

The Anacardiaceae of Peninsular Malaysia: Notes on *Mangifera* and typifications in several genera

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ABSTRACT. A discussion is given of the doubtful presence in Peninsular Malaysia of several species of *Mangifera* L. that were considered by Kostermans & Bompard (1993) to occur there. In addition, 43 names in several genera of the Anacardiaceae that do grow in Peninsular Malaysia are lectotypified, and one name, *Camposperma coriaceum* Jack, is neotypified.

Keywords. *Buchanania*, *Camposperma*, *Dracontomelon*, *Drimycarpus*, *Gluta*, *Mangifera*, *Melanochyla*, *Parishia*, *Pentaspadon*, *Semecarpus*, *Swintonia*, *Toxicodendron*

Introduction

The genera and species of the Anacardiaceae (mango family) have recently been revised for the *Flora of Peninsular Malaysia*. This revision recognises 16 native genera and one that is introduced, with a total of 74 taxa (including four varieties), of which 62 (including three varieties) are native, and eight species (including one variety) are endemic. Four introduced species are naturalised in Peninsular Malaysia: the cashew nut (*Anacardium occidentale* L.) was introduced for cultivation and is now naturalised in many places, while three species with edible fruits, *Mangifera indica* L., *M. × odorata* Griff. and *Spondias dulcis* Parkinson, are known from cultivation and have occasionally become naturalised.

This work is based mainly on herbarium collections made in Peninsular Malaysia that are now housed at the Natural History Museum, London (BM), the Royal Botanic Gardens, Kew (K and K-W), and the Forest Research Institute of Malaysia (KEP). Type materials not available at those institutions were studied online via JSTOR Global Plants (<https://plants.jstor.org/plants>), the Linnean Herbarium (<https://linnean.access.preservica.com>) or at the Indian Virtual Herbarium (<https://ivh.bsi.gov.in>) and accessed in June 2025. Barcode information is given for all specimens where available and placed in square brackets both in the taxonomic citations and in the text.

Species of *Mangifera* reported from Peninsular Malaysia but whose presence is doubtful

Kostermans & Bompard (1993), in their worldwide revision of *Mangifera* L., recorded a number of species as occurring in Peninsular Malaysia, but whose presence I have

not been able to confirm. These records are usually based on only one or a few sterile specimens and refer to the following species: *Mangifera applanata* Kosterm., *M. blommesteinii* Kosterm., *M. bullata* Kosterm., *M. paludosa* Kosterm. ex S.K.Ganesan, *M. parvifolia* Boerl. & Koord.-Schum., *M. rufocostata* Kosterm. and *M. torquenda* Kosterm. In his checklist of Peninsular Malaysia, Turner (1997: 104) only cursorily mentions these names without any comments.

For most species of *Mangifera*, the variation of the leaves on a single specimen was found to be considerable in this study, and Kochummen (1989: 35) reported a similar variation in leaf venation. It is therefore often challenging to identify a sterile specimen belonging to this genus and sometimes even a fruiting one with any degree of certainty, without detailed label data. When collecting fruiting material, it is therefore essential for identification purposes to make notes on the colour of the exudate and how or if it changes on exposure to air, and to record the colour of both the fruit skin and pulp, and the smell and taste of the mature fruit (for instance, the fruit of *Mangifera* × *odorata* has yellow and fibrous pulp whereas the fruit of *M. orophila* Kosterm. has whitish pulp with few fibres).

Mangifera applanata is known from Sumatra and Borneo and was also recorded from Taman Negara in Pahang based on a single sterile specimen, *Bompard 821* (Pahang, Taman Negara, Jerantut, 25 May 1987, KEP, no barcode). In their account, Kostermans & Bompard (1993) said that in its sterile state, this species is difficult to distinguish from *Mangifera laurina* Blume, apart from its thinner leaves and denser tertiary reticulate veins, and can be distinguished from *M. indica* only by its denser tertiary reticulate veins. Kostermans & Bompard (1993: 66) also wrote that this species may be a synonym of *Mangifera maingayi* Hook.f. (= *M. quadrifida* Jack). Based on its overall appearance, the specimen *Bompard 821* has now been identified as *Mangifera laurina*.

The Bornean species *Mangifera blommesteinii* was recorded from Peninsular Malaysia based on a single sterile specimen (*KEP 28502*, KEP) from Rotan Tunggal Forest Reserve in Pahang (Kostermans & Bompard, 1993: 146). According to Kostermans & Bompard (1993: 146, 181), this species differs from *Mangifera subsessilifolia* Kosterm. only by having a longer and less swollen petiole (*M. blommesteinii*: petiole 5–20 mm long with the base slightly thickened; *M. subsessilifolia*: petioles 5–25 mm long and swollen at the base). The specimen *KEP 28502* has petioles which vary between 5–10 mm long and they are swollen at the base, and so it is now identified as *M. subsessilifolia*.

Mangifera bullata is known from Sumatra and possibly Borneo and was recorded from Peninsular Malaysia based on a single sterile specimen (*Whitmore FRI 12680*, KEP) from the upper montane forests along Ulu Brang in Terengganu (Kostermans & Bompard, 1993: 175). This species in its entirety is known only from sterile material, with the possible exception of a fruiting collection from Apokayan, Kalimantan, Indonesia at BO, but the fruit was not described in the protologue. The Whitmore specimen from Peninsula Malaysia looks like a typical *Mangifera* and it could easily be one of several species of that genus. Consequently, *Mangifera bullata* is not accepted as present for Peninsular Malaysia.

The species *Mangifera paludosa* is known from Sumatra and Singapore (Ganesan, 2018). Of the two specimens cited by Kostermans & Bompard (1993: 42) from Peninsular Malaysia, *Yeop CF 848* (KEP) has now been identified, based on the characters of the leaves and fruits, as *M. gracilipes* Hook.f., while the second specimen (Malacca, fl., *Griffith s.n.*) could not be located at K.

The Sumatran and Bornean species *Mangifera parvifolia* was reported by Kostermans & Bompard (1993: 39) from Terengganu in Peninsula Malaysia based on one specimen, *FRI 20332* (KEP). This has now been identified as belonging to the Barking Deer's Mango (*Irvingia malayana* Oliv. ex A.W.Benn.).

