication of names.

The genus *Ixora* L. consists of about 563 species, distributed worldwide in tropics and subtropics regions (POWO, 2024). In Republic of the Philippines, the genus is represented by 39 species, namely *I. alejandroi* Banag & Tandang, *I. angustilimba* Merr., *I. auriculata* Elmer, *I. bartlingii* Elmer, *I. bibracteata* Elmer, *I. capitulifera* Merr., *I. cephalophora* Merr., *I. chartacea* Elmer, *I. chinensis* Lam., *I. coccinea* L., *I. confertiflora* Merr., *I. crassifolia* Merr., *I. cumingiana* S.Vidal, *I. ebracteolata* Merr., *I. filipes* Valetton, *I. finlaysoniana* Wall. ex G.Don, *I. gigantifolia* Elmer, *I. inaequifolia* C.B.Rob., *I. intermedia* Elmer, *I. javanica* (Blume) DC., *I. leucocarpa* Elmer, *I. leytenensis* Elmer, *I. longifolia* Sm., *I. longistipula* Merr., *I. luzoniensis* Merr., *I. macgregorii* C.B.Rob., *I. macrophylla* Bartl. ex DC., *I. magnifica* Elmer, *I. mearnsii* Merr., *I. mindanaensis* Merr., *I. palawanensis* Merr., *I. philippinensis* Merr., *I. pilosa* Merr., *I. propinqua* Merr., *I. reynaldoi* Banag, *I. salicifolia* (Blume) DC., *I. silagoensis* Manalastas, Banag & Alejandro, *I. sparsiflora* Elmer and *I. tenelliflora* Merr. (POWO, 2024). Except *I. bartlingii*, *I. cephalophora*, *I. chinensis*, *I. coccinea*, *I. filipes*, *I. finlaysoniana*, *I. intermedia*, *I. javanica*, *I. longifolia*, *I. philippinensis*, *I. salicifolia* and *I. tenelliflora*, the remaining 27 species are endemic to Philippines. However, the name *I. propinqua* Merr. (1913: 39) is illegitimate because it is a later homonym of *I. propinqua* R.Br. ex G.Don (1834: 570). Therefore, a new, replacement name is proposed here. To fix the identity, the lectotype for the name *I. propinqua* Merr. is designated here. In China, the genus *Ixora* L. is represented by 17 species, viz. *I. auricularis* Chun & How ex W.Ko, *I. cephalophora* Merr., *I. chinensis* Lam., *I. effusa* Chun & F.C.How, *I. finlaysoniana* Wall. ex G.Don, *I. hainanensis* Merr., *I. hekouensis* Tao Chen, *I. henryi* H.Lév., *I. insignis* Chun & F.C.How ex W.C.Ko, *I. longifolia* Sm., *I. longshanensis* Tao Chen, *I. nienkui* Merr. & Chun, *I. paraopaca* W.C.Ko, *I. subsessilis* Wall. ex G.Don, *I. tibetana* Bremek., *I. tsangii* Merr. ex H.L.Li and *I. yunnanensis* Hutch. (POWO, 2024), of which *I. hekouensis*, *I. insignis*, *I. longshanensis*, *I. paraopaca* and *I. tibetana* are endemic. However, the name

*I. insignis* Chun & F.C.How ex W.C.Ko (1999: 97) is illegitimate because it is a later homonym of *I. insignis* W.Bull (1884: 55). Therefore, a new, replacement name is herein proposed.

The genus *Knoxia* L. comprises 14 species, distributed in central Africa, tropical and subtropical Asia to north Australia (POWO, 2024). In Indonesia, the genus is represented by 5 species, namely *K. hookeri* Lakshmin., *K. lineata* DC., *K. roxburghii* (Spreng.) M.A.Rau, *K. stricta* Miq. and *K. sumatrensis* (Retz.) DC., of which *K. lineata* and *K. stricta* are endemic (POWO, 2024). However, the name *K. stricta* Miq. (1869: 260) is illegitimate because it is a later homonym of *K. stricta* Gaertn. (1788: 122). Therefore, a new, replacement name is herein proposed.

