

ANNOTATED CHECKLIST OF *CYRTANDRA* (GESNERIACEAE) OF SUMATRA, INDONESIA

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ABSTRACT

WANG, Q. W., BRAMLEY, G. L. C., ATKINS, H. J. & KARTONEGORO, A. 2022. Annotated checklist of *Cyrtandra* (Gesneriaceae) of Sumatra, Indonesia. *Reinwardtia* 21(2): 63–80. — There are 53 species and three varieties of Sumatran *Cyrtandra* (Gesneriaceae) included in the checklist. Thirty-three lectotypes and four neotypes have been assigned, including for two excluded species. Two species are designated as *incertae sedis* due to a lack of type material or any associated specimens. A new name of *C. jackii* is proposed here to replace the illegitimate *C. glabra* Jack. Most of the species included in the checklist are endemic to Sumatra, with some species distributed in neighboring islands in Malesia. The next step for *Cyrtandra* in Sumatra is to carry out a full taxonomic revision to better understand distribution patterns and species limits and also to assign appropriate neotypes for those species still missing original material.

Key words: *Cyrtandra*, endemic, Southeast Asia, Sumatra, typification.

ABSTRAK

WANG, Q. W., BRAMLEY, G. L. C., ATKINS, H. J. & KARTONEGORO, A. 2022. Catatan *Cyrtandra* (Gesneriaceae) dari Sumatra, Indonesia. *Reinwardtia* 21(2): 63–80. — Terdapat 53 jenis dan tiga varietas *Cyrtandra* (Gesneriaceae) dari Sumatra termasuk dalam daftar periksa. Tiga puluh tiga jenis telah ditetapkan lektotipenya dan empat jenis ditetapkan neotipenya dalam studi ini, termasuk dua jenis yang dikeluarkan. Dua jenis ditetapkan sebagai tidak pasti karena tidak adanya tipe atau spesimen lain yang berkaitan. Nama baru *C. jackii* diajukan untuk menggantikan *C. glabra* Jack yang tidak sah. Sebagian besar jenis dalam daftar periksa merupakan jenis-jenis endemik untuk Sumatra, dan beberapa jenis juga tersebar luas di beberapa pulau sekitar di Malesia. Langkah selanjutnya untuk studi *Cyrtandra* di Sumatra adalah melakukan revisi taksonomi secara utuh untuk mengetahui pola distribusi dan batasan jenis dan juga untuk menetapkan neotipe yang tepat untuk beberapa jenis yang material aslinya masih belum ditemukan.

Kata kunci: Asia Tenggara, *Cyrtandra*, endemik, Sumatra, tipifikasi.

INTRODUCTION

Cyrtandra J.R.Forst. & G.Forst. is the largest genus in the Gesneriaceae with *ca.* 800 species (Atkins *et al.*, 2013). It is distributed throughout Southeast Asia and across the islands of the Pacific to Hawaii. Its high species number, tendency to restricted endemism and widespread distribution make it an excellent model genus for biogeographic and ecological studies (Atkins *et al.*, 2013; 2020). However, for this potential to be realised basic taxonomic work is required, particularly on

the biodiverse islands of Southeast Asia, such as Sumatra.

The first account of *Cyrtandra* from Sumatra was provided by William Jack in 1823 based on his own collections (Jack, 1823). He described 11 species, mostly from the area around Bengkulu Province. Three years later, Blume proposed 12 *Cyrtandra* species mostly from Java, some of which were subsequently found to occur in Sumatra (Blume, 1826; Clarke, 1883; Bakhuizen van den Brink, 1950; Backer & Bakhuizen van den Brink, 1965). This was followed shortly afterwards

by three species from Sumatra described by Miquel (1858). Clarke (1883) was the first botanist to attempt a monograph of the genus across its distribution, and in that account, he also described a further thirteen species from Sumatra. Ridley (1917, 1923, 1926) then described a further eight species and Moore (1925) added five new species and two varieties from the island. Subsequently, Bramley & Cronk (2003) carried out a revision of the genus on Mount Kerinci on the border between West Sumatra and Jambi Province where they described three new species. Since then, there has been one new species described in 2020 (Smith *et al.*, 2020) and one new name for a later homonym for a Sumatran species (Olivar *et al.*, 2022).

No systematic review of *Cyrtandra* across the island has ever been undertaken. This comprehensive annotated checklist of the genus in Sumatra is an important step towards a full taxonomic account and a significant contribution to our overall knowledge of *Cyrtandra*.

MATERIALS AND METHODS

A provisional set of *Cyrtandra* names from Sumatra was assembled from the Gesneriaceae Resource Centre (GRC, 2022). All protologues were subsequently checked; the type status was confirmed and if appropriate, a lectotype was chosen from the original material if no holotype had been specified. Further discussion on type designation is given below: in general, where a lectotype was selected, it was checked against the protologue to ensure it matched the author's description of the species; decision making related to particular authors is set out in detail. Information on taxonomic status was taken from floras and other publications (Jack, 1823; Blume, 1826; De Candolle, 1845; Miquel, 1858; Clarke, 1883; Bakhuizen van den Brink, 1950; Bramley & Cronk, 2003; Bramley *et al.*, 2004; Atkins & Kartonegoro, 2021; GRC, 2022; POWO, 2022; Olivar *et al.*, 2022) and no additional taxonomic decision-making was undertaken at this time, although where there is some uncertainty about status this has been indicated in the discussion following the name entry. The checklist entry for each name follows the standard abbreviations for authors (IPNI, 2022) and journals and books (TL2, 2022). Most of the research for this paper was carried out during the restrictions of the Covid-19 pandemic using online resources from the following herbaria (A, BM, FI, G, L, M, MEL, SING, US, WU, abbreviations following Thiers, 2021) and online resources such as JSTOR plants (JSTOR, 2021). Physical collections were checked in herbaria of the home institutions of the authors (BO, E, K) and at the Natural History Museum, London (BM).

Wherever they are available the most recent 2D barcodes in the form L.2821876 on the sheets held at L are cited in preference to the older barcodes in the form L0538544 although some specimens, *e.g.* L0003263 (type of *C. longepetiolata*), only have the older ones. Where there are differences, locality details and spelling in type citations are taken from the specimen labels and not from the protologues. The original spelling of names is followed in the checklist except for those exceptions, detailed in Art. 60 of the Code (Turland *et al.*, 2018), where corrections are allowed such as for the removal of a hyphen (Art. 60.11) – *e.g.* *C. longepetiolata*.

RESULTS AND DISCUSSION

Sumatran *Cyrtandra* species

There are 53 species and three variety names which are considered to be accepted at the current time. Of these, 39 species and three varieties are known to be endemic to Sumatra and 15 species are also distributed on neighbouring islands. Of the 15 non-endemic species, 13 have a distribution that includes Java, with a few also known from Peninsular Malaysia (3), Southern Thailand (1), Borneo (1), Sulawesi (2) or the Lesser Sunda Islands (3) (Atkins & Kartonegoro, 2021; Bakhuizen van den Brink, 1950; Bramley *et al.*, 2004; Girmansyah *et al.*, 2013; Olivar *et al.*, 2022; GRC, 2022). See Appendix for distribution information. Some of the endemic species in Sumatra are distributed widely on the island. However, there are also some species known only in restricted areas such as the Kerinci Range, Leuser Mountains, Mentawai Islands, and North Sumatra (Ridley, 1917, 1926; Bramley & Cronk 2003; Smith *et al.*, 2020). Some of the species are based only on type specimens and two species are of uncertain status due to lack of types or any associated specimens.

Type designation of Sumatran *Cyrtandra*

To avoid repetition in the text, here we discuss the major collectors and authors of Sumatran *Cyrtandra* and outline our decision-making regarding typification.

Jack (1823) did not cite specimens when he described his species but sometimes gave information about locality. Almost all of Jack's collections and some of his manuscripts were burned in a ship fire in 1824 (Ridley, 1917; Merrill, 1952; Hughes & Girmansyah, 2011). A small number of his Sumatran collections are, however, in the Delessert Herbarium at Geneva (G) and also at the Natural Biodiversity Center in Leiden (L) from the Hasskarl private herbarium (Merrill, 1952). When it has been possible to locate Jack collections and link them unambigu-



Fig. 1. Some *Cyrtandra* species from Sumatra. A. *C. pendula* Blume. B. *C. rosea* Ridl. C. *C. rubriflora* P.E.Sm. & H.J.Atkins. D. *Cyrtandra* sp. E. *C. pauciflora* Ridl. Photos by S. Barber (A, B, E), P. Wilkie (C), M. Hughes (D).

ously with the names, these have been lectotypified here. Following Hughes & Girmansyah (2011) it is necessary to neotypify the names where it has not been possible to locate Jack's own collections. This is done in this study when possible or will be carried out as part of a planned full revision of Sumatran *Cyrtandra* and may require fieldwork to the collecting localities of the type material.

