

NOMENCLATURE ARTICLE

A synopsis of Philippine *Cyrtandra* (Gesneriaceae)

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Abstract A taxonomic synopsis of Philippine *Cyrtandra* (Gesneriaceae) is presented. Following a study of 138 published names and their types, we accept 98 *Cyrtandra* species for the Philippine flora. Except for *C. angularis*, *C. elatostemoides*, and *C. yaeyamae*, all are endemic to the country. Lectotypes or neotypes are designated for all names for which this is necessary, except for six names for which we were unable to locate original material. We also validate a species name that was previously described without a Latin diagnosis (*C. peninsula*), synonymize three names, and provide taxonomic notes for each species. In addition, we propose two replacement names for taxa for which a legitimate name in *Cyrtandra* does not currently exist: *C. edanoi* for a Philippine species and *C. siporensis* for a Sumatran species. A look-up table is provided to facilitate referencing of currently accepted names in Philippine *Cyrtandra*.

Keywords biodiversity; conservation; nomen novum; species nova; synonymy; taxonomy; typification

Supporting Information may be found online in the Supporting Information section at the end of the article.

■ INTRODUCTION

Cyrtandra J.R.Forst. & G.Forst. is the largest genus in the Gesneriaceae with ca. 800 species of herbs, subshrubs and climbers, recognized by possessing two fertile stamens, and ellipsoidal indehiscent fruits that can either be tough-walled capsules or fleshy berries (Figs. 1, 2) (Cronk & al., 2005; Atkins & al., 2013, 2020). *Cyrtandra* exhibits the widest geographical range of all Gesneriaceae genera. This extends from the Nicobar Islands in the West to the Hawaiian and Marquesan islands in the East (Burt, 2001; Atkins & al., 2013). Biogeographical studies of the genus provided evidence that Borneo is the most likely ancestral area and that dispersal followed a west-to-east pattern (Clark & al., 2009; Johnson & al., 2019; Atkins & al., 2020). As is common for many widespread species-diverse genera in the region (e.g., *Begonia* L., *Bulbophyllum* Thouars, *Dendrochilum* Blume, *Elatostema* J.R.Forst. & G.Forst., *Hoya* R.Br., *Ficus* L., *Medinilla* Gaudich., *Syzygium* Gaertn.), a modern comprehensive taxonomic treatment of this highly diverse genus is still lacking.

Clarke (1883) attempted an overall treatment of *Cyrtandra*, recognizing 167 species, which he divided into two subgenera and thirteen sections. Taxonomists that followed recognized that his sections contained a mixture of species unrelated to each other and abandoned his system of classification (Burt, 2001; Bramley, 2005). Subsequent sectional classifications were developed to accommodate diversity in Hawaii (Hillebrand, 1888; St. John, 1966, 1987; Wagner & al., 1999) and in New Guinea (Schlechter, 1923). Atkins & al. (2021) showed that all but one of Clarke's (1883) sections, *C. sect. Dissimiles*, are polyphyletic. To date, no satisfactory infrageneric classification exists for the genus. Bramley (2003) suggested that an island-by-island approach is most suitable to advance the taxonomy of *Cyrtandra* and this would benefit from concerted, multi-institutional, multinational strategies. Using this approach, Clark & al. (2013) produced a phylogenetically informed revision for the Solomon Islands and recognized monophyletic groups that are characterized by morphological characters. Atkins & al. (2020) produced the first well-sampled phylogeny of *Cyrtandra* across Southeast Asia, which showed some geographical structuring. This became an important

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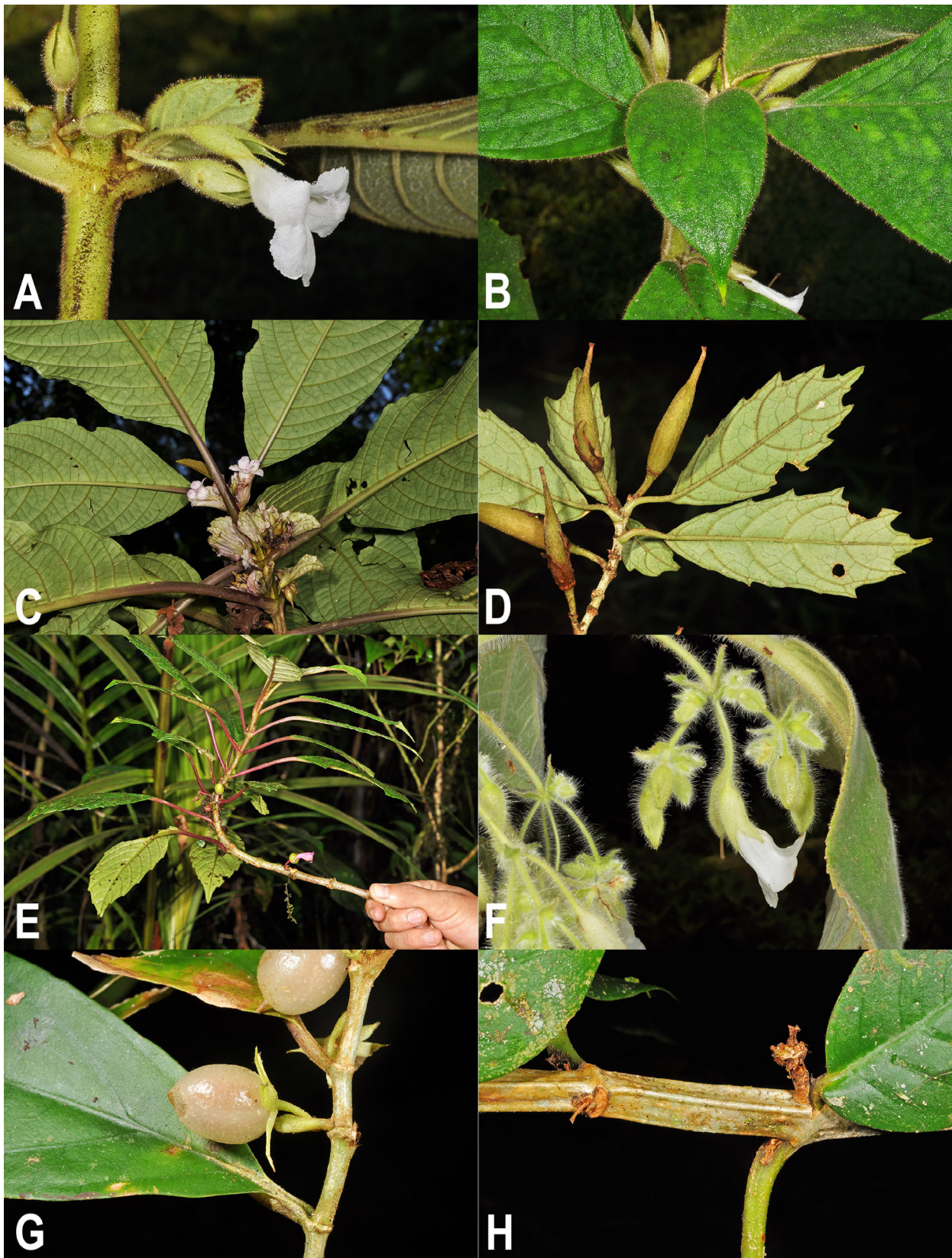


Fig. 1. Photographs of Philippine *Cyrtandra*. **A**, *C. ferruginea*: few-flowered simple cyme and hirsute corolla; **B**, *C. ferruginea*: anisophyllous leaves; **C**, *C. cumingii*: abaxial view of flowering shoot; **D**, *C. incisa*: fruiting shoot showing distinctly incised leaf margins; **E**, *C. sibuyanensis*: flowering shoot with leaves with long petioles and flowers with pink glabrous recurved corollas; **F**, *C. argentii*: pendulous compound and 10–15-flowered inflorescence; **G**, *C. maesifolia*: berry-like fruits; **H**, *C. angularis*: angular internodes. — Photos: Pieter B. Pelser & Julie F. Barcelona.

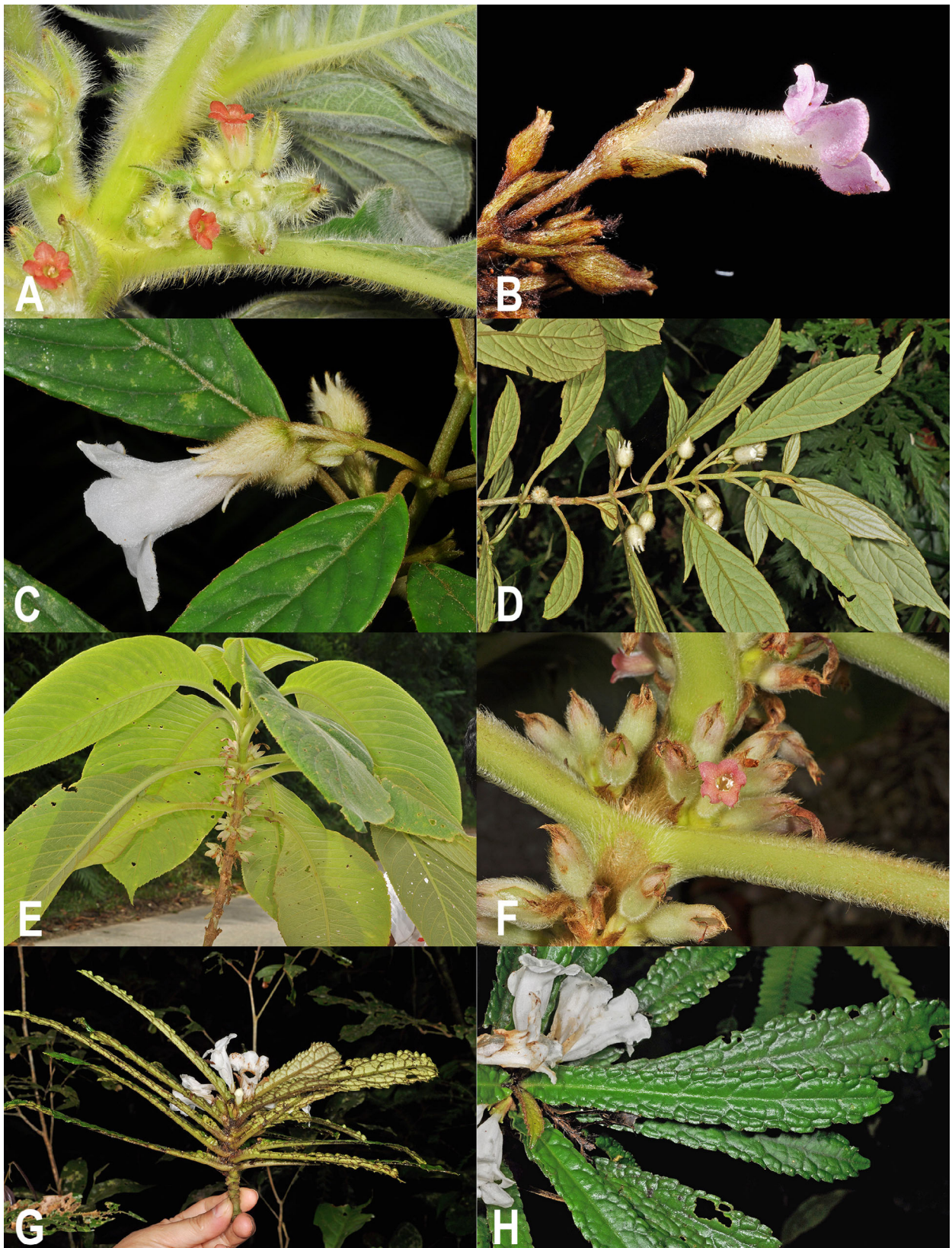


Fig. 2. Photographs of Philippine *Cyrtandra*: **A**, *C. villosissima*: flowers with red corolla; **B**, *C. ramiflora*: flower with white corolla tube and pink lobes; **C**, *C. parviflora*: flower; **D**, *C. parviflora*: flowering shoot; **E**, *C. hirtigera* var. *chlorina*: stem with senescent flowers; **F**, *C. hirtigera* var. *chlorina*: flower; **G**, *C. attenuata*: linear obovate leaves that are congested in the upper parts of the stem; **H**, *C. attenuata*: leaves. — Photos: Pieter B. Pelsel & Julie F. Barcelona.

stimulus for taxonomic treatments in centers of diversity, such as Sulawesi (Atkins & Kartonegoro, 2021), Borneo (Atkins, in prep.), and New Guinea (Bramley, in prep.).

The first comprehensive account of Philippine *Cyrtandra* species was published by Merrill (1923). His checklist consolidated work by Clarke (1883), Kraenzlin (1906, 1913a,b), and Elmer (1908, 1910, 1913, 1915, 1919), as well as the results of his own research (Merrill, 1906, 1907, 1913, 1915, 1916, 1918, 1919, 1920, 1922). In total, 83 species were listed. Post Merrill (1923), Elmer (1934, 1939), Kraenzlin (1928), and Quisumbing (1930) continued working on the genus and described 17 new species from the Philippines. In the 20th century, Atkins & Cronk (2001) revised species from the Philippine island of Palawan and described three new species. Nishii & al. (2019) investigated *Cyrtandra* specimens from Japan, Taiwan and Batan Island in the Philippines, reporting *C. yaeyamae* Ohwi for the first time from the country. Olivar & al. (2020) described a new species and clarified the differences between the often confused *C. ferruginea* Merr. and *C. villosissima* Merr. The most recent comprehensive taxonomic checklist of Philippine *Cyrtandra* is presented on Co's Digital Flora of the Philippines website (Pelser & al., 2011–). It lists the currently accepted names for 99 species and a further 6 species that are either not yet formally described or for which a legitimate name is not currently available. The present contribution builds on this checklist and the previously published literature and is intended to serve as a precursor to a full taxonomic revision of *Cyrtandra* in the Philippines. We present a detailed annotated synopsis of Philippine *Cyrtandra*, clarify type citations, designate lectotypes or neotypes where necessary, and provide taxonomic notes to facilitate the application of names. In addition, we validate the name for a species that was previously described without a Latin diagnosis, present nomina nova for two previously described *Cyrtandra* species, and synonymize three names. A look-up table (suppl. Table S1) is provided to facilitate referencing of accepted names in Philippine *Cyrtandra*.

■ MATERIALS AND METHODS

All known published names used for Philippine species of *Cyrtandra* were reviewed. Their protologues were obtained from the Biodiversity Heritage Library (BHL, 2020) and Internet Archive (2020), and supplementary information (e.g., distribution and taxonomic status) was obtained from Co's Digital Flora of the Philippines (Pelser & al., 2011–), World Flora Online (WFO, 2021), International Plant Names Index (IPNI, 2020), and GBIF.org (2020). Philippine *Cyrtandra* material were acquired as digital and/or physical loans from A, BISH, BM, BO, BRIT, CP, E, GH, HBG, JEPS, K, L, MO, NY, P, PNH, U, UC, US, W, and Z. Herbaria B, E, K and WRS� were visited to examine additional specimens. Typification of names followed the *International Code of Nomenclature for algae, fungi, and plants* (Turland & al., 2018). Lectotypes were selected where appropriate from a set of

syntypes or paratypes, and neotypes were designated when no original material could be located.

■ RESULTS AND DISCUSSION

The application of taxonomic names is determined by means of nomenclatural types (Art. 7.2 of the *ICN*, Turland & al., 2018). The usage of the term “type” has evolved since the inception of the *Code*, but since 1 January 1958, it is required to designate a single element as the type. From 1 January 1990, the herbarium, collection or institution in which the type is conserved must be specified. A holotype is one specimen or illustration conserved in one herbarium or other collection or institution (Art. 8.2 of the *ICN*). Here, we discuss for Philippine *Cyrtandra* whether holotypes were unambiguously designated, whether syntypes or paratypes are available for lectotypification, and whether there is no original material, in which case neotypification is needed.

