



A new species of *Quintinia* (Paracryphiaceae) and an overview of the genus for New Guinea

Oliver K. Paul^a & Jürgen Kellermann^{b,c}

^a Papua New Guinea National Herbarium, PNG Forest Research Institute, P.O. Box 314, Lae 411, Morobe Province, Papua New Guinea
Email: opaul@fri.pngfa.gov.pg

^b State Herbarium of South Australia, Botanic Gardens and State Herbarium, Hackney Road, Adelaide, South Australia 5000, Australia
Email: juergen.kellermann@sa.gov.au

^c The University of Adelaide, School of Biological Sciences, Adelaide, South Australia 5005, Australia

Abstract: A new species of *Quintinia* A.DC. is described, *Q. macrophylla* Hatus. ex O.K.Paul, and the typifications of all other species occurring in New Guinea are reviewed. An identification key to all 13 species accepted for the area is provided, as well as an Appendix with a checklist of all species in the genus. Lectotypes are chosen for *Quintinia altigena* Schltr., *Q. epiphytica* Mattf., *Q. lanceolata* Reeder, *Q. ledermannii* Schltr., *Q. macgregorii* F.Muell., *Q. nutantiflora* Schltr., *Q. pachyphylla* Schltr. and *Q. schlechteriana* O.C.Schmidt.

Keywords: *Quintinia*, Escalloniaceae, Paracryphiaceae, Quintiniaceae, Saxifragaceae, typification, new species, Indonesia, Western New Guinea, Papua New Guinea, checklist

Introduction

The genus *Quintinia* A.DC. is comprised of c. 25 species (Appendix 1) of evergreen trees or shrubs, sometimes epiphytic, native to the Philippines, Sulawesi (Indonesia), New Guinea (and some adjacent islands), New Caledonia, Vanuatu, New Zealand and Australia. It was first described by Candolle (1830), who named it after Jean-Baptiste de la Quintine, a French gardener. The taxonomic history of the genus was summarised by Pillon & Hequet (2019). Previously, *Quintinia* has been assigned to Saxifragaceae, Escalloniaceae, or to its own family Quintiniaceae; molecular data now place it into Paracryphiaceae (Dickison & Lundberg 2016, and references therein).

The genus has not been revised recently for New Guinea, which has a high species diversity of *Quintinia*. Cámara-Leret *et al.* (2020) recognised 12 species in their checklist of New Guinea plants, of these, 11 species are recorded in Papua New Guinea (PNG), the eastern half of the island of New Guinea, and 10 species occur in Western New Guinea (Indonesia).

Mueller (1892) described the first species from the then British Territory of Papua in a short note in *Victorian Naturalist*: *Quintinia macgregorii* F.Muell., named after the collector, Sir William MacGregor, who found it at Mt Suckling in the Owen Stanley Range. This was followed by Schlechter (1914, 1917), who discussed the

genus, enumerated all then known species and described four new taxa from the colonies of Dutch and German New Guinea: *Quintinia ledermannii* Schltr., *Q. altigena* Schltr., *Q. nutantiflora* Schltr. and *Q. pachyphylla* Schltr., the last three collected during the A. Franssen Herderschee Expedition (Duuren & Vink 2011).

This was followed by the description of five species in the papers of Ridley (1916), Schmidt (1924), Mattfeld (1940) and Reeder (1946), who discussed the results of scientific expeditions or described single collections that were examined by them: *Quintinia rigida* Ridl., discovered at Mt Carstensz (Puncak Jaya), during the Wollaston Expedition (Ridley 1916); *Q. schlechteriana* O.C.Schmidt from Mt Doorman; *Q. epiphytica* Mattf. from Sambanga (above present day Kabwum); *Q. brassii* Reeder from near Lake Habema; and *Q. lanceolata* Reeder from Idenburg River (both in then Netherlands New Guinea) (see also Frodin & Gressit 1982 and Frodin 2007 for more information on the exploration of New Guinea).

Royen (1983) was the last botanist to treat the genus in his *Alpine Flora of New Guinea*, where he enumerated and described six species from high altitudes, two of these new to science: *Quintinia montiswilhelmii* P.Royen and *Q. kuborensis* P.Royen. Since then, there were occasional reports of undescribed taxa, manuscript names were mentioned in publications or on determination-slips on herbarium specimens and proposed type specimens were

labelled as such, but none of these suggested new taxa have been formally described (e.g. Streimann 1983; Al-Shammary 1991; Al-Shammary & Gornall 1994; Johns *et al.* 2009).

In New Guinea, the distribution of *Quintinia* ranges from lowland rainforests to high montane moss forest. The genus is not restricted to any particular habitats or vegetation types, but is distributed across the different altitudinal ranges. However, *Quintinia kuborensis* and *Q. montiswilhelmii* are two species that grow in the high montane moss forest zones. Since *Quintinia* species are mainly small to medium sized shrubs or trees (to 30 m), the wood is mainly used for fuel wood, building homes and fences; bark and leaves are used for medicinal purposes in different parts of PNG (pers. obs.).

In this paper we describe a new species, *Quintinia macrophylla* Hatus. ex O.K.Paul, a manuscript name used by Sumihiko Hatushima for plants that we recognise here as a new species. The taxon is illustrated, a distribution map is provided, as well as an identification key to the genus for New Guinea.

Material and Methods

The morphological analysis was conducted using herbarium sheets. *Quintinia* specimens held in LAE were examined to score their vegetative and reproductive character and character-states.

Herbarium acronyms follow Thiers (2008). In this paper, specimens that were examined in person are indicated with an exclamation mark (!). Digital images of all other specimens were viewed online at JSTOR Global Plants (JSTOR 2021) or via other herbarium websites (Appendix 2). Specimens that have not been seen in person or as an image are indicated by “*n.v.*”.

Provinces are used when listing distributions in Indonesian Western New Guinea. The geographical regions for PNG are taken from Womersley (1978).

References used for the etymology of the names are Jackson (1900), Steenis-Krusemann & Steenis (1950) and Stearn (1983).

Key to *Quintinia* species in New Guinea

1. Epiphytes or vines, not shrubs or trees *Q. epiphytica*
- 1: Shrubs or trees
 2. Leaves slightly greyish underneath (in fresh material) *Q. altigena*
 - 2: Leaves glossy or pale green underneath (when fresh)
 3. Leaves thickly coriaceous, less brittle, leathery when dry
 4. Leaf margin entire, distinctively revolute *Q. rigida*
 - 4: Leaf margin entire, flat, not distinctively revolute
 5. Leaves lower surface black punctate or dark punctate *Q. pachyphylla*
 - 5: Leaves lower surface glabrous, pale glossy green
 6. Leaves larger, broadly obovate-oblong, 10–25 × 5–10 cm, apex obtuse or rounded *Q. macrophylla*
 - 6: Leaves smaller and narrower, elliptic to oblanceolate, (4–) 6–9 × 1.5–2.5 cm, apex obtuse or acute *Q. brassii*
 - 3: Leaves thinly coriaceous or subcoriaceous, brittle when dry
 7. Calyx lobes prominent, > 2 mm long *Q. nutantiflora*
 - 7: Calyx lobes less prominent, < 2 mm long
 8. Petal apex retuse *Q. macgregorii*
 - 8: Petal apex acute, obtuse or rounded
 9. Inflorescence less than 10 flowers, leaves distinctively small, usually < 6 cm long
 10. Leaf lamina ovate, small, 0.5–1.5 × 0.5–1 cm *Q. montiswilhelmii*
 - 10: Leaf lamina elliptic-lanceolate, 1–6 × 0.7–2.5 cm *Q. kuborensis*
 - 9: Inflorescence more than 10 flowers; leaves large, usually > 6 cm long
 11. Petioles > 10 mm long; leaves elliptic-lanceolate, apex acute
 12. Leaves elliptic-lanceolate; venation not prominent below *Q. ledermannii*
 - 12: Leaves lanceolate; venation prominent below *Q. lanceolata*
 - 11: Petioles < 10 mm long; leaves oblong-obovate, apex obtuse, rounded *Q. schlechteriana*

Taxonomy

Quintinia altigena Schltr.

Bot. Jahrb. Syst. 52(1-2): 127 (1914); *Nova Guinea* 12: 488 (1917). — **Type citation:** “Nördl. Neu-Guinea: Auf offenem Terrain des Hubrechts-Gebirges, ca. 3100 m ü.M. (E. VERSTEEG n. 2414 — blühend im Februar 1913).“ **Lectotype:** INDONESIA, Western New Guinea: Mt Hubrecht, 3100 m, 7 Feb. 1913, G.M. Versteeg 2414 (BO, missing or destroyed), *vide* P.Royen, *Alpine Fl. New Guinea* 4: 2509 (1983), as “Holotype”. **New lectotype (here designated):** B 10 0715391. **Isolectotypes:** L0035121; L0035122; U0226125.

Note. Schlechter (1914) described this species from a Versteeg collection, a photograph of which was published in Schlechter (1917) in the account of the results of the A. Franssen Herderschee Expedition. As he worked in Berlin (Stafleu & Cowan 1985), the main set of Schlechter’s collections and type specimens can be found in that herbarium. The specimen of *Q. altigena* at B, cited above, has an original drawing of dissected flowers attached to it (Fig. 1A). One of the type specimens in Leiden (L0035121) seems to have been used for the photograph in Schlechter (1917), but the branch has been damaged.

