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**Notes on Hawaiian Species of *Lobelia*<sup>Gaud.</sup> *hypoleuca***  
**Hawaiian Plant Studies 5<sup>1</sup>**

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LOBELIA GAUDICHAUDII AND ITS RELATIVES

The Lobeliaceae are represented in the Hawaiian islands by five endemic genera and one indigenous genus, *Lobelia*, with endemic species. The endemic species and varieties total 154. Many of them are trees or vigorous shrubs with large and beautiful flowers. They abound in the rain forests and the high bogs.

In 1937 E. Y. Hosaka and F. R. Fosberg discovered a small bog in the cloud zone on the Koolau Range, Oahu. Growing there was a striking lobeliad with numerous tall racemes. This was described as *Lobelia Gaudichaudii* A. P. DC. var. *koolauensis* Hosaka and Fosberg. Consideration of this variety has resulted in the revision of the species and its relatives. The plants are rather uniform in stout, shrubby habit and general appearance, but differ in the size and shape of the calyx lobes, the size and shape of the floral bracts, the pubescence of the herbage and inflorescence, and the color of the flowers. When classified on this basis, it is evident that each of the varieties and forms is restricted in its occurrence to a single island, Kauai, Oahu, or Maui.

Key to *Lobelia Gaudichaudii*, its Varieties and Relatives

Corolla 4.5-9 cm. long<sup>2</sup>; floral bracts not cordate; upper leaves obovate to oblong-linear, not cordate at base; plant glabrous or somewhat pubescent but not villous throughout,

<sup>1</sup> This is the fifth of a series of papers designed to present descriptions, revisions, and records of Hawaiian plants. The preceding papers have been published as B. P. Bishop Mus., Occ. Papers, 10 (4), 1933; 10 (12), 1934; 11 (14), 1935; 12 (8), 1936.

<sup>2</sup> Corolla measured along the arc of the curve.

- Calyx lobes 1.2-2.2 cm. long,  
 Inflorescence not villous throughout,  
 Floral bracts 2.2-3.5 cm. long, 6-10 mm. wide,  
 Leaves all or some of them with midrib hirsute beneath; raceme usually single.....*L. Gaudichaudii* var. *typica*.  
 Leaves all glabrous beneath; stem usually with several terminal racemes,  
 Flowering branch naked or with a few reduced bracts.....  
 .....var. *koolauensis*.  
 Flowering branch leafy,  
 Herbage glabrous.....var. *kauaensis*.  
 Herbage pilose throughout or in part.....f. *hirsuta*.  
 Floral bracts 3-4.5 cm. long, 0.8-2 cm. wide,  
 Calyx lobes ciliate,  
 Corolla cream-colored with faint purplish streaks.....  
 .....var. *gloria-montis*.  
 Corolla crimson.....f. *sanguinea*.  
 Calyx lobes not ciliate.....f. *kukuiensis*.  
 Inflorescence villous throughout; bracts 3-4.5 cm. long.....f. *Bryanii*.  
 Calyx lobes 2.2-3.5 cm. long.....var. *longibracteata*.  
 Corolla 3.5-4.5 cm. long; floral bracts ovate or cordate; upper leaves cordate to subcordate; plant villous throughout.....*L. villosa*.

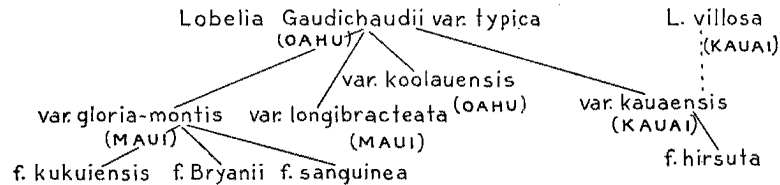


FIGURE 1.—Diagram showing interrelationship of the *Lobelia Gaudichaudii* group.

