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OCCASIONAL PAPERS
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Director's Report for 1915

HONOLULU, H. I.
BISHOP MUSEUM PRESS
1916

REPORT PRESENTED APRIL 10, 1916.
RETURNED APPROVED JULY 10, 1916.

New Hawaiian Plants.—V.

CHARLES N. FORBES.

APRIL, 1916.

Labordia kaalæ, sp. nov.

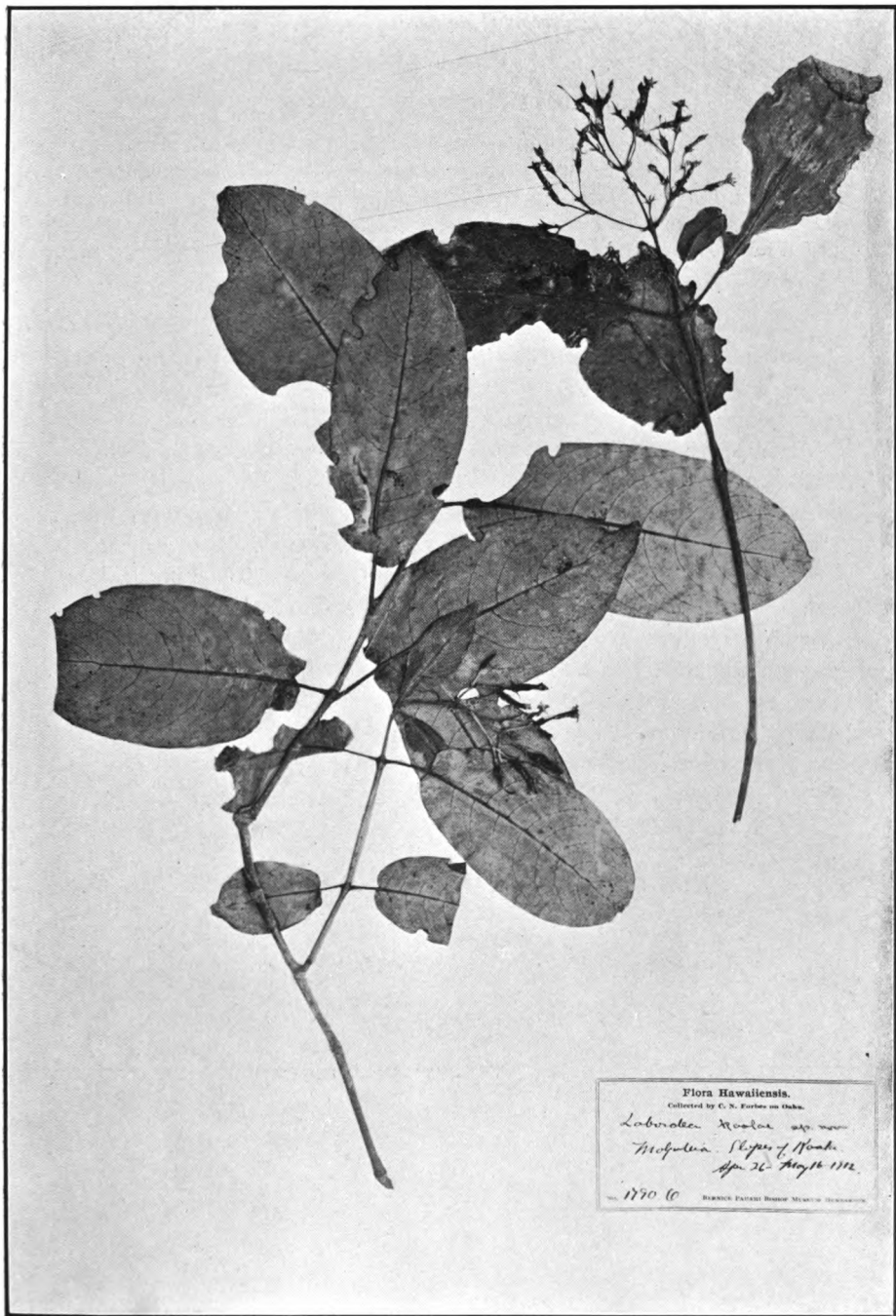
Arbuseula 36 dm. alta; foliis ellipticis vel elliptico-oblongis, basi truncatis, emarginatis vel sub-cordatis, apice acutis, subtus tomentosis, 8.2-12.2 cm. longis, 4.3-5.8 cm. latis, cum petiolis, 1.1-1.5 cm. longis; floribus viridis, paniculato-cymosis, bracteis subulatis; calyce pubescente, lobis lanceolatis, 2-4 mm. longis; corolla glabra, tuba gracili, 9-10 mm. longa, lobulis triangularis, 2-3 mm. longis, ovario pubescenti. Capsula ignota.