The first few species of *Cyrtandra* were described for the Philippine flora by Clarke (1883). Clarke stated in his introduction (Clarke, 1883: 11) that he cited all of the material he had seen in the herbaria that he had visited. The specimens cited by Clarke under each species' entry therefore represent all of the material he had seen for that species. Whenever a single specimen is cited, this should be considered the holotype. In the other cases where multiple specimens are cited, they are considered syntypes (Art. 9.6 of the *ICN*), and we have selected a representative specimen showing distinguishing characters from the syntypes, a lectotype.

Kraenzlin (1906, 1913a,b, 1928) described 37 *Cyrtandra* species for the Philippine flora. In 1906, Kraenzlin first described five species. He wrote in his introductory notes (Kraenzlin, 1906: 275–276) that specimens stored at K served as types. Whenever a single specimen is indicated in his description of a species, this is therefore considered the holotype. Where more than one specimen is cited, these are syntypes, and the specimen representing the taxon best has been designated here as the lectotype. Kraenzlin (1913a,b) described 31 species. In this work, he described species based on specimens sent to B by Merrill. The majority of his descriptions mention a series of collections and these are considered syntypes (Art. 9.6 of the *ICN*). Kraenzlin's (1913a,b) names are here lectotypified, or neotypified if the syntypes or other original material could not be located. Lastly, Kraenzlin (1928) described *C. pantothrix* Kraenzl. designating the specimen deposited at W as the type.

From 1906 to 1939, Merrill and Elmer described between them 70 species of *Cyrtandra* for the Philippine flora. Rather than designating a single specimen as the type, Merrill (1906, 1907, 1913, 1915, 1916, 1918, 1919, 1920, 1922, 1923) and Elmer (1908, 1910, 1913, 1915, 1919, 1934, 1939) referred to a type gathering and did not mention whether and how many duplicates of the type had been collected. Specimens from the type gathering are therefore syntypes, and a representative is designated here as the lectotype. When specimens

from the type gathering could not be located, we designated a lectotype from the paratypes, or a neotype from specimens that matched the description of the species in the protologue.

Elmer (1939) described “*Cyrtandra peninsula* Elmer”, “*C. umbrina* Elmer”, and “*C. vulcanica* Elmer” without a Latin diagnosis, violating Art. 39.1. These names were therefore not validly published. Upon morphological analysis of their “types”, we concluded that two of these (“*C. umbrina*”, “*C. vulcanica*”) are conspecific with species whose names were previously validly published. However, the third species (“*C. peninsula*”) is indeed taxonomically distinct and we therefore validate it here.

Quisumbing (1930) described seven additional species of *Cyrtandra* and indicated in his introductory note (Quisumbing, 1930: 315) that types were deposited at the Bureau of Science Herbarium, Manila (now PNH), and that isotypes were at UC. Like many of the types deposited at PNH before the Second World War, these were destroyed during the bombing of the Bureau of Science in February 1945. Lectotypes are designated here from the surviving isotypes. More recently, Atkins & Cronk (2001), Nishii & al. (2019), Olivar & Muellner-Riehl (2019) and Olivar & al. (2020) described new species or reviewed the names of Philippine cyrtandras. Type designations included in these works are retained and detailed here.

■ SYNOPSIS OF PHILIPPINE CYRTANDRA

1. *Cyrtandra aclada* Merr. in Philipp. J. Sci. 20: 443. 1922 – **Lectotype (designated here):** Philippines, Zamboanga, Mt. Tubuan, Oct–Nov 1919, *Bur. Sci. 36616 Ramos & Edaño* (K barcode K000831596!).

Merrill (1922) described this species based on two Bureau of Science collections made by Ramos and Edaño (36616, 36907) from Mt. Tubuan citing *Bur. Sci. 36616 Ramos & Edaño* as the type. Only one specimen of the gathering, deposited in K, was located. Because it is the only specimen of the type gathering known to us and it is uncertain whether there are any duplicates, it is designated here as the lectotype. Despite the specimen is lacking open flowers for investigation, important diagnostic features, such as the absence of indumentum, the opposite, equal, and slightly crenulate leaves, and the cauline inflorescences sometimes arising directly from the base of the stem, can still be observed (Merrill, 1922).

2. *Cyrtandra aeruginosa* Quisumb. in Philipp. J. Sci. 41: 345. 1930 – **Lectotype (designated here):** Philippines, Isabela, Mt. Moises, 1 Mar 1926, *Bur. Sci. 47320 Ramos & Edaño* (NY barcode 04291102!; isolectotype: K barcode K000831597!).

Quisumbing (1930) described this species solely based on *Bur. Sci. 47320 Ramos & Edaño* and designated the specimen in PNH as the holotype. Pre-war specimens in PNH were completely destroyed due to a fire that broke out in the museum in 1941 (National Museum of the Philippines, 2021) and hence that specimen is no longer extant. We located

isotypes in K and NY and designate the specimen in NY as the lectotype because it has more floral parts. It shows the diagnostic features of this species: unequal, densely pubescent, dentate, and lanceolate to oblanceolate leaves, and umbellate inflorescences with small floral parts, which are densely pubescent except for the ovaries (Quisumbing, 1930).

3. *Cyrtandra agusanensis* Elmer in Leaf. Philipp. Bot. 7: 2658. 1915 – **Lectotype (designated here):** Philippines, Agusan, Mt. Urdaneta, Aug 1912, *Elmer 13497* (NY barcode 00312633!; isolectotypes: BO No. 1735317!, E barcode E00062580!, HBG barcode HBG-517514!).

Elmer (1915) described this species based on the gathering *Elmer 13497* from Mt. Urdaneta. Multiple syntypes were located, and an exemplar specimen in NY is here designated as the lectotype. This species is morphologically similar to *Cyrtandra livida* Kraenzl. but is different in having broadly lanceolate (vs. elliptic to narrowly elliptic) leaves with denticulate (vs. crenate) margins, solitary flowers (vs. inflorescences of 1–3 flowers), white corollas with purplish tinge (vs. white tinged with yellow), and pubescent (vs. glabrous) calyces (Elmer, 1915).

4. *Cyrtandra alvarezii* Merr. in Philipp. J. Sci., C 13: 326. 1918 – **Lectotype (designated here):** Philippines, Lanao, Mar 1916, *For. Bur. 25214 Alvarez* (A barcode 00054951!).

Merrill (1918) described this characteristic species with broadly oblong-oblanceolate leaves and umbellate infructescences based on *For. Bur. 25214 Alvarez*. Only one specimen was located and this is here designated as the lectotype.

5. *Cyrtandra angularis* Elmer in Leaf. Philipp. Bot. 3: 960. 1910 – **Lectotype (designated here):** Philippines, Mindanao, Mt. Apo, May 1909, *Elmer 10698* (K barcode K000096619!; isolectotypes: A barcode 00054953!, BISH barcode BISH1001866!, BM barcode BM000630842!, BO No. 1869795!, E barcode E00062579!, GH barcode 00054952!, HBG barcode HBG-517613!, MO No. 1997468 [barcode MO-716215!], NY barcode 00312635!, US barcode 00126213!, WRS!).

Elmer (1910) described this species based on *Elmer 10698*. Merrill (1923) later reduced it to a synonym of *Cyrtandra oblongifolia* (Blume) C.B. Clarke. Burt (1970), however, demonstrated that the two species can be distinguished using calyx characters. *Cyrtandra angularis* has tubular calyces with rounded lobes, whereas *C. oblongifolia* has triangular calyx lobes that are scarcely united into a tube (Burt, 1970). The specimen in K is designated as the lectotype since it is the most complete. *Cyrtandra angularis* is one of only three Philippine *Cyrtandra* species that are not endemic to the country. It has been reported from Mindanao and Sabah (Burt, 1970).

6. *Cyrtandra antoniana* Elmer in Leaf. Philipp. Bot. 2: 561. 1908 – **Lectotype (designated here):** Philippines, Negros Oriental, Cuernos Mts., Mar 1908, *Elmer 9542* (NY barcode

00312636!; isolectotypes: BM barcode BM000795039!, BO No. 1870482!, E barcode E00062581!, HBG barcode HBG-517512!, MO No. 1997469 [barcode MO-716216]!, US barcode 00126215!, WRSL!, Z barcode Z-000017802!).

Elmer (1908) discovered this species during his expedition to the Cuernos Mountains. Only one collection was cited in the protologue, and the duplicate in NY with Elmer's field notes is designated as the lectotype. *Cyrtandra antoniana* is particularly striking for its showy red to purple pendulous inflorescences (Elmer, 1908).

7. *Cyrtandra apoensis* Elmer in Leaflet. Philipp. Bot. 3: 962. 1910 – **Lectotype (designated here)**: Philippines, Davao, Mt. Apo, Aug 1909, *Elmer 11557* (A barcode 00054954!; isolectotypes: BISH barcode BISH1001867!, BM barcode BM000630843!, BO No. 1870477!, E barcode E00062582!, GH barcodes 00054955! & 00054956!, HBG barcode HBG-517511!, K barcode K000831598!, MO No. 1997470 [barcode MO-716217]!, NY barcode 00312637!, U barcode U 0226576!, US barcode 00126216!, WRSL!, Z barcode Z-000017803!).

Elmer (1910) described this species based on *Elmer 11557*. The specimen in A shows the diagnostic characters best and is therefore designated as the lectotype. Characteristic features of this species are its large subequal oblong leaves with dentate margins and bluntly cuneate to inequilateral bases, its glabrous inflorescences, and its cardinal-red, and strongly reflexed corollas (Elmer, 1910).

8. *Cyrtandra argentii* Olivar, H.J. Atkins & Muellner in Eur. J. Taxon. 676: 1. 2020 – Holotype: Philippines, Mindoro, Mt. Halcon, 13 Mar 1997, *Mendum & al. 29053* (E barcodes E00057027!+E00057028!; isotype: PNH!).

The holotype is mounted on two sheets clearly marked as belonging to the same gathering. *Cyrtandra argentii* is a recently described species with pendulous compound cymose inflorescences of 10–15 flowers, subequal leaves, white woolly indumentum, glabrous corolla, and ovoid fruits (Olivar & al., 2020).

9. *Cyrtandra attenuata* Elmer in Leaflet. Philipp. Bot. 2: 558. 1908 – **Lectotype (designated here)**: Philippines, Negros Oriental, Cuernos Mts., Mar 1908, *Elmer 9623* (BM barcode BM000997685!; isolectotypes: E barcode E00062583!, HBG barcode HBG-517510!, K barcode K000831599!, L barcode L 0003342!, MO No. 1997471 [barcode MO-716218]!, NY barcode 00312639!, WRSL!, Z barcode Z-000017804!).

= *Cyrtandra stenophylla* Kraenzl. in Philipp. J. Sci., C 8: 325. 1913 – Syntypes: Philippines, Negros, Canlaon Volcano, *Merrill 7008* (B, presumed destroyed), *For. Bur. 4259 Everett* (B, presumed destroyed); Luzon, Tayabas Prov., Paete-Piapi, *For. Bur. 9533 Curran* (B, presumed destroyed) – **Neotype (designated here)**: Philippines, Panay, May–Aug 1918, *Bur. Sci. 32491 McGregor* (K!; isoneotype: P barcode P03884383!).

Elmer (1908) described this species based on *Elmer 9623*, and the syntype in BM is here designated as the lectotype because it includes flowers. Kraenzlin (1913b) described *Cyrtandra stenophylla* Kraenzl. based on three collections: *Merrill 7008* and *For. Bur. 4259 Everett* from the same type locality as *C. attenuata*, and *For. Bur. 9533 Curran* from Luzon. Merrill (1923) synonymized *C. stenophylla* with *C. attenuata* and we agree with his decision. Both species share the following characters: linear-obovate leaves that are congested in the upper part of the stems, and pubescent floral parts. To date, none of the syntypes of *C. stenophylla* have been located. We therefore designate a neotype for this name from a collection indicated in Merrill's (1923) work as being *C. stenophylla* and that is conspecific with *C. attenuata*.

10. *Cyrtandra auriculata* C.B. Clarke in Candolle & Candolle, Monogr. Phan. 5: 251. 1883 – **Lectotype (designated here)**: Philippines, Luzon, Albay, *Cuming 1328* (K barcode K000831600!; isolectotypes: FI barcode FI009829!, K barcode K000831601!).

Clarke (1883) described this species based on *Cuming 1328* in K, of which there are two sheets, both bearing “*Cyrtandra auriculata*” in Clarke's handwriting. On one of the sheets (K000831601), 1328 could be mistaken for 1320 as there is only a faint line dissecting the 0, and the number is written differently from that on K000831600. However, Clarke (1883) stated in his introduction that he attempted to cite all the material seen by him, and he did not cite *Cuming 1320*. As such we assume he also interpreted the collector number as 1328. Here, we select the K sheet with the larger portion of plant (K000831600) as lectotype. A drawing of a floral dissection is also present on this specimen which could have been made by Clarke or later in the specimen's history. This characteristic creeping herb is easily recognized by its pubescent, anisophyllous leaves and pubescent, solitary, purple flowers (Clarke, 1883).

11. *Cyrtandra bacanii* Olivar & Muellner in Phytotaxa 418: 117. 2019 ≡ *Cyrtandra umbellata* Kraenzl. in Philipp. J. Sci., C 8: 330. 1913, nom. illeg., non de Vriese 1856 – **Lectotype (designated here)**: Philippines, Benguet, Dec 1908, *For. Bur. 15900 Bacani* (K barcode K000831685!; isolectotype: US barcode 00126363!).

Olivar & Muellner-Riehl (2019) gave a new name to *Cyrtandra umbellata* Kraenzl. as this is a later homonym of *C. umbellata* de Vriese but failed to designate a lectotype. Long peduncles (ca. 9 to 10 cm) and the glabrous leaves are characteristic of this species (Kraenzlin, 1913b). The specimen in K has more fruiting parts and is designated as the lectotype.

12. *Cyrtandra barnesii* Merr. in Philipp. J. Sci. 20: 444. 1922 – **Lectotype (designated here)**: Philippines, Benguet, Mt. Tonglon, May–Jun 1904, *For. Bur. 920 Barnes* (BM barcode BM000997684!; isolectotypes: L 2D barcode L.2825836!, NY barcodes 04291109! & 04291110!, US barcode 00126221!).

Merrill (1922) indicated that the gathering *For. Bur. 920 Barnes* was the type of *Cyrtandra barnesii* and a syntype in BM is here designated as the lectotype as it shows the diagnostic unequal leaves (larger leaf oblanceolate, smaller leaf obovate), ciliate inflorescences and the whorl of ovate pilose bracts (Merrill, 1922). Merrill (1922) noted that this species had been confused with *C. lobbii* C.B. Clarke but differs significantly in its dissimilar leaves, the smaller one of the pair being sessile, ovate, deeply cordate and entirely different in shape and size from the larger one of the pair. In contrast, *C. lobbii* has isophyllous oblong-lanceolate leaves with acute bases. Merrill (1922) mentioned that *Bur. Sci. 37541 & 37800 Ramos & Edaño* represent a form of *C. barnesii* with densely pilose leaves with an obtuse to cordate base.

13. *Cyrtandra bataanensis* Kraenzl. in Philipp. J. Sci., C 8: 330. 1913 – Type: Philippines, Luzon, Bataan: *For. Bur. 20035 Topacio* (B, presumed destroyed) – **Neotype (designated here)**: Philippines, Mindoro, Paluan, Apr 1921, *Bur. Sci. 39707 Ramos* (US barcode 00081286!; isoneotypes: US barcodes 00081284!, 00081285!).