The Sumatran and Bornean species *Mangifera rufocostata* was recorded from Peninsular Malaysia by Kostermans & Bompard (1993: 117) based on a sterile seedling collection (*Kochummen s.n.*, 1988) collected from the 50-ha plot in Pasoh Forest Reserve, Negeri Sembilan. This specimen could now not be found. Leaves of seedlings are often quite different from those of the mature plants, and this identification is not accepted here.

The name *Mangifera torquenda* was considered to be either part of *M. similis* Blume by Ding Hou (1978: 29) or treated as a separate species by Kostermans & Bompard (1993: 60) and Kochummen (1996: 46). It was recorded by Kostermans & Bompard (1993) from Peninsular Malaysia based on a single sterile gathering (*Bompard 823*, BO, KEP) from Taman Negara in Pahang. In addition, Bompard while visiting KEP in 1987, identified a specimen with an unattached fruit at KEP (Pulau Pinang, 8 May 1986, *Khairuddin FRI 32686*) as possibly being *Mangifera torquenda*. Based on the leaf, fruit and infructescence characters, *Bompard 823* should be placed in *Mangifera quadrifida* var. *longipetiolata* Kochummen, while the specimen with a fruit (*Khairuddin FRI 32686*) cannot be identified to species level without the infructescence. Consequently, *Mangifera torquenda* is not accepted as being present in Peninsular Malaysia.

Mangifera subsessilifolia is an enigma. It is known from a large area including Peninsular Malaysia, Singapore, Sumatra and Borneo (Sabah), and has a collection history which goes back to 1932 (*Osman FMS 28502*, KEP) in Peninsular Malaysia and 1955 in Sabah (Kostermans & Bompard, 1993: 182). Over this whole area and during all this time, no fruiting and/or flowering material has ever been found. This lack of fertile material is not a unique phenomenon in this genus because flowering material of the Mountain Mango (*Mangifera orophila* Kosterm.) was not found until 1988 even though fruiting material had been known since at least the 1920s, and this taxon was accepted as distinct by both Corner (1940: 106) and Kochummen (1989: 40, as *Mangifera* sp. B). *Mangifera subsessilifolia* is quite a common species, at least in Peninsular Malaysia, where 13 gatherings are known from at least seven different localities (KEP Herbarium Database, December 2024). It is also known from one gathering in Sabah (Kochummen, 1996: 45), one in Singapore and two in Sumatra (Kostermans & Bompard, 1993: 180–182). Further research, in particular molecular work, is needed to establish the nature of this taxon; it could perhaps be a clone or a hybrid, or when encountered in flower or fruit the specimens might prove to belong to a different taxon altogether. Close relatives were reported by Kostermans & Bompard (1993: 181) to be two widespread species, *Mangifera lagenifera* Griff. and

M. macrocarpa Blume, and the Bornean species *M. blommesteinii*, with which it was previously confused in Sabah.

The Sumatran and possibly Bornean species *Mangifera bullata* was described by Kostermans (in Kostermans & Bompard, 1993: 175; and see notes above) without flowering or fruiting material, and still no fertile collections are known of it.

Lectotypifications in numerous genera

When citing specimens, the locality as mentioned on the label or in the protologue is usually accompanied by the current political name for the region, Peninsular Malaysia, rather than “Malay Peninsula” or “Malaya”, which would have been used on labels and in publications prior to 1963.

Taxonomic names are listed by the basionym being lectotypified. If this is the currently accepted name, then it is given in bold italic script. However, if it is not the currently accepted name, then this basionym is given in italics. If the currently accepted name is homotypic, it is included in the nomenclatural paragraph in bold italic script. If the currently accepted name is not homotypic, it is listed on a separate line in bold italic script.

In some cases where a lectotype was designated by a previous author, a second-step lectotypification may be necessary if more than one sheet was included in the previous lectotype designation (see Turland et al., 2025: Art. 9.17).

1. *Buchanania lucida* Blume var. *laxiflora* Ridl., Fl. Malay Penins. 1: 518 (1922). – TYPE: [Thailand, Ko Adang], Pulau Adang, April 1911, *H.N. Ridley 15744* (lectotype K [K001129681], designated here).

= ***Buchanania arborescens*** (Blume) Blume, Mus. Bot. 1(12): 183 (1850).

Notes. The original description of *Buchanania lucida* Blume var. *laxiflora* Ridl. (Ridley, 1922: 518) mentioned only one gathering, from Pulau Adang [= Ko Adang] in Thailand. A Ridley specimen at K [K001129681] with this locality data is designated here as the lectotype.

2. *Dracontomelon mangiferum* Blume var. *pubescens* Koord. & Valeton, Bijdr. Boomsoort. Java 4: 115 (1896). – TYPE: [Indonesia], Java, Pekalongan, Soebah, 10 May 1896, *S.H. Koorders 22487β* (lectotype L [L.2270092], designated here).

= ***Dracontomelon dao*** (Blanco) Merr. & Rolfe, Philipp. J. Sci., C 3: 108 (1908).

Notes. The description of *Dracontomelon mangiferum* Blume var. *pubescens* Koord. & Valeton was based on several specimens from the herbarium of Koorders (Koorders & Valeton, 1896: 116), which were collected from Java (Indonesia), Tjilatjap on the small island of Noesakambangan (*Koorders 20096* [L.2270110, L.2270111]; *Koorders 39284* [L.2270103]; *Koorders 24705* [L.2270102]; *Koorders 376* [L.2259861]), in the

district of Banjoewangi (no specimens found), near Soebah in Pěkalongan (*Koorders* 22487 β [L.2270092]; *Koorders* 37028 [L.2270100]; *Koorders* 27304 [L.2270089]) and near Tjòramanis (Sěmpòlan) (*Koorders* 12510 [L.2259855, L.2259856]; *Koorders* 38326 [L.2259862]). Of these specimens, only two sterile ones have an original label with the name *Dracontomelon mangiferum* var. *pubescens*: sheet L.2259861 of the gathering *Koorders* 376 and sheet L.2259856 of *Koorders* 12510. Two different specimens each have an inflorescence: L.2270092 of the gathering *Koorders* 22487 β and L.2270089 of *Koorders* 27304. Among these, L.2270092, which has both a well-developed inflorescence and a compound leaf with several leaflets attached, is designated here as the lectotype.

3. *Gluta elegans* (Wall.) Kurz var. *curtisii* Burkill, Gard. Bull. Straits Settlem. 5: 228 (1931). – TYPE: [Peninsular Malaysia], Penang, Timur Laut, Government Hill, 1897, *C. Curtis* 3278 (lectotype SING [SING0056586], designated here; isolectotypes K [K001129680], SING [SING0056585, SING0056587]).
= *Gluta tavoyana* Wall. ex Hook.f., Fl. Brit. India 2: 22 (1876).