Type locality, ridges of Kaala at the head of Mokuleia valley, Oahu. C. N. Forbes, No. 1790, O. April 29, 1912.

A slender tree 36 dm. high, with dark bark. Leaves elliptical to elliptic-oblong in outline, with the base slightly truncate and emarginate or sub-cordate, apex acute, glabrous above, pale below with fine tomentum, 8.2-12.2 cm. long, 4.3-5.8 cm. wide, with petioles 1.1-1.5 cm. long. Flowers greenish, many, 9 to 25, on a distinctly peduncled, pubescent, paniculate cyme, the bractlets subulate. Calyx divided to near the base, the lobes lanceolate, pubescent, 2-4 mm. long. Corolla with a slender tube of about 9-10 mm. in length and triangular lobes of about 2-3 mm. long, glabrous. Anthers projecting beyond the tube. Ovary pubescent. Capsule not seen.

This is most probably closest related to *L. membranacea* Mann, the inflorescence resembling that of *L. tinifolia* Gray.

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LABORDIA KAALÆ FORBES.

Labordia Lydgateii, sp. nov.

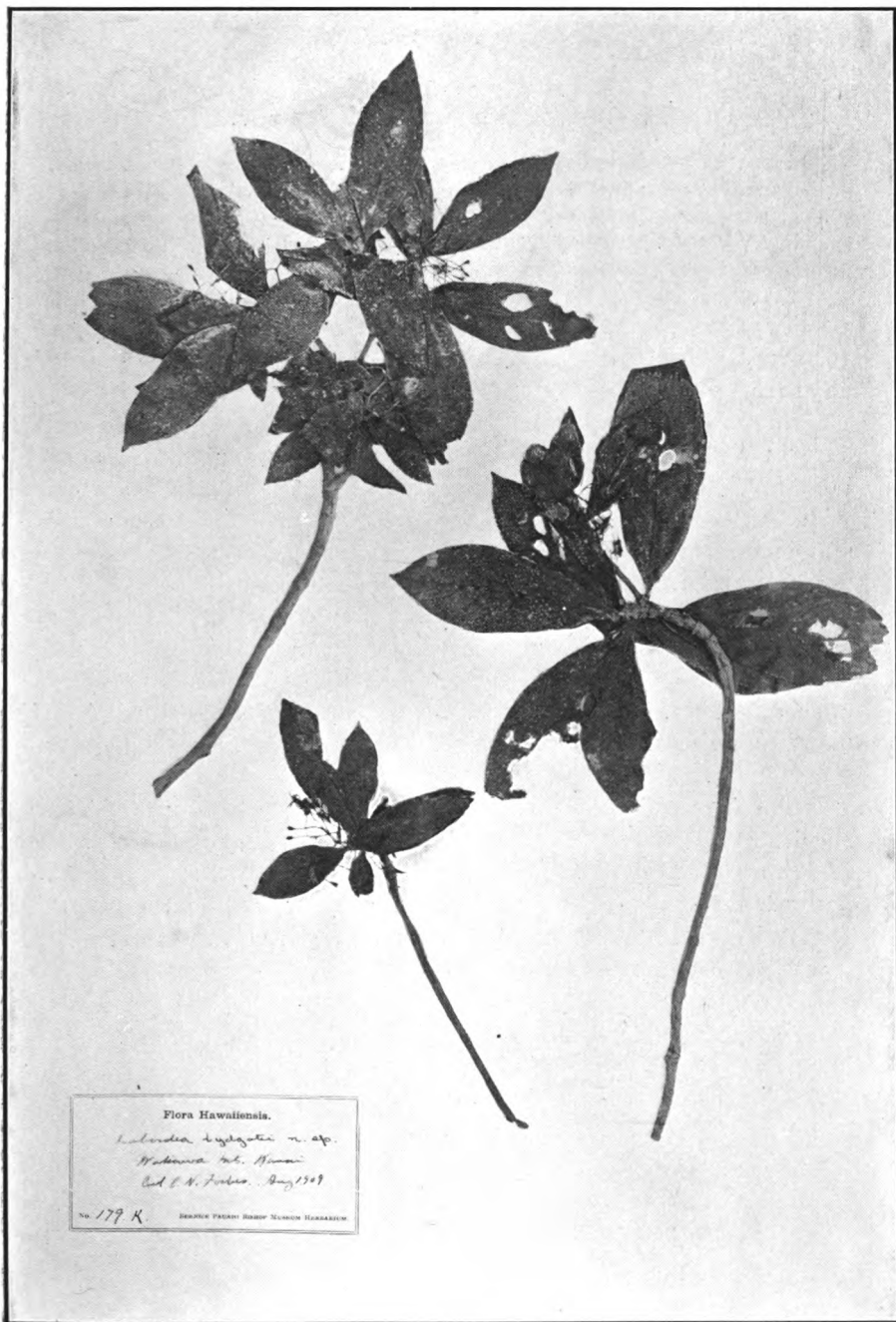
Frutex vel arbuscula, ramulis pubescentibus; foliis ellipticis vel obovatis, supra glabris, subtus hirsutis, 5.9-7.4 cm. longis, 2.1-2.9 cm. latis, cum petiolis 0-3 mm. longis; cymis 6-21 floris, pilosis, bracteis subulatis; floribus parvis, flavis; calyce lobis lanceolatis, 2 mm. longis, corolla glabra, tuba gracili, 5 mm. longa, lobulis lanceolatis, 2.5-3 mm. longis. Capsula globosa, 4 mm. lata, 2-valvis.