Like many of Kraenzlin's (1913a,b) types stored in B, the collection *For. Bur. 20035 Topacio* from Bataan, Luzon, on which the description of this species was based, has not been located to date and is presumed to have been destroyed during the Second World War. Merrill (1923) identified collections from Paluan Mindoro (a neighboring island of Luzon) as *Cyrtandra bataanensis*. These specimens match the description of Kraenzlin (1913b) by having anisophyllous leaves (large leaves ca. 24 × 6.5 cm and smaller leaves 13 × 3.8 cm), with a cuneate-obovate base, dentate margins, and densely pilose nerves and petioles, by having calyces with triangular lobes with acuminate tips, and by having tubular and villous corollas. The specimen from the collection *Bur. Sci. 39707 Ramos* at US is here designated as a neotype since it clearly shows these characters.

14. *Cyrtandra benguetiana* Kraenzl. in J. Linn. Soc., Bot. 37: 281. 1906 – **Lectotype (designated here)**: Philippines, Benguet, *Loher 4237* (K barcode K000831602!; isolectotype: US barcode 00126223!).

Remaining syntypes: Philippines, Benguet, Nov 1884, *Vidal 1821* (K barcode K000831603!); Philippines, Benguet: *Loher 5039* (K barcode K000831604!).

Kraenzlin (1906) mentioned three collections (*Loher 4237 & 5039, Vidal 1821*) in the protologue, and the specimen showing the most complete parts is selected as lectotype from these syntypes. The sheet, deposited at K, contains both *Loher 4237* and *Vidal 1821*. *Loher 4237* is the right-most specimen on the sheet. Kraenzlin (1906) noted this species is morphologically similar with *Cyrtandra parviflora* C.B. Clarke and *C. chrysea* C.B. Clarke, but is distinguished by its smaller leaves and golden-yellow indumentum throughout the plant.

15. *Cyrtandra callicarpifolia* Elmer in Leaflet Philipp. Bot. 3: 966. 1910 – **Lectotype (designated here)**: Philippines,

Mindanao, Mt. Apo, Aug 1909, *Elmer 11497* (BM barcode BM000997683!; isolectotypes: A barcode 00054959!, BISH barcode BISH1001879!, BO No. 1870503!, E barcode E00062584!, GH barcodes 00054957! & 00054958!, HBG barcode HBG-517509!, K barcode K000831605!, MO No. 1997472 [barcode MO-716214!], NY barcode 00312640!, P barcode P03899623!, US barcode 00126226!, WRS!).

= *Cyrtandra miserrima* Kraenzl. in Philipp. J. Sci., C 8: 316. 1913 – **Lectotype (designated here)**: Philippines, Mindanao, Mt. Apo, May 1903, *DeVore & Hoover 317* (US barcode 00126296!).

Elmer (1910) described this species based on *Elmer 11497* and the most complete syntype in BM is here selected as the lectotype. Merrill (1923) synonymized *Cyrtandra miserrima* with *C. callicarpifolia* because the only difference between them was the size of their leaves, quite variable in *C. callicarpifolia* and ca. 12 × 5 cm in *C. miserrima*. We were only able to locate one syntype of *C. miserrima* in US, which is here designated as the lectotype. *Cyrtandra callicarpifolia* is similar to *C. maesifolia* in its leaf morphology. Both species have alternate oblong to elliptic leaves with glabrous upper surfaces, acute apices, and rounded to cuneate bases. *Cyrtandra callicarpifolia* is distinguished by its 1- to 3-flowered inflorescences (vs. 3–5 in *C. maesifolia*), its larger flowers (vs. not more than 3 cm in *C. maesifolia*), and its entirely white corollas (vs. tinged with purple in the sinuses in *C. maesifolia*).

16. *Cyrtandra castanea* Merr. in Philipp. J. Sci., C 13: 326. 1918 – **Lectotype (designated here)**: Philippines, Luzon, Mt. Dalindingan, Aug–Sep 1916, *Bur. Sci. 26606 Ramos & Edaño* (K barcode K000831606!; isolectotypes: P barcode P03899620!, US barcode 00126228!).

Merrill (1918) described this species based on *Bur. Sci. 26606 Ramos & Edaño*, and the most complete syntype in K is here designated as the lectotype. Merrill (1918) also noted the morphological similarities of this species to *Cyrtandra incisa* C.B. Clarke, but *C. castanea* has dark brown indumentum, whereas the indumentum of *C. incisa* is yellow to brown.

17. *Cyrtandra cauliflora* Merr. in Philipp. J. Sci. 17: 315. 1920 – **Lectotype (designated here)**: Philippines, Panay, Libacao, May–Jun 1919, *Bur. Sci. 35342 Martelino & Edaño* (A barcode 00054960!; isolectotypes: K barcode K000831607!, P barcode P03899625!, US barcode 00126229!).

Merrill (1920) described this species based on *Bur. Sci. 35342 Martelino & Edaño*, and the most complete syntype in A is here designated as the lectotype. *Cyrtandra cauliflora* is a cauliflorous species recognized by its oblanceolate leaves with acuminate apex, cuneate base, and serrate margin, and its entirely villous inflorescences (Merrill, 1920).

18. *Cyrtandra cleopatrae* H.J. Atkins & Cronk in Edinburgh J. Bot. 58(3): 451. 2001 – Holotype: Philippines, Palawan,

Cleopatra's Needle, 22 Jan 1998, Cronk, Mendum, Argent, Middleton, Wilkie, Fuentes & Chavez 25437A (PNH!; isotype [two sheets]: E barcodes E00118605! & E00118606!).

This species was described by Atkins & Cronk (2001), who noted that the distinctive lilac corolla and calyx, and the ferruginous indumentum separate this species from other *Cyrtandra* species from Palawan.

19. *Cyrtandra constricta* Elmer in Leaflet. Philipp. Bot. 7: 2660. 1915 – **Lectotype (designated here)**: Philippines, Mindanao, Mt. Urdaneta, Oct 1912, *Elmer 14196* (GH barcode 00054961!; isolectotypes: A barcode 00054962!, BISH barcode BISH1001875!, BO No. 1359448!, CAS barcode 0033130!, CP!, E barcode E00062585!, HBG barcode HBG-517503!, K barcode K000831608!, MO No. MO751474 [barcode MO-716212!], NY barcodes 00312644! & 00312645!, P barcode P03884314!, U barcode U 0226572!, US barcodes 01269031! & 00126233!, Z barcode Z-000017806!).

Elmer (1915) described this species based on *Elmer 14196*. The syntype in GH shows reproductive parts and is here designated as the lectotype. This species is morphologically similar to *Cyrtandra tavabensis* Elmer and *C. davaoensis* Elmer. All three have oblong leaves with long petioles (ca. 3 cm) and ellipsoid fruits that are subtended by minute bracts. *Cyrtandra constricta* can be distinguished by its glabrous leaves (those of *C. davaoensis* and *C. tayabensis* are hirsute at the nerves) and the number of fruits per infructescence (3–5 in *C. constricta* vs. 1–3 in both *C. davaoensis* and *C. tayabensis*).

20. *Cyrtandra cumingii* C.B. Clarke in Candolle & Candolle, Monogr. Phan. 5: 263. 1883 – Lectotype (designated by Nishii & al. in Edinburgh J. Bot. 76(3): 340. 2019): Philippines, Luzon, Tayabas, 1841, *Cuming 757* (K barcode K000831609!; isolectotypes: BM barcode BM000798277!, K barcode K000831610!, L 2D barcodes L.2818448! & L.2818452!, MO No. 100457525 [barcode MO-2369197!], P barcodes P03884307! & P03884310!).

This is a widespread species common in primary forests along streams at medium elevation (Merrill, 1923). Nishii & al. (2019) noted that a detailed taxonomic study throughout its range is required to understand both the species limits and its relationship with morphologically similar species such as *Cyrtandra grandifolia* Elmer, *C. gitingensis* Elmer, *C. oblongata* Merr. and *C. pachyneura* Kraenzl.

21. *Cyrtandra davaoensis* Elmer in Leaflet. Philipp. Bot. 3: 968. 1910 – **Lectotype (designated here)**: Philippines, Mindanao, Mt. Apo, May 1909, *Elmer 10595* (NY barcode 00312648!; isolectotypes: A barcode 00054964!, BISH barcode BISH1001882!, BM barcode BM000997677!, BO No. 1870755!, E barcode E00062587!, GH barcode 00054963!, HBG barcode HBG-517501!, K barcode K000831613!, L 2D barcode L.2818352!, US barcode 00126240!, WRS!, Z barcode Z-000017808!).

= *Cyrtandra scandens* Kraenzl. in Philipp. J. Sci., C 8: 319. 1913 – **Lectotype (designated here)**: Philippines, Mindanao, Surigao, Apr 1906, *Bolster 326* (US barcode 00126340!).

Elmer (1910) described this species based on *Elmer 10595* from Mt. Apo on the island of Mindanao. The specimen in NY with reproductive parts and Elmer's field notes is designated as the lectotype for this species. Merrill (1923) recognized that *Cyrtandra scandens*, also from Mindanao but from another province, matches the description of *C. davaoensis*. We support Merrill's (1923) recognition of *C. scandens* as a synonym of *C. davaoensis*. Only one syntype has been located, and we here designate the US specimen as the lectotype. *Cyrtandra davaoensis* is morphologically similar to *C. tayabensis* Elmer, but differs in the number of lateral nerves (17 vs. 10 in *C. tayabensis*), acute versus acuminate leaf apices in *C. tayabensis*, ovately oblong versus oblong leaves in *C. tayabensis*, and calyces that are deeply divided versus only divided up to the upper third in *C. tayabensis*.

22. *Cyrtandra decussata* Elmer in Leaflet. Philipp. Bot. 3: 961. 1910 – **Lectotype (designated here)**: Philippines, Mindanao, Mt. Apo, Sep 1909, *Elmer 11704* (GH barcode 00054965!; isolectotypes: BISH barcode BISH1001883!, BM barcode BM000997676!, BO No. 1870273!, E barcode E00062588!, HBG barcode HBG-517500!, K barcode K000831614!, L 2D barcode L.2818382!, MO No. 1997476 [barcode MO-716208!], NY barcode 00312647!, US barcode 00126241!, WRS!, Z barcode Z-000017809!).

Elmer (1910) described this species based on *Elmer 11704*, and the syntype in GH is designated as the lectotype since it shows the position of the inflorescences. *Cyrtandra decussata* is morphologically similar to *C. attenuata* Elmer and *C. pallidifolia* Kraenzl. (Elmer, 1910). It is distinguished from these two by having longer internodes and inflorescences restricted to the lower nodes close to the ground. Those of *C. attenuata* and *C. pallidifolia* are borne on the upper leaf axils.

23. *Cyrtandra disparifolia* Quisumb. in Philipp. J. Sci. 41: 347. 1930 – **Lectotype (designated here)**: Philippines, Luzon, Isabela, San Mariano, Feb–Mar 1926, *Bur. Sci. 46751 Ramos & Edaño* (NY barcode 04291106!).

Quisumbing (1930) described this species based on *Bur. Sci. 46751 Ramos & Edaño*. Only one isotype in NY was located and is designated as the lectotype. Quisumbing (1930) mentioned that the abaxial side of the leaves is red when fresh and that it is morphologically similar to *C. reticosa* C.B. Clarke, but *C. disparifolia* can be distinguished by its glabrous ovaries (hirsute in *C. reticosa*) and its smaller leaves and flowers.

24. *Cyrtandra edanoi* Olivar & Pelsner, **nom. nov.** ≡ *Didymocarpus pallida* Kraenzl. in Philipp. J. Sci., C 8: 167. 1913,

non *Cyrtandra pallida* Elmer 1908, ≡ *Cyrtandra cope-landii* Merr., Enum. Philipp. Fl. Pl. 3: 458. 1923 [nom. nov. pro *Didymocarpus pallida*], nom. illeg., non *Cyrtandra cope-landii* Elmer 1915 [which ≡ *Rhyncho- techum cope-landii* (Elmer) Elmer ex Merr.] – Type: Philippines, Mindanao, Zamboanga, Sax River, Merrill 8224 (B, presumed destroyed) – **Neotype (designated here)**: Philippines, Mindanao, Zamboanga, Oct–Nov 1919, *Bur. Sci.* 37227 Ramos & Edaño (K!).

Kraenzlin's (1913a) description of this species is based on Merrill 8224. Kraenzlin (1913a) wrote in the protologue that his original placement in *Didymocarpus* Wall. was based on flower buds. Subsequent collecting at the type locality by Ramos and Edaño afforded flowering specimens that led Merrill (1923) to identify the species as *Cyrtandra*. Because the epithet was already occupied by a different name introduced by Elmer (1908; see below), Merrill (1923) provided *C. cope-landii* as a replacement name. However, that name is antedated by *C. cope-landii* Elmer (1915) making it a later homonym (Art. 53.1 of the ICN, Turland & al., 2018). A new name is here proposed and commemorates G.E. Edaño, who was part of the team that collected additional material of this species. Kraenzlin's (1913a) type has not been located to date, and a neotype is here designated from a collection assigned to this species by Merrill (1923). It should also be noted that *C. cope-landii* Elmer is currently considered to belong to *Rhyncho- techum* Blume (Merrill, 1923; Anderson & Middleton, 2013).

25. *Cyrtandra elatostemoides* Elmer in Leaf. Philipp. Bot. 5: 1781. 1913 ('*elatostemmoides*') – **Lectotype (designated here)**: Philippines, Palawan, Mt. Pulgar, Mar 1911, *Elmer 13207* (P barcode P03884334!; isolectotypes: BO No. 1870745!, E barcode E00062589!, L 2D barcode L.2818282!).

= *Cyrtandra kraenzlinii* Merr. in Philipp. J. Sci., C 10: 76. 1915 – **Lectotype (designated here)**: Philippines, Palawan, Malampaya Bay, Sep 1910, *Merrill 7247* (K barcode K000831632!; isolectotypes: BM barcode BM000798279!, L 2D barcode L.2825938!, NY barcode 00312663!, P barcode P03555568!, US barcode 00126276!).

The specific epithet was misprinted as '*elatostemmoides*' in the protologue, but corrected to '*elatostemoides*' in the errata accompanying the volume of *Leaflets of Philippine Botany* in which it was published (Elmer, 1913). *Elmer 13207* was cited as the type of *Cyrtandra elatostamoides* by Elmer (1913) without citing a herbarium, so the most complete syntype found at P is designated here as the lectotype. *Merrill 7247* was the only collection cited in the protologue for *C. kraenzlinii*; the specimen in K has floral parts for investigation and is selected as the lectotype. The greatly reduced, ovate smaller leaf is distinctive for this species. *Cyrtandra elatostemoides* and *C. gibbsiae* S.Moore from Sabah have vermiform sclereids in the hypodermis and polymorphic sclereids (Atkins & Cronk, 2001). *Cyrtandra elatostemoides* is one of only three Philippine *Cyrtandra* species

that are not endemic to the country, it has also been reported from Borneo (Atkins & Cronk, 2001).

26. *Cyrtandra ferruginea* Merr. in Philipp. J. Sci., C 10: 75. 1915 – **Lectotype (designated here)**: Philippines, Luzon, Camarines, Mt. Cauayan, Dec 1913, *Bur. Sci.* 1548 Ramos (GH barcode 00054966!; isolectotypes: BM barcode BM000630854!, BO No. 1870740!, L 2D barcode L.2818245!, NY barcode 00312651!, P barcode P03884331!, US barcode 00126248!).

Merrill (1915) described this species based on *Bur. Sci.* 1548 Ramos, and the most complete syntype in GH is designated as the lectotype. The affinities of this species were discussed by Olivar & al. (2020). This species shares with *C. argentii* Olivar & al., *C. hirtigera* H.J. Atkins & Cronk, and *C. villosissima* Merr. the erect suffrutescent habit and large leaves. *Cyrtandra ferruginea* can be recognized by its ferruginous anisophyllous leaves, 1–3-flowered simple cymes, and hirsute corolla.

