

Diagnosis of new series of *Cyrtandra* (Gesneriaceae) from Oahu, Hawaiian Islands / by Harold St. John and William Bicknell Storey.

St. John, Harold, 1892-

Honolulu, Hawaii : [Bernice P. Bishop Museum], 1950.

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Diagnoses of New Species of *Cyrtandra* (Gesneriaceae)
from Oahu, Hawaiian Islands
Hawaiian Plant Studies 20

BY HAROLD ST. JOHN AND WILLIAM BICKNELL STOREY

Cyrtandra is probably the largest genus of flowering plants in the Hawaiian Islands. Every active botanical collector and student since the time of Charles Gaudichaud in 1819 has found and studied the genus. The shrubs are numerous but they are found only in wet forests or moist valleys. They are known to be narrow endemics, most of them limited in occurrence to a single mountain range or, more commonly, to a single valley on one side of a mountain mass.

The authors have been actively studying this genus on the island of Oahu since 1931 and have a large monograph in preparation. As numerous new species have been recognized and called by manuscript names for many years, it is desirable to put these names on record and thus make them available to botanical students. The species are assigned to the sections defined by J. F. Rock. The types, unless otherwise specified, are in Bernice P. Bishop Museum. The data for the type specimens are quoted exactly from the original labels, which accounts for a few apparent editorial inconsistencies.

SECTION CHAETOCALYCES

Cyrtandra axilliflora, sp. nov.

Frutex 1-2 m. alta, foliis oppositis, petiolis perfoliatis, laminis 9-20 cm. longis chartaceis ovalibus breve acuminatis ad basim decurrentibus marginibus irregulariter serratis infra ad venas hirsutulis, cymis 5-floriferis hirsutulis, calycibus 17-20 mm. longis puberulentis lobis 13-18 mm. longis lineari-oblongis, corollis 31-34 mm. longis pilosis, stylo capitato-puberulo.

Typus: Koolau Range, Waikane-Schofield Trail, Kahana, 1,500 ft. alt., *H. St. John* 20,240.

***Cyrtandra collarifera*, sp. nov.**

Frutex 2 m. alta, foliis oppositis hirsutis, petiolis crasse valde perfoliatis, laminis 8-19 cm. longis crasse chartaceis fragilibus ovalibus minute subacuminatis ad basim decurrentibus marginibus irregulariter serrulatis, cymis 1-floriferis, calycibus 17 mm. longis campanulatis hirsutis lobis 14-16 mm. longis anguste lanceo-linearibus, ovariis glabris, stylis pilosis.

Typus: Koolau Range, Waiomao Stream, Palolo, *H. St. John* 20,303.

***Cyrtandra dentata*, sp. nov.**

Frutex 2 m. alta, foliis oppositis, laminis 9-18 cm. longis late ovalibus ad basim abrupte cuneatis ad apicem abrupte contractis subacutisque chartaceis supra hirsutis infra pilosis pallidisque, cymis glanduloso-pilosis 3-7-floriferis, calycibus 8-11 mm. longis lobis 6-9 mm. longis lanceolatis, corollis pilosis, ovariis subglabris, fructibus glanduloso-puberulentis.

Typus: Kawailoa, Waiola Valley, 1,250 ft. alt., *H. St. John* 21,364.

***Cyrtandra kahanaensis*, sp. nov.**

Frutex, foliis oppositis, laminis 12-18.5 cm. longis chartaceis late ovalibus acuminatis cuneatis decurrentibus infra valde puberulentis marginibus serratis, cymis 9-15-floriferis puberulentis, calycibus 9-11 mm. longis anguste campanulatis lobis 7-8 mm. longis lanceo-linearibus obtusis, corollis 18-20 mm. longis capitato-glanduloso-puberulentis, ovario glabro, stylo capitato-glanduloso-puberulo.

Typus: Kahana, Waikane-Schofield Trail, 2,000 ft., *W. B. Storey* 197.

***Cyrtandra koolauensis*, sp. nov.**

Frutex, foliis oppositis, laminis 7-12.5 cm. longis chartaceis ellipticis subacuminatis ad basim longe decurrentibus infra venis pilosis marginibus serrulatis, cymis 1-floriferis, calycibus 17 mm. longis pilosulis 5-partitis lobis linearibus attenuatis, baccis lanceoloideis glabris.

Typus: Koolau Mts., Laie-Malaekahana Ridge Trail, 1,500 ft. elev., *W. B. Storey* 145.