Royen (1983) stated that the holotype of the species can be found in BO. This could be accepted as an inadvertent lectotypification of the name (Art. 9.10; Turland *et al.* 2018), however, even after an extensive search, that specimen cannot be found (I. Erlinawati, pers. comm., Nov. 2021). It is possible that Royen

assumed that the type was in BO, but only examined a duplicate from another herbarium, or the specimen is no longer extant. Another explanation might be that “BO” is a printing error, and that Royan actually meant to write “B”. However, it is impossible to prove this and the typification has to be taken as it was printed.

Since the specimen is missing from BO, but there is still original material available in other herbaria, we designate a new lectotype above, using the specimen at B (Art. 9.3). All other specimens of *Versteeg 2414* are isolectotypes.

Distribution. Indonesia, Western New Guinea: West Papua and Papua provinces. Papua New Guinea: West Sepik, Morobe, Western Highlands, Eastern Highlands, Southern Highlands, Northern, Central and Milne Bay.

Etymology. From the Latin *altus* (high) and *genus* (born, produced), referring to the habit of the plant; it is the only larger tree described by Schlechter (1914, 1917) from that expedition.

Selected specimens examined

INDONESIA. WESTERN NEW GUINEA: West Papua. Vogelkop Peninsula, Mt Tembruk, Aggi Gita Lake, 28 Jan. 1962, H.O. Sleumer & M. Vink BW 15406 (L, LAE!); Wondiwoi Mountains, Wandamman Peninsula, 6 Mar. 1962, P.A.W. Schram BM 13377 (L, LAE!). **Papua.** Jayapura, 15 km SW of Bernhard Camp, Idenburg River, Jan. 1939, L.J. Brass 11856 (L, LAE!; A, n.v.).

PAPUA NEW GUINEA. Morobe. Manggak-ngone, 5 km E of Wagau, 14 Nov. 2004, B.J. Conn 5050, K.D.Q. Damas, K.M. Fazang, O.K. Paul & T.K. Kuria (L, LAE!, NSW).

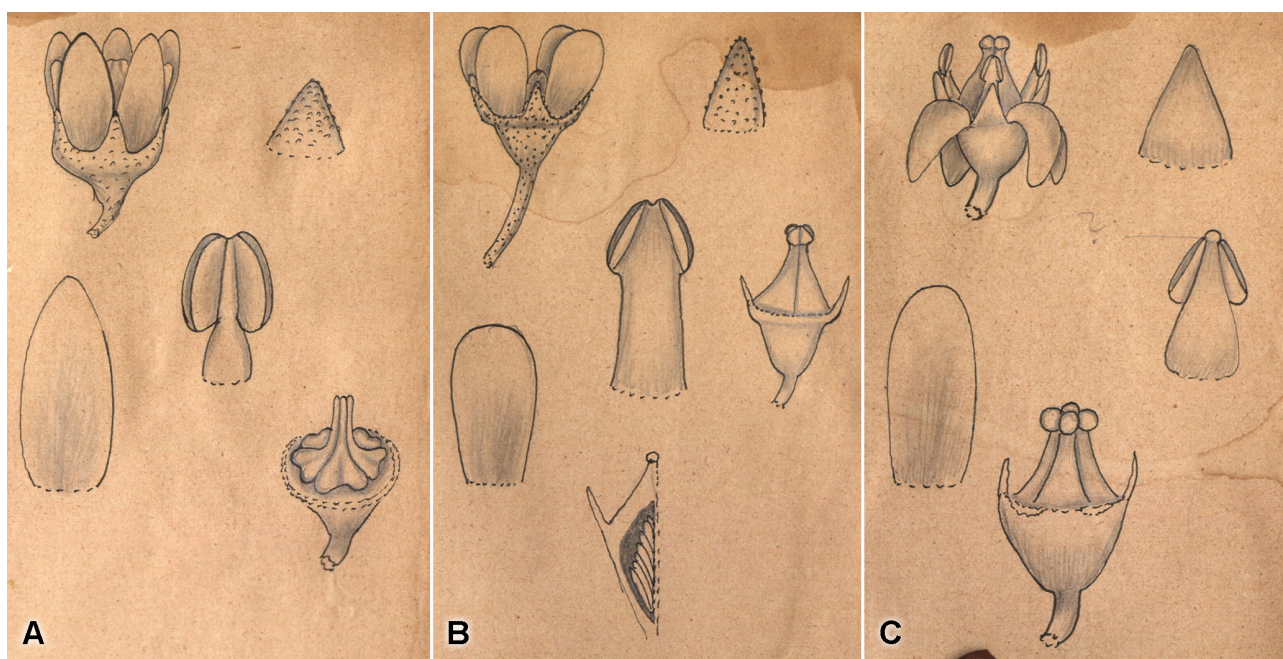


Fig. 1. Original line drawings of flowers, attached to the lectotype sheets at B of three *Quintinia* species named by Rudolf Schlechter, presumably drawn by Schlechter or an assistant. **A** *Quintinia altigena* (B 10 0715391); **B** *Q. nutantiflora* (B 10 0715389); **C** *Q. pachyphylla* (B 10 0715390). — © Botanischer Garten und Botanisches Museum Berlin-Dahlem, reproduced under a Creative Commons CC BY-SA 3.0 licence.

Southern Highlands. Western summit grasslands of Mt Giluwe, 7 May 2012, *O.K. Paul 11* (LAE!, NSW). **Western Highlands.** Ecological Site No 2, 1.5 miles N of Lutheran Mission sawmill at Pockenamanda, near Wabag, 9 Feb. 1965, *J.R. Flenley ANU 2432* (LAE!, CANB, *n.v.*). **Eastern Highlands.** Mt Ormogadzin, W of Mt O Dan [Mount Udun], Sepik-Wahgi Divide, 5 Sep. 1963, *P. van Royen NGF 18073A* (L, LAE!, NSW; A, BO, BRI, CANB, K, SING, *n.v.*).

Quintinia brassii Reeder

J. Arnold Arbor. 27: 280, Fig. 1A–C (1946). — **Type citation:** “NETHERLANDS NEW GUINEA: 6 km. northeast of Lake Habbema, alt. 3200 m., *Brass 11007* (TYPE), Oct. 1938”. **Holotype:** INDONESIA, Western New Guinea: 6 km NE of Lake Habbema, 3200 m, Oct. 1938, *L.J. Brass 11007* (A, *n.v.*). **Isotypes:** BRI-AQ0022611; L0035128.

Quintinia insularis Al-Shammary, *Syst. Stud. Saxifragac. S. Hemisph.* 437 (1991), *nom. inval.*

Quintinia ‘B’: Gornall & Al-Shammary, *Bot. J. Linn. Soc.* 114: 131 (1994).

Note. Reeder (1946: 275) wrote that “[I]n the absence of parenthetical letters indicating the place of deposit, cited specimens are to be found only at the Arnold Arboretum.” As the “TYPE” specimen listed in his paper does not have a herbarium indicated and Reeder was not aware that there were duplicates at other herbaria, the specimen at A is the holotype of *Quintinia brassii*. We confirmed that the holotype is at A, but the specimen was not available for study at the time of writing (M. Schmuell, pers. comm., Nov. 2021). However, there are two isotypes at BRI and L, which are available online (JSTOR 2021).

Al-Shammary’s manuscript name “*Q. insularis*” was used in some publications, e.g. by Johns *et al.* (2009).

Distribution. Indonesia, Western New Guinea: Papua Province. Papua New Guinea: West Sepik, Morobe, Southern Highlands, Eastern Highlands and Milne Bay.

Etymology. Named after the Australian botanist and explorer Leonhard John Brass (1900–1971), who collected the type specimen.

Selected specimens examined

INDONESIA. WESTERN NEW GUINEA: **Papua.** Snow Mountains, 6 km NE of Lake Habbema, Oct. 1938, *L.J. Brass 11007* (L, LAE!, BRI, *n.v.*).

PAPUA NEW GUINEA. **West Sepik.** Star Mts Expedition, Mt Capella summit ridge, c. 2 km SE of on Ridge W of Tel Basin, 7 Apr. 1975, *W.R. Barker & T. Umba LAE 67265* (BRI, L, LAE!, A, CANB, K, *n.v.*). **Morobe.** Wagau, 12 Jan. 1965, *C.D. Sayers, NGF 21597* (BRI, LAE!). **Southern Highlands.** Mt Ambua near Lei Camp, 29 July 1966, *D. Frodin NGF 26999* (BRI, LAE!, E, *n.v.*). **Eastern Highlands.** Slopes of Kerigomna, 11 Nov. 1968, *A.N. Millar NGF 40674* (BRI, L, LAE!, BISH, BO, CANB, NSW, US, PNH, SING, *n.v.*). **Milne Bay.** South Fergusson Island, Track between Ailuluai and Agamoia, 3 Nov. 1976, *J.R. Croft et al. NGF 68677*

(BRI, L, LAE!, NSW; A, BISH, BO, CANB, E, K, M, PNH, QRS, SING, US, *n.v.*; proposed type of “*Q. insularis*”).

