

THE *GESNERIACEAE* OF SULAWESI II: SEVEN NEW SPECIES OF *CYRTANDRA*

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Seven new species of *Cyrtandra* (*Gesneriaceae*) from Sulawesi are described and illustrated: *C. gorontaloensis*, *C. fasciata*, *C. luteiflora*, *C. serratifolia*, *C. purpurea*, *C. tenuicarpa* and *C. roseiflora*.

Keywords. *Cyrtandra*, *Gesneriaceae*, new species, SE Asia, Sulawesi, taxonomy.

INTRODUCTION

Ongoing work on *Cyrtandra* in SE Asia has revealed the presence of a number of new species in Sulawesi. Seven of these are described here. A full account of *Cyrtandra* in Sulawesi is in preparation.

GEOGRAPHY

Cyrtandra J.R. Forst. & G. Forst. (*Gesneriaceae*–*Cyrtandroideae*–*Cyrtandreae*) is a large genus of c.600 species of herbs, shrubs, climbers, and rarely trees. It is a predominantly SE Asian group, its distribution corresponding to the Malesian type *sensu* van Balgooy (1971), and is found from the Nicobar Islands in the Indian Ocean, throughout Malesia, in Taiwan and the southern Japanese islands, in northern Australia, and east across Polynesia to Hawaii. It is recorded with certainty on the Asian continent as far north as southern Thailand, and there are probably also several species in central Vietnam (B.L. Burtt, pers. comm.). Its centres of diversity are New Guinea and Borneo, each with over 150 species, and the Philippines with over 80 species. It is found in the rain forest from sea level to over 2000m.

TAXONOMIC HISTORY

The *cyrtandras* of Sulawesi are not well known. Until now, only 10 species have been described from the island and, with the exception of one new combination made by B.L. Burtt in 1990, no new taxa have been described since 1906. The flora of the island is generally poorly known and there is no complete checklist, let alone a Flora. The position of Sulawesi at the heart of Malesia, one of the most geologically complex areas in the world, makes a knowledge of the affinities of the flora of the island crucially important to an understanding of the biogeography of SE Asia

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and the evolution of many SE Asian plant groups (see Mendum & Atkins, pp. 299–304, this issue). Molecular work on the origins and affinities of the *Cyrtandra* flora of Sulawesi is in progress.

Collections from Sulawesi are small in number and many new species have been described from only a few specimens, sometimes only a single collection. This clearly is not ideal, but with the very real possibility that these taxa may not be collected again for many years it is important to record their presence now.

The new species described here have not been referred to sections. A sectional classification of the genus was made in 1883 by Clarke. He had few collections to study and saw only a fraction of the diversity of which we are now aware. All his sections contain a mixture of species that would not now be grouped together (Burt, 1990) and they are not widely used.

MORPHOLOGY

There is a very strong tendency throughout the *Gesneriaceae* for the two leaves of a pair to be unequal in size. As outlined by Hilliard & Burt (2002) in their monograph of *Agalmyla*, this anisophylly takes a number of forms. At its most extreme, the reduced leaf is represented by a stalkless scale-like structure 5–30mm long. Anisophylly can also occur as a slight difference in the size of the two leaves, or as a great reduction in one of them to as short as 4mm but still with a clear differentiation into petiole and blade. Sometimes, one leaf of a pair is completely absent and the leaves then appear to be alternate. All the above states are represented in these new species.

The shape of the stigma can change considerably as it matures, and it can be difficult to compare stigma shapes with confidence. As there is often very little flowering material available, stigma characters should be treated with some caution. Broadly, however, the stigmas fall into the following three groups: bilobed with lobes vertical or horizontal (possibly depending on age), peltate and capitate.

Notes on the descriptions

All leaves are assumed to be mature unless specified otherwise. Leaf terminology (shape of lamina, apex and base) follows Hickey (1979).

The term ‘hairy’ indicates that the surface in question has a significant covering of hairs but that it is not obscured; ‘densely hairy’ indicates that the surface is obscured.

Measurements are given for fruit length and width (dry material) in the descriptions, although the stage of maturity of fruits on herbarium specimens is not always known. These measurements should therefore be treated with some caution.

Floral characters and measurements are taken from spirit collections as well as rehydrated herbarium material. An attempt has been made to describe overall corolla shape, the shape of the limb, and the size of the lobes. While all corollas seen

are bilabiate to a greater or lesser degree (with two upper lobes and three lower lobes, or two upper, two lateral and one lower lobe), the corolla limb falls into two main types. The first and most common group has all lobes ‘spreading’, i.e. not strongly recurved or extending forwards. This is found in many of the Sulawesi taxa and is seen here in *C. luteiflora* H.J. Atkins and *C. gorontaloensis* H.J. Atkins. The second group has the lower lobes strongly recurved and the upper ones either erect, extending forwards, or also recurved. There is clearly some variation within this group with respect to the position of the upper lobes, but it is not clear to what extent this may vary with age. All members of this group have, however, strongly recurved lower lobes. In some, the middle lower lobe is much longer than the others and appears like a ‘tongue’, which is typical of Schlechter’s subgenus *Glossophorae* from New Guinea (Schlechter, 1923). In others the lower lobes are all approximately the same size. *Cyrtandra purpurea* H.J. Atkins has the extended lower lobe.

The disk is described as being cupular when it encloses the base of the ovary completely. This is consistent with terminology used by Burtt (1990).

1. *Cyrtandra gorontaloensis* H.J. Atkins, sp. nov. Fig. 1.

Cyrtandra gorontaloensis a ceteris speciebus generis in insula Sulawesi cognitis combinatione: foliis ut videtur alternis (cicatricibus foliorum delapsorum praesentibus), pedicellis longis (15–30mm), corollis pallide luteis distinguenda.

Type: Sulawesi, Gorontalo, Gunung Gambuta, 1500m, 12 iv 2002, *Atkins et al.* 91 (holo. BO, iso. E).

Branching shrub to 1.5m. *Stems* striate, sparsely hairy, more densely so when young. *Leaves* appearing alternate, occasionally opposite with one of each pair vestigial and scale-like; developed leaf 7–11.5 × 1.5–3.5cm, narrowly oblong to oblanceolate, acuminate to 1.0cm, narrowly cuneate and slightly asymmetric at base; subentire, with 4 or 5 pairs of occasionally branching lateral veins at c.50°, curving towards margin and sparse tertiary veins, subglabrous above and below although sparsely hairy on midrib and veins, and densely hairy on margins. *Petiole* 10–15mm, hairy. *Reduced leaves* 5 × 1mm, scale-like. *Inflorescences* in leaf axils, 1-flowered. *Bracts* 1–1.5mm, narrowly ovate to linear, not connate. *Pedicels* 1.5–3.0cm, hairy. *Calyx* 7–10mm, pale green, hairy, bilabiate, 3 upper lobes united into a shallowly notched limb, 2 lower lobes similarly united. *Corolla* 1.7–2.0cm long, pale yellow, white hairy outside, narrow below, gradually widening to mouth, limb bilabiate, lobes not recurved, c.4 × 4mm. *Filaments* 3mm long, borne 1.2cm above base of corolla, glabrous, white. *Anthers* 1.5mm, face to face, cohering at tips before dehiscence, brown. *Staminodes* 1mm long. *Gynoecium* 8mm; disk 1–1.5mm, cupular, unevenly lobed, ciliate, much lower on one side, glabrous outside, hairy inside; ovary densely hairy; style densely hairy, glandular towards apex; stigma bilobed, lobes vertical on (?immature) specimens seen, 1mm, slightly glandular outside, included. *Fruit* 12–18 × 5–6mm, green, ovoid, hairy; calyx not persistent; base of style persistent.