Blume (1826) did not cite types for his proposed *Cyrtandra* taxa from Java, so it has been necessary to choose lectotypes for these names and, whenever possible, we have selected Blume's own collections. Blume was the first Director of the Rijksherbarium in Leiden (L) which was founded in 1830 (Veldkamp, 1980), and the top set of his collections are held there, now the Naturalis Biodiversity Center, with some duplicates elsewhere. When there were no Blume collections associated with the species, the lectotype was chosen from specimens collected by Reinwardt, Kuhl or Van Hasselt where the type is held in the Natu-

ralis Biodiversity Center Herbarium (L). When Blume left Java, he took the herbaria of Reinwardt, Kuhl, and van Hasselt with him (Van Steenis-Kruseman, 2022).

All of the Sumatran *Cyrtandra* species described by De Vriese (1856) were based on the collections of C.G.C. Reinwardt which were sent to De Vriese to study in Amsterdam (Veldkamp, 1980). De Vriese usually gave details of a collection when the species was described but cited no herbarium. Reinwardt's herbarium was later bequeathed to the Rijksherbarium Leiden now the Naturalis Biodiversity Center (Van Steenis-Kruseman, 2022). Reinwardt's collections in L which link to these names have either been treated as holotypes if there is no ambiguity or have been lectotypified here where clarification is helpful.

Miquel (1858) cited specimens when describing his species but did not specify a herbarium so it has been necessary to select a lectotype for his names. All Miquel's Sumatran *Cyrtandra* species are based on the collections of J.E. Teijsmann

which he worked on in Utrecht (Van Steenis-Kruseman, 2022) and are all now incorporated into the herbarium of the Naturalis Biodiversity Center, with some duplicates stored in Herbarium Bogoriense (BO).

Clarke (1883) usually listed multiple specimens for his Sumatran *Cyrtandra* species as he was attempting to provide a comprehensive list of all of the material available at that time from the thirteen herbaria that he consulted for his monograph (Clarke, 1883). For all but two of his species, *C. anisophylla* and *C. integrifolia*, where a single collection from a named herbarium was listed, it has been necessary to select a lectotype from the list of specimens provided by Clarke. Clarke cites a lot of material collected by O. Beccari which he describes as being ‘beautifully collected’ and supplying ‘far more novelties than any other collection’. These are listed as being ‘in h. propr.’ *i.e.* ‘in Beccari’s own herbarium’, which is in the Museum of Natural History in Florence (FI) (Cecchi *et al.*, 2021).

Ridley (1917; 1923; 1926) usually cited localities when he described species but did not give collection numbers or herbaria. Turner (2012) observed that ‘a high proportion of Ridley’s taxa need lectotypification because he rarely designated types from among the various specimens he cited when publishing taxa. He was also inconsistent in annotating the specimens he saw’. Thus, following Turner (2012), the choice of lectotype chosen here has been the specimen of highest quality from among candidate syntypes for Ridley’s names.

Moore cited a collection when he described a new species but did not specify a herbarium (Moore, 1925). All of his names are based on the collections of H.O. Forbes’s expeditions to Java and Sumatra (Rendle, 1925). According to Ridley (1917), the ‘type set’ of Forbes’s collections are held at the Natural History Museum (BM), and thus these specimens are considered here to be the holotypes and any duplicates to be isotypes.

Type designations included in more recent works (Bramley & Cronk, 2003; Smith *et al.*, 2020; Olivar *et al.*, 2022) have usually been retained but a small number of errors relating to species from Mount Kerinci have been corrected here.

Checklist

There are 53 species and three varieties accepted in the checklist and the names are listed alphabetically since there is currently no effective infrageneric classification for *Cyrtandra* (Atkins *et al.*, 2021). Where a specimen (or its high resolution digital image) has not been seen, *n.v.* (indicating not seen) is noted after the specimen. Where possible, lectotypes and neotypes have been designated or we have indicated where fur-

ther neotypification based on further research will be necessary.

1. **CYRTANDRA ANISOPHYLLA** C.B. Clarke
Cyrtandra anisophylla C.B. Clarke in A.D.C. & C.D.C., Monogr. Phan. 5(1) (1883) 249. — Type: INDONESIA. In Sumatra occidentale [West Sumatra Prov.] nel “Padangsche bovenlanden” sul Monte Singalan [Mount Singgalang], 1,700 m, 6 Jul 1878, O. Beccari *s.n.* (holotype: FI [FI013134, image seen]; isotype: K [K000831535!]).

Distribution. Endemic to Sumatra (Clarke, 1883; Bramley & Cronk, 2003; Bramley, 2005).

2. **CYRTANDRA AUREA** Jack
Cyrtandra aurea Jack, Trans. Linn. Soc. London 14(1) (1823) 29. — Type: INDONESIA. Sumatra, interior of Bencoolen [Bengkulu Prov.], at the foot of Gunong Bunko [Mt. Bungkok], *W. Jack s.n.* (not found). Sumatra, Tapanuli, between Sidikalang and Pongkolan, 18 KM South of Sidikalang, 1,200 m, 27 Mar 1954, A.H.G. Alston 14832 (neotype: BO [BO-1870315!], designated here).

Cyrtandra cordifolia de Vriese, Pl. Ind. Bat. Orient. (1856) 16, non Gaudich. (1829). — *Rhynchocharpus cordifolius* Reinw. ex Blume, Cat. Gew. Buitenzorg (1823) 84, *nom. nud.* — Type: INDONESIA. Java, C.G.C. Reinwardt 516 (holotype: L).

Distribution. Sumatra (Jack, 1823); Sumatra and Java (Clarke, 1883; Bakhuizen van den Brink, 1950; Backer & Bakhuizen van den Brink, 1965).

Notes. We have managed to find a number of Jack’s Sumatran *Cyrtandra* collections at G and L but none that link to this species. Here we select a new type for the species collected from Tapanuli, North Sumatra (Alston 14832, BO) which is a good match with Jack’s original description of this species.

Cyrtandra cordifolia de Vriese is considered to be a synonym of *C. aurea* by Clarke (1883) and also by Bakhuizen van den Brink (1950). De Vriese (1856) cites a Reinwardt collection with the description of *Cyrtandra cordifolia* as ‘Herb Reinw. no 516 sub nomine: *Rhynchocharpus cordifolii*’ and a specimen matching these details is considered to be the holotype.

3. **CYRTANDRA AUREOTINCTA** Bramley & Cronk

Cyrtandra aureotincta Bramley & Cronk, Harvard Pap. Bot. 7(2) (2003) 419. — Type: INDONESIA. Sumatra, Mount Kerinci, trail to peak from Kersik Tua, 2,000–2,500 m, 28 Jul 2000, Radhiah & Q.C.B. Cronk 129 (holotype: E [E00121282!]; isotypes: BIOT!, BO!).

Distribution. Endemic to Sumatra [Kerinci Range] (Bramley & Cronk, 2003).

4. *CYRTANDRA BECCARII* C.B. Clarke
Cyrtandra beccarii C.B. Clarke in A.D.C. & C.D.C., Monogr. Phan. 5(1) (1883) 249. — Type: INDONESIA. In Sumatra occidentale [West Sumatra Prov.] nel “Padangsche bovenlanden” sul Monte Singalan [Mount Singgalang], 1,700 m, 6 Jul 1878, *O. Beccari PS 327* (lectotype: K [K000831536!], designated here; isolectotypes: FI [FI013136, image seen], L [L0278249, image seen]).

Distribution. Endemic to Sumatra (Clarke, 1883; Bramley, 2005).

Notes. In the protologue of this species, Clarke (1883) cited one specimen with the description of the species, which is *Beccari 327* from Sumatra and cited two herbaria, K and Beccari’s own herbarium which is now in Florence. The specimen in K has Clarke’s writing on it and is selected here as the lectotype.

5. *CYRTANDRA BICOLOR* Jack
Cyrtandra bicolor Jack, Trans. Linn. Soc. London 14(1) (1823) 27. — Type: INDONESIA. Sumatra, *W. Jack s.n.* (lectotype: G [G00365349, image seen], designated here).

Distribution. Sumatra (Jack, 1823); Peninsular Malaysia, Sumatra (Clarke, 1883).

Notes. The only specimen found of *C. bicolor* collected by Jack is selected here as the lectotype. Clarke (1883) expands the range of this species to include Peninsular Malaysia although further work is required to clarify the distribution of this species and species limits as it is similar to *C. pendula* Blume.

6. *CYRTANDRA BREVICAULIS* Ridl.
Cyrtandra brevicaulis Ridl., J. Fed. Malay States Mus. 8(4) (1917) 70. — Type: INDONESIA. [West Sumatra Prov.], Tapan, Barong Baru, 4,000 ft., 7 Jun 1914, *H.C. Robinson & C.B. Kloss s.n.* (lectotype: BM [BM000600363!], designated here; isolectotype: K [K000831553!]).

Distribution. Endemic to Sumatra [West Sumatra] (Ridley, 1917).

Notes. Ridley (1917) states that this species is collected at ‘Barong Bharu, on the west side Barisan Range’, at 4,000 ft. There are two specimens of *Robinson & Kloss s.n.* from the Korinchi expedition one each at K and BM which are marked as Types and have both *C. brevicaulis* and Barong Bharu written on them. The specimen

at BM, which is the most complete, is designated here as the lectotype.