The genus *Ophiorrhiza* L. consists of about 380 species, distributed worldwide in tropical and subtropical Asia to Pacific (POWO, 2024). In Republic of the Philippines, the genus is represented by 33 species, namely *O. acuminata* DC., *O. argostemmoides* Elmer, *O. biflora* Elmer, *O. caespitulosa* Elmer, *O. camiguinensis* Elmer, *O. ciliata* Elmer, *O. curtiflora* Elmer, *O. davaensis* Quisumb., *O. dolichophylla* Merr., *O. erythropilosa* Alfeche & Alejandro, *O. hamiguitanensis* Alfeche & Alejandro, *O. inaequifolia* Elmer, *O. involucrata* Elmer, *O. kuroiwae* Makino, *O. lancilimba* Merr., *O. linearifolia* Merr., *O. macgregorii* Merr., *O. maquilingsensis* Elmer, *O. mungos* L., *O. oblongifolia* DC., *O. oblongilimba* Merr., *O. ovata* Merr., *O. pinatuboensis* Ruhsam, *O. pubescens* Elmer, *O. pubiflora* Merr., *O. pulgarensis* Elmer, *O. ravifolia* Naive & Alejandro, *O. sorsogonensis* Elmer, *O. stenophylla* Merr., *O. tenuis* Merr., *O. undulata* Merr., *O. venosa* Merr. and *O. zambalensis* Elmer (POWO, 2024). Except *O. kuroiwae* and *O. mungos*, the remaining 31 species are endemic to Philippines. However, the names *O. stenophylla* Merr. (1921: 439) and *O. tenuis* Merr. (1921: 440) are illegitimate, because these names are later homonyms of *O. stenophylla* Valetton (1912: 110) and *O. tenuis* Ridl. (1912: 16) respectively. Therefore, a new, replacement name is herein proposed for each illegitimate name. To fix the identity and to avoid the misapplication of names, lectotypes are designated here for *O. stenophylla* Merr. and *O. tenuis* Merr.

The genus *Psychotria* L. consists of about 1650 species, distributed along tropical and subtropical regions (POWO, 2024). In Republic of Indonesia, the genus is represented by more than 200 species (POWO, 2024). However, the names *P. arborea* Ridl. (1917: 51) and *P. schlechteriana* Valetton (1927: 78) are illegitimate, because these names are later homonyms of *P. arborea* Hiern (1877: 202) and *P. schlechteriana* K.Krause (1908: 37) respectively. Therefore, a new, replacement name is herein proposed for each illegitimate name.

## Nomenclature

***Canthium lallanii*** R.Kr.Singh, *nom. nov.*

≡ *Canthium spinosum* (Klotzsch ex Eckl. & Zeyh.) Kuntze, Revis. Gen. Pl. 3(2): 545. 1898, *nom. illeg., non* (Thunb.) J.St.-Hil., Expos. Fam. Nat. 1: 444. 1805. *Plectronia spinosa* Klotzsch ex Eckl. & Zeyh., Enum. Pl. Afric. Austral. 3: 362. 1837.

Lectotype (designated here): South Africa, Uitenhage (Kariega), July–August, C.F. Ecklon & C.L.P.

*Zeyher 2298* (HAL0114232!, Figure 1); isolectotypes L0000189!, L0000190!, M0106346!, MO-04805632!, P005463432!, P00546343!, P005463434!, REG000630!, S11-38974!, S-G-4918!.

Distribution: Botswana, Eswatini and Republic of South Africa.

Etymology: The new name is named after my father, the late Shri Lallan Singh.

Notes: Ecklon & Zeyher (1861) described *Plectronia spinosa* based on the specimens collected from Uitenhage (Kariega), South Africa. Eleven original specimens for the name *P. spinosa* Klotzsch ex Eckl. & Zeyh. were traced (HAL0114232, L0000189, L0000190, M0106346, MO-04805632, P005463432, P00546343, P005463434, REG000630, S11-38974 and S-G-4918). Of these, the specimen HAL0114232 is better-preserved, contains flowers and fruits, and therefore is designated here as the lectotype as it agrees well with the protologue.

***Hedyotis lallanii*** R.Kr.Singh, *nom. nov.*

≡ *Hedyotis microphylla* Merr., Philipp. J. Sci. 1(Suppl. 3): 239. 1906. *nom. illeg., non* Willd., Syst. Veg., ed. 15 bis [Roemer & Schultes] 3: 526. 1818.

Lectotype (designated here): Philippines, Luzon Island, Province of Benguet, Pauai to Baguio, November 1905, *E.D. Merrill 4693* (P03904770!, Figure 2); isolectotypes NY00131807!, US00137421!.

Remaining syntype: Philippines, Luzon Island, Province of Benguet, Suyoc to Pauai, November 1905, *E.D. Merrill 4736* (US02356713!).

Distribution: Endemic to Republic of the Philippines.

Etymology: The new name is named after my father, the late Shri Lallan Singh.

Notes: While describing *Hedyotis microphylla*, Merrill (1906) cited the type information as “Luzon, Province of Benguet, Pauai to Baguio (4693 *Merrill*) November, 1905; Suyoc to Pauai (4736 *Merrill*) November, 1905. On high ridges in the mossy forest 2,000 to 2,300 m”. Pertaining to this specification, four original specimens were traced, two at US (US00137421 and US02356713) and one each at NY (NY00131807) and P (P03904770). The best one, P03904770, is designated here as the lectotype. The specimens of this species collected later from different areas of Philippines by the other workers were also traced [CAS493212 (Figure 3), CAS493233, P03904771 (Figure 4), P03904772, US02356710 (Figure 5), US02356711, US023567112].

