New Species of Hawaiian Plants Collected by David Nelson in 1779
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The first scientific plant collection in the Hawaiian Islands was made by David Nelson, gunner and botanist on Captain James Cook’s third world-voyage. All the specimens were obtained on a single 5-day expedition that attempted to climb and explore Mauna Loa. Also in the party were Marine Corporal John Ledyard, Simeon Woodruff, Robert Anderson, Midshipman George Vancouver, and two native guides.

Nelson collected more than 130 specimens, and they were dried, and safely carried to London. They were given to Sir Joseph Banks who later deposited them in the British Museum of Natural History. Subsequently they were given manuscript names by Daniel Solander, and by his successor Robert Brown. No list of them was kept, and they were filed in the herbarium under these unpublished names.

During the 2 centuries since this first collection of Hawaiian plants was gathered, only a half-dozen or so of them were noticed in print, by Bentham, Aiton, Seemann, Dunal, and Sherff. The writer spent 4 weeks in 1950 and 1 in 1975 combing the British Museum herbarium in search of these historic specimens. In a subsequent article he will enumerate all the specimens so located, a goodly total, but probably not a complete one. Below are published those that still seem to be undescribed. Evidently they also are now extinct.

Cordial thanks are due to Dr. R. S. Cowan who in 1953 aided the author by careful observations and drawings of a number of the plants here described as new species.

URTICACEAE

Neraudia Cookii sp. nov.

Figure 1

Diagnosis: Frutex dioica est, planta mascula cum ramulis 0.8–4 mm diametro, nodis incrassatis, internodis 4–24 mm longis, cortice pallide rubri-badio laevi in parte pilosi in sicco sulcato, cicatricibus foliorum 1 mm altis suborbicularibus-scutelliformis plerumque a reliquis inflorescentiac obscuratis, ramulis foliosis 7–15 cm longis 7–15 foliis ferrentibus, novellis albi-pilosulis, petiolis 4–16 mm longis dense albi-pilosulis, laminis 3.3–8 cm longis 5.5–22 mm latis firme chartaceis lineari-lanceolatis apice longe attenuato basi obtusa vel breve cuneata supra obscure viridibus dense albi-papillosis et remote adpressi-pilosis infra albi-pilosis sed in costa et nervis secundariis subadpressi-pilosis, nolis floriferis bracteis floris 0.3–0.5 mm longis scariosis extra et in marginibus puberulentibus, floribus masculis multis aggregatis axillaribus, alabastris ovoideis acuminatis, calycibus 2–2.2 mm longis subviridibus adpressi-puberulentibus intra glabris 1/3–1/2 partitis, lobis 4 ovatis acuminatis, staminibus 4 in lobis oppositis inflexis, filamentis 2 mm longis, antheris 0.6–0.8 mm longis ellipticis in suturo laterali dehiscentibus, pistilodio rudimentario minuto lanato, plantis femineis ignotis.

Diagnosis of holotype: Dioecious shrub (or tree?); branchlets seen 21–26 cm long; 0.8–4 mm in diameter, with the nodes enlarged, salient; internodes 4–24 mm long; bark pale reddish brown, smooth, but with some persisting pilosity, on drying shrinking slightly and forming longitudinal ridges; leaf scars 1 mm high, suborbicular–shield-shaped, largely concealed by the remnants of the inflorescence; branchlets leafy for 7–15 cm, bearing 7–15 leaves; young branchlets spreading white pilosulous; petiolo 4–16 mm long, densely white pilosulous; blades 3.3–8 cm long, 5.5–22 mm wide, entire, firm chartaceous; linear–lanceolate, the apex long attenuate, the base obtuse or very short cuneate, above dark green, closely white papillose and remotely appressed pilose,

1 Manuscript received 20 May 1975.
FIGURE 1. *Neraulia* Cookii St. John, from holotype. *a*, habit of male plant, \( \times 1 \); *b*, leaf underside, \( \times 4 \); *c, d*, staminate flowers, \( \times 4 \); *e*, stamens, \( \times 4 \).
below subpressed pilose on the midrib and secondaries, white pilosulous generally on the surface, the distinctive network of veins formed by the tertiary ones; nodes floriferous, the many flowers subtended by scarious bracts 0.3–0.5 mm long, puberulent on back and margin; pedicels 0.5–1.5 mm long, puberulent, persistent; staminate flowers in close axillary clusters; buds ovoid, acuminate, the calyx greenish, 2–2.2 mm long, appressed puberulent, within glabrous, cleft 1/3–1/2 way into 4 lobes, these ovate, acuminate; stamens 4, opposite the calyx lobes, sharply inflexed and bent double in bud; filaments 2 mm long; anthers 0.6–0.8 mm long, elliptic, dehiscent by a lateral suture; pistilode a minute rudiment, woolly tufted; pistillate plants unknown.

**HOLOTYPUS:** Sandwich Islands [Kona, Hawaii Island], Dav. Nelson (BM).

**DISCUSSION:** This early collection was filed in the British Museum of Natural History as *Urtica* sp., and there was no indication that any botanist had tried to identify it more precisely. It is a full sheet of three good and flowering branches with abundant staminate flowers. Its growth habit and capitate axillary flowers at first suggested *Pipturus*, but the dioecious flowers and entire leaves proved it to be a species of *Neraudia*. That genus has recently been closely studied by Cowan (1949). It is to be regretted that the specimen at hand furnishes only staminate branches. It might be cautious to hold this treatment in manuscript, awaiting further and more complete collections, but unfortunately there is little chance of obtaining them. Cook's voyage was the one that discovered the islands, and the vegetation then was virgin down to the seashore or to the edge of the plantations of the Hawaiians. Soon afterwards, in 1792, cattle, sheep, and goats were freed on the islands, and they caused much destruction of the vegetation. The Kona slope of Mauna Loa, and especially near Kealakekua Bay, has long been developed as a modern settlement, with coffee plantations and cattle ranches, and the abundant feral goats still range widely there. This region has been explored by almost all of the botanists who have worked in Hawaii, without this easily noticeable shrub being rediscovered. It is improbable that it will be found again; hence, it is here described as new, even though the female plants of the species are unknown.