27. *Cyrtandra fusconervia* Merr. in Philipp. J. Sci., C 8: 389. 1913 – **Lectotype (designated here)**: Philippines, Leyte, Dagami, 31 Mar 1913, *Wenzel 88* (GH barcode 00054968!; isolectotype: US barcode 00126253!).

Merrill (1913) described this species solely from the gathering *Wenzel 88*, and the syntype in GH showing the inflorescences and the large leaves of this species is selected as the lectotype. This species shares affinities with *Cyrtandra attenuata* Elmer and *C. pallidifolia* Kraenzl., but has wider leaves (reaching up to 9 cm in *C. fusconervia* vs. only 2 cm in *C. attenuata* and *C. pallidifolia*) and corollas (5 cm in *C. fusconervia* vs. 2–3 cm in *C. attenuata* and *C. pallidifolia*), and prominent nerves with brown pilose hairs (vs. green and pulverulent in *C. attenuata* and *C. pallidifolia*).

28. *Cyrtandra geantha* Kraenzl. in Philipp. J. Sci., C 8: 323. 1913 – Type: Philippines, Mindanao, Lake Lanao, Camp Keithley, *Clemens s.n.* (B, presumed destroyed) – **Neotype (designated here)**: Philippines, Mindanao, Bukidnon, Jun–Jul 1920, *Bur. Sci.* 39111 Ramos & Edaño (P barcode P03555516!; isoneotypes: K!, US barcode 00081333!).

Kraenzlin's (1913b) type for this species has not been located. However, Merrill (1923) cited collections that match Kraenzlin's (1913b) description. From these, we designate *Bur. Sci.* 39111 Ramos & Edaño in P as the neotype as this shows the distinguishing characters of this species. The ferruginous indumentum and the reproductive parts arising near the ground can be used to distinguish this species from *Cyrtandra limnophila* Kraenzl. and *C. tecomiflora* Kraenzl. (both are glabrous and the flowers are borne on the upper leaf axils; Kraenzlin, 1913b).

29. *Cyrtandra gitingensis* Elmer in Leaf. Philipp. Bot. 3: 956. 1910 – **Lectotype (designated here)**: Philippines, Sibuyan, Mt. Giting-giting, Apr 1910, *Elmer 12369*

(E barcode E00062590!; isolectotypes: BISH barcode BISH1001892!, BM barcode BM000997674!, BO No. 1870937!, HBG barcode HBG-517491!, K barcode K000831618!, L 2D barcode L.2818081!, MO No. 1997478 [barcode 716206!], NY barcode 00312655!, US barcode 00126256!, WRSL!, Z barcode Z-000017814!).

Elmer (1910) described this species based on *Elmer 12369*, and the syntype in E showing the decurrent leaf bases and the inflorescences is here designated as the lectotype. *Cyrtandra gitingensis* is morphologically similar to *C. cumingii* C.B. Clarke, but different by having decurrent leaf bases with brown hairs (vs. not decurrent and glabrous in *C. cumingii*), pedunculate inflorescences with green, ovate, foliaceous bracts that are pubescent along the nerves, and pubescent calyces and corollas (vs. sessile with white glabrous bracts and glabrous floral parts in *C. cumingii*).

30. *Cyrtandra glabrifolia* Merr., Enum. Philipp. Fl. Pl. 3: 459. 1923 ≡ *Cyrtandra glabra* Kraenzl. in Philipp. J. Sci., C 8: 317. 1913, nom. illeg., non Jack 1823 – **Lectotype (designated here)**: Philippines, Mindoro, Mt. Halcon, Nov 1906, Merrill 5770 (US barcode 00126257!; isolectotypes: K barcode K000831619!, US barcode 00081501!).

Cyrtandra glabra Kraenzl. is a later homonym, and Merrill (1923) gave this species a new name. The specimen in US, which is part of Kraenzlin's (1913b) type material, was also listed by Merrill (1923) and shows the characteristic features of this species. It is designated as the lectotype. This species is distinct in having anisophyllous leaves, long peduncles, and is devoid of indumentum (Kraenzlin, 1913b).

31. *Cyrtandra glabrilimba* Quisumb. in Philipp. J. Sci. 41: 349. 1930 – **Lectotype (designated here)**: Philippines, Luzon, Mt. Moises, Mar 1926, Bur. Sci. 47263 Ramos & Edaño (A barcode 00054969!; isolectotypes: B barcode B 10 1067851!, BO No. 1362409!, K barcode K000831620!, NY barcode 04291103!).

Quisumbing (1930) described this species based on Bur. Sci. 47263 Ramos & Edaño. The holotype in PNH was destroyed during the Second World War, and the isotype in A is designated as the lectotype because it has more reproductive parts. *Cyrtandra glabrilimba* is morphologically similar to *C. tenuipes* Merr. Both species are glabrous, except on the younger parts of the plants and on the inflorescences. They also have opposite unequal oblong to oblanceolate leaves. *Cyrtandra glabrilimba* differs from *C. tenuipes* in its smaller flowers, number of flowers in an umbel (4–10 in *C. glabrilimba* vs. 3–4 in *C. tenuipes*), shorter peduncles (8–20 mm in *C. glabrilimba* vs. 4–6 cm in *C. tenuipes*), and narrowly ovoid ovaries (vs. ovoid in *C. tenuipes*).

32. *Cyrtandra grandifolia* Elmer in Leaflet Philipp. Bot. 7: 2663. 1915 – **Lectotype (designated here)**: Philippines, Mindanao, Mt. Urdaneta, Sep 1912, *Elmer 13711* (E barcode E00062592!; isolectotypes: A barcode 00054970!, BISH barcode BISH1001898!, BM barcode BM000997673!,

GH barcode 00054971!, HBG barcode HBG-517488!, K barcode K000831621!, L 2D barcode L.2818097!, MICH barcode 1192337!, MO No. 751580 [barcode MO-716205!], NY barcode 00312657!, P barcode P03555511!, U barcode U 0226567!, US barcode 00126260!).

Elmer (1915) described this species based on *Elmer 13711*. Among the syntypes, the specimen in E has flowering material held in a packet that is available for dissection and close examination and for this reason is designated as the lectotype. *Cyrtandra grandifolia* is morphologically similar to *C. cumingii*, but has larger leaves and pedunculate inflorescences (60 × 10 cm in *C. grandifolia* vs. 30 cm × 14 cm in *C. cumingii* and sessile inflorescences in *C. cumingii*).

33. *Cyrtandra hirtigera* H.J. Atkins & Cronk in Edinburgh J. Bot. 58(3): 452. 2001 – Holotype: Philippines, Palawan, Cleopatra's Needle, 21 Jan 1998, Cronk & al. 25433 (PNH!; isotypes: E barcodes E00067286!, E00067287!, E00067288! & E00743896!).

Atkins & Cronk (2001) noted that this species is morphologically similar to *Cyrtandra villosissima* Merr. and that *C. hirtigera* is distinct by having fused calyx lobes that are broadly lanceolate (vs. divided and linear in *C. villosissima*), glabrous fruits (vs. with eglandular hairs in *C. villosissima*) and glandular hairs on the style (vs. eglandular in *C. villosissima*). The typical variety has crimson indumentum, red calyces with acute lobe apices, and reddish-orange corollas with slightly bilabiate lobes (Atkins & Cronk, 2001).

- 33a. *Cyrtandra hirtigera* var. *chlorina* H.J. Atkins & Cronk in Edinburgh J. Bot. 58(3): 453. 2001 – Holotype: Philippines, Palawan, Thumb Peak, 29 Jan 1998, Cronk & al. 25518 (PNH!; isotypes: E barcodes E00067283!, E00067284!, E00067285! & E00743673!).

This variety has pale indumentum, green calyces with acuminate lobe apices, and yellow to red corollas with subequal lobes (Atkins & Cronk, 2001; Olivar & al., 2020).

34. *Cyrtandra hypochrysea* Kraenzl. in J. Linn. Soc., Bot. 37: 276. 1906 – Holotype: Philippines, Luzon, Benguet, 1905, *Loher 4233* (K barcode K000831626!; isotype: US barcode 00126264!).

Kraenzlin (1906) explicitly mentioned that the type for this species was deposited in K. Only one specimen could be located in K, and this is considered the holotype. *Cyrtandra hypochrysea* is morphologically similar to *C. chrysea* C.B. Clarke but different in its pedunculate inflorescences (vs. sessile in *C. chrysea*) and larger flowers (ca. 2.5 cm long in *C. hypochrysea* vs. ca. 1.5 cm long in *C. chrysea*).

35. *Cyrtandra hypochrysoides* Kraenzl. in Philipp. J. Sci., C 8: 319. 1913 – **Lectotype (designated here)**: Philippines, Luzon, Mt. Pinatubo, Mar–Apr 1907, Bur. Sci. 2543 Foxworthy (US barcode 00081521!; isolectotypes: NY barcode 04291101!, P barcode P03934034!, US barcode 00081346!).

- = *Cyrtandra quisumbingii* Elmer in Leaflet. Philipp. Bot. 9: 3193. 1934, **syn. nov.** – **Lectotype (designated here):** Philippines, Luzon, Mt. Pinatubo, May 1927, *Elmer 22130* (NY barcode 00312702!; isolectotypes: BO No. 1257711!, C barcode C10012753!, GH barcode 00054988!, K barcode K000831667!, L 2D barcode L.2826465!, MICH barcode 1192339!, MO No. 1037954 [barcode MO-256459!], P barcode P03899639!, US barcode 00126326!, Z barcode Z-000017828!).
- = *Cyrtandra quisumbingii* var. *minor* Elmer in Leaflet. Philipp. Bot. 9: 3194. 1934, **syn. nov.** – **Lectotype (designated here):** Philippines, Luzon, Mt. Pinatubo, May 1927, *Elmer 22192* (MICH barcode 1192340!; isolectotypes: GH barcode 00054989!, HBG barcode HBG-517453!, K barcode K000831668!, MO No. 1037955 [barcode MO-256459!], NY barcode 00312701!, P barcode P03899638!).
- Remaining syntypes of *Cyrtandra hypochrysoides*: Philippines, Palawan, April 1906, *Bur. Sci. 650 Foxworthy* (US barcodes 00081518! & 00126265!), *Bur. Sci. 687 Foxworthy* (US barcodes 00081519! & 00081345!).
- Kraenzlin (1913b) did not designate a type for *Cyrtandra hypochrysoides* but instead listed multiple collections (*Bur. Sci. 2543, 650, & 687 Foxworthy*). Among these syntypes, *Bur. Sci. 2543 Foxworthy* best represents the species, and the most complete specimen in US is designated as the lectotype. Elmer (1934) described *C. quisumbingii* based on material from the same locality as *Bur. Sci. 2543 Foxworthy*. Elmer (1934) failed to compare both species despite their clear similarities. In fact, the types and descriptions of both species perfectly match each other. Both varieties of *C. quisumbingii* are therefore here considered synonyms of *C. hypochrysoides*. The lectotypes selected here for *C. quisumbingii* and its variety are from the syntypes and have reproductive structures in good condition. *Cyrtandra hypochrysoides* is morphologically similar to *C. hypochrysea* Kraenzl. differing in its larger leaves (20–22 × 4–6 cm long in *C. hypochrysoides* vs. 5–10 × 2–4.5 cm in *C. hypochrysea*), ferruginous indumentum (vs. yellow in *C. hypochrysea*), and smaller flowers (only up to 10 mm long in *C. hypochrysoides* vs. up to 25 mm long in *C. hypochrysea*).
36. *Cyrtandra hypoleuca* Kraenzl. in Philipp. J. Sci., C 8: 171. 1913 – **Lectotype (designated here):** Philippines, Mindanao, Sax River Mountains, Nov–Dec 1911, *Merrill 8107* (US barcode 00126266!; isolectotypes: K barcode K000831627!, P barcode P03555589!).
- Kraenzlin (1913a) described this species based on *Merrill 8107*, and the syntype in US is here designated as the lectotype because it has an open flower. *Cyrtandra hypoleuca* is morphologically similar to *C. hypochrysea*, but is distinct in its pale-silvery abaxial side (vs. golden yellow in *C. hypochrysea*).
37. *Cyrtandra ilicifolia* Kraenzl. in J. Linn. Soc., Bot. 37: 282. 1906 – **Lectotype (designated here):** Philippines, Luzon, Benguet, 1905, *Loher 4236* (K barcode K000831630!; isotype: US barcode 00081495!).
- Remaining syntypes: Philippines, Benguet, *Loher 4235* (K barcode K000831629!), *Vidal 1669* (L 2D barcode L.2818005!).
- Kraenzlin (1906) did not designate a type for this species, but instead listed three collections (*Loher 4235, Loher 4236, Vidal 1669*). Compared to all located syntypes, specimens of *Loher 4236* are in a better state, and the specimen in K with multiple opened flowers is designated as the lectotype. The species was named for its leaves, which resemble those of *Quercus ilex* L. In terms of leaf morphology, *Cyrtandra ilicifolia* is similar to *C. parviflora* C.B. Clarke, but the smaller flowers distinguish it (not more than 1.5 cm in length in *C. ilicifolia* vs. at least 3 cm in length in *C. parviflora*).
38. *Cyrtandra ilocana* Merr. in Philipp. J. Sci. 14: 452. 1919 – **Lectotype (designated here):** Philippines, Luzon, Mt. Palimlim, Aug 1918, *Bur. Sci. 33370 Ramos* (BM barcode BM000997718!; isolectotypes: K barcode K000831631!, P barcode P03555587!, US barcode 00126267!).
- Merrill (1919) described this species based on *Bur. Sci. 33370 Ramos*, and the most complete syntype in K with infructescences is selected as the lectotype for this characteristically glabrous species.
39. *Cyrtandra inaequifolia* Elmer in Leaflet. Philipp. Bot. 5: 1782. 1913 – **Lectotype (designated here):** Philippines, Palawan, Mt. Pulgar, Apr 1911, *Elmer 13092* (NY barcode 00312659!; isolectotypes: BISH barcode BISH 1001902!, BM barcode BM000997717!, BO No. 1877484!, E barcode E00062594!, HBG barcode HBG-517485!, L 2D barcode L.2818007!, MO No. 705994 [barcode MO-716189!], US barcode 00738207!, V barcode V0060534F!).
- Elmer (1913) described this species based on *Elmer 13092*, and the syntype in NY with reproductive parts and Elmer's field notes is designated as the lectotype. Atkins & Cronk (2001) noted the similarities of this species to *Cyrtandra livida* Kraenzl., but it differs in habit (*C. inaequifolia* is a shrub, whereas *C. livida* is an unbranched herb).
40. *Cyrtandra incisa* C.B. Clarke in Candolle & Candolle, Monogr. Phan. 5: 250. 1883 – **Lectotype (designated here):** Philippines, Luzon, *Cuming 492* (K barcode K000831640!; isolectotype: K barcode K000831641!).
- = *Cyrtandra philippinensis* C.B. Clarke in Candolle & Candolle, Monogr. Phan. 5: 250. 1883 – **Lectotype (designated here):** Philippines, Luzon, 1823, *Perrottet s.n.* (P barcode P03884399!; isolectotypes: G barcode G00493799!, P barcode P03884400!).
- = *Cyrtandra florulenta* Kraenzl. in Philipp. J. Sci., C 8: 173. 1913, **syn. nov.** – Type: Philippines, Luzon, Bontoc, *Van-overbergh 855* (B, presumed destroyed) – **Neotype**

(designated here): Philippines, Luzon, Benguet, Nov–Dec 1910, *Bur. Sci. 12603 Fenix* (US barcode 00081331!).