Notes. The original description of *Gluta elegans* (Wall.) Kurz var. *curtisii* Burkill (Burkill, 1931: 228) mentioned only one gathering: *Curtis* 3278 from Penang, Peninsular Malaysia. There are four morphologically similar specimens of this gathering, three at SING and one at K. One of the sheets at SING [SING0056586] is designated here as the lectotype.

4. *Gluta elegans* (Wall.) Kurz var. *helferi* Hook.f., Fl. Brit. India 2: 22 (1876). – TYPE: Tenasserim [Myanmar] or Andaman Islands [India], *J.W. Helfer s.n.* [Kew distribution no. 1119] (lectotype K [K002256911], designated here).
= *Gluta tavoyana* Wall. ex Hook.f., Fl. Brit. India 2: 22 (1876).

Notes. The original description of *Gluta elegans* (Wall.) Kurz var. *helferi* Hook.f. (Hooker, 1876: 22) mentioned only one gathering: *Helfer s.n.* from either Tenasserim [Myanmar] or the Andaman Islands [India]. There are three Helfer specimens with a label that has this locality data: *Helfer* 1117, 1118, and 1119. In this genus, flower characters are more important in species recognition than are fruiting characters, therefore the gathering *Helfer* 1119 [K002256911] with many young flowers is designated as the lectotype, rather than *Helfer* 1117 [K000695208], which only has several old flowers, or *Helfer* 1118 [K002256910], which has immature fruits and a few incomplete flowers.

5. *Gluta lanceolata* Ridl., J. Straits Branch Roy. Asiat. Soc. 49: 17 (1908 [‘1907’]). – TYPE: [Peninsular Malaysia], Penang, [Pulau Balek] Pulau Balick, June 1898, *H.N. Ridley* 9465 (lectotype BM [BM000884807], designated here).

Notes. The original description of *Gluta lanceolata* Ridl. (Ridley, 1907: 17) mentioned only one gathering: *Ridley 9465* from Balek Pulau in Penang. Only one specimen of this gathering could be found, and it is designated here as the lectotype.

6. *Gluta renghas* L., Mant. Pl. 2: 293 (1771), sphalm. '*benghas*'. – TYPE: no locality, *Anonymous s.n.* [Herb. Linn. No 1068.1] (lectotype LINN [LINN 1068.1], designated here).

Notes. The original description of this species mentioned only a locality, Java (Linnaeus, 1771: 293). In the Linnaean Herbarium, only one collection of this species without any locality data, is known (LINN 1068.1), and it is designated here as the lectotype.

7. *Gluta tavoyana* Wall. ex Hook.f., Fl. Brit. India 2: 22 (1876). – TYPE: [Myanmar], at Tavoy, *W. Gomez s.n.* [EIC 1004] (lectotype K [K000695207], first step designated by Tardieu-Blot, Fl. Cambodia, Laos and Vietnam 2: 96 (1962), second step designated here; isolectotypes BR [BR0000006952884], K [K001110585, K001110586, K001110587]).

Notes. Hooker's validation of the Wallich manuscript name (Hooker, 1876: 22) *Gluta tavoyana* Wall. ex Hook.f., was based on two gatherings: *Gomez s.n.* [EIC 1004] from Tavoy, in Myanmar [BR0000006952884, K000695207, K001110585, K001110586, K001110587] and *Griffith s.n.* [Cat. 1118/1] from Mergui, also in Myanmar [K002256915]. In her account for the species of Indochina, Tardieu-Blot (1962: 124) designated the Gomez gathering as the lectotype. However, five specimens of this collection are known and so the Gomez specimen from Hooker's own herbarium [K000695207], which is now in the general herbarium at K, is designated here in a second-step lectotypification.

8. *Gluta velutina* Blume, Mus. Bot. 1: 183 (1850). – TYPE: [Indonesia], Borneo, Banjarmasin, 1836, *S. Müller s.n.* (lectotype L [L0015644], designated here; isolectotype L [L0820708]).

Notes. The original description of *Gluta velutina* Blume (Blume, 1850: 183) mentioned: '*In Borneo regionibus litoralibus*'. Two Müller specimens collected in 1836 from Banjarmasin in Southeast Borneo have the name *Gluta velutina* on a label in Blume's handwriting. Salomon Müller collected plants in Borneo in 1836, and his collections were available to Blume (van Steenis-Kruseman, 1950: 376). Of the two specimens of this gathering present at L, the one which also has Müller's original label [L0015644] is designated here as the lectotype.

9. *Gluta virosa* Ridl., J. Straits Branch Roy. Asiat. Soc. 75: 27 (1917). – TYPE: [Peninsular Malaysia], Penang, Barat Daya, Teluk Bahang, May 1893, *C. Curtis 3005* (lectotype SING [SING0051610], designated here; isolectotypes K [K001129631], SING [SING0051607, SING0051608]).

= *Gluta wrayi* King, J. Asiat. Soc. Bengal, Pt. 2, Nat. Hist. 65(2): 482 (1896).

Notes. The original description of *Gluta virosa* Ridl. (Ridley, 1917: 27) mentioned five gatherings from Peninsular Malaysia: *Ridley s.n.* from Rantau Panjang, Kelantan; *Kunstler s.n.* from Gunung Pondok, Perak; *Curtis 3005* from Teluk Bahang, Penang [K001129631, SING0051607, SING0051608, SING0051610]; *Curtis 1527* from Penara Bukit, Penang [K001315801, SING0051609]; and *Ridley s.n.* from Moniots Road, Penang. For three of the gatherings, no specimens have been found. The sheets of *Curtis 1527* have very immature fruits, so the specimen at SING [SING0051610] of *Curtis 3005*, which has mature fruits, is designated here as the lectotype.

10. *Gluta wrayi* King, J. Asiat. Soc. Bengal, Pt. 2, Nat. Hist. 65(2): 482 (1896). – TYPE: [Peninsular Malaysia], Perak, Larut, July 1888, *Wray 2290* (lectotype K [K001129630], designated here).

Notes. The original description of *Gluta wrayi* King (King, 1896: 482), mentioned only one gathering: *Wray 2290* from Perak in Peninsular Malaysia. Only one specimen of this gathering could be found K [K001129630], and it is designated here as the lectotype.