7. *CYRTANDRA CARNOSA* Jack
Cyrtandra carnososa Jack, Trans. Linn. Soc. London 14(1) (1823) 30. — *Whitia carnososa* (Jack) Blume, Bijdr. Fl. Ned. Ind. 14 (1826) 775. — Type: INDONESIA. Sumatra, *W. Jack s.n.* (lectotype: G [G00365351, image seen], designated here).

Distribution. Endemic to Sumatra (Jack, 1823).

Notes. The only specimen found of *C. carnososa* collected by Jack is selected here as the lectotype. *Cyrtandra carnososa* was moved into the genus *Whitia* Blume in 1826 (Blume, 1826), with a location in Java ‘in sylvis montium Seribu’ given but no specimen cited. *Cyrtandra carnososa* was listed as a synonym, although strictly this is the basionym as this is a recombination.

Bakhuizen van den Brink (1950) later contended that, in fact, *C. carnososa* and *Whitia carnososa* (Jack) Blume are different species and he provided another name in *Cyrtandra*, *C. rufa* Bakh.f., to accommodate his understanding of *Whitia carnososa*. Bakhuizen van den Brink (1950) stated that he could not find Blume’s original specimen from Mount Seribu but that Blume’s description ‘and the Javanese specimen doubtless cover each other’. Bakhuizen van den Brink also stated that *C. carnososa* differs by its unilateral disc. He listed Reinwardt’s collection from Mount Moenara as the type of this species and the lectotype of *Whitia carnososa* and also cited a *Kuhl & van Hasselt* specimen from Mount Pangrango.

As *Whitia carnososa* is a recombination of *Cyrtandra carnososa*, however, these species should share the same type, which we believe is a Jack collection now in the herbarium in G. It was, therefore, not correct, under the Code (Article 7.3 (Turland *et al.*, 2018)), for Bakhuizen van den Brink (1950) to treat *Whitia carnososa* and *Cyrtandra carnososa* as different taxa and designate a Reinwardt (or Blume) collection as a lectotype for *Whitia carnososa*. We therefore treat *Whitia carnososa* as a synonym of *Cyrtandra carnososa* here and *Cyrtandra rufa* as an unrelated species with the Reinwardt collection from Java as its type. Whether *C. rufa*, based on the Javan material, is present in Sumatra, remains to be confirmed through fieldwork and revisionary work.

8. *CYRTANDRA DISPAR* DC.
Cyrtandra dispar DC., Prodr. 9 (1845) 282. — *Cyrtandra frutescens* Wall., Numer. List [Wallich] (1829) n. 807, *nom. nud.* — Type: MALAYSIA. Penang, 1829, *N. Wallich Cat. 807* (lectotype: K [K000831502!], designated by Bramley *et al.* (2004); isolectotypes: BM [BM000755533!],

BM000755534!], E [E00062408!, E00062409!, E00062410!], K [K000831500!, K000831501!], L, S [S11-10989, image seen], SING).

Cyrtandra squamulata Korth. *nom.nud.*: C.B. Clarke, in A.DC. & C.DC., Monogr. Phan. 5 (1) (1883) 203. *nom. nud.*

Distribution. Peninsular Malaysia (De Candolle, 1845); Peninsular Malaysia and Sumatra (Clarke, 1883); Southern Thailand, Peninsular Malaysia, Sumatra (Bramley *et al.*, 2004).

Notes. In the protologue, de Candolle cited one specimen from the East India Company herbarium, *Wall. Cat. 807*, which had the name *C. frutescens* Wall. associated with it, which is a later homonym of *C. frutescens* Jack from which it is very distinct. Bramley selected the K-Wallich specimen as lectotype (Bramley *et al.*, 2004). Clarke (1883) cited many specimens with the description of the species and expanded the distribution to include Sumatra. *Cyrtandra squamulata* is an unpublished manuscript name of Korthals that was listed as a synonym of this species by Clarke (1883).

9. CYRTANDRA DISSIMILIS C.B. Clarke
Cyrtandra dissimilis C.B. Clarke, in A.DC. & C.DC., Monogr. Phan. 5(1) (1883) 207. — Type: INDONESIA. Provincia di Padang in Sumatra occidentale [West Sumatra Prov.], Ayer Mancior [Air Mancur], 360 m, Aug 1878, *O. Beccari PS 731* (lectotype: FI [FI013139, image seen], designated here; isolectotype: K [K000831512!]).

Distribution. Sumatra and Java (Clarke, 1883).

Notes. Clarke (1883) cited four specimens with the description of *C. dissimilis*: two from Java and two from Sumatra. Specimens of *Beccari 731* from K and FI and *Korthals 189* from L, both from Sumatra, have been traced. The most complete of the Beccari collections from Florence has been selected here as the lectotype.

10. CYRTANDRA FENESTRATA C.B. Clarke
Cyrtandra fenestrata C.B. Clarke, in A.DC. & C.DC., Monogr. Phan. 5(1) (1883) 233. — Type: INDONESIA. In Sumatra occidentale [West Sumatra Prov.] nel “Padangsche bovenlanden” sul Monte Singalan [Mount Singgalang], 1,700 m, Jul 1878, *O. Beccari PS 253* (lectotype: FI [FI013153, FI013154, image seen] designated here; isolectotypes: BM [BM000600334!], K [K000831528!], [L.2818236, image seen]).

Distribution. Endemic to Sumatra (Clarke, 1883; Bramley & Cronk, 2003).

Notes. In the protologue of *C. fenestrata*,

Clarke listed three *Beccari* collections: 65 (in K and FI), and 150 and 253 (in FI). The most complete of these, *Beccari 253*, with both fruits and flowers, in FI is selected as the lectotype here. Duplicates of this collection have also been found at BM, K, and L and these are designated as isolectotypes here.

11. CYRTANDRA FLABELLIFOLIA S. Moore
Cyrtandra flabellifolia S. Moore, J. Bot. 63[Suppl.] (1925) 75. — Type: INDONESIA. Resident Palembang [South Sumatra Prov.], Mt. Dempo, 5,500 ft, 1881, *H.O. Forbes 2258* (holotype: BM [BM000600340!]; isotype: L [L0003300, image seen]).

11a. CYRTANDRA FLABELLIFOLIA var. FLABELLIFOLIA

Distribution. Endemic to Sumatra [Mount Dempo] (Moore, 1925).

11b. CYRTANDRA FLABELLIFOLIA var. CORDATA S. Moore
Cyrtandra flabellifolia var. *cordata* S. Moore, J. Bot. 63[Suppl.] (1925) 75. — Type: INDONESIA. Resident Palembang [South Sumatra Prov.], Mt. Dempo, 5,500 ft, 1881, *H.O. Forbes 2423c* (holotype: BM [BM000600343!]).

Distribution. Endemic to Sumatra [Mount Dempo] (Moore, 1925).

12. CYRTANDRA FLABELLIGERA Ridl.
Cyrtandra flabelligera Ridl., J. Fed. Malay States Mus. 8(4) (1917) 69. — Type: INDONESIA. Sumatra, [Jambi Prov.], Korinchi, Siolak Daras, 16 Mar 1914, *H.C. Robinson & C.B. Kloss s.n.* (lectotype: K [K000831511!], designated here; isolectotypes: A [A00102939, image seen], US [US00126250, US00080844, images seen]).

Distribution. Endemic to Sumatra [Kerinci Range] (Ridley, 1917; Bramley & Cronk, 2003).

Notes. In the protologue, Ridley gave the locality for the species as Siolak Daras at 4,400 ft in Sumatra but did not cite any specimens. A holotype and isotype were listed by Bramley & Cronk (2003), although these specimens have the collection details of ‘Sungai Kumbang’ which does not match the locality given in the protologue. Specimens of *C. flabelligera* collected by Robinson and Kloss were found at A, K, and US with the collecting details ‘Siolak Daras’ which match the protologue. The most complete of these held at Kew is designated here as the lectotype. Ridley (1917) thought that this species is allied to *C. oblongifolia*, Benth., but ‘with large fan-shaped bracts and a rather long peduncle’. Whether this

species is truly distinct from *C. oblongifolia* requires further study as part of a full taxonomic revision.

13. CYRTANDRA FRUTESCENS Jack

Cyrtandra frutescens Jack, Trans. Linn. Soc. London 14(1) (1823) 31. — Type: INDONESIA. Sumatra, *W. Jack s.n.* (lectotype: G [G00365352, image seen], designated here).

Distribution. Endemic to Sumatra (Jack, 1823).

Notes. The only specimen found of *C. frutescens* collected by Jack is selected here as the lectotype.

14. CYRTANDRA GRACILENTA Kraenzl.

Cyrtandra gracilentata Kraenzl., J. Linn. Soc., Bot. 37 (1906) 278. — Type: INDONESIA. Sumatra, near Datar [Tanah Datar], 1897, *C. Curtis* 455 (holotype: K [K000831566!]).

Distribution. Endemic to Sumatra [West Sumatra] (Burt, 1970, 1978).