***Hedyotis merrillii*** R.Kr.Singh, *nom. nov.*

≡ *Hedyotis laxiflora* Merr., Philipp. J. Sci. 17: 430. 1921, *nom. illeg., non* (Benth.) Walp., Ann. Bot. Syst. 2: 772. 1852.

Lectotype (designated here): Philippines, Catanduanes, 25 November 1917, *M. Ramos 30313* (US00137411!, Figure 6).

Distribution: Endemic to Republic of the Philippines.

Etymology: The new name is named after Elmer Drew Merrill (1876–1956), American Botanist.

Notes: Merrill (1921) described *Hedyotis laxiflora* based on the specimens collected by M. Ramos from Catanduanes, Philippines. At present, only one original specimen is extant for the name *H. laxiflora* Merr. at US (US00137411), which is designated here as the lectotype. One more specimen of *H. laxiflora* Merr. collected by M. Ramos in February 1923 from Mount Irig, Rizal province, Philippines was traced at US (US02356718, Figure 7).

***Ixora merrillii*** R.Kr.Singh, *nom. nov.*

≡ *Ixora propinqua* Merr., Philipp. J. Sci., C 8: 39. 1913, *nom. illeg., non* R.Br. ex G.Don, Gen. Hist. 3: 570. 1834.

Lectotype (designated here): Philippines, Mindanao, November 1911, *E.D. Merrill 8254* (K000763351!, Figure 8).

Distribution: Endemic to Republic of the Philippines.

Etymology: The new name is named after Elmer Drew Merrill (1876–1956), American Botanist.

Notes: In the protologue of *Ixora propinqua*, Merrill (1913) mentioned the type information as “Mindanao, Sax River Mountains, back of San Ramon, *Merrill 8254*, November, 1911, in damp forests, altitude about 800 m”. At present, only one original specimen is extant for the name *I. propinqua* Merr. at K (K000763351), which is designated here as the lectotype.

***Ixora wan-chang-koi*** R.Kr.Singh, *nom. nov.*

≡ *Ixora insignis* Chun & F.C.How ex W.C.Ko, Guihaia 19(2): 97. 1999, *nom. illeg., non* W.Bull, Nursery Cat. 199: 55. 1884.

Holotype: China, Yunnan, Hekou, 23 May 1953, *M.Y. Siao 54* (IBSC).

Distribution: Endemic to China (Yunnan Province).

Etymology: The new name is named after Wan Chang Ko, Chinese Botanist.

***Knoxia miquelii*** R.Kr.Singh, *nom. nov.*

≡ *Knoxia stricta* Miq., Ann. Mus. Bot. Lugduno-Batavi 4: 260. 1869, *nom. illeg., non* Gaertn., Fruct. Sem. Pl. 1: 122. 1788.

Holotype: Indonesia, Kalimantan, Borneo, *s.d.*, *P.W. Korthals s.n.* (U0227870!).

Distribution: Endemic to Indonesia (Kalimantan).

Etymology: The new name is named after Friedrich Anton Wilhelm Miquel (1811–1871), Dutch Botanist.

***Ophiorrhiza lallanii*** R.Kr.Singh, *nom. nov.*

≡ *Ophiorrhiza tenuis* Merr., Philipp. J. Sci. 17: 440. 1921, *nom. illeg., non* Ridl., J. Straits Branch Roy. Asiat. Soc. 61: 16. 1912.

Lectotype (designated here): Philippines, Luzon Island, Province of Rizal, Mount Lumutan, July 1917, *M. Ramos & G. Edaño* 29785 (P03991900!, Figure 9); isolectotypes K000740697!, US00137508! (Figure 10).

Distribution: Endemic to Republic of the Philippines.

Etymology: The new name is named after my father, the late Shri Lallan Singh.

Notes: Three original specimens for the name *Ophiorrhiza tenuis* Merr. were traced (K000740697, P03991900 and US00137508). The best one, P03991900, is designated here as the lectotype as it agrees well with the protologue.

***Ophiorrhiza merrillii*** R.Kr.Singh, *nom. nov.*

≡ *Ophiorrhiza stenophylla* Merr., Philipp. J. Sci. 17: 439. 1921, *nom. illeg., non* Hayata, Icon. Pl. Formosan. 2: 91. 1912 *et* Valetton, Bot. Jahrb. Syst. 48: 110. 1912.

Lectotype (designated here): Philippines, Luzon Island, Province of Cavite, Alfonso, May 1915, *M. Ramos & D. Deroy* 22591 (P03991903!, Figure 11); isolectotypes K001045940! (Figure 12), NY00132392!, US00137507!.

Distribution: Endemic to Republic of the Philippines.

Etymology: The new name is named after Elmer Drew Merrill (1876–1956), American Botanist.

Notes: For the name *Ophiorrhiza stenophylla* Merr. four original specimens were traced (K001045940, NY00132392, P03991903 and US00137507). Among these, the specimen P03991903 is better-preserved, contains well developed flowers, and therefore is designated here as the lectotype.