The most similar species, *N. ovata* Gaud., also of Hawaii Island, can be distinguished by having the blades 2–6.5 cm wide, broadly ovate or oval, thin, the apex acuminate (or acute), below densely puberulent; stamine calyx 3–4.5 mm long, appressed and erect pilosulous and with mingled short erect uncinate hairs. On the other hand *N. Cookii* has the blades 0.5–2.2 cm wide, linear-lanceolate, the apex long attenuate, firm chartaceous; stamine calyx 2–2.2 mm long, appressed puberulent.

This species is named in honor of Captain James Cook, officer of the British Navy, and scientific explorer extraordinary, who, on receipt from Corporal John Ledyard of a note suggesting an excursion to climb and explore the distant peak, Mauna Loa, dispassionately read the letter, and approved the project. He ordered the excursion to be made, and even detailed Ledyard and Nelson as members of the party to make the climb. This excursion allowed Nelson to make the first collection of Hawaiian plants, including this one.

**PIPERACEAE**

*Peperomia plinervata* sp. nov. (subgen. *Hawaiiana*)

**Figure 2**

**DIAGNOSIS HOLOTYPHI:** Caulibus plus 3 dm altis glabris, internodis 7–13.5 cm longis, foliis 3–4-verticillatis, petiolis 10–27 mm longis supra canaliculatis sparse pilosulis pilis 0.4–0.5 mm longis arcuatis paginis superis in sicco subnigris infra pallidioribus nervis supra obscuris infra nervis primariis et secundariis validis salientibus 5-plinervatis jugo primo proxime basi jugo secundario 1–2 cm e basi distantio, spicis pluribus in axilibus superis 4.5–9 cm longis 1.2 mm diametro, pedunculis 6–13 mm longis pilosulis vel sparse pilosulis pilis 0.5 mm longis arcuatibus, rachidibus glabris, bracteis 0.3–0.4 mm diametro orbicularibus.
FIGURE 2. Peperomia plinervata St. John, from holotype. a, b, habit, × ½; c, d, leaves, × ½; e, f, floral bract, × 25; g, stamen, × 25.

Diagnosis of Holotype: Stems more than 3 dm tall, glabrous; internodes 7–13.5 cm long; leaves whorled, 3–4 at a node; petioles 10–27 mm long, canaliculate on the upper side, sparsely pilosulous, the hairs 0.4–0.5 mm long, curving

Peltatis lutei-punctatis, antheris 0.2–0.3 mm longis late elliptics peltatis, ovariis ovoideis sessilibus, stigmatibus binis punctis elevatis in fossa vadosa apicali occurrentibus, fructibus incognitis.
towards the leaf apex; blades 8–12 mm long, 1.8–3 cm wide, fleshy but when dried thick chartaceous, narrowly elliptic, the apex long tapering, acute, the base gradually cuneate decurrent, above sparsely pilosulous on the veins, below moderately and uniformly pilosulous, the hairs 0.4–0.5 mm long, arcuate, the upper surface drying almost black, the lower paler, venation obscure above, but below the midrib and secondary veins strong and salient, 5-plinerved, the first pair of laterals just above the base, the second pair stronger, separating at 1–2 cm from the leaf base; spikes numerous in the upper axils, the mature ones 4.5–9.5 cm long, about 1.2 mm in diameter (when dried); peduncles 6–13 mm long, pilosulous, sometimes sparsely so, the hairs 0.5 mm long, arcuate; rachis glabrous; bracts 0.3–0.4 mm in diameter, round, peltate, yellow punctate; anthers 0.2–0.3 mm long, broadly elliptic in outline, peltate; ovaries ovoid, sessile; stigmas divided, appearing as two darker, raised points in the base of a shallow apical depression; fruits not seen.

**HOLOTYPUS:** Sandwich Islands [Kona, Hawaii Island], Dav. Nelson (BM).

**DISCUSSION:** This new species is a member of the subgenus *Hawaiiana* of Yuncker, and it is most nearly related to *P. Macraeana* C. DC., which occurs on the eastern side of Hawaii and on Maui, and is distinguished by having its stems densely appressed hirtellous above; petioles 1–4 cm long, densely appressed hirtellous; blades 5–9.7 cm long, 2–6 cm wide, elliptic-lanceolate or broadly so to obovate, above sparingly hirtellous or only at base or only on the nerves, below densely brown hirtellous, especially along the nerves, apex acute to acuminate, base acute, venation mostly 7-plinerved; peduncle appressed hirtellous or subglabrate; spikes 2–7 cm long; and the bracts about 0.5 mm broad. On the other hand, *P. plinervata* has the stems glabrous; petioles 1–2.7 cm long, sparsely curved pilosulous; blades 8–12 cm long, 1.8–2.3 cm wide, narrowly elliptic, above sparsely pilosulous on the veins, below moderately and uniformly pilosulous, the apex long tapering acute, the base gradually cuneate decurrent, the venation 5-plinerved; peduncles pilosulous or sparsely so; spikes 4.5–9.5 cm long; and the bracts 0.3–0.4 mm in diameter.

There are no known subsequent collections of this species since the original ones, made on the western side of Mauna Loa in 1779 by David Nelson. Since the region has been well explored during the last hundred years, it appears that the new species here described is already extinct.

The new epithet is derived from the botanical term *plinervus* (Yuncker 1933: 11), but this is of obscure derivation. It is perhaps formed from the Greek *pleion,* more; and certainly from the Latin adjective *nervatus,* nerved.