Notes. Kraenzlin (1906) cited one specimen with the description of *C. gracilentata*, which was *Curtis s.n.* from near ‘Datar (Dater?)’ as written by Kraenzlin, which he assumed to be in Borneo. As noted by Burt (1970, 1978), and also handwritten on the sheet at E on which a photograph of the K specimen is mounted, the correct spelling of the collecting locality has been a cause of confusion but that it is a place in Sumatra, not Borneo, and that Kraenzlin (1906) was incorrect about the locality. We give our interpretation of the locality name as written on the specimen label.

15. CYRTANDRA GRANDIS Blume var. AMPLA (C.B. Clarke) Bakh.f.

Cyrtandra grandis var. *ampla* (C.B. Clarke) Bakh.f., Blumea 6 (1950) 397. — *Cyrtandra ampla* C.B. Clarke in A.D.C. & C.D.C., Monogr. Phan. 5 (1) (1883) 259. — Type: INDONESIA. In Sumatra occidentale [West Sumatra Prov.] nel “Padangsche bovenlanden” sul Monte Singalan [Mount Singgalang], Jun 1878, *O. Beccari PS 173* (lectotype: K [K000831541!], designated here; isolectotypes: BM [BM000600333!], F [FI013132, image seen], L [L0003307, image seen]).

Distribution. Sumatra (Clarke, 1883); Sumatra, Java (Bakhuizen van den Brink, 1950; Backer & Bakhuizen van den Brink, 1965).

Notes. Clarke (1883) cited two specimens with the description of *C. ampla*. One was *Beccari 173* from Sumatra and the other was *Horsfield 18* from Java. Specimens of *Beccari 173* have been seen from K, L, BM, and FI but no specimens of

Horsfield 18 have been traced, although Clarke records that part of this specimen is at BM (Clarke, 1883). The specimen of *C. ampla* at K is selected here as the lectotype as it has the name in Clarke’s handwriting on it.

16. CYRTANDRA HIRSUTA Jack

Cyrtandra hirsuta Jack, Trans. Linn. Soc. London 14(1) (1823) 27. — Type: INDONESIA. Sumatra, *W. Jack s.n.* (lectotype: G [G00370808, image seen], designated here).

Distribution. Endemic to Sumatra (Jack, 1823).

Note. The only specimen found of *C. hirsuta* collected by Jack is selected here as the lectotype.

17. CYRTANDRA HOLODASYS Miq.

Cyrtandra holodasys Miq., Fl. Ned. Ind. 2 (1858) 747. — Type: INDONESIA. [West Sumatra Prov.], Palembang, *J.E. Teijsmann HB 11912* (lectotype: K [K000831517!], designated here; isolectotypes: BO [BO-1978094!, BO-1978095!], L [L0003242, image seen]).

Distribution. Endemic to Sumatra [West Sumatra] (Miquel, 1858; Clarke 1883).

Note. In the protologue for *C. holodasys*, Miquel (1858) cited one specimen with the description of the species, which was a *Teijsmann* specimen from Palembang in Sumatra, although no herbarium was cited. There are specimens matching this description in BO, K and L. The most complete specimen matching these details in K is selected here as the lectotype.

18. CYRTANDRA IMPRESSIVENIA C.B. Clarke

Cyrtandra impressivenia C.B. Clarke in A.D.C. & C.D.C., Monogr. Phan. 5(1) (1883) 212. — Type: INDONESIA. In Sumatra occidentale [West Sumatra Prov.] nel “Padangsche bovenlanden” sul Monte Singalan [Mount Singgalang], 1,700 m, Jun–Jul 1878, *O. Beccari PS 177* (lectotype: FI [FI013157, image seen], designated here; isolectotype: K [K000831521!]).

Distribution. Endemic to Sumatra [West Sumatra] (Clarke, 1883).

Notes. In the protologue, Clarke (1883) cited one specimen with the description of the species, which was *Beccari 177* from Sumatra, but listed collections from both K and FI. The specimen at FI is selected here as the lectotype, as it is the most complete specimen.

19. CYRTANDRA INCOMPTA Jack

Cyrtandra incompta Jack, Trans. Linn. Soc. London 14(1) (1823) 29. — Type: INDONESIA.

Sumatra, *W. Jack s.n.* (not found). West Sumatra, Gunung Sago, from Puncak Pato, 1,200 m, 9–12 Mar 1989, *Mulyati 06* (neotype: BO [BO-1871010!], designated here; isoneotypes ANDA, BO [BO-1871009!, BO-1871011!]).

Distribution. Endemic to Sumatra (Jack, 1823).

Notes. It has not been possible to find any Jack collections of this species, including at G and L (Clarke, 1883; Merrill, 1952). Thus, following Art 9.8 of the Code (Turland *et al.*, 2018) a neotype is selected from BO which matches Jack's description for the species. No locality is given in the protologue but some of Jack's collections are from West Sumatra.

20. CYRTANDRA INSULARIS Ridl.

Cyrtandra insularis Ridl., Bull. Misc. Inform. Kew 1926(2) (1926) 75. — Type: INDONESIA. Sumatra, Mentawai Islands, Island of Siberut, 11 Sep 1924, *C.B. Kloss SFN 13075* (holotype: K [K000831569!]; isotypes: BO [BO-1731157!, BO-1731159!], SING [SING0050764]).

Distribution. Endemic to Sumatra [Mentawai Islands] (Ridley, 1926).

Notes. This species was described in a paper on the Flora of the Mentawai Islands based on Cecil Boden-Kloss collections (Ridley, 1926). *Kloss 13075* is cited as the type; there are duplicates of this gathering at BO, K and SING. Ridley was at Kew from 1913 (Turner, 2012), so we assume his description was based on the K specimen which we list as the holotype. The specimens had been collected under Singapore Field Numbers and presumably distributed from there, with one set remaining at Singapore and unseen by Ridley. The fact that the SING duplicate has fruits rather than flowers, yet Ridley's description does not include fruit characters, supports this hypothesis.

21. CYRTANDRA INTEGRIFOLIA C.B. Clarke

Cyrtandra integrifolia C.B. Clarke in ADC. & C.DC., Monogr. Phan. 5(1) (1883) 248. — Type: INDONESIA. Provincia di Padang in Sumatra occidentale [West Sumatra Prov.], Ayer Mancior [Air Mancur], 360 m, Aug 1878, *O. Beccari PS 770* (holotype: K [K000831534!]; isotype MEL [MEL2492168, image seen]).

Distribution. Endemic to Sumatra [West Sumatra] (Clarke, 1883).

22. *Cyrtandra jackii* Q.W. Wang & Karton., *nom. nov.*

Cyrtandra glabra Jack, Trans. Linn. Soc. London 14 (1823) 28, *nom. illeg. non Cyrtandra glabra*

Banks ex C.F. Gaertn. (1807). — Type: INDONESIA. Sumatra, Bencoolen, *W. Jack s.n.* (not found). INDONESIA. Sumatra, Resident Bengkulu [Bengkulu Prov.], Kaba, 1,000 m, 18 Mar 1932, *C.N.A. de Voogd 1318* (neotype: BO [BO-1731105!], designated here; isoneotypes: BO [BO-1731106!], L [L.2818083, image seen]).

Distribution. Sumatra (Jack, 1823); Sumatra, Java (Bakhuizen van den Brink, 1950).

Notes. *Cyrtandra glabra* Jack was published illegitimately because it is a later homonym of *Cyrtandra glabra* Banks ex C.F. Gaertn. from the Pacific (Gaertner, 1807). In the protologue, Jack (1823) cites the location as being 'inland from Bencoolen'. However, no specimen is cited and it has not been possible to trace any of his collections of this species (Clarke, 1883; Merrill, 1952). A new name, *C. jackii* is proposed here to legitimise the species and a new type specimen is designated collected from close to the locality given by Jack and is a good match to the original description.

23. CYRTANDRA LOCUPLES S. Moore

Cyrtandra locuples S. Moore, J. Bot. 63[Suppl.] (1925) 75. — Type: INDONESIA. Resident Palembang [South Sumatra Prov.], Mt. Dempo, 5,500 ft, 1881, *H.O. Forbes 2264* (holotype: BM [BM000600342!]; isotype: WU [WU-0046015, image seen]).

Distribution. Endemic to Sumatra [South Sumatra] (Moore, 1925).

24. CYRTANDRA MACROPHYLLA Jack

Cyrtandra macrophylla Jack, Trans. Linn. Soc. London 14(1) (1823) 25, t. 2. — Type: INDONESIA. Sumatra, *W. Jack 87* (lectotype: [G00365262, image seen], designated here).

Distribution. Endemic to Sumatra (Jack, 1823).

Notes. The only specimen found of *C. macrophylla* collected by Jack is selected here as the lectotype.

25. CYRTANDRA MEMBRANACEA Ridl.

Cyrtandra membranacea Ridl., J. Fed. Malay States Mus. 8(4) (1917) 71. — Type: INDONESIA. Sumatra, [Jambi Prov.], Korinchi, Siolak Daras, 4,400 ft., 16 Mar 1914, *H.C. Robinson & C.B. Kloss s.n.* (lectotype: BM [BM000600362!], designated here).