***Lobelia Gaudichaudii* A. P. DC., Prodr. 7: 384, 1838.**

An erect plant up to 2 m. tall, glabrous or pubescent, stem hollow, covered with leaf scars; leaves clustered at apex of stem, linear-lanceolate to oblong-lanceolate, coriaceous to subcoriaceous, sessile, margin revolute or thickened; inflorescence a raceme, simple or branching, with floral bracts; flowers curved; corolla 3.5-9 cm. long, white to crimson, splitting into 5 segments; staminal column glabrous; anther bearded at tip, stigma two-lobed, oval, slightly exserted beyond the anther; capsule ovoid or pyriform, glabrous or pubescent, with an acuminate conical apex.

***Lobelia Gaudichaudii* A. P. DC. var. *typica* St. John and Hosaka.**  
 var. nov.

*Lobelia Gaudichaudii* A. P. DC., Prodr. 7: 384, 1838.

*Lobelia Gaudichaudii* A. P. DC. var. *coccinea* Rock, Torrey Bot. Club, Bull. 44: 238, 1917.

An erect glabrous plant with stem 30-80 cm. tall, 2.5-4 cm. in diameter, hollow, covered with leaf scars; leaves 15-21 cm. long, 1.5-2.5 cm. wide, oblong-lanceolate, acute at apex, broadly sessile, coriaceous, pale green or purplish beneath, margin revolute or thickened, upper part with callous teeth, base glabrous or sparsely ciliate, midrib large, glabrous or densely hirsute; inflorescence a single raceme or rarely 2-3-branching; rhachis glabrous; raceme leafy at base, bracteate above, floral bracts 2.2-3.2 cm. long, 6-10 mm. wide, oblanceolate, glabrous or sparsely ciliate, purplish; pedicels 2.3-5 cm. long, glabrous, green or purplish; calycine tube 4-8 mm. long, campanulate to hemispheric, glabrous, calyx lobes 1.2-2 cm. long, 4-6 mm. wide, glabrous, green or purplish; corolla 5-8 cm. long, 6-13 mm. wide, glabrous, deep rose-colored, the two lateral lobes splitting two thirds way down, linear, lower lip shortly trifid; staminal column glabrous, red; anther sac glabrous, violet-rose, tip bearded; stigma two-lobed, oval, slightly exerted beyond the anther; capsule 1.5-2 cm. high, 1-1.5 cm. wide at middle, conspicuously fringed with calyx lobe scars, ovoid or pyriform, with an acuminate, conical apex, lower portion with pronounced veins; seeds 1-1.2 mm. long, 0.5 mm. wide, ovate-reniform, compressed, shining, center dark, with narrow, brownish coriaceous margin.

Type: ad cacumen montis O-Wahu Sandwicensium (Gaudich.-[aud] 1837). J. F. Rock states that the type specimen in Herb. Paris is *Gaudichaud no. 149*.

Range: restricted to the Koolau Range, Oahu, Hawaiian islands.

Oahu: summit of Konahuanui, Mar. 11-12, 1915, *C. N. Forbes 2180.O*, and *2182.O*; top of Poamoho Trail, Koolau Range, alt. 800 m., Nov. 22, 1936, *F. R. Fosberg 13330*; Lanihuli Peak, Feb. 29, 1920, *D. W. Garber 261* and *262*; Peak of Mount Konahuanui, Nov. 23, 1919, *Garber 82*; Kipapa Gulch, Koolau Range, alt. 2,800 ft., Sept. 18, 1932, *E. Y. Hosaka 686*; Mount Lanihuli, Sept. 1914, *Nelson and Stone 10003*; Konahuanui, Sept. 1912, *J. F. Rock 10003*; Punaluu Mts., Dec. 3, 1908, *Rock 64*; Punaluu Mts., Dec. 3-14, 1908, *Rock 65*; Summit of Konahuanui, Sept. 1912, *G. W. Shaw 12742* (type of var. *coccinea*); Waipio-Waihole divide, Kipapa Gulch, Waipio, alt. 2,800 ft., Sept. 18, 1932, *H. St. John 12077*; same locality, April 24, 1938, *St. John 18905*.