**URTICACEAE**

**Urera konaensis** sp. nov.

**Figure 3**

**DIAGNOSIS HOLOTYFE:** Arbor 6.6 m alta dioica est, exemplo masculo cum ramulis hirsutulis pilis 0.4 mm longis, petiolis 1.5–5 cm longis hirsutulis canaliculatis, laminis 8–10 cm longis 2.5–5.5 cm latis crasse chartaceis ovatis apice acuminato basi rotundata vel cordata margini crenato sed ad basim integro supra glabris infra hirsutulis et in nervis cum pilis minutis, nervis omnino prominentibus nervis secundariis 6–9 in dimidio quoque, inflorescentia mascula 2–5 cm longa, pedunculis 1.5–3 cm longis, axibus sparse puberulis pilis 0.2 mm longis, floribus masculis sessilibus 1.2 mm longis 2 mm diametro depressi-globosis glabris, 5 lobis calycis ovatis, staminibus 5 in alabastro inflexis, antheris 0.6–0.7 mm longis 0.6–0.8 mm latis, filamentis 0.5 mm longis.

**DIAGNOSIS OF HOLOTYPE:** Tree 6.6 m tall, dioecious; staminate plant with hirsutulous branchlets, the hairs 0.4 mm long; petioles 1.5–5 cm long, hirsutulous, channeled above; blades 8–10 cm long, 2.5–5.5 cm wide, thickish chartaceous, ovate, the apex acuminate, the base rounded to cordate, the margins crenate except at base, glabrous above, hirsutulous below and the veins with minute hairs, the venation prominent on both surfaces, the secondary veins in 6–9 pairs; staminate inflorescences 2–5 cm long; peduncle 1.5–3 cm long, the axes sparsely puberulous with hairs 0.2 mm long; staminate flowers sessile, 1.2 mm long, 2 mm in diameter, oblate globose, glabrous, 5 calyx lobes ovate; the 5 stamens inflexed in the bud; anthers
FIGURE 3. *Urera konaensis* St. John, from holotype. *a*, habit of male plant, × \(\frac{1}{4}\); *b*, staminate inflorescence, × 1; *c*, staminate bud, × 15; *d*, staminate flower, × 15; *e*, staminate sepal, × 15; *f*, stamen, × 15; *g*, habit of female plant, × \(\frac{1}{4}\); *h*, pistillate flower, × 15; *i*, fruit, × 15; *j*, pistil, × 15.
SUPPLEMENTARY DESCRIPTION: Pistillate plants with the branchlets sparsely hirsutulous towards the tip; petioles sparsely hirsutulous; blades sparsely hirsutulous below; pistillate inflorescences 1.5–2 cm long, the axes sparsely puberulent with hairs 0.2 mm long; pedicels 0.5 mm long; pistillate flowers 1.2 mm long, 0.7 mm in diameter, glabrous; 5 sepals ovate, but the margins minutely laciniate at apex; stigma penicillate, exerted; fruit unknown.


DISCUSSION: U. konaensis is most closely related to U. glabra (H. & A.) Wedd., var. mollis (Wedd.) Wawra, non Wawra, a variety found on Mauna Kea, Hawaii, and it has the blades deeply serrate, and the under­surface softly pubescent on nerves and intervals, but the other details are unknown. U. konaensis has the blades crenate, the undersurface with the intervals glabrous, the midrib pilosulous, and the secondaries with fewer, shorter hairs. The holotypic sheet in the British Museum is marked on the back, “Sandwich Isl.Capt. Cook’s 2nd & 3rd Voy[ages].” Since the second voyage did not come to Hawaii, it is certain that the collection was made by David Nelson on the third voyage which did so. The specimen was labeled Hydrangeoides 2.

The new epithet is formed from the name of the Kona District, on the western side of Hawaii Island, where Nelson made his only collections.

AMARANTHACEAE

Achyranthes Nelsonii sp. nov.

Figure 4

DIAGNOSIS HOLOTYPE: Ramulis quadrangularibus sparse strigulosis deinde glabrescentibus, internodiis 3.5–5 cm longis, petiolis 3–6 mm longis marginatis ciliolatis supra glabris infra subadpressis-pilosulis, laminis 15–25 mm longis 14–20 mm latis tenuiter coriaceis obovatis vel late obovatis paginis ambis pilo­sulis pilis 0.3 mm longis suberectis vel subadpressis nervis obscuris costa infra salientia apice rotundato basi cuneata decurrenta marginibus integris, inflorescentiis 1–1.5 cm longis spicatis sessillibus terminalibus et in ramulis terminalibus, spicis 4–11 mm longis 4–8 mm diametro capitatis vel breve cylindraceis axi albi-pilosii pilis 0.7 mm longis, bractea infima 1.5 mm longa 1 mm lata persistens ovata concava acuta glabra carios a 1-nervata, braceolis florae binis 1.8–2 mm longis 1 mm latis ovati-ellipticis acutis scariosis secundum nerva sub­luteis valde carinatis et in apice subapiculatis, 5 sepalis 4 mm longis 0.8 mm latis ellipticis concavis glabris acutis subflavis, 5 staminibus cum pseudostamodiis alternis ligu latis profunde 3–4-fissis omnibus in cupula 0.9 mm longa basali connatis, partis liberis filamentarum 1.5 mm longis subulatis ligu latis, antheris 1 mm longis 0.5 mm latis, partis liberis pseudostamindii 2 mm longis 0.4 mm latis ligu latis in apice et margine profunde 3–4-lacinatis, pistilo glabo, ovariiis 0.8 mm longis subglobo­sis, stylo 1 mm longo, stigmate truncato, fructibus 1.5 mm longis 0.7 mm diametro oblongis glabris; semine 0.7 mm longo 0.5 mm diametro late ellipsoideo tetragono fere nigro apice late truncato.
FIGURE 4. *Achyranthes Nelsonii* St. John, from holotype. a, b, habit, ×1; c, bracts and flower, ×5; d, rhachis bract, ×5; e, lateral floral bract, ×5; f, outer sepal, ×5; g, androecium, ×5; h, free part of pseudostaminodium, ×10; i, fruit, ×10; j, seed, ×10.
the 5 sepals equal, 4 mm long, 0.8 mm wide, green, elliptic, narrowed to each end, navicular, scarious; androecium a membranous tube 0.9 mm long, from which the 5 filaments arise, each 1.5–2 mm long, filamentous, glabrous; anthers 1 mm long, 0.5 mm wide, oblong-elliptic, alternating with the 5 ligulate pseudostaminodia 2.5 mm long, the apex cleft 1/3 way into 3–4 subulate lobes; style 1 mm long; stigma truncate; ovary 0.8 mm long, subglobose, glabrous; fruit 1.8 mm long; seed 0.7 mm long, 0.5 mm in diameter, broadly ellipsoid, tetragonal, blackish, the apex broadly truncate.