Distribution. Endemic to Sumatra [Kerinci Range] (Ridley, 1917).

Notes. Ridley (1917) cited three collecting localities for *C. membranacea* (Barong Bharu, Barisan Range at 4,000 ft; Sungei Kumbang at

4,500 ft; Siolak Daras at 3,000 ft) Herbarium specimens with matching details have been found at BM, K and US. As Ridley did not explicitly designate a type or a herbarium, following Article 9.11 of the Code (Turland *et al.*, 2018), it is necessary to select a lectotype from this original material. The choice is further complicated because some sheets have multiple pieces of plant with multiple labels (e.g. K000831574, K000831575). After careful consideration, we choose to select the specimen at the BM [BM000600362] from Siolak Daras (in Ridley's handwriting) as lectotype here. Bramley & Cronk (2003) incorrectly listed this specimen as the holotype and that is corrected here.

26. *CYRTANDRA MINOR* S.Moore
Cyrtandra minor S.Moore, J. Bot. 63[Suppl.] (1925) 75. — Type: INDONESIA. Res. Palembang [South Sumatra Prov.], Mt. Siminoeng [Seminung], 3,900 ft, 1880, *H.O. Forbes 2146* (holotype: BM [BM000600339!]; isotypes: L [L0003255, L0003254, images seen]).

Distribution. Endemic to Sumatra [South Sumatra] (Moore, 1925).

27. *CYRTANDRA NAVICELLATA* Zipp. ex C.B.Clarke
Cyrtandra navicellata Zipp. ex C.B.Clarke in A.DC. & C.DC., Monogr. Phan. 5(1) (1883) 240. — Type: INDONESIA. Sumatra, 1882, *P.W. Korthals 255* (lectotype: K [K000831532!], designated here; isolectotype: L [L0278284, image seen]).

Distribution. Endemic to Sumatra (West Sumatra) (Clarke, 1883).

Notes. This species was published in 1883 based on an unpublished Zippelius name (Clarke, 1883). In the protologue, Clarke cited two specimens with the description of the species, which were *Korthals 173* and *255* from Sumatra. There is a single sheet with specimens of both *Korthals 173* and *255* mounted on it at Kew. Leiden also has sheets of *Korthals 173* and *255*. *Korthals 255* at Kew is the most complete specimen and is selected as the lectotype and the specimen in Leiden becomes the isolectotype.

28. *CYRTANDRA NEMOROSA* Blume
Cyrtandra nemorosa Blume, Bijdr. Fl. Ned. Ind. 14 (1826) 771. — Type: INDONESIA. Java, *C.G.C. Reinwardt s.n.* (lectotype: L [L0003256, image seen], designated here).
Cyrtandra reticosa C.B.Clarke in A.DC. & C.DC., Monogr. Phan. 5(1) (1883) 212. — Type: INDONESIA. Java, *P.W. Korthals 254* (lectotype: L [L2825676, image seen], designated here).

Distribution. Java (Blume, 1826; Clarke, 1883); Sumatra, Java (Bakhuizen van den Brink, 1950).

Notes. Reinwardt's collection from Java labeled *C. nemorosa* is selected as lectotype because there were none of Blume's own collections found for the species. Bakhuizen van den Brink (1950) placed *C. reticosa* in synonymy and automatically added Sumatra to the distribution of this species.

29. *CYRTANDRA OBLONGIFOLIA* (Blume) Benth. & Hook.f. ex C.B.Clarke
Cyrtandra oblongifolia (Blume) Benth. & Hook.f. ex C.B.Clarke in A.DC. & C.DC., Monogr. Phan. 5(1) (1883) 206. — *Whitia oblongifolia* Blume, Cat. Gew. Buitenzorg (1823) 17. — *Whitia longifolia* Blume, Cat. Gew. Buitenzorg (1823) 86, *nom. nud.* — Type: INDONESIA. Java, *C.L. Blume s.n.* (lectotype: L [L.2825707, image seen], designated here).

Whitia pilosa Zipp., *nom. nud.*: C.B.Clarke in A.DC. & C.DC., Monogr. Phan. 5(1) (1883) 206.

Distribution. Java (Blume, 1823); Sumatra, Java, Borneo, Philippines (Clarke, 1883; Merrill, 1923); Sumatra, Java, Borneo (Burt, 1970)

Notes. This species was first described in the genus *Whitia* by Blume (1823). Bentham & Hooker (1876) later questioned the distinctiveness of *Whitia* in their large work on genera, although the species was only formally moved into *Cyrtandra* by Clarke (1883).

Blume (1823, 1826) did not cite any specimens or a location but states that the species grows 'in sylvis montanis'. Here, we choose one of Blume's own specimens (L.2825707) from among several specimens labeled as *Whitia oblongifolia* in the Naturalis Biodiversity Center (L) and New York Botanical Garden (NY), and this is selected here as the lectotype.

30. *CYRTANDRA OLIGANTHA* Korth. ex C.B.Clarke
Cyrtandra oligantha Korth. ex C.B.Clarke in A.DC. & C.DC., Monogr. Phan. 5(1) (1883) 241. — Type: INDONESIA. Sumatra, *P.W. Korthals 1036 (109)* (lectotype: L [L.2826139, image seen], designated here; isolectotype: L [L.2826140, image seen]).

Distribution. Endemic to Sumatra (Clarke, 1883; Moore, 1925).

Notes. This species was published in 1883 (Clarke, 1883), based on an unpublished Korthals's name. In the protologue, Clarke cited '*Korthals, n. 1036* in h. Mus. Lugd. n. 109'. There are two sheets in the herbarium in Leiden which

have 'Korthals' and both of these collection numbers (109 and 1036) written on them. One of the sheets (L.2826139) has Korthals's writing on it and is selected here as the lectotype with the second becoming the isolectotype.

31. CYRTANDRA PANDURATA Ridl.

Cyrtandra pandurata Ridl., J. Malay. Branch Roy. Asiat. Soc. 1 (1923) 81. — Type: INDONESIA. [North Sumatra Prov.], Berastagi, 10 Feb 1921, H.N. Ridley s.n. (lectotype: K [K000831582!], designated here).

Distribution. Endemic to Sumatra [North Sumatra] (Ridley, 1923).

Notes. Ridley (1923) did not cite a type but he gave the locality of the species as Berastagi. There is one specimen of this species in the herbarium at Kew which was collected by Ridley in 1921 from Berastagi. As no other collections have been found, this is designated here as the lectotype.

32. CYRTANDRA PATENTISERRATA Bramley & Cronk

Cyrtandra patentiserrata Bramley & Cronk, Harvard Pap. Bot. 7(2) (2003) 420. — Type: INDONESIA. Sumatra West Kust [West Sumatra Prov.], G. Koerintji [Mt. Kerinci], 1,400 m, 7 May 1920, H.A.B. Bunnemeijer 8551 (holotype: L [L0278438, image seen]; isotype: BO!).

Distribution. Endemic to Sumatra [Kerinci Range] (Bramley & Cronk, 2003).

33. CYRTANDRA PAUCIFLORA Ridl. [Fig. 1e] *Cyrtandra pauciflora* Ridl., J. Malay. Branch Roy. Asiat. Soc. 1 (1923) 81. — Type: INDONESIA. [North Sumatra Prov.], Berastagi, wooded ravine, 15 Feb 1921, H.N. Ridley s.n. (lectotype: K [K000831585!], designated here).

Distribution. Endemic to Sumatra (North Sumatra) (Ridley, 1923).

Notes. There was no type specimen recorded in the protologue for this species but the location details are given as 'in a wooded ravine, Berastagi'. There are four specimens in the Kew herbarium collected by Ridley, without collection numbers, from Sumatra. One of these (K000831585) has exactly the same location details as in the protologue, and has flowers and fruits. It is selected here as the lectotype.

34. CYRTANDRA PELTATA Jack

Cyrtandra peltata Jack, Trans. Linn. Soc. London 14(1) (1823) 30, non Wawra (1872). — Type: INDONESIA. Sumatra, W. Jack s.n. (not found).

Sumatra, Bengkulu Prov., Ketahun, Sungai Gembung, c. 150 m, 12 Oct 1993, J.J. Afriastini 2643 (neotype: BO [BO-1350518!], designated here; isoneotype: L [L.3794481, image seen]).

Distribution. Endemic to Sumatra (Jack, 1823).

Notes. No Jack collections of this species have been found in any herbaria consulted, and thus a neotype has been selected from all Sumatran collections in BO. *Afriastini 2643* is chosen as neotype for the species here as the collection was made very close to Jack's collecting site in Bengkulu, Sumatra and its appearance closely matches Jack's description. The rest of Sumatran species were collected from West Sumatra.

35. CYRTANDRA PENDULA Blume [Fig. 1a] *Cyrtandra pendula* Blume, Bijdr. Fl. Ned. Ind. 14 (1826) 768. — Type: INDONESIA. Java, C.L. Blume 2038c (lectotype: L [L.2826033, image seen], designated here).

