

Nomenclatural changes and taxonomic notes in the tribe Morindeae (Rubiaceae)

Sylvain G. RAZAFIMANDIMBISON
Birgitta BREMER

Bergius Foundation,
The Royal Swedish Academy of Sciences and Botany Department,
Stockholm University, SE-10691, Stockholm (Sweden)
sylvain.razafimandimbison@bergianska.se
birgitta.bremer@bergianska.se

Razafimandimbison S. G. & Bremer B. 2011. — Nomenclatural changes and taxonomic notes in the tribe Morindeae (Rubiaceae). *Adansonia*, sér. 3, 33 (2): 283-309. DOI: 10.5252/a2011n2a13.

ABSTRACT

A new circumscription and new generic delimitations of the tribe Morindeae in the subfamily Rubioideae (Rubiaceae) have been proposed as a result of two recent molecular phylogenetic studies. The adoption of a narrow circumscription of *Morinda* and a broad circumscription of *Gynochthodes* requires new combinations and names in these genera. This study presents descriptions of the newly delimited *Gynochthodes* and *Morinda*, and 78 new combinations (73 in the former and five in the latter) and three new names (*Gynochthodes alejandroi* Razafim. & B. Bremer, *G. ridsdalei* Razafim. & B. Bremer, and *G. wongii* Razafim. & B. Bremer). We make three lectotypifications, and recognize 15 species in *Appunia*, 11 species in *Coelospermum*, 93 species in *Gynochthodes*, 39 species in *Morinda*, and one species in *Siphonandrium*. Finally, a list of all currently recognized species for each genus of Morindeae is presented.

KEY WORDS

Rubiaceae,
Morindeae,
Appunia,
Coelospermum,
Gynochthodes,
Morinda,
Siphonandrium,
new combinations.

RÉSUMÉ

Changements nomenclaturaux et notes taxonomiques dans la tribu Morindeae (Rubiaceae).

Une nouvelle circonscription et de nouvelles délimitations génériques de la tribu des Morindeae dans la sous-famille des Rubioideae (Rubiaceae) ont été proposées à la suite de deux récentes études phylogénétiques moléculaires. L'adoption d'une circonscription étroite de *Morinda* et d'une circonscription large de *Gynochthodes* nécessite de nouvelles combinaisons et de nouveaux noms dans ces genres. Cette étude présente des descriptions de *Gynochthodes* et *Morinda* nouvellement délimités et 78 nouvelles combinaisons (73 chez le premier et cinq chez le second) et trois nouveaux noms (*Gynochthodes alejandroi* Razafim. & B. Bremer, *G. ridsdalei* Razafim. & B. Bremer et *G. wongii* Razafim. & B. Bremer). Nous établissons trois lectotypifications et reconnaissons 15 espèces chez *Appunia*, 11 espèces chez *Coelospermum*, 93 espèces chez *Gynochthodes*, 39 espèces chez *Morinda* et une espèce chez *Siphonandrium*. Enfin, une liste de toutes les espèces actuellement reconnues pour chaque genre des Morindeae est présentée.

MOTS CLÉS

Rubiaceae,
Morindeae,
Appunia,
Coelospermum,
Gynochthodes,
Morinda,
Siphonandrium,
nouvelles combinaisons.

INTRODUCTION

A new circumscription of the pantropical tribe Morindeae of the subfamily Rubioideae (Rubiaceae) has recently been established based on a molecular phylogenetic study by Razafimandimbison *et al.* (2008). The members of Morindeae can be diagnosed by their massive T-shaped placentae inserted in the middle of the septum bearing two anatropous ovules per carpel and pyrenes with a single lateral germination slit (Igersheim & Robbrecht 1993). The tribe is additionally characterized by the frequent occurrence of head-like inflorescences and multiple fruits. A more recent study by Razafimandimbison *et al.* (2009) demonstrated the paraphyly of the type genus *Morinda* L. with respect to its closely related genera *Coelospermum* Blume, *Gynochthodes* Blume, *Pogonolobus* F. Muell., and *Sarcopygme* Setch. & Christoph. As a consequence, new generic limits of Morindeae were proposed in order to make *Morinda* monophyletic, and that morphologically well-defined genera were recognized in Morindeae. A total of five genera were recognized: the Neotropical *Appunia* Hook. f., the tropical Asian and Australasian *Coelospermum* (including the Australian *Pogonolobus*), the tropical Asian and Australasian, and Malagasy

Gynochthodes (including the vast majority of the lianescent species of *Morinda*), the pantropical *Morinda* (including *Sarcopygme*), and the New Guinean *Siphonandrium* (see Appendix 1). Keys to the accepted genera of Morindeae were presented in Razafimandimbison *et al.* (2009). The adoption of the new circumscriptions of *Gynochthodes* and *Morinda* requires many new combinations. In this paper, we present updated descriptions of the newly circumscribed *Gynochthodes* and *Morinda*, and make a total of 78 new combinations (73 in the former and 5 in the latter) and three new names in *Gynochthodes*.

MATERIALS AND METHODS

We consulted all type specimens of the species of *Morinda* at L and S herbaria, all scanned images of those at BR, BM, F, K, MO, P, and US herbaria via the Global Plants Initiative (<http://www.bores.org>) website, and those available at the websites of A (<http://www.huh.harvard.edu>) and NY (<http://sciweb.nybg.org>) herbaria (all abbreviations after Holmgren *et al.* 1990). In addition, we received scanned images of all type specimens of the lianescent *Morinda* and

Sarcopygme housed at BISH herbarium. Inclusion of the species of *Morinda* and *Sarcopygme*, respectively, in *Gynochthodes* and *Morinda* (both *sensu* Razafimandimbison *et al.* 2009) were based on the identification using the keys to the genera presently recognized in Morindeae *sensu* Razafimandimbison *et al.* (2009) coupled with the results of Razafimandimbison and Bremer (unpubl. data.) based on combined nrETS, nrITS, *rps*16, and *trn*T-F data.

SYSTEMATICS

Genus *Appunia* Hook.f.

Genera Plantarum 2: 120 (1873). — Type: *Appunia tenuiflora* (Benth.) Jack.

Bellynxia Müll.Arg., *Flora* 58: 465 (1875). — Type: *Bellynxia angulata* (Benth.) Müll.Arg.

DESCRIPTION

See Burger & Taylor (1993).

NUMBER OF SPECIES RECOGNIZED

Fifteen species (see Appendix 1).

DISTRIBUTION

Neotropics.

SPECIES EXCLUDED FROM *APPUNIA*

Appunia parviflora Lundell., *Contributions from the University of Michigan Herbarium. Ann Arbor, MI* 4: 28 (1940) = *Ronabea latifolia* Aubl., *Histoire des Plantes de la Guiane Française* 1: 154 (1775); other combination: *Psychotria erecta* (Aubl.) Standl. & Steyerl., *Publications of the Field Museum of Natural History. Botanical series* 23: 24 (1943) (based on *Ronabea erecta* Aubl., *Histoire des Plantes de la Guiane Française* 1: 156 [1775]).

Genus *Coelospermum* Blume

Bijdragen tot de Flora van Nederlandsch Indië 16: 994. (Oct. 1826-Nov. 1827). — Type: *Coelospermum scandens* Blume.

Olostyla DC., *Prodromus, Systematis Naturalis* 4: 440 (Sep. 1830). — Type: *Olostyla corymbosa* (Labill.) DC.

Pogonolobus F.Muell., *Fragmenta Phytographiae Australiae* 1: 55 (1858). — Type: *Pogonolobus reticulatus* F.Muell.

Merismostigma S.Moore, *Journal of the Linnean Society, Botany* 45: 332 (1921). — Type: *Merismostigma neocaledonicum* S.Moore.

DESCRIPTION

See Johansson (1988).

NUMBER OF SPECIES RECOGNIZED

Eleven species (see Appendix 1).

DISTRIBUTION

Tropical Asia and Australasia.

SPECIES EXCLUDED FROM *COELOSPERMUM*

1. *Coelospermum barbatum* Span. — *Linnaea* 15: 318 (1841) = *Gynochthodes coriacea* Blume, *Bijdragen tot de Flora van Nederlandsch Indië* 16: 993 (Oct. 1826-Nov. 1827).

2. *Coelospermum gmelinii* Miq. — *Annales Musei Lugduno-Batavi* 3: 62 (1867) = *Archangelica gmelinii* DC., *Prodromus Systematis Naturalis* IV: 170 (1830).

REMARKS

We favor the orthographic variant *Coelospermum* (from *coelo-*, meaning with a hole in Greek) over the original spelling *Caelospermum*, as the author himself made the correction in his *Flora javae* (Blume 1828). Brummitt & Taylor (1990) consider that the spelling corrected by the original author should be followed. The synonymy was already established by Razafimandimbison *et al.* (2009: 885) for *Pogonolobus*.

DUBIOUS SPECIES

1. *Coelospermum abernianum* Elmer. — *Leaflets of Philippine Botany* 41: 3 (1906).

Remarks

We agree with Johansson (1988) that *Coelospermum abernianum* does not belong to *Coelospermum*, because it does not have the characteristics of the genus as delimited here.

2. *Coelospermum fragrans* (Montrouz.) Baill. ex Guillaumin. — *Annales de l'Institut botanico-géologique colonial de Marseille* 2: 168 (1911); *Figuierea fragrans* Montrouz., *Mémoires de l'Académie royale des Sciences, Belles-Lettres et Arts de Lyon, Section des Sciences* 10: 220 (1860).

Remarks

Johansson (1988: 289) argued that this species is possibly conspecific with *C. monticolum* Baill. ex Guillaumin, as this latter is the only species of *Coelospermum* known from the type locality of *C. fragrans* (Île Art). We are unable to verify this because we could not trace the type specimen of *C. fragrans*. The location of Montrouzier material was moved from the "Faculté de Pharmacie" to LYJB. However, the type specimen of *C. fragrans* is missing at LYJB and LY.

3. *Coelospermum nigrescens* (K.Krause) Guillaumin. — *Archives de Botanique de Caen* III (5): 41 (1929); *Olostyla nigrescens* K.Krause. — *Botanische Jahrbücher für Systematik, Pflanzengeschichte und Pflanzengeographie* 39: 167 (1908).

Remarks

Johansson (1988: 291) argued that this species is possibly conspecific with either *C. balansanum* Baill. or *C. crassifolium* J.T.Johanss. However, we were unable to trace the type specimen of *O. nigrescens*, which was presumably preserved at B herbarium.

Genus *Gynochthodes* Blume

Bijdragen tot de Flora van Nederlandsch Indië 16: 993. (Oct. 1826–Nov. 1827). — Type: *Gynochtododes coriacea* Blume.

Guttenbergia Zoll. & Moritz, *Natuur- en Geneeskundig Archief voor Nederlandsch-Indië* 2: 2 (1845), syn. nov. — Type: *Guttenbergia umbellata* (L.) Zoll. & Moritz.

Sphaerophora Blume, non (A. H. Hassall) J. Lindley (1846), *Museum Botanicum Lugduno-Batavum sive stirpium Exoticarum* 1: 179 (1850). — Type: *Sphaerophora glomerata* Blume. (lecto-, designated by Johansson [1994: 15], L!).

Pogonanthus Montrouz., *Mémoires de l'Académie royale des Sciences, Belles-Lettres et Arts de Lyon. Section des*

Sciences 10: 225 (1860). — Type: *Pogonanthus candollei* Montrouz.

Tetralopha Hook.f., *Hooker's Icones Plantarum* 11: 57, t. 1072 (1870). — Type: *Tetralopha motleyi* Hook.f.

Imantina Hook.f., *Genera Plantarum* 2: 120 (1873). — Type: *Imantina deplanchei* Hook.f.

DESCRIPTION

Lianas, rarely shrubs or trees. Leaves petiolate, chartaceous to more or less coriaceous. Inflorescences terminal, terminal on axillary (lateral) shoots, or axillary, solitary or composed of 2 to 10 heads arranged into umbel-like, racemose or cymose or terminal. Flowers polygamous (hermaphrodite and functionally unisexual) or dioecous, mostly completely to basally fused when clustered in heads, sometimes in multiflorous compound dichasia or rarely single, sessile or sometimes pedicellate; corolla tubes shorter than corolla lobes, rarely as long as or longer than corolla lobes; filaments inserted in corolla throat, linear, glabrous, white, anthers partly exerted; disk annular, persistent in fruit; styles filiform, terete; stigmatic lobe bilobate, exerted; ovary inferior, bilocular, with longitudinal false dissepiment separating the ovules, ovaries of all flowers of a head basally to completely fused; locule biovular. Fruits fused into syncarps or simple drupes. Seeds globose or semi-globose.

NUMBER OF SPECIES RECOGNIZED

93 species (see Appendix 1).

DISTRIBUTION

Tropical Asia, Australasia and Madagascar.

REMARKS

We favor the orthographic variant *Gynochthodes* over the original spelling *Gynochtododes*, as Blume himself made the correction in his *Flora javae* (Blume 1828). Brummitt & Taylor (1990) consider that the spelling corrected by the original author should be followed. *Tetralopha* is long established synonym of *Gynochthodes*. The synonymy was already proposed by Razafimandimbison *et al.* (2009: 885) for *Imantina*, *Pogonanthus*, and *Sphaerophora*.

NEW COMBINATIONS

1. *Gynochthodes ammitia* (Halford & A.J.Ford)
Razafim. & B.Bremer, comb. nov.

BASIONYM. — *Morinda ammitia* Halford & A.J.Ford, *Austrobaileya* 6: 898 (2004). — Type: Australia, Queensland, Cook Distr., Cooktown, Isabella Road, E of Isabella Falls, c. 200 m alt., 13.III.2001, A. Ford AF 267 & J. Holmes (holo-, BRI; iso-, DNA, NSW).

2. *Gynochthodes artensis* (Montrouz.)
Razafim. & B.Bremer, comb. nov.

BASIONYM. — *Morinda artensis* Montrouz., *Mémoires de l'Académie royale des Sciences, Belles-Lettres et Arts de Lyon. Section des Sciences* 10: 219 (1860). — Type: New Caledonia, Île Art, Montrouzier s.n. (holo-, ?).

REMARKS

The location of Montrouzier material was moved from the “Faculté de Pharmacie” to LYJB. However, the type specimen of *M. artensis* is missing at LYJB and LY.