Remaining syntypes of *Cyrtandra incisa*: Philippines, Luzon, *Cuming 488* (K barcode K000831639!, P barcode P03884401!), *Barthe s.n.* (P barcode P03555574!).

Remaining syntypes of *Cyrtandra philippinensis*: Philippines: *Callery 37* (P barcodes P03884402!, P03884403!, P03884404!, P03884398!).

Clarke (1883) described *Cyrtandra incisa* and listed multiple specimens (*Cuming 492, 488, Barthe s.n.*). Among the syntypes, *Cuming 492* in K is the most complete and is here designated as the lectotype. Kraenzlin (1913a) described *C. florulenta*, noting its similarity with *C. incisa*. After reviewing the protologue and specimens associated with *C. florulenta*, we conclude that only leaf size separates it from *C. incisa*. Therefore, we recognize *C. florulenta* as a heterotypic synonym of *C. incisa*. A neotype is here designated from a collection made at the type locality and cited by Merrill (1923) under this name, since the original type material has not been located and is presumed destroyed. *Cyrtandra philippinensis* was described by Clarke (1883) based on *Perrottet s.n.* and *Callery 37*. Merrill (1923) concluded that *C. philippinensis* is morphologically similar to *C. incisa* and synonymized this species. We adhere to Merrill's (1923) decision, and we designate the most complete syntype (*Perrottet s.n.*, P) as the lectotype. *Cyrtandra incisa* has distinctly incised leaf margins and brown sericeous hairs on the calyces.

41. *Cyrtandra infantae* Kraenzl. in Philipp. J. Sci., C 8: 327. 1913 – Type: Philippines, Luzon, Tayabas, *Bur. Sci. 9320 Robinson* (B, presumed destroyed) – **Neotype (designated here):** Philippines, Luzon, Mt. Binuang, May 1917, *Bur. Sci. 28809 Ramos & Edaño* (US barcode 00081405!).

Kraenzlin (1913b) described this species based on *Bur. Sci. 9320 Robinson*, but we could not find any extant original material, and the type is presumed destroyed. A neotype is here designated from a collection made by Ramos and Edaño at the type locality. The specimen is a good match for the description by Kraenzlin (1913b), showing crowded leaves at the apex of the shoots, leaves that are seemingly alternate because the opposite pair is greatly reduced, serrate leaf margins, and pubescent corollas.

42. *Cyrtandra lagunae* Kraenzl. in Philipp. J. Sci., C 8: 175. 1913 – **Lectotype (designated here):** Philippines, Luzon, Mt. Banahaw, Feb 1911, *Merrill 7499* (BM barcode BM000997712!; isolectotypes: K barcode K000831633!, US barcode 00126278!).

= *Cyrtandra maquilingsensis* Elmer in Leafl. Philipp. Bot. 8: 3083. 1919 – **Lectotype (designated here):** Philippines, Luzon, Mt. Makiling, Jul 1917, *Elmer 17813* (A barcode 00054981!; isolectotypes: BISH barcode BISH1001916!, BM barcode BM000997713!, BO No. 1877490!, CAS barcode 0033132!, GH barcode 00054980!, HBG barcode HBG-517478!, L 2D barcode L.2825817!, NY barcode 00312679!, P barcode P03555535!, S No. 11-11094!,

US barcodes 00126289! & 01269030!, U barcode U 0226566!, Z barcode Z-000017820!).

Kraenzlin (1913a) described *Cyrtandra lagunae* based on the gathering *Merrill 7499*, and the syntype in BM is designated as the lectotype since multiple buds can be readily observed. Kraenzlin (1913a) stated in the protologue that the single-flowered inflorescences best distinguish this species from its close relatives. However, this character is not apparent in the types. The number of flowers distinguishes *C. lagunae* from *C. maquilingsensis* (Elmer, 1919). Since multiple flowers can be seen on the type of *C. lagunae* and no other significant differences between *C. lagunae* and *C. maquilingsensis* can be observed, we support Merrill's (1923) placement of *C. maquilingsensis* into synonymy. The syntype from the type gathering *Elmer 17813* of *C. maquilingsensis* in A with multiple floral parts is designated as its lectotype. *Cyrtandra lagunae* is a shrub with lanceolate anisophyllous leaves with denticulate margins and with large, white, fascicled, hirsute flowers (ca. 8 cm long).

43. *Cyrtandra lancifolia* Merr. in Philipp. J. Sci. 14: 454. 1919 – **Lectotype (designated here):** Philippines, Luzon, Ilocos Norte, Aug 1918, *Bur. Sci. 33078 Ramos* (BM barcode BM000997710!; isolectotypes: A barcode 00054974!, K barcode K000831634!, P barcode P03555564!, US barcode 00126279!).

Merrill (1919) described this species from the gathering *Bur. Sci. 33078 Ramos*, and the syntype in BM with an open flower is designated as the lectotype. *Cyrtandra lancifolia* is morphologically similar to *C. livida* Kraenzl. and *C. agusanensis* Elmer. It is, however, different in its dentate leaves (vs. denticulate in *C. livida* and *C. agusanensis*) and larger inflorescences (4.5–5 cm long in *C. lancifolia* vs. only reaching up to 3 cm long in *C. livida* and *C. agusanensis*).

44. *Cyrtandra limnophila* Kraenzl. in Philipp. J. Sci., C 8: 323. 1913 – Type: Philippines, Luzon, Mt. Abu, *Bur. Sci. 1988 Foxworthy* (B, presumed destroyed) – **Neotype (designated here):** Philippines, Catanduanes, Nov–Dec 1917, *Bur. Sci. 30565 Ramos* (US barcode 00081341!).

– “*Cyrtandra umbrina* Elmer” in Leafl. Philipp. Bot. 10: 3742. 1939, not validly published – Philippines, Luzon, Mt. Bulusan, Jul 1916, *Elmer 16537* (BO No. 1730878!, GH barcode 00054998!, HBG barcode HBG-517433!, L 2D barcode L.2826697!, MO No. 841997 [barcode MO-716199!], NY barcodes 00312889! & 00312890!, P barcode P03899663!, S No. 11-11103!, U barcode U 0226561!, US barcodes 00126365! & 01269037!, Z barcode Z-000017832!).

Kraenzlin (1913b) described this species based on *Bur. Sci. 1988 Foxworthy*. We could neither find a representative of this collection in B, nor any duplicates in any other herbaria. Hence the type material appears to have been lost and there is no known extant original material. We therefore select a neotype from collections identified by Merrill (1923) as *Cyrtandra limnophila*. The collection *Elmer 16537* was distributed in 1916 by Elmer with the designation “*C. umbrina*”. Elmer (1939)

published the name, but not validly so because he did not include a Latin diagnosis (Art. 39.1). Merrill (1923) already noted that *Elmer 16537* is conspecific with *C. limnophila*. Here we agree with Merrill's delimitation. *Cyrtandra limnophila* is morphologically similar to *C. pallidifolia* Kraenzl. but is different in having serrate versus crenate leaf margins and obtuse versus acuminate calyx lobes.

45. *Cyrtandra livida* Kraenzl. in Philipp. J. Sci., C 8: 322. 1913 – **Lectotype (designated here)**: Philippines, Palawan, Mar–Apr 1906, *Bur. Sci. 781 Foxworthy* (US barcode 00126284!; islectotype: US barcode 00081520!).

Kraenzlin (1913b) described this species based on *Bur. Sci. 781 Foxworthy*, and the syntype in US with floral buds is designated as the lectotype. *Cyrtandra livida* is closely related to *C. inaequifolia* but can be distinguished based on habit: *C. livida* is an unbranched herb, whereas *C. inaequifolia* is a shrub (Atkins & Cronk, 2001). The corollas of *C. livida* are white and tinged with yellow at the throat and pink hairs externally (Atkins & Cronk, 2001).

46. *Cyrtandra lobbii* C.B. Clarke in Candolle & Candolle, Monogr. Phan. 5: 282. 1883 – **Lectotype (designated here)**: Philippines, Luzon, *Lobb s.n.* (K barcode K000831643!; islectotype: K000831642!).

= *Cyrtandra curranii* Kraenzl. in Philipp. J. Sci., C 8: 176. 1913 – **Lectotype (designated here)**: Philippines, Luzon, Laguna, San Antonio, Mar 1912, *For. Bur. 13189 Curran* (P barcode P03884347!; islectotypes: BM barcode BM000997709!, K barcode K000831612!, P barcode P03884347!, US barcode 00126238!).

= *Cyrtandra ramosii* Kraenzl. in Philipp. J. Sci., C 8: 177. 1913 – **Lectotype (designated here)**: Philippines, Luzon, Laguna, San Antonio, Aug 1910, *Bur. Sci. 10976 Ramos* (US barcode 00126328!; islectotypes: K barcode K000831670!, P barcode P03899640!).

= *Cyrtandra wenzelii* Merr. in Philipp. J. Sci., C 9: 385. 1914 – **Lectotype (designated here)**: Philippines, Leyte, Buenavista, May 1914, *Wenzel 665* (US barcode 00126373!).

Remaining syntypes of *Cyrtandra lobbii*: Philippines, Batangas, *Cuming 1458* (FI barcode FI009826!, K barcode K000831646!, P barcode P0355552!).

A widespread species. The oldest name was introduced by Clarke (1883) based on *Lobb s.n.* and *Cuming 1458*. We designate one of the two syntypes of *Lobb s.n.*, both at K, as the lectotype, since it is the most complete. Merrill (1923) synonymized three names (*Cyrtandra curranii*, *C. ramosii*, *C. wenzelii*) based on similarities in leaf morphology, their characteristic bracts (ovate bracts with tomentose hairs and acuminate apices), and enlarged calyces. In all three cases, the most complete syntypes from the type collections are here designated as lectotypes.

47. *Cyrtandra loheri* Quisumb. in Philipp. J. Sci. 41: 351. 1930 – **Lectotype (designated here)**: Philippines, Luzon,

Mt. Pamingtingan, Mar 1912, *Loher 12939* (UC barcode UC240031!).

Quisumbing (1930) described this species based on two gatherings (*Loher 12939*, *14316*) designating the former as the type. Quisumbing's (1930) holotype was destroyed during a fire in PNH and we designate the surviving isotype as the lectotype. *Cyrtandra loheri* resembles *C. tenuisepala* Quisumb. It is distinct in its longer peduncles (1.5–2.5 cm long in *C. loheri* vs. 3–6 mm in *C. tenuisepala*), smaller flowers (5–6 mm long in *C. loheri* vs. more than 13–15 mm long in *C. tenuisepala*), and villous indumentum on the vegetative parts (vs. ferruginous only on the abaxial surface of the leaves in *C. tenuisepala*).

48. *Cyrtandra longipes* Merr. in Philipp. J. Sci., C 13: 329. 1918 – **Lectotype (designated here)**: Philippines, Luzon, Catanduanes, Nov–Dec 1917, *Bur. Sci. 30353 Ramos* (K barcode K000831648!; islectotypes: P barcode P03555547!, US barcode 00126287!).

Merrill (1918) described this species based on *Bur. Sci. 30353 Ramos*, and the syntype in K with complete reproductive parts is designated as the lectotype. *Cyrtandra longipes* is morphologically similar to *C. sibuyanensis* Elmer and *C. panayensis* Merr., but can be readily recognized by its elongated petioles (reaching up to 12–14 cm in *C. longipes* vs. only up to 4 cm in *C. sibuyanensis* and *C. panayensis*).

49. *Cyrtandra macrodiscus* Kraenzl. in J. Linn. Soc., Bot. 37: 279. 1906 – Holotype: Philippines, Luzon, Benguet, May–Jun 1904, *For. Bur. 921 Barnes* (K barcode K000831649!; isotypes: NY barcode 00312678!, P barcode P03555543!, US barcode 00126288!).

= *Cyrtandra grossedentata* Elmer in Leaf. Philipp. Bot. 1: 346. 1908 – **Lectotype (designated here)**: Philippines, Luzon, Benguet, Mar 1907, *Elmer 8864* (Z barcode Z-000017816!; islectotypes: A barcode 00054972!, E barcode E00062593!, K barcode K000831622!, L 2D barcode L.2818029!).

Types of names published by Kraenzlin in 1906 are deposited in K (Kraenzlin, 1906: 275). *Cyrtandra macrodiscus* was described based on *For. Bur. 921 Barnes*. There is only one specimen in K and this is considered the holotype. Merrill (1923) synonymized *Cyrtandra grossedentata* with *C. macrodiscus*, recognizing that their types were collected at the same locality and that both were morphologically similar. *Cyrtandra grossedentata* was described by Elmer (1908) based on *Elmer 8864*, and the most complete syntype in Z is designated as the lectotype. *Cyrtandra macrodiscus* is morphologically similar to *C. incisa* but it can be differentiated by having smaller leaves (5–8.5 cm long × 1–2.5 cm in *C. macrodiscus* vs. 18–20 cm × 3–6 cm in wide in *C. incisa*) and white corollas with purple streaks (vs. entirely white in *C. incisa*).

50. *Cyrtandra maesifolia* Elmer in Leaf. Philipp. Bot. 2: 556. 1908 – **Lectotype (designated here)**: Philippines, Negros,

Cuernos Mts., Jun 1908, *Elmer 10228* (E barcode E00062597!).

= *Cyrtandra chavis-insectorum* Kraenzl. in Philipp. J. Sci., C 8: 318. 1913 – **Lectotype (designated here)**: Philippines, Mindanao, Lanao, Jul 1906, *Clemens 650* (US barcode 01269035!; isolectotype: US barcode 00126231!).

= *Cyrtandra nervosa* Kraenzl. in Philipp. J. Sci., C 8: 178. 1913 – **Lectotype (designated here)**: Philippines, Zamboanga, Sax River Mountains, Dec 1911, *Merrill 8126* (K barcode K000831654!; isolectotype: US barcode 00126300!).

= *Cyrtandra williamsii* Kraenzl. in Philipp. J. Sci., C 8: 315. 1913 – **Lectotype (designated here)**: Philippines, Zamboanga, Sax River, Feb 1905, *Williams 2087* (US barcode 00126375!).

Elmer (1908) described *Cyrtandra maesifolia* based on *Elmer 10228* and we were only able to locate a single syntype in E, which is designated here as the lectotype. Merrill (1923) synonymized three names published by Kraenzlin (1913a,b): *C. chavis-insectorum*, *C. nervosa*, and *C. williamsii*. The synonymy was based on the following shared characters: climbing habit, leaves alternate, coriaceous, oblong to obovate, subentire margins, bracts lanceolate, inflorescences axillary, calyx lobes lanceolate with acuminate tips, and corollas white with red to purple sinuses. Lectotypes are selected for these three names, and in each case, it is the most complete syntype that could be located from the type gathering. Elmer distributed several gatherings (*Elmer 15177*, *16453*, *16673*) under the designation “*C. bulusanensis*”, but never published the name. Merrill (1923) listed them under *C. callicarpifolia*, but Elmer (1939) referred them to *C. williamsii*, which is a synonym of *C. maesifolia*. The leaves of these specimens indeed better resemble those of *C. maesifolia* (leaves alternate, oblong to ovate, acute apex, base obtuse, margins serrate near the apices). *Cyrtandra maesifolia* is a widespread species with alternate leaves, leaf-opposed 2- to 3-flowered inflorescences, nearly divided calyces, white corollas that may be flushed with pink to purple coloration, and berry-like fruits (Elmer, 1908).