Cyrtandra rotundifolia Ridl., J. Straits Branch Roy. Asiat. Soc. 57 (1911) 76. — Type: MALAYSIA. State of Perak, Temengoh, 1909, H.N. Ridley 14445 (lectotype: SING [SING0043670!], designated here; isolectotypes: K [K000831503!], BM).

Distribution. Java (Blume, 1826); Sumatra and Java (Clarke, 1883); Peninsular Malaysia, Sumatra, Java (Bramley *et al.*, 2004).

Notes. Blume (1826) did not cite any specimens or a location when he described *C. pendula* but stated that the species grows 'in humidis montanis'. A flowering specimen collected by Blume, *Blume 2038c*, and incorrectly listed in Bramley *et al.* (2004) as the holotype rather than being proposed as the lectotype, is formally designated here.

Cyrtandra rotundifolia Ridl. was described from Peninsular Malaysia (Ridley, 1911). This was considered a synonym of *C. pendula* by Bramley *et al.* (2004). Ridley (1911) did not cite any specimens but gave the locality as 'Temengoh'. The most complete specimen at SING, and marked as a type, is selected as the lectotype and the specimens at K and BM become the isolectotypes.

36. CYRTANDRA PERPLEXA S.Moore

Cyrtandra perplexa S.Moore, J. Bot. 63[Suppl.] (1925) 74. — Type: INDONESIA. Res. Palembang [South Sumatra Prov.], Mt. Dempo, 6,500 ft., 1880, H.O. Forbes 2493a (holotype: BM [BM000600347!]; isotype: L [L0003261, image seen]).

Distribution. Endemic to Sumatra [South Sumatra] (Moore, 1925).

37. *CYRTANDRA PICTA* Blume

Cyrtandra picta Blume, Bijdr. Fl. Ned. Ind. 14 (1826) 769. — Type: INDONESIA. Java, *C.L. Blume s.n.* (lectotype: L [L.2826547, image seen], designated here).

Cyrtandra longepetiolata de Vriese, Pl. Ind. Bat. Orient. (1856) 12. — Type: INDONESIA. Java, Bantam, *C.G.C. Reinwardt. s.n.* (lectotype: L [L0003263, image seen], designated here).

Cyrtandra repens var. *monantha* C.B. Clarke in A.D.C. & C.D.C., Monogr. Phan. 5(1) (1883) 248. — Type: INDONESIA. Java, *H. Kuhl & J.C. van Hasselt 87* (holotype: L).

Distribution. Java (Blume, 1826); Sumatra, Java (Clarke, 1883; Bakhuizen van den Brink, 1950).

Notes. The lectotype for *Cyrtandra picta* was taken from Blume's own collections at L with his handwriting on the label. For *C. longepetiolata* described by de Vriese, one of Reinwardt's collections, annotated with the manuscript name '*Rhynchocharpus glaber* Rwdt' mentioned in the protologue, has been selected as De Vriese was working on Reinwardt's herbarium (Van Steenis-Kruseman, 2022).

Bakhuizen van den Brink (1950) considered *C. longepetiolata* to be a synonym of *C. picta*. Bramley & Cronk (2003) stated that *C. longepetiolata* may be distinct from *C. picta* but it is placed back in synonymy here.

38. *CYRTANDRA PILOSA* Blume

Cyrtandra pilosa Blume, Bijdr. Fl. Ned. Ind. 14 (1826) 770. — Type: INDONESIA. Java, *C.L. Blume 2038b* (lectotype: L [L0003264, image seen], designated here).

Cyrtandra pallescens Jack, *nom. nud.*: C.B. Clarke in A.D.C. & C.D.C., Monogr. Phan. 5(1) (1883) 231.

Distribution. Java (Blume, 1826); Sumatra, Java (Clarke, 1883).

Notes. Blume's own collection from Java in L with his handwriting on the label, is chosen as lectotype. This name has been applied to specimens across a wide distributional range from Java, Sumatra, Singapore, Myanmar and Peninsular Malaysia (Clarke, 1883; Burt, 1978). Although, the Peninsular Malaysian specimens are now considered to be *C. wallichii* (C.B. Clarke) B.L. Burt (Burt, 1978; Bramley *et al.*, 2004). Further work is required across the distribution to determine how widely distributed this species is and to confirm its presence in Sumatra.

39. *CYRTANDRA POPULIFOLIA* Miq.

Cyrtandra populifolia Miq., Fl. Ned. Ind. 2 (1858) 741. — Type: INDONESIA. [West Sumatra

Prov.], in de kloof van den Singalang [Mt. Singalang], *J.E. Teijsmann HB 1197* (lectotype: U [U0002253, image seen], designated here; isolectotypes: BO [BO-1886854!, BO-1886855!], L [L0003267, image seen]).

Distribution. Sumatra (Miquel, 1858); Sumatra, Java (Clarke, 1883; Bakhuizen van den Brink, 1950).

Notes. In the protologue for *C. populifolia*, Miquel cited a Teijsmann specimen from Mount Singalang with the description of the species. A Teijsmann collection of this species from U, where Miquel was based (Van Steenis-Kruseman, 2022) and marked as 'Typus', is designated here as the Lectotype. A duplicate at L, marked as 'Typ. Dupl' and less complete, is designated here as the isolectotype along with two sheets in BO.

40. *CYRTANDRA RHYNCANTHERA*

C.B. Clarke

Cyrtandra rhyncanthera C.B. Clarke in A.D.C. & C.D.C., Monogr. Phan. 5(1) (1883) 233. — Type: INDONESIA. Sumatra West Coast, Mount Singalang, *C. Curtis 77* (lectotype: K [K000831525!], designated by Bramley & Cronk (2003).

Distribution. Endemic to Sumatra (Clarke, 1883; Bramley & Cronk, 2003).

41. *CYRTANDRA ROSEA* Ridl. [Fig. 1b]

Cyrtandra rosea Ridl., J. Fed. Malay States Mus. 8(4) (1917) 70. — Type: INDONESIA. [Jambi Prov.], Korinchi, Siolak Daras, 3,000 ft., 17 Mar 1914, *H.C. Robinson & C.B. Kloss s.n.* (lectotype: BM [BM000600367!], designated here; isolectotype: K [K000831592!]).

Distribution. Endemic to Sumatra [Kerinci Range] (Ridley, 1917).

Notes. Ridley (1917) gave details of two localities in the protologue of this species. One was Siolak Daras, at 3,000 ft.; the other was Korinchi Peak, 7,300 ft. A *Robinson & Kloss* collection from Siolak Daras specimen was incorrectly listed as the holotype by Bramley & Cronk (2003), rather than being proposed as a lectotype. Here, we formally designate it as lectotype.

42. *CYRTANDRA ROSTRATA* Blume

Cyrtandra rostrata Blume, Bijdr. Fl. Ned. Ind. 14 (1826) 771. — Type: INDONESIA. Java, *C.L. Blume s.n.* (lectotype: L [L0003272, image seen], designated here).

42a. *CYRTANDRA ROSTRATA* var. *ROSTRATA*

Distribution. Java (Blume, 1826); Sumatra,

Java (Clarke, 1883; Moore, 1925); Sumatra, Java, Lesser Sunda Islands (Girmansyah *et al.* 2013).

Notes. This species was described from Java but its distribution was later extended to include Sumatra (Clarke, 1883; Moore, 1925) and the Lesser Sunda Islands (Girmansyah *et al.*, 2013). One of Blume's own collections marked as *Cyrtandra rostrata* in his handwriting is selected as the lectotype.

42b. CYRTANDRA ROSTRATA var. SUBSESSILIS S.Moore

Cyrtandra rostrata var. *subsessilis* S.Moore, J. Bot. 63[Suppl.] (1925) 74. — Type: INDONESIA. Sumatra, Lampongs [Lampung Prov.], Kotta Djawa, 285 ft., 1880, *H.O. Forbes 1382* (holotype: BM [BM014127659!]; isotypes: WU [WU0046017, image seen]).

Distribution. Endemic to Sumatra [Lampung] (Moore, 1925).

Notes. The specimens at BM and WU both have the number 1382 written on a label that is marked as 'SOUTH EAST JAVA'. The protologue states, however, that the specimen was collected in 'Kotta Djawa, Lampong' in Sumatra.

43. CYRTANDRA RUBRIFLORA P.E.Sm. & H.J.Atkins [Fig. 1c]

Cyrtandra rubriflora P.E.Sm. & H.J.Atkins, Rheedeia 30 (2020) 159. — Type: INDONESIA. Sumatra, Aceh Province, Gunung Leuser National Park, Ketambe Research Station, 8 Mar 2008, *P. Wilkie, M. Hughes, A. Sumadijaya, Rasnovi, Marlan & Rabusin PW630* (holotype: E [E00416358!]; isotype: BO [BO-1880564!]).

Distribution. Endemic to Sumatra [Leuser Mts.] (Smith *et al.*, 2020).