3. *Gynochthodes badia* (Y.Z.Ruan)
Razafim. & B.Bremer, comb. nov.

BASIONYM. — *Morinda badia* Y.Z.Ruan, *Flora Reipublicae Popularis Sinicae* 71: 327 (1999). — Type: China, Hunan, Qiayang, 5.VI.1954, C. T. Lee 2319 (holo-, IBSC).

4. *Gynochthodes bartlingii* (Elmer)
Razafim. & B.Bremer, comb. nov.

BASIONYM. — *Morinda bartlingii* Elmer, *Leaflets of Philippine Botany* 4: 1340 (1912). — Type: Philippines, Puerto Princesa (Mt. Pulgar), Palawan, IV.1911, A. D. E. Elmer 13037 (holo-, BISH!; iso-, F!, NY!, US!).

5. *Gynochthodes billardierei* (Baill.)
Razafim. & B.Bremer, comb. nov.

BASIONYM. — *Morinda billardierei* Baill., *Adansonia* n.s. 12: 231 (1879). — Type: New Caledonia, probably Balade, 1793, *Labillardière s.n.* (lecto-, designated by Johansson (1994: 21), P!).

6. *Gynochthodes brevipes* (S.Y.Hu)
Razafim. & B.Bremer, comb. nov.

BASIONYM. — *Morinda brevipes* S.Y.Hu, *Journal of the Arnold Arboretum* 32: 399 (1951). — Type: China, Hainan, Po-ting, F. C. How 71754 (holo-, A!).

7. *Gynochthodes bucidifolia* (A.Gray)
Razafim. & B. Bremer, comb. nov.

BASIONYM. — *Morinda bucidifolia* A.Gray, *Proceedings of the American Academy of Arts and Sciences* 4: 41 (1860). — Type: Fiji, Vanua Levu, Mbua Prov., Sandalwood Bay, 1840, U.S. Expl. Exped. 62352 (holo-, US; iso-, K, P!).

Morinda nandarivatensis Gillespie, *Bernice P. Bishop Museum Bulletin* 74: 40 (1930), syn. nov. — Type: Fiji, Viti Levu, Tholo North Prov., Mt. Nanggarambuluta, E of Nandarivatu, slopes of Loma Langa Mountain, 1200 m alt., 16.XI.1927, Gillespie 3786 (holo-, BISH!).

Morinda tripetala Christoph., *Bernice P. Bishop Museum Bulletin* 154: 73 (1938), syn. nov. — Type: Samoa, Upollu, top of Fao, open, 680 m alt., E. Christophersen 555 (holo-, BISH!, iso-, A!).

8. *Gynochthodes calciphila* (K.M.Wong)
Razafim. & B.Bremer, comb. nov.

BASIONYM. — *Morinda calciphila* K.M.Wong, *Malayan Nature Journal* 38: 97 (1984). — Type: Malaysia, Perak, Ipok, limestone, Burkill SFN 2555 (holo-, SING).

9. *Gynochthodes callicarpaefolia* (Y.Z.Ruan)
Razafim. & B.Bremer, comb. nov.

BASIONYM. — *Morinda callicarpaefolia* Y.Z.Ruan, *Flora Reipublicae Popularis Sinicae* 71: 325 (1999). — Type: China, Yunnan, Bingbian, 500 m alt., in forest, 11.VII.1953, Mao 2517 (holo-, IBSC).

REMARKS

The specific epithet “*callicarpaefolia*” is changed to “*callicarpifolia*” based on the Article 60.8 of the *International Code of Botanical Nomenclature* (Greuter *et al.* 2006).

10. *Gynochthodes candollei* (Montrouz.)

Razafim. & B.Bremer, comb. nov.

BASYNYM. — *Pogonanthus candollei* Montrouz., *Mémoires de l'Académie royale des Sciences, Belles-Lettres et Arts de Lyon. Section des Sciences* 10: 225 (1860).

Morinda candollei (Montrouz.) Beauvis., *Genera Montrouzierana* 57 (1901). — Type: New Caledonia, Île Art, *Montrouzier 109* (lecto-, designated by Johansson [1994: 21], P!; isolecto-, G).

Morinda pulchella Schltr., *Botanische Jahrbücher für Systematik, Pflanzengeschichte und Pflanzengeographie* 2: 267 (1906). — Type: New Caledonia, forest edges on the mountains near Oubatche, 700 m alt., 18.XII.1902, *Schlechter 15491* (lecto-, designated by Johansson [1994: 21], P!; isolecto-, BM, G, K).

Morinda candollei Montrouz. var. *subvillosa* Guillaumin, *Bulletin du Muséum national d'Histoire naturelle* 2: 122 (1929). — Type: New Caledonia, Prony, *Franc 1853* (lecto-, designated by Johansson [1994: 23], P!; isolecto-, A!, P!).

Morinda candollei (Montrouz.) Beauvis. var. *angustifolia* Guillaumin, *Archives de Botanique, Mémoires* 3. *Caen* 5: 42 (1930), syn. nov. — Type: New Caledonia, entre Couaoua et Canala, 800 m alt., *Balansa 1984* (lecto-, designated by Johansson [1994: 23], P!).

REMARKS

We agree with Johansson (1994) that *M. puchella* is a synonym of *M. candollei* and hereby reiterate its synonymy in order to avoid unnecessary combinations in *Gynochthodes*.

11. *Gynochthodes canthoides* (F.Muell.)

Razafim. & B.Bremer, comb. nov.

BASYNYM. — *Coprosma canthoides* F.Muell., *Fragmenta Phytographiae Australiae* 7: 45 (1869). — Type: Australia, South Eales, Durandoo, *F. Mueller* (holo-, K).

Coprosma acutifolia F.Muell. ex Benth., *Flora Australiensis* 3: 429 (1867), nom. illeg.

Morinda acutifolia F.Muell., *Fragmenta Phytographiae Australiae* 9: 179 (1875), nom. illeg.

Morinda canthoides (F.Muell.) Halford & R.J.F.Hend., *Austrobaileya* 5: 731 (2000).

12. *Gynochthodes celebica* (Miq.)

Razafim. & B.Bremer, comb. nov.

BASYNYM. — *Morinda celebica* Miq., *Flora van Nederlandsch Indië* 2: 246 (1857). — Type: Celebes, among the bushes in the coastal areas of Boni, *Zollinger 3441* (holo-, L!).

13. *Gynochthodes cinnamomea* (Craib)

Razafim. & B.Bremer, comb. nov.

BASYNYM. — *Morinda cinnamomea* Craib, *Bulletin of Miscellaneous Information, Royal Botanic Gardens, Kew* 433 (1932). — Type: Satul, Kao Kêo Range, 700 m alt., evergreen forest, *Kerr 14551* (holo-, BM!; iso-, K).

14. *Gynochthodes cinnamomifoliata* (Y.Z.Ruan)

Razafim. & B.Bremer, comb. nov.

BASYNYM. — *Morinda cinnamomifoliata* Y.Z.Ruan, *Flora Reipublicae Popularis Sinicae* 71: 336-337 (1999). — Type: China, Guangxi, Guixian, *Z. Z. Chen 50743* (holo-, IBSC).

15. *Gynochthodes citrina* (Y.Z.Ruan)

Razafim. & B.Bremer, comb. nov.

BASYNYM. — *Morinda citrina* Y.Z.Ruan, *Flora Reipublicae Popularis Sinicae* 71: 331 (1999). — Type: China, Guangdong, Qujiang, 3.IV.1930, *S. P. Ko 50302* (holo-, IBSC).

Morinda citrina Y.Z.Ruan var. *chlorina* Y.Z.Ruan, *Flora Reipublicae Popularis Sinicae* 71: 332 (1999), syn. nov. — Type: China, Zhejiang, Changhua, *M. P. Teng 4794* (holo-, IBSC).

16. *Gynochthodes cochinchinensis* (DC.)

Razafim. & B.Bremer, comb. nov.

BASYNYM. — *Morinda cochinchinensis* DC., *Prodromus* 4: 449 (1830). — Type: description of *Morinda umbellata* Lour., non L., *Flora Cochinchinensis* 140 (1790).

Morinda trichophylla Merr., *Philippine Journal of Science* 23: 267 (1923), syn. nov. — Type: Philippines, Yik Tsok Mau, 17 & 19.V.1922, *McClure 8755* (holo-, A!; iso-, US!).

REMARKS

De Candolle's species was based entirely on Loureiro's description of *Morinda umbellata* Lour., which is not the same as *M. umbellata* L.

17. *Gynochthodes collina* (Schltr.)
Razafim. & B.Bremer, comb. nov.

BASIONYM. — *Morinda collina* Schltr., *Botanische Jahrbücher für Systematik, Pflanzengeschichte und Pflanzengeographie* 39: 265 (1906). — Type: New Caledonia, on the maintain slopes near Ngoyé, 200 m alt., 30.XI.1902, *Schlechter 15154* (lecto-, designated by Johansson [1994: 33], P!; isolecto-, BM, G, K, L, S!).

Morinda elongata Schltr., *Botanische Jahrbücher für Systematik, Pflanzengeschichte und Pflanzengeographie* 39: 266 (1906). — Type: New Caledonia, on the maintain forests near Ngoyé, 400 m alt., 6.XI.1902, *Schlechter 15234* (lecto-, designated by Johansson [1994: 33], S!; isolecto-, BM!, G, K!, P!).

REMARKS

We agree with Johansson (1994) that *M. elongata* is a synonym of *M. collina* and hereby reiterate its synonymy in order to avoid unnecessary combinations in *Gynochthodes*.

18. *Gynochthodes constipata*
(Halford & A.J.Ford)
Razafim. & B.Bremer, comb. nov.

BASIONYM. — *Morinda constipata* Halford & A.J.Ford, *Austrobaileya* 81: 82 (2009). — Type: Australia, Queensland, Cook Dist., National Park Reserve 904, Wooroonoran, just S of tower 9, Mt. Bellenden Ker cableway, 17.X.2003, *A. Ford AF4184 & J.Holmes* (holo-, BRI; iso-, L, K, MEL, MO, NSW, SUNIV in S!).

REMARKS

One specimen of *Morinda constipata* (as "*Morinda* sp. 2") was included in Razafimandimbison *et al.* (2009: 881), which supported the position of this species in *Gynochthodes* sensu Razafimandimbison *et al.* (2009).

19. *Gynochthodes costata*
(Merr. & L.M.Perry)

Razafim. & B.Bremer, comb. nov.

BASIONYM. — *Morinda costata* Merr. & L.M.Perry, *Journal of Arnold Arboretum* 26: 263 (1945). — Type: New Guinea, 6 km southwest of Bernhard Camp, Idenburg River, 1200 m alt., II.1939, *Brass 13012* (holo-, A!).

20. *Gynochthodes decipiens* (Schltr.)
Razafim. & B.Bremer, comb. nov.

BASIONYM. — *Morinda decipiens* Schltr., *Botanische Jahrbücher für Systematik, Pflanzengeschichte und Pflanzengeographie* 39: 266 (1906). — Type: New Caledonia, near Outbarche, 900 m alt., 17.XII.1902, *Schlechter 15466* (lecto-, designated by Johansson (1994: 45), S!; isolecto-, K, L, P!).

21. *Gynochthodes deplanchei* (Hook.f.)
Razafim. & B.Bremer, comb. nov.

BASIONYM. — *Imantina deplanchei* Hook.f., *Genera Plantarum* 120 (1873); *Morinda deplanchei* (Hook.f.) Baill. ex K.Schum., *Die Natürlichen Pflanzenfamilien* 4, 4: 138 (1891). — Type: New Caledonia, Presqu'île de Pum, *Deplanche 465* (holo-, K; iso-, P!).

Morinda gatopensis Guillaumin, *Archives de Botanique, Mémoires* 3, *Caen* 5: 43 (1930). — Type: New Caledonia, Houailou, XII.1869, *Deplanche 407* (lecto-, designated by Johansson [1994: 35], P!; isolecto-, A!, P!).

Morinda podocarpifolia Guillaumin, *Archives de Botanique, Mémoire* 3, *Caen* 5: 44 (1930). — Type: New Caledonia, Houailou, XII.1869, *Balansa 1988* (lecto-, designated by Johansson [1994: 35], P!; isolecto-, A!, P!).

Morinda alyxioides Guillaumin, *Bulletin de la Société botanique de France* 91: 44 (1944). — Type: New Caledonia, Gatope, 1867, *Vieillard s.n.* (lecto-, designated by Johansson (1994: 35), P!; isolecto-, P!).

REMARKS

We agree with Johansson (1994) that *M. alyxioides*, *M. gatopensis*, and *M. podocarpifolia* are synonyms of *M. deplanchei* and hereby reiterate their synonymies in order to avoid unnecessary combinations in *Gynochthodes*.

22. *Gynochthodes elliptifolia*
(Quisumb. & Merr.)

Razafim. & B.Bremer, comb. nov.

BASIONYM. — *Morinda elliptifolia* Quisumb. & Merr., *Philippine Journal of Science* 37: 204 (1928). — Type: Philippines, Mindanao, Davao Prov., Galintan, 250 m alt., 24.VI.1927, Ramos & Edaño B.S. 48909 (holo-, BR; iso-, NY!).

23. *Gynochthodes elmeri* (Merr.)
Razafim. & B.Bremer, comb. nov.

BASIONYM. — *Morinda elmeri* Merr., *University of California Publications in Botany* 15: 297 (1929). — Type: Philippines, near Tawao, Elmer 21114 (holo-, UC; iso-, FI, NY!, S!).

24. *Gynochthodes gjellerupii* (Valeton)
Razafim. & B.Bremer, comb. nov.

BASIONYM. — *Morinda gjellerupii* Valeton, *Botanische Jahrbücher für Systematik, Pflanzengeschichte und Pflanzengeographie* 61: 152 (1927). — Type: New Guinea, Hellwig 282 (holo-, BO).

25. *Gynochthodes glaucescens* (Schltr.)
Razafim. & B.Bremer, comb. nov.

BASIONYM. — *Morinda glaucescens* Schltr., *Botanische Jahrbücher für Systematik, Pflanzengeschichte und Pflanzengeographie* 39: 267 (1906). — Type: New Caledonia, on the mountain slopes near Ngoyé, 300 m alt., 17.XI.1902, Schlechter 15354 (lecto-, designated by Johansson [1994: 43], P!; isolecto-, BM, K).