Quintinia epiphytica Mattf.

Bot. Jahrb. Syst. 70: 469 (1940). — **Type citation:** “Nordost-Neuguinea : Sambanga, 1500–1800 m ü. M., auf hohen Bäumen des Bergwaldes (M.S. Clemens n. 7168, am 22. September 1937, fruchtend; Typus Hb. Berol.)”. **Lectotype (here designated) or perhaps holotype:** PAPUA NEW GUINEA: Morobe, Sambanga, 5–6000ft, 22 Sep. 1937, *M.S. Clemens 7168* (B 10 0715398).

Note. We were only able to trace one specimen of *Clemens 7168*, however it is possible that duplicates exist, as Clemens’ collections are distributed in several overseas herbaria. As such, the specimen from B, where Mattfeld worked, is above designated as the lectotype of the name; if only one specimen is in existence (Art. 40.3) then this would be the holotype (McNeill 2014; Mosyakin *et al.* 2019).

Distribution. Indonesia, Western New Guinea: West Papua Province. Papua New Guinea: West Sepik, East Sepik, Morobe, Western Highlands and Southern Highlands.

Etymology. The epithet is referring to the plant’s epiphytic habit. In the publication, Mattfeld (1940: 469) referred to a note by Clemens, which stated that this was a “common scandent shrub on largest trees in mossy bush [...] fl.[owers] too high to see” (see also Reeder 1946).

Selected specimens examined

INDONESIA. WESTERN NEW GUINEA: **West Papua.** Vogelkop, Kebar Valley, 28 Oct. 1954, *P. van Royen 3855* (L, LAE!); Vogelkop, Mt Nettoti, Nettoti Range, path from Andjai to Wekari River, 30 Nov. 1961, *P. van Royen & H. Sleumer 7898* (BRI, L, LAE!, A, BO, CANB, K, RSA, US, *n.v.*); Vogelkop, Nettoti Range, hill W of Mt Nettoti, Cape Vogel, 1 Dec. 1961, *P. van Royen & H. Sleumer 7947* (L, LAE!, A, BO, BRI, CANB, K, RSA, US, *n.v.*).

PAPUA NEW GUINEA. **East Sepik.** Ambunti, Hunstein Range, 9 Aug. 1966, *R. Schodde 10879* (L, LAE; A, K, BO, BRI, US, *n.v.*). **Morobe.** Mt Missim, Wau, 18 Apr. 1986, *J.L.C.H. van Valkenburg 701* (L, LAE!, WAG, *n.v.*). **Southern Highlands.** Tari, Lei River, SE foot of Mt Ambua, 23 Aug. 1966, *C. Kalkman 5194* (L, LAE!). **Western Highlands.** Murrumb Pass, Tomba-Tambul Road, 11 July 1971, *J. Womersely & B.C. Stone NGF 43751* (LAE!).

Quintinia kuborensis P.Royen

Alpine Fl. New Guinea 4: 2501, Fig. 728A–C (1983). — **Type citation:** “Holotype. Kalkmann 4965, (L)” & “Kubor Mts”. **Holotype:** PAPUA NEW GUINEA: Southern Highlands, Tari, Mt Ambua, 3390 m, 28 July 1966, *C. Kalkman 4965* (L0035129). **Isotypes:** BISH30138, *n.v.*

Quintinia (*a*): Kalkman & Vink, *Blumea* 18: 135 (1970), *pro parte*.

Quintinia kuborensis subsp. *huonensis* Gornall & Al-Shammary, *in sched.*, *nom. inval.*

Note. Kalkman & Vink (1970) mention an unnamed *Quintinia* from the Doma Peaks region and they list several specimens, among them the collection that later became the holotype of *Q. kuborensis*, when Royen (1983) described the species.

Some herbarium specimens have been labelled with the manuscript name “*Quintinia kuborensis* subsp. *huonensis*”, but this subspecies was never published.

This species is endemic to Papua New Guinea.

Distribution. Papua New Guinea: Morobe, Western Highlands, Eastern Highlands and Southern Highlands.

Etymology. The epithet refers to the type locality, Mr Kubor in the Kubor Range, PNG (4,359 m).

Selected specimens examined

PAPUA NEW GUINEA. Morobe. Domgin, Salawaket Range, Huon Peninsula, 5 Oct. 1964, *R.D. Hoogland 9997* (BRI, L, LAE!; A, CANB, K, US, *n.v.*; proposed type of “*Q. kuborensis* subsp. *huonensis*”). **Western Highlands.** Mt Kigum, around Base Camp, 8 Apr. 1977, *A. Vinas LAE 59820* (LAE!; BRI, *n.v.*). **Eastern Highlands.** Mt Wilhelm Keglsugl-Pindaunde Track, 4 July 1966, *L.K. Wade ANU 7340* (L, LAE!; A, BO, BRI, CANB, G, K, US, PHN, BISH, *n.v.*). **Southern Highlands.** Mt Kerewa, NW Slopes, 15 Sep. 1981, *J. Wiakabu & J. Veldkamp LAE 73704* (L, LAE!; A, BRI, CANB, K, *n.v.*).

***Quintinia lanceolata* Reeder**

J. Arnold Arbor. 27: 278 (1946). — **Type citation:** “NETHERLANDS NEW GUINEA: 15 km. southwest of Bernhard Camp, Idenbug River, alt. 1770 m., *Brass & Versteegh 11920* (TYPE), Jan. 1939”. **Holotype:** INDONESIA, Western New Guinea: 15 km SW of Bernhard Camp, Idenburg River, 1770 m, Jan. 1939, *L.J. Brass & C. Versteegh 11920* (A, *n.v.*). **Isotypes:** BRI-AQ0022612; L0035130.

Note. As with *Q. brassii*, above, Reeder (1946) did not indicate a herbarium when he mentioned the type specimen. As such, the holotype of the species is deposited at A, but the specimen was not available for study at the time of writing (M. Schull, pers. comm., Nov. 2021). We examined images of the two isotypes online (JSTOR 2021).

Endemic to Western New Guinea. The species is not known from Papua New Guinea, but some specimens were collected close to the border and it is possible that it also occurs there.

Distribution. Indonesia, Western New Guinea: West Papua and Papua provinces.

Etymology. From the Latin *lanceolatus* (lanceolate), referring to the shape of the leaves of the taxon.

Selected specimens examined

INDONESIA. WESTERN NEW GUINEA: West Papua. Vogelkop, Mt Nettoti, Nettoti Range, Cape Vogel, path from Andjai to Wekari, 28 Nov. 1961, *P. van Royen & H.O. Sleumer 7381* (BRI, L, LAE!; A, BO, CANB, K, RSA, SING, US, *n.v.*). **Papua.** Jayapura, Cycloop Mts, path from Ifar to Ormoe, 28 June 1961, *P. van Royen & H.O. Sleumer 6068* (BRI, L, LAE!; BM, CANB, G, K, MAN, PNH, UC, *n.v.*).

***Quintinia ledermannii* Schltr.**

Bot. Jahrb. Syst. 52(1-2): 125–126, Fig. 3 (1914). — **Type citation:** “Nordöstl. Neu-Guinea: In den Wäldern auf dem Etappenberg, ca. 850 m ü. M. (C. LEDERMANN n. 9056 – blühend im October 1912); in den Nebelwäldern auf dem Lordberg, ca. 1000 m ü. M. (C. LEDERMANN n. 10167, 10293 – blühend im Dezember 1912).” **Lectotype (here designated):** PAPUA NEW GUINEA: Sepik area, Dec. 1912, *C.L. Ledermann 10293* (L0035132, ex B). **Residual syntypes:** Sepik area, Oct. 1912, *C.L. Ledermann 9056* (L0035131); Sepik area, Dec. 1912, *C.L. Ledermann 10167* (L0035133, ex B).

Quintinia spatulata Al-Shammary, *Syst. Stud. Saxifragac. S. Hemisph.* 437 (1991), *nom. inval.*

Quintinia ‘D’: Gornall & Al-Shammary, *Bot. J. Linn. Soc.* 114: 131 (1994).

Note. The three specimens mentioned in the protologue were collected during the Kaiserin-Augusta Expedition (1912–1913) by Ledermann (Sauer 1915; Ledermann 1919). The main set of specimens used to be held at B (Steenis-Krusemann & Steenis 1950), however no type material of *Quintinia ledermannii* could be found at that institution (R. Vogt, pers. comm., Oct. 2021), i.e. it was most likely destroyed during WWII, as was most of Ledermann’s collections (Veldkamp *et al.* 1988). Duplicates of all three collections are available at L, two of these labelled “Ex Museo botanico Berolinensis”. Schlechter (1914) described the flowers of the species and illustrated flowers and inflorescences in detail. The sheet with the best flowering material is above designated as the lectotype.

Interestingly, both herbaria also hold another specimen of that species, which was collected during this expedition (Lordberg, Sepik area, 1 Dec. 1912, *C.L. Ledermann 9955*; B 10 1154548; L.1870990), but this was not mentioned in the protologue and is not type material.

Distribution. Indonesia, Western New Guinea: Papua Province (Snow Mountains region). Papua New Guinea: West Sepik, East Sepik, Morobe, Western Highlands, Eastern Highlands, Southern Highlands, Western, Central, Northern and Milne Bay.