As Rock later pointed out [B. P. Bishop Mus., Mem., 7 (2): 117, 1919], his *L. Gaudichaudii* var. *coccinea* was an exact synonym of *L. Gaudichaudii* A. P. DC. He was misled by an aggregate confused description in Hillebrand's "Flora of the Hawaiian Islands", and mistook a Maui plant for *L. Gaudichaudii*. He later detected this confusion, realized that Gaudichaud's type was the Oahu species and reduced his variety to synonymy under *L. Gaudichaudii*. Rock's variety *coccinea* was an illegitimate name, being superfluous when published [Int. Rules Bot. Nomen., 3d. ed., art. 60 (1), p. 19, 1935],

and hence has no standing in nomenclature. In a species having as many variations as this, it is desirable to assign a subdivisional name to the original one. Rock's varietal name is not only illegitimate but undesirable, because if restored it would make Rock's instead of Gaudichaud's earlier collection the type. Hence, we reject Rock's name and coin a new varietal name, variety *typica*.

**Lobelia Gaudichaudii** A. P. DC. var. **koolauensis** Hosaka and Fosberg, B. P. Bishop Mus., Occ. Papers, **14** (1): 4, 1938.

Plants 1-1.5 m. tall, stem unbranched, 3-4 cm. in diameter, leaves clustered at apex of stem; leaves 12-17 cm. long, 2-2.5 cm. wide, glabrous, coriaceous; inflorescence branching candelabrum-like, glabrous, the 3-6 racemes 40-50 cm. long, with 20-35 flowers, the axis bracteate but leafless; floral bracts 2.5-3 cm. long, 7-10 mm. wide, coriaceous, glabrous, pedicels 2.5-4.3 cm. long, glabrous; calyx tubes 8-11 mm. long, broadly obconical, glabrous, the lobes 10-15 mm. long, 3-6 mm. wide, lanceolate, glabrous; corolla 5.8-6.5 cm. long, 1.8-2 cm. wide, whitish to whitish green, glabrous; staminal column glabrous; anthers glabrous, the tips all bearded; stigma two-lobed, bearded.

Type: Oahu, Koolau Range, divide between head of Kawainui Gulch and Kaipaupau Gulch, alt. 860 m., on open, windswept, sloping bog, June 1, 1937, *Hosaka and Fosberg 1915* (type in Bishop Mus.).

Range: known only from the type locality on the Koolau Range, Oahu, Hawaiian islands.

Oahu: Koolau Range, divide between head of Kawainui and Kaipaupau Gulches, in open bog, alt. 860 m., July 24, 1937, *Fosberg and F. E. Egler 14224*.

**Lobelia Gaudichaudii** A. P. DC. var. **kauaensis** Gray, Am. Acad., Proc. **5**: 150, 1862 (published as var. *Kauaensis*).

*Lobelia kauaensis* (Gray) Heller, Minn. Bot. Stud., **1**: 911, 1897.

An erect plant 1-2 m. tall; stem covered with leaf scars; leaves 15-30 cm. long, 1.5-3 cm. wide, linear-lanceolate, glabrous; inflorescence of 2-5 racemes, glabrous; leaves of flowering branches linear-lanceolate; floral bracts 1.5-2.5 cm. long, 4-8 mm. wide, glabrous; calyx lobes 0.8-1.2 cm. long, 3-5 mm. wide; corolla 4.5-6 cm. long, glabrous, white with purplish veins.

Type: Kauai, U. S. Expl. Exped. The type is in the U. S. Nat. Herb.

Range: restricted to the high mountain bogs of Kauai, Hawaiian islands.

Kauai: Hanapepe, alt. 800 m., Dec. 1909, *A. Faurie 552*; Wahiawa Swamp, Aug. 1909, *C. N. Forbes*; Waialeale, Sept. 1909, *J. F. Rock 5109*; Waialeale, Oct. 21, 1916, *Rock 12845*; Kahili Swamp, Wahiawa,

Lihue-Koloa Forest Reserve, alt. 2,100 ft., Dec. 29, 1930, *H. St. John and others 10849*; Kahili Bog, Wahiawa, alt. 2,100 ft., Dec. 24, 1933, *H. St. John and F. R. Fosberg 13561*.