**HOLOTYPE**: Sandwich Islands [Kona, Hawaii Island], Dav. Nelson (BM).

**DISCUSSION**: This species does not fit into any of the numerous small genera segregated from *Acbryanthus*, nor does it conform to the characters of any of the described sections of this genus. It is not really a close relative of, but it is here contrasted with, the somewhat similar species *A*. *maritima* (Mart.) Standl., a littoral species of the beaches from Florida to Brazil, and on the west coast of Africa, a species with the heads with few flowers; floral bracts mucronate; sepals 3–5-nerved; seeds 1 mm long; leaves glabrous; blades elliptic oblong to oval, 2–6 cm long, 0.8–3 cm wide. *A. Nelsonii* has the heads several flowered; floral bracts not mucronate, sepals 1-nerved; seeds 0.7 mm long; leaves pilosulous; blades obovate, 1.5–2.5 cm long, and 1.4–2 cm wide; seeds 0.7 mm long.

The new epithet is chosen to honor the collector, David Nelson, botanist of Captain Cook's third voyage.

**EUPHORBIACEAE**

*Euphorbia celastroides* Boiss., var. *Nelsonii*, var. nov.

**Figure 5**

**DIAGNOSIS HOLOTYPE**: Ramis glabris, petiolis 4–6.5 mm longis glabis, capitulis 1–2 (vel 3–5), pedunculis 3–8 mm longis gracilibus, involucris 2 mm longis glabris.

**DIAGNOSIS OF HOLOTYPE**: Glabrous shrub; branches slender; leafy branchlets bearing 5–8 pairs of spreading leaves, smooth, slightly zigzag between the nodes, the nodes 2 mm in diameter; internodes 4–15 mm long; stipules 1–2.5 mm long, ovate, the upper part and margin pale, membranous; petioles 4–6.5 mm long, fleshy, on drying striate and shrunken; principal blades 5–6.9 cm long, 8–12.5 mm wide, narrowly oblong spatulate, the apex obtuse, the base slightly oblique, auriculate, the margin entire, below the veins raised and conspicuous; cymes axillary, usually 1–2-headed, rarely 3–5-headed, the bracts opposite and like the stipules; pedicel 3–7 mm long; the inflorescence examined and measured after boiling (the shrinkage had been 10 to 20 percent); involucre 2–2.5 mm long, turbinate, glabrous, with 4 large rounded-shield-shaped glands 0.6–0.8 mm wide, and separated by a gap where a fifth one would have been; stamens many, exserted and forming a rosette around the shortly protruded ovary; stamens elongate, in bundles of about 11, united only at base, with 2–3 dwarfed stamens and many repeatedly dichotomous hirsute ciliate staminodia; staminate flowers with pedicel 2.6 mm long, sparsely pilosulous near the apex; filament 0.5 mm long, glabrous; anthers with twinned suborbicular anther sacs 0.2 mm long; pistillate flowers glabrous, with a stipe 2 mm long; ovary 1.8 mm long, 3-lobed, the three stigmas ligulate, 2-lobed; fruit unknown.


**DISCUSSION**: These specimens seem to represent an undescribed variety, to be added to the already considerable number. In Sherff's key (1938: 9) it runs to var. *haupuana*, but it scarcely resembles it. There is a greater similarity to the var. *mauiensis* Sherff, but this has the branches puberulous; petioles 1–2 mm long, puberulous; capitula mostly solitary, sessile or sub sessile; involucre outwardly pubescent; and it grows on Lanai and Maui. The var. *Nelsonii* differs by having the branches glabrous; petioles 4–6.5 mm long, glabrous; capitula 1–2 (or 3–5) in an inflorescence; peduncle 3–8 mm long, slender; involucre 2 mm long, glabrous. In leaf shape and in general aspect the new plant is very like var. *odonatoides* Sherff (1951: 55, fig. 2), but this has the branchlets thick, at first very minutely
FIGURE 5. *Euphorbia celastroides* Boiss., var. *Nelsonii* St. John, from holotype. *a*, habit, ×1; *b*, flower, ×8; *c*, stamens and bractlet, ×8; *d*, capsule, ×8.
hispidulous, 3–5 mm in diameter at the nodes; young leaves densely pubescent; principal leaves 3–6 cm long, 4–16 mm wide, the apex obtuse or truncate or even somewhat emarginate, the base very oblique; petioles 1–2 mm long, densely hispidulous; involucre densely yellowish tomentose without, sessile or on a thickish pedicel less than 1 mm long and densely hispidulous; capsule hispidulous with often stellate hairs; and it occurs on Lanai. The var. *Nelsonii* is separable by having the branchlets slender, glabrous, 2 mm in diameter at the nodes; young leaves glabrous; principal blades 5–6.9 cm long, 8–12.5 mm wide, the apex obtuse, the base slightly oblique; petioles 4–6.5 mm long, glabrous; involucre glabrous; pedicels 3–7 mm long, glabrous; and the ovary glabrous.