***Psychotria lallanii*** R.Kr.Singh, *nom. nov.*

≡ *Psychotria arborea* Ridl., J. Fed. Malay States Mus. 8(4): 51. 1917, *nom. illeg., non* Hiern, Fl. Trop. Afr. [Oliver et al.] 3: 202. 1877 *et* Sessé & Moc., Fl. Mexic., ed. 2 57. 1894.

Lectotype (designated by Turner et al., 2018): Indonesia, Sumatra, Korinchi peak, 7500 ft., 24 April 1914, *H.C. Robinson & C.B. Kloss* 65 (BM000945356!, Figure 13); isolectotype K001129546!.

Distribution: Endemic to Indonesia (Sumatra).

Etymology: The new name is named after my father, the late Shri Lallan Singh.



Figure 1: Lectotype of *Plectronia spinosa* Klotzsch ex Eckl. & Zeyh. (HAL0114232, © Herbarium of Martin-Luther-Universität, Halle)

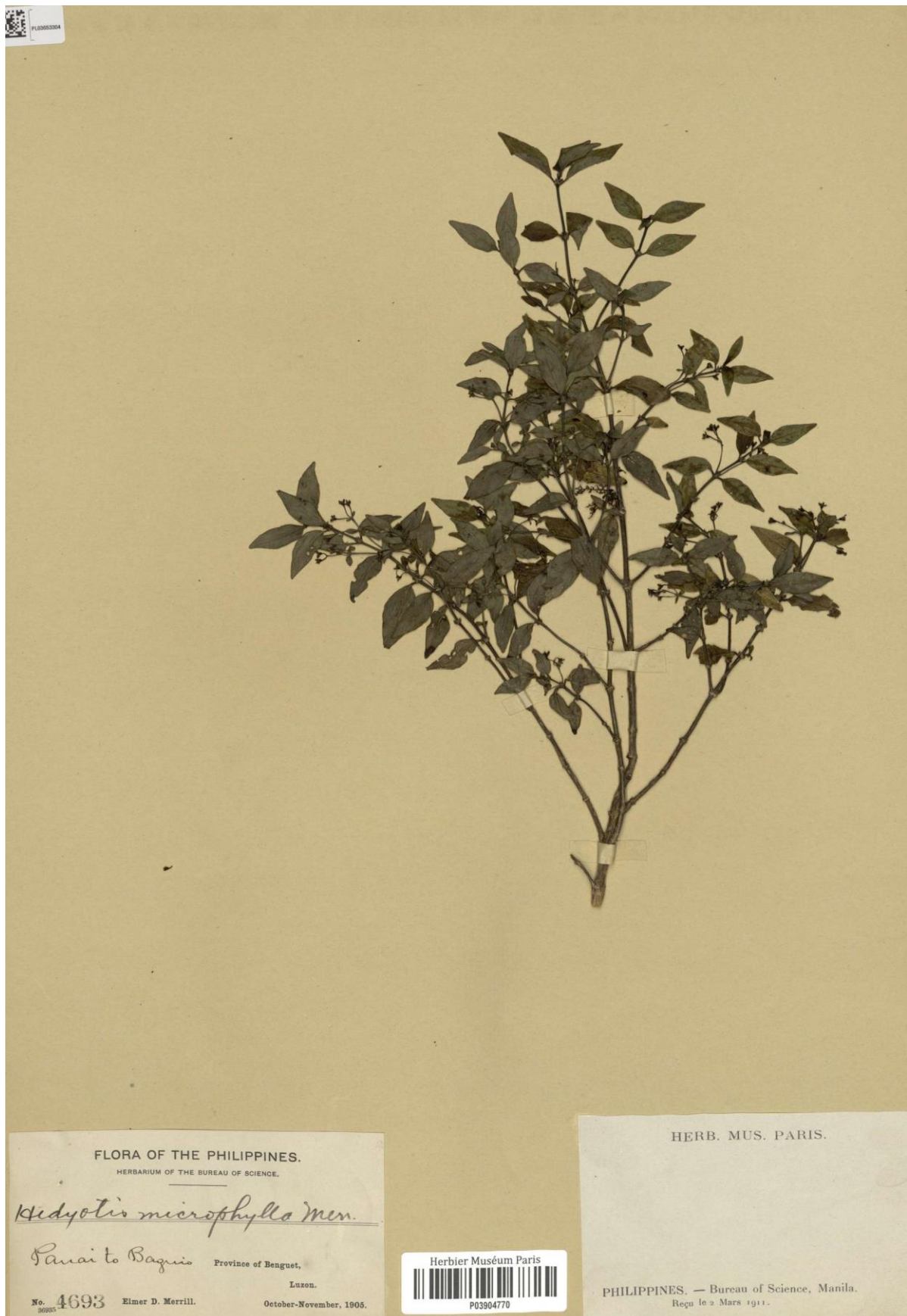


Figure 2: Lectotype of *Hedyotis microphylla* Merr. (P03904770, © Muséum National d'Histoire Naturelle, Paris)





Figure 3: Herbarium specimen of *Hedyotis microphylla* Merr. (CAS493212, © California Academy of Sciences, San Francisco)



Figure 4: Herbarium specimen of *Hedyotis microphylla* Merr. (P03904771, © Muséum National d'Histoire Naturelle, Paris)



Figure 5: Herbarium specimen of *Hedyotis microphylla* Merr. (US02356710, © United States National Herbarium, Smithsonian Institution, Washington D.C.)