Etymology. Named after the Swiss horticulturist and collector Carl Ludwig Ledermann (1875–1958).

Selected specimens examined

INDONESIA. WESTERN NEW GUINEA: Papua. Bernhard Camp, 4 km SW, Mar. 1939, *L.J. Brass 13703* (L, LAE!; A, BRI, *n.v.*); Bernhard Camp Idenburg River, Mar. 1939, *L.J. Brass 13132* (L, LAE!; A, BRI, *n.v.*); Ifar Ormoe camp site, 28 June 1961, *P. van Royen & H.O. Sleumer 6068* (L, LAE!; A, BM, CANB, G, MAN, PNH, UC, *n.v.*).

PAPUA NEW GUINEA. East Sepik. Hunstein Range, 29 Sep. 1989, *P. Katik LAE 64328 & A. Kairo* (BRI, L, LAE!, NSW; CANB, *n.v.*). **Morobe.** Kaindi, moss forest, 11 Aug. 1964, *A.N. Millar NGF 23622* (E, L, LAE!; A, BISH, BO, BRI, CANB, HAW, K, NSW, SING, PNH, US, *n.v.*; proposed type of “*Q. spathulata*”); Opuseng, Cromwell, 26 Oct. 2006, *O.K. Paul LAE 88514, T.M.A. Utteridge, W.J. Baker, R.P.J. de Kok, K.D.Q. Damas, B.B. Bau, D. Damas & K.M. Fazang* (LAE!, NSW; A, CANB, BRI, K, L, UPNG, *n.v.*); Mt Kaindi, 27 June 1973, *P.F. Stevens & G.W. Gillet LAE 58809* (BRI, L, LAE!; A, BISH, CANB, E, K, M, NSW, *n.v.*). **Western Highlands.** Waile road near Reservoir, small hill with power transformer substation, Porgera area, Enga, 6 Sep. 2005, *W. Takeuchi 20212, A. Towati & D. Ama* (L, LAE!). **Western.** NE side of Bianglopmik (Lake Vivian), a few meters N of Ok Abne 1, near entrance to lake, N of Biang Bluff, southern slopes of Star Mountains, 2 Nov. 2014, *B.J. Conn 5944, K.D.Q. Damas, D. Damas & P. Homot* (LAE!, NSW).

Quintinia macgregorii F.Muell.

Victorian Naturalist 9: 112 (1892); *Bot. Centralbl.* 53: 27 (1893). — **Type citation:** “high up on Mount Suckling”. **Lectotype (here designated):** PAPUA NEW GUINEA: Northern, Mt Suckling, 5–6000 [ft], 31 July 1891, *W. MacGregor s.n.* (MEL628127). **Isotype:** K000739372 (received Feb. 1892).

Quintinia macgregori F.Muell., *Victorian Naturalist* 8: 164 (1891), *nom. nud. & inval.*

Note. As discussed by Reeder (1946), Mueller (1892) described the species in a very short note outlining the differences between *Q. macgregorii* and the Australian *Q. fawcneri* F.Muell. (see Zich *et al.* 2020). No specimens were listed in the publication, but there is one collection of the species available at MEL, which was collected by Sir William MacGregor. A duplicate specimen is available at K, bearing a blue “Phytologic Museum of Melbourne / Baron Ferd. Von Mueller, Ph. & M.D.” label, i.e. it was distributed by Mueller to that herbarium. Both specimens were labelled by Mueller and contain some flowers and leaves; we assume they were available to him when preparing the publication. The sheet in MEL is in slightly better condition and is therefore designated as the lectotype, above.

The species is endemic to Papua New Guinea.

Distribution. Papua New Guinea: Morobe, Western Highlands, Eastern Highlands, Southern Highlands, Central, Northern and Milne Bay.

Etymology. The epithet honours Sir William MacGregor (1846–1919), Scottish doctor, administrator and later lieutenant-governor of British New Guinea (1888–1898).

Selected species examined

PAPUA NEW GUINEA. Western Highlands. NE of Yaki River Valley, 2 July 1960, *R.D. Hoogland & R. Schodde 6893* (L, LAE!; BRI, CANB, *n.v.*). **Eastern Highlands.** Hillcrest behind Kerowagi, 1 Aug. 1957, *R.G. Robbins 633* (L, LAE!; BRI, CANB, *n.v.*). **Southern Highlands.** Track up to Mt Giluwe, 24 Sep. 1968, *J. Vandenberg, P. Katik & A. Kairo NGF 39719* (BRI, L, LAE!; A, BO, CANB, K, SING, *n.v.*); **Central.** Murray Pass, Wharton Rang, June 1933, *L.J. Brass 4719* (LAE!, NY; BRI, L, *n.v.*). **Milne Bay.** Mt Wadimana Summit area, E Mt Simpson Range, 19 July 1969, *R. Schodde 5500* (L, LAE!; A, BRI, CANB, CHR, K, *n.v.*).

Quintinia macrophylla Hatus. ex O.K.Paul, *sp. nov.*

A Quintinia nutantiflora Schltr. *foliis coriaceioribus grandioribusque, floribus pentameris et sepalis vix persistentibus differt.*

Holotypus: PAPUA NEW GUINEA: Morobe, Mt Kaindi, 2040 m, 14 Nov. 1963, *J.S. Womersley NGF 19031* (LAE57717!). **Isotypi:** BISH1014086, BRI-AQ35622; L.1871374; US03684170; SING0342779; K, A, BO, SYD, CANB, P, NH, *n.v.*

Quintinia macrophylla Hatus. in Streimann, *Plants Upper Watut Watershed* 173 (1983), *nom. nud. & inval.*; Valk. & Ketner, *J. Trop. Ecol.* 10: 46–47 (1994), *nom. nud. & inval.*; Byng, *Fl. Pl. Handbk.* 507 (2014), *nom. nud. & inval.*

Quintinia macrophylla Hatschb. in E.P.Beaver *et al.*, *Zootaxa* 4809(3): 467 (2020), *nom. nud. & inval.*

Quintinia microphylla Hatus. in B.J.Conn & Damas, *Guide Trees Papua New Guinea*, <https://www.pngplants.org/PNGtrees> (2006–), *in error.*

Quintinia grandifolia Al-Shammary, *Syst. Stud. Saxifragac. S. Hemisph.* 437 (1991), *nom. inval.*

Quintinia ‘A’: Gornall & Al-Shammary, *Bot. J. Linn. Soc.* 114: 131 (1994).

Small to large *tree*, 10–30 m high. *Bole* cylindrical (c. 20 cm diam.); straight (bole c. 10 m long); buttresses absent; no spines; no aerial roots or stilt roots. *Bark* brown, rough, pustular, lenticels elongated vertically, total thickness 10–12 mm; subrhytidome (under-bark) green or yellow; bark blaze consisting of one layer (when cut); faintly to non-aromatic; pleasant; outer blaze white or pale yellow (straw-coloured), with stripes, fibrous; inner blaze white (straw-coloured), with stripes, fibrous; bark exudate present, colourless, not readily flowing, colour changing to orange on exposure to air, not sticky. Mature *branches* glabrous, with lenticels. *Leaves* simple, alternate; lamina 13–25 × 4–8 cm, broadly obovate, apex obtuse, thickly coriaceous, glabrous; margin entire, mostly revolute; venation brochidodromous, not very distinct, primary venation impressed on the upper side, (30–) 50–80 (–100) pairs

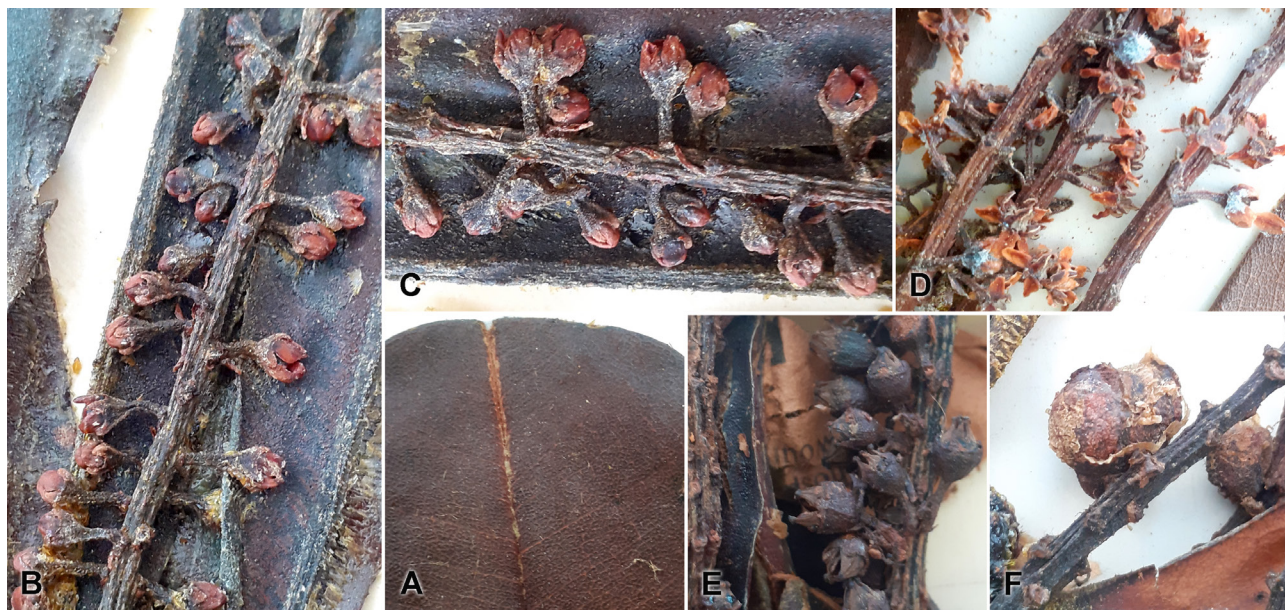


Fig. 2. *Quintinia macrophylla*. **A** coriaceous leaf, apex; **B, C** inflorescence axis with young flowers and buds; **D** open flowers; **E** young fruits; **F** mature fruits. — A, F E.E. Henty, D.B. Foreman & M. Galore NGF 42819 (LAE), B, C E.E. Henty, D.B. Foreman & M. Galore NGF 42760 (LAE), D J. Regalado 1582 (LAE), E J.R. Croft & V. Lelean LAE 6582 (LAE).