11. *Mangifera lanceolata* Ridl., J. Straits Branch Roy. Asiat. Soc. 59: 90 (1911). – TYPE: [Peninsular Malaysia], Kedah, February 1890, *H.N. Ridley 15233* (lectotype K [K000695004], first step designated by Mukherji, Lloydia 12(2): 83 (1949), second step designated here; isolectotypes A [A00049051, fragment], K [K000695002, K000695003]).

= *Mangifera pentandra* Hook.f., Fl. Brit. India 2(4): 14 (1876).

Notes. The original description of *Mangifera lanceolata* Ridl. (Ridley, 1911: 90) was based on a single gathering: *Ridley 15233* from Kedah, Peninsular Malaysia. In his treatment of the genus, Mukherji (1949: 83) stated that the type was at K, and this can be regarded as a lectotypification. However, there are three sheets of this gathering at K, so one [K000695004] is designated here as the lectotype in a second-step lectotypification.

12. *Mangifera* × *odorata* Griff., Notul. 4: 417 (1854). – *Mangifera foetida* Lour. var. *odorata* (Griff.) Pierre, Fl. Forest. Cochinch. 4: t. 365B (1897). – TYPE: [Peninsular Malaysia], Malacca, June 1842, *W. Griffith Cat. 1098* (lectotype K [K000695122]),

first step designated by Mukherji, Lloydia 12: 124 (1949), second step designated here; isoelectotypes K [K000695123], P [P02440645, P05189926]).

Notes. The original description (Griffith, 1854: 417) of *Mangifera* × *odorata* Griff. was based on a single gathering made by this author in October 1842 from Malacca, Peninsular Malaysia. In his treatment of the genus, Mukherji (1949: 124) stated that the type was at K, which is an error to be corrected to lectotype. No specimen of this gathering with the collection date of October could be found. Of the two sheets of the *Griffith Cat. 1098* gathering at K, one [K000695122] is designated here as the lectotype in a second-step lectotypification.

13. *Mangifera sclerophylla* Hook.f., Fl. Brit. India 2: 15 (1876). – TYPE: [Peninsular Malaysia], Malacca, *A.C. Maingay 494* [Kew distribution no. 1480] (lectotype K [K001315584], first step designated by Kostermans & Bompard, Mangoes: 43 (1993), second step designated here; isoelectotypes CAL [CAL0000024408], K [K001315574]). = *Mangifera griffithii* Hook.f., Trans. Linn. Soc. London 23(1): 168 (1860).

Notes. The original description (Hooker, 1876: 15) of *Mangifera sclerophylla* Hook.f. was based on a single gathering, *Maingay s.n.*, from Malacca, Peninsular Malaysia. In their treatment of the genus, Kostermans & Bompard (1993: 43) stated that the holotype was at K, which counts as an effective lectotypification. There are two specimens collected by Maingay from Malacca at K [K001315574, K001315584]. Of these, the sheet with an original label and both the original Maingay number as well as the Kew distribution no., is designated as the lectotype in a second-step lectotypification.

14. *Mangifera superba* Hook.f., Fl. Brit. India 2: 19 (1876). – TYPE: [Peninsular Malaysia], Malacca, 17 January 1865–1866, *A.C. Maingay 1499* [Kew distribution no. 476] (lectotype K [K000695150], first step designated by Mukherji, Lloydia 12: 129 (1949), second step designated here; isoelectotype K [K000695151]).

Notes. The original description (Hooker, 1876: 19) of *Mangifera superba* Hook.f. was based on *Maingay 1499* from Malacca, Peninsular Malaysia. In his revision of the genus, Mukherji (1949: 129) stated that the type was at K, which counts as an effective lectotypification. However, given that there are two sheets of this gathering at K, sheet K000695150 is designated here as the lectotype in a second-step lectotypification.

15. *Melanorrhoea aptera* King, J. Asiat. Soc. Bengal, Pt. 2, Nat. Hist. 65(2): 487 (1896). – *Gluta aptera* (King) Ding Hou, Blumea 24: 12 (1978). – TYPE: [Peninsular Malaysia], Perak, Larut, January 1883, *Dr King's Collector 3727* (lectotype K [K000695321] designated here; isoelectotype SING [SING0051684]).

Notes. The original description in King (1896: 488) of *Melanorrhoea aptera* King was based on several gatherings: *Dr King's Collector* 3485, 3727, and 7656 from Perak, and *Curtis* 1567 from Penang, in Peninsular Malaysia. In this genus, fruits are more important for species recognition than flowers, therefore the fruiting specimen [K000695321] of the gathering *Dr King's Collector* 3727 is designated here as the lectotype.

16. *Melanochyla densiflora* King, J. Asiat. Soc. Bengal, Pt. 2, Nat. Hist. 65(2): 503 (1896). – TYPE: [Peninsular Malaysia], Perak, Larut, August 1884, *Dr King's Collector* 6526 (lectotype K [K000695561], designated here; isoelectotypes BM [BM000947114], US [US00901861]).

= *Melanochyla tomentosa* Hook.f., Fl. Brit. India 2(4): 38 (1876).

Notes. The original description (King, 1896: 503) of *Melanochyla densiflora* King mentioned two gatherings: *Dr King's Collector* 5615 [BM000947113, K000695563, SING0051672, SING0051673] and 6526 [BM000947114, K000695561, US00901861], both from Perak, Peninsular Malaysia. All sheets of these two gathering are morphologically similar, and a specimen at K [K000695561] of *Dr King's Collector* 6526 is designated here as the lectotype.

17. *Melanochyla nitida* King, J. Asiat. Soc. Bengal, Pt. 2, Nat. Hist. 65(2): 507 (1896). – TYPE: [Peninsular Malaysia], Perak, Larut, October 1884, *Dr King's Collector* 6722 (lectotype K [K000695565], designated here; isoelectotypes BM [BM000884936], US [US00901860]).

Notes. The original description (King, 1896: 507) of *Melanochyla nitida* King mentioned several gatherings from Peninsular Malaysia: *Dr King's Collector* 6722 [BM000884936, K000695565, US00901860], *Scortechini* 2037 and *Wray s.n.*, all from Perak, and *Curtis* 1496 [SING0051671] from Penang. No specimen of either *Scortechini* 2037 or *Wray s.n.* could be found. All known specimens of two remaining gatherings are morphologically similar, and the sheet K000695565 of *Dr King's Collector* 6722 is designated here as the lectotype.