The type sheet bears four leafy branches from 7.5–17 cm in length. They seem to be identical, and might even have come from the same bush. However, the data indicate that the sheet bears two collections, one by David Nelson who was at Kealakekua, Hawaii, with Captain Cook, and one by Archibald Menzies who was on Captain Vancouver’s voyage. Dr. Menzies was an officer, and one of his duties was to examine the botanical productions of the lands visited. He had much liberty, made frequent shore excursions, and probably landed and made collections at each port visited by the ship on Hawaii, Maui, Oahu, Kauai, and Niihau. Unfortunately his specimens bear no other data than Sandwich Islands.

The other collector, David Nelson, was a botanist, a supernumerary in the crew of the *Discovery*, and was on Captain Cook’s third voyage. His only recorded botanizing trip in the islands was on the excursion to climb from Kealakekua to the mountain Mauna Loa. With him was John Ledyard, the Yankee who proposed the trip, and who was a marine corporal. They reported climbing for 3 days, reaching a spot in the rain forest 24 miles from the shore and 11 miles from the peak. The 24 miles climbed were obviously estimated trail miles, not airline, and the total of the 24 and 11 reveals that the distance travelled was overestimated, as they did not get beyond the rain forest. From these circumstances, it is deduced that certainly the Nelson specimens and probably the Menzies specimens came from this western part of the island of Hawaii.
FIGURE 6. *Sida Leiyardii* St. John, from holotype. *a*, habit, × 1; *b*, bud, × 4; *c*, calyx, × 4; *d*, petal, × 4; *e*, androecium, × 4; *f*, ovary, styles, stigmas, × 4; *g*, coccus, side view, × 10; *h*, coccus, distal view, × 10.
Sida Nelsonii (sect. Sida) sp. nov.

**Figures 7, 8**

**Diagnosis Holotypi:** Frutex est, ramulis obscuris et purpuraceis et remote stellati-hirsutulis pilis 0.2 mm longis, stipulis 7–8 mm longis 0.2 mm latis lineari-subulate subglabris deciduis, petiolis 9–14 mm longis stellati-hirsutulis, laminis 4–5 cm longis 3–4 cm latis crasse chartaceis ovatis vel late ovatis apice acuto basi cordata marginibus dupli-ovati-dentatis supra sparsim stellati-puberulis in midnervo et nervis secundariis infra remote stellati-hirsutulis nervis supra impressis infra elevatis fere 4 in dimidio quoque, floribus multis 2–3 in axilibus superis, pedicellis 25–35 mm longis sparsim stellati-hirsutulis saepe cum nodo 4.5–6 mm infra calycem, calycibus extra in costis et marginibus sparsim stellati-hirsutulis sed infra in lobis dense stellati-canescences pilis 0.1–0.2 mm longis flexuosis, tubo 3 mm longo 7 mm diametro in basi truncato, 5 lobis 5.5–6.2 mm longis 5 mm latis ovatis acuminatis midnervis elevatis, 5 petalis 9 mm longis 13 mm latis late cuneatis apice rotundato membranaceis ungui glabro, tubo filamentarum 4 mm longo 1 mm diametro in apice sparse stellati-puberulo apicibus filamentarum 1 mm longis 1.5 mm latis 12-loculato cum pilis paucis stellatis, calycibus in fructu 9 mm diametro, coccis siccatis 5 mm longis 3.1–3.5 mm latis 1.5 mm crassis valvis 0.7 mm longis oblate deltoides setis 1.3–1.8 mm longis erectis glabris, seminibus 1.7 mm longis 1.5 mm latis suborbicularibus compressis nigris nitidis.

**Discussion:** S. Ledyardii is a member of the section *Sida*, as is the similar species *S. Diellii* Gray, of Hawaii Island, a species with the blades ovate, finely dentate crenate; pedicels 7–8 mm long; calyces lobes ovate, subacute; dried cocci 3 mm long, 1.2 mm wide, the valves 0.8 mm long, deltoid. *S. Ledyardii* has the blades elliptic, subacute, rounded dentate; pedicels 20–37 mm long; calyxlobes deltoid; dried cocci 3.2–3.5 mm long, 2 mm wide, the valves 0.5 mm long, obliquely ovate.

The species is named for John Ledyard, a companion of David Nelson on his botanical trip on the island of Hawaii in 1779.
principal veins impressed, but salient below, secondary veins about 4 in each half; flowers abundant, 2–3 in the upper leaf axils; pedicels 25–35 mm long, often with a joint 4.5–6 mm below the base of the calyx, sparingly stellate hirsutulous; calyx very sparsely stellate on ribs and margin, subglabrate, but within densely stellate canescent on the lobes, the hair branches 0.1–0.2 mm long, flexuous, the tube 3 mm long, 7 mm in diameter, truncate at base, the 5 lobes 5.5–6.2 mm long, 5 mm broad, ovate, acuminate, the midrib elevated; 5 petals 9 mm long and 13 mm wide, broadly cuneate, the apex rounded, glabrous, membranous, the claw short;
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**Figure 8. Sida Nelsonii** St. John. Photo of type sheet. The two fruiting branches at the left are the holotype.

filament tube 4 mm long, 1 mm in diameter, sparsely stellate near the apex, the free filament tips 1 mm long, glabrous; anthers 0.5 mm long, 0.2 mm wide; stigmas capitellate; styles 13, the free portion 4 mm long, mostly more or less pendent, the basal portion 1.2 mm long, glabrous; ovary 1.2 mm high, broadly depressed conic, 2 mm in diameter, with a few scattered stellate hairs, 12-celled; fruiting calyx about 9 mm in diameter; cocci 5 mm long, bicorneate apically, the main body 3.1–3.5 mm long, 2.2–2.5 mm wide, 1.5 mm thick, valves 0.7 mm long, low, broad deltoid, awns 1.3–1.8 mm long, erect, glabrate; seeds 1.7 mm long, 1.5 mm wide, suborbicular, compressed, black, shining.