of secondary veins barely visible; petioles not winged, attached to base of leaf blade, not swollen, 1–3 cm long, glabrous; stipules absent. *Inflorescence* axillary, glabrous, racemose, 5–26 cm long, with 30–80 (–100) flowers on unbranched axis, bracts 1–2 mm, sometimes persistent. *Flowers* 4- or 5-merous; pedicels 2–5 mm. *Calyx* lobes triangular, 0.5–1 mm long, glabrous, free and persistent only on immature fruits. *Petals* free, oblong, 1–5 mm long, glabrous, white. *Stamens* white. *Style* persistent, 1–1.5 mm long. *Ovary* inferior, 4–5 locules, hypanthium glabrous. *Fruit* a capsule, glabrous, greenish yellow, ovoid, c. 10 × 10 mm, minutely ridged longitudinally. **Fig. 2, 3.**

Illustration: J.W. Byng, *Fl. Pl. Handbk.* 507 (2014), fruit only.

Affinities. This species is similar to *Quintinia nutantiflora*, having similar leaf shape and size, however, that species has consistently 4-merous flowers with

distinctive calyx lobes, persistent on fruits, and its leaves are thinly coriaceous and brittle (Tab. 1). The thickly coriaceous leaves of *Q. macrophylla* are less brittle and cannot be broken in half easily.

Distribution. The new species has been collected a few times in Western New Guinea (Indonesia) in higher elevations from the Vogelkop Peninsula to the Snow Mountains region. In Papua New Guinea it is found mainly along the Central Range (or Central Cordillera) from west to east. It occurs in the Star Mountains in the north-west and Muller Range in the south-west through Bismarck Range and into the Kuper Range. It has been collected from the following regions in Papua New Guinea: West Sepik, Western, Eastern Highlands, Southern Highlands and Morobe (Fig. 4).

Habitat. Mid to high montane forest between 2000 to 3000 meters above sea level (Valkenburg & Ketner 1994). It is commonly found associating with

Table 1. Diagnostic characters of *Quintinia macrophylla*, compared with *Q. nutantiflora* and *Q. rigida*.

	<i>Q. macrophylla</i>	<i>Q. nutantiflora</i>	<i>Q. rigida</i>
Leaf texture	Thickly coriaceous; less brittle	Thinly coriaceous to subcoriaceous; brittle	Thickly coriaceous; less brittle
Upper leaf surface	Brown on drying	Black on drying	Brown on drying
Leaf lamina length	13–25 cm	10–13 cm	(4–) 5–10 (–11) cm
Leaf apex	Obtuse-rounded	Acute	Retuse
Flowers	4–5-merous	4-merous	4-merous
Calyx lobes	Less distinct & deciduous	Distinct & persistent on fruit	Less distinct



Fig. 3. *Quintinia macrophylla* Hatus. ex O.K.Paul, isotype, J.S. Womersley NGF 19031 (L.1871374). Insets: close-up of flowers. — Image from Naturalis Biodiversity Center, Leiden, reproduced under a Creative Commons CC0 1.0 licence.

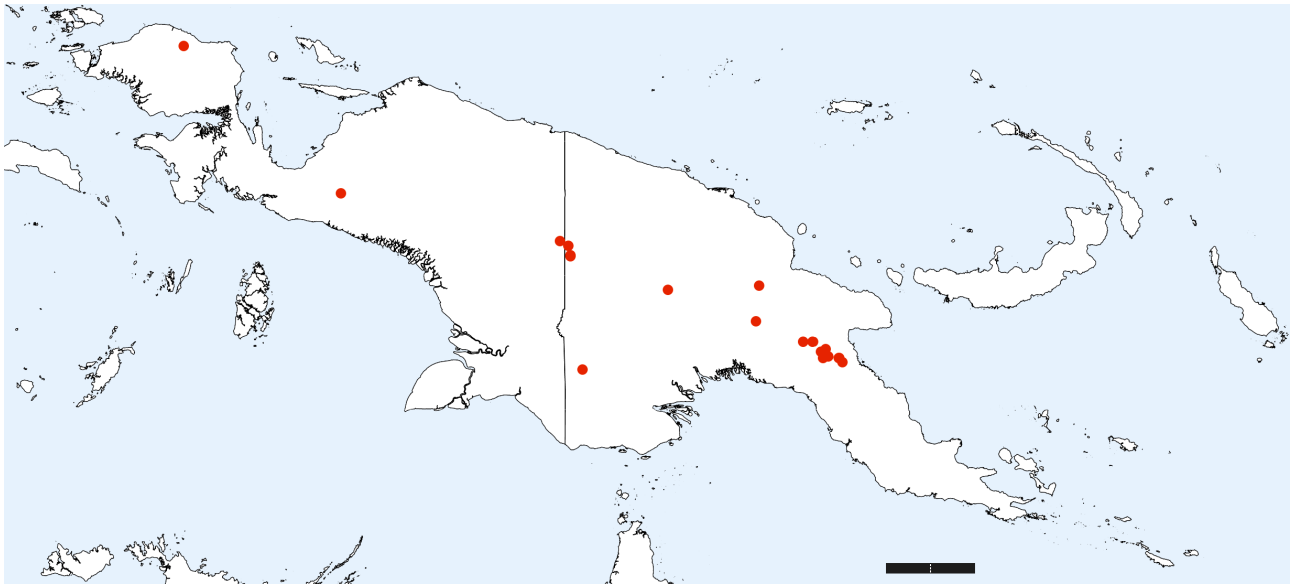


Fig. 4. Distribution map of *Quintinia macrophylla* in New Guinea, generated from specimens examined. Scale bar = 200 km.

Podocarpus, *Syzygium*, *Nothofagus*, *Elaeocarpus*, as well as tree ferns like *Cyathea* and *Dicksonia*.

Conservation status. *Quintinia macrophylla* is a common species in the natural mid to high montane forests. Since it is generally not harvested for major uses such as timber and its natural habitat is still intact with no major developments and destructions, it is not regarded as vulnerable or threatened. Its estimated area of occupancy (AOO) in PNG is 100 km² and extent of occupancy (EOO) is 180,000 km², based on other *Quintinia* species assessed under IUCN guidelines IUCN (2021). As such, it is stable and of Least Concern (LC). The conservation status in Western New Guinea should be assessed.

Notes. The new species seems to be restricted mostly in higher elevations in mid to high montane forests over 2000 meters above sea level (Valkenburg & Ketner 1994) and is widely distributed throughout Papua New Guinea, especially along the Central Cordillera (Fig. 4).

There are other *Quintinia* species associated with *Q. macrophylla*, which can be difficult to identify without a flower or fruit, i.e. *Q. rigida* and *Q. nutantiflora*. However, the thickly coriaceous leaves of *Q. macrophylla* are a field character that can be used to differentiate it from these other two *Quintinia* species. The leaves of *Q. macrophylla* are also much larger (lamina 13–25 cm long vs 10–13 cm in *Q. nutantiflora* and (4–) 5–10 (–11) cm in *Q. rigida*). *Quintinia nutantiflora* is similar to *Q. macrophylla*, but *Q. nutantiflora* has more prominent calyx lobes than *Q. macrophylla*.

In error, Conn & Damas (2006–) used the epithet “*microphylla*” in the online *Guide to trees of Papua New Guinea*.

Etymology. The epithet is derived from the Greek *μακρος* (*makros*, large) and *φυλλον* (*phyllon*, leaf), in reference to the very large leaves of the species.

Authorship. The name was originally coined by Japanese botanist Sumihiko Hatusima (1906–2008; Hotta 2008) and several specimens in different herbaria are annotated with his manuscript name. We recognise Hatusima’s contribution to New Guinean botany by taking up this epithet for the new species and citing him as an “ex” author. While Kanehira & Hatusima (1942) published on related genera, Hatusima’s findings on *Quintinia* never appeared in print.