Morinda schumanniana Schltr., *Botanische Jahrbücher für Systematik, Pflanzengeschichte und Pflanzengeographie* 39: 268 (1906). — Type: New Caledonia, on the mountain slopes near Ngoyé, 300 m alt., 17.XI.1902, Schlechter 15359 (lecto-, designated by Johansson [1994: 43], P!).

REMARKS

We agree with Johansson (1994) that *M. schumanniana* is a synonym of *M. glaucescens* and hereby reiterate its synonymy in order to avoid unnecessary combinations in *Gynochthodes*.

26. *Gynochthodes glomerata* (Blume)
Razafim. & B.Bremer, comb. nov.

BASIONYM. — *Sphaerophora glomerata* Blume, *Museum Botanicum Lugduno-Batavum sive stirpium Exoticarum* 1: 179, f. 38 (1850); *Morinda glomerata* (Blume) Miq., *Flora van Nederlandsch Indië* 2: 247 (1857). — Type: New Guinea, herb. Blume, Zippelius s.n. (lecto-, designated by Johansson [1994: 15], L!).

Sphaerophora gemella Blume, *Museum Botanicum Lugduno-Batavum sive stirpium Exoticarum* 1: 179, f. 36 (1850); *Morinda gemella* (Blume) Miq., *Flora van Nederlandsch Indië* 2: 247 (1857), syn. nov. — Type: Novâ Guineâ, herb. Blume, Zippelius s.n. (holo-, L!).

27. *Gynochthodes grayi* (Seem.)
Razafim. & B.Bremer, comb. nov.

BASIONYM. — *Morinda grayi* Seem., *Flora Vitiensis* 130 (1866). — Type: Fiji, U.S. Expl. Exped., 1840, U.S. Expl. Exped. 62353 (holo-, US; iso-, K, P).

28. *Gynochthodes hainanensis*
(Merr. & F.C.How)
Razafim. & B.Bremer, comb. nov.

BASIONYM. — *Morinda hainanensis* Merr. & F.C.How, *Sunyatsenia* 5: 188 (1940). — Type: Po-Ting Distr., Tai-Ping Kong, Chang-Sha Village, 330 m alt., 28.V.1935, F. C. How 72652 (holo-, AI; iso-, NY!).

29. *Gynochthodes hirtella*
(Merr. & L.M.Perry)
Razafim. & B.Bremer, comb. nov.

BASIONYM. — *Morinda hirtella* Merr. & L.M.Perry, *Journal of Arnold Arboretum* 26: 264 (1945). — Type: New Guinea, Brass 7984 (holo-, BMI; iso-, AI, L!).

30. *Gynochthodes hispida* (K.M.Wong)
Razafim. & B.Bremer, comb. nov.

BASIONYM. — *Morinda hispida* K.M.Wong, *Malayan Nature Journal* 41: 269 (1987). — Type: Malaysia Peninsula, Johore, Padang Temambun, sandstone plateau, 600 m alt., 27.IV.1986, Wong & Saw 34334 (holo-, KEP).

31. *Gynochthodes hollrungiana* (Valeton)
Razafim. & B.Bremer, comb. nov.

BASIONYM. — *Morinda hollrungiana* Valeton, *Botanische Jahrbücher für Systematik, Pflanzengeschichte und Pflanzengeographie* 61: 153 (1927). — Type: New Guinea, Kaiser-Wilhelms-Land, *Hollrung s.n.* (holo-, ?).

REMARKS

We have not been able to trace the original material. According to Stafleu & Cowan (1986: 649), the type specimen may be located at BO. We made a request to this herbarium without success.

32. *Gynochthodes howiana* (S.Y.Hu)
Razafim. & B.Bremer, comb. nov.

BASIONYM. — *Morinda howiana* S.Y.Hu, *Journal of Arnold Arboretum* 32: 400 (1951). — Type: China, Hainan, Poting, 14.IV.1935, *F. C. How 71911* (lecto-, designated by Liu & Zhang [2008: 578], A!).

33. *Gynochthodes hupehensis* (S.Y.Hu)
Razafim. & B.Bremer, comb. nov.

BASIONYM. — *Morinda hupehensis* S.Y.Hu, *Journal of Arnold Arboretum* 32: 400 (1951). — Type: China, Hupeh, En-shih, *H. C. Chow 1818* (holo-, A!).

34. *Gynochthodes jackiana* (Korth.)
Razafim. & B.Bremer, comb. nov.

BASIONYM. — *Morinda jackiana* Korth., *Nederlandsch Kruidkundig Archief* 2, 2: 227 (1851). — Type: Indonesia, Borneo, *Korthals s.n.* (holo-, L; iso-, A!).

35. *Gynochthodes jasminoides* (A.Cunn.)
Razafim. & B.Bremer, comb. nov.

BASIONYM. — *Morinda jasminoides* A.Cunn., *Botanical Magazine* 61: t. 3351 (1834). — Type: Australia, Colony of Port Jackson, *Cunningham s.n.* (holo-, K).

36. *Gynochthodes kanalensis* (Baill. ex Guillaumin)
Razafim. & B.Bremer, comb. nov.

BASIONYM. — *Morinda kanalensis* Baill., *Annales de l'Institut botanico-géologique colonial de Marseille* 2: 172 (1911), nom. nud.; *Morinda kanalensis* Baill., *Bulletin du Muséum national d'Histoire naturelle*, sér. 2, 1: 118 (1929), nom. nud.; *Morinda kanalensis* Baill. ex Guillaumin, *Archives de Botanique, Mémoires* 3, Caen 5: 43 (1930). — Type: New Caledonia, Mt. Humboldt, 12.X.1869, *Balansa 1987* (lecto-, designated by Johanson (1994: 53), P!; isolecto-, P!).

37. *Gynochthodes lacunosa*
(King & Gamble)
Razafim. & B.Bremer, comb. nov.

BASIONYM. — *Morinda lacunosa* King & Gamble, *Journal of the Asiatic Society of Bengal* 73: 87 (1904). — Types: Perak, *King's collector 4320*, *King's collector 6030*, *King's collector 8254* (Syn-, CAL).

38. *Gynochthodes leparensis* (Valeton)
Razafim. & B.Bremer, comb. nov.

BASIONYM. — *Morinda leparensis* Valeton, *Icones Bogorjenses* 4: t. 362 (1913). — Type: Lepar, *Teysmann, Hortus Bogor, cult. XVII C 102* (holo-, L!).

39. *Gynochthodes leptocalama* (Wernham)
Razafim. & B.Bremer, comb. nov.

BASIONYM. — *Morinda leptocalama* Wernham, *Journal of Botany, British & Foreign. London* 56: 77 (1918). — Type: New Guinea, Mt. Gawada, 4000 ft., *Forbes 864* (holo-, BM!; iso-, K, L!).

40. *Gynochthodes litseifolia* (Y.Z.Ruan)
Razafim. & B.Bremer, comb. nov.

BASIONYM. — *Morinda litseifolia* Y.Z.Ruan., *Flora Reipublicae Popularis Sinicae* 71: 335 (1999). — Type: China, Jiangxi, Jiayang-mountain, 1300 m alt., 09.VII.1965, *S. S. Lai 3488* (holo-, IBSC).

41. *Gynochthodes micrantha* (Valeton)
Razafim. & B.Bremer, comb. nov.

BASIONYM. — *Morinda micrantha* Valeton, *Botanische Jahrbücher für Systematik, Pflanzengeschichte und Pflanzengeographie* 61: 153 (1927). — Type: New Guinea, 800 m alt., VIII.1910, *L. Schultzze* 43 (holo-, ?).

REMARKS

We have not been able to trace the original material. According to Stafleu & Cowan (1986: 649), the type specimen may be located at BO. We made a request to this herbarium without success.

42. *Gynochthodes microcephala* (Bartl. ex DC.)
Razafim. & B.Bremer, comb. nov.

BASIONYM. — *Morinda microcephala* Bartl. ex DC., *Prodrumus* 4: 449 (1830). — Type: Phillipines, Luzon Island, *T. Haenke s.n.* (holo-, G-DC!).

43. *Gynochthodes mollis* (A.Gray)
Razafim. & B.Bremer, comb. nov.

BASIONYM. — *Morinda mollis* A.Gray, *Proceedings of the American Academy of Arts and Sciences* 4: 41 (1860). — Type: Fiji, U.S. Expl. Exped. 62377 (holo-, US; iso-, K, NY!).

Morinda candollei Montrouz. var. *villosa* Guillaumin, *Archives de Botanique, Mémoires* 3, Caen 5: 42 (1930), syn. nov. — Type: New Caledonia, Gatope, *Viellard* 2741 pro parte (lecto-, designated by Johansson [1994: 27], P!).

44. *Gynochthodes montana* (J.T.Johanss.)
Razafim. & B.Bremer, comb. nov.

BASIONYM. — *Morinda montana* J.T.Johanss., *Opera Botanica* 122: 49 (1994). — Type: New Caledonia, Mont Panié, 1400 m alt., 28.XI.1983, *McPherson* 6090 (holo-, MO; iso-, S!).

45. *Gynochthodes myrtifolia* (A.Gray)
Razafim. & B.Bremer, comb. nov.

BASIONYM. — *Morinda myrtifolia* A.Gray, *Proceedings of the American Academy of Arts and Sciences* 4:

41 (1860); *Morinda myrtifolia* A.Gray var. *myrtifolia* (autonym used by J.T.Johanss., *Opera Botanica* 122: 55 [1994]). — Type: Fiji, U.S. Expl. Exped. 62351 (holo-, US; iso-, K, NY!).

Morinda forsteri Seem., *Flora Vitiensis* 129 (1866). — Type: Society Islands, *J. R. & G. Forster s.n.* (lecto-, designated by Smith & Darwin [1988: 333], K; isolecto-, BM).

Morinda choriophylla Baill., *Adansonia s.n.* 12: 246 (1879); *Morinda myrtifolia* A.Gray var. *choriophylla* (Baill.) J.T.Johanss., *Opera Botanica* 122: 57 (1994). — Type: New Caledonia, à l'embouchure de la rivière du Houailou, XII.1869, *Balansa* 1989 (lecto-, designated by Johansson [1994: 57], P!; isolecto-, K, P!).

Morinda glandulosa Merr., *Philippine Journal of Science. Section C, Botany* 9: 146 (1914); *Morinda umbellata* L. var. *glandulosa* Merr., *Occasional Papers of Bernice Pauahi Bishop Museum of Polynesian Ethnology and Natural History* 15: 220 (1940). — Type: Marianas Islands, Tumon Road, XI.1911, *Guam Experiment Station* 37, *J. B. Thompson* 376 (lecto-, designated by Johansson [1994: 55], NY!).

Morinda velutina Guillaumin, *Archives de Botanique, Mémoires* 3, Caen 5: 44 (1930); *Morinda myrtifolia* A.Gray var. *velutina* (Guillaumin) J.T.Johanss., *Opera Botanica* 122: 59 (1994), syn. nov. — Type: New Caledonia, above Ouroué, near the mouth of Dotio, I.1872, *Balansa* 3421 (lecto-, designated by Johansson [1994: 59], P!; isolecto-, A!, P!).

Morinda forsteri Seem. subsp. *guillauminii* Däniker, *Vierteljahrsschrift der Naturforschenden Gesellschaft in Zürich* 78: 465 (1933). — Type: New Caledonia, groves on the Nouméa peninsula, X.1870-I.1871, *Balansa* 2992 (holo-, Z; iso-, P!).

Morinda myrtifolia A.Gray var. *brevifolia* J.T.Johanss., *Opera Botanica* 122: 55 (1994). — Type: New Caledonia, Négropo, northern plateau of Mont Prokoméo, 700 m alt., 27.I.1972, *MacKee* 24947 (holo-, P!).

REMARKS

We agree with Johansson (1994) that *M. choriophylla*, *M. glandulosa*, and *M. forsteri* are synonyms of *M. myrtifolia* and hereby reiterate their synonymies in order to avoid unnecessary combinations in *Gynochthodes*.

46. *Gynochthodes nanlingensis* (Y.Z.Ruan)
Razafim. & B.Bremer, comb. nov.

BASYNYM. — *Morinda nanlingensis* Y.Z.Ruan, *Flora Reipublicae Popularis Sinicae* 71: 329 (1999). — Type: China, Hunan, Yizhang, 5.VI.1941, *Q. Liu 2948* (holo-, IBSC).

Morinda nanlingensis Y.Z.Ruan var. *pauciflora* Y.Z.Ruan, *Flora Reipublicae Popularis Sinicae* 71: 331 (1999), syn. nov. — Type: China, Zhejiang, Hanzhou, *X. Y. He 20528* (holo-, IBSC).

Morinda nanlingensis Y.Z.Ruan var. *pilophora* Y.Z.Ruan, *Flora Reipublicae Popularis Sinicae* 71: 331 (1999), syn. nov. — Type: China, Hunan, Huitong, *Z. T. Li 2887* (holo-, IBSC).

47. *Gynochthodes neocaledonica* (S.Moore)
Razafim. & B.Bremer, comb. nov.

BASYNYM. — *Lucinaea neocaledonica* S.Moore, *Journal of the Linnean Society, Botany* 45: 328 (1921); *Morinda neocaledonica* (S.Moore) Guillaumin, *Archives de Botanique, Mémoire* 3, *Caen* 3: 44 (1930). — Type: New Caledonia, Taom, 500 m alt., 2.XII.1914, *Compton 2304* (lecto-, designated by Johansson (1994: 27), BM; iso-, P!).

48. *Gynochthodes nitida* (Merr.)
Razafim. & B.Bremer, comb. nov.

BASYNYM. — *Morinda nitida* Merr., *Philippine Journal of Science* 17: 435 (1920, publ. 1921). — Type: Philippines, Bucas Grande Island, VI.1919, *Ramos & Pascasio BS 35074* (holo-, A!; iso-, US!).

49. *Gynochthodes oblongifolia* (Valeton)
Razafim. & B.Bremer, comb. nov.

BASYNYM. — *Morinda oblongifolia* Valeton, *Botanische Jahrbücher für Systematik, Pflanzengeschichte und Pflanzengeographie* 61: 153 (1927). — Type: New Guinea, 100 m alt., 22.V.1912, *Ledermann 7366* (holo-, ?).