**HOLOTYPE:** Sandwich Island [= Hawaiian Islands], Messrs. Menzies & D. Nelson (BM).

**DISCUSSION:** *Sida Nelsonii* can be compared to *S. sertum* Nutt. ex Gray, a species with the calyx closely minutely stellate tomentose, the lobes acuminate; dried cocci 4.1–4.2 mm long, the valves 1–1.1 mm long, the awns 0.9 mm long; young shoots densely stellate tomentose; blades 1.5–3.4 cm long, elliptic ovate, obtuse. *S. Nelsonii* has the calyx very sparsely stellate on ribs and margins, subglabrate; dried cocci 5 mm long, the valves 0.7 mm long, the awns 2–2.5 mm long; young shoots with scattered stellate hairs; blades 4–5 cm long, ovate to broadly ovate, acute.

The holotypic sheet contains two branches with many fruits, but almost leafless; and one leafy fruiting branch. The data, Sandwich Island. Menzies and Nelson, indicate that there were two collections, but do not mark them. Nelson’s collection must have been from Kona, Hawaii. Menzies collected on all the major Hawaiian Islands, including Hawaii, so his plant may also have come from Kona, Hawaii, but it cannot be proven. The two left-hand specimens on the sheet are here made the holotype. The writer thinks that they were collected.
FIGURE 9. Labordia Nelsonii St. John, from holotype. a, habit, × 1/3; b, nodes, petioles, and stipule, × 2; c, fruit, × 2.

by Nelson. He was botanist on the *Discovery* on Captain Cook’s third voyage.

LOGANIACEAE

*Lobordia Nelsonii* sp. nov. (sect. Rabdolia)

Figure 9

**Diagnosis Holotypi:** Planta lignosa 1 m alta est, novellis quadrangularibus albi-hirsutis, ramulis vetustioribus glabris teretibus laevibus subluteis, nodis incrassatis, internodis 1.1–5 cm longis, stipulis intrapetiolaribus connatis et ocream 3–4 mm altam glabrem infundibuliformem bifidem formantibus, petiolis 10–15 mm longis compressis vadose canaliculatis supra glabris in marginibus et infra sparse hirsutulis, laminis 7–9.5 cm longis 2.5–3.9 cm latis coriaceis oblaneolatis apice rotundato subacuto basi anguste cuneato longe decurrenti nervis supra obscuris sed infra evidentis, nervis secundariis 4–5 in dimidio quoque curvatis ascendentibus supra obscure viridibus glabris infra pallide viridibus et sparse hirsutis, cymis 4–8-floriferis densis terminalibus 2.2–2.5 cm longis, bracteis 4–5 mm longis 0.4 mm latis linearibus sparse hirsutuli-ciliatis, pedicellis 4–6.5 mm longis hirsutis, calycibus cum 5
sepals 15–17 mm longis 3–3.7 mm latis angustissime elliptics crebre 5-nervosis in basi hirsutis et sursum midnervum remote in midnervo hirsuto intra glabris, in bordinibus in dimidio infero minute ciliolatis, capsulis 22 mm longis 8 mm latis lanceolatis compressis ecarinatis erostratis dense subadpressae hirsutis, floribus incognitis.

**DIAGNOSIS OF HOLOTYPE:** Woody plant 1 m tall; young branchlets quadrangular, white hirsute, the older branchlets glabrate, terete, smooth, yellowish; nodes enlarged; internodes 1.1–5 cm long; stipules intrapetiolar, united and forming a sheath 3–4 mm high, glabrous, funnelform, but 2-notched, one in each interval; petioles 10–15 mm long, flattened, shallowly channeled, and glabrous above, sparsely hirsutulous on the margins and the lower side; blades 7–9.5 cm long, 2.5–3.9 cm wide, coriaceous, obovate, the apex rounded, then abruptly subacute, the base narrowly cuneate, long decurrent, venation rather obscure above, but distinct below, the lateral veins 4–5 in each half, curved ascending, above dark green, glabrous, below pale green and sparsely hirsute; cymes 4–8-flowered, terminal, dense, 2.2–2.5 cm long; bracts 4–5 mm long, 0.4 mm wide, linear, sparsely hirsutulous ciliate; pedicels 4–6.5 mm long, hirsute; calyx of 5 subequal sepals 15–17 mm long, 3–3.7 mm wide, very narrowly elliptic; immature capsules 22 mm long.

The new species is like *L. pumila* (Hbd.) Skottsbg. in lacking a style, but is very unlike it in most other details.

The new epithet is chosen to honor the collector, David Nelson.

**LABIATAE**


**Figure 10**

**ORIGINAL DIAGNOSIS:** “pubescens vel hirsuta, foliis ellipticis amplis basi rotundatis angustissimis, cymis axillaris laxe ramosissimis multifloris hirsutissimis, calycibus hirsutis, dentibus linearibus tubo subaequilongis, corollis calyces breviter superantibus.


**EXPANDED DIAGNOSIS OF HOLOTYPE:** Shrub; leafy branchlets 2–4 mm in diameter; branchlets quadrangular, unisulcate on each face, the angles rounded, hirsute, the hairs arcuate to subappressed; internodes 2.3–5.8 cm long; petioles 2–4.5 cm long appressed hirsutulous; blades 7.5–13 cm long, 5–6 cm wide, elliptic, the apex acute, the base shortly cuneate, above and below hirsutulous on the veins, the intervals below rather densely dotted with minute, golden brown oil glands, the margin crenate,
with about 3 teeth per cm, the venation prominent below, about 8 secondary veins in each half, curved ascending; inflorescence axillary, paniculate, 3–6.5 cm long, and all the axes white hispid; peduncles 8–15 mm long; bracteoles 3.5–6.5 mm long, 0.7–2.5 mm wide, foliaceous, obovate to ob lanceolate, villous-hispid; pedicels 4–8 mm long, hispid; calyx in flower 5–6.5 mm long, 1.5–2 mm in diameter, campanulate, hispid and glandular atomiferous without, glabrous within, the lobes 1 mm long, subulate, the tube 3.5–4 mm long; corolla glabrous, the tube 7 mm long, 1 mm in diameter, mostly straight, then near the throat slightly decurved, the limb 4-lobed; the lower lip 3 mm long, 2 mm wide, broadly elliptic, the
2 lateral lobes 2 mm long and wide, suborbicular; the upper lobe 2.5 mm long and wide, broadly elliptic; the 2 upper longer stamens with the filaments adnate to the corolla tube up to the throat, the free tips 3 mm long, subulate, sparsely pilosulous; anthers 0.5 mm long, dimidiate; the 2 lower stamens with filaments 0.5 mm shorter, similar, but on the example seen the anthers have fallen; ovary 1 mm long, 4-lobed, dark; style 7 mm long, stout subulate; stigmatic lobes 2 and 0.2 mm long, diverging; calyx in fruit 6–7 mm long, 4–5 mm in diameter, broadly campanulate, the lobes 2.5–3 mm long, 0.6–0.7 mm wide; nutlets 2.1–2.3 mm long, 0.8–1 mm wide and thick, narrowly ellipsoid, smooth, blackish, with a sharp angle between the two inner faces; hilum 0.6 mm long, at the base of the inner ridge, pale, like a flattened ellipse.