The database entry for the L specimens at *Naturalis* all show in error “Hatschb.” (Gerdt Guenther Hatschbach, Brazilian botanist, 1923–2013; Ferreira da Silva & Ferraz de Oliveira 2008) as author of this manuscript name, even though on the actual specimens the name is attributed to “Hatus.” or “Hats.”, the former being the official abbreviation of Hatusima’s surname (IPNI 2021), the latter another less commonly used abbreviation (e.g. Kokubugata *et al.* 2012; Matsuda *et al.* 2017). Unfortunately, this error was perpetuated in publications, with the name “*Quintinia macrophylla* Hatschb.” having been used in at least one scientific paper (Beaver *et al.* 2020).

Additional specimens examined

INDONESIA. WESTERN NEW GUINEA: West Papua. Kebar Valley, Mt Watjetoni, 23 Nov. 1960, *C. Versteegh* BW 10332 (L, LAE!). **Papua.** Star Mountains, Mt Antares, 20 July 1959, *C. Kalkman* 4459 (L, LAE!; A, BM, BO, CANB, M, *n.v.*); Wissel Lake region, slope and summit of Mt Barara, 4 Sep. 1939, *P.J. Eyma* 5133 (L; BO, *n.v.*).

PAPUA NEW GUINEA. West Sepik. Telefomin, north slopes of Star mountains, 8 Apr. 1975, *J.R. Croft & V. Lelean* LAE 65824 (BRI, L, LAE!; A, CANB, E, K, *n.v.*); Telefomin, Silinmogu, below Tamanagabip, 9 May 1975, *A. Vinas &*

J. Wiakabu LAE 59399 (L, LAE!; A, BRI, CANB, K, *n.v.*). **Morobe.** Eddie Creek, 2 Sep. 1974, *A. Alison AA-NG 113* (LAE!); Mt Kaindi, 17 Sep. 1978, *D.G. Frodin UPNG 6545* (LAE!; UPNG, *n.v.*); Bulldog Track, 7 May 1963, *T.G. Hartley TGH 11807* (LAE!; BRI, CANB, *n.v.*); Gumi TRP area, 10 Apr. 2006, *O. Paul LAE 87729* (LAE!, NSW; K, *n.v.*); Watut Range, 13 Aug. 1995, *J. Regalado 1582* (LAE!, NY; F, GH, *n.v.*); Kaindi, 4 Nov. 1966, *C.E. Ridsdale NGF 30217* (L, LAE!); Bulolo, 17 Oct. 1982, *H. Streimann 8632* (L, LAE!; A, BFC, CANB, K, UPNG, *n.v.*); Mt Kaindi, 10 Sep. 1968, *J. Vandenberg & A.N. Millar NGF 39692* (L, LAE!; A, BISH, BO, BRI, CANB, K, PNH, SING, SYD, *n.v.*); near helicopter pad, Mt Kaindi, 18 Dec. 1968, *J. Vandenberg NGF 42162* (BRI, L ×3; A, CANB, K, *n.v.*; proposed type of “*Q. grandifolia*”). **Eastern Highlands.** Wara Semia, 10 km south-southwest of Maimafu, Crater Mountain, 29 Jan. 1999, *R. Jensen NG 155* (BRI); Keglsugl, trail to Mt Wilhelm, 5 Aug. 1994, *J. Regalado & P. Katik 1174* (NY, LAE!; F, *n.v.*). **Southern Highlands.** Ambua, Tari, 4 Aug. 1966, *D. Frodin NGF 28201* (L, LAE!). **Western.** Hong Kong hill, Ok Tedi headwaters, 29 Oct. 1969, *E.E. Henty, D.B. Foreman & M. Galore NGF 42760* (L, LAE!; A, BRI, CANB, K, *n.v.*); Edinburgh Camp, Ok Tedi headwaters, 30 Oct. 1969, *E.E. Henty, D.B. Foreman & M. Galore NGF 42819* (L, LAE!, US; A, BISH, BRI, BO, CANB, E, K, PNH, SING, SYD, *n.v.*); Muller Range, 19 Sep. 2009, *W. Takeuchi, D. Ama & B. Gamui 24635* (LAE!, L).

Quintinia montiswilhelmii P.Royen

Alp. Fl. New Guinea 4: 2498, Fig. 728D–G (1983), as “*montiswilhelmii*”. — **Type citation:** “Holotype. McVean & Wade ANU 7043, (L).” & “Mt Wilhelm”. **Holotype:** PAPUA NEW GUINEA: Eastern Highlands, Slopes east of Lake Aunde, Mt Wilhelm, 17 May 1966, *D.N. McVean & L.K. Wade ANU 7043* (L0035134). **Isotypes:** LAE75340!; CANB, *n.v.*

Note. The species is endemic to Papua New Guinea.

Distribution. Papua New Guinea: Western Highlands, Eastern Highlands and Southern Highlands.

Etymology. The epithet refers to the type locality, Mt Wilhelm in the Bismarck Range, the highest peak in PNG (4,509 m).

Selected specimens examined

PAPUA NEW GUINEA. Western Highlands. Nona-Minj Divide, Kubor Range, 5 July 1963, *W. Vink 16041* (L, LAE!; CANB, *n.v.*). **Eastern Highlands.** Slope of Imbuka Ridge, Lake Wilhelm area, 24 Aug. 1970, *B.G. Briggs 3772* (NSW); Pindua Aunde, Mt Wilhelm, Gembolg, Feb. 1970, *T. Umba NGF 43477* (L, LAE!; A, BO, BRI, CANB, K, NSW, *n.v.*). **Southern Highlands.** Tari, Mt Né, 8 July 1966, *W. Vink 17123* (L, LAE!).

Quintinia nutantiflora Schltr.

Bot. Jahrb. Syst. 52(1-2): 127 (1914); *Nova Guinea* 12: 488 (1917). — **Type citation:** “Nördl. Neu-Guinea: Auf dem Hellwig-Gebirge, ca. 1900 m ü. M. (A. PULLE n. 84 – blühend im December 1912).” **Lectotype (here**

designated): INDONESIA, Western New Guinea: Mt Hellwig, 1900 m, 27 Dec. 1912, *A.A. Pulle 841* (B 10 0715389). **Isolectotypes:** U0226124; L0035135.

Quintinia macrocarpa Al-Shammary, *Syst. Stud. Saxifragac. S. Hemisph.* 437 (1991), *nom. inval.*

Quintinia ‘C’: Gornall & Al-Shammary, *Bot. J. Linn. Soc.* 114: 131 (1994).

Note. In the protologue, the collecting number is given in error as “81”, however all Pulle collections seen from that location and date have the collecting number “841”. This is an error to be corrected (Art. 9.2; Turland *et al.* 2018). The lectotype at B has original line drawings of flowers attached to the sheets (Fig. 1B). The isolectotype at L bears a *Determinavit* slip by Schlechter.

Distribution. Indonesia, Western New Guinea: West Papua and Papua provinces. Papua New Guinea: West Sepik, Western Highlands, Eastern Highlands and Milne Bay.

Etymology. The name is derived from the Latin *nutans* (nodding) and *flos* (flower), in reference to the loose, nodding flowers of the species.

Selected specimens examined

INDONESIA. WESTERN NEW GUINEA: West Papua. Mt Sensenemes, Anggi Gigi Lake, 18 Jan. 1962, *H.O. Sleumer & M. Vink BW 14204* (L, LAE!; BRI, *n.v.*); Anggi Gita, Lake Testega, 13 Jan. 1962, *H.O. Sleumer & M. Vink BW 14117* (L, LAE!; BRI, *n.v.*); Tamrau Range, path from Sudjak village to Mt Kusemun, 4 Nov. 1961, *P. van Royen, H. Sleumer & F. Schram 7673* (L, LAE; A, BO, BRI, CANB, K, RSA, US, *n.v.*).

PAPUA NEW GUINEA. West Sepik. Torricelli Mountains, Mt Somoro, 31 Aug. 1961, *P.J. Darbyshire 324* (L, LAE!; CANB, *n.v.*). **Madang.** Mt Wilhelm, Plot 2200C, 28 Oct. 2012, *J.K. Munzinger 6815, J.-F. Molino, K.D.Q. Damas, K. Molem & J.-C. Pintaud* (LAE!, NSW, P; K, MPU, *n.v.*). **Western Highlands.** Minj-Nona Divide, N slopes of Kubor Range, 22 Aug. 1963, *R. Pullen 5209* (B, BRI, L, LAE!; CANB, *n.v.*; proposed type of “*Q. macrocarpa*”). **Eastern Highlands.** 2 miles N Waimambuno, 20 Aug. 1957, *J.C. Saunders 818* (L, LAE!; CANB, *n.v.*). **Milne Bay.** Mt Wadimann ridge, NE from Mt Simpson, 22 July 1969, *R. Pullen 7854* (L, LAE!; A, CANB, K, *n.v.*).

Quintinia pachyphylla Schltr.

Bot. Jahrb. Syst. 52(1-2): 127 (1914); *Nova Guinea* 12: 489 (1917). — **Type citation:** “Nördl. Neu-Guinea: Auf den Nordhängen des Hellwig-Gebirges, ca. 2500 m ü. M. (A. PULLE n. 930 – blühend im Januar 1913).” **Lectotype (here designated):** INDONESIA, Western New Guinea: Mt Hellwig, 2500 m, 6 Jan. 1913, *A.A. Pulle 930* (B 10 0715390). **Isolectotypes:** U0226123; L.1871497; L0035137.