In 1937, a plant with characters intermediate between *L. Gaudichaudii* var. *typica* and *L. kauaensis* was discovered on Oahu. The characters that had been used to separate *L. Gaudichaudii* var. *typica* from *L. kauaensis* were combined in this new plant. Also the finding of a branching form of a typical *L. Gaudichaudii* (not *L. Gaudichaudii* var. *koolauensis*) made the separation more difficult. Because of these facts *L. kauaensis* is reduced to a variety of *L. Gaudichaudii*.

This variety can be distinguished from the species by always having a branching inflorescence, glabrous and smaller leaves, smaller calyx lobes and smaller flowers.

This plant was included by Hillebrand in his concept and description of *L. Gaudichaudii*; but, as has been shown, that species is restricted to Oahu.

The type of *L. Gaudichaudii* A. P. DC. var. *kauaensis* Gray was collected on Kauai by the U. S. Exploring Expedition under Captain Wilkes. The writers have not seen the type, but the isotype in the Gray Herbarium was studied and discussed by Rock.

***Lobelia Gaudichaudii*** A. P. DC. var. ***kauaensis*** Gray f. ***hirsuta***, St. John and Hosaka, f. nov.

Racema hirsuta. Pedicellus hirsutus. Bracteeae florosae ciliatae. Lobae calycis ciliatae.

Plant habit similar to the variety, racemes brown hirsute; floral bracts and calyx lobes with ciliate margin; pedicels hirsute.

Type: Kauai, Waialeale, Oct. 1916, *J. F. Rock 12845a* (type in Bishop Mus.).

Range: restricted to Mt. Waialeale, Kauai, Hawaiian islands.

Kauai: Waialeale, Oct. 21, 1916, *Rock 12845* (two fruiting branches of this form mounted on the same sheet with a flowering branch of the variety).

This form is distinguished from the variety by being hirsute. Rock, in his description of *L. kauaensis* [B. P. Bishop Mus., Mem. 7 (2): 119, 1919], included this hirsute form. The hirsute plant is distinct and no intermediates are known.

***Lobelia Gaudichaudii*** A. P. DC. var. ***gloria-montis*** (Rock) St. John and Hosaka, comb. nov.

*Lobelia gloria-montis* Rock, B. P. Bishop Mus., Mem., 7(2) : 117, pl. 58, 1919.

Stem 1-1.5 m. tall; leaves 15-18 cm. long, 2.8-4 cm. wide, glabrous on both surfaces, usually ciliate at the margins near base; floral bracts broadly spatulate to obovate, 3-4 cm. long, 1.7-2.2 cm. wide, conspicuously denticulate near the apex, ciliate below; pedicels 3-4 cm. long; calyx lobes 1.5-2 cm. long, 4-7 mm. wide, ciliate on margin; corolla 7-9 cm. long, glabrous, about 2 cm. wide at the widest part, cream-colored with faint purplish streaks.

Type: W. Maui, elev. 5,700 ft., Puu Kukui Mt.; Aug. 1910, *J. F. Rock* and *J. S. Hammond* 8209 (type in Bishop Mus.).

Range: restricted to the summit bogs of western Maui, Hawaiian islands.

Maui: top of mountain of West Maui, *H. Mann* and *W. T. Brigham* 462; Puu Kukui, open bogs, alt. 5,000-5,700 ft., Feb. 7, 1930, *H. St. John* 10274.

This variety of western Maui differs from the var. *typica* in several regards, but some of the characters overlap, so the writers think the variation is not significant enough to maintain the plant as a species. *L. Gaudichaudii* var. *gloria-montis* has floral bracts 1.7-2.2 cm. wide, midrib and leaf glabrous, and the flowers cream-colored. *L. Gaudichaudii* var. *typica* has floral bracts 6-10 mm. wide, midrib of leaf usually densely hirsute, flowers deep red-purple.

This plant was erroneously included by Hillebrand in his description of *L. Gaudichaudii*, which species or its variety *typica* is restricted to Oahu.

***Lobelia Gaudichaudii*** A. P. DC. var. ***longibracteata*** Rock, Coll. Haw., Bull. 2 : 47, 1913.

*Lobelia gloria-montis* Rock var. *longibracteata* Rock, B. P. Bishop Mus., Mem., 7 (2) : 119, 122, pl. 59, 1919.