REMARKS

We have not been able to trace the original material. According to Stafleu & Cowan (1986: 649), the type specimen may be located at BO. We made a request to this herbarium without success.

50. *Gynochthodes officinalis* (F.C.How)
Razafim. & B.Bremer, comb. nov.

BASYNYM. — *Morinda officinalis* F.C.How, *Acta Phytotaxonomica Sinica* 7: 326-327 (1958). — Type: China, Kwangtung, Lofou Shan, 11.V.1930, *N. K. Chun 40965* (holo-, IBSC).

Morinda officinalis F.C.How var. *hirsuta* F.C.How, *Acta Phytotaxonomica Sinica* 7: 328 (1958), syn. nov. — Type: China, Hainan, Tungfang Hsien, 15.XII.1955, *Hainan Exped. 287* (holo-, IBSC).

51. *Gynochthodes oligocephala*
(Merr. & L.M.Perry)

Razafim. & B.Bremer, comb. nov.

BASYNYM. — *Morinda oligocephala* Merr. & L.M.Perry, *Journal of Arnold Arboretum* 26: 265 (1945). — Type: New Guinea, Tarar, Wassi Kussa River, XII.1936, *Brass 8490* (holo-, A; iso-, BM!, L!, NY!).

52. *Gynochthodes parvifolia* (Bartl. ex DC.)
Razafim. & B.Bremer, comb. nov.

BASYNYM. — *Morinda parvifolia* Bartl. ex DC., *Prodromus* 4: 449 (1830). — Type: Philippines, Manila, 1.XII.1912, *T. Haenke s.n.* (holo- PR or PRC?; iso- MO!).

Morinda cumingiana S.Vidal, *Phanerogamae Cumingiana Philippinarum*: 184 (1885); *Lucinaea cumingiana* S.Vidal, *Phanerogamae Cumingiana Philippinarum*: 216 (1885), syn. nov. — Type: Philippines, Albay Prov., *H. Cuming 1242* (holo-, BM; iso-, L).

REMARKS

The holotype of *Gynochthodes parvifolia* is not found at G-DC herbarium or G herbarium. De Candolle (1830) referred to the Haenke herbarium, where he himself saw the type specimen. So, it is possible that the holotype is at PR or PRC herbarium, where the collections of Haenke are housed. We made requests from these herbaria without success.

53. *Gynochthodes phyllireoides* (Labill.)
Razafim. & B.Bremer, comb. nov.

BASYNYM. — *Morinda phyllireoides* Labill., *Sertum austrocaledonicum* 49: t. 49 (1825). — Type: New Caledonia,

probably Balade, 1793, *Labillardière s.n.* (lecto-, designated by Johansson (1994: 37), P!; iso-, BM, G, G-DC, K).

Morinda vieillardii Baill., *Adansonia s.n.* 12: 230 (1879). — Type: New Caledonia, Wagap, 1861, *Vieillard 719* pro parte (lecto-, designated by Johansson (1994: 37), P!; isolecto-, P!).

Morinda fallax Schltr., *Botanische Jahrbücher für Systematik, Pflanzengeschichte und Pflanzengeographie* 39: 267 (1906). — Type: New Caledonia, in the mountain forests near Yaouhé, 400 m alt., 15.X.1902, *Schlechter 15034* (lecto-, designated by Johansson (1994: 37), P!; isolecto-, BM, G, K, L, P!, Z).

Morinda ligustrina S.Moore, *Journal of the Linnean Society, Botany* 14: 335 (1921). — Type: New Caledonia, Ignambi, 1400 m alt., 01.VIII.1914, *Compton 1580* (holo-, BM).

REMARKS

We agree with Johansson (1994) that *M. fallax*, *M. ligustrina*, and *M. vieillardii* are synonyms of *M. phyllireoides* and hereby reiterate their synonymies in order to avoid unnecessary combinations in *Gynochthodes*.

54. *Gynochthodes platyphylla* (Merr.)

Razafim. & B.Bremer, comb. nov.

BASIONYM. — *Morinda platyphylla* Merr., *Philippine Journal of Science* 11: 33 (1916). — Type: Sorsogon Prov., Luzon Island, VIII.1915, *M. Ramos BS 23414* (holo-, A!; iso-, BISH!, LI, NY!, US!).

55. *Gynochthodes podistra* (Halford & A.J.Ford)

Razafim. & B.Bremer, comb. nov.

BASIONYM. — *Morinda podistra* Halford & A.J.Ford, *Austrobaileya* 6: 895 (2004). — Type: Australia, Queensland, Cook District, Daintree River National Park, Black Mountain area, Daintree River headwaters, 25.V.1998, *P.I. Forster PIF22959*, *R. Jago*, *R. Jensen* & *R. Booth* (holo-, BRI).

56. *Gynochthodes polyneura* (Miq.)

Razafim. & B.Bremer, comb. nov.

BASIONYM. — *Morinda polyneura* Miq., *Flora van Nederlandsch Indië* 2: 244 (1857). — Types: *Horsfield s.n.* (syn-, BM, K, U in L), *Junghuhn s.n.* (syn-, L, U in L).

57. *Gynochthodes pubiofficialis* (Y.Z.Ruan)

Razafim. & B.Bremer, comb. nov.

BASIONYM. — *Morinda pubiofficialis* Y.Z.Ruan, *Flora Reipublicae Popularis Sinicae* 71: 334 (1999). — Type: China, Guizhou, Tongren, *Tsiang 5990* (holo-, IBSC).

58. *Gynochthodes reticulata* (Valeton)

Razafim. & B.Bremer, comb. nov.

BASIONYM. — *Lucinaea reticulata* Valeton, *Contribution to the Phytogeography and Flora of the Arfak Mountains* 180 (1917); *Morinda reticulata* (Valeton) Valeton, *Botanische Jahrbücher für Systematik, Pflanzengeschichte und Pflanzengeographie* 61: 152 (1927). — Type: New Guinea, Irian Jaya, Arfak Mts, Angi lakes, 7000 ft, *Gibbs 5580* (holo-, BM!).

59. *Gynochthodes retropila* (Halford & A.J.Ford)

Razafim. & B.Bremer, comb. nov.

BASIONYM. — *Morinda retropila* Halford & A.J.Ford, *Austrobaileya* 81: 85 (2009). — Type: Australia, Wooroonooran National Park, start of Bartle Frere walking track, 27.XI.2001, *P.I. Forster PIF27757* & *A.M. Young* (holo-, BRI).

REMARKS

One specimen of *Morinda retropila* (as *Morinda* sp. 1) was included in Razafimandimbison *et al.* (2009), which supported the position of this species in *Gynochthodes* sensu Razafimandimbison *et al.* (2009).

60. *Gynochthodes retusa* (Poir.)

Razafim. & B.Bremer, comb. nov.

BASIONYM. — *Morinda retusa* Poir., *Encyclopédie méthodique, Botanique Supplément* 4: 316 (1797). — Type: Madagascar, *unknown s.n.* (holo-, P-LA).

61. *Gynochthodes ridleyi* (King & Gamble)

Razafim. & B.Bremer, comb. nov.

BASIONYM. — *Morinda umbellata* L. var. *ridleyi* King & Gamble, *Journal of the Asiatic Society of Bengal, Part 2, Natural History* 73: 88 (1904); *Morinda ridleyi* (King & Gamble) Ridl., *Flora of the Malay Peninsula* 2: 118 (1923). — Types: Singapore, in Botanic Garden Jungle, *Ridley 5668*, *Ridley 6470*, *Ridley 6471*, and *Ridley 6916* (Syn-, K).

62. *Gynochthodes rigida* (Miq.)
Razafim. & B.Bremer, comb. nov.

BASIONYM. — *Morinda rigida* Miq., *Flora van Nederlandsch Indië* 2: 246 (1857). — Type: Indonesia, Sumatra, near Sibogo, *Teysmann s.n.* (lecto-, designated by Johansson (1994: 15), U in L).

63. *Gynochthodes rugulosa* (Y.Z.Ruan)
B.Bremer, comb. nov.

BASIONYM. — *Morinda rugulosa* Y.Z.Ruan, *Flora Reipublicae Popularis Sinicae* 71: 328 (1999). — Type: China, Guangxi, Gongcheng, 13.VII.1931, *S. S. Sin. 128651* (holo-, IBSC).

64. *Gynochthodes sarmentosa* (Blume)
Razafim. & B.Bremer, comb. nov.

BASIONYM. — *Morinda sarmentosa* Blume, *Bijdragen tot de Flora van Nederlandsch Indië* 1006 (Oct. 1826-Nov. 1827). — Type: Indonesia, Java, *Blume s.n.* (holo-, L).

Morinda sarmentosa Blume var. *puberula* Miq., *Flora van Nederlandsch Indië* 2: 245 (1857), syn. nov. — Type: Indonesia, Java, *Horsfield s.n.* (holo-, L or U in L?).

65. *Gynochthodes scabrifolia* (Y.Z.Ruan)
Razafim. & B.Bremer, comb. nov.

BASIONYM. — *Morinda scabrifolia* Y.Z.Ruan, *Flora Reipublicae Popularis Sinicae* 71: 332 (1999). — Type: China, Yunnan, Bingbian, *China-Soviet Union Exped. 3515* (holo-, IBSC).

66. *Gynochthodes shuanghuaensis*
(C.Y.Chen & M.S.Huang)
Razafim. & B.Bremer, comb. nov.

BASIONYM. — *Morinda shuanghuaensis* C.Y.Chen & M.S.Huang, *Acta Phytotaxonomica Sinica* 14: 70-71 (1976). — Type: China, Guangdong, Wuhua, 25.X.1975, *Baji Expedition 045* (holo-, IBSC).

67. *Gynochthodes subcaudata* (Valeton)
Razafim. & B.Bremer, comb. nov.

BASIONYM. — *Morinda subcaudata* Valeton, *Botanische Jahrbücher für Systematik, Pflanzengeschichte und Pflanzengeographie* 61: 154 (1927). — Types: *Ledermann 9069, 9885, 9925* (syn-, ?).

REMARKS

We have not been able to trace the original material. According to Stafleu & Cowan (1986: 649), the type specimens may be located at BO. We made a request to this herbarium without success.

68. *Gynochthodes triandra* (S.Moore)
Razafim. & B.Bremer, comb. nov.

BASIONYM. — *Morinda triandra* S.Moore, *Journal of Botany* 61 (*Supplement*): 25 (1923). — Type: Sogere, *Forbes 487* (holo-, BM).

69. *Gynochthodes trimera* (Hillebr.)
Razafim. & B.Bremer, comb. nov.

BASIONYM. — *Morinda trimera* Hillebr., *Flora Hawaiian Islands* 177 (1888). — Type: Hawaiian Islands, east Maui, Hamakua, *J. M. Lydgate s.n.* (holo-, BISH!).

Morinda sandwicensis O.Deg., *Flora Hawaiiensis* 332 (1936); *Morinda sandwicensis* O.Deg. var. *sandwicensis*, (autonym used by H.St.John, *Pacific Science* 33 (4): 372 [1979, publ. 1980]), syn. nov. — Type: Hawaiian Island, Waianae Mts. 10.VII.1932, *O. Degener, K. Park, & Y. Nitta 9423* (holo-, BISH!; iso-, MO!, NY!).

Morinda lainaiensis H.St.John, *Pacific Science* 33 (4): 369 (1979, publ. 1980), syn. nov. — Type: Hawaiian Islands, Lanai Island, Kahinahina, 14.VI.1915, *G. C. Mubro 262* (holo-, BISH!).

Morinda sandwicensis O.Deg. var. *glabrata* (O.Deg.) H.St. John, *Pacific Science* 33 (4): 372 (1979, publ. 1980); *Morinda sandwicensis* O.Deg. f. *glabrata* O.Deg., *Flora Hawaiiensis*, Family 332 (1936), syn. nov. — Type: Hawaiian Islands, Waianae Mts., 13.V.1932, *O. Degener, K. Park, D. Topping, & O. Swezey 4150* (holo-, BISH!; iso-, NY!).

Morinda sandwicensis O.Deg. var. *hosakae* H.St.John, *Pacific Science* 33 (4): 374 (1979, publ. 1980), syn. nov. — Type: Hawaiian Islands, Oahu Island, Koolau Range,

16.IV.1923, *E. Y. Hosaka 963* (holo-, BISH!; isotype, NTBG!).

Morinda waikapuensis H.St.John, *Pacific Science* 33 (4): 376 (1979, publ. 1980), syn. nov. — Type: Hawaiian Islands, Maui Island, Waikapu Valey, VI.1910, C. N. Forbes 133.M (holo-, BISH!).

REMARKS

Morinda trimera is one of the two arborescent species of *Morinda* that we transferred to *Gynochthodes* sensu Razafimandimbison *et al.* (2009) based on Razafimandimbison & Bremer (unpubl. data) analyses based on combined nrETS, nrITS, rps16, and trnT-F data. The range of its flowers length also falls within that of *Gynochthodes*. We consider *M. lainaiensis*, *M. sandwicensis*, and *M. waikapuensis* to be synonyms of *M. trimera* and hereby provide their synonymies in order to avoid unnecessary combinations in *Gynochthodes*.

70. *Gynochthodes truncata* (J.T. Johanss.)

Razafim. & B.Bremer, comb. nov.

BASIONYM. — *Morinda truncata* J.T.Johanss., *Opera Botanica* 122: 41 (1994). — Type: New Caledonia, sommet nord du Mt Kaala, 1000-1050 m alt., 25.XII.1966, MacKee 16146 (holo-, P!).

71. *Gynochthodes umbellata* (L.)

Razafim. & B.Bremer, comb. nov.

BASIONYM. — *Morinda umbellata* L., *Species Plantarum* 176 (1753). — Type: *Herb. Hermann* 3: 11, no. 81 (BM-000621833) (lecto-, designated by Smith & Darwin [1988: 333], BM).

Morinda padavara Juss. ex Schult., *Systema Vegetabilium* 5: 216 (1819), syn. nov. — Type: *Malabar s.n.* (lecto-, designated here, P-JU!).

Morinda scandens Roxb., *Flora of India* 2: 201 (1824), syn. nov. — Type: drawing n° 2570 in *Icones Roxburghianae* (holo-, K).