Figure 6: Lectotype of *Hedyotis laxiflora* Merr. (US00137411, © United States National Herbarium, Smithsonian Institution, Washington D.C.)



Figure 7: Herbarium specimen of *Hedyotis laxiflora* Merr. (US02356718, © United States National Herbarium, Smithsonian Institution, Washington D.C.)

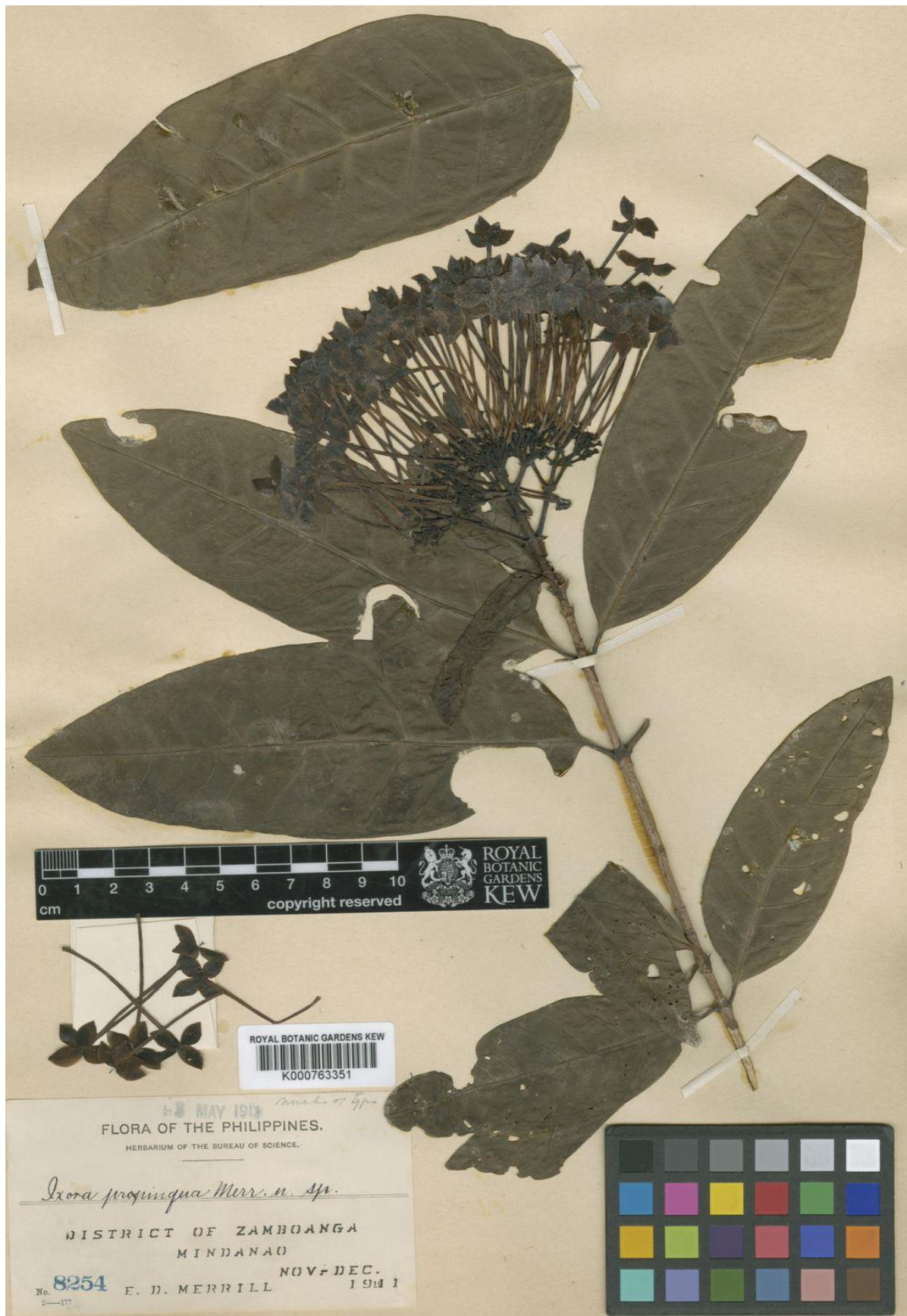


Figure 8: Lectotype of *Ixora propinqua* Merr. (K000763351, © The Trustees of the Royal Botanic Gardens, Kew)