Additional specimens examined of Cyrtandra maesifolia distributed as “C. bulusanensis”. – Philippines, Luzon, Mt Bulusan, Nov 1915, *Elmer 15177* (K!); Philippines, Luzon, Mt Bulusan, Jun 1916, *Elmer 16453* (HBG barcode HBG-517557!, K!, L 2D barcode L.2822224!, P barcode P03884922!); Philippines, Luzon, Mt Bulusan, Jun 1916, *Elmer 16673* (HBG barcode HBG-517558!, K!, P barcode P03884921!).

51. *Cyrtandra membranifolia* Elmer in Leaf. Philipp. Bot. 3: 963. 1910 – **Lectotype (designated here)**: Philippines, Mindanao, Mt. Apo, Aug 1909, *Elmer 11273* (K barcode K000831650!; isolectotypes: A barcode 00054982!, BISH barcode BISH1001918!, BM barcode BM000630870!, BO No. 1877491!, E barcode E00062598!, GH barcode 00054983!, HBG barcode HBG-517473!, L 2D barcode L.2825764!, MO No. 1997449 [barcode MO-716193!], NY barcode 0031268!, US barcode 00126292!, WRSL!, Z barcode Z-000017825!).

Elmer (1910) described this species based on *Elmer 11273*, and the syntype in K is designated as the lectotype because it best shows the following diagnostic features of this species: fascicled inflorescences, linear bracts, and pilose corollas.

52. *Cyrtandra microphylla* Merr. in Philipp. J. Sci., C 13: 328. 1918 – **Lectotype (designated here)**: Philippines, Luzon, Mt. Umingan, Aug–Sep 1916, *Bur. Sci. 26250 Ramos & Edaño* (K barcode K000831651!; isolectotypes: P barcode P03555529!, US barcode 00126294!).

Merrill (1918) described this species from *Bur. Sci. 26250 Ramos & Edaño*, and the syntype in K, which has multiple fruits, is designated as the lectotype. *Cyrtandra microphylla* is morphologically similar to *C. tenuipes* Merr., but is distinguished by its smaller leaves (up to 5 × 2.5 cm in *C. microphylla* vs. up to 10 × 3 cm in *C. tenuipes*) and calyx tube about half as long as the slender calyx lobes (vs. calyx tube and lobes of equal same size in *C. tenuipes*).

53. *Cyrtandra mindanaensis* Elmer in Leaf. Philipp. Bot. 3: 958. 1910 – **Lectotype (designated here)**: Philippines, Mindanao, Mt. Apo, Sep 1909, *Elmer 11711* (E barcode E00062599!; isolectotypes: BM barcode BM000630844!, L 2D barcode L.2825785!).

Elmer (1910) described this species from *Elmer 11711*, and the syntype in E is designated as the lectotype because it has loose reproductive parts in the fragment packet that show glabrous ovoid fruits, which distinguish *Cyrtandra mindanaensis* from *C. incisa*, which has hirsute linear fruits.

54. *Cyrtandra mucronatisepala* Quisumb. in Philipp. J. Sci. 41: 352. 1930 – **Lectotype (designated here)**: Philippines, Mindanao, Mt. Mayo, April–May 1927, *Bur. Sci. 49427 Ramos & Edaño* (NY barcode 04291105!).

Quisumbing (1930) designated *Bur. Sci. 49427 Ramos & Edaño* in PNH as the holotype. This is assumed to have been destroyed during the Second World War. Only one isotype in NY was located and this is here designated as the lectotype. This specimen, however, is sterile. An illustration is available in the protologue and should be used as an aid to identify this species. *Cyrtandra mucronatisepala* is distinguished from *C. lobbii* C.B. Clarke by its mucronate, oblong-ovate calyx lobes (vs. acuminate, lanceolate in *C. lobbii*).

55. *Cyrtandra multifolia* Merr. in Philipp. J. Sci., C 13: 327. 1918 – **Lectotype (designated here)**: Philippines, Luzon, Mt. Umingan, Aug–Sep 1916, *Bur. Sci. 26459 Ramos & Edaño* (US barcode 00126297!; isolectotype: K barcode K000831653!).

Merrill (1918) described this species from *Bur. Sci. 26459 Ramos & Edaño*. The syntype in US has open flowers and is designated as the lectotype. *Cyrtandra multifolia* is morphologically similar to *C. incisa* but has smaller leaves (up to 9 × 2.5 cm in *C. multifolia* vs. up to 20 × 6 cm in *C. incisa*).

with finer serrations, and larger flowers (7 vs. 3 cm long in *C. incisa*).

56. *Cyrtandra oblongata* Merr. in Philipp. J. Sci., C 10: 78. 1915 – **Lectotype (designated here)**: Philippines, Luzon, Mt. Banahaw, Feb 1911, *Merrill 7515* (K barcode K000831655!; isolectotype: US barcode 00126303!).

Merrill (1915) cited four gatherings (*Whitford 931, 1008, Loher 6650, Merrill 5578*) in addition to the one that was indicated as type (*Merrill 7515*). The syntype in K has most intact parts and is here designated as the lectotype. Merrill (1915) noted that this species is often confused with *Cyrtandra cumingii*, but is distinguished by its decurrent oblong hirsute leaves (non-decurrent, ovate and glabrous in *C. cumingii*).

57. *Cyrtandra pachyneura* Kraenzl. in Philipp. J. Sci., C 8: 174. 1913 – **Lectotype (designated here)**: Philippines, Luzon, Mt. Tonglon, May 1911, *Merrill 7800* (US barcode 00126308!; isolectotypes: K barcode K000831656!, L 2D barcode L.2826146!, P barcode P03884434!).

= *Cyrtandra alnifolia* Kraenzl. in Philipp. J. Sci., C 8: 329. 1913 – Type: Philippines, Luzon, Benguet, *Bur. Sci. 8350 McGregor* (B, presumed destroyed) – **Neotype (designated here)**: Philippines, Luzon, Benguet, May 1914, *Merrill 9662* (US barcode 00081444!; isoneotype: K!).

Kraenzlin (1913a) described this species based on *Merrill 7800*. The specimen in US is the most complete and is here designated as the lectotype. Merrill (1923) recognized that Kraenzlin (1913b) based his descriptions of *Cyrtandra pachyneura* and *C. alnifolia* on collections he made at neighboring localities. Later collections from these localities showed that both species differ only in the size of their leaves, which led Merrill (1923) to synonymize the names. The type for *C. alnifolia* is presumed destroyed, and a neotype is designated from a collection made by Merrill from the type locality that matches Kraenzlin's (1913b) description by having anisophyllous, oblong-elliptic leaves, and pedunculate inflorescences with broadly ovate involucre bracts.

58. *Cyrtandra pachyphylla* Kraenzl. in Philipp. J. Sci., C 8: 316. 1913 – **Lectotype (designated here)**: Philippines, Luzon, Mt. Mayon, Jun 1907, *Bur. Sci. 2928 Mearns* (US barcode 00126309!).

– “*Cyrtandra vulcanica* Elmer” in Leaflet Philipp. Bot. 10(136): 3743. 1939, not validly published – Philippines, Luzon, Mt. Bulusan, Sep 1916, *Elmer 17388* (BO No. 1877515!, C barcode C10012754!, GH barcode 00092002!, HBG barcode HBG-517432!, MO No. 838488 [barcode MO-716197]!, NY barcode 00312895!, P barcode P03899655!, S No. 11-11124!, U barcode U 0226557!, US barcodes 01269038! & 00126370!, Z barcode Z-000017834!).

Kraenzlin (1913b) described *Cyrtandra pachyphylla* based on *Bur. Sci. 2928 Mearns*. We were only able to locate one syntype in US, and it is here designated as the lectotype. Elmer (1939) published “*C. vulcanica*” without a Latin diagnosis, and hence it was not validly published (Art. 39.1).

Nonetheless, it is worth noting that “*C. vulcanica*” perfectly matches the description of *C. pachyphylla*. Both have oblanceolate leaves with crenate margins and inequilateral bases, peduncles 5–8 cm long and umbellate inflorescences. Kraenzlin (1913b) noted that this species is quite striking for having inequilateral leaf bases, slender peduncles, small corollas (ca. 1–1.5 cm), elongated ovaries, and short styles.

59. *Cyrtandra pallida* Elmer in Leaflet Philipp. Bot. 2: 559. 1908 – **Lectotype (designated here)**: Philippines, Negros, Cuernos Mts., Mar 1908, *Elmer 9518* (BM barcode BM000997706!; isolectotypes: A barcode 00054984!, BO No. 1367203!, E barcode E00062600!, HBG barcode HBG-517470!, K barcode K000831657!, L 2D barcode L.2826148!, MO No. 1997452 [barcode MO-716190]!, NY barcode 00312690!, US barcode 00126310!, WRS!, Z barcode Z-000017826!).

= *Cyrtandra laxa* Elmer in Leaflet Philipp. Bot. 3: 967. 1910 – **Lectotype (designated here)**: Philippines, Mindanao, Mt. Apo, Aug 1909, *Elmer 11585* (GH barcode 00054978!; isolectotypes: A barcode 00054979!, BISH barcode BISH1001905!, BM barcode BM000997708!, E barcode E00062595!, GH barcode 00054977!, HBG barcode HBG-517482!, K barcode K000831637!, L 2D barcode L.2826150!, MO No. 1997445 [barcode MO-716187]!, NY barcode 04291112!, P barcode P03555561!, U barcode U 0226565!, US barcode 00126280!, Z barcode Z-000017818!).

Remaining syntypes of *Cyrtandra laxa*: Philippines, Mindanao, Mt. Apo, Aug 1909, *Elmer 11490* (BM barcode BM000997707!, E barcode E00062596!, GH barcode 00054975!, HBG barcode HBG-517481!, K barcode K000831638!, L 2D barcode L.2826149!, MO No. 1997444 [barcode MO-716188]!, NY barcode 04291111!, WRS!, Z barcode Z-000017819!).

Elmer (1908) described *Cyrtandra pallida* based on *Elmer 9518*, and we designate the most complete syntype in BM as the lectotype. Elmer (1910) described *C. laxa* as morphologically similar to *C. pallida*. We agree with Merrill (1923) that the two species are mainly different in size and that this is not sufficient to consider them taxonomically distinct. The syntype in GH from the type gathering *Elmer 11585* is the most complete and is designated as the lectotype of *C. laxa*. Additional syntype for *C. laxa* is *Elmer 11490* collected from the same expedition in the type locality. Elmer (1908) described this common species as similar in most regards to *C. benguetiana* Kraenzl., but it has sessile inflorescences with involucre bracts (vs. pedunculate and bracts absent in *C. benguetiana*).

60. *Cyrtandra pallidifolia* Kraenzl. in Philipp. J. Sci., C 8: 172. 1913 – Type: Philippines, Luzon, Tayabas, *Bur. Sci. 13379 Ramos* (B, presumed destroyed).

= *Cyrtandra humilis* Elmer in Leaflet Philipp. Bot. 1(16): 345. 1908, nom. illeg., non Blume 1826 ≡ *Cyrtandra coriaceifolia* Olivar & Muellner-Riehl in Phytotaxa 418(1): 117.

2019 – **Lectotype (designated here)**: Philippines, Benguet, Baguio, Mar 1907, *Elmer 8855* (A barcode 00054973!; isolectotypes: BO No. 1877483!, E barcode E00062591!, K barcode K000831623!, L 2D barcode L.2818085!).

= *Cyrtandra arbuscula* Kraenzl. in Philipp. J. Sci., C 8: 326. 1913 – Type: Philippines, Cagayan, *Bur. Sci. 7428 Ramos* (B, presumed destroyed).

= *Cyrtandra glaucescens* Kraenzl. in Philipp. J. Sci., C 8: 328. 1913 – **Lectotype (designated here)**: Philippines, Panay, Dumarao, Mar 1910, *Merrill 6702* (K barcode K000831617!).

Kraenzlin (1913a,b) described three species based on incomplete material, often lacking floral parts. Merrill (1923) recognized that these were morphologically similar to *Cyrtandra humilis* Elmer and synonymized them with that species. However, *C. humilis* Elmer is a later homonym (Olivar & Muellner-Riehl, 2019), and *C. pallidifolia* is the next available name. We did not neotypify *C. pallidifolia* or *C. arbuscula* since we were not able to locate any collections from the same area as the type locality. Only the syntype in A for *C. humilis* has flowering parts and is designated as the lectotype. We were only able to locate one syntype, at K, for *C. glaucescens* and it is designated as the lectotype. Further taxonomic research is needed to determine if these names should indeed be considered as synonyms.

61. *Cyrtandra panayensis* Merr. in Philipp. J. Sci. 14: 452. 1919 – **Lectotype (designated here)**: Philippines, Antique, May–Aug 1918, *Bur. Sci. 32241 McGregor* (K barcode K000831659!; isolectotypes: A barcode 00054985!, US barcode 00126313!).

Merrill (1919) based his description of this species on two gatherings (*Bur. Sci. 32241 & 32411 McGregor*) and designated the former as type. The syntype in K is the most complete and is designated as the lectotype. *Cyrtandra panayensis* is morphologically similar to *C. tayabensis* Elmer but is different in its smaller isophyllous and fewer-nerved leaves (vs. anisophyllous in *C. tayabensis* and leaves reaching 18 × 6 cm with 12 nerves vs. only reaching 10 × 5 cm with 8 nerves in *C. panayensis*) and its entirely glabrous ovaries (vs. pilose ovaries in *C. tayabensis*).

62. *Cyrtandra pantothrinx* Kraenzl. in Repert. Spec. Nov. Regni Veg. 24: 221. 1928 – Holotype: Philippines, Luzon, Majajay, *Wallis s.n.* (W No. W0117996!).

Kraenzlin (1928) explicitly indicated the holotype of this species to be *Wallis s.n.* in W. He noted that the 2-flowered inflorescences, which are subtended by foliaceous bracts, and the completely pubescent corollas make this species unique among *Cyrtandra*.

63. *Cyrtandra parva* Merr. in Philipp. J. Sci. 20: 446. 1922 – **Lectotype (designated here)**: Philippines, Mindanao, Zamboanga District, Malangas, Oct–Nov 1919, *Bur. Sci. 36833 Ramos & Edaña* (K barcode K000831660!).

Merrill (1922) described this species based on two gatherings (*Bur. Sci. 36833, 37248 Ramos & Edaña*) and designated the former as the type. Only one syntype has been found to date, and it is here designated as the lectotype. This species is characterized by its small size, prostrate slender stems, conspicuous, brown, ciliate indumentum and anisophyllous leaves.

64. *Cyrtandra parviflora* C.B. Clarke in Candolle & Candolle, Monogr. Phan. 5: 283. 1883 – Holotype: Philippines, Luzon, 1840, *Callery s.n.* (P barcode P03884361!).

= *Cyrtandra micrantha* Kraenzl. in J. Linn. Soc., Bot. 37: 280. 1906 – Holotype: Philippines, Luzon, Benguet, Jun 1904, *For. Bur. 923 Barnett* (K barcode K000831661!; isotype: US barcode 00126293!).

Clarke (1883) stated that he only saw *Callery s.n.* in P and hence it is considered the holotype. Kraenzlin (1906) described *Cyrtandra micrantha* as distinct from *C. parviflora* by having curved stamens. This character, however, is a mechanism hypothesized to prevent self-fertilization (Burt, 2001; Bramley, 2005). This led Merrill (1923) to synonymize *C. micrantha* because there were insufficient morphological differences with *C. parviflora*. This species has pulverulent indumentum, short peduncles, and dense cymose inflorescences.

65. *Cyrtandra parvifolia* Merr. in Philipp. J. Sci., C 2: 300. 1907 – **Lectotype (designated here)**: Philippines, Mindoro, Mt. Halcon, Nov 1906, *Merrill 5718* (K barcode K000831665!; isolectotypes: NY barcode 00312691!, US barcode 00126314!).