Note. As other Schlechter types of *Quintinia* at B, the lectotype specimen also contains original drawings

of the flowers (Fig. 1C). The isolectotype L.1871497 is only fragmentary, but the other two isolectotype specimens from L and U are larger.

Distribution. Indonesia, Western New Guinea: West Papua and Papua provinces (Snow Mountains region). Papua New Guinea: Morobe, Western Highlands and Eastern Highlands.

Etymology. The epithet is derived from the Greek *παχυσ* (*pachys*, thick) and *φυλλον* (*phyllon*, leaf), referring to the thick leaves of the species.

Selected specimens examined

INDONESIA. WESTERN NEW GUINEA: West Papua. Vogelkop, Mt Tembruk, Anggi Gita Lake, 28 Jan. 1962, *H.O. Sleumer & M. Vink BW 15406* (BRI, L, LAE; MAN, *n.v.*). **Papua.** 9 km NE of Lake Habbema, Oct. 1938, *L.J. Brass 10449* (BRI, L, LAE; A, *n.v.*); 15 km SW of Bernhard Camp, Idenburg, Jan. 1939, *L.J. Brass 11983* (BRI, L, LAE; A, *n.v.*).

PAPUA NEW GUINEA. Morobe. Eraulu Logging Area, 13 June 1974, *P. Katik LAE 62099* (BRI, L, LAE; A, BISH, CANB, K, NSW, US, *n.v.*); Edie Ck 4 miles SW of Wau, 7 Jan. 1964, *C.D. Sayers sub T.G. Hartley 12588* (BRI, L, LAE; CANB, *n.v.*). **Western Highlands.** W of Kawil, Jimmi Valley, 16 June 1955, *J.S. Womersley & A.N. Millar NGF 7685* (BRI, LAE!). **Eastern Highlands.** Kainantu-Okapa Road, 11 Aug. 1963, *T.G. Hartley 12143* (BRI, L, LAE; CANB, *n.v.*).

Quintinia rigida Ridley

Trans. Linn. Soc. London, Bot. 9(1): 38 (1916). — **Type citation:** “Camps XI to XIII, 8300 to 10,500ft”. **Lectotype:** INDONESIA, Western New Guinea: Dutch New Guinea, A.F.R. Wollaston Expedition, [Mt Carstensz, Banderong valley,] Feb. 1913, *C. Boden Kloss s.n.* (BM000551644, annotated as “*Quintiniya [sic] rigida*”), *vide* P.Royen, *Alpine Fl. N. Guinea* 4: 2509 (1983), as “Holotype”. **Isolectotype:** L0035139.

Note. Royen (1983) inadvertently designated the specimen in BM as lectotype of the name by stating that it is the “Holotype” (Art. 9.10; Turland *et al.* 2018). It is a well-preserved specimen, annotated by Ridley. The detailed location description is taken from the isolectotype specimen at L.

Distribution. Indonesia, Western New Guinea: Papua Province (Snow Mountains region). Papua New Guinea: Morobe, Central and Milne Bay.

Etymology. From the Latin *rigidus* (stiff, inflexible), referring to the rigid leaves of the taxon.

Selected specimens examined

INDONESIA. WESTERN NEW GUINEA: Papua. Star Mountains, Mt Antares, 23 July 1959, *C. Kalkman 4488* (L, LAE; A, BM, CANB, M, *n.v.*).

PAPUA NEW GUINEA. Morobe. Bakaia, about 15 miles SE of Garania, 24 Jan. 1964, *T.G. Hartley 12787* (BRI,

CANB, LAE). **Central.** Above Kuputivava, Goilala, 12 Feb. 1964, *T.G. Hartley 13013* (L, LAE; BRI, CANB, *n.v.*). **Milne Bay.** S slopes of Goe, Rabaraba, 12 July 1972, *P.F. Stevens & J.F. Veldkamp LAE 55512* (L, LAE; A, BRI, CANB, K, *n.v.*); Idop Range, Road to Mt Simpson, 17 July 1968, *M. Galore NGF 17598* (LAE!).

Quintinia schlechteriana O.C.Schmidt

Nova Guinea 14: 148 (1924). — **Type citation:** “Niederländisch Neu Guinea: Dormantop, 3260 m — H. J. Lam n. 1606 (Typus), blühend und fruchtend im Oktober 1920”. **Lectotype (here designated):** INDONESIA, Western New Guinea: Nova Guinea neerlandica in reg. flum. Mamberami [Dutch New Guinea, Mamberamo river region], Mt Doormantop [Mt Anggemuk], 3260 m, 17 Oct. 1920, *H.J. Lam 1606* (B 10 1001193). **Isolectotype:** K000739373; L0035140; U0226122.

Note. All type material was identified by Schmidt and these specimens are labelled as having been distributed by BO, however, no duplicate could be found at that institution (I. Erlinawati, pers. comm., Nov. 2021), i.e. it may be missing or is no longer extant. The specimen at B has Schmidt’s notes and detailed line drawings of flowers attached (Fig. 5) and is above designated as the lectotype.

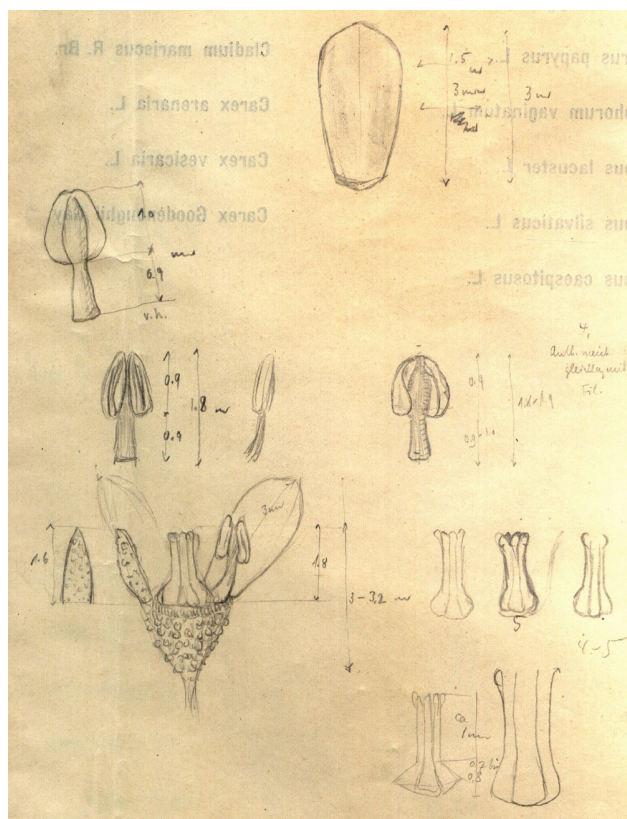


Fig. 5. Pencil drawings of a flower of *Quintinia schlechteriana* and its parts, attached to the lectotype in B; presumably drawn by O.C. Schmidt (B 10 1001193). — © Botanischer Garten und Botanisches Museum Berlin-Dahlem, reproduced under a Creative Commons CC BY-SA 3.0 licence.

Distribution. Indonesia, Western New Guinea: Papua Province (Snow Mountains region). Papua New Guinea: Morobe, Western & Western Highlands.

Etymology. Named after the German botanist Friedrich Richard Rudolph Schlechter (1927–1925), who authored the first treatment of *Quintinia* in New Guinea (Schlechter 1914).

Selected specimens examined

INDONESIA. WESTERN NEW GUINEA: **Papua.** Bele River, 18 km NE of Lake Habbema, Nov. 1938, *L.J. Brass 11453* (BRI, L, LAE!; A, *n.v.*).

PAPUA NEW GUINEA. **Morobe.** Kaindi, Aug. 1938, *J.B. McAdam 258* (BRI, LAE!). **Western Highlands.** Mt Kum near Mt Hagen, Apr. 1957, *J.S. Womersley NGF 9468* (L, LAE!). **Western.** Muller Range, Apalu Reke Camp 3, 19 Sep. 2009, *W. Takeuchi, D. Ama & B. Gamui 24767* (L, LAE!; A, *n.v.*); Muller Range, Apalu Reke Camp 3, 21 Sep. 2009, *W. Takeuchi, D. Ama & B. Gamui 24827* (L, LAE!; A, *n.v.*).

Acknowledgments

We thank Ina Erlinawati (Herbarium Bogoriense), Michaela Schull (Harvard University Herbaria) and Robert Vogt (Botanischer Garten und Botanisches Museum Berlin-Dahlem) for information on type material and specimens held at BO, A and B, respectively. Frank Andrews organised scans of specimens from BRI. Misako Mishima (Kyushu University Museum, Fukuoka), Shuichiro Tagane (Kagoshima University Museum) and Nobuyuki Tanaka & Tsuyoshi Hosoya (National Museum of Nature and Science, Tokyo) are thanked for searching the collections of FU, KAG and TNS, respectively. Peter de Lange (UNITEC) and two anonymous referees provided welcome feedback. Teresa Lebel (AD) is thanked for editing this paper. Images of drawings attached to herbarium sheets and of the isolectotype were reproduced under the following *Creative Commons* licenses: B — *CC BY-SA 3.0* (<https://creativecommons.org/licenses/by-sa/3.0/>); L — *CCO 1.0* (public domain).