Distribution. Indonesia (North Sulawesi); 1400–1500m.

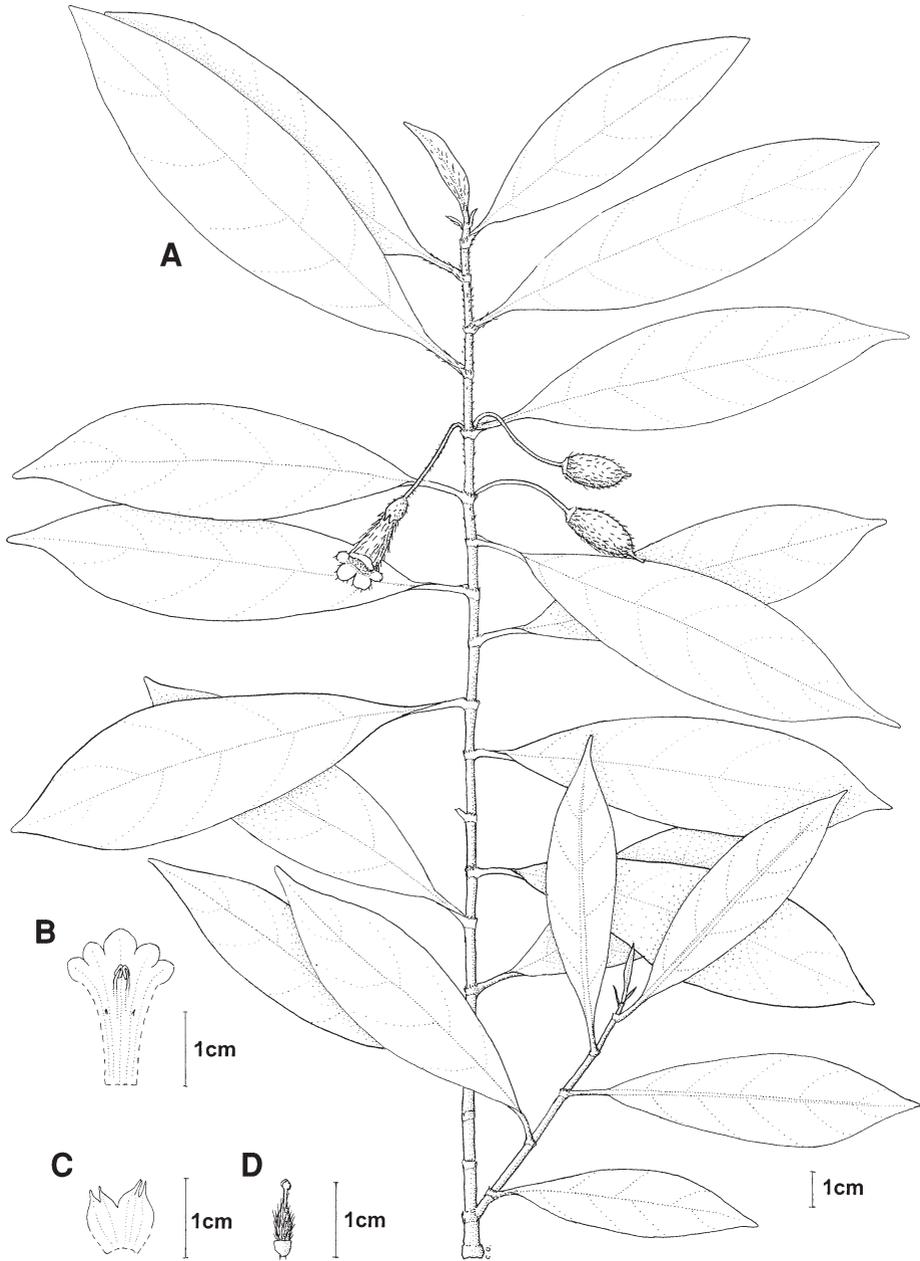


FIG. 1. *Cyrtandra gorontaloensis* H.J. Atkins (*Atkins et al.* 91; *Milliken* 1131). A, habit; B, corolla; C, calyx; D, gynoecium. Drawn by Christina Oliver.

Additional specimens examined. SULAWESI. **North Sulawesi:** Dumoga Bone National Park, Bolaang-Mongondow, vicinity of G. Sinombayuga, 1400m, 30 ix 1991, *Milliken* 1131 (L).

Known only from two collections from North Sulawesi, it is, however, very distinctive with its combination of alternate leaves (and reduced scale-like leaves where present), single flowers on long pedicels, yellow corolla and sparse tertiary venation. It is named after the northern Sulawesi province of Gorontalo where it was collected.

2. *Cyrtandra fasciata* H.J. Atkins, *sp. nov.* Fig. 2.

Cyrtandra fasciata a ceteris speciebus generis in insula Sulawesi cognitis combinatione: caulibus tessellatis squamatisque, corollis luteis erectis arcuatis lobis rubro-fasciatis distinguenda.

Type: Sulawesi, Gorontalo, Gunung Gambuta, 1000m, 10 iv 2002, *Atkins et al.* 54 (holo. BO, iso. E).

Herb to 80cm. *Stems* woody at base, bark tessellate, scaly, glabrous. *Leaves* opposite; both in each pair well developed but somewhat unequal, 14–22 × 3–6cm, oblanceolate to narrowly oblong, with 5–10mm acumen, attenuate at base, decurrent; serrulate with 9–12 pairs of lateral veins at 40° and some short side veins running to adjacent teeth, subglabrous although sparsely hairy on midrib and veins below. *Petiole* 1–1.5cm, glabrous to sparsely hairy. *Inflorescences* subsessile in leaf axils, 1–3-flowered. *Bracts* c.20 × 2mm, linear, apex acuminate, sparsely felted-hairy, brown, not connate. *Calyx* 2.8cm, flushed reddish-pink at base, yellow above, tubular, longitudinally ridged, sparsely hairy, bilabiate, 3 upper lobes c.7mm long, acuminate, 2 lower lobes united in a shallowly notched limb c.14mm long. *Corolla* 3.2–4.0cm, yellow, red stripes on lobes, erect, arcuate, narrow below, widening towards mouth, sparsely hairy outside, densely glandular hairy on inside of lobes, limb bilabiate, lobes strongly recurved, constricted just below rounded apex, all lobes 10 × 5–6mm. *Filaments* 1.0cm long, borne 1.8cm above base of corolla, yellow. *Anthers* 4mm, thecae parallel, not cohering at tips before anthesis (on specimens seen), back of anthers glandular hairy. *Staminodes* c.3mm long. *Gynoeceium* 2.0–2.5cm; disk 1mm, cupular, margin even, glabrous; ovary glabrous; style glandular-hairy for whole length; stigma bilobed, lobes vertical, 1mm, densely glandular hairy on outer surface of lobes, included. *Fruit* 2 × 1cm, ovoid, glabrous, green when unripe, calyx and base of style persistent.