44. CYRTANDRA SANDEI de Vriese

Cyrtandra sandei de Vriese, Pl. Ind. Bat. Orient. (1856) 14. — Type: INDONESIA. Celebes [Sulawesi], Lontar, *C.G.C. Reinwardt s.n.* (lectotype: L [L0003193!], designated by Atkins & Kartonegoro (2021)).

Distribution. Sulawesi (De Vriese, 1856); Sumatra and Java (Clarke, 1883); Sumatra, Java, Lesser Sunda Islands, Sulawesi (Atkins & Kartonegoro, 2021).

45. CYRTANDRA SCUTATA S.Moore

Cyrtandra scutata S.Moore, J. Bot. 63[Suppl.] (1925) 76. — Type: INDONESIA. Resident Palembang [South Sumatra Prov.], Mt. Dempo, 4,000 ft., 1880, *H.O. Forbes 2437bis* (holotype: BM [BM000600346!]).

Distribution. Endemic to Sumatra [Mt. Dempo] (Moore, 1925).

46. CYRTANDRA SIPORENSIS Olivar

Cyrtandra siporensis Olivar, Taxon 71(5) (2022) 1104. — *Cyrtandra chiritooides* Ridl., Bull. Misc. Inform. Kew 1926 (1926) 75, *nom. illeg., non Cyrtandra chiritooides* Kraenzl. (1913) — Type: INDONESIA. Sumatra, Mentawai Islands, Island of Sipora, 9 Oct 1924, *C.B. Kloss 14651* (holotype: K [K000831554!]; isotypes: BO [BO-1735386!], SING [SING0050766!]).

Distribution. Endemic to Sumatra [Mentawai Islands] (Ridley, 1926; Olivar *et al.*, 2022).

47. CYRTANDRA STENOPTERA Bramley & Cronk

Cyrtandra stenoptera Bramley & Cronk, Harvard Pap. Bot. 7(2) (2003) 417. — Type: INDONESIA. Sumatra, Mt. Kerinci, 1,800–2,000 m, 27 Jul 2000, *Radhiah & Q.C.B. Cronk 110* (holotype: E [E00121291!]; isotypes: BIOT!, BO!).

Distribution. Endemic to Sumatra [Kerinci Range] (Bramley & Cronk, 2003).

48. CYRTANDRA SULCATA Blume

Cyrtandra sulcata Blume, Bijdr. Fl. Ned. Ind. 14 (1826) 770. — Type: INDONESIA. [West Java Prov.], Megamendung, *C.L. Blume 221* (lectotype: L [L2826829, image seen], designated by Atkins & Kartonegoro (2021)).

Distribution. Java (Blume, 1826; Clarke, 1883); Sumatra, Java, Sulawesi (Atkins & Kartonegoro, 2021).

49. CYRTANDRA TEYSMANNII Miq.

Cyrtandra teysmannii Miq., Fl. Ned. Ind. 2 (1858) 741. — Type: INDONESIA. Sumatra, in de kloof van den Singalang [Mt. Singgalang], *J.E. Teijsmann HB 1198* (lectotype: BO [BO-1877508!], designated here; isolectotype U [U0002254, image seen]).

Distribution. Endemic to Sumatra [West Sumatra] (Miquel, 1858; Clarke, 1883).

Note. In the protologue for *C. teysmannii*, Miquel (1858) cited a Teijsmann specimen from Singgalang with the description of the species but no herbarium. A Teijsmann collection of this species from BO, which matches the location details in the protologue, is designated here as the lectotype and a duplicate at U is designated as the isolectotype.

50. CYRTANDRA TRICHODON Ridl.

Cyrtandra trichodon Ridl., J. Fed. Malay States Mus. 8 (1917) 70. — Type: INDONESIA. Suma-

tra, Korinchi Peak, 6 May 1914, *H.C. Robinson & C.B. Kloss*, *s.n.* (lectotype: BM [BM000600356!], designated here; islectotype K [K000831595!]).

Distribution. Endemic to Sumatra [Kerinci Range] (Ridley, 1917; Bramley & Cronk, 2003).

Notes. Ridley (1917) did not cite any specimens in the protologue but gave a location of ‘Korinchi Peak, 7,300 ft’ for this species. There are two duplicates of a *Robinson & Kloss s.n.* collection with these locality details: one at the BM and one at K. As Ridley did not explicitly designate a type or a herbarium and because we cannot be sure that Ridley was not working closely with both sheets (his handwriting is on the labels of both), following Article 9.11 of the Code (Turland *et al.*, 2018), it is necessary to select a lectotype. Bramley & Cronk (2003) incorrectly cited the BM duplicate as the holotype and the Kew duplicate as the isotype. We correct that here by formally designating the BM specimen as the lectotype and the Kew specimen as the islectotype.

51. *CYRTANDRA VIRIDESCENS* C.B. Clarke
Cyrtandra viridescens C.B. Clarke in A.D.C. & C.D.C., Monogr. Phan. 5(1) (1883) 247. — Type: INDONESIA. In Sumatra occidentale [West Sumatra Prov.] nel “Padangsche bovenlanden” sul Monte Singalan [Mount Singgalang], 1,600 m, Jun-Jul 1878, *O. Beccari PS 25* (lectotype: FI [FI013180, image seen] designated here; islectotype: K [K000831533!]).

Distribution. Endemic to Sumatra (Clarke, 1883).

Notes. Clarke (1883) listed *Beccari 25* for this species deposited in FI and K. The collection from FI is selected as the lectotype here as it has flowers.

UNCERTAIN SPECIES

Two names described by Jack (1823) have been placed here. It was not possible to locate any collections made by Jack linked to these names or identify any material appropriate for neotypification. Further research will be carried out as part of a full revision of Sumatran *Cyrtandra* and may require fieldwork to the collecting localities of the type material.

52. *CYRTANDRA MACULATA* Jack
Cyrtandra maculata Jack, Trans. Linn. Soc. London 14 (1823) 26. — Type: INDONESIA. Sumatra, *W. Jack s.n.* (not found).

Distribution. Endemic to Sumatra (Jack, 1823).

53. *CYRTANDRA RUBIGINOSA* Jack
Cyrtandra rubiginosa Jack, Trans. Linn. Soc. London 14 (1823) 32. — Type: INDONESIA. Sumatra, *Jack s.n.* (not found).

Distribution. Endemic to Sumatra (Jack, 1823).

EXCLUDED SPECIES

1. *CYRTANDRA HORSFIELDII* Miq.
Cyrtandra horsfieldii Miq., Fl. Ned. Ind. 2 (1858) 738. — Type: INDONESIA. Sumatra, Bangka, *T. Horsfield s.n.* (lectotype: K [K000854725!], designated here). = *Pentaphragma horsfieldii* (Miq.) Airy Shaw, Kew Bull. 8(2) (1953) 249 (Pentaphragmataceae).

Notes. *Cyrtandra horsfieldii* was transferred to *Pentaphragma* in the account for the genus in Malesia (Airy Shaw, 1953).

2. *CYRTANDRA DECURRENS* de Vriese
Cyrtandra decurrens de Vriese, Pl. Ind. Bat. Orient. (1856) 14. — Type: INDONESIA. [Maluku Prov.], Amboina insula prope Hilam, Jul 1821, *C.G.C. Reinwardt 1266 (205)* (holotype: L [L.2818363, image seen]).
Cyrtandra elongata Korth., *nom. nud.*: C.B. Clarke in A.D.C. & C.D.C., Monogr. Phan. 5(1) (1883) 232.

Notes. This species was described by De Vriese (1856) from a specimen from the Moluccas, *Reinwardt 1266* at Reinwardt’s herbarium, now Naturalis Biodiversity Center (L). A Reinwardt collection from Ambon (Ambonia) at the herbarium in Leiden is considered to be the lectotype. In 1883, Clarke expanded the distribution of the species to include Sumatra and also described three varieties: one from Peninsular Malaysia, one from Borneo and Papua and one from Sulawesi. The varieties from Sulawesi and Peninsular Malaysia have subsequently been raised to species-level as *C. polyneura* (C.B. Clarke) B.L. Burtt (Burtt, 1990) and *C. wallichii* (C.B. Clarke) B.L. Burtt (Burtt, 1978) respectively. The specimens listed by Clarke (1883) as *C. decurrens* when he expanded the distribution of the species to include Sumatra (*Korthals 119 & 128*) are now considered to be *C. pandurata*, and *C. decurrens* is not thought to be present in Sumatra.

AUTHOR CONTRIBUTIONS

QWW, GLCB, HJA, and AK set the ideas for this research and all authors contributed equally as main authors to the manuscript.

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Appendix. List of all Sumatran *Cyrtandra* names with status, distribution, and types and their status and deposition (accepted name in bold).