18. *Melanorrhoea curtisii* Oliv. in Hooker's Icon. Pl. 16: t. 1513 (1886). – *Gluta curtisii* (Oliv.) Ding Hou, Blumea 24: 13 (1978). – TYPE: [Peninsular Malaysia], Penang, Government Hill, May 1901, *Curtis* 242 (lectotype K [K000695243], first step designated by Ding Hou Blumea 24: 13 (1978), second step designated here; isoelectotypes K [K001129683], KEP [KEP80758], SING [SING0051677, SING0051678, SING0051680]).

Notes. The original description by Oliver (1886: t. 1513) of *Melanorrhoea curtisii* Oliv. only mentioned one gathering: *Curtis s.n.*, Government Hill, Penang, Peninsular Malaysia. In his treatment of this species in preparation for his account in *Flora Malesiana*, Ding Hou (1978: 13) lectotypified this name based on the specimens at K. However, there are three Curtis specimens of this species from Government Hill, Penang at K [K000695243, K001129683, K001379137]. The last of these was collected in April 1893 and so cannot be included in Ding Hou's lectotype. As fruiting material is easier to identify than flowering material in this genus, the fruiting specimen at K [K000695243] is designated here as the lectotype via a second step.

19. *Melanorrhoea inappendiculata* King, J. Asiat. Soc. Bengal, Pt. 2, Nat. Hist. 65(2): 488 (1896). – TYPE: [Peninsular Malaysia], Penang, Timur Laut, Government Hill, 22 July 1890, *C. Curtis* 2475 (lectotype K [K000695318], designated here; isoelectotypes K [K001379166], SING [SING0051618, SING0051685]).
= *Gluta aptera* (King) Ding Hou, Blumea 24: 12 (1978).

Notes. The original description (King, 1896: 488) of *Melanorrhoea inappendiculata* King mentioned two gatherings: *Dr King's Collector* 5418 from Perak, and *Curtis* 2475 from Penang, both in Peninsular Malaysia. As one of the specimens of *Curtis* 2475 at K [K000695318] has both flowers and a mature fruit, it is designated here as the lectotype.

20. *Melanorrhoea maingayi* Hook.f., Fl. Brit. India 2: 25 (1876). – TYPE: [Peninsular Malaysia], Malacca, 30 July 1865–1866, *A.C. Maingay* 2650 [Kew distribution no. 485] (lectotype K [K000695317], designated here; isoelectotypes CAL [CAL0000024426], K [K001379103, K001379104]).
= *Gluta wallichii* (Hook.f.) Ding Hou, Blumea 24: 21 (1978).

Notes. The original description of *Melanorrhoea maingayi* Hook.f. (Hooker, 1876: 25) cited only *Maingay s.n.* from Malacca, Peninsular Malaysia. There are several gatherings of this species which fall under that description: *Maingay* 1535 [Kew distribution no. 482], 1865–1866 [K001379105]; *Maingay* 1921 [Kew distribution no. 485], 21 June 1865–1866 [K001379103, K000695316]; *Maingay* 2650 [Kew distribution no. 485], 1865–1866 [CAL0000024426, K001379103, K001379104, K000695317]; *Maingay s.n.* [Kew distribution no. 485], 30 July 1865–1866 [K001379106]. In addition, two specimens in other herbaria with the Kew distribution no. 485 are probably duplicates of one of these gatherings [GH00049063, L0015645], and the same is likely to be true for one gathering in CAL with the Kew distribution no. 482 [CAL0000024425]. One gathering has both flowers and mature fruit(s) (*Maingay* 2650) and three have flowers (*Maingay s.n.*, 1535, 1921). The sheet K000695317 of *Maingay* 2650 with flowers and mature fruits is designated here as the lectotype.

21. *Melanorrhoea pubescens* Ridl., Fl. Malay Penins. 1: 530 (1922). – ***Gluta pubescens*** (Ridl.) Ding Hou, Blumea 24: 15 (1978). – TYPE: [Peninsular Malaysia], Malacca, Tebung Road, October 1892, *R. Derry 1010* (lectotype K [K000695240], first step designated by Ding Hou, Blumea 24: 15 (1978), second step designated here; isoelectotype K [K000695241]).

Notes. The original description by Ridley (1922: 530) of *Melanorrhoea pubescens* Ridl. mentioned only one gathering: Machang, Tebung Road, *Derry 1010*. Ding Hou (1978: 15), in his account of this species in preparation for his treatment for *Flora Malesiana*, designated material at K as the lectotype. However, two specimens of this gathering are at K [K000695240, K000695241] and the one with two fruits [K000695240], rather than that with only one fruit [K000695241] is designated here as the lectotype via a second step.

22. *Melanochyla tomentosa* Hook.f., Fl. Brit. India 2: 38 (1876). – TYPE: [Peninsular Malaysia], Malacca, 5 March 1867, *A.C. Maingay 1803* [Kew distribution no. 1428] (lectotype K [K000695560], first step designated by Kochummen, Tr. Fl. Sabah & Sarawak, 2: 58 (1996), second step designated here; isoelectotype K [K001379328]).

Notes. Hooker's original description of *Melanorrhoea tomentosa* Hook.f. (Hooker 1876: 38) only mentioned: *Maingay s.n.* from Malacca, Peninsular Malaysia. There are two possible gatherings representing this: *Maingay 1803* [Kew distribution no. 1428] and *Maingay 1925* [Kew distribution no. 489]. Kochummen (1996) designated the K specimen of the gathering *Maingay 1803* as the holotype, which is considered an error to be corrected to lectotype. However, there are two specimens of this gathering at K [K000695560, K001379328], and the one with drawings of a flower [K000695560] is designated here in a second-step lectotypification.

23. *Melanorrhoea torquata* King, J. Asiat. Soc. Bengal, Pt. 2, Nat. Hist. 65(2): 486 (1896). – ***Gluta torquata*** (King) Tard., Adansonia 1: 195 (1961). – TYPE: [Peninsular Malaysia], Perak, Larut, February 1884, *Dr King's Collector 5552* (lectotype CAL [CAL0000024424], designated here; isoelectotypes BM [BM000884817], K [K000695238], SING [SING0051605]).