Type locality, Wahiawa drainage basin, Kauai; ridges near the swamp. Rev. J. M. Lydgate, flowering and fruiting specimens, no date. C. N. Forbes, No. 179, K. August, 1909, flowering specimens.

Shrub or small tree with pubescent branchlets. Leaves elliptical to obovate in outline, glabrous above, hirsute below, 5.9-7.4 cm. long, 2.1-2.9 cm. wide, with petiole not over 3 mm. long. The cyme open, slender and pilose, 6-21-flowered. Flowers small, pale yellow. Calyx parted to near the base, the lobes lanceolate, 2 mm. long, a little less than half the length of the corolla tube. Corolla glabrous without, pilose within, the slender tube about 5 mm. long; the slender spreading, lanceolate lobes, about one half that length or slightly longer. Capsule globose, smooth, not winged, 2-valved, 4 mm. in diameter.

This species has smaller fruits than any other species known to me. In general appearance the plant might suggest *L. hirtella* Mann, but the floral characters are essentially different.

[176]



LABORDIA LYDGATEI FORBES.

Haplostachys Munroii, sp. nov.

Pilosa; foliis oblongo-cordatis, acutis, crenatis, villosis, 7.7-14 cm. longis, 3.7-9.7 cm. latis, cum petiolis, 4.2-9.3 cm. longis; racemis terminalibus, simplicibus, 2-2.5 dm. longis, floribus oppositis, pedicellis 2 mm. longis; calyce grandi, 1.7 cm. longa, lobis acutis, 3 mm. longis, pubescenti; corolla alba, grandi, pubescenti, tubo 2.2 cm. longo.