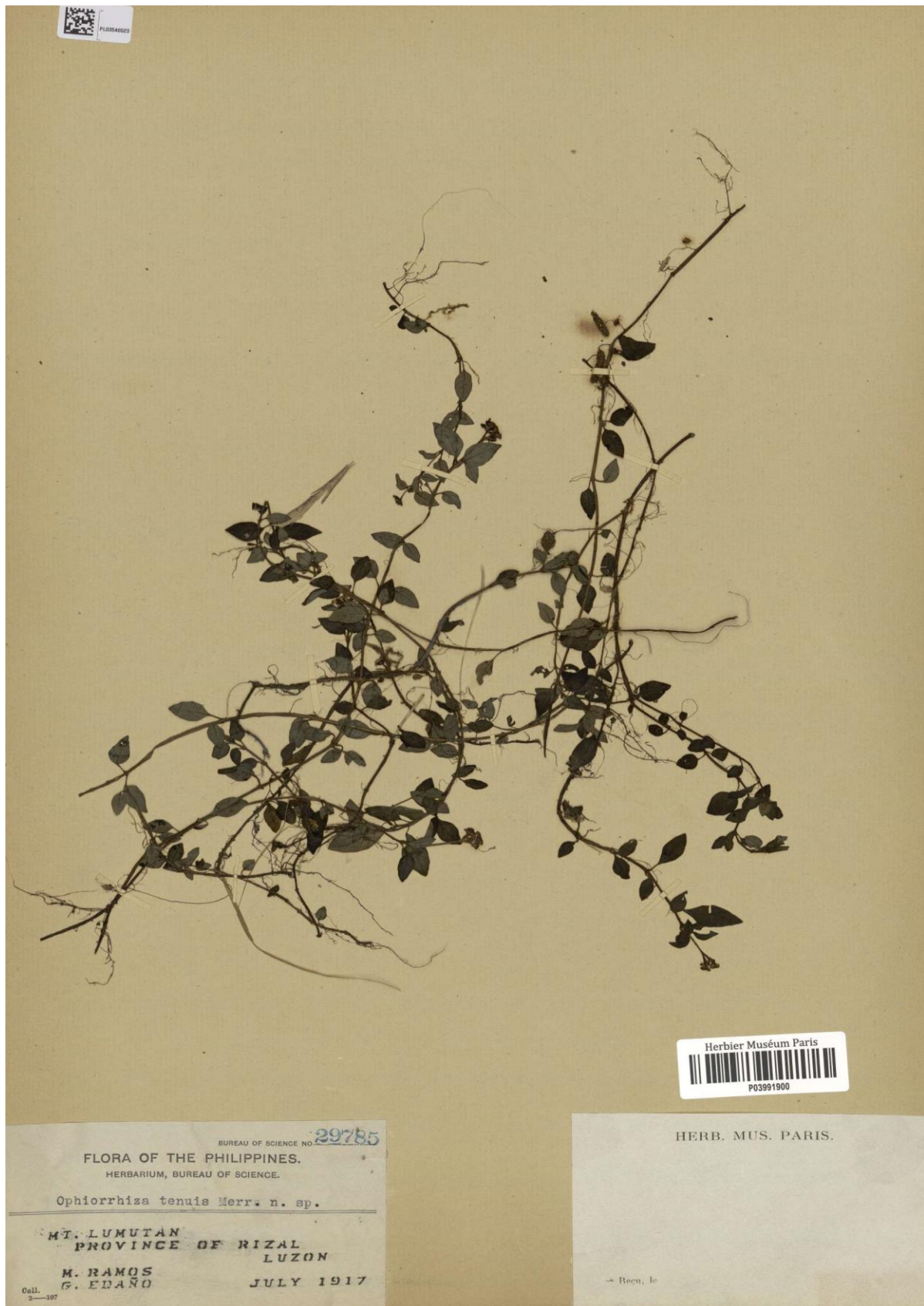


Figure 9: Lectotype of *Ophiorrhiza tenuis* Merr. (P03991900, © Muséum National d'Histoire Naturelle, Paris)



Figure 10: Isolectotype of *Ophiorrhiza tenuis* Merr. (US00137508, © United States National Herbarium, Smithsonian Institution, Washington D.C.)