Notes. The original description of *Melanorrhoea torquata* King (King, 1896: 487) only mentioned one gathering: *Dr King's Collector 5552* from Perak, Peninsular Malaysia. There are several specimens of this gathering in various herbaria (BM [BM000884817], CAL [CAL0000024424], K [K000695238], and SING [SING0051605]). The specimen at CAL [CAL0000024424] is designated here as the lectotype.

24. *Microstemon curtisii* King, J. Asiat. Soc. Bengal, Pt. 2, Nat. Hist. 65(2): 498 (1896). – ***Pentaspadon curtisii*** (King) Corner, Gard. Bull. Straits Settlement. 10: 262 (1939). – TYPE: [Peninsular Malaysia] Kedah, Langkawi, June 1890, *C. Curtis* 2620 (lectotype SING [SING0051590], designated here; isolectotype P [P02440689]).

Notes. In the original description of *Microstemon curtisii* King (King, 1896: 489), only one gathering was mentioned: *Curtis* 2620 from Kedah, Peninsular Malaysia. There are specimens of this gathering in two herbaria, P [P02440689] and SING [SING0051590]. The specimen at SING is designated here as the lectotype.

25. *Parishia insignis* Hook.f. var. *tomentosa* King, J. Asiat. Soc. Bengal, Pt. 2, Nat. Hist. 65(2): 493 (1896). – TYPE: [India], Andaman Islands, Namuna Ghar Hill, South Andaman, 9 January 1892, *Dr King's Collector s.n.* (lectotype CAL [CAL0000210635], designated here; isolectotypes K [K002255585, K002255586, K002255587, K002255588]).

= ***Parishia insignis*** Hook.f., Trans. Linn. Soc. London 23(1): 170, t. 26 (1860).

Notes. In the original description of *Parishia insignis* Hook.f. var. *tomentosa* King (King, 1896: 493), only one gathering was mentioned: *Dr King's Collector s.n.* from the Andaman Islands, India. There are five specimens of this at CAL and K [CAL0000210635, K002255585, K002255586, K002255587, K002255588]. The CAL specimen has many flowers [CAL0000210635] and is designated here as the lectotype.

26. ***Parishia paucijuga*** Engl. in A.L.P.P. de Candolle & A.C.P. de Candolle, Monogr. Phan. 4: 309 (1883). – TYPE: Singapore, September 1867, *A.C. Maingay* 2623 [Kew distribution no. 496] (lectotype K [K000695402], designated here; isolectotypes K [K001379208, K001379209]).

Notes. The original description of *Parishia paucijuga* Engl. (Engler, 1883: 309) only mentioned one gathering: *Maingay* 2623 from Singapore. Three sheets of this gathering, [K000695402, K001379208, K001379209] were found, one is sterile [K001379208] and the remaining two both have mature detached fruits. The specimen K000695402 is designated here as the lectotype.

27. *Parishia rosea* Ridl., J. Straits Branch Roy. Asiat. Soc. 59: 90 (1911). – TYPE: [Peninsular Malaysia], Kedah, Pulau Langkawi, February 1911, *Aniff* [*Haniff* 15559] (lectotype K [K000695400], designated here; isolectotype K [K000695401]).

= ***Parishia insignis*** Hook.f., Trans. Linn. Soc. London 23(1): 170, t. 26 (1860).

Notes. The original description of *Parishia rosea* Ridl. (Ridley, 1911: 90) mentioned only: “*Aniff. Feb. 1911*” from Pulau Segai in Langkawi, Peninsular Malaysia. Two specimens of this gathering were found at K. The one with the most flowers and the misspelling of the collector’s name (*Aniff*) in the description [K000695400] is designated here as the lectotype.

28. *Pentaspadon officinalis* Holmes ex King, J. Asiat. Soc. Bengal, Pt. 2, Nat. Hist. 65(2): 499 (1896). – TYPE: [Peninsular Malaysia], Perak, Larut, September 1884, *Dr King’s Collector 6549* (lectotype K [K000695350], designated here; isolectotype BM [BM000793053]).

= *Pentaspadon motleyi* Hook.f., Trans. Linn. Soc. London 23(1): 168 (1860).

Notes. The original description in King (1896: 499) of *Pentaspadon officinalis* Holmes ex King mentioned several gatherings: *Dr King’s Collector 3315* [K001315490], 3770 [BM000793054, K000695348, K000695349], 4868, 6549 [BM000793053, K000695350], 6933; *Scortechini 2043* [SING0056723]; and *Wray 4168* [SING0056724, SING0056725, SING0056726, SING0056727] all from Perak, Peninsular Malaysia. As flowers are more important than fruits in species recognition in this genus, a flowering specimen at K [K000695350] of *Dr King’s Collector 6549* is designated here as the lectotype.

29. *Pentaspadon velutinus* Hook.f., Fl. Brit. India 2: 28 (1876). – *Microstemon velutina* (Hook.f.) Engl., Bot. Jahrb. Syst. 1: 376 (1881). – TYPE: [Peninsular Malaysia], Malacca, 1865–1866, *A.C. Maingay 1650* [Kew distribution no. 464] (lectotype K [K000695352], designated here; isolectotypes BM [BM000884741], GH [GH00049089], K [K000695351], L [L0015832]).

Notes. In the original description of *Pentaspadon velutinus* Hook.f. (Hooker, 1876: 28), only one gathering was mentioned: *Maingay s.n.* from Malacca, Peninsular Malaysia. There are several specimens of this gathering in various herbaria [BM000884741, GH00049089, K000695351, K000695352, L0015832]. The specimen at K [K000695352] with detailed drawings on the sheet is designated here as the lectotype.

30. *Rhus succedanea* L., Mant. 2: 221 (1771). – TYPE: [Published illustration] Kaempfer, Amoen. Exor. Fasc.: t. 795 (1712), lectotype designated here.
= *Toxicodendron succedaneum* (L.) Kuntze, Revis. Gen. Pl. 1: 154 (1891).

Notes. In the original description of this species in Linnaeus (1771: 221), two localities were cited: Japan and China, and reference was made to a plate (t. 795) of a Japanese plant in Kaempfer (1712). The only specimen of this species in the Linnaean Herbarium is from India [LINN 378.10], while two unidentified specimens are from the Cape of

Good Hope [LINN 378.18] and the Carolinas [LINN 378.7]. There are also several unidentified specimens in LINN without any locality data [LINN 378.1, LINN 378.3, LINN 378.5, LINN 378.9, LINN 378.15, LINN 378.17, LINN 378.28, LINN 378.29, LINN 378.30]. Almost all are sterile and given their leaf shape, they are unlikely to belong to this species. As Linnaeus did not see any herbarium material of Kaempfer and because no type was indicated by him (Jarvis, 2007: 137, 795), the plate cited by Linnaeus in Kaempfer (1712) is designated here as the lectotype.