= *Cyrtandra fragilis* Elmer in Leaf. Philipp. Bot. 2: 557. 1908 – **Lectotype (designated here)**: Philippines, Negros Oriental, Cuernos Mts., Apr 1908, *Elmer 9917* (MO No. 1264652 [barcode MO-716207!]; isolectotypes: BISH barcode BISH1001891!, BM barcode BM000997705!, BO No. 1727682!, E barcode E00062586!, GH barcode 00054967!, HBG barcode HBG-517496!, K barcode K000831615!, L 2D barcode L.2818195!, MICH barcode 1192335!, NY barcode 00312652!, P barcode P03884329!, U barcode U 0226569!, US barcode 00126252!, WRSL!, Z barcode Z-000017812!).

Merrill (1907) described *Cyrtandra parvifolia* based on *Merrill 5718*, and the most complete syntype in K is here designated as the lectotype. Although not type material, Merrill (1907) and Elmer (1908) both cited *Mearns & Hutchinson 4753* from Mt. Malindang, Mindanao, following the descriptions of *C. parvifolia* and *C. fragilis* respectively. Upon review of the protologues and types, we conclude that there are not enough differences between the two species to consider them taxonomically distinct at the species level. We therefore agree with Merrill's decision to place *C. fragilis* in synonymy (Merrill, 1923). The most complete syntype of *C. fragilis* that we located was in MO and is here designated as the lectotype. The small opposite oblong-lanceolate leaves with inequilateral bases, the solitary axillary flowers, and the glabrous calyces and corollas are distinct for this species (Merrill, 1907).

66. *Cyrtandra peninsula* Elmer ex Olivar & H.J. Atkins, **sp. nov.** – Holotype: Philippines, Luzon, Mt. Bulusan, Apr 1916, *Elmer 15699* (A barcode 00054986!; isotypes: MO No. 837931 [barcode MO-716192]!, NY barcode 00312692!, US barcode 00738206!).

The holotype is illustrated in Fig. 3.

Diagnosis. – Morphologically similar to *Cyrtandra membranifolia* Elmer, but differing in subumbellate inflorescences, lanceolate bracts, triangular calyx lobes with setaceous tips, and yellowish indumentum.

Description. – An erect suffrutescent shrub. *Stems* terete, with yellow tomentose hairs on younger stems, older stems glabrescent. *Leaves* opposite, anisophyllous; petiole of large leaf 4–5 cm long, yellow tomentose; blade of large leaf slightly falcate, ca. 20 × 7.5 cm, base obtuse or obtusely rounded, not decurrent, margins minutely serrate, apex acuminate, yellow tomentose on both sides; petiole of smaller leaf 0.5–1 cm long, yellow tomentose; blades of the smaller leaf slightly falcate, ca. 4 × 2 cm, base obtuse or obtusely rounded, not decurrent, margins minutely serrate, apex acuminate, yellow tomentose on both sides; 6–10 lateral veins more conspicuous on the

abaxial side, densely hirsute on both sides. *Inflorescences* erect, axillary, 3–5-flowered; peduncles ca. 2 cm long, yellow tomentose. *Flowers* in subumbellate clusters; pedicels ca. 1 cm long, yellow tomentose; bracts lanceolate, ca. 3 mm long, yellow tomentose, persistent. *Calyx* tubular, ca. 1.5 cm long; lobes attenuate, ca. 0.6 × 0.3 cm; apex setaceous; pubescent. *Corolla* campanulate, 3.5 cm long, upper lobes 1–1.5 × 2 mm, lateral lobes 1 × 1.5 mm, lower lobe 2 × 1.5 mm, narrow at base, widening towards the mouth, externally pubescent. *Stamens* and *pistils* not observed. *Fruits* not seen.

Distribution and habitat. – This species is endemic to Mt. Bulusan in Sorsogon Province (Luzon). It was collected by Elmer from wet humus-covered soil of densely shady primary forest near streams and ravines at about 700 m a.s.l.

Conservation status. – This species is only known from a single gathering (*Elmer 15699*). Mount Bulusan, the type locality, has been a protected area since 1935 (DENR, 2021), but has erupted several times. In 2016, the volcano had a phreatic eruption, destroying the vegetation around the area (GVP, 2021). Given the very restricted area of occupancy of this species and the fact that there is a plausible future threat (volcanic eruption) that could drive the species to Critically Endangered or Extinction in a short time, this species is considered Vulnerable using criterion D2 (IUCN, 2001).

Notes. – Elmer (1939) described this species without providing a Latin diagnosis and hence it was not validly published (Art. 39.1). Here we validate the name and provide a description based on the only known collection.

Etymology. – We believe that Elmer named this species based on the type locality, which is on the Bicol peninsula.

67. *Cyrtandra pinatubensis* Elmer in Leaflet Philipp. Bot. 9: 3191. 1934 – **Lectotype (designated here):** Philippines, Luzon, Mt. Pinatubo, May 1927, *Elmer 22076* (C barcode C10012752!; isolectotypes: B barcode B 10 0277723!, BM barcode BM000997704!, BO No. 1257713!, GH barcode 00054987!, HBG barcode HBG-517464!, K barcode K000831666!, L 2D barcode L.2826581!, MICH barcode 1192338!, MO No. 1037953 [barcode MO-716191]!, NY barcode 00312695!, P barcode P03884365!, Z barcode Z-000017827!).

Elmer (1934) described this species based on *Elmer 22076*, and the most complete syntype in C is designated as the lectotype. *Cyrtandra pinatubensis* is morphologically similar to *C. cumingii*, but it has lanceolate, subequal, serrate leaves and glabrous pedunculate inflorescences (vs. ovate, equal, dentate leaves and hirsute sessile inflorescences in *C. cumingii*).

68. *Cyrtandra plectranthiflora* Kraenzl. in Philipp. J. Sci., C 8: 332. 1913 – **Lectotype (designated here):** Philippines, Luzon, Lepanto, Mt. Data, Jan 1909, *Bur. Sci. 5945 Ramos* (US barcode 00126320!).

Kraenzlin (1913b) described this species based on *Bur. Sci. 5945 Ramos*. We were only able to locate one syntype in US, and it is here designated as the lectotype. Kraenzlin (1913b)



Fig. 3. Holotype of *Cyrtandra peninsula* Elmer ex Olivar & H.J. Atkins, **sp. nov.** *Elmer 15699* (A barcode 00054986).

named this species for its lower corolla lips, which resemble those in the genus *Plectranthus* L'Hér.

69. *Cyrtandra pulgarensis* Elmer ex H.J. Atkins & Cronk in Edinburgh J. Bot. 58(3): 450. 2001 – Holotype: Philippines, Palawan, Mt. Pulgar, May 1911, *Elmer 13204* (E barcode E00259923!; isotype: L 2D barcode L.2826462!, NY barcode 04291108!, WRS!).

Atkins & Cronk (2001) described this species to validate Elmer's herbarium name on the label distributed with *Elmer 13204*. The non-connate bracts, the numerous-flowered inflorescences and the white calyces and corollas distinguish *Cyrtandra pulgarensis* from the other species in Palawan.

70. *Cyrtandra ramiflora* Elmer in Leaflet. Philipp. Bot. 3: 964. 1910 – **Lectotype (designated here)**: Philippines, Mindanao, Mt. Apo, May 1909, *Elmer 10681* (NY barcode 00312883!; isolectotypes: A barcode 00054991!, BISH barcode BISH1001946!, BM barcode BM000997701!, BO No. 1877497!, E barcode E00062601!, GH barcode 00054990!, HBG barcode HBG-517452!, MO No. 1997455 [barcode MO-716159]!, K barcode K000831669!, US barcode 00126327!, WRS!).

Elmer (1910) described this species based on *Elmer 10681*. We designate the syntype in NY as the lectotype because it is the most complete and contains Elmer's field notes. The inflorescence position is variable. It can be leaf opposed, sometimes arising directly from the ground, or more commonly from axils of the fallen leaves. Also, the white corolla tube and pink lobes are characteristic.

71. *Cyrtandra roseoalba* Kraenzl. in Philipp. J. Sci., C 8: 178. 1913 – **Lectotype (designated here)**: Philippines, Luzon, Laguna, San Antonio, Aug 1910, *Bur. Sci. 10923 Ramos* (US barcode 00126333!).

Kraenzlin (1913a) described this species based on *Bur. Sci. 10923 Ramos*. We were only able to locate one syntype in US, and it is here designated as the lectotype. The wide calyces of this species are reminiscent of *Cyrtandra lobbii*, but it can be differentiated by its smaller, pubescent, and pink corollas (vs. glabrous, white corollas in *C. lobbii*).

72. *Cyrtandra rufotricha* Merr. in Philipp. J. Sci. 20: 441. 1922 – **Lectotype (designated here)**: Philippines, Mindanao, Zamboanga, Mt. Tubuan, Oct 1919, *Bur. Sci. 36655 Ramos & Edaño* (US barcode 00126334!; isolectotypes: K barcode K000831672!, P barcode P03884387!).

Merrill (1922) described this species based on *Bur. Sci. 36655 Ramos & Edaño*, and the most complete syntype is in US, so it is designated as lectotype here. *Cyrtandra rufotricha* is morphologically similar to *C. pallidifolia* Kraenzl., but it can easily be distinguished from this species by the stiff, jointed, brown hairs that are ca. 3.5 mm long at the nodes, leaves, petioles, bracts, calyces, and corollas. This characteristic indumentum is absent in *C. pallidifolia*.

73. *Cyrtandra rupicola* Elmer in Leaflet. Philipp. Bot. 5: 1784. 1913 – **Lectotype (designated here)**: Philippines, Palawan, Mt. Pulgar, May 1911, *Elmer 13213* (E barcode E00062604!; isolectotype: BO No. 1877498!).

Elmer (1913) described this species based on *Elmer 13213*. We were able to locate one syntype each in BO and E. However, both specimens are sterile. We designate the specimen in E as the lectotype since the whole plant is mounted on the sheet, and it can be readily observed that the species is a branched, semiwoody herb with white indumentum throughout and opposite, anisophyllous, elliptic leaves. The leaves of *Cyrtandra rupicola* resemble those of *C. livida* Kraenzl., but differ in their acute apex and cuneate base (vs. acuminate apex and attenuate base in *C. livida*).

74. *Cyrtandra saligna* Kraenzl. in Philipp. J. Sci., C 8: 324. 1913 – **Lectotype (designated here)**: Philippines, Mindanao, Zamboanga, 10 Oct 1906, *Merrill 5480* (L 2D barcode L.2822751!; isolectotypes: NY barcode 04291107!, P barcode P03934033!, US barcodes 00081499! & 00126335!).

Kraenzlin (1913b) described this species based on the collection *Merrill 5480*, and the syntype in L, which best shows the distinguishing characters of the species, is designated as the lectotype. The lanceolate leaves resemble members of *Salix* L. The fascicled inflorescences arising from the base of the stem distinguish this species from the other Philippine ones (Kraenzlin, 1913b).

75. *Cyrtandra santosii* Merr. in Philipp. J. Sci. 14: 453. 1919 – **Lectotype (designated here)**: Philippines, Luzon, Benguet, Pauai, Apr–Jun 1918, *Bur. Sci. 32071 Santos* (K barcode K000831673!; isolectotypes: A barcode 00054992!, P barcode P03884392!, US barcode 00126339!).

Merrill (1919) described this species based on *Bur. Sci. 32071 Santos*, and the syntype with more flowering parts, at K, is here designated as the lectotype. *Cyrtandra santosii* is morphologically similar to *C. hypochrysoides* Kraenzl., differing in its larger inflorescences (vs. reaching only 4 cm in length in *C. hypochrysoides*), longer petioles, coriaceous rigid leaves (vs. soft and membranous in *C. hypochrysoides*), and its much denser and longer indumentum.

76. *Cyrtandra sibuyanensis* Elmer in Leaflet. Philipp. Bot. 3: 969. 1910 – **Lectotype (designated here)**: Philippines, Sibuyan, Mt. Giting-giting, May 1910, *Elmer 12529* (NY barcode 00312885!; isolectotypes: A barcode 00054993!, BISH barcode BISH1001950!, BM barcode BM000630855!, BO No. 1877500!, E barcode E00062602!, HBG barcode HBG-517440!, K barcode K000831674!, L 2D barcode L.2826335!, MO No. 1997456 [barcode MO-716194]!, US barcode 00126342!, WRS!).

Elmer (1910) described this species based on *Elmer 12529*, and the syntype in NY, with reproductive parts and Elmer's field notes, is designated here as the lectotype. *Cyrtandra sibuyanensis* is an epiphytic species recognized by

its long petioles (ca. 6 cm long), oblong leaves with margins that are serrulate in the apical third of the leaf, and pink, glabrous, recurved corollas (Elmer, 1910).

77. *Cyrtandra similis* Quisumb. in Philipp. J. Sci. 41: 354. 1930 – **Lectotype (designated here)**: Philippines, Luzon, Nueva Vizcaya, Mt. Alzapan, May–Jun 1925, *Bur. Sci.* 45572 Ramos & Edaña (A barcode 00054994!; isolectotypes: B barcode B 10 10678550!, K barcode K000831675!).

Quisumbing (1930) designated *Bur. Sci.* 45572 Ramos & Edaña in PNH as the holotype. The holotype is presumed destroyed, and the isotype in A, with an open flower, is designated as the lectotype. *Cyrtandra similis* belongs to the *C. villosissima* Merr. group (Olivar & al., 2020) because it has an erect suffrutescent habit and large leaves that are slightly falcate and densely hirsute. Among the four species of this group (*C. argentii*, *C. ferruginea*, *C. hirtigera*, *C. villosissima*), *C. similis* is most similar to *C. ferruginea* but is easily identified by its long peduncles, smaller flowers, and persistent calyces that do not enclose the fruit.

78. *Cyrtandra sorsogonensis* Merr. in Philipp. J. Sci., C 11: 31. 1916 – **Lectotype (designated here)**: Philippines, Luzon, Sorsogon, Mt. Kililibong, Jul–Aug 1915, *Bur. Sci.* 23318 Ramos (US barcode 00126344!; isolectotypes: BM barcode BM000630880!, K barcode K000831676!).

Cyrtandra sorsogonensis has long-petioled leaves, dense ferruginous indumentum, and inflated calyces (Merrill, 1916). This can be easily observed on the specimen in US, which is designated as the lectotype because it has more flowering parts.

79. *Cyrtandra strongiana* Kraenzl. in Philipp. J. Sci., C 8: 325. 1913 – Type: Philippines, Mindanao, Lake Lanao, Clemens 1094 (B, presumed destroyed) – **Neotype (designated here)**: Philippines, Mindanao, Bukidnon, Aug 1912, *Bur. Sci.* 15717 Fenix (K!; isoneotype: US barcode 00081430!).

= *Cyrtandra mirabilis* Kraenzl. in Philipp. J. Sci., C 8: 321. 1913, nom. illeg., non C.B. Clarke 1883 – Type: Philippines, Davao, Williams 3012 (B, presumed destroyed) – **Neotype (designated here)**: Philippines, Mindanao, Tanguilan, Jul 1920, *Bur. Sci.* 39141 Ramos & Edaña (L 2D barcode L.2825786!; isoneotypes: K!, P barcode P03555526!, US barcode 00081433!).

Kraenzlin (1913b) described this species based on “Mrs. Clemens 1094”, but the type is presumed destroyed. Among the specimens listed by Merrill (1923) under the name *Cyrtandra strongiana*, the specimen *Bur. Sci.* 15717 Fenix in K was collected around the type locality and shows the characteristic cinnate inflorescences with slender and flexible peduncles (Kraenzlin, 1913b) and is here designated as the neotype. Merrill (1923) synonymized these names, presumably as they share the distinctive inflorescence. *Cyrtandra mirabilis* Kraenzl. is a later homonym because the epithet was already

used for a species described by Clarke (1883). We select the neotype *Bur. Sci.* 39141 Ramos & Edaña for *C. mirabilis* from specimens listed by Merrill (1923) distributed under the name and collected around the type locality. The specimen in L has a long branch of inflorescence that shows the characteristic cinnate arrangement (Kraenzlin, 1913b).