Distribution. Indonesia (Central and South Sulawesi); 850–1700m.

Additional specimens examined. **Central Sulawesi:** Danau Tambing, 1700m, 23 v 1979, *van Balgooy* 3442 (E, L). **South Sulawesi:** Mamasa-Tabang, KBT. Polewali, 21 vi 1974, *Shuji Yoshida* 1234 (BO); Desa Sasakan Kec. Sumarorong Kab. Polmas, 850m, 19 ii 1986, *Yusuf & Wahyono* 133 (BO).

A very striking new species, easily distinguished by its tessellate, flaky stem and erect flowers with striped red and yellow corolla lobes constricted below the tips.

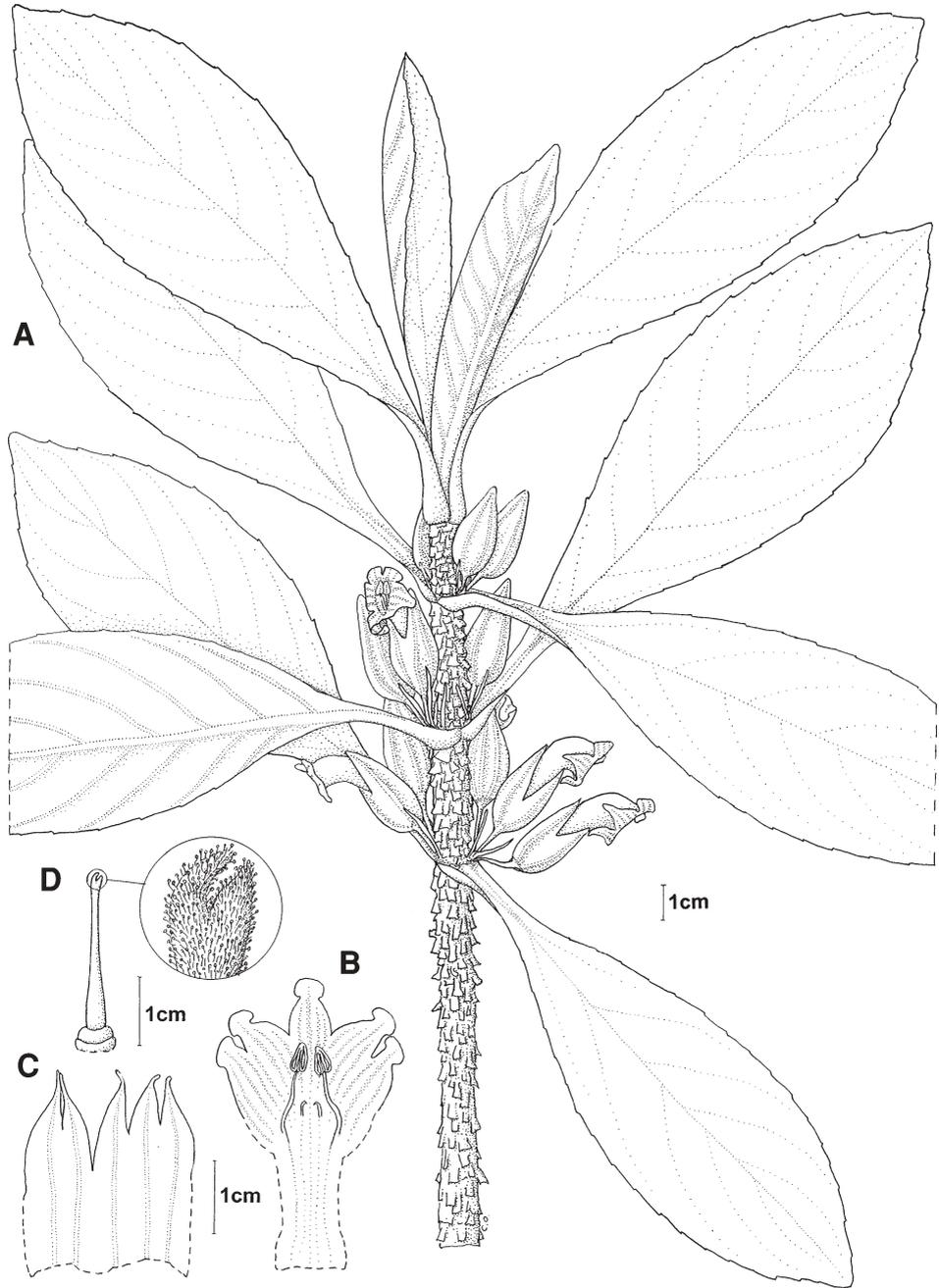


FIG. 2. *Cyrtandra fasciata* H.J. Atkins (*Atkins et al.* 54). A, habit; B, corolla; C, calyx; D, gynoecium. Drawn by Christina Oliver.

3. *Cyrtandra luteiflora* H.J. Atkins, sp. nov. Fig. 3.

Cyrtandra luteiflora a ceteris speciebus generis caulibus flagelliformibus hypogeis foliis anisophyllis, floribus majoribus usque 40mm longis (ceteris solum usque c.15mm) corollis luteis distincta.

Type: Sulawesi, Gorontalo, Gunung Gambuta, 960m, 10 iv 2002, *Atkins et al.* 52 (holo. BO, iso. E).

Branching woody herb or shrub to 50cm. *Stems* longitudinally striate, subglabrous, sparsely hairy when young. *Leaves* opposite; one of each pair markedly reduced or both well developed but somewhat unequal in size; developed leaves 8.5–14 × 3.5–5cm, narrowly obovate, occasionally somewhat rhomboid, acuminate, base attenuate, slightly asymmetric, shortly decurrent, with 3 or 4 distant, rounded narrow teeth or shallow lobes on each side, with 4 or 5 pairs of lateral veins at c.45° and some short side veins running to adjacent teeth, subglabrous above, sparsely hairy below, more densely so on midrib and veins. *Petiole* 5–8mm, sparsely hairy. *Reduced leaves* 4 × 3mm, either vestigial and cordate, or same shape as larger leaves. *Inflorescences* on trailing rooting stems from base of main plant or sessile in leaf axils, 1- or 2-flowered; trailing stem c.1mm in diameter, up to 1.5m long, glabrous, striate, dark green. *Bracts* 3 × 1mm, linear, sparsely hairy, not connate. *Pedicel* 1–2cm, purple, sparsely hairy. *Calyx* c.1.5cm, purple, glabrous to sparsely hairy, most densely so at apex of lobes, bilabiate, lobes c.7mm, acuminate. *Corolla* 4cm, pale yellow with purple markings on lobes outside and two dark yellow to orange marks in throat, narrowly funnel-shaped, arcuate, sparsely hairy outside, limb bilabiate, lower lobes 10 × 9mm, upper lobes 8 × 8mm. *Filaments* 6mm long, borne c.2.5cm above base of corolla, white. *Anthers* 1.5mm, thecae more or less parallel, anthers parallel, cohering at tips. *Staminodes* c.3mm. *Gynoecium* 3.2cm; disk cupular, margin undulate, glabrous; ovary glabrous; style white, glandular hairy; stigma white, peltate, 2mm across, included. *Fruit* 15 × 4mm, narrowly ovoid, glabrous, dark brown, calyx and base of style persistent.