31. *Semecarpus curtisii* King, J. Asiat. Soc. Bengal, Pt. 2, Nat. Hist. 65(2): 509 (1896). – TYPE: [Thailand], Phuket, Tongkah, Flagstaff Hill, February 1893, *C. Curtis* 2930 (lectotype CAL [CAL0000024434], designated here; isolectotypes K [K000695431], SING [SING0051585, SING0051586]).

Notes. The original description in King (1896: 509) of *Semecarpus curtisii* King only mentioned one gathering: *Curtis* 2930 from Tonga (Tongkah) in Thailand. Four specimens of this gathering are held in CAL, K and SING [CAL0000024434, K000695431, SING0051585, SING0051586]. The specimen at CAL [CAL0000024434] is designated here as the lectotype.

32. *Semecarpus curtisii* King var. *brevipetiolatus* M.R.Hend., Gard. Bull. Straits Settlements 3: 290 (1924). – TYPE: [Peninsular Malaysia], Negeri Sembilan, Gunung Tampin, 22 November 1921, *R.E. Holttum SFN 9521* (lectotype SING [SING0056590], designated here).

= *Semecarpus curtisii* King, J. Asiat. Soc. Bengal, Pt. 2, Nat. Hist. 65(2): 509 (1896).

Notes. The original description (Henderson, 1924: 290) of *Semecarpus curtisii* King var. *brevipetiolatus* M.R.Hend. mentioned several gatherings from Peninsular Malaysia: *Burkill* 3250 [SING0056721], *Mohd Nur* 1623 [SING0056589], and *Holttum SFN 9521* [SING0056590] all from Negeri Sembilan, and *Alvins* 885 [SING0069602] from Malacca. In this genus, fruits are more important than flowers in species identification, so the gathering with plenty of fruits, *Holttum SFN 9521* [SING0056590], is designated here as the lectotype.

33. *Semecarpus glabra* Ridl., Fl. Malay Penins. 5: 303 (1925). – TYPE: [Peninsular Malaysia], Penang, Waterfall, 1 March 1901, *C. Curtis* 3594 (lectotype K [K000695594], designated here; isolectotypes K [K000695595], SING [SING0051578, SING0051579]).

= *Drimycarpus luridus* (Hook.f.) Ding Hou, Blumea 24: 6 (1978).

Notes. The original description of *Semecarpus glabra* Ridl. (Ridley, 1925: 303) only mentioned one gathering: *Curtis* 3594 from Penang, Peninsular Malaysia. There are

four specimens of this in two herbaria [K000695594, K000695595, SING0051578, SING0051579]. The flowering specimen at K [K000695594] is designated here as the lectotype.

34. *Semecarpus glomerulatus* Ridl., J. Straits Branch Roy. Asiat. Soc. 54: 39 (1910). – TYPE: [Peninsular Malaysia], Kedah, Langkawi Islands, Pulau Nior Stali, November 1901, *C. Curtis 3681* (lectotype KEP [KEP80756], designated here; isolectotypes K [K000695428], L [L0538556], SING [SING0051581, SING0051583]).
= *Semecarpus cochinchinensis* Engl., Monogr. Phan. 4: 489 (1883).

Notes. The original description by Ridley (1910: 39) of *Semecarpus glomerulatus* Ridl. only mentioned one gathering: *Curtis 3681* from Langkawi Islands, Pulau Nior Stali, Kedah, Peninsular Malaysia. Five specimens of this gathering are known in four herbaria [K000695428, KEP80756, L0538556, SING0051581, SING0051583]. The flowering specimen in KEP [KEP80756] is designated here as the lectotype.

35. *Semecarpus lucens* King, J. Asiat. Soc. Bengal, Pt. 2, Nat. Hist. 65(2): 501 (1896). – TYPE: [Peninsular Malaysia], Perak, January 1884, *Dr King's Collector 5444* (lectotype K [K001379265], designated here; isolectotypes BM [BM000884888], E [E00314051], L [L.2272301]).

Notes. King's original description of *Semecarpus lucens* King (1896: 510) mentioned several gatherings: *Dr King's Collector 5256* [K001379263], *5377* [BM000884887, K001379264], *5444* [BM000884888, E00314051, K001379265, L.2272301], *5470* [SING0051665, SING0051666], and *6895* [A00049212, K000695430, K000695429 now sent to SING], all from Perak, Peninsular Malaysia. All the known specimens of these gatherings are morphologically similar and the sheet K001379265 of the gathering that has the most known duplicates (*Dr King's Collector 5444*) is designated here as the lectotype.

36. *Semecarpus prainii* King, J. Asiat. Soc. Bengal, Pt. 2, Nat. Hist. 65(2): 511 (1896). – TYPE: India, Andaman Islands, *J.W. Helfer 1131* (lectotype CAL [CAL0000024441], designated here; isolectotype K [K003497150]).

Notes. The original description in King (1896: 511) of *Semecarpus prainii* King mentioned several gatherings: *Helfer 1131* [CAL0000024441, K003497150], *Dr Prain's Collector 11* [K000695383] and *20* [K000695382], all from the Andaman Islands, India; *Dr King's Collector 7422* [SING0051662, SING0051663, SING0051664] from Perak, Peninsular Malaysia; and an unnumbered *Prain* collection from the Barren and Cocos islands in the Indian Ocean, of which no specimens could be found. In his discussion, King mentioned that all flowers seen were very similar, although the

ones from Perak were slightly larger and had longer and more acute calyx lobes. The specimen at CAL [CAL0000024441] of the gathering *Helper 1131* is designated here as the lectotype.

37. *Semecarpus velutinus* King, J. Asiat. Soc. Bengal, Pt. 2, Nat. Hist. 65(2): 508 (1896). – TYPE: [Peninsular Malaysia], Perak, May 1885, *Dr King's Collector 7655* (lectotype K [K000695427], designated here).

Notes. The original description in King (1896: 508) of *Semecarpus velutinus* King mentioned three different gatherings: *Dr King's Collector 7439* [K000695425, K000695426, SING0051661], 7622 [SING0051660] and 7655 [K000695427], all from Perak, Peninsular Malaysia. The specimens of *Dr King's Collector 7439* and 7622 have either young fruits or old flowers, whereas the sheet of the gathering numbered 7655 has a mature fruit. In this genus, fruits are more important than flowers in species identification, so the specimen of the fruiting gathering [K000695427] is designated here as the lectotype.