Plants 3-5 m. tall, glabrous throughout; leaves 18-20 cm. long, 3-3.5 cm. wide, glabrous, oblong-lanceolate, nearly of even width, coriaceous; inflorescence terminal, of 5-7 racemes; floral bracts 6-7.5 cm. long, 8-10 mm. wide, linear-lanceolate, glabrous except for the margin which is sparsely ciliate at base; calyx lobes 2.8-3.5 cm. long, 5-8 mm. wide, lanceolate, glabrous except for the margin which is ciliate at base; corolla 6.5-7.5 cm. long, glabrous.

Type: W. Maui, elev. 5,780 ft., Mt. Puu Kukui, Aug. 1910, *J. F. Rock* 8818 (type in Bishop Mus.).

Range: restricted to forest at summit of Puu Kukui, western Maui, Hawaiian islands.

Maui: known only by the type collection of several sheets.

Judging from the materials available, this variety is very distinct from the var. *typica*, and almost deserves a specific rank. It can be recognized easily by the long floral bracts and long calyx lobes.

**Lobelia Gaudichaudii** A. P. DC. var. **gloria-montis** (Rock) St. John and Hosaka f. **Bryanii**, St. John and Hosaka, f. nov.

Planta stricta 1.5-2 m. alta. Inflorescentia fulva hirsuta. Pedicellus hirsutus. Tubus calycis dense hirsutus. Lobae calycis dense hirsutae.

An erect unbranched plant 1.5-2 m. tall; leaves 13-16 cm. long, 2.5-3.5 cm. wide, oblong, spathulate, sessile; raceme single, 40-60 cm. long, hirsute, brownish when dry; bracts hirsute on both surfaces; pedicels hirsute; calyx tubes and lobes densely hirsute; corolla sparsely pilose.

Type: W. Maui, Puu Kukui, May 1910, *C. N. Forbes 68.M* (type in Bishop Mus.).

Range: restricted to the high bogs of the mountains of western Maui, Hawaiian islands.

Maui: Puu Kukui, edge of open bogs, alt. 5,200 ft., Dec. 18, 1928, *E. H. Bryan, Jr. 632*.

*Lobelia Gaudichaudii* var. *gloria-montis* f. *Bryanii* differs from the variety in several characters. It has a hirsute spike; the pedicels, calyx tubes, and calyx lobes densely brown hirsute; and the petals sparsely pilose. *L. Gaudichaudii* var. *gloria-montis* has glabrous spikes, pedicels, calyx tubes, calyx lobes, and petals.

This form is named for Mr. E. H. Bryan, Jr., Curator of Bishop Museum, who has inspired many people to appreciate nature.

**Lobelia Gaudichaudii** A. P. DC. var. **gloria-montis** (Rock) St. John and Hosaka f. **sanguinea** St. John and Hosaka, f. nov.

Florae coccinae.

Habit of plant similar to the variety; flowers crimson.

Type: W. Maui, Puu Kukui, in swamp, alt. 4,500 ft., Aug. 16, 1933, *C. E. Hartt* (type in Bishop Mus.).

Range: restricted to the summit bogs of the mountains of western Maui, Hawaiian islands.

Maui: Puu Kukui, summit bog, alt. 1,850 m., Oct. 9, 1922, *C. Skottsberg 773*.

This form can be easily distinguished from the variety by the crimson flowers. The variety has cream-colored flowers with faint purplish streaks.

**Lobelia Gaudichaudii** A. P. DC. var. **gloria-montis** (Rock) St. John and Hosaka f. **kukuiensis** St. John and Hosaka, f. nov.

Bractae florosae 2-4 cm. longae, 0.7-1 cm. latae. Lobae calycis glabrae.  
Plant similar to the variety; floral bracts 2-4 cm. long, 0.7-1 cm. wide;  
calyx lobes glabrous; corolla about 1 cm. wide.

Type: W. Maui, Haelaau-Puu Kukui trail, alt. 4,400 ft., Dec. 19, 1928, *G. R. Ewart III 89* (type in Bishop Mus.).

Range: restricted to the mountains of western Maui, Hawaiian islands.