Figure 11: Lectotype of *Ophiorrhiza stenophylla* Merr. (P03991903, © Muséum National d'Histoire Naturelle, Paris)

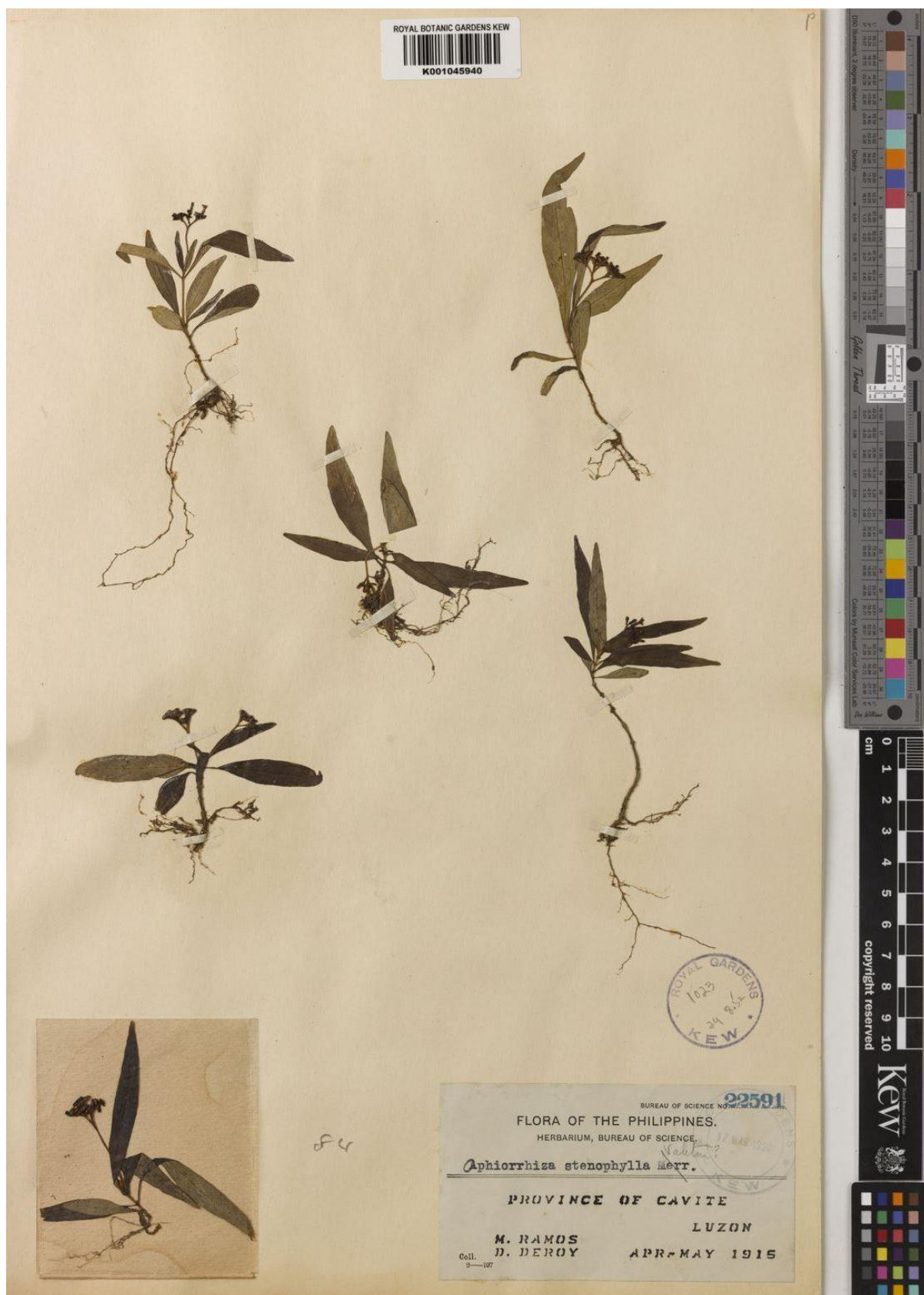


Figure 12: Isolectotype of *Ophiorrhiza stenophylla* Merr. (K001045940, © The Trustees of the Royal Botanic Gardens, Kew)



Figure 13: Lectotype of *Psychotria arborea* Ridl. (BM000945356, © The Natural History Museum, London)



Figure 14: Isotype of *Psychotria schlechteriana* Valeton (NY00133005, © Herbarium of the New York Botanical Garden)