Distribution. Indonesia (Sulawesi, North Sulawesi); 960m.

Additional specimens examined. None.

This is the third species from Sulawesi in which the flowers are borne on trailing stems that originate from the base of the plant. The other two, *C. hypogaea* and *C. geoflora*, were described by Koorders in 1898. *Cyrtandra luteiflora* can be clearly distinguished from these, however, by its anisophyllous leaves, yellow flowers and glandular style. Section *Geodesme* Schltr. (Schlechter, 1923) was erected to accommodate species from Papua New Guinea (including *C. nodulosa* Schltr. and *C. rhizantha* Schltr.) that share this phenomenon of producing basal trailing inflorescences.

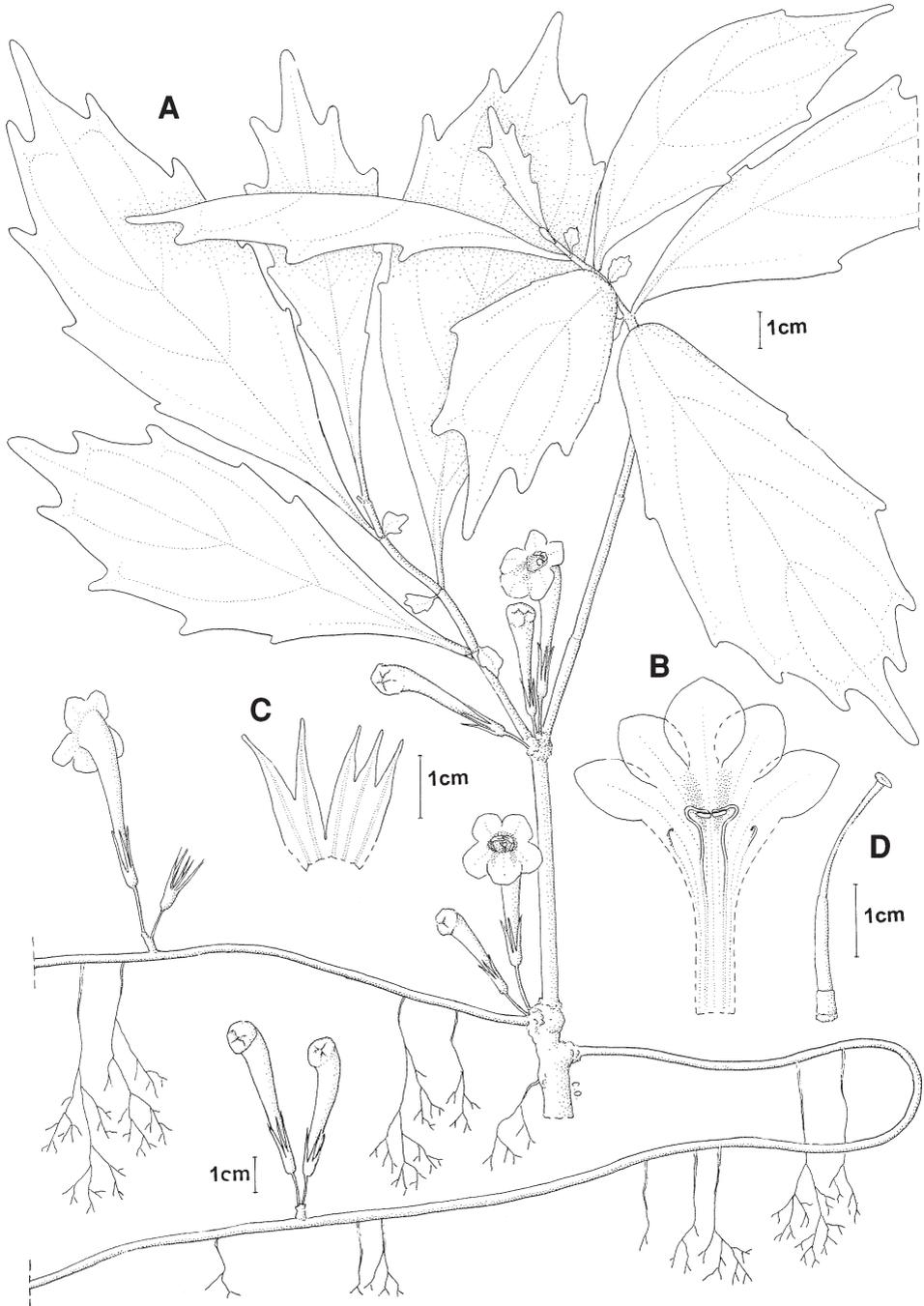


FIG. 3. *Cyrtandra luteiflora* H.J. Atkins (*Atkins et al.* 52). A, habit; B, corolla; C, calyx; D, gynoecium. Drawn by Christina Oliver.

4. *Cyrtandra serratifolia* H.J. Atkins, sp. nov. Fig. 4.

Cyrtandra serratifolia a ceteris speciebus generis in insula Sulawesi cognitis foliis brevibus 3–4cm longis serratisque, floribus solitariis rubris usque roseis magnis 20–26mm longis distincta.

Type: Sulawesi, Bolaang Mongondow, 1780m, 16 iv 1985, *de Vogel & Vermuelen* 7202 (holo. BO; iso. E, K, L).

Erect or creeping shrub to 30cm. *Stems* longitudinally striate, hairy, more densely so when young. *Leaves* opposite, sometimes 3 per node; all well developed but somewhat unequal in size; 0.5–2 × 0.4–1.2cm, elliptic to broadly elliptic, sometimes obovate, base broadly cuneate, not decurrent, more or less symmetric, serrate, with 3 or 4 pairs of lateral veins at c.40°, occasionally with short veins running to adjacent teeth, sparsely hairy, more densely so on midrib and margins above and midrib and veins below. *Petiole* 1–4mm long, hairy to densely hairy. *Inflorescences* subsessile in leaf axils, 1-flowered. *Bracts* 3–4 × 1mm, linear, hairy, not connate. *Pedicels* 4–5mm, hairy. *Calyx* 7–9mm long, green, with 5 equal subulate lobes, 5–6mm long, hairy outside, most densely so at median line of lobes and at their tips. *Corolla* 2–2.6cm, pink or red, funnel-shaped, slightly arcuate, hairy outside, lobes not strongly recurved, limb bilabiate, upper lobes 5–6 × 7–8mm, lower lobes 6–7 × 5–6mm. *Filaments* 2mm long, borne 1.2–1.4cm above base of corolla, with some sessile glands. *Anthers* 1.5mm, thecae slightly divaricate, cohering at tips before dehiscence. *Staminodes* less than 1mm long. *Gynoecium* 9–13mm; disk 1mm, cupular, undulate, glabrous; ovary subglabrous at base becoming glandular hairy towards style; style glandular hairy; stigma bilobed, lobes horizontal, 3mm across, included. *Fruit* to 10 × 5mm, on (?immature) specimens, ovoid, subglabrous but with glandular hairs at base of often persistent style; calyx persistent.