Type locality, Paomai, Lanai. G. C. Munro, No. 350. June 16, 1914. Also Koa, Lanai. G. C. Munro, No. 486. February 23, 1916.

Sub-erect, the squarish branches pilose. Leaves oblong-cordate in outline, apex acute, rather coarsely crenate, villose on both faces, rather thin in texture, 7.7-14 cm. long, 3.7-9.7 cm. wide, with villose petioles 4.2-9.3 cm. long. Inflorescence a simple terminal raceme, 2-2.5 dm. long, the flowers opposite on pedicels 2 mm. long, the bracts lanceolate 7 mm. long. Calyx large, obconical or obconic-cylindrical, softly pubescent, with a few scattering longer hairs, 1.7 cm. long, the very short acute teeth 3 mm. long. Corolla large, pure white, the tube slightly curved, 2.2 cm. long; the lower lip 1.6 cm. long, upper lip 8 mm. long, pubescent. Nucules large, slightly glandular at the top, 7 mm. long.

The flowers have a strong aroma, according to Munro. The species is somewhat intermediate between *H. Grayana* Hbd. and *H. truncata* (Gray) Hbd., coming closest to the latter. From *H. truncata* it differs in the acute calycine teeth, and in the larger cordate leaves. The genus has not been reported from Lanai.

[178]



HAPLOSTACHYS MUNROII FORBES.

Phyllostegia electra, sp. nov.

Holoseriaceae; foliis elleptico-lanceolatis, serratis, acuminatis, basi acutis vel subrotundatis, subtus hispidulis, 6.7-9 cm. longis, 2.5-4.4 cm. latis, cum petiolis 1.3-3.5 cm. longis; racemis terminalibus, simplicibus vel paniculatis, 2 dm. longis, pedicellis 0.6-1 cm. longis; floribus parvis, calyce holoseriacei, tuba 5 mm. longa, lobis lanceolato-linearibus, 2 mm. longis, corolla alba, pubescenti, 9 mm. longa, labiis subæqualibus.

Type locality, Power line trail between Kapaka and Kualapa, Kauai. C. N. Forbes, No. 143, K. August 6-9, 1909.

Sub-erect with holoseriaceous branches. Leaves elliptic-lanceolate, serrate, acuminate, the base acute or slightly rounded, hispidulous or nearly glabrate above, very shortly hispid below, 6.7-9 cm. long, 2.5-4.4 cm. wide, with petiole 1.3-3.5 cm. long. Inflorescence a simple terminal raceme, or with a pair of lateral racemes from the larger foliaceous bracts below. The lanceolate foliaceous bracts decrease in size upward, generally shorter than the pedicels. Flowers in whorls of 4-6 on pedicels 0.6-1 cm. long. Calyx holoseriaceous, the tube 5 mm. long, the teeth linear lanceolate, 2 mm. long. Corolla white, the tube nearly straight pubescent, 9 mm. long, the lips nearly equal, one third the length of the tube.

Separated from other species of *Phyllostegia* by the combination of its characters. The right hand branch of the figured specimens is teratological. The branch is contorted, bent like a knee and thickened on the outside at the flowering node, the inner or opposite pedicels being absent.

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PHYLLOSTEGIA ELECTRA FORBES.

Stenogyne affinis, sp. nov.

Pubescens; foliis ellipticis vel elleptic-oblongis, obtusis, basi obtusis vel subrotundatis, pubescentibus, crenatis, 1.4-2.4 cm. longis, 0.9-1.2 cm. latis, cum petiolis pubescentibus 0.6-1.1 cm. longis; verticillastris bifloris, pedicellis pubescentibus 3 mm. longis; calyce pubescente, lobis inaequalis 2 mm. longis, tuba 6 mm. longa; corolla pubescente, subviride, annulo integerrimo, lobis superiore falcato longe producto; staminibus exsertis; nucellis 5 mm. longis.