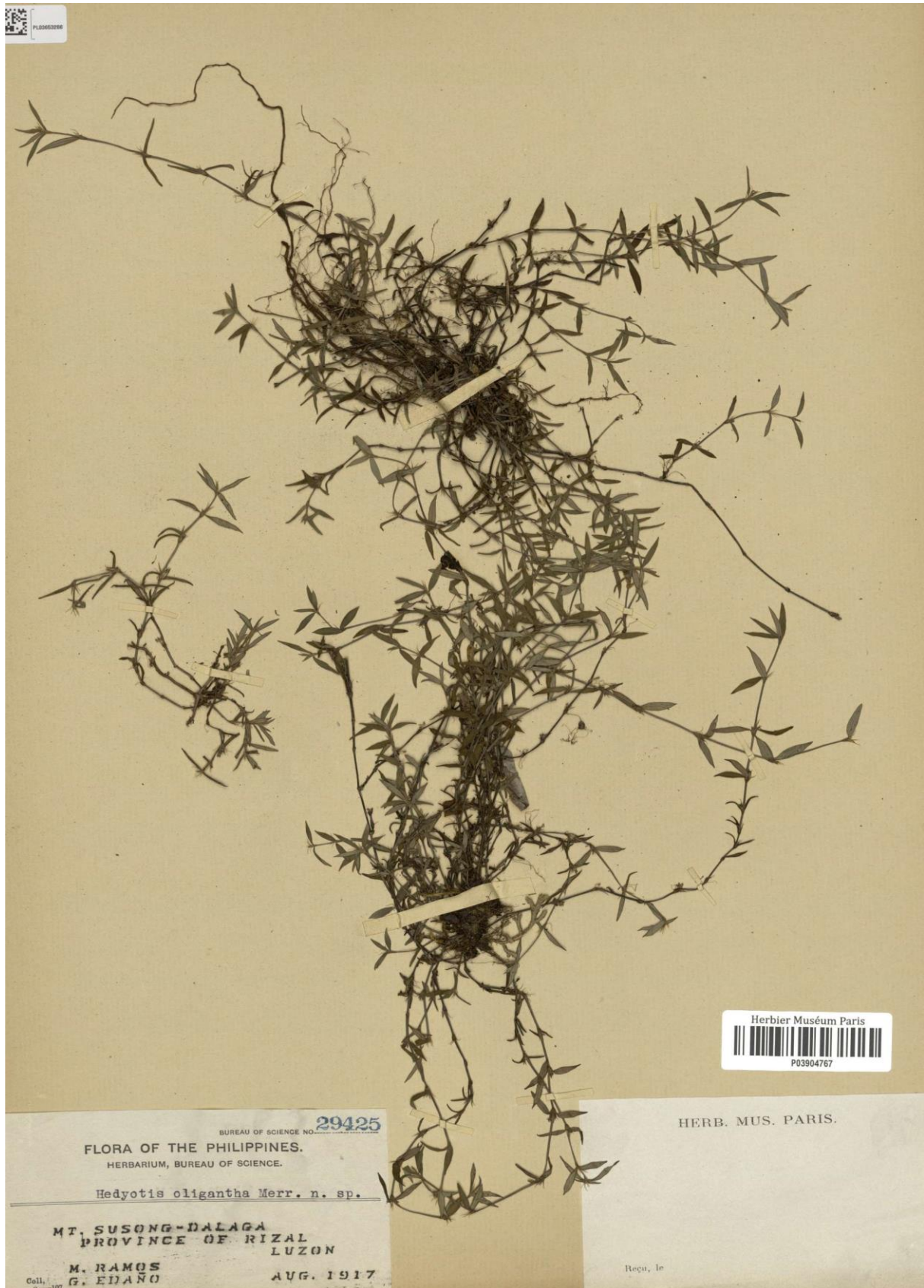


Figure 15: Lectotype of *Hedyotis oligantha* Merr. (P03904767, © Muséum National d'Histoire Naturelle, Paris)



Figure 16: Isolectotype of *Hedyotis oligantha* Merr. (US00137425, © United States National Herbarium, Smithsonian Institution, Washington D.C.)

***Psychotria vishwanathii*** R.Kr.Singh, *nom. nov.*

≡ *Psychotria schlechteriana* Valetton, Bot. Jahrb. Syst. 61: 78. 1927, *nom. illeg., non* K.Krause, Bot. Jahrb. Syst. 40(Heft 3, Beibl. 92): 37. 1908.

Holotype: Papua New Guinea, Kaiser-Wilhelmsland, 50 ft., 3 November 1909, *F.R.R. Schlechter 20011* (BO); isotype NY00133005! (Figure 14).

Distribution: Endemic to New Guinea (Indonesia and Papua New Guinea).

Etymology: The new name is named after my grandfather, the late Shri Vishwanath Singh.

***Scleromitrium oliganthum*** (Merr.) R.Kr.Singh, *comb. nov.*

≡ *Hedyotis oligantha* Merr., Philipp. J. Sci. 17: 431. 1921, *non* Merr., Philipp. J. Sci. 23: 266. 1923, *nom. illeg.*

Lectotype (designated here): Philippines, Luzon Island, Rizal Province, Mount Susong Dalaga, August 1917, *M. Ramos & G. Edaña 29425* (P03904767!, Figure 15); isolectotypes A00097116!, L0064013!, MO-716685!, NY00131810!, US00137425! (Figure 16).

Distribution: Endemic to Republic of the Philippines.

Notes: Six original specimens for the name *Hedyotis oligantha* Merr. (1921, *non* 1923) were traced (A00097116, L0064013, MO-716685, NY00131810, P03904767 and US00137425). Of these, the best one P03904767, is designated here as the lectotype as it agrees well with the protologue. Three more specimens of this species collected by M. Ramos in August 1918 from Ilocos North Province, Luzon Island, Philippines were also traced (L2916915, P03904768 and US02356708).

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