Distribution. Indonesia (North Sulawesi); 1500–1800m.

Additional specimens examined. **North Sulawesi:** Bolaang Mongondow, viii 1917, *Kaudern* 184 (BO); Dumoga Bone National Park, Bolaang Mongondow, 1500m, 26 ix 1991, *Milliken* 1064 (E, L); Gorontalo, Gunung Gambuta, 1600m, 12 iv 2002, *Atkins et al.* 93 (E).

Differs from any other yet seen from Sulawesi in its tiny serrate leaves and low scrambling habit. It is similar vegetatively to the Philippine *C. zamboangensis* Merr. (Merrill, 1920), but the flowers of *C. serratifolia* are much smaller. Currently, it is recorded only from the mountains of the Bolaang Mongondow region of North Sulawesi above 1500m.

5. *Cyrtandra purpurea* H.J. Atkins, sp. nov. Fig. 5.

Cyrtandra purpurea a ceteris speciebus generis in insula Sulawesi cognitis combinatione: planta epiphytica (non terrestri), foliis venatione tertiaria carentibus, corolla purpurea, fructibus subglobosis carnis distinguenda.

Type: Sulawesi, Upper Sopa River, 1000m, 25 v 1979, *van Balgooy* 3503 (holo. L; iso. A, E).

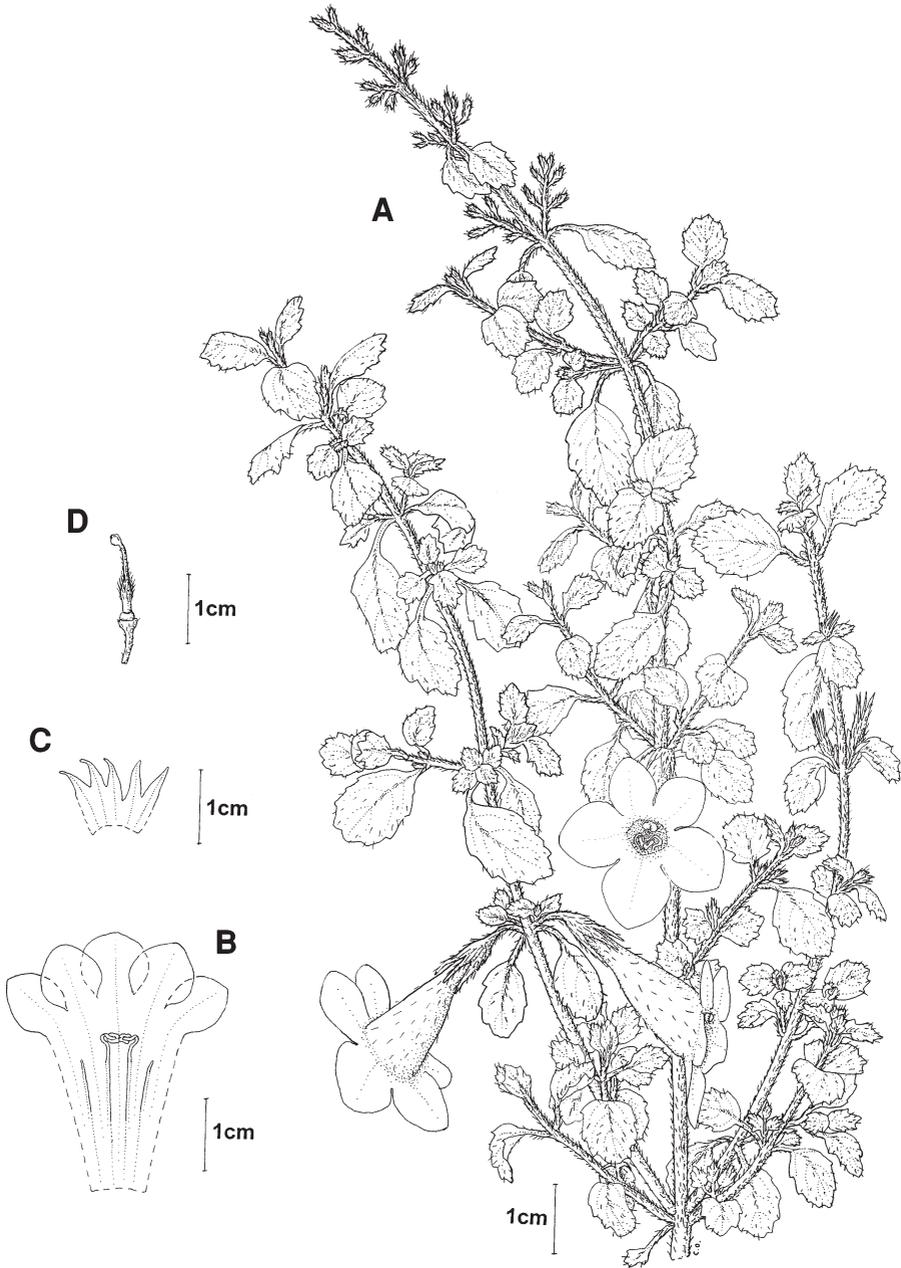


FIG. 4. *Cyrtandra serratifolia* H.J. Atkins (*Atkins et al.* 93; *Milliken* 1064; *de Vogel & Vermuelen* 7202). A, habit; B, corolla; C, calyx; D, gynoecium. Drawn by Christina Oliver.