Maui: Puu Kukui, Dec. 1928, *E. H. Bryan, Jr.*; Honokahau drainage basin, Sept. 25-Oct. 17, 1917, *C. N. Forbes 456.M.*; Puu Kukui, Sept. 25, 1916, *G. C. Munro 615*; summit of Mount Eeke, Sept. 1918, *J. F. Rock and J. Hashimoto*.

This form differs from the variety in having narrower flowers, narrower floral bracts, and glabrous calyx lobes.

***Lobelia villosa*** (Rock) St. John and Hosaka, comb. nov.

*Lobelia kauaiensis* (*kauaensis*) (Gray) Heller var. *villosa* Rock, *Torrey Bot. Club, Bull.* 44: 237, 1917.

An upright plant with stem 60-100 cm. high and about 3 cm. across, stem closely covered with leaf scars; lower leaves 9-14 cm. long, 2.5-4 cm. wide, oblong, with winged petiole, broadly sessile, with thick prominent midrib and obscure veins, sub-acute at apex, glabrous below except the margin and midrib which are villous, revolute, upper leaves gradually reduced to foliaceous, cordate to subcordate bracts, oblanceolate, acute at apex, sparsely to densely villous on both surfaces, coriaceous margin revolute; inflorescence candelabrum-like, of several racemes, many-flowered, branches 40-60 cm. long, sparsely to densely villous; floral bracts 2-3 cm. long, 1.4-2 cm. wide, cordate or ovate, broadly sessile, entire, densely villous; pedicel 2.5-3 cm. long, slender, densely villous; calycine tube 0.5-0.8 mm. high, 10-14 mm. wide, villous, obconical, lobes 1-1.5 cm. long, 4-5.5 mm. wide, lanceolate, glabrous to sparsely pubescent, margin ciliate, purplish-tinged; corolla 3.5-4.5 cm. long, 8-12 mm. wide at the widest part, glabrous, whitish green with purplish veins, two lateral lobes splitting down two thirds of the length, linear, the lower lip shortly trifold; staminal column glabrous; anthers glabrous, all bearded at tip; capsule dark, villous, pyriform, with an acuminate conical apex; seed oblong-reniform, compressed, brownish, glossy, margin thickened.

Type: Kauai, Waialeale, Oct. 21, 1916, *J. F. Rock 12844* (type in Bishop Mus.). Rock gives the above data on the type specimen in the Bishop Museum but gives Mt. Waialeale, Oct. 21, 1916, *J. F. Rock and A. S. Hitchcock 12741* in the original publication. *Rock 12844* and *Rock and Hitchcock 12741* refer to the same collection.

Range: restricted to the summit bogs of Mt. Waialeale, Kauai, Hawaiian islands.



Kauai: Alakai swamp, Waimea drainage basin, west side, July 3-Aug. 18, 1917, *C. N. Forbes 1122.K.*; Waialeale, Sept. 23, 1909, *Rock 5823*; Waialeale, Oct. 1911, *Rock*; Waialeale, alt. 5,200 ft., Oct. 21, 1916, *Rock 12844*.

Rock, who has seen this plant growing in its natural habitat, says that the whole aspect of the plant is different from var. *kauaensis*. The writers have examined a large number of specimens of the two plants and find that Rock's variety is decidedly different from both *L. Gaudichaudii* and the var. *kauaensis*, so his variety is here raised to a species. *L. villosa* differs from *L. Gaudichaudii* var. *typica* and *L. Gaudichaudii* var. *kauaensis* in many characters. It is villous throughout with corolla 3.5-4.5 cm. long; floral bracts ovate or cordate, villous; pedicels densely villous; leaves 2.5-4 cm. wide, oblong, margin and vein villous. *L. Gaudichaudii* var. *kauaensis* is glabrous throughout; with corolla 4.5-6 cm. long; floral bracts linear-lanceolate, glabrous or ciliate on the margin; pedicels glabrous; leaves 1.5-3 cm. wide, linear-lanceolate. *Lobelia Gaudichaudii* var. *typica* is glabrous throughout, corolla 5-8 cm. long, 6-10 mm. wide; floral bracts oblanceolate, glabrous; leaves 1.5-2.5 cm. wide, oblong-lanceolate, usually with densely hirsute midrib.