**HOLOTPUS:** In ins. Sandwich [Kona, Hawaii Island], Nelson (BM).

**DISCUSSION:** Under this present treatment it is evident that *P. ftoribunda* is known only by the holotype, from the western slope of Hawaii Island. The specimens from eastern Hawaii, listed by Sherif (1935: 55) as *P. ftoribunda*, are now removed and classified as *P. villosa* St. John.

**Phyllostegia Forbesii** (Sherif) comb. nov.


Figure 11

**ORIGINAL DIAGNOSIS:** "Caulis infra sparsim supra dense brevi-hispidus setulis minutis erecto-adpressis. Folia supra sparsim ac breviter adpresso-hispidula, infra secundum venas subadpresso-pubescentia alibi glabrata sed numerosissime ac minutissime resinoso-punctulata. Inflorescentiae pili breviores, saepe glandulosae-capitati; calyce dimidio minore, valde resinoso-glandulosi."

**EXPANDED DIAGNOSIS OF ISOTYPES:** Upright shrub 6–11.5 dm tall; leafy branchlets 1–6 mm in diameter, quadrangular, with rounded angles and broad shallow intervening valleys, curved ascending white puberulous; internodes 5–10.5 cm long; nodes enlarged; internodes 5–10.5 cm long; nodes enlarged; leaf scars 2–5 mm wide, lunate, stramineous; bundle scar single, large, central; petioles 3–8 cm long, slender, channeled above, curved ascending white puberulous; blades of main stems 13–22 cm long, 6.3–11 cm wide, lance-elliptic, the apex acute, the base rounded, texture chartaceous, above and below sparsely appressed puberulous on the surface and densely so on the principal veins, above dark green, below pale green, the margins crenate, with 2–3 teeth per cm, the venation evident on both sides, secondary veins 5–8 in each half, curved ascending; inflorescences axillary, racemose (rarely paniculate), usually 1, rarely 2 per axil, 4–8 cm long, 20–25 mm in diameter, white hirsutulous, the hairs at first capitulate glandular; bracts 2–4 mm long, elliptic, foliaceous; peduncles 1–2 cm long; pedicels 6–9 mm long; calyx in flower 4.5 mm long, reddish, cylindrical campanulate, 1 mm in diameter at the throat, capitulate glandular hirsutulous and densely resinous atomiferous, the tube 3–3.5 mm long; the lobes 1 mm long, narrowly deltoid, ascending; corolla with the throat and upper portion red, the lower part of the tube white; corolla tube 7 mm long, arcuate decurved, 1.5 mm in diameter at the throat; the limb 4-lobed, gland-dotted; the lower lip 3 mm long, oblong suborbicular; the 2 lateral lobes 1.8 mm long, 2.5 mm wide, rounded oblong, the upper lobe 2 mm long, 3 mm wide, oblate suborbicular, the 2 longer stamens with their filaments adnate to the corolla tube for 3 mm, the free tips 2 mm long, filamentous, glabrous; anthers 0.7 mm long, glabrous; calyx in fruit 4.5–5 mm long, subglobose; dry nutlets 3–3.2 mm long, 1.5–1.7 mm wide, 0.6–0.7 mm thick, blackish brown, ellipsoid, with the 2 radial faces flat and a sharp inner angle.

**HOLOTPUS:** Hawaiian Islands, Hawaii Island, Kona, Kaalapuuwale [= Kealapuali], June 30, 1911, C. N. Forbes 294.H. (mo). Three isotypes (bshs) examined.

**DISCUSSION:** *P. Forbesii* is mostly closely related to *P. floribunda* Benth., a species with the inflorescences paniculate, white hispid; pedicels 4–8 mm long; calyx in flower 5–6.5 mm long,
Figure 11. *Phyllostegia Forbesii* (Sheff) St. John, from isotypes. *a*, habit, $\times$ \(\frac{1}{4}\); *b*, flower, $\times$ 3; *c*, corolla throat and lobes, $\times$ 3; *d*, fruiting calyx, $\times$ 3; *e*, stamens, $\times$ 5; *f*, pistil, $\times$ 5; *g*, *h*, seed, $\times$ 5.
Phyllostegia Ledyardii

**Phyllostegia Ledyardii** sp. nov. (sect. *Phyllostegia*, subsect. *Holopyllae*)

**Figure 12**

**DIAGNOSIS HOLOTYPI**: Ramulis omnibus quadrangularibus pilosulis pilis 0.5 mm longis, nodis densioriter pilosulis pilis 0.7 mm longis, petiolis 1–5 cm longis albi-pilosis et pilosulis, laminis 3–8.5 cm longis 2–6 cm latis tenuiter chartaceis ovatis cordatis apice acuta paginis ambis glandulosi-atomiferis et pilosulis sed infra densioriter pubescentibus nervis uterque densioriter pubescentibus, costa infra salientia, nervis secundariis infra subincrassatis in 5 jugis marginibus serrati-crenatis 3–4-dentatis per cm, racemis terminalibus 10–16 cm longis sparse pilosulis et glandulosis, pedunculis 3–3.5 cm longis (racemis secundariis 3.5–11 cm longis), verticellis 7–12, internodis 1–2 cm longis, nodis 6–12 floriferis, bracteis foliosis oblanceolatibus stipitatis ad apicem reductis in nodis inferioribus calycis superantibus, pedicels 2–5 mm longis gracilibus, calycibus in flore 4.5–5 mm longis tubo 3–4 mm longo 1.9–2.2 mm