Type locality, Puu Huluhulu, Hawaii. C. N. Forbes, No. 834, H. June 12, 1915.

Diffuse, with sharply angular, finely pubescent branches. Leaves elliptical to elliptic-oblong in outline, obtuse or slightly rounded at the base, crenate, pubescent on both faces, 1.4-2.4 cm. long, 0.9-1.2 cm. wide, with pubescent petioles 0.6-1.1 cm. long. Flowers in whorls of two, on pubescent pedicels 3 mm. long. Calyx pubescent, sub-bilabiate, the obtuse teeth slightly unequal in length, hardly 2 mm. long, the tube 6 mm. long, veins quite distinct. Corolla greenish, tomentose, shaped as in *S. microphylla* Benth., annulus complete or nearly so. Filaments and style long exerted, slightly hairy to glabrous. Nucules 5 mm. long.

This species has about the same relationship to *S. microphylla* Benth., that *S. vagans* Hbd. does to *S. crenata* Gray. From *S. microphylla* it differs most strikingly in its much larger pubescent leaves and laxer habit. Puu Huluhulu is a cinder cone of Mauna Kea which has become isolated by lava flows from the north side of Mauna Loa. [182]



Flora Hawaiana.
Collected by C. H. Forbes on Hawaii.
Stenogyne affinis sp. nov.
Pau Hahaione.
June 12-17/57.
No. 1244. HERBARIUM OF THE BUREAU OF AGRICULTURE, HONOLULU, HAWAII.

STENOGYNE AFFINIS FORBES.

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Cyanea Juddii sp. nov.

Caule simplici, 12 dm. altus; foliis lato-lanceolatis, membranaceis, integerrimis, subter pubescentibus, 6 dm. longis, 18 cm. latis, cum petiolis aculeis, 2.5 dm. longis; pedunculis 6-9 cm. longis, cum bracteis linearis ab base ad apicem, pedicellis bi-bracteis; floribus magnis, calyce puberulente vel glabrata, lobis linearibus, obtusis, fimbriatis, 9-10 mm. longis, corolla falciformi, extus pubescente 3.2-3.8 cm. longa. Bacca ignota.

Type locality, Pali at the head of Waiahole Valley, Oahu. Only one specimen was seen during a trip in the company of Messrs. Albert Judd, Dr. C. M. Cooke and others. C. N. Forbes, No. 1744, O. February 6, 1912.

Stem 12 dm. high, without branches. Leaves widely lanceolate, entire, glabrous above, finely pubescent below, especially along the nerves and mid-vein which is also sparingly aculeate, 6 dm. long, 18 cm. wide, with a petiole 2.5 dm. long, sparingly armed with short, stout, yellowish prickles. Peduncles 6-9 cm. long, clothed from the base with linear oblong, obtuse bracts, which are finely fimbriate, 9-16 mm. long, 3 mm. wide, the 5-10 flowers near the apex, the pedicels bi-bracteate near the middle. Calyx sparingly puberulent or glabrous, the tube obconical, 6 mm. long, the lobes linear oblong, obtuse, with the edges finely serrate. Corolla falciform, striped with dark purple and white, densely puberulent but appearing glabrous in dried specimens, glabrous on the inside, with a deep dorsal slit, 3.2-3.8 cm. long. Staminal column glabrous, free. Berry not seen.

I have hesitated for some time in deciding that this is really distinct from *C. tritomantha* Gray, a species only known from the island of Hawaii. It differs in smaller flowers combined with minor characteristics. Both are readily separated from most other *Cyanea* by the densely bracted peduncle, but the Oahu species might be confused with the genus *Rollandia*. It may prove to be closely related to *R. truncata* Rock.

[184]



CYANEA JUDDII FORBES.