Name	Accepted name	Distribution	Type and status
<i>Cyrtandra ampla</i> C.B.Clarke	<i>Cyrtandra grandis</i> var. <i>ampla</i> (C.B.Clarke) Bakh.f.		
<i>Cyrtandra anisophylla</i> C.B.Clarke	=	Sumatra	Holo FI; iso K
<i>Cyrtandra aurea</i> Jack		Sumatra, Java	Neo BO, designated here
<i>Cyrtandra aureotincta</i> Bram- ley & Cronk		Sumatra (Kerinci Range)	Holo E; iso BIOT, BO
<i>Cyrtandra beccarii</i> C.B.Clarke		Sumatra	Lecto K, designated here; isolecto FI, L
<i>Cyrtandra bicolor</i> Jack		Peninsular Malaysia, Sumatra	Lecto G, designated here
<i>Cyrtandra brevicaulis</i> Ridl.		Sumatra (West)	Lecto BM, designated here; isolecto K
<i>Cyrtandra carnosa</i> Jack		Sumatra	Lecto G, designated here
<i>Cyrtandra chiritoides</i> Ridl.	<i>Cyrtandra siporensis</i> Olivar		
<i>Cyrtandra cordifolia</i> de Vriese	<i>Cyrtandra aurea</i> Jack		Holo L, <i>n.v.</i>
<i>Cyrtandra decurrens</i> de Vriese		Moluccas	Holo L
<i>Cyrtandra dispar</i> DC.		Thailand, Peninsular Malaysia, Sumatra	Lecto K; isolecto BM, E, K, L, S, SING
<i>Cyrtandra dissimilis</i> C.B.Clarke		Sumatra, Java	Lecto FI, designated here; isolecto K
<i>Cyrtandra elongata</i> Korth.	<i>Cyrtandra decurrens</i> de Vriese		<i>nomen nudum</i>
<i>Cyrtandra fenestrata</i> C.B.Clarke		Sumatra	Lecto FI designated here; isolecto BM, FI, K, L
<i>Cyrtandra flabellifolia</i> S.Moore		Sumatra (Mt. Dempo)	Holo BM; iso L
<i>Cyrtandra flabellifolia</i> var. <i>cordata</i> S.Moore		Sumatra (Mt. Dempo)	Holo BM
<i>Cyrtandra flabelligera</i> Ridl.		Sumatra (Kerinci Range)	Lecto K, designated here; isolecto A, US
<i>Cyrtandra frutescens</i> Jack		Sumatra	Lecto G, designated here
<i>Cyrtandra frutescens</i> Wall.	<i>Cyrtandra dispar</i> DC.		<i>nomen nudum</i>
<i>Cyrtandra glabra</i> Jack	<i>Cyrtandra jackii</i> Q.W.Wang & Karton.		
<i>Cyrtandra gracilentata</i> Kraenzl.		Sumatra (West)	Holo K
<i>Cyrtandra grandis</i> var. <i>am- pla</i> (C.B.Clarke) Bakh.f		Sumatra, Java	Lecto K, designated here; isolecto BM, FI, L
<i>Cyrtandra hirsuta</i> Jack		Sumatra	Lecto G, designated here

<i>Cyrtandra holodasys</i> Miq.		Sumatra	Lecto K, designated here; isolecto BO, L
<i>Cyrtandra horsfieldii</i> Miq.	<i>Pentaphragma horsfieldii</i> (Miq.) Airy Shaw		Lecto K, designated here
<i>Cyrtandra impressivenia</i> C.B. Clarke		Sumatra (West)	Lecto FI, designated here; isolecto K
<i>Cyrtandra incompta</i> Jack		Sumatra	Neo BO, designated here; isoneo ANDA, BO
<i>Cyrtandra insularis</i> Ridl.		Sumatra (Mentawai Islands)	Holo K; iso BO, SING
<i>Cyrtandra integrifolia</i> C.B. Clarke		Sumatra (West)	Holo K; iso MEL
<i>Cyrtandra jackii</i> Q.W. Wang & Karton.		Sumatra, Java	Neo BO, designated here; isoneo BO, L
<i>Cyrtandra locuples</i> S. Moore		Sumatra (South)	Holo BM; iso WU
<i>Cyrtandra longepetiolata</i> de Vriese	<i>Cyrtandra picta</i> Blume		Lecto L, designated here
<i>Cyrtandra macrophylla</i> Jack		Sumatra	Lecto G, designated here
<i>Cyrtandra maculata</i> Jack		Sumatra	Neotype required
<i>Cyrtandra membranacea</i> Ridl.		Sumatra (Kerinci Range)	Lecto BM, designated here
<i>Cyrtandra minor</i> S. Moore		Sumatra (South)	holo BM; iso L
<i>Cyrtandra navicellata</i> Zipp. ex C.B. Clarke		Sumatra (West)	Lecto K, designated here; isolecto L
<i>Cyrtandra nemorosa</i> Blume		Sumatra, Java	Lecto L, designated here
<i>Cyrtandra oblongifolia</i> Benth. & Hook.f. ex C.B. Clarke		Sumatra, Java, Borneo	Lecto L, designated here
<i>Cyrtandra oligantha</i> Korth. ex C.B. Clarke		Sumatra	Lecto L, designated here; isolecto L
<i>Cyrtandra pallescens</i> Jack	<i>Cyrtandra pilosa</i> Blume		<i>nomen nudum</i>
<i>Cyrtandra pandurata</i> Ridl.		Sumatra (North)	Lecto K, designated here
<i>Cyrtandra patentiserrata</i> Bramley & Cronk		Sumatra (Kerinci Range)	Holo L; iso BO
<i>Cyrtandra pauciflora</i> Ridl.		Sumatra (North)	Lecto K, designated here
<i>Cyrtandra peltata</i> Jack		Sumatra	Neo BO, designated here; isoneo L
<i>Cyrtandra pendula</i> Blume		Peninsular Malaysia, Sumatra, Java	Lecto L, designated here
<i>Cyrtandra perplexa</i> S. Moore		Sumatra (South)	Holo BM; iso L
<i>Cyrtandra picta</i> Blume		Sumatra, Java	Lecto L, designated here

<i>Cyrtandra pilosa</i> Blume	Sumatra, Java	Lecto L, designated here
<i>Cyrtandra populifolia</i> Miq.	Sumatra, Java	Lecto U, designated here; isolecto BO, L
<i>Cyrtandra repens</i> var. <i>monantha</i> C.B.Clarke	<i>Cyrtandra picta</i> Blume	Holo L, <i>n.v.</i>
<i>Cyrtandra reticosa</i> C.B.Clarke	<i>Cyrtandra nemorosa</i> Blume	Lecto L, designated here
<i>Cyrtandra rhyncanthera</i> C.B.Clarke	Sumatra	Lecto K
<i>Cyrtandra rosea</i> Ridl.	Sumatra (Kerinci Range)	Lecto BM, designated here; isolecto K
<i>Cyrtandra rostrata</i> Blume	Sumatra, Java, Lesser Sunda Islands	Lecto L, designated here
<i>Cyrtandra rostrata</i> var. <i>subsessilis</i> S.Moore	Sumatra (Lampung)	Holo BM.; iso WU
<i>Cyrtandra rotundifolia</i> Ridl.	<i>Cyrtandra pendula</i> Blume	Lecto SING, designated here; isolecto K
<i>Cyrtandra rubiginosa</i> Jack	Sumatra	Neotype required
<i>Cyrtandra rubriflora</i> P.E.Sm. & H.J.Atkins	Sumatra (Mt. Leuser)	Holo E; iso BO
<i>Cyrtandra sandei</i> de Vriese	Sumatra, Java, Lesser Sunda, Sulawesi	Lecto L
<i>Cyrtandra scutata</i> S.Moore	Sumatra (Mt. Dempo)	Holo BM
<i>Cyrtandra siporensis</i> Olivar	Sumatra (Mentawai Islands)	holo K; iso BO, SING
<i>Cyrtandra squamulata</i> Korth.	<i>Cyrtandra dispar</i> DC.	<i>nomen nudum</i>
<i>Cyrtandra stenoptera</i> Bramley & Cronk	Sumatra (Kerinci Range)	Holo E; iso BIOT, BO
<i>Cyrtandra sulcata</i> Blume	Sumatra, Java, Lesser Sunda, Sulawesi	Lecto L
<i>Cyrtandra teysmannii</i> Miq.	Sumatra (West)	Lecto BO, designated here; isolecto U
<i>Cyrtandra trichodon</i> Ridl.	Sumatra (Kerinci Range)	Lecto BM, designated here; isolecto K
<i>Cyrtandra viridescens</i> C.B.Clarke	Sumatra	Lecto FI, designated here; isolecto K
<i>Rhynchocharpus cordifolius</i> Reinw. ex Blume	<i>Cyrtandra aurea</i> Jack	<i>nomen nudum</i>
<i>Whitia carnososa</i> (Jack) Blume	<i>Cyrtandra carnososa</i> Jack	
<i>Whitia longifolia</i> Blume	<i>Cyrtandra oblongifolia</i> (Blume) Benth. & Hook. ex C.B.Clarke	<i>nomen nudum</i>
<i>Whitia oblongifolia</i> Blume	<i>Cyrtandra oblongifolia</i> (Blume) Benth. & Hook. ex C.B.Clarke	
<i>Whitia pilosa</i> Zipp.	<i>Cyrtandra oblongifolia</i> (Blume) Benth. & Hook. ex C.B.Clarke	<i>nomen nudum</i>