**Phyllostegia Forbesii** has the inflorescences racemose (rarely paniculate), capitata glandular hirsutulous; pedicels 6–9 mm long; calyx in flower 4.5 mm long, 1 mm in diameter, capitata glandular hirsutulous and resinous atomiferous, the tube 3–3.5 mm long, the lobes narrowly deltoid; calyx in fruit 4.5–5 mm long, the lobes 1 mm long; corolla with lateral lobes 1.8 mm long, 2.5 mm wide, the upper lobe 2 mm long, 3 mm wide; free filament tips 2 mm long, glabrous; dry nutlets 3–3.2 mm long; stem curved ascending white puberulous; petioles 3–8 cm long, puberulous; major blades 13–22 cm long, above and below appressed puberulous.

**Phyllostegia Ledyardii** sp. nov. (sect. *Phyllostegia*, subsect. *Holopyllae*)

**Figure 12**

**DIAGNOSIS HOLOTYPI**: Ramulis omnibus quadrangularibus pilosulis pilis 0.5 mm longis, nodis densioriter pilosulis pilis 0.7 mm longis, petiolis 1–5 cm longis albi-pilosis et pilosulis, laminis 3–8.5 cm longis 2–6 cm latis tenuiter chartaceis ovatis cordatis apice acuta paginis ambis glandulosi-atomiferis et pilosulis sed infra densioriter pubescentibus nervis uterque densioriter pubescentibus, costa infra salientia, nervis secundariis infra subincrassatis in 5 jugis marginibus serrati-crenatis 3–4-dentatis per cm, racemis terminalibus 10–16 cm longis sparse pilosulis et glandulosis, pedunculis 3–3.5 cm longis (racemis secundariis 3.5–11 cm longis), verticellis 7–12, internodis 1–2 cm longis, nodis 6–12 floriferis, bracteis foliosis oblanceolatibus stipitatis ad apicem reductis in nodis inferioribus calycis superantibus, pedicels 2–5 mm longis gracilibus, calycibus in flore 4.5–5 mm longis tubo 3–4 mm longo 1.9–2.2 mm

**Phyllostegia Ledyardii** sp. nov. (sect. *Phyllostegia*, subsect. *Holopyllae*)

**Figure 12**

**DIAGNOSIS HOLOTYPI**: Ramulis omnibus quadrangularibus pilosulis pilis 0.5 mm longis, nodis densioriter pilosulis pilis 0.7 mm longis, petiolis 1–5 cm longis albi-pilosis et pilosulis, laminis 3–8.5 cm longis 2–6 cm latis tenuiter chartaceis ovatis cordatis apice acuta paginis ambis glandulosi-atomiferis et pilosulis sed infra densioriter pubescentibus nervis uterque densioriter pubescentibus, costa infra salientia, nervis secundariis infra subincrassatis in 5 jugis marginibus serrati-crenatis 3–4-dentatis per cm, racemis terminalibus 10–16 cm longis sparse pilosulis et glandulosis, pedunculis 3–3.5 cm longis (racemis secundariis 3.5–11 cm longis), verticellis 7–12, internodis 1–2 cm longis, nodis 6–12 floriferis, bracteis foliosis oblanceolatibus stipitatis ad apicem reductis in nodis inferioribus calycis superantibus, pedicels 2–5 mm longis gracilibus, calycibus in flore 4.5–5 mm longis tubo 3–4 mm longo 1.9–2.2 mm
lato extra pilosulis et glandulosi-atomiferis intra glabris, lobis 1.5–2.2 mm longis 0.7–1.2 mm latis deltoidei-lanceolatis acutis extra et infra pilosulis, corollis valde bilabiatis extra pilosulis et glandulosi-punctatis, labia infera tripartita lobis lateralisibus 2.5–2.7 mm longis latisque rotundatis loba infera 3.5 mm longa 4 mm lata semiorbiculari lobis intra glabris, labia supera 2.7 mm longa et lata rotundata, tubo 9–11.5 mm longo 2–2.5 mm diametro ad orificem exiguiter dilatato intra lanuloso, filamentis minute capitati-glandulose pubescentibus, filamentis binis proximis 2.5 mm longis, loculis antherarum 0.5 mm longis 0.3 mm latis ovalibus glabris, stylo et stigmati 7.5 mm lono glabro, ovario 0.5 mm longo 0.7 mm lato depresso-globoso nigro glabro, nuculis 2 mm longis 1 mm latis in sectio late deltoideis nigris pagina dorsali 1–1.7 mm latis, calycibus in fructu 6–7 mm longo.

**DIAGNOSIS OF HOLOTYPE:** Branchlets all quadrangular, the angles rounded, the faces deeply unisulcate, pilosulous with hairs about 0.5 mm long; nodes more densely pilosulous with hairs 0.7 mm long; petioles 1–5 cm long, canaliculate on the upper side, white pilose and pilosulous; blades 3–8.5 cm long, 2–6 cm wide, thin chartaceous, ovate, cordate, acute at apex, both surfaces glandular atomiferous and pilosulous, more densely so beneath, the venation more densely pubescent on both faces, secondary vein branching immersed above, slightly salient below, in about 5 pairs, the margins serrate-crenate, with 3–4 teeth per cm; inflorescences racemose, terminal, the major ones 10–16 cm long, but the secondary ones from the axils of the uppermost vegetative nodes 3.5–11 