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Appendix 1. World checklist of *Quintinia*.

Information from IPNI (2021) and other publications and online resources, as indicated below.

Quintinia A.DC., *Monogr. Campan.* 92 (1830), *in adnot.*

- = *Curraniodendron* Merr., *Philipp. J. Sci.*, C 5: 177 (1910).
- = *Dedeia* Baill., *Adansonia* 12: 338 (1879).

New Zealand¹ – Dawson & Lucas (2011), de Lange (2022).

Quintinia serrata A.Cunn., *Ann. Nat. Hist.* 2(11): 356 (1839).

- = *Quintinia serrata* var. β Hook.f., *Handbk. N. Zeal. Fl.* 59 (1864).
- = *Quintinia acutifolia* Kirk, *Stud. Fl. New Zealand* 137 (1899).
- = *Quintinia acutifolia* var. *lanceolata* Kirk, *Stud. Fl. New Zealand* 138 (1899).
- = *Quintinia elliptica* Hook.f., *Bot. Antarct. Voy. II. (Fl. Nov.-Zel.)* 1: 78 (1852).
- = *Quintinia serrata* var. *elliptica* (Hook.f.) Kirk, *Stud. Fl. New Zealand* 137 (1899).

New Caledonia & Vanuatu (*Q. media* only) – Pillon & Hequet (2019).

Quintinia hyehenensis Pillon & Hequet, *Phytotaxa* 397(1): 49 (2019).

Quintinia major (Baill.) Schltr., *Bot. Jahrb. Syst.* 52(1–2): 125 (1914).

- = *Dedeia major* Baill., *Adansonia* 12: 339 (1879).

Quintinia media (Baill.) Guillaumin, *Bull. Soc. Bot. France* 86: 277 (1939).

- = *Dedeia media* Baill., *Adansonia* 12: 341 (1879).
- = *Quintinia neoebudica* (Guillaumin) Guillaumin, *Ann. Mus. Colon. Marseille Sér.* 6, 5-6: 23 (1948).
- = *Dedeia neoebudica* Guillaumin, *J. Arnold Arbor.* 12: 250 (1931).
- = *Quintinia parviflora* (Schltr.) Schltr., *Bot. Jahrb. Syst.* 52(1–2): 125 (1914).
- = *Dedeia parviflora* Schltr., *Bot. Jahrb. Syst.* 39(1): 115 (1906).

Quintinia minor (Baill.) Schltr., *Bot. Jahrb. Syst.* 52(1–2): 125 (1914).

- = *Dedeia minor* Baill., *Adansonia* 12: 339 (1879).
- = *Quintinia resinosa* (Schltr.) Schltr., *Bot. Jahrb. Syst.* 52(1–2): 125 (1914).
- = *Dedeia resinosa* Schltr., *Bot. Jahrb. Syst.* 39(1): 115 (1906).

Quintinia oreophila (Schltr.) Schltr., *Bot. Jahrb. Syst.* 52(1–2): 125 (1914).

- = *Dedeia oreophila* Schltr., *Bot. Jahrb. Syst.* 39(1): 114 (1906).

Quintinia sessiliflora Pillon & Hequet, *Phytotaxa* 397(1): 50 (2019).

Australia – Standley & Ross (1983), Zich *et al.* (2020), APC (2021), APNI (2021), AVH (2021).

Quintinia fawkneri F.Muell., *Fragm.* 6(43): 92 (1867).

Quintinia quatrefagesii F.Muell., *Victorian Naturalist* 7: 181 (1891).

Quintinia sieberi A.DC., *Monogr. Campan.* 92 (1830).

Quintinia verdonii F.Muell., *Fragm.* 2(15): 125 (1861).

New Guinea – Cámara-Leret *et al.* (2020), this paper.

Quintinia altigena Schltr., *Bot. Jahrb. Syst.* 52(1–2): 127 (1914).

Quintinia brassii Reeder, *J. Arnold Arbor.* 27: 280 (1946).

- = *Quintinia insularis* Al-Shammary, *Syst. Stud. Saxifragac. S. Hemisph.* 437 (1991), *nom. inval.*
- = *Quintinia* 'B': Al-Shammary & Gornall, *Bot. J. Linn. Soc.* 114: 131 (1994).

Quintinia epiphytica Mattf., *Bot. Jahrb. Syst.* 70(4): 469 (1940).

Quintinia kuborensis P.Royen, *Alpine Fl. New Guinea* 4: 2501 (1983).

Quintinia lanceolata Reeder, *J. Arnold Arbor.* 27: 278 (1946).

¹ *Quintinia* in New Zealand is in need of revision. While “three ill-defined species” (Moore & Irwin 1978: 78) have been recognised in the past (e.g. Allan 1961: *Q. acutifolia*, *Q. elliptica* & *Q. serrata*), at the moment only one very variable species is accepted (Eagle 1982; Dawson & Lucas 2011; de Lange 2022).

- Quintinia ledermannii** Schltr., *Bot. Jahrb. Syst.* 52(1–2): 125 (1914).
 = *Quintinia spathulata* Al-Shammary, *Syst. Stud. Saxifragac. S. Hemisph.* 439–440 (1991), *nom. inval.*
 = *Quintinia* 'D': Al-Shammary & Gornall, *Bot. J. Linn. Soc.* 114: 131 (1994).
- Quintinia macgregorii** F.Muell., *Victorian Naturalist* 9: 112 (1892).
- Quintinia macrophylla** Hatus. ex O.K.Paul, *Swainsona* 36: 110 (2022).
 = *Quintinia macrophylla* Hatus. in Streimann, *Pl. Upper Watut Watershed Papua New Guinea* 173 (1983), *nom. nud. & inval.*
 = *Quintinia grandifolia* Al-Shammary, *Syst. Stud. Saxifragac. S. Hemisph.* 437 (1991), *nom. inval.*
 = *Quintinia* 'A': Al-Shammary & Gornall, *Bot. J. Linn. Soc.* 114: 131 (1994).
- Quintinia montiswilhelmii** P.Royen, *Alpine Fl. New Guinea* 4: 2498 (1983), as "*montiswilhelmi*".
 = *Quintinia* sp.: R.J.Johns & P.F.Stevens, *Bot. Bull. Dept. Forests Papua New Guinea* 6: 37 (1971).
- Quintinia nutantiflora** Schltr., *Bot. Jahrb. Syst.* 52(1–2): 127. 1914.
 = *Quintinia macrocarpa* Al-Shammary, *Syst. Stud. Saxifragac. S. Hemisph.* 438 (1991), *nom. inval.*
 = *Quintinia* 'C': Al-Shammary & Gornall, *Bot. J. Linn. Soc.* 114: 131 (1994).
- Quintinia pachyphylla** Schltr., *Bot. Jahrb. Syst.* 52(1–2): 127 (1914).
- Quintinia rigida** Ridl., *Trans. Linn. Soc. London, Bot.* 9(1): 38 (1916).
- Quintinia schlechteriana** O.C.Schmidt, *Nova Guinea* 14: 148 (1924).

Mindanao (Philippines) & Sulawesi (Indonesia) – Merrill (1923), Brambach (2019), GBIF (2021).

- Quintinia apoensis** (Elmer) Schltr., *Bot. Jahrb. Syst.* 52(1–2): 125 (1914).
 = *Dedeia apoensis* Elmer, *Leafl. Philipp. Bot.* 2: 682 (1910).
 = *Curraniodendron apoense* (Elmer) Merr., *Philipp. J. Sci., C* 10: 5 (1915).
 = *Curraniodendron dedaeoides* Merr., *Philipp. J. Sci., C* 5: 177 (1910).
 = *Dedeia cinerea* Elmer, *Leafl. Philipp. Bot.* 8: 2824 (1915).

Appendix 2. Online herbarium websites searched for specimens

Australasia's Virtual Herbarium	https://avh.chah.org.au
Consortium of Pacific Herbaria	https://serv.biokic.asu.edu/pacific/portal/index.php
JACQ	https://www.jacq.org
JSTOR Global Plants	https://plants.jstor.org
PNGplants	https://www.pngplants.org/PNGdatabase.html
A, GH — Harvard University Herbaria	https://kiki.huh.harvard.edu/databases/specimen_index.html
B — Herbarium Berolinense	http://ww2.bgbm.org/herbarium/default.cfm
BM — Natural History Museum, London	https://data.nhm.ac.uk
BR — Meise Botanic Gardens	https://www.botanicalcollections.be/
E — Royal Botanic Garden Edinburgh	https://data.rbge.org.uk/search/herbarium/
G — Geneva Herbarium	http://www.ville-ge.ch/musinfo/bd/cjb/chg/?lang=en
K — Royal Botanic Gardens Kew	http://apps.kew.org/herbcat/navigator.do
L, U — Naturalis Biodiversity Center	https://bioportal.naturalis.nl
MO — Missouri Botanic Gardens	https://www.tropicos.org/home
NY — New York Botanical Gardens	http://sweetgum.nybg.org/science/vh/
P — Muséum national d'Histoire naturelle, Paris	https://science.mnhn.fr/all/search
US — Smithsonian (NMNH)	https://collections.nmnh.si.edu/search/botany/