80. *Cyrtandra subglabra* Merr. in Philipp. J. Sci. 20: 447. 1922 – **Lectotype (designated here)**: Philippines, Mindanao, Zamboanga, Oct–Nov 1919, *Bur. Sci.* 36937 Ramos & Edaña (K barcode K000831677!; isolectotypes: L 2D barcode L.2826836!, P barcode P03884382!, US barcode 00126347!).

Merrill (1922) described this species based on *Bur. Sci.* 36937 Ramos & Edaña, and the syntype at K is considered the most complete, with its multiple open flowers, so is designated as the lectotype. *Cyrtandra subglabra* is entirely glabrous except for its conspicuously pilose corollas. Merrill (1922) noted that the unbranched habit, the opposite, subequal, entire leaves, and the two bracts subtending the sessile inflorescences distinguish *C. subglabra* from the other Philippine taxa.

81. *Cyrtandra tagaleurium* Kraenzl. in Philipp. J. Sci., C 8: 176. 1913 – **Lectotype (designated here)**: Philippines, Camiguin, Mar–Apr 1912, *Bur. Sci.* 14462 Ramos (K barcode K000831678!; isolectotypes: A barcode 00054996!, K barcodes K000831679! & K000831680!, NY barcode 00312888!, P barcode P03899665!, US barcodes 00081477! & 00126348!).

Kraenzlin (1913a) described this species based on *Bur. Sci.* 14462 Ramos, and the K syntype is designated as the lectotype because it has multiple open flowers. *Cyrtandra tagaleurium* is morphologically similar to *C. lysiosepala* (A.Gray) C.B. Clarke and *C. garnotiana* Gaudich. but differs in its glabrous corollas.

82. *Cyrtandra talonensis* Elmer in Leaf. Philipp. Bot. 3: 959. 1910 – **Lectotype (designated here)**: Philippines, Mindanao, Mt. Apo, Sep 1909, *Elmer* 11899 (E barcode E00062606!; isolectotypes: L 2D barcode L.2826767!, MO No. 1997457 [barcode MO-716201]!, NY barcode 00546613!, US barcode 00126351!, WRS�!).

Elmer (1910) described this species based on *Elmer* 11899. The only syntype with flowers is in E and is here designated as the lectotype. *Cyrtandra talonensis* is morphologically similar to *C. maesifolia* Elmer but can be differentiated by its smaller inflorescences (length of corollas and calyces reaching only up to 5 cm in *C. talonensis*) and its red corollas (vs. white in *C. maesifolia*).

83. *Cyrtandra tayabensis* Elmer in Leaf. Philipp. Bot. 1: 347. 1908 – **Lectotype (designated here)**: Philippines, Luzon, Tayabas, Lucban, May 1907, *Elmer* 9238 (A barcode 00054997!; isolectotypes: BO No. 1877507!, E barcode E00631543!, K barcode K000831682!, L 2D barcode

- L.2826772!, MO No. 1997459 [barcode MO-716200]!, NY barcode 00546615!, US barcode 00126356!, WRS�!, Z barcode Z-000017831!).
- Elmer (1908) described this species based on *Elmer 9238*, and the syntype in A has the most intact reproductive parts and is here designated as the lectotype. *Cyrtandra tayabensis* is morphologically similar to *C. sibuyanensis* Elmer, but has shorter petioles (only reaching up to 7 cm in *C. tayabensis*) and longer pubescent corollas (vs. glabrous in *C. sibuyanensis*).
84. *Cyrtandra tenuipes* Merr. in Philipp. J. Sci., C 13: 330. 1918 ≡ *Cyrtandra longipedunculata* Merr. in Philipp. J. Sci. 10: 77. 1915, nom. illeg., non Rech. 1908 – **Lectotype (designated here)**: Philippines, Luzon, Mt. Polis, Feb 1913, *Bur. Sci. 19664 McGregor* (P barcode P0355548!; isolectotypes: K barcode K000831647!, US barcode 00126286!).
- Merrill (1918) gave a new name to *Cyrtandra longipedunculata* Merr. because this name was illegitimate as the epithet was already occupied by that for a Samoan species described by Rechinger (1908). The only syntype of *Bur. Sci. 19664 McGregor* that has open flowers is in P and is designated as the lectotype. *Cyrtandra tenuipes* is morphologically similar to *C. plectranthiflora* Kraenzl., but it has oblanceolate, glabrous leaves and larger flowers, whereas *C. plectranthiflora* has lanceolate ferruginous leaves and flowers less than 2 cm long.
85. *Cyrtandra tenuisepala* Quisumb. in Philipp. J. Sci. 41: 356. 1930 – **Lectotype (designated here)**: Philippines, Luzon, Mt. Alzapan, May–Jun 1925, *Bur. Sci. 45579 Ramos & Edaño* (B barcode B 10 1067852!; isolectotype: K barcode K000831684!, NY barcode 04291104!).
- Quisumbing (1930) described this species based on *Bur. Sci. 45579 Ramos & Edaño*, and the holotype in PNH is presumed destroyed. The isotype in B, which is very well preserved and has numerous reproductive parts, is designated as the lectotype. The short calyx tube and the characteristic linear calyx lobes distinguish this species from the other Philippine taxa (Quisumbing, 1930).
86. *Cyrtandra trivialis* Kraenzl. in Philipp. J. Sci., C 8: 331. 1913 – Type: Philippines, Luzon, Isabela, *Bur. Sci. 8003 Ramos* (B, presumed destroyed) – **Neotype (designated here)**: Philippines, Ifugao, Feb 1913, *Bur. Sci. 20008 McGregor* (K!; isoneotype: US barcode 00081484!).
- Kraenzlin (1913b) described this species based on *Bur. Sci. 8003 Ramos*, but the type is presumed destroyed. Here, we designate a neotype from among specimens listed by Merrill (1923) that best represents the species. The anisophyllous, ovate-lanceolate, serrate leaves, yellow indumentum, 1- to 3-flowered inflorescences, and the undulate, crenulate lower corolla lip are characteristic of this species (Kraenzlin, 1913b).
87. *Cyrtandra umbellifera* Merr. in Philipp. J. Sci., C 3: 435. 1909 – Lectotype (designated by Nishii & al. in Edinburgh J. Bot. 76: 340. 2019): Philippines, Batan, Mt. Iraya, May–Jun 1907, *Bur. Sci. 3785 Fenix* (P barcode P03899661!; isolectotype: US barcode 00126364!).
- = *Cyrtandra kotoensis* Hosokawa in Trans. Nat. Hist. Soc. Formosa 25: 412. 1935 – Holotype: Taiwan, Botel Tobago, Mt. Koto, Dec 1935, *Hosokawa 8129* (TA!).
- Nishii & al. (2019) noted that *Cyrtandra umbellifera* bears some resemblance to *C. longirostris* de Vriese, *C. calli-carpifolia* Elmer and *C. bruteliana* Koord., although these do not have the distinctive umbellate inflorescence of *C. umbellifera*.
88. *Cyrtandra urdanetensis* Elmer in Leaflet Philipp. Bot. 7: 2664. 1915 – **Lectotype (designated here)**: Philippines, Mindanao, Mt. Urdaneta, Sep 1912, *Elmer 13882* (HBG barcode HBG-517434!; isolectotypes: A barcode 00055000!, BISH barcode BISH1001958!, BM barcode BM000795042!, BO No. 1730876!, BRIT barcode 23521!, CAS barcode 0033133!, E barcode E00062603!, GH barcode 00054999!, K barcode K000831686!, L 2D barcode L.2826702!, MO No. 751414 [barcode MO-716198]!, NY barcode 00312891!, P barcode P03899660!, U barcode U 0226562!, US barcodes 00126366! & 01269033!, Z barcode Z-000017833!).
- Elmer (1915) described this species based on *Elmer 13882*. The only syntype with fruit is in HBG and is here designated as the lectotype. *Cyrtandra urdanetensis* is morphologically similar to *C. incisa* C.B. Clarke, but has a higher degree of serration of the leaves.
89. *Cyrtandra vanoverberghii* Kraenzl. in Philipp. J. Sci., C 8: 174. 1913 – Type: Philippines, Luzon, Bontoc: *Vanoverbergh 512* (B, presumed destroyed) – **Neotype (designated here)**: Philippines, Luzon, Bontoc, Dec 1912, *Vanoverbergh 2641* (P barcode P03899659!).
- Kraenzlin (1913a) described this species based on *Vanoverbergh 512*, and the material is presumed destroyed. A neotype in P is designated from among the specimens listed by Merrill (1923). This species is morphologically similar to *Cyrtandra cumingii* C.B. Clarke, but *C. vanoverberghii* is distinguished by its subsessile leaves and entirely white corollas (vs. petiolate leaves and corollas with purple streaks in *C. cumingii*).
90. *Cyrtandra villosissima* Merr. in Philipp. J. Sci. 1(Suppl. 3): 225. 1906 – **Lectotype (designated here)**: Philippines, Mindanao, Lake Lanao, Jan 1906, *Clemens 51* (F barcode V0060536F!; isolectotypes: BO No. 1877514!, US barcode 00126369!).
- = *Slackia philippinensis* Kraenzl. in Philipp. J. Sci., C 8: 171. 1913 – Type: Philippines, Zamboanga, Sax River, *Merrill 8295* (B, presumed destroyed).
- Merrill (1906) described this species based on “Mrs. Clemens 51”, and the most complete syntype in F is designated as the lectotype. The red corolla and green calyces with distinctly linear lobes distinguish this species from *Cyrtandra*

hirtigera H.J. Atkins & Cronk (Olivar & al., 2020). Merrill (1923) synonymized *Slackia philippinensis* Kraenzl. under *C. villosissima*. We have not located, however, the type for this name.

91. *Cyrtandra yaeyamae* Ohwi in J. Jap. Bot. 13(5): 339. 1937 – Holotype: Japan, Iriomote Island, Nakara-gawa, Oct 1936, *Sonohara s.n.* (KYO barcode KYO00069674!). = *Cyrtandra iriomotensis* Masam. in Notul. Syst. (Paris) 6: 38. 1937 – Holotype: Japan, Iriomote Island, *Masamune s.n.* (TAI!).

The decurrent leaf base, 15–18 lateral veins of the leaves, and the longer calyx distinguish this species from *Cyrtandra cumingii* (Nishii & al., 2019). In the Philippines, this species is represented by *Hatusima 25011* collected on Mt. Iraya, Batan Islands.

92. *Cyrtandra zamboangensis* Merr. in Philipp. J. Sci. 20: 445. 1922 – **Lectotype (designated here)**: Philippines, Mindanao, Zamboanga, Mt. Tubuan, Nov 1919, *Bur. Sci. 37249 Ramos & Edaño* (US barcode 00126377!; isolectotypes: K barcode K000831687!, P barcode P03899648!).

Merrill (1922) described this species based on *Bur. Sci. 37249 Ramos & Edaño*, and the syntype in K, with few flowers, is designated as the lectotype. *Cyrtandra zamboangensis* is morphologically similar to *C. auriculata* C.B. Clarke, but it has isophyllous petiolate leaves with crenate margins (vs. anisophyllous subsessile leaves with serrate margins in *C. auriculata*) and much smaller white flowers (vs. more than 3 cm in length and violet in *C. auriculata*).

Insufficiently known taxa

The following names were validly published, but we have not located their types. These names are not neotypified here since we were unable to locate specimens that match the descriptions of the species. The information below was compiled from the protologues.

1. *Cyrtandra atropurpurea* Merr. in Philipp. J. Sci., C 10: 75. 1915 – Type: Philippines, Luzon, Ifugao, Mt. Polis, 2 Feb 1913, *Bur. Sci. 19852 McGregor* (not located).

We located a collection (*Bur. Sci. 37649 Ramos & Edaño*, US 00081276!, K!) from the type locality filed as *Cyrtandra atropurpurea*. The material does not fit Merrill's (1915) description of the species because it has petiolate instead of sessile leaves and is most likely *C. pachyneura* Kraenzl. The information presented in the protologues of both names suggests that this may be the only differentiating character between *C. atropurpurea* and *C. pachyneura*. Considering this and their overlapping areas of distribution in the Cordillera Central mountain range, they might be conspecific.

2. *Cyrtandra chiritooides* Kraenzl. in Philipp. J. Sci., C 8: 327. 1913 – Type: Philippines, Polillo, *Bur. Sci. 10257 McGregor* (not located).

Kraenzlin (1913b) named this species after *Chirita* Buch.-Ham. because of its flowers, and placed it in *Cyrtandra*, since it could not be accommodated easily in any other genus but noted that its floral size was “extraordinary” for *Cyrtandra*. Recollection of this species is needed to determine its generic placement.

3. *Cyrtandra cyclosum* Kraenzl. in Philipp. J. Sci., C 8: 317. 1913 – Type: Philippines, Negros, Mt. Kanlaon, *Banks s.n.* (not located).

Kraenzlin (1913b) noted that the strongly bilabiate corolla and the deeply cleft calyx distinguish this species from other *Cyrtandra*.

4. *Cyrtandra mcgregorii* Kraenzl. in Philipp. J. Sci., C 8: 328. 1913 – Type: Philippines, Cagayan, *Bur. Sci. 10576 McGregor* (not located).

Kraenzlin (1913b) noted that this species was characterized by its large, nearly entire leaves, and involucrate inflorescences.

5. *Cyrtandra nana* Merr. in Philipp. J. Sci., C 10: 79. 1915 – Type: Philippines, Mindanao, Bukidnon, 2 Aug 1913, *Bur. Sci. 21462 Escritor* (not located).

Merrill (1915) noted that this small plant (ca. 4 cm in height) was characterized by its solitary, pedicelled flowers and sessile opposite leaves.

6. *Cyrtandra tecomiflora* Kraenzl. in Philipp. J. Sci., C 8: 322. 1913 – Type: Philippines, Mindanao, Zamboanga, *For. Bur. 9264 Whitford & Hutchinson* (not located).

Kraenzlin (1913b) noted that this species was morphologically similar to *Cyrtandra radiceflora* C.B. Clarke, but differed in its habit and glabrous calyx lobes.

New name

Cyrtandra siporensis Olivar **nom. nov.** ≡ *Cyrtandra chiritooides* Ridl. in Bull. Misc. Inform. Kew 1926(2): 75. 1926, nom. illeg., non Kraenzl. 1913 – Holotype: Sumatra, Sipora Island, 10 Oct 1924, *Boden-Kloss 14651* (K barcode K000831554!; isotype: SING barcode 0050766!).

A new name is here proposed for *Cyrtandra chiritooides* Ridl. as this is a later homonym (Art. 53.1 of the ICN, Turland & al., 2018) of *C. chiritooides* Kraenzl. This specific epithet is derived from the name of the type locality.

■ AUTHOR CONTRIBUTIONS

JECO, HJA, GLCB, FH and ANM-R conceived ideas for this research. HJA and GLCB facilitated herbarium loans and visits. JECO, HJA, GLCB and BPB conducted taxonomic analysis and treatment. JECO led the writing and all authors contributed equally to the manuscript. — JECO, <https://orcid.org/0000-0001-6363-6610>; HJA, <https://orcid.org/0000-0002-3523-1883>; GLCB, <https://orcid.org/0000-0003-0893-6789>; BPB, <https://orcid.org/0000-0002-6990-1419>; FH, <https://orcid.org/0000-0002-4870-0108>; ANM-R, <https://orcid.org/0000-0002-2710-469X>

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