Morinda umbellata L. var. *scortechinii* King & Gamble, *Journal of the Asiatic Society of Bengal, Part 2. Natural History* 73: 88 (1904); *Morinda scortechinii* (King & Gamble) Ridl., *Flora of the Malay Peninsula* 2: 118 (1923), syn. nov. — Type: *Scortechinii 2015* (holo-, K).

Morinda umbellata L. var. *tonkinensis* Pit., in Lecomte H. & Humbert H., *Flore Générale de l'Indochine* 3: 323 (1924), syn. nov. — Type: Vietnam, Lang-bian, A. Chevalier s.n. (lecto-, designated here, P!).

Morinda umbellata L. var. *accuminatissima* Valetton, *Botanische Jahrbücher für Systematik, Pflanzengeschichte und Pflanzengeographie* 61: 153 (1927), syn. nov. — Type: New Guinea, 850 m atl., *Ledermann 9331* (holo-, ?).

Morinda boninensis Ohwi, *Feddes Repertorium* 36: 57 (1934); *Morinda umbellata* L. var. *boninensis* (Ohwi) T.Yamaz., *Journal of Japanese Botany* 61: 343 (1986), syn. nov. — Type: S. *Nishimura s.n.* (holo-, TO).

Morinda umbellata L. var. *archboldiana* Fosberg, *Sargentia* 1: 123 (1942), syn. nov. — Type: Fiji, Viti Levu, Serua, vicinity of Ngaloa, Thulanuku, dense forest, 30 m alt., 29.IV.1941, *Degener 15115* (holo-, US!; iso-, A!, NY!, S!).

Morinda umbellata L. var. *forsteri* Seem., *Sargentia* 1: 123 (1942), syn. nov. — Type: Society Islands, J. R. & G. *Forsteri s.n.* (lecto-, designated by Smith & Darwin (1988: 333), K!; isolecto-, BM!).

Morinda umbellata L. var. *hahazimensis* T.Yamaz., *Journal of Japanese Botany* 61: 343 (1986), syn. nov. — Type: Japan, Hahazima Island, 15.VII.1920, T. *Nakai s.n.* (holo-, TI).

Morinda umbellata L. var. *obovata* Y.Z.Ruan, *Flora Reipublicae Popularis Sinicae* 71: 325 (1999), syn. nov. — Type: China, Guangdong, *Fengshun & G. Li 201473* (holo-, IBSC).

REMARKS

We have not been able to trace the original material of *Morinda umbellata* L. var. *accuminatissima* Valetton. According to Staffeu and Cowan (1986: 649), the type specimen may be located at BO, P, and U. We made requests to these herbaria without success.

72. *Gynochthodes villosa* (Hook.f.)

Razafim. & B.Bremer, comb. nov.

BASIONYM. — *Morinda villosa* Hook.f., *Flora of British India* 3: 158 (1880). — Type: *Wallich' Cat. 8425* (holo-, K-W).

73. *Gynochthodes wallichii* (Kurz)
Razafim. & B. Bremer, comb. nov.

BASYNYM. — *Morinda wallichii* Kurz, *Journal of the Asiatic Society of Bengal*, Part 2, *Natural History* 41: 313 (1872). — Type: Herb. Kurz, *Tenasserim s.n.* (holo-, CAL).

NEW NAMES

1. *Gynochthodes alejandroi*
Razafim. & B. Bremer, nom. nov.

REPLACED NAME. — *Morinda philippinensis* Elmer, *Leaflets of Philippine Botany* 3: 1044 (1911). — Type: Philippines, Capiz Prov., Magallanes (Mt. Giting-giting), Sibuan Island, V.1910, A. D. E. Elmer 12460 (holo-, Al; iso-, L!, NY!; US!).

REMARKS

The specific epithet “*philippinensis*” cannot be used in combination with *Gynochthodes*, as it would be a later homonym of *Gynochthodes philippinensis* (Elmer) Merr. The replacement name *alejandroi* refers to Dr. Grecebio J. Alejandro, who has a good knowledge of the Philippian Rubiaceae.

2. *Gynochthodes ridsdalei*
Razafim. & B. Bremer, nom. nov.

REPLACED NAME. — *Morinda reticulata* Gamble, *Bulletin of Miscellaneous Information, Royal Botanic Gardens, Kew* 248 (1920). — Type: India (south), evergreen forests of Travancore, at Merchiston, 600 m alt., IV.1895, *Bourdillon 591* (lecto-, K, designated here).

REMARKS

Morinda reticulata Gamble is an illegitimate name, as it is a later homonym of *Morinda reticulata* Benth., which has priority over the former. Razafimandimbison *et al.* (2009) confirmed that the Australian *Morinda reticulata* Benth. belongs to *Coelospermum*, consistent with Baillon (1879) who already made the new combination *Coelospermum decipiens* Baill. The specific epithet “*reticulata*” cannot be used in combination with *Gynochthodes*, as it would be a later homonym of *Gynochthodes reticulata* (Valeton) Razafim. & B. Bremer. The replacement name *rids-*

dalei refers to Dr. Colin Ridsdale, who has a great knowledge of the tropical Asian Rubiaceae. Gamble (1920) listed two specimens, *Bourdillon 591* and *M. Rama Row 1281*, when describing his *Morinda reticulata*. We chose *Bourdillon 591* as lectotype.

3. *Gynochthodes wongii*
Razafim. & B. Bremer, nom. nov.

REPLACED NAME. — *Morinda coriacea* Merr., *Philippine Journal of Science* 17: 435 (1920, publ. 1921). — Type: Mindanao (Surigao), *Ramos and Pascasio B.S. 34439* (holo-, Al; US!).

REMARKS

The specific epithet “*coriacea*” cannot be used in combination with *Gynochthodes*, as it would be a later homonym of *Gynochthodes coriacea* Blume, the type of *Gynochthodes*. The replacement name *wongii* refers to Professor Khoo Meng Wong (Malaysia), who has a great knowledge of the Southeast Asian Rubiaceae.

Genus *Morinda* L.

Species plantarum: 176 (1753). — Type: *Morinda royoc* L. (lecto-, designated by Hitchcock: 132 [1929]).

Rojoc Adans., *Famille des Plantes* 2: 246 (1763).

Appunettia Good, *Journal of Botany* 64 (Supplement 2): 30 (1926). — Type: *Appunettia angolensis* Good.

Sarcopygme Setch. & Christoph., *Occasional Papers of Bernice Pauahi Bishop Museum of Polynesian Ethnology and Natural History* 11: 4 (1935), syn. nov. — Type: *Sarcopygme pacifica* (Reinecke) Setch. & Christoph.

DESCRIPTION

Small trees or shrubs, rarely lianas. Leaves petiolate (rarely subsessile), chartaceous to coriaceous, glabrous. Inflorescences mostly leaf-opposed (modified terminal inflorescences), sometimes axillary with heads arranged into secondarily compound inflorescences, composed of 1 to 3 heads, sometimes axillary with heads arranged into secondarily compound inflorescences, pedunculate (rarely sessile), branched. Flowers bisexual; corolla tubes

much larger than corolla lobes; filaments inserted in corolla throat, linear, glabrous, white; anthers partly exerted (rarely well exerted); disk annular, persistent in fruit; style filiform, terete; stigma bilobate, more or less recurved, not exerted; ovaries inferior, bilocular, with longitudinal false dissepiment, ovaries of all flowers of a head basally to completely fused; locule biovular. Fruits fused into syncarps. Seed globose or semi-globose.

NUMBER OF SPECIES RECOGNIZED

40 species (see Appendix 1).

DISTRIBUTION

Pantropical.

NEW COMBINATIONS

The type of the Samoan genus *Sarcopygme* was nested in *Morinda* sensu stricto in Razafimandimbison *et al.* (2009). As a consequence, we transfer below all the five described species to *Morinda*.

1. *Morinda intermedia* (Setch. & Christoph.)
Razafim. & B.Bremer, comb. nov.

BASIONYM. — *Sarcopygme intermedia* Setch. & Christoph., *Bernice P. Bishop Museum Bulletin* 154: 67 (1938). — Type: Samoa, wet forest above Matavanu crater, atl. 1400 m, 28.VII.1931 (fr.), *Christophersen & Hume 2193* (holo-, BISH!).

2. *Morinda mayorii* (Setch.)
Razafim. & B.Bremer, comb. nov.

BASIONYM. — *Breonia* (?) *mayorii* Setch., *American Samoa*: 44, pls 6-7 (1924); *Sarcopygme mayorii* (Setch.) Setch. & Christoph., *Occasional Papers of Bernice Pauahi Bishop Museum of Polynesian Ethnology and Natural History* 11: 5 (1935). — Type: Samoa, Tutuila, trail to Matafao, I.1922, *Setchell 419* (holo-, UC).

3. *Morinda multinervis* (Setch. & Christoph.)
Razafim. & B.Bremer, comb. nov.

BASIONYM. — *Sarcopygme multinervis* Setch. & Christoph., *Bernice P. Bishop Museum Bulletin* 154: 69 (1938). — Type: Samoa, *Christophersen & Hume 2299* (holo-, BISH!).

4. *Morinda pacifica* (Reinecke)
Razafim. & B.Bremer, comb. nov.

BASIONYM. — *Sarcocephalus pacificus* Reinecke, *Botanische Jahrbücher für Systematik, Pflanzengeschichte und Pflanzengeographie* 25: 681, pl. 13 (1898); *Sarcopygme pacifica* (Reinecke) Setch. & Christoph., *Occasional Papers of Bernice Pauahi Bishop Museum of Polynesian Ethnology and Natural History* 11: 4 (1935). — Type: Samoa, Upolu, *Reinecke 1623* (holo-, HBG).

5. *Morinda ramosa* (Lauterb.)
Razafim. & B.Bremer, comb. nov.

BASIONYM. — *Sarcocephalus ramosus* Lauterb., *Botanische Jahrbücher für Systematik, Pflanzengeschichte und Pflanzengeographie* 41: 235 (1908); *Sarcopygme ramosa* (Lauterb.) Setch. & Christoph., *Occasional Papers of Bernice Pauahi Bishop Museum of Polynesian Ethnology and Natural History* 11: 4 (1935). — Type: Samoa, Savaii, Mataana, alt. 1600 m, 20.IX.1906, *Vaupel 525* (holo-, B probably destroyed).

SPECIES EXCLUDED FROM *MORINDA*

A total of 29 species of *Morinda* have been excluded from *Morinda* sensu Razafimandimbison *et al.* (2009), of which 12 neotropical species are transferred back to *Appunia*.

1. *Morinda axillaris* Lam. ex Poir.

Encyclopédie Méthodique. Botanique Supplément 4: 315 (1797) = *Saldinia axillaris* (Lam. ex Poir.) Bremek., *Candollea* 16: 110 (1957).

2. *Morinda aurantiaca* (K.Krause) Steyererm.

Memoirs of the New York Botanical Garden 23: 385 (1972) = *Appunia aurantiaca* (K.Krause) Sandwith,

Kew Bulletin 472 (1931) (based on *Rudgea aurantiaca* K.Krause, *Notizblatt des Botanischen Gartens und Museums zu Berlin-Dahlem* 6: 206 [1914]).

3. *Morinda beccariana* Baill. ex K.Schum.

Die Natürlichen Pflanzenfamilien 4, 4: 138 (1891) = *Primatomeris beccariana* (Baill. ex K.Schum.) J.T.Johanss., *Opera Botanica* 94: 57 (1987).

4. *Morinda borneensis* (Baill.) K.Schum.

Die Natürlichen Pflanzenfamilien 4, 4: 138 (1891) = *Rennellia borneensis* Baill., *Bulletin mensuel de la Société linnéenne de Paris* 1: 205 (1879).

5. *Morinda brachycalyx* (Bremek.) Steyererm.

Memoirs of the New York Botanical Garden 23: 385 (1972) = *Appunia brachycalyx* (Bremek.) Steyererm., *Memoirs of the New York Botanical Garden* 17: 359 (1967) (based on *Bellynkxia brachycalyx* Bremek., *Recueil des Travaux botaniques néerlandais* 31: 227 [1934]).

6. *Morinda calycina* (Benth.) Steyererm.

Memoirs of the New York Botanical Garden 23: 385 (1972) = *Appunia calycina* (Benth.) Sandwith, *Kew Bulletin* 471 (1931) (based on *Coffea calycina* Benth., *Journal of Botany by William Jackson Hooker* 3: 232 [1841]; other combination: *Bellynkxia calycina* (Benth.) Bremek., *Recueil des Travaux botaniques néerlandais* 31: 276 [1934]).

7. *Morinda debilis* (Sandwith) Steyererm.

Memoirs of the New York Botanical Garden 23: 385 (1972) = *Appunia debilis* Sandwith, *Kew Bulletin* 471 (1931).

8. *Morinda esquirolii* H.Lév.

Flore du Kouy-Tchéou 368 (1915) = *Macaranga andamanica* Kurz, *Forest Flora of British Burma* 2: 389 (1877).

9. *Morinda guatemalensis*

(Donn.Sm.) Steyererm.

Memoirs of the New York Botanical Garden 23: 385 (1972) = *Appunia guatemalensis* Donn.Sm., *Botanical Gazette* 48: 294 (1909).

10. *Morinda hypotephra* F.Muell.

Victorian Naturalist 6: 55 (July 1889) = *Palmeria hypotephra* (F.Muell.) Domin (Monimiaceae), *Reperitorium Specierum Novarum Regni Vegetabilis* 12: 390 (1913).

REMARKS

The name *Morinda hypotephra* F.Muell. was misapplied in the past (up to 1997) to the species that we refer to an undescribed *Morinda* sp. 1 in Razafimandimbison *et al.* (2009) and was recently described by Halford & Ford (2009) as *Morinda retropila* Halford & A.J.Ford (see Appendix 1). The type of the name *Morinda hypotephra* F.Muell. is actually a species of *Palmeria*, *P. hypotephra* (F.Muell.) Domin, of the family Monimiaceae and this synonymy was confirmed by Whiffin & Foreman (2007).

11. *Morinda korthalsiana* Miq.

Annales Musei Botanici Lugduno-Batavi 4: 214 (1869) = *Rennellia morindiformis* (Korth.) Ridl., *Bulletin of Miscellaneous Information, Royal Botanic Gardens, Kew* 1939: 609 (1940).