38. *Syndesmis elegans* Wall. in Roxburgh, Fl. Ind. 2: 315 (1824). – *Gluta elegans* (Wall.) Kurz, Prelim. Rep. Forest Pegu, App. A: xli (1875). – TYPE: [Peninsular Malaysia], Penang, 1823, *Porter s.n.* [EIC 1003] (lectotype K [K001110584], designated here; isolectotypes K [K000695202, K001110583], NY [NY00050965]).

Notes. Wallich's original description (in Roxburgh, 1824: 315) of *Syndesmis elegans* Wall. mentioned that the name was based on a plant found by Mr Porter in the hills of Penang, now in Peninsular Malaysia, and that it was in flower at the beginning of the year. There are two sets of specimens of this species collected by Porter from Penang [EIC 1003 and 4909]. The sheet at K [K001110584] of the gathering EIC 1003, with an original label and numerous flowers, is designated here as the lectotype.

39. *Syndesmis coarctatus* Griff., Notul. 4: 409 (1854). – *Gluta coarctata* (Griff.) Hook.f., Fl. Brit. India 2: 22 (1876). – TYPE: [Peninsular Malaysia], Malacca, 1845, *W. Griffith s.n.* (lectotype K [K000695201], designated here; isolectotypes K [K000695199, K000695200]).

= *Gluta velutina* Blume, Mus. Bot. 1(12): 183 (1850).

Notes. In the original description of *Syndesmis coarctatus* Griff. (Griffith, 1854: 409), only one gathering was mentioned: *Griffith s.n.* from Malacca, Peninsular Malaysia. There are three specimens of this gathering [K000695199, K000695200, K000695201], and the one with the detailed drawings on the sheet [K000695201] is designated here as the lectotype.

40. *Swintonia floribunda* Griff., Proc. Linn. Soc. London 1: 283 (1846). – TYPE: [Myanmar], Mergui, Madamacan Island, *W. Griffith s.n.* (lectotype K [K000695305], designated here).

Notes. In the original description of *Swintonia floribunda* Griff. (Griffith, 1846: 283), only one gathering was mentioned: *Griffith s.n.* from Madamacan Island, near Mergui in Myanmar. There is only one specimen known [K000695305] of this gathering, and it is designated here as the lectotype.

41. *Swintonia puberula* H.Pearson, Bull. Misc. Inform. Kew 1906: 3 (1906). – TYPE: [Peninsular Malaysia], Perak, Bujong Malacca, September 1898, *H.N. Ridley 9650* (lectotype K [K000695297], designated here; isoelectotypes CAL [CAL0000024427, CAL0000024428], K [K000695296]).

= *Swintonia floribunda* Griff. var. *penangiana* (King) Kochummen, Gard. Bull. Singapore 36(2): 196 (1984).

Notes. In the original description by Pearson (1906: 3) of *Swintonia puberula* H.Pearson, only one gathering was mentioned: *Ridley 9650* from Malacca, Peninsular Malaysia. There are two specimens of this gathering at K [K000695296, K000695297] and two at CAL [CAL0000024427, CAL0000024428]. The one at K with beautiful drawings on the sheet [K000695297] is designated here as the lectotype.

42. *Swintonia spicifera* Hook.f., Fl. Brit. India 2: 27 (1876). – TYPE: [Peninsular Malaysia], “Malaya”, *A.C. Maingay s.n.* [Kew distribution no. 486/2] (lectotype K [K000695335], designated here; isoelectotypes GH [GH00049247], K [K000695333]).

Notes. The original description by Hooker (1876: 27) of *Swintonia spicifera* Hook.f. mentioned only one gathering: *Maingay* from “Penang?”, with no indication of a collection number. No specimens of Maingay from Penang of this species could be found; however, three specimens collected by him, all *s.n.*, [Kew distribution no. 486/2] from “Malaya” [GH00049247, K000695333, K000695335] were located. All have both flowers and fruits and are morphologically similar. One of the sheets at K [K000695335] is designated here as the lectotype.

43. *Swintonia spicifera* Hook.f. var. *scortechinii* King, J. Asiat. Soc. Bengal, Pt. 2, Nat. Hist. 65(2): 491(1896). – TYPE: [Peninsular Malaysia], Perak, *B. Scortechini 1891* (lectotype BM [BM000884824], designated here; isoelectotypes K [K000695334], SING [SING0056740, SING0056741, SING0056742]).

= *Swintonia spicifera* Hook.f., Fl. Brit. India 2: 27 (1876).

Notes. The original description in King (1896: 491) of *Swintonia spicifera* Hook.f. var. *scortechinii* King only mentions one gathering: *Scortechini 1891* from Perak, Peninsular Malaysia. There are several specimens of this gathering in various herbaria [BM000884824, K000695334, SING0056740, SING0056741, SING0056742] and the sheet at BM [BM000884824] with many mature flowers is designated here as the lectotype.

Neotypification

1. *Coelopyrum coriaceum* Jack, Malayan Misc. 2(7): 65 (1822). – ***Campnosperma coriaceum*** (Jack) Hallier f. ex Steenis, Fl. Males. Bull. 3: 74 (1948). – TYPE: [Indonesia], Sumatra, Palembang, O of Kommering-Iilir, 25 April 1918, *F.H. Endert 312* (neotype L [L.2265695], designated here).

Notes. The original description of this species by Jack noted that it came from the forests in the neighbourhood of Bencoolen, Sumatra (Jack, 1822: 65). Almost all his collections have been lost (see van Steenis-Kruseman, 1950: 256) and no material of this species collected by Jack from Sumatra was found (see also Ding Hou (1978: 5)). A neotype from Palembang, Sumatra [L.2265695] which has all the key characters for recognition of this species is designated here.

ACKNOWLEDGEMENTS. The author is grateful to the curators of A, BM, BR, CAL, E, GH, K, KEP, L, LINN, NY, P, SING and US for access to the specimens used in the present study. I am very grateful to Helen Fortune for checking my English. At FRIM, I would like to thank Dr Sam Yen Yen, Dr Ruth Kiew & Dr Richard Chung for all their help. This research was supported by Visiting Research Fellowships at FRIM, which are gratefully acknowledged.

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