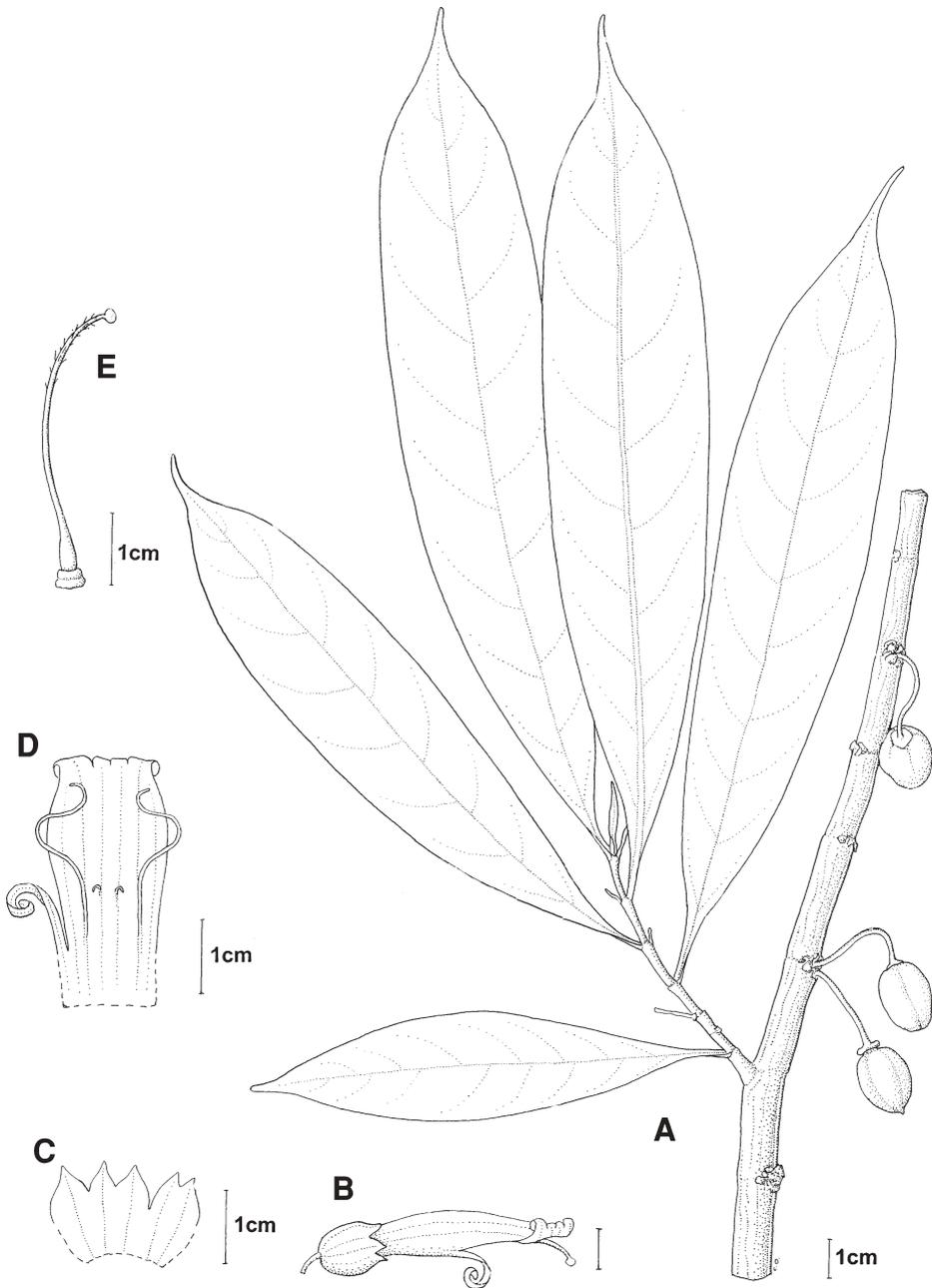


FIG. 5. *Cyrtandra purpurea* H.J. Atkins (van Balgooy 3503). A, habit; B, flower; C, calyx; D, corolla; E, gynoecium. Drawn by Christina Oliver.

Branching, epiphytic climber. *Stems* striate, subglabrous. *Leaves* opposite, subequal; 17–22 × 4–5cm, narrowly oblong, acuminate, narrowly cuneate and ± symmetric at base, slightly decurrent, entire, with 11–14 pairs of lateral veins at c.60° not reaching margin and obscure tertiary veins, glabrous, although sparsely hairy on midrib and veins below. *Petiole* 1–2cm, glabrous. *Inflorescences* 1- or 2-flowered, axillary, from near apex to base of stem. *Bracts* not seen (soon caducous?). *Calyx* 1–1.1cm, campanulate, purple, glabrous, coriaceous, 5-lobed, slightly bilabiate, lobes triangular, 5mm. *Corolla* 3cm, lilac-purple to brown, tubular, glabrous outside, mouth oblique, limb strongly bilabiate, lower median lobe linear and strongly recurved, c.8 × 1.5mm, upper and lateral lobes recurved, 2–3mm long. *Filaments* 2cm long, borne 1cm above base of corolla. *Anthers* not seen (damaged on all specimens). *Staminodes* c.1mm long. *Gynoecium* 3.5cm; disk 1mm, cupular, subentire to undulate, glabrous; ovary glabrous; style glandular hairy for much of its length; stigma peltate, 2mm across, exserted. *Fruit* 1–1.7 × 1–1.2cm, subglobose, glabrous, green when unripe, fleshy, calyx not persistent, base of style persistent.

Distribution. Indonesia (Central Sulawesi); 1000m.

Additional specimens examined. **Central Sulawesi:** Sopa Valley, 1000m, 3 v 1979, *van Balgooy* 3124 (A, L); Sopa Valley, 1000m, 6 v 1979, *de Vogel* 5231 (K, L).

All specimens seen are from the Sopa Valley south of Palu, at an altitude of 1000m and in areas of alluvial soil. Collecting notes from the specimens state that the plant is either a ‘solitary climber’ (*de Vogel* 5231) or an ‘epiphytic shrub’ (*van Balgooy* 3503). Apart from a single specimen of *C. hypogaea* Koord., this is the only record from Sulawesi of epiphytism in *Cyrtandra*, which is not common in the genus. It is a very distinctive species due to its epiphytic habit, subglobose fruit, purple flowers with characteristic elongated lower lobe and leaves with obscure tertiary venation.

6. *Cyrtandra tenuicarpa* H.J. Atkins, *sp. nov.* **Fig. 6.**

Cyrtandra tenuicarpa a ceteris speciebus generis in insula Sulawesi cognitis combinatione: inflorescentiis longe pedunculatis pedunculo usque 80mm longo, fructibus angustissimis 25–35 × 1.5–2mm distinguenda.

Type: Sulawesi, South Sulawesi, road between Palopo and Rantepao, 900m, 3 iii 2000, *Mendum et al.* 00229 (holo. BO, iso. E).

Branching herb to 1.2m. *Stems* striate, sparsely hairy, more densely so when young. *Leaves* opposite; both in each pair well developed but somewhat unequal, (6–)8–14cm × 3–6cm, elliptic, acuminate, base usually attenuate and strongly asymmetric, subentire to minutely serrulate, with 10–12 pairs of lateral veins at 50–60°, curving upwards, sparsely hairy above and below, more densely so on midrib and veins. *Petiole* 4–8mm, hairy. *Inflorescences* pedunculate, pendulous in leaf axils, 3–5-flowered. *Bracts and bracteoles* 1–2mm, ovate, hairy to densely hairy, not connate. *Peduncle* 3.5–8.0cm, sparsely hairy, 0.5mm in diam. *Pedicels* 0.7–1.5(–3)cm. *Calyx*