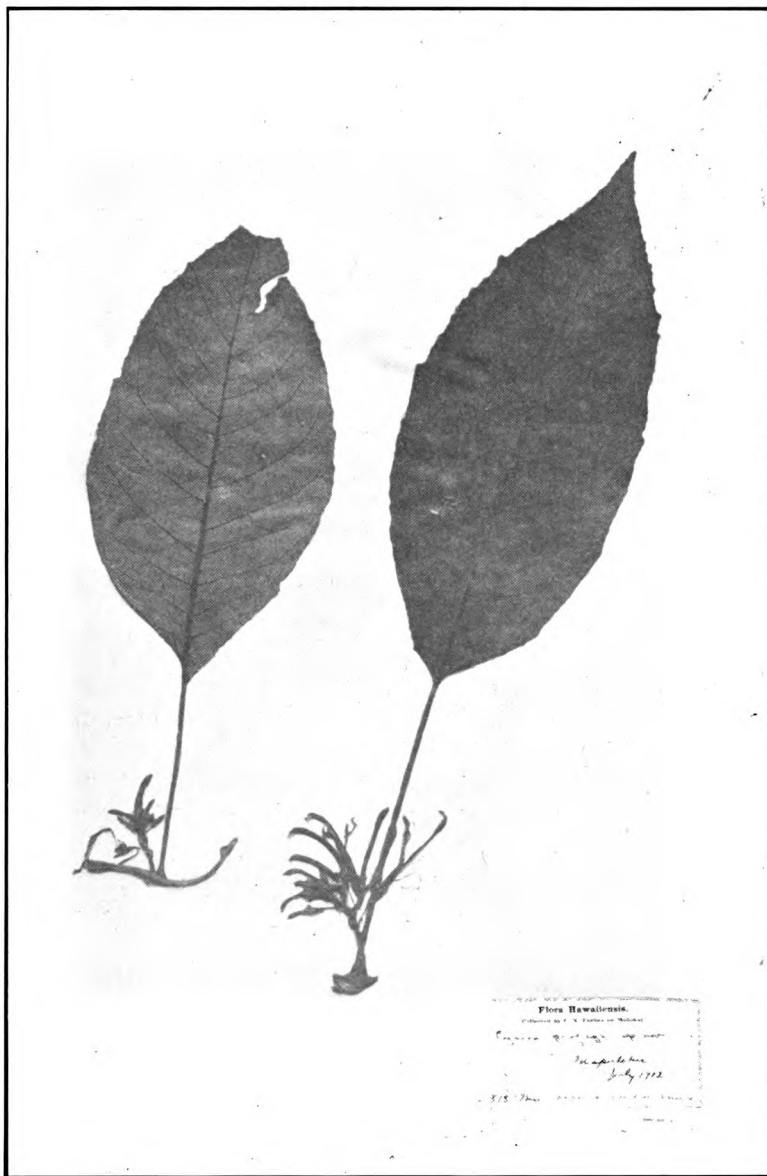
Cyanea profuga, sp. nov.

Caule simplici, 18-24 dm. altus; foliis late-ellipticis, acuminatis, basi acutis, undulatis, glabris, 23.4 cm. longis, 9.8 cm. latis, cum petiolis 12.2 cm. longis; pedunculis glabris, 2.8-4.1 cm. longis, pedicellis, 9-10 mm. longis; floribus albis, calyce glabris, tubis cylindricis, 7 mm. longis, lobis oblongis, 5 mm. longis; corollis sub-erectis, glabris, 3.4 cm. longis, columnis stamineis glabris. Bacca ignota.

Type locality, Mapulehu Valley, Molokai. C. N. Forbes, No. 313, Mo. July, 1912. The upper part of Mapulehu Valley was used as a place of refuge in times of war.

Stem simple, 18-24 dm. high. Leaves broadly elliptical, acuminate, acute at the base, undulate, somewhat irregularly so, glabrous, pale whitish below, the petioles rather long, 23.4 cm. long, 9.8 cm. wide, with petiole 12.2 cm. long. Peduncle naked below, glabrous, 9-12-flowered, 2.8-4.1 cm. long, the pedicels 9-10 mm. long. Calyx cylindric-obconical, glabrous, the tube 7 mm. long, the lobes oblong with rounded apex, 5 mm. long. Corolla white, slender, sub-erect, glabrous, with dorsal slit nearly to the base, 3.4 cm. long. Staminal column and anthers glabrous. Berry not seen.