12. *Morinda longiloba*

(Steyererm.) Steyererm.

Memoirs of the New York Botanical Garden 23: 385 (1972) = *Appunia longiloba* Steyererm., *Memoirs of the New York Botanical Garden* 17: 359 (1967).

13. *Morinda longipedunculata* Steyererm.

Annals of Missouri Botanical Garden 75: 340 (1988) = *Appunia longipedunculata* (Steyererm.) Delprete, *Journal of Botanical Research Institute of Texas* 3: 809 (2009).

14. *Morinda muscosa* Jacq.

Selectarum Stirpium Americanarum Historia in qua ad Linnaeanum Systema Determinatae 65 (1763) = *Psychotria muscosa* (Jacq.) Steyerl., *Memoirs of the New York Botanical Garden* 23: 671 (1972).

15. *Morinda odontocalyx* (Sandwith) Steyerl.

Memoirs of the New York Botanical Garden 23: 385 (1972) = *Appunia odontocalyx* Sandwith, *Kew Bulletin* 472 (1931) (based on *Bellynxia odontocalyx* (Sandwith) Bremek., *Recueil des Travaux botaniques néerlandais* 31: 276 [1934]).

16. *Morinda palmatorum* DC.

Prodromus 4: 448 (1830) = *Psychotria peduncularis* var. *palmatorum* (DC.) Verdc., *Kew Bulletin* 30: 257 (1975).

17. *Morinda peduncularis* Kunth

Nova Genera et Species Plantarum 3: 380 (1818) = *Appunia peduncularis* (Kunth) Delprete, *Journal of Botanical Research Institute of Texas* 3: 809 (2009).

18. *Morinda polysperma* Jack

Malayan Miscellanies 1: 14 (1820) = *Schradera polysperma* (Jack) Puff, Buchner & Greimler, *Blumea* 43: 293 (1998); other combination: *Lucinaea polysperma* (Jack) K.Schum., *Die Natürlichen Pflanzenfamilien* 4, 4: 64 [1891].

19. *Morinda salomoniensis* Engl.

Botanische Jahrbücher für Systematik, Pflanzengeschichte und Pflanzengeographie 7: 478 (1886) = *Coeospermum salomoniense* (Engl.) J.T.Johanss., *Blumea* 33: 281 (1988).

20. *Morinda seibertii* (Standl.) Steyerl.

Memoirs of the New York Botanical Garden 23: 386 (1972) = *Appunia seibertii* Standl., *Annals Missouri Botanical Garden* 24: 208 (1937).

21. *Morinda sparsiflora* (Steyerl.) Steyerl.

Memoirs of the New York Botanical Garden 23: 385 (1972) = *Appunia sparsiflora* Steyerl., *Memoirs of the New York Botanical Garden* 17: 356 (1967).

22. *Morinda speciosa* Wall. ex Kurz

Forest Flora of Burma 2: 62 (1877) = *Rennellia speciosa* (Wall. ex Kurz) Hook.f., *Flora of British India* 3: 158 (1880).

23. *Morinda sumatrana* Miq.

Annales Musei Botanici Lugduno-Batavi 4: 213 (1869) = *Rennellia elliptica* Korth., *Nederlandsch Kruidkundig Archief* 2, 2: 257 (1851).

24. *Morinda surinamensis* (Bremek.) Steyerl.

Memoirs of the New York Botanical Garden 23: 386 (1972) = *Appunia surinamensis* (Bremek.) Steyerl., *Memoirs of the New York Botanical Garden* 17: 359 (1967) (based on *Bellynxia surinamensis* Bremek., *Recueil des Travaux botaniques néerlandais* 31: 276 (1934); other combination: *Cordia surinamensis* Miq. ex Bremek., *Recueil des Travaux botaniques néerlandais* 31: 276 [1934] nom. inval. pro. syn.).

25. *Morinda tenuiflora* (Benth.) Steyerl.

Memoirs of the New York Botanical Garden 23: 386 (1972) = *Appunia tenuiflora* (Benth.) B.D.Jacks., *Kew Index* 1: 166 (1893) (based on *Coffea tenuiflora* Benth., *Journal of Botany by William Jackson Hooker* 3: 232 (1841)).

26. *Morinda tribrachya* K.Schum.

Die Natürlichen Pflanzenfamilien 4(4): 138 (1891) = *Rennellia morindiformis* (Korth.) Ridl., *Bulletin of Miscellaneous Information, Royal Botanic Gardens, Kew* 1939: 609 (1940).

27. *Morinda triphylla* (Ducke) Steyerl.

Memoirs of the New York Botanical Garden 23: 386 (1972) = *Appunia triphylla* Ducke, *Notizblatt des Bota-*

nischen Gartens und Museums zu Berlin-Dahlem 11: 482 (1932; other combination: *Bellynckxia triphylla* (Ducke) Bremek., *Recueil des Travaux botaniques néerlandais* 31: 276 (1934)).

28. *Morinda volubilis* Merr.

Philippine Journal of Science, Section C, Botany 1 (Supplement 5): 137 (1906) = *Coelospermum volubile* (Merr.) J.T.Johanss., *Blumea* 33: 281 (1988).

29. *Morinda venezuelensis* (Steyerm.) Steyerm.

Memoirs of the New York Botanical Garden 23: 386 (1972) = *Appunia venezuelensis* Steyerm. *Memoirs of the New York Botanical Garden* 17: 356 (1967).

DUBIOUS SPECIES

1. *Morinda lastelliana* Baill. — *Adansonia* 12: 231 (1879).

Remarks

Examination of the type specimen of *M. lastelliana* (at P) shows that it probably represents a species of the genus rubiaceous *Danais* in the tribe Danaideae (A. P. Davis, pers. com.).

Genus *Siphonandrium* K.Schum.

Nachträge zur Flora der deutschen Schutzgebiete in der Südsee 394 (1905). — Type: *Siphonandrium intricatum* K.Schum.

DESCRIPTION

See Schumann & Lauterbach (1905).

NUMBER OF RECOGNIZED SPECIES

One species (see Appendix 1).

DISTRIBUTION

New Guinea.

Acknowledgements

We thank David Halford for informing us about the identity of *Morinda hypotephra*; Sachiko Nishida and Armand Randrianasolo for providing some Japanese

and Chinese literature; Martin Callmender for checking the presence of the type specimens of *Morinda cochinchinensis* DC and *Morinda parvifolia* Bartl. ex DC at G-DC and G herbaria; Martin Callmender and Nicolas Fumeaux for helping with the nomenclatural issues of *M. cochinchinensis*; Aaron Davis, Elmar Robbrecht, and Rafaël Govaerts for their invaluable comments on an early version of the paper; and the following herbaria for making scanned images of their type specimens of *Morinda* available online: A, BR, BM, F, K, L, MO, NY, P, U in L, US; S and UPS for allowing access to collections; and Dr. Neill Snow and BISH for providing scanned images.

REFERENCES

- AUBLET J. B. C. F. 1775. — *Histoire des plantes de la Guiane Française* 1. P.-F. Didot jeune, London & Paris, 392 p.
- BAILLON, H. E. 1879. — Sur l'*Imantina*. *Bulletin mensuel de la Société linnéenne de Paris* 1: 202-205.
- BLUME C. L. 1826-1827. — Rubiaceae. *Bijdragen tot de Flora van Nederlandsch Indië* 16: 913-1018.
- BLUME C. L. 1828. — *Enumeratio plantarum Javae et Insularum adjacentium minus cognitarum vel novarum*. Fasciculus II. Lugduni Batavorum, Leiden, v-viii.
- BREMEKAMP, C. E. B. 1934. — Notes on the Rubiaceae of Surinam. *Recueil des Travaux botaniques néerlandais* 31: 248-308.
- BREMEKAMP C. E. B. 1957. — Monographie du genre *Saldinia* A. Rich. (Rubiaceae). *Candollea* 16: 91-129.
- BRUMMITT R. K. & TAYLOR N. P. 1990. — To correct or not to correct? *Taxon* 39: 298-306.
- BURGER W. & TAYLOR C. M. 1993. — Family # 202 Rubiaceae, in BURGER W. (ed.), *Flora Costaricensis*. *Fieldiana Botany* 33: 1-333.
- CANDOLLE A. DE 1830. — *Prodomus Systematis Naturalis* IV. Treuttel et Würtz, Paris, 683 p.
- DELPRETE P. G. 2009. — Rubiaceae, in FEUILLET C. (ed.), Checklist of the plants of the Guianas Shield – 1. Update to the Angiosperms. *Journal of the Botanical Research Institute of Texas* 3: 809-813.
- DOMIN K. 1913. — Eighth contribution to the Flora of Australia. *Repertorium Specierum Novarum Regni Vegetabilis* 12: 388-390.
- DUCKE A. 1932. — Neue arten aus der *Hylaea Brasiliensis*. *Notizblatt des Botanischen Gartens und Museums zu Berlin-Dahlem* 11: 471-483.
- HALFORD D. A. & FORD A. J. 2009. — Two new species of *Morinda* L. (Rubiaceae) from north-east Queensland. *Austrobaileya* 8: 81-90.
- HIERN W. P. 1898. — *Catalogue of the African Plants col-*

- lected by Dr. Friedrich Welwitsch in 1853-61, Part 3. Longman and Co, London: 511-784.
- HOLMGREN P. K., HOLMGREN N. H. & BARNETT L. C. 1990. — *Index Herbariorum*. New York Botanical Garden, New York, 693 p.
- HOOKE W. J. 1841. — *Coffea calycina*. *Journal of Botany, British and Foreign* 3: 232.
- HOOKE J. D. 1880. — *The Flora of British India* 3L. Reeve and Co., London, 610 p.
- HITCHCOCK A. S. 1929. — Proposal by Hitchcock A. S. (Washington) and Green M. L. (Kew) - Standard-species of Linnean genera of Phanerogamae (1753-54), in RAMSBOTTOM J., SPRAGUE T. A., WILLMOTT A. J. & WAKEFIELD E. M. (eds), *International Botanical Congress, Cambridge, 1930, Nomenclature: Proposal by British Botanist*. Wyman & Sons, London: 110-199.
- JACKSON B. D. 1893. — *Appunia tenuiflora* (Benth.) B.D.Jacks. *Index Kewensis* 1: 166.
- JOHANSSON J. T. 1987. — Revision of the genus *Prismatomeris* Thw. (Rubiaceae, Morindeae). *Opera Botanica* 94: 1-62.
- JOHANSSON J. T. 1988. — Revision of the genus *Caelospermum* Blume (Rubiaceae, Rubioideae, Morindeae). *Blumea* 33: 265-297.
- JOHANSSON J. T. 1994. — The genus *Morinda* (Morindeae, Rubioideae, Rubiaceae) in New Caledonia: Taxonomy and phylogeny. *Opera Botanica* 122: 5-67.
- KORTHALS P. W. 1851. — Overzicht der Rubiaceën van de Nederlandschoostindische Kolonien. *Nederlandsch Kruidkundig Archief* 2: 255-257.
- KRAUSE K. 1908. — *Olostyla nigrescens* K.Krause. *Botanische Jahrbücher für Systematik, Pflanzengeschichte und Pflanzengeographie* 40: 39.
- KRAUSE K. 1914. — Rubiaceae. Notizblatt des Botanischen Gartens und Museums zu Berlin-Dahlem 6: 200-212.
- KUTZ W. S. 1877. — *Forest flora of British Burma* 2. Office of the Superintendent of Government Printing, Calcutta, 1162 p.
- LÉVEILLÉ A. A. H. 1914-1915. — Flore du Kouy-Tchéou. Le Mans, 532 p.
- MCCNEILL J., BARRIE F. R., BURDET H. M., DEMOULIN V., HAWKSWORTH D. L., MARHOLD K., NICOLSON D. H., SILVA P. C., SKOG J. E., WIERSEMA J. H. & TURLAND N. J. 2006. — International Code of Botanical Nomenclature 2006 (Vienna Code): adopted by the Seventeenth International Botanical Congress, Vienna, Austria, July 2005. *Regnum Vegetabile* 146. 1-568.
- MIQUEL F. A. G. 1867. — *Coelospermum gmelinii* Miq. *Annals Musei Botanici Lugduno-Batavi* 3: 62.
- PUFF C., GREIMLER J. & BUCHNER R. 1998. — Revision of *Schradera* (Rubiaceae-Schradereae) in Malesia. *Blumea* 43: 287-335.
- RAZAFIMANDIMBISON S. G., MCDOWELL T. D., HALFORD D. A. & BREMER B. 2009. — Molecular phylogenetics and genetic assessment in the tribe Morindeae (Rubiaceae-Rubioideae): How to circumscribe *Morinda* L. to be monophyletic? *Molecular Phylogenetics and Evolution* 52: 879-886.
- RAZAFIMANDIMBISON S. G., RYDIN C. & BREMER B. 2008. — Evolution and trends in the Psychotriaceae alliance (Rubiaceae): a rarely reported evolutionary change of many-seeded carpels from one-seeded carpels. *Molecular Phylogenetics and Evolution* 48: 207-223.
- RIDLEY N. H. 1930. — Notes on some Malayan Rubiaceae. Morindeae. *Bulletin of Miscellaneous Information*, Royal Botanic Gardens, Kew 9: 600-611.
- SANDWITH N. Y. 1931. — Contribution to the Flora of tropical America: VIII. *Bulletin of Miscellaneous Information*, Royal Botanic Gardens, Kew 10: 467-492.
- SCHUMANN K. 1891. — Rubiaceae, in ENGLER A. & PRANTL K. (eds). *Die natürlichen Pflanzenfamilien* vol. IV(4). W. Engelmann, Leipzig: 1-156.
- SCHUMANN K. & LAUTERBACH K. 1905. — *Nachträge zur Flora der Deutschen Schutzgebiete in der Südsee*. Gebrüder Borntraeger, Leipzig, 446 p.
- SETCHELL W. A. & CHRISTOPHERSEN E. 1935. — Preliminary notes on *Sarcopygme*, a new rubiaceous genus from Samoa. *Occasional Papers of Bernice Pauahi Bishop Museum of Polynesian Ethnology and Natural History* 11: 3-5.
- SPANOGHE J. B. 1841. — *Prodromus florum timorensis*. *Linnaea* 15: 318.
- STAFLEU F. A. & COWAN R. S. 1986. — Taxonomic literature. A selective guide to botanical publications and collections with dates, commentaries and types. 2nd ed., 6 (Sti-Vuy). *Regnum Vegetabile* 115: 1-926.
- STANDLEY P. C. & STEYERMARK J. A. 1943. — Study of Central America Plants. III. *Field Museum of Natural History, Botanical Series* 23: 24.
- STEYERMARK J. A. 1967. — Rubiaceae, in MAGUIRE B. & COLLABORATORS (eds), The botany of the Guayana Highland. *Memoirs of the New York Botanical Garden* 17: 1-439.
- STEYERMARK, J. A. 1972. — Rubiaceae, in MAGUIRE B. & COLLABORATORS (eds), The botany of the Guayana Highland – Part IX. *Memoirs of the New York Botanical Garden* 23: 227-832.
- VALETON, T. 1927. — Die Rubiaceae von Papuasien 2. Coffeoideae, in LAUTERBACH K. (ed.), Beiträge zur Flora von Papuasien 14. *Botanische Jahrbücher für Systematik, Pflanzengeschichte und Pflanzengeographie* 61: 32-163.
- VERDCOURT B. 1975. — Studies in the Rubiaceae-Rubioideae for the flora of tropical East Africa. *Kew Bulletin* 30: 247-326.
- WHIFFIN T. & FOREMAN D. B. 2007. — Monimiaceae. *Flora of Australia* 2. Australian Biological Resources Study/CSIRO Publishing, 486 p.