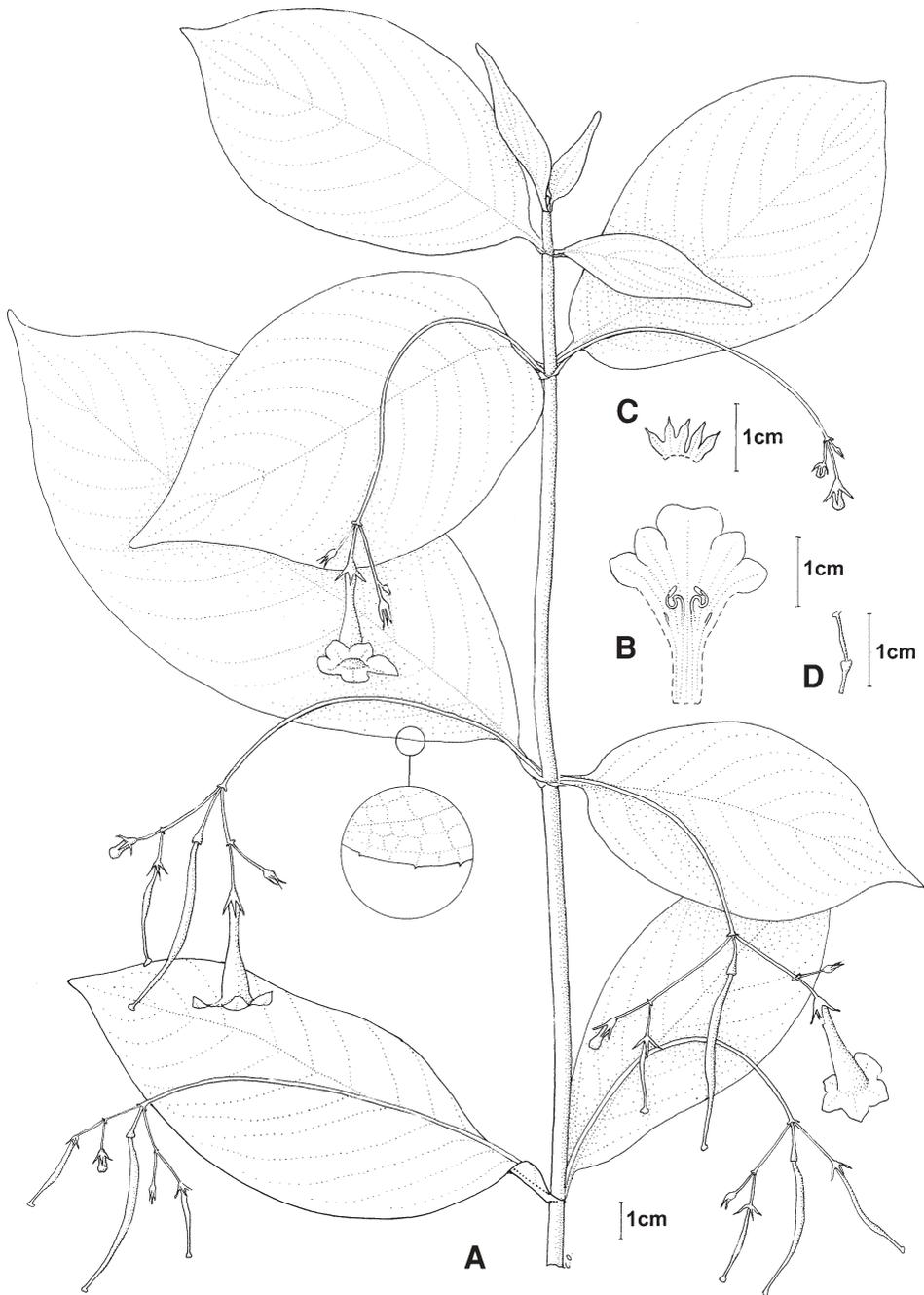


FIG. 6. *Cyrtandra tenuicarpa* H.J. Atkins (*Mendum et al.* 00229). A, habit; B, corolla; C, calyx; D, gynoeceum. Drawn by Christina Oliver.

4–5mm, pale green, sparsely hairy outside, slightly bilabiate, 5-lobed, lobes triangular, acuminate, 2–3mm long. *Corolla* 1.5–1.6cm, white, narrow below, widening to mouth apically, glandular hairy outside, upper lobe larger than others, c.5 × 3mm, other lobes somewhat recurved, c.2 × 2mm. *Filaments* 4–5mm long, borne 1cm above base of corolla. *Anthers* 1mm, thecae parallel, not cohering at tips before dehiscence. *Staminodes* 1.5mm long. *Gynoecium* 1.4–1.5cm; disk cupular, undulate, glabrous, 1mm; ovary and style glandular hairy; stigma bilobed, lobes vertical and pressed together on (?immature) specimens seen, oblong, 1mm, included. *Fruit* 2.5–3.5cm × 1.5–2mm, narrowly cylindrical, glabrous except for glandular hairs on persistent style, calyx sometimes persistent.

Distribution. Indonesia (South and Central Sulawesi); 800–900m.

Additional specimens examined. **Central Sulawesi:** Gunung Timbaang, 1913, *Rachmat* 573 (BO). **South Sulawesi:** Todjamboe, 800m, 20 vi 1929, *Kjellberg* 1686 (BO).

The exact distribution of this species is unclear and only three specimens have been seen. The first is a recent collection from the Tana Toraja area of South Sulawesi; the second is also from Tana Toraja but the exact locality is uncertain, and the third (*Rachmat* 573) is from Gunung Timbaang, the exact locality of which has not been traced. According to the entry for *Rachmat* in the Collectors section of *Flora Malesiana* (van Steenis, 1950), Gunung Timbaang is in Central Sulawesi, although the locality is not given.

A further specimen, *Afriastini* 2032, also from South Sulawesi, is apparently closely related to *C. tenuicarpa*, having the same distinctive narrow fruits although differing in having much bigger bracts (30mm long as opposed to 1–2mm) and much hairier leaves.

7. *Cyrtandra roseiflora* H.J. Atkins, sp. nov. Fig. 7.

Cyrtandra roseiflora a ceteris speciebus generis in insula Sulawesi cognitis combinatione: foliis glabris et serratis, corollis pallide rubris in fauce cremeis, disco ciliato distincta.

Type: Sulawesi, Central Sulawesi, Mt. Sojol, 1500m, 26 ii 2000, *Mendum et al.* 00173 (holo. BO, iso. E).