The habit of the plant and the leaves bear a striking resemblance to *C. acuminata* (Cham.) Hbd., but otherwise the plant is very different. Another plant, Forbes, No. 240, Mo., collected on the Pelekunu trail on the same island, is probably the same species; but not having flowers or fruit this cannot be definitely decided at present. [186]



CYANEA PROFUGA FORBES.

Cyanea palakea, sp. nov.

Caule fruticosa; foliis spathulato-lanceolatis, sinuatis, acutis, aculeatis, subtus pubescentibus, 23.8-28.1 cm. longis, 3.7-5.1 cm. latis, cum petiolis 2-2.9 cm. longis; pedunculis 1.2-1.5 cm. longis, pedicellis 7-8 mm. longis; calyce glabra, tubo 5-6 mm. longo, lobis acutis 3-3.5 mm. longis; corolla alba, falciforma, glabra, 3.6 cm. longa; columna staminea glabra; bacca globosa, luteola, seminibus rubris.

Type locality, dense forest east of Palakea, about 10 miles north of Kilauea, Hawaii. C. N. Forbes, No. 1003, H. June 29, 1915.

Stem 6-9 dm. high, sparingly branching, armed with stout yellow or orange-colored spines, epiphyte on trees. Leaves spathulate-lanceolate in outline, sinuate, acute, contracting toward the base, glabrous above but more or less armed with stout yellow spines, pubescent below, especially along the rather prominent veins, and spiney, 23.8-28.1 cm. long, 3.7-5.1 cm. wide, with petiole 2-2.9 cm. long. Peduncle short, smooth, rather stout, 1.5-1.2 cm. long, the pedicels 7-8 mm. long. Calyx obconical, glabrous, the tube 5-6 mm. long, the teeth narrow acute, 3-3.5 mm. long. Corolla white, nearly glabrous, sparsely puberulent under a lens, falciform, 3.6 cm. long. Staminal column and anthers glabrous. Berry globose, orange-colored, rather flat-topped. Seeds crustaceous, smooth, reddish.

This species seems to be most closely related to *C. platyphylla* Hbd., from which it differs in habit and leaves. While only seen in this locality, it may be expected in other places in these dense woods which have not been thoroughly botanized.

[188]



CYANEA PALAKEA FORBES.