#### A NEW VARIETY OF LOBELIA HYPOLEUCA

***Lobelia hypoleuca*** Hillebr. var. ***Rockii*** St. John and Hosaka, var. nov.

Planta 1-2 m. alta. Antherae glabrae.

Plant 1-2 m. tall; leaves densely woolly beneath; inflorescence branching; flowers bluish; anthers glabrous.

Type: Oahu, Koolau Range, Punaluu, alt. 2,000 ft., Sept. 28, 1930, *E. Y. Hosaka 312* (type in Bishop Mus.).

Range: restricted to wet forests of the Koolau Range and the Waianae Mountains, Oahu, Hawaiian islands.

Oahu: Kaaumakua, alt. 1,700 ft., in moist wood on slope, Feb. 22, 1928, *H. F. Bergman*; Koolauloa Mts., between Punaluu and Kaipapau, Nov. 14-21, 1908, *C. N. Forbes and J. F. Rock*; Lanihuli, Oct. 14, 1908, *Forbes*; Paalaa-Wahiawa Divide, wet scrubby forest, alt. 750 m., Nov. 22, 1936, *F. R. Fosberg 13323*; Mount Konahuanui, Olympus Trail, near Pauoa Valley rest house, Nov. 23, 1919, *D. W. Garber 89*; Waianae Mts., Puu Kaala, alt. 3,500 ft., Aug. 24, 1924, *J. A. Harris C242132*; Kipapa Gulch, S. ridge, at head of gulch, alt.

1,800 ft., Oct. 16, 1932, *Hosaka 797*; Punaluu Trail, alt. 2,000 ft., Nov. 14, 1908, *Rock 808*; same locality, Nov. 14-21, 1908, *Rock 807*; Kaluanui, open woods, near ridge, alt. 2,100 ft., Nov. 30, 1929, *H. St. John 10103*; Punaluu, rain forest, alt. 2,000 ft., Jan. 10, 1931, *W. B. Storey*; Waikane-Schofield Trail, alt. 1,250-2,400 ft., Oct. 16, 1932, *A. Suehiro*; Mount Olympus, Aug. 26, 1913, *O. H. Swezey*.

Hillebrand (Flora Haw. Is., 238, 1888) described *Lobelia hypoleuca* from specimens collected on Maui at Wailuku [south ridge, Wailuku Valley, western Maui, Aug. 1870] and Lahaina; Oahu, Waialua and Halemano; Molokai, pali of Pelekunu; Hawaii, woods of Kohala, but he did not indicate any type specimen. Dr. St. John, while in Berlin, Germany, examined Hillebrand's specimens and found the fruiting one collected at Wailuku marked *Lobelia hypoleuca* n. sp. in Hillebrand's handwriting, so this specimen is properly designated as the type. The specimens from western Maui in the Bishop Museum have hirsute anthers. Hillebrand described *L. hypoleuca* as with "anthers glabrous", but this character was taken from the flowering specimens from Oahu. We have studied this group and found that the glabrous or hirsute character of the anther is a constant and distinct one. From the available materials in the herbarium of Bishop Museum it appears that those with hirsute anthers were found on Lanai and Maui, while those with glabrous anthers were restricted to Oahu. Therefore we are making the Oahu plant a new variety of the Maui and Lanai one which is the true *L. hypoleuca*.

#### EXCLUDED PLANTS

It is apparent that *L. Gaudichaudii* or some of its variations occur on the island of Molokai. On his distributional table in his monograph [B. P. Bishop Mus., Mem., 7 (2): 82, 1919] Rock indicates the species from Molokai; and his plate 15 shows an old fruiting plant without leaves, on the cliffs of Pelekunu. Rock apparently did not collect a specimen. What seems to be this same plant has recently been described as *L. gloria-montis* var. *molokaiensis* Degener (Fl. Haw., fam. 339, Feb. 11, 1938). The description is: "About 4 dm. high. Leaves about 12 cm. long and 15-18 mm. wide, entirely glabrous. Flowers unknown." Papaala Pali, Molokai, Degener 7.778. Degener's type had no flowers. Until more complete material is available it is impossible to evaluate properly this Molokai plant.