Submitted on 29 October 2009;
accepted on 17 February 2011.

APPENDIX 1

Index of names associated with *Appunia*, *Coelospermum*, *Gynochthodes*, *Morinda*, and *Siphonandrium*. **1**, new names; **bold**, type species.

Species recognized in this study	Homotypic synonyms	Heterotypic synonyms
<i>Appunia angulata</i> (Benth.) Baill.	<i>Ixora angulata</i> Benth.; <i>Bellynkxia angulata</i> (Benth.) Müll.Arg.	
<i>Appunia aurantiaca</i> (K.Krause) Sandwith	<i>Rudgea aurantiaca</i> K.Krause; <i>Morinda aurantiaca</i> (K.Krause) Steyerem.	
<i>Appunia brachycalyx</i> (Bremek.) Steyerem.	<i>Bellynkxia brachycalyx</i> Bremek.; <i>Morinda brachycalyx</i> (Bremek.) Steyerem.	
<i>Appunia calycina</i> (Benth) Sandwith	<i>Coffea calycina</i> Benth.; <i>Bellynkxia calycina</i> (Benth.) Bremek.; <i>Morinda calycina</i> (Benth.) Steyerem.	
<i>Appunia debilis</i> Sandwith	<i>Morinda debilis</i> (Sandwith) Steyerem.	
<i>Appunia guatemalensis</i> Donn.Sm.	<i>Morinda guatemalensis</i> (Donn.Sm.) Steyerem.	
<i>Appunia longipedunculata</i> (Steyerem.) Delprete	<i>Morinda longipedunculata</i> Steyerem.	
<i>Appunia megalantha</i> C.M.Taylor & Lorence		
<i>Appunia odontocalyx</i> Sandwith	<i>Bellynkxia odontocalyx</i> (Sandwith) Bremek.; <i>Morinda odontocalyx</i> (Sandwith) Steyerem.	
<i>Appunia peduncularis</i> (Kunth) Delprete	<i>Morinda peduncularis</i> Kunth	
<i>Appunia siebertii</i> Standl.	<i>Morinda siebertii</i> (Standl.) Steyerem.	
<i>Appunia surinamensis</i> (Bremek.) Steyerem.	<i>Bellynkxia surinamensis</i> Bremek.; <i>Morinda surinamensis</i> (Bremek.) Steyerem.; <i>Cordia surinamensis</i> Miq. ex Bremek.	
<i>Appunia tenuiflora</i> (Benth.) B.D.Jacks.	<i>Coffea tenuiflora</i> Benth.; <i>Morinda tenuiflora</i> (Benth.) Steyerem.	<i>Appunia longiloba</i> Steyerem.; <i>Morinda longiloba</i> (Steyerem.)Steyerem.; <i>Appunia sparsiflora</i> Steyerem.; <i>Morinda sparsiflora</i> (Steyerem.)Steyerem.
<i>Appunia triphylla</i> Ducke	<i>Bellynkxia triphylla</i> (Ducke) Bremek.; <i>Morinda triphylla</i> (Ducke) Steyerem.	
<i>Appunia venezuelensis</i> Steyerem.	<i>Morinda venezuelensis</i> (Steyerem.) Steyerem.	
<i>Coelospermum balansanum</i> Baill.		<i>Stylocorina corymbosa</i> Labill.; <i>Olostyla corymbosa</i> (Labill.) DC.; <i>C. corymbosum</i> (Labill.) Baill. ex K.Schum.; <i>C. billardieri</i> Däniker; <i>Merismostigma neocaledonicum</i> Moore
<i>Coelospermum crassifolium</i> J.T.Johanss.		
<i>Coelospermum dasylobium</i> Halford & A.J.Ford		
<i>Coelospermum decipiens</i> Baill.	<i>Morinda reticulata</i> Benth.	
<i>Coelospermum monticolum</i> Baill. ex Guillaumin		
<i>Coelospermum paniculatum</i> F.Muell.		
<i>Coelospermum purpureum</i> Halford & A.J.Ford		

APPENDIX 1 – Continuation.

Species recognized in this study	Homotypic synonyms	Heterotypic synonyms
<i>Coelospermum reticulatus</i> (F.Muell.) Benth.	<i>Pogonolobus reticulatus</i> F.Muell.	
<i>Coelospermum salomoniense</i> (Engl.) J.T.Johanss.	<i>Morinda salomoniensis</i> Engl.	<i>Morinda volubilis</i> auct. non Merrill
<i>Coelospermum truncatum</i> (Wall.) Baill. ex K.Schum.	<i>Cupia truncata</i> (Wall.) DC.; <i>Diplospora truncata</i> (Wall.) Steud.; <i>Pseudixora truncata</i> (Wall.) Miq.; <i>Trisciadia truncata</i> (Wall.) Hook.f.	<i>Coelospermum scandens</i> Blume; <i>C. corymbosum</i> Blume ex DC.; <i>C. morindiforme</i> Pierre ex Pitard; <i>C. acuminatum</i> Geddes; <i>C. luteum</i> Geddes; <i>C. kanehirae</i> Merr.
<i>Coelospermum volubile</i> (Merr.) J.T.Johanss.	<i>Morinda volubile</i> Merr.	
<i>Gynochthodes alexandroi</i> Razafim. & B.Bremer ¹	<i>Morinda philippinensis</i> Elmer	
<i>Gynochthodes ammitia</i> (Halford & A.J.Ford) Razafim. & B.Bremer	<i>Morinda ammitia</i> Halford & A.J.Ford	
<i>Gynochthodes artensis</i> (Montrouz.) Razafim. & B.Bremer	<i>Morinda artensis</i> Montrouz.	
<i>Gynochthodes australensis</i> J.T.Johanss.		
<i>Gynochthodes badia</i> (Y.Z.Ruan) Razafim. & B.Bremer	<i>Morinda badia</i> Y.Z.Ruan	
<i>Gynochthodes bartlingii</i> (Elmer) Razafim. & B.Bremer	<i>Morinda bartlingii</i> Elmer	
<i>Gynochthodes billardierei</i> (Baill.) Razafim. & B.Bremer	<i>Morinda billardierei</i> Baill.	
<i>Gynochthodes brevipes</i> (S.Y.Hu.) Razafim. & B.Bremer	<i>Morinda brevipes</i> S.Y.Hu	
<i>Gynochthodes bucidifolia</i> (A.Gray) Razafim. & B.Bremer	<i>Morinda bucidifolia</i> A.Gray; <i>Morinda umbellata</i> L. var. <i>bucidifolia</i> (A.Gray) Forsberg	
<i>Gynochthodes calciphila</i> (K.M.Wong) Razafim. & B.Bremer	<i>Morinda calciphila</i> K.M.Wong	
<i>Gynochthodes callicarpifolia</i> (Y.Z.Ruan) Razafim. & B.Bremer	<i>Morinda callicarpifolia</i> Y.Z.Ruan	
<i>Gynochthodes candollei</i> (Montrouz.) Razafim. & B.Bremer	<i>Pogonanthus candollei</i> Montrouz.; <i>Morinda candollei</i> (Montrouz.) Beauvis.	<i>Morinda pulchella</i> Schltr.; <i>Morinda candollei</i> Montrouz. var. <i>subvillosa</i> Guillaumin; <i>Morinda candollei</i> (Montrouz.) Beauvis. var. <i>angustifolia</i> Guillaumin
<i>Gynochthodes canthoides</i> (F.Muell.) Razafim. & B.Bremer	<i>Coprosma canthoides</i> F.Muell.; <i>Coprosma acutifolia</i> F.Muell. ex Benth.; <i>Morinda acutifolia</i> F.Muell.; <i>Morinda canthoides</i> (F.Muell.) Halford & R.J.F.Hend	
<i>Gynochthodes celebica</i> (Miq.) Razafim. & B.Bremer	<i>Morinda celebica</i> Miq.	
<i>Gynochthodes cinnamomea</i> (Craib) Razafim. & B.Bremer	<i>Morinda cinnamomea</i> Craib	
<i>Gynochthodes cinnamomifoliata</i> (Y.Z.Ruan) Razafim. & B.Bremer	<i>Morinda cinnamomifoliata</i> Y.Z.Ruan	
<i>Gynochthodes citrina</i> (Y.Z.Ruan) Razafim. & B.Bremer	<i>Morinda citrina</i> Y.Z.Ruan	<i>Morinda citrina</i> Y.Z.Ruan var. <i>chlorina</i> Y.Z.Ruan
<i>Gynochthodes cochinchinensis</i> (DC.) Razafim. & B.Bremer	<i>Morinda cochinchinensis</i> DC.	<i>Morinda trichophylla</i> Merr.

APPENDIX 1 – Continuation.

Species recognized in this study	Homotypic synonyms	Heterotypic synonyms
<i>Gynochthodes collina</i> (Schltr.) Razafim. & B.Bremer	<i>Morinda collina</i> Schltr.	<i>Morinda elongata</i> Schltr.
<i>Gynochthodes constipata</i> (Halford & A.J.Ford) Razafim. & B.Bremer	<i>Morinda constipata</i> Halford & A.J.Ford	
<i>Gynochthodes coriacea</i> Blume		
<i>Gynochthodes costata</i> (Merr. & L.M.Perry) Razafim. & B.Bremer	<i>Morinda costata</i> Merr. & L.M.Perry	
<i>Gynochthodes decipiens</i> (Schltr.) Razafim. & B.Bremer	<i>Morinda decipiens</i> Schltr.	
<i>Gynochthodes deplanchei</i> (Hook.f.) Razafim. & B.Bremer	<i>Imantina deplanchei</i> Hook.f.; <i>Morinda deplanchei</i> (Hook.f.) Baill.	<i>Morinda gatopensis</i> Guillaumin; <i>Morinda podocarpifolia</i> Guillaumin; <i>Morinda alyxioides</i> Guillaumin
<i>Gynochthodes elliptifolia</i> (Quisumb. & Merr.) Razafim. & B.Bremer	<i>Morinda elliptifolia</i> Quisumb. & Merr.	
<i>Gynochthodes elmeri</i> (Merr.) Razafim. & B.Bremer	<i>Morinda elmeri</i> Merr.	
<i>Gynochthodes epiphytica</i> (Rech.) A.C.Sm. & S.P.Darwin	<i>Plectronia epiphytica</i> Rech.	<i>Gynochthodes ovalifolia</i> (Valeton) Kaneh.; <i>G. trukensis</i> Hosok.
<i>Gynochthodes gjellerupii</i> (Valeton) Razafim. & B.Bremer	<i>Morinda gjellerupii</i> Valeton	
<i>Gynochthodes glaucescens</i> (Schltr.) Razafim. & B.Bremer	<i>Morinda glaucescens</i> Schltr.	<i>Morinda schumanniana</i> Schltr.
<i>Gynochthodes glomerata</i> (Blume) Razafim. & B.Bremer	<i>Sphaerophora glomerata</i> Blume; <i>Morinda glomerata</i> (Blume) Miq.	<i>Sphaerophora gemella</i> Blume; <i>Morinda gemella</i> (Blume) Miq.
<i>Gynochthodes grayi</i> (Seem.) Razafim. & B.Bremer	<i>Morinda grayi</i> Seem.	
<i>Gynochthodes hainanensis</i> (Merr. & F.C.How) Razafim. & B.Bremer	<i>Morinda hainanensis</i> Merr. & F.C.How	
<i>Gynochthodes hirtella</i> (Merr. & L.M.Perry) Razafim. & B.Bremer	<i>Morinda hirtella</i> Merr. & L.M.Perry	
<i>Gynochthodes hispida</i> (K.M.Wong) Razafim. & B.Bremer	<i>Morinda hispida</i> K.M.Wong	
<i>Gynochthodes hollrungiana</i> (Valeton) Razafim. & B.Bremer	<i>Morinda hollrungiana</i> Valeton	
<i>Gynochthodes howiana</i> (S.Y.Hu) Razafim. & B.Bremer	<i>Morinda howiana</i> S.Y.Hu	
<i>Gynochthodes hupehensis</i> (S.Y.Hu) Razafim. & B.Bremer	<i>Morinda hupehensis</i> S.Y.Hu	
<i>Gynochthodes jackiana</i> (Korth.) Razafim. & B.Bremer	<i>Morinda jackiana</i> Korth.	
<i>Gynochthodes jasminoides</i> (A.Cunn.) Razafim. & B.Bremer	<i>Morinda jasminoides</i> A.Cunn.	
<i>Gynochthodes kanalensis</i> (Baill. ex Guillaumin) Razafim. & B.Bremer	<i>Morinda kanalensis</i> Baill. ex Guillaumin	
<i>Gynochthodes lacunosa</i> (King & Gamble) Razafim. & B.Bremer	<i>Morinda lacunosa</i> King & Gamble	
<i>Gynochthodes lenticellata</i> (C.B.Rob.) Merr.	<i>Tetralopha lenticellata</i> C.B.Rob.	
<i>Gynochthodes leparensis</i> (Valeton) Razafim. & B.Bremer	<i>Morinda leparensis</i> Valeton	
<i>Gynochthodes leptocalama</i> (Wernham) Razafim. & B.Bremer	<i>Morinda leptocalama</i> Wernham	
<i>Gynochthodes litseifolia</i> (Y.Z.Ruan) Razafim. & B.Bremer	<i>Morinda litseifolia</i> Y.Z.Ruan.	