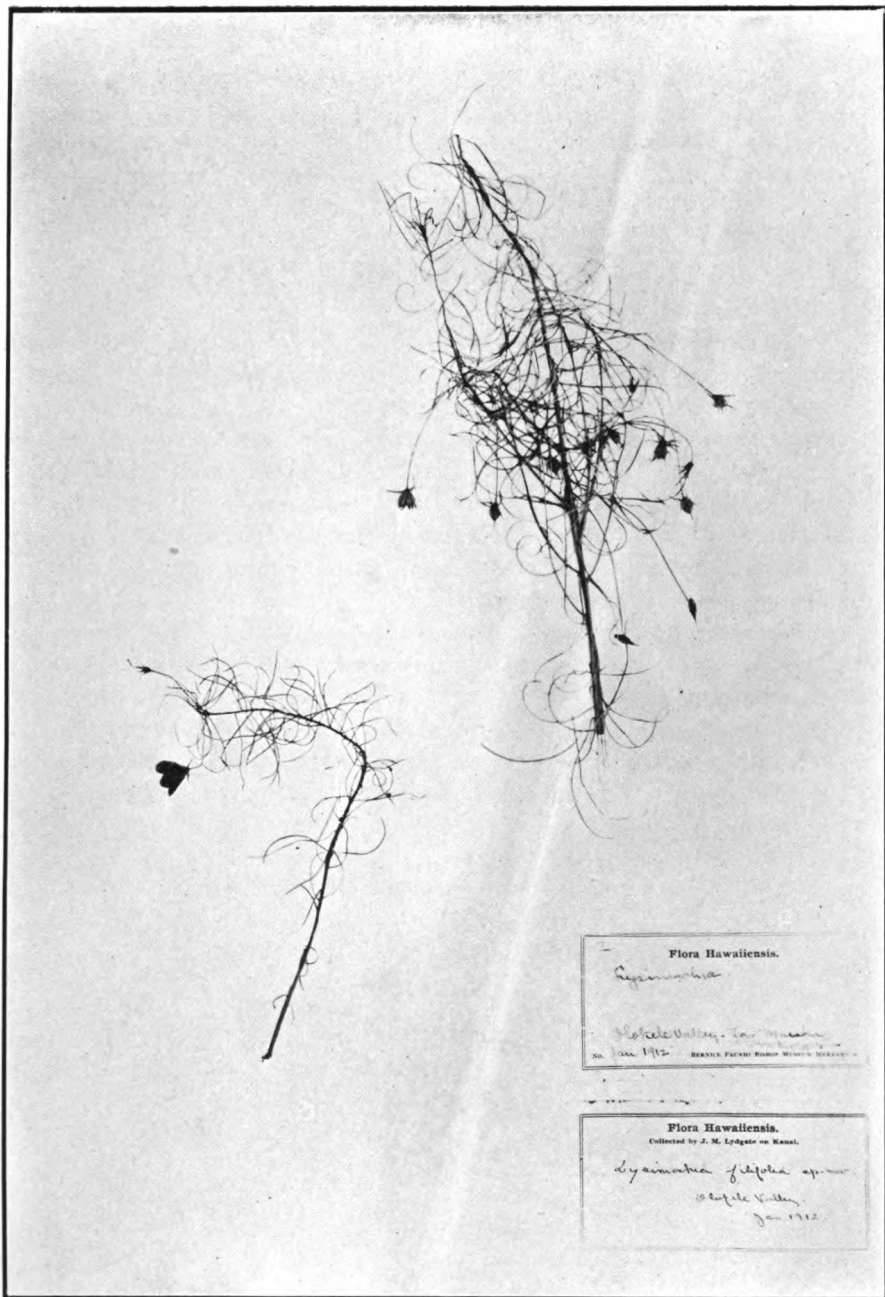
Lysimachia filifolia Forbes & Lydgate, sp. nov.

Fruticosa, glabrata, ramosa; foliis filiformis, 2.5-4.3 cm. longis, glabris; pedunculis unifloris, glabris, 1.8 cm. longis; floribus 5-meris; sepalis lanceolatis, 5 mm. longis, corolla sub-rotata, lobis late obovatis, purpureis, 1 cm. longis, filamentis basi dilatis; capsula crustacea, ovata, 5 mm. longa, 3.5 mm. lata, 5 valvis dehiscens.

Type locality, upper portion of Olokele Valley, Kauai. Rev. J. M. Lydgate. January, 1912.

Small glabrous shrub with reddish stems. Leaves filiform, glabrous, 1-nerved, 3-4.3 cm. long. Peduncles one-flowered, glabrous, 1.8 cm. long in the flowering stage, 4.3-5.4 cm. long in the fruiting stage, inclined to droop. Flowers 5-merous. Sepals narrow lanceolate, 5 mm. long. Corolla sub-rotate, reddish purple, the lobes widely obovate, 1 cm. high. Stamens a little shorter than the corolla, filaments dilated at the base. Capsule ovoid, crustaceous, smooth, shiny within, 5-valved, 5 mm. long, 3.5 mm. wide. Seeds minute, numerous.

This species belongs to the group of *L. Hillebrandii* Hook. and of *L. Remyi* Hbd., two species which run into each other with a number of connecting forms. The present species differs essentially in the extreme form of the leaves. The sepals are much narrower than in these species, and the capsule is smaller. We have seen no specimens with leaves intermediate between this and *L. Remyi*. [190]



LYSIMACHIA FILIFOLIA FORBES & LYDGATE.