Branching shrub to 1m. *Stems* slender, striate, subglabrous. *Leaves* opposite, subequal or one in each pair markedly reduced; developed leaves 6–11 × 1.5–3cm, narrowly oblong to narrowly elliptic, acuminate, cuneate and more or less symmetric at base, not decurrent; serrate with 5–7 pairs of lateral veins at c.40°, occasionally looping and joining vein above, and with short veins running to the teeth, glabrous above and below. *Petiole* 3–4mm, subglabrous. *Reduced leaves* 4 × 2mm, cordate. *Inflorescences* in leaf axils and at stem base in axils of fallen leaves, 1-flowered. *Pedicel* 5–7mm, sparsely hairy. *Bracts* 2–4mm long, linear, sparsely hairy, not connate. *Calyx* 1.2–1.4cm, narrowly campanulate, pale green,

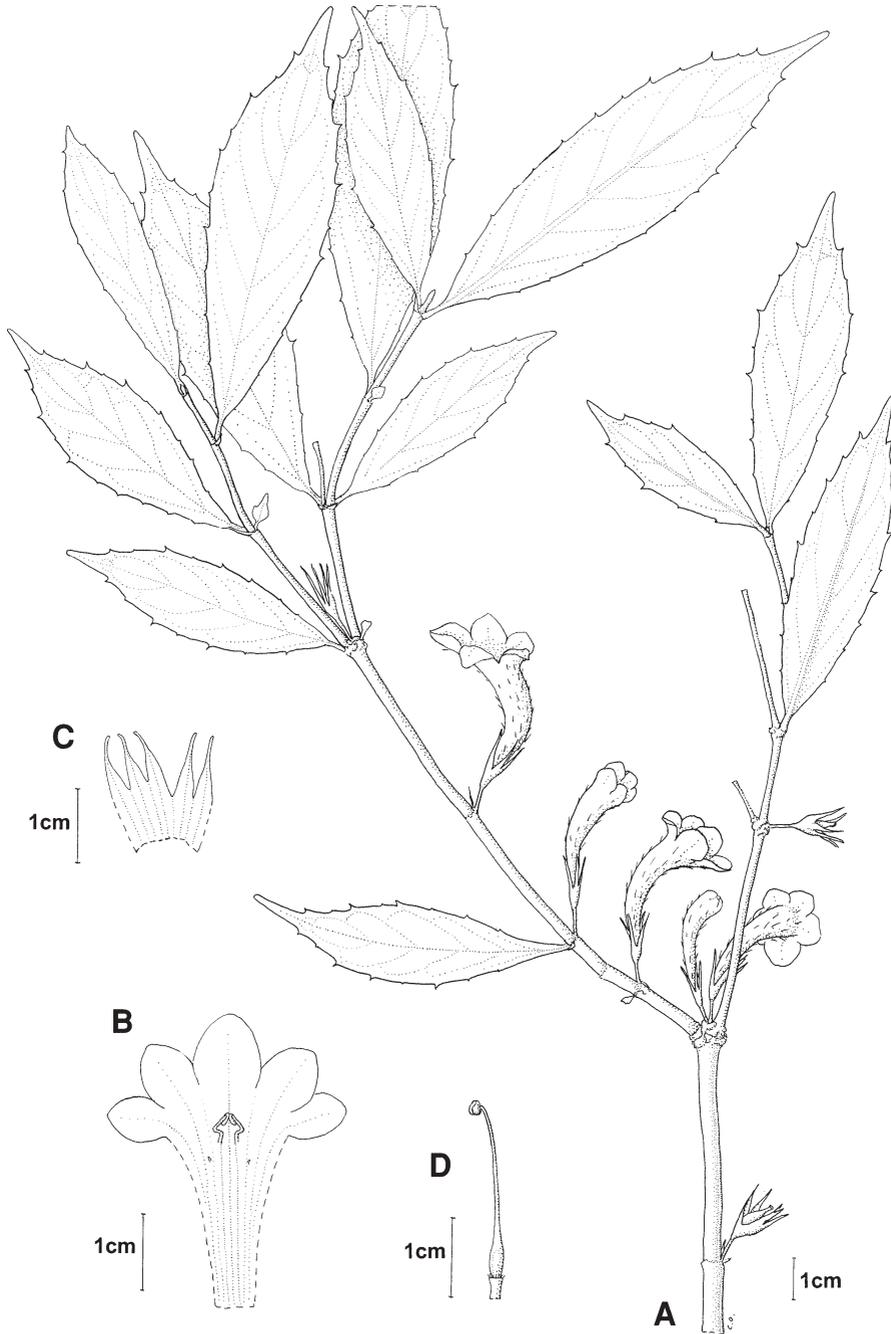


FIG. 7. *Cyrtandra roseiflora* H.J. Atkins (*Mendum et al.* 00173). A, habit; B, corolla; C, calyx; D, gynoecium. Drawn by Christina Oliver.

sparsely hairy, warty at base, slightly bilabiate, lobes subulate, 6–7mm. *Corolla* 3–3.5cm long, pale red, paler inside, cream in tube and throat, more or less erect, narrowly funnel-shaped, gradually widening to mouth, slightly pouched on lower side, arcuate, hairy outside, lobes not recurved, slightly bilabiate. *Filaments* 3–5mm long, borne 2–2.2cm above base of corolla. *Anthers* 2mm, thecae slightly divaricate, cohering at tips, and face to face before dehiscence. *Staminodes* less than 1mm. *Gynoecium* 1.1–2.2cm; disk 2–2.5mm, cupular, undulate, ciliate; ovary and style hairy; stigma bilobed, lobes 1mm, pressed together, included. *Fruit* ovoid, sparsely hairy, 5 × 3mm (?immature), calyx and base of style persistent.

Distribution. Indonesia (Central Sulawesi); 1500m.

Additional specimens examined. **Central Sulawesi:** Gunung Boko, 1913, *Rachmat* 1002a (BO).

Recorded from only two localities on the northern peninsula of the island. It can easily be distinguished by its glabrous, serrate leaves, pink flowers with white throat and unusual ciliate nectary disk at the base of the ovary.

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REFERENCES

- VAN BALGOOY, M. M. J. (1971). Plant geography of the Pacific. *Blumea* Suppl. 6.
- BURTT, B. L. (1990). Gesneriaceae of the Old World. I. New and little-known species of *Cyrtandra* from Malesia. *Edinburgh J. Bot.* 47: 201–233.
- CLARKE, C. B. (1883). Cyrtandreae. In: DE CANDOLLE, A. & DE CANDOLLE, C. (eds) *Monographiae Phanerogamarum*, vol. 5(1). Paris: Sumptibus G. Masson.
- HICKEY, L. J. (1979). A revised classification of the architecture of dicotyledonous leaves. In: METCALFE, C. R. & CHALK, L. (eds) *Anatomy of the Dicotyledons*. Oxford: Clarendon Press.
- HILLIARD, O. M. & BURTT, B. L. (2002). The genus *Agalmyla* (Gesneriaceae-Cyrtandroideae). *Edinburgh J. Bot.* 59(1): 1–210.
- KOORDERS, S. H. (1898). *Verslag eener botanische dienstreis door de Minahasa. Meded. Lands Plantetuin XIX*. Batavia: G. Kolff & Co.
- KRAENZLIN, F. (1913). Cyrtandraceae novae Philippinenses. *Philipp. J. Sci.* 8(5): 311–333.
- MERRILL, E. D. (1920). New or noteworthy Philippine plants XVI. *Philipp. J. Sci.* 17: 239–323.

-
- SCHLECHTER, R. (1923). Gesneriaceae Papuanae. *Bot. Jahrb. Syst.* 58: 255–379.
VAN STEENIS, C. G. G. J. (ed.) (1950). *Flora Malesiana*, series I, vol. I. Jakarta:
Noordhoff-Kolff. N.V.

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