***Cyrtandra subumbellata* (Hbd.), comb. nov.**

Cyrtandra gracilis Hbd. β var. *subumbellata* Hbd., Fl. Haw. Is., 334, 1888.

SECTION CROTONOCALYCES

***Cyrtandra crassior*, sp. nov.**

Frutex, foliis oppositis, laminis 5.5-9.5 cm. longis crassi-chartaceis ovalibus basin rotundatis vel breve cuneatis acutis marginibus grosse denticulati-serratis

infra villosis sed nervis valde villosis, cymis 1-floriferis villosis, calycibus 11-13 mm. longis infundibuliformis villosis lobis 4.5-8 mm. longis, corollis 20 mm. longis villosis, ovario styloque villosa.

Typus: Koolau Range, Punaluu Mts., *J. F. Rock* 10.

***Cyrtandra ferruginosa*, sp. nov.**

Frutex 2 m. alta, foliis oppositis, laminis 15-25 cm. longis chartaceis ovalibus breve acuminatis cuneatis infra pilosulis marginibus denticulatis, cymis 3-5-floriferis pilosulis, calycibus 20 mm. longis pilosis late infundibuliformis lobis 7-10 mm. longis inflexis, corollis 28-30 mm. longis pilosis, ovario styloque capitato-glanduloso-villosa.

Typus: Mt. Tantalus, 1,800 ft. alt., *H. St. John* 20,257.

***Cyrtandra grossecrenata*, sp. nov.**

Frutex, foliis oppositis, laminis 7-12.5 cm. longis ovalibus firme chartaceis subacuminatis ad basim cuneatis marginibus grosse crenatis, cymis 1-3-floriferis, calycibus 14-15 mm. longis late infundibuliformis, corollis 25 mm. longis villosis, ovario styloque glabro.

Typus: Hawaiian Islands [probably Oahu], *H. Mann & W. T. Brigham* 441 or 723.

***Cyrtandra kipapaensis*, sp. nov.**

Frutex, foliis oppositis inaequalibus, laminis 4.7-13.2 cm. longis chartaceis ellipticis vel ovalibus acutis cuneatis vel decurrentibus infra pilosis marginibus denticulatis, cymis 4-7-floriferis villosis, calycibus 9-14 mm. longis infundibuliformis villosis lobis 3.5-8 mm. longis lanceo-ovatis, corollis 13-16 mm. longis villosis, ovario styloque villosa.

Typus: Kipapa Gulch, 1,600 ft. elev., *W. B. Storey* 220.

***Cyrtandra paloloensis*, sp. nov.**

Frutex 2 m. alta, foliis oppositis, laminis 7-15 cm. longis crasse chartaceis ovatis ad basim abrupte contractis cuneatisque ad apicem subacuminatis infra pilosis marginibus denticulatis, cymis 3-5-floriferis dense pilosis, calycibus 15-21 mm. longis infundibuliformis lobis 6-12 mm. longis late ovato-deltaoideis, corollis pilosis, baccis pilosis.

Typus: Palolo, Waiomao Stream, 800 ft. alt., *H. St. John* 20,299.

***Cyrtandra piligyua*, sp. nov.**

Frutex 1 m. alta, foliis oppositis, laminis 10-17 cm. longis chartaceis ovatis vel late ovatis acutis vel subacuminatis infra adpressi-pilosulis marginibus denticulatis, cymis 1-floriferis glanduloso-pilosis, calycibus 10 mm. longis campanulatis pilosis lobis 4-6 mm. longis, ovario piloso.

Typus: Mt. Tantalus 1,700 ft. alt., *H. St. John & W. B. Storey* 20,255.

Cyrtandra Skottsbergii, sp. nov.

Cyrtandra Pickeringii Gray var. *latifolia* Skottsbg., Göteborg Bot. Trädgård, Med. 10: 169-170, 1936, not *C. latifolia* Benth. in Hook. Lond. Jour. Bot. 2: 228, 1843 which equals *C. cymosa* Forst., Char. Gen., 6, 1776.

Cyrtandra villicalyx, sp. nov.

Frutex 2-4 m. alta, foliis oppositis viscoso-villosis, laminis 11-23 cm. longis chartaceis suborbicularibus subacuminatis cordatis dentatis, cymis 3-(4)-floriferis villosis, calycibus 15-25 mm. longis glanduloso-villosis late campanulatis lobis 12-15 mm. longis lanceolatis, corollis 22-25 mm. longis pilosis, ovario styloque glabro.

Typus: Waikane-Schofield Trail, Waikane, 800-1,200 ft. alt., *H. St. John & W. B. Storey 20,239*.

Cyrtandra villicalyx var. **pubentigyna**, var. nov.

A specie differt in fructibus puberulentis.

Typus: Koolau Mts., Kahana Valley 1,100 ft., Dec. 10, 1933, *F. Kitamura*.

Cyrtandra viridiflora, sp. nov.

Cyrtandra crassifolia (Hbd.) Rock, Am. Jour. Bot. 5: 265, pl. 18, 1918 as to Punaluu specimen and pl. 18, not as to toponym; not *C. Pickeringii* Gray β var. *crassifolia* Hbd., Fl. Haw. Is., 327, 1888.

Frutex 5-20 dm. alta, foliis oppositis, laminis 3-10.2 cm. longis carnosis cordatis vel suborbicularibus acuminatis cordatis villosis marginibus denticulatis vel serratis, umbellis 1-5-floriferis, calycibus 12-15 mm. longis anguste infundibuliformis villosis lobis 5-6 mm. longis, corollis 18-22 mm. longis villosis, ovario styloque glabro.

Typus: Punaluu Mts., *J. F. Rock 8,825*.

Cyrtandra waianaeensis, sp. nov.

Frutex 5 m. alta, foliis oppositis villosis, laminis 5-8 cm. longis chartaceis late ovalibus minime subacuminatis ad basim rotundatis vel paene subcordatis asymmetricis marginibus minute denticulatis vel subintegris, cymis 3-floriferis dense villosis, calycibus crateriformis 14-15 mm. longis in fructu revolutis lobis 7-10 mm. longis ovatis acutis, corollis 20 mm. longis villosis, ovario styloque villosis, fructibus 15-17 mm. longis ovalibus villosis albis.

Typus: Waianae Mts., Puu Kalena, Waianaeuka, 3,400 ft. alt., *H. St. John 22,573*.

SECTION CYLINDROCALYCES

Cyrtandra alata, sp. nov.

Frutex, foliis oppositis, laminis 13-24 cm. longis firme chartaceis ellipticilanceolatis subacuminatis large decurrentibus infra pilosis marginibus serrulatis, cymis 7-floriferis pilosulis, calycibus 16-21 mm. longis lobis 6-11 mm. longis linearibus vel lanceo-linearibus obtusis, corollis 23 mm. longis glabris, stylo puberulo.

Typus: Koolau Mts., Punaluu Valley, 1,900 ft. elev., *M. Yamaguchi & W. B. Storey 167*.

Cyrtandra atomigyna, sp. nov.

Frutex, foliis oppositis, laminis 20-27 cm. longis chartaceis ovalibus subacutis contractis et decurrentibus supra remote hirsutulis marginibus denticulatis seu serrulatis, cymis 3-floriferis villosis, calycibus 15-20 mm. longis villosis anguste campanulatis lobis 10-12 mm. longis lineari-lanceolatis, corollis 23-25 mm. longis villosis, stylo nullo, ovario glanduloso-atomifero.

Typus: Koolau Mts., North Fork of Kipapa Gulch, 1,500 ft. elev., *W. B. Storey 258*.

Cyrtandra calpidicarpa (Rock), comb. nov.

Cyrtandra longifolia Hbd. var. *calpidicarpa* Rock, *Am. Jour. Bot.* 4: 618, 1917.

Cyrtandra carinata, sp. nov.

Frutex, foliis oppositis, laminis 9-11.7 cm. longis ellipticis subacuminatis ad basim breve decurrentibus serratis infra pilosis, cymis 1-floriferis pilosis, calycibus 14-16 mm. longis pilosis lobis 8-10 mm. longis, corollis 19-21 mm. longis pilosis, ovario styloque atomifero.

Typus: Oahu, *H. Mann & W. T. Brigham* (Cornell University).

Cyrtandra crenata, sp. nov.

Frutex, foliis verticillatis, laminis 12-25 cm. longis chartaceis ellipticis vel oblanceolatis acutis subacuminatisve ad basim decurrentibus marginibus crenatis vel denticulatis infra adpressi-villosis, cymis 3-7-floriferis villosis, calycibus 23-27 mm. longis dense villosis anguste campanulatis lobis 11-19 mm. longis angustissime lanceolatis acuminatis, corollis 25-32 mm. longis pilosulis, stylo capitato-glanduloso-puberulento, ovario glabro, baccis 15-17 mm. longis ellipsoideis albis.

Typus: Kahana, Waikane-Schofield Trail, 1,600 ft. alt., *H. St. John & W. B. Storey 20,242*.

Cyrtandra degenerans (Wawra) Heller var. **calycoschiza**, var. nov.

A specie differt in calycibus maturis trilobatis lobis lanceo-linearibus, foliis 10-22 cm. longis, 13-52 mm. latis minus cuneatis.

Typus: Waimano Ridge, in 1914, *C. N. Forbes & D. Lake 1,984.O.*

***Cyrtandra fusiformis*, sp. nov.**

Frutex ad 5 m. alta, foliis verticillatis, laminis 12-15 cm. longis carnosis oblanceolatis longe cuneatis apicibus subacuminatis supra glabris infra pilosis subglabris marginibus crenatis ad serratis, cymis multis 1-floriferis, calycibus 3-4 cm. longis fusiformis adpressi-pilosis, corollis 30-32 mm. longis capitato-puberulentis, ovario styloque glabro.

Typus: Waianae Mts., Puu Kalena, Waianaeuka, 3,470 ft. alt., *H. St. John 22,565.*

***Cyrtandra Hosakae*, sp. nov.**

Frutex, foliis oppositis, laminis 9-18 cm. longis anguste ellipticis lucidis firme chartaceis acuminatis ad basim cuneatis vel breve decurrentibus marginibus crenatis infra venis adpressi-pilosulis, cymis 1-floriferis, calycibus 18-20 mm. longis infundibuliformis adpressi-pilosulis lobis 14-17 mm. longis ovato-deltaideis, corollis 22 mm. longis villosis, ovario styloque glabro, baccis nudis.

Typus: Koolau Range, Kipapa Gulch, 1,500 ft., *W. B. Storey 225.*

***Cyrtandra intravillosa*, sp. nov.**

Frutex, foliis oppositis, laminis 29-36 cm. longis chartaceis lineari-oblanceolatis subacuminatis ad basim longe decurrentibus infra ad nervos pilosis, cymis 1-3-floriferis pilosis, calycibus 17-19 mm. longis dense villosis, corolla immatura 15 mm. longa villosa, ovario styloque villosa.

Typus: Koolau Mts., Kipapa Gulch, 1,500 ft. elev., *W. B. Storey.*

***Cyrtandra kahukuensis*, sp. nov.**

Frutex 2 m. alta, foliis oppositis glabris glabrativae, laminis ovalibus ellipticisve 5-14 cm. longis acuminatis ad basim breve cuneatis marginibus grosse apiculato-serratis infra in venis pilosulis, cymis 5-7-floriferis, calycibus 10-17 mm. longis anguste fusiformis deinde campanulatis lobis 9-15 mm. longis lineari-lanceolatis sparse pilosis, ovario styloque glabro, baccis nudis.

Typus: Koolau Range, Pupukea-Kahuku Trail, Ohia Ai Gulch, Kahuku, 1,300 ft. alt., *H. St. John 20,221.*

***Cyrtandra kaulantha*, sp. nov.**

Frutex 1-3.5 m. alta, foliis oppositis sessilibus, laminis 30-60 cm. longis crasse chartaceis oblanceolatis acuminatis in basi auriculatis infra puberulis marginibus crenatis, cymis in basi caulinarum saepe inter radices 7-25-floriferis, calycibus 15-23 mm. longis extus glabris lobis 4-7 mm. longis, corollis 25-30 mm. longis, ovario styloque glabro, baccis 14-18 mm. longis ellipsoideis.

Typus: Waiahole Ditch Trail, Waikane, 700 ft. alt., *H. St. John & W. B. Storey 20,238.*

Cyrtandra oblanceolata, sp. nov.

Frutex, foliis verticillatis, petioliis perfoliatis, laminis 14-37 cm. longis chartaceis oblanceolatis decurrentibus infra sparse pilosis marginibus serrulatis, cymis 3-5-floriferis pilosis, calycibus 24-31 mm. longis pilosis lobis 10-12 mm. longis, corollis 27-30 mm. longis glabris, ovario styloque glabro.

Typus: Waiahole, Waiahole Ditch Trail, Waianu Stream, 800 ft. alt., *H. St. John* 22,577.

Cyrtandra oulophylla, sp. nov.

Cyrtandra Lessoniana Gaud. δ var. *pachyphylla* Hbd., Fl. Haw. Is., 331, 1888, in part, as to plant from Niu with obovate leaves, not *C. pachyphylla* Kränzlin, Philippine Jour. Sci., Bot. 8: 316, 1913.

Frutex, foliis oppositis, laminis 6-10 cm. longis coriaceis late ovalibus obovatisve acutis cuneatis infra dense pilosis marginibus valde crenato-serratis, cymis 1-2-floriferis pilosis, calycibus 15-16 mm. longis pilosis fusiformibus lobis 14-15 mm. longis, stylo glabro, ovario glanduloso-atomifero.

Typus: Niu, *W. Hillebrand & J. M. Lydgate*.

Cyrtandra plurifolia, sp. nov.

Frutex 1-2 m. alta, foliis verticillatis, laminis 11-15 cm. longis chartaceis oblanceolatis acutis vel subacuminatis cuneatis infra pilosis marginibus serratis, cymis 2-floriferis pilosis, calycibus 20-26 mm. longis pilosis in flore anguste campanulatis bipartitis lobis 13-17 mm. longis, corollis 30-35 mm. longis pilosulis, stylo capitato-glanduloso-piloso, ovario glabro.

Typus: Koolau Range, Pupukea-Kahuku Trail, Ohia Ai Gulch, Kahuku, 1,300 ft. alt., *H. St. John* 20,222.

Cyrtandra punaluuensis, sp. nov.

Frutex, foliis verticillatis, laminis 8.5-14 cm. longis chartaceis oblanceolatis vel anguste oblanceolatis acutis ad basim cuneatis et longe decurrentibus infra pilosulis vel subglabris marginibus remote serrulatis, cymis 1-floriferis villosis, calycibus fusiformis 30-40 mm. longis elobatis, corollis 38-40 mm. longis capitato-glanduloso-puberulentis, ovario styloque glabro.

Typus: Punaluu Mt., 2,400 ft. elev., *J. F. Rock* 934.

Cyrtandra pupukeaensis, sp. nov.

Frutex, foliis oppositis inaequalibus, laminis 5.5-18 cm. longis firme chartaceis ovalibus subacuminatis breve cuneatis infra pilosis marginibus serratis, cymis 3-7-floriferis pilosis, calycibus 11-13 mm. longis pilosis campanulatis lobis 2.8-4 mm. longis anguste deltoideis, corollis 20-28 mm. longis capitato-glanduloso-pilosis, ovario styloque glabro, baccis 2.5 cm. longis ovoideis albis.

Typus: Koolau Range, Pupukea-Kahuku Trail, 1,500 ft., *W. B. Storey* 169.

Cyrtandra sessilis, sp. nov.

Frutex 0.5-1 m. alta, foliis verticillatis sessilibus, laminis 8-20 cm. longis firme chartaceis oblanceolatis ad basim anguste oblongis integris glabris integris vel minute denticulatis, cymis 3-8-floriferis, calycibus fusiformis 16-22 mm. longis subglabris lobis 2-7 mm. longis, corollis 15-24 mm. longis subglabris, ovario styloque glabro, baccis 15 mm. longis albis ellipsoideis.

Typus: Waikane-Schofield Trail, Kahana, 2,000 ft. alt., *H. St. John & W. B. Storey 20,241*.

Cyrtandra turbiniformis, sp. nov.

Frutex, foliis oppositis sparse pilosis, laminis 6-17 cm. longis anguste ellipticis vel oblanceolatis subacuminatis ad basim decurrentibus marginibus serrulatis, cymis 3-5-floriferis, calycibus 13-14 mm. longis fusiformis lobis 5-8 mm. longis lineari-lanceolatis pilosulis, corollis 21-22 mm. longis pilosis, ovario styloque glabro, baccis lanceo-ellipsoideis nudis.

Typus: Koolau Mts., Heeia Valley, 600 ft. alt., *W. B. Storey 232*.

SECTION MICROCALYCES

Cyrtandra ambigua (Hbd.), comb. nov.

Cyrtandra triflora Gaud. var. *ambigua* Hbd., Fl. Haw. Is., 332, 1888.

Cyrtandra polyantha C. B. Clarke var. *ambigua* (Hbd.) Rock, Am. Jour. Bot. 6: 209, 1919 (published as *C. polyantha ambigua* but stated to be a variety).

Cyrtandra cupuliformis, sp. nov.

Frutex 2.4 m. alta, foliis oppositis dense velutinosos pilosis, laminis 4.5-9 cm. longis coriaceis asymmetrico obovatis ad basim abrupte cuneatis apicibus subacutis marginibus serrulatis, cymis 3-floriferis, calycibus 8-11 mm. longis cupuliformis lobis late deltoideis 3-6 mm. longis, ovariiis stylisque glabris.

Typus: Waianae Range, DuPont Trail, 3,300 ft. alt., *Mita & Frederick 204*.

Cyrtandra Fosbergii, sp. nov.

Frutex, foliis oppositis, laminis 11-16 cm. longis, firme chartaceis ovalibus acutis vel subacuminatis ad basim decurrentibus supra glabris infra pilosis marginibus grosse serratis, cymis 1-3-floriferis pilosis, calycibus 18-22 mm. longis campanulatis pilosis lobis 14 mm. longis lanceolatis, corollis 23-30 mm. longis, ovario glabro, stylo piloso.

Typus: Koolau Mts., Kahana Ditch Trail, Kahana, 270 m. alt., *F. R. Fosberg 10,390*.

Cyrtandra intonsa, sp. nov.

Frutex, foliis oppositis, laminis 7-16 cm. longis firme chartaceis ellipticis vel

ovato-ellipticis vel ovalibus subacuminatis cuneatis vel decurrentibus infra pilosulis marginibus serratis, cymis 2-4-floriferis pilosis, calycibus 6-8 mm. longis campanulatis sparse adpressi-puberulentis lobis 3-6 mm. longis, stylo glabro, ovario glabro, fructu puberulento.

Typus: Kipapa, elev. 425 m., *E. P. Hume* 95.

***Cyrtandra opaeulae*, sp. nov.**

Frutex ad 2 m. alta, foliis oppositis, laminis 8.3-17 cm. longis chartaceis lanceolatis vel ellipticis vel ovalibus acuminatis cuneatis infra adpressi-pilosulis marginibus serratis, cymis 5-7-floriferis pilosis, calycibus 9-14 mm. longis pilosis subglobo-campanulatis lobis 7-12 mm. longis pilosis, corollis 15-20 mm. longis pilosis, stylo sparse glanduloso-piloso, ovario glabro.

Typus: Koolau Mts., Kawaihoa-Opaewa Divide, Paalaa, 1,800 ft. elev., *W. B. Storey* 168.

***Cyrtandra rivularis*, sp. nov.**

Frutex, foliis oppositis, laminis 28-63 mm. longis crasse chartaceis lanceolato-ovatis vel lanceolato-obovatis acutis cuneatis infra pilosis marginibus serrulatis, cymis 3-5-floriferis glanduloso-pilosis, calycibus 10-15 mm. longis pilosis campanulatis lobis 3-7.5 mm. longis, corollis 16-21 mm. longis villosis, ovario styloque glabro.

Typus: Kaluanui, *W. B. Storey* 171.

***Cyrtandra sandwicensis* (Lévl.), comb. nov.**

Viola sandwicensis Lévl., Fedde Repert. Sp. Nov. 11: 63, 1912.

Cyrtandra Garnotiana Gaud. f. *uniflora* Skotts. (as *garnotiana*), Göteborg Bot. Trädgård, Med. 10: 174, 1936 (invalid for lack of Latin diagnosis).

It is with much regret that the name *sandwicensis*, so carelessly made by Léveillé, is here adopted. There seems no way to avoid accepting it.

***Cyrtandra villosa*, sp. nov.**

Frutex 2 m. alta, foliis oppositis, laminis 9-16 cm. longis chartaceis oblanceolatis vel late oblanceolatis cuneatis decurrentibus infra pilosulis praesertim in venis, cymis 3-floriferis pilosulis, calycibus 9-11 mm. longis pilosulis campanulatis lobis 4-7 mm. longis, corollis 18 mm. longis villosis, ovario glabro, stylo pilosulo.

Typus: Koolau Mts., Waikane-Schofield Trail, Waikane, 250 m. alt., *F. R. Fosberg* 8,786.

SECTION SCHIZOCALYCES

***Cyrtandra Bryanii*, sp. nov.**

Frutex 2-3 m. alta, foliis oppositis, laminis 5-10.2 cm. longis subcoriaceis ellipticis vel oblanceo-ellipticis acutis vel subacuminatis ad basim cuneatis infra

viscidi-pilosis nervis villosis marginibus serrulatis, cymis 2-4-floriferis subadpressi-villosis, calycibus 8-11 mm. longis crateriformis valde subadpressi-villosis lobis 7-9 mm. longis ovatis acutis stylo villosa.

Typus: Kawailoa, 1,600 ft. alt., *E. H. Bryan 813*.

Cyrtandra chartacea, sp. nov.

Frutex, foliis oppositis, laminis 4-21 cm. longis chartaceis anguste oblanceolatis longe decurrentibus ad apicem acuminatis infra hirsutulis marginibus serrulatis, cymis 1-3-floriferis valde ferrugineo-hirsutulis, calycibus 18-20 mm. longis late infundibuliformis hirsutulis lobis 9-12 mm. longis lanceolatis, corollis villosis, stylo piloso, ovario glabro.

Typus: Kipapa Gulch, south ridge, Waipio, 1,500 ft. alt., *E. Y. Hosaka 605*.

Cyrtandra Christophersenii, sp. nov.

Frutex, foliis oppositis, laminis 5-13.5 cm. longis chartaceis ellipticis acutis cuneatis marginibus remote serrulatis supra adpressi-pilosulis, cymis 3-floriferis dense pilosulis, calycibus 11-14 mm. longis anguste campanulatis adpressi-pilosulis lobis 7-10 mm. longis lineari-lanceolatis, corollis 14-18 mm. longis villosis, stylo glabro, ovario subglabro.

Typus: Waianae Mts., Puu Hapapa, 2,000 ft., *W. B. Storey & E. Y. Hashimoto 126*.

Cyrtandra Forbesii, sp. nov.

Frutex, foliis oppositis, laminis 52-67 mm. longis firme chartaceis ovalibus acutis cuneatis infra valde pilosis marginibus apiculato-denticulatis, cymis 1-floriferis pilosis, calycibus 12-14 mm. longis infundibuliformis lobis 8-11 mm. longis elliptici-oblanceolatis pilosis, corollis 18-22 mm. longis pilosis.

Typus: Koolauloa [Koolau] Mts., between Punaluu and Kaipapau [Kaipapau], May 3-8, 1909, *C. N. Forbes & C. M. Cooke*.

Cyrtandra Frederickii, sp. nov.

Frutex 2 m. alta, foliis oppositis, laminis 10-14 cm. longis, late asymmetricis ovalibus plerumque ad basim rotundatis ad apicem acutis crasse chartaceis marginibus argute dentatis supra infraque villosis, petiolis inflorescentibus cymisque dense villosis, cymis 5-7-floriferis, calycibus 8-15 mm. longis corollis subaequantibus, ovariis fructibusque dense pilosis.

Typus: Mokuleia, Keawapilau gulch, 1,800-2,000 ft. alt., 13 July 1947, *D. Mita & L. Frederick*.

Cyrtandra hirsutula, sp. nov.

Frutex, foliis oppositis inaequalibus, laminis 2.5-6 cm. longis subcoriaceis anguste oblanceolatis acutis cuneatis marginibus integris infra sparse hirsutulis, cymis 1-floriferis hirsutulis, calycibus 12-13 (-15 in vivo) mm. longis campanu-

latis hirsutulis lobis 8-13 mm. longis corollis 18-23 mm. longis villosis, ovario styloque glabro.

Typus: N. side of Kaala, elev. 4,000 ft., Feb. 11, 1928, *H. F. Bergman*.

Cyrtandra kaalae, sp. nov.

Frutex, foliis oppositis, laminis 9-14.5 cm. longis chartaceis ovalibus abrupte acutis cuneatis infra pilosis marginibus irregulariter denticulatis, cymis 3-5-floriferis hirsutis, calycibus 14-19 mm. longis anguste infundibuliformis hirsutis 9-15 mm. longis, corollis 15-20 mm. longis villosis, ovario styloque glabro.

Typus: Puu Kaala, 3,500 ft., *W. B. Storey* 189.

Cyrtandra Lessoniana Gaud. var. *typica*, var. nov.

Cyrtandra Lessoniana Gaud., Bot. Voy. Uranie, 447, 1829; Atlas, tab. 54, 1826-30.

Foliis lanceolatis vel lanceo-ovatis breve acuminatis, lobis calycorum intus glabris.

Cyrtandra Lessoniana Gaud. var. *borealis*, var. nov.

A specie differt in foliis late oblanceolatis, calycibus intus pilosis.

Typus: Pupukea Military Trail, Jan. 29, 1927, *L. H. MacDaniels* 559.

Cyrtandra Mannii, sp. nov.

Frutex, foliis oppositis, laminis 14-15 cm. longis firme chartaceis ellipticis breve acuminatis subcuneatis infra villosis marginibus serrulatis, cymis 3-floriferis pilosis, calycibus 14-17 mm. longis campanulatis pilosis lobis 9-15 mm. longis, corollis 22-28 mm. longis villosis, ovario styloque pilosis.

Typus: Waianae Mts., Waianaepuka, 2,575 ft., *F. Kitamura*.

Cyrtandra poamohoensis, sp. nov.

Frutex 1.5-3 m. alta, foliis oppositis, laminis 6-18 cm. longis crasse chartaceis elliptici-lanceolatis vel ovalibus in apice basique attenuatis infra pilosis marginibus serratis, cymis 2-floriferis pilosis, calycibus 12-15 mm. longis pilosis subglobosis lobis 10-14 mm. longis elliptici-lanceolatis, corollis 26 mm. longis villosis, stylo nullo, ovario villosio.

Typus: Koolau Range, Poamoho Trail, Paalaa-Wahiawa, 2,000 ft. alt., *H. St. John* 20,187.

Cyrtandra pruinosa, sp. nov.

Frutex 1.5-2.5 m. alta, foliis oppositis, laminis 7-16 cm. longis chartaceis ovatis vel lanceolatis acuminatis breve decurrentibus infra puberulentis marginibus serratis, cymis 1-floriferis pruinosis, calycibus 12-21 mm. longis pruinosis

foliaceis 5-partitis lobis lanceo-ellipticis, corollis 22-24 mm. longis glabris, stylo pruinoso, ovario glabro, fructibus ovoideis albis 1-1.9 cm. longis (in sicco).

Typus: Kalauao, *W. B. Storey 240.*

***Cyrtandra reflexa*, sp. nov.**

Frutex, foliis oppositis, laminis 5-21 cm. longis chartaceis ovalibus vel suborbicularis acutis vel subacuminatis cuneatis vel breve decurrentibus infra villosis marginibus serrato-dentatis, cymis 5-32-floriferis villosis, calycibus 11-15 mm. longis villosis campanulatis lobis 8-10 mm. longis reflexis, corollis 17-22 mm. longis villosis, ovario styloque glanduloso-villoso.

Typus: Kawaiiki Ditch Trail, Kawailoa, 1,200 ft. alt., *H. St. John 20,272.*

***Cyrtandra Rockii*, sp. nov.**

Frutex 2 m. alta, foliis oppositis, laminis 18-20 cm. longis chartaceis oblanceolatis subacuminatis ad basim longe decurrentibus marginibus irregulariter duplo serratis infra pagina pilosa, cymis 3-5-floriferis, calycibus 30-32 mm. longis anguste campanulatis dense ferruginoso-villosis lobis 8-17 mm. longis lanceo-linearibus, ovario glabro, stylo piloso.

Typus: Maakua-Papali ridge, Kaipapau, 1,600 ft. alt., *H. St. John 13,357.*

***Cyrtandra stupantha*, sp. nov.**

Frutex 1-2 m. alta, foliis oppositis, laminis 9-17 cm. longis oblique lanceo-ovatis vel -obovatis chartaceis acutis vel subacuminatis ad basim cuneatis marginibus irregulariter denticulatis vel serratis supra viridibus et hirsutis infra pallidis et pilosis, cymis caulifloris, praesertim ad basim albis 3-17-floriferis, calycibus 7-9 mm. longis campanulatis hirsutulis lobis 5-8 mm. longis anguste lanceo-oblongis, corollis 14-22 mm. longis villosis, ovario puberulento.

Typus: Koolau Range, Kawaiiki Ditch Trail, Kawailoa, 1,100 ft. alt., *H. St. John 22,864.*

***Cyrtandra Wilderi*, sp. nov.**

Cyrtandra Lessoniana Gaud. var. β Hbd., Fl. Haw. Is., 331, 1888.

Cyrtandra Lessoniana Gaud. var. *stenoloba* Skottsbl., Göteborg Bot. Trädgård, Med. 10: 173, 1936.

Frutex 2-10 dm. alta, novellis adpresse ferruginoso-pilosis, foliis oppositis, laminis 4-12 cm. longis coriaceis ovalibus acutis ad basim breve decurrentibus supra sparse hirsutis infra dense adpresse ferruginoso-pilosis, cymis 1-floriferis, calycibus 10-15 mm. longis pilosis lobis 7-12 mm. longis, corollis villosis, ovario styloque glabro, baccis ovoideis.

Typus: Waianae Mts., Mt. Kaala, Makaha, 4,000 ft. alt., *H. St. John 22,275.*