APPENDIX 1 – Continuation.

Species recognized in this study	Homotypic synonyms	Heterotypic synonyms
<i>Gynochthodes macrophylla</i> Kurz		
<i>Gynochthodes micrantha</i> (Valeton) Razafim. & B.Bremer	<i>Morinda micrantha</i> Valeton	
<i>Gynochthodes microcephala</i> (Bartl. ex DC.) Razafim. & B.Bremer	<i>Morinda microcephala</i> Bartl. ex DC.	
<i>Gynochthodes mindanaensis</i> Merr. <i>Gynochthodes mollis</i> (A.Gray) Razafim. & B.Bremer	<i>Morinda mollis</i> A.Gray	<i>Morinda candollei</i> Montrouz. var. <i>villosa</i> Guillaumin
<i>Gynochthodes montana</i> (J.T.Johanss.) Razafim. & B.Bremer	<i>Morinda montana</i> J.T.Johanss.	
<i>Gynochthodes myrtifolia</i> (A.Gray) Razafim. & B.Bremer	<i>Morinda myrtifolia</i> A.Gray; <i>M.</i> <i>myrtifolia</i> A.Gray var. <i>myrtifolia</i> J.T.Johanss.	<i>Morinda forsteri</i> Seem.; <i>M. choriophylla</i> Baill.; <i>M. myrtifolia</i> A.Gray var. <i>choriophylla</i> (Baill.) J.T.Johanss.; <i>M. glandulosa</i> Merr.; <i>M. velutina</i> Guillaumin; <i>M. forsteri</i> Seem. subsp. <i>guillauminii</i> Däniker; <i>M. myrtifolia</i> A.Gray var. <i>brevifolia</i> J.T.Johanss.
<i>Gynochthodes nanlingensis</i> (Y.Z.Ruan) Razafim. & B.Bremer	<i>Morinda nanlingensis</i> Y.Z.Ruan	<i>Morinda nanlingensis</i> Y.Z.Ruan var. <i>pauciflora</i> Y.Z.Ruan; <i>M. nanlingensis</i> Y.Z.Ruan var. <i>pilophora</i> Y.Z.Ruan
<i>Gynochthodes neocaledonica</i> (S.Moore) Razafim. & B.Bremer	<i>Lucinaea neocaledonica</i> S.Moore; <i>Morinda neocaledonica</i> (S.Moore) Guillaumin	
<i>Gynochthodes nigra</i> (Merr.) Merr. <i>Gynochthodes nitida</i> (Merr.) Razafim. & B.Bremer	<i>Tetralopha nigra</i> Merr. <i>Morinda nitida</i> Merr.	
<i>Gynochthodes oblongifolia</i> (Valeton) Razafim. & B.Bremer	<i>Morinda oblongifolia</i> Valeton	
<i>Gynochthodes officinalis</i> (F.C.How) Razafim. & B.Bremer	<i>Morinda officinalis</i> F.C.How	<i>Morinda officinalis</i> var. <i>hirsuta</i> F.C.How
<i>Gynochthodes oligantha</i> Merr. <i>Gynochthodes oligocephala</i> (Merr. & L.M.Perry) Razafim. & B.Bremer	<i>Morinda oligocephala</i> Merr. & L.M.Perry	
<i>Gynochthodes oresbia</i> Halford & A.J.Ford		
<i>Gynochthodes parvifolia</i> (Bartl. ex DC.) Razafim. & B.Bremer	<i>Morinda parvifolia</i> Bartl. ex DC.	<i>Morinda cumingiana</i> S.Vidal
<i>Gynochthodes philippinensis</i> (Elmer) Merr.	<i>Tetralopha philippinensis</i> Elmer	
<i>Gynochthodes phyllireoides</i> (Labill.) Razafim. & B.Bremer	<i>Morinda phyllireoides</i> Labill.	<i>Morinda vieillardii</i> Baill.; <i>Morinda fallax</i> Schltr.; <i>Morinda ligustrina</i> S.Moore
<i>Gynochthodes platyphylla</i> (Merr.) Razafim. & B.Bremer	<i>Morinda platyphylla</i> Merr.	
<i>Gynochthodes podistra</i> (Halford & A.J.Ford) Razafim. & B.Bremer	<i>Morinda podistra</i> Halford & A.J.Ford	
<i>Gynochthodes pollilensis</i> (C.B.Rob.) Ruhsam	<i>Tetralopha pollilensis</i> C.B.Rob.	
<i>Gynochthodes polyneura</i> (Miq.) Razafim. & B.Bremer	<i>Morinda polyneura</i> Miq.	
<i>Gynochthodes proboscidea</i> Pierre ex. Pit.		
<i>Gynochthodes puberula</i> Craib		
<i>Gynochthodes pubifolia</i> Merr.		

APPENDIX 1 – Continuation.

Species recognized in this study	Homotypic synonyms	Heterotypic synonyms
<i>Gynochthodes pubiofficialis</i> (Y.Z.Ruan) Razafim. & B.Bremer	<i>Morinda pubiofficialis</i> Y.Z.Ruan	
<i>Gynochthodes reticulata</i> (Valeton) Razafim. & B.Bremer	<i>Lucinaea reticulata</i> Valeton; <i>Morinda reticulata</i> (Valeton) Valeton	
<i>Gynochthodes retropila</i> (Halford & A.J.Ford) Razafim. & B.Bremer	<i>Morinda retropila</i> Halford & A.J.Ford	
<i>Gynochthodes retusa</i> (Poir.) Razafim. & B.Bremer	<i>Morinda retusa</i> Poir.	
<i>Gynochthodes ridleyi</i> (King & Gamble) Razafim. & B.Bremer	<i>Morinda umbellata</i> L. var. <i>ridleyi</i> King & Gamble; <i>Morinda ridleyi</i> King & Gamble	
<i>Gynochthodes ridsdalei</i> Razafim. & B.Bremer ¹	<i>Morinda reticulata</i> Gamble	
<i>Gynochthodes rigida</i> (Miq.) Razafim. & B.Bremer	<i>Morinda rigida</i> Miq.	
<i>Gynochthodes rugulosa</i> (Y.Z.Ruan) B.Bremer	<i>Morinda rugulosa</i> Y.Z.Ruan	
<i>Gynochthodes sarmentosa</i> (Blume) Razafim. & B.Bremer	<i>Morinda sarmentosa</i> Blume	<i>Morinda sarmentosa</i> Blume var. <i>puberula</i> Miq.
<i>Gynochthodes scabrifolia</i> (Y.Z.Ruan) Razafim. & B.Bremer	<i>Morinda scabrifolia</i> Y.Z.Ruan	
<i>Gynochthodes sessilis</i> Halford		
<i>Gynochthodes shuanghuaensis</i> (C.Y.Chen & M.S.Huang) Razafim. & B.Bremer	<i>Morinda shuanghuaensis</i> C.Y.Chen & M.S.Huang	
<i>Gynochthodes subcaudata</i> (Valeton) Razafim. & B.Bremer	<i>Morinda subcaudata</i> Valeton	
<i>Gynochthodes sublaceolata</i> Miq.		<i>Gynochthodes tetrandra</i> Kuntze
<i>Gynochthodes triandra</i> (S.Moore) Razafim. & B.Bremer	<i>Morinda triandra</i> S.Moore	
<i>Gynochthodes trimera</i> (Hillebr.) Razafim. & B.Bremer	<i>Morinda trimera</i> Hillebr.	<i>Morinda sandwicensis</i> O.Deg.; <i>M. lainaiensis</i> H.St.John; <i>M. sandwicensis</i> O.Deg. var. <i>glabrata</i> O.Deg.; <i>M. sandwicensis</i> O.Deg. var. <i>hosakae</i> H.St.John; <i>M. sandwicensis</i> O.Deg. var. <i>sandwicensis</i> ; <i>M. waikapuensis</i> H.St.John
<i>Gynochthodes truncata</i> (J.T. Johanss.) Razafim. & B.Bremer	<i>Morinda truncata</i> J.T.Johanss.	
<i>Gynochthodes umbellata</i> (L.) Razafim. & B.Bremer	<i>Morinda umbellata</i> L.	<i>Morinda padavara</i> Juss. ex Schult.; <i>M. scandens</i> Roxb.; <i>M. umbellata</i> L. var. <i>scortechinii</i> King & Gamble; <i>M. umbellata</i> L. var. <i>tonkinensis</i> Pit.; <i>M. umbellata</i> L. var. <i>acuminatissima</i> Valeton; <i>M. boninensis</i> Ohwi; <i>M. umbellata</i> L. var. <i>archboldiana</i> Fosberg; <i>M. umbellata</i> L. var. <i>bucidifolia</i> (A.Gray) Forsberg; <i>M. umbellata</i> L. var. <i>forsteri</i> Seem.; <i>M. umbellata</i> L. var. <i>hahazimensis</i> T.Yamaz.; <i>M. umbellata</i> L. var. <i>obovata</i> Y.Z.Ruan
<i>Gynochthodes verticillata</i> (Valeton) Hosok		

APPENDIX 1 – Continuation.

Species recognized in this study	Homotypic synonyms	Heterotypic synonyms
<i>Gynochthodes villosa</i> (Hook.f.) Razafim. & B.Bremer	<i>Morinda villosa</i> Hook.f.	
<i>Gynochthodes wallichii</i> (Kurz) Razafim. & B.Bremer	<i>Morinda wallichii</i> Kurz	
<i>Gynochthodes wongii</i> Razafim. & B.Bremer ¹	<i>Morinda coriacea</i> Merr.	
<i>Morinda angolensis</i> (R.D.Good) F.White	<i>Appunettia angolensis</i> R.D.Good	
<i>Morinda angustifolia</i> Roxb. <i>Morinda asteroscepa</i> K.Schum. <i>Morinda buchii</i> Urb. <i>Morinda citrifolia</i> L.		<i>Morinda squarrosa</i> Buch.-Ham. <i>Morinda aspera</i> Wight & Am.; <i>M. asperula</i> Standl.; <i>M. bracteata</i> (Roxb.) Kurz; <i>M. chachuca</i> Buch.-Ham.; <i>M. ligulata</i> Blanco; <i>M. littoralis</i> Blanco; <i>M. macrophylla</i> Desf.; <i>M. mudia</i> Buch.-Ham.; <i>M. multiflora</i> Roxb.; <i>M. nodosa</i> Buch.-Ham.; <i>M. quadrangularis</i> G.Don; <i>M. stenophylla</i> Spreng.; <i>M. teysmanniana</i> Noronha; <i>M. tinctoria</i> Noronha; <i>M. zollingeriana</i> Miq. <i>Morinda exserta</i> Roxb.; <i>M. tinctoria</i> Roxb.
<i>Morinda coreia</i> Buch.-Ham.		
<i>Morinda corneri</i> K.M.Wong <i>Morinda elliptica</i> (Hook.f.) Ridl.	<i>Morinda citrifolia</i> L. var. <i>elliptica</i> Hook.f.	
<i>Morinda fasciculata</i> Benth. <i>Morinda geminata</i> DC.		<i>Morinda batesii</i> Wernham, <i>M. chrysorhiza</i> (Thonn.) DC.
<i>Morinda hoffmannioides</i> Standl. <i>Morinda intermedia</i> (Setch. & Christoph.) Razafim. & B.Bremer <i>Morinda latibracteata</i> Valetton <i>Morinda laxa</i> DC. <i>Morinda leiantha</i> Kurz <i>Morinda longiflora</i> G.Don <i>Morinda longifolia</i> Craib <i>Morinda longissima</i> Y.Z.Ruan <i>Morinda lucida</i> Benth. <i>Morinda mayorii</i> (Setch.) Razafim. & B.Bremer	<i>Sarcopygme intermedia</i> Setch. & Christoph.	<i>Morinda citrifolia</i> sensu Hiern (1898)
<i>Morinda moaensis</i> Alain <i>Morinda morindoides</i> (Baker) Milne-Redh. <i>Morinda multinervis</i> (Setch. & Christoph.) Razafim. & B.Bremer <i>Morinda nana</i> Craib <i>Morinda pacifica</i> (Reinecke) Razafim. & B.Bremer	<i>Breonia</i> (?) <i>mayorii</i> Setch.; <i>Sarcopygme mayorii</i> (Setch.) Setch. & Christoph.	<i>Morinda confusa</i> Huch.
<i>Morinda panamensis</i> Seem. <i>Morinda pandurifolia</i> Kuntze	<i>Sarcocephalus pacificus</i> Reinecke; <i>Sarcopygme pacifica</i> (Reinecke) Setch. & Christoph.	

APPENDIX 1 – Continuation.

Species recognized in this study	Homotypic synonyms	Heterotypic synonyms
<i>Morinda pedunculata</i> Valetton		
<i>Morinda persicifolia</i> Buch.-Ham.		<i>Morinda lanceolata</i> Wall.; <i>M. talmyi</i> Pierre ex Pit.
<i>Morinda pumila</i> Craib		
<i>Morinda ramosa</i> (Lauterb.) Razafim. & B.Bremer	<i>Sarcocephalus ramosus</i> Lauterb.; <i>Sarcopygme ramosa</i> (Lauterb.) Setch. & Christoph.	
<i>Morinda rosiflora</i> Y.Z.Ruan		
<i>Morinda royoc</i> L.		<i>Morinda ferruginea</i> A.Rich.; <i>M. yucatanensis</i> Greenm.
<i>Morinda scabrida</i> Craib		
<i>Morinda sessiliflora</i> Bertol.		
<i>Morinda titanophylla</i> E.M.A.Petit		
<i>Morinda tomentosa</i> B.Heine ex Roth		
<i>Morinda turbacensis</i> Kunth		
<i>Morinda undulata</i> Y.Z.Ruan		
<i>Siphonandrium intricatum</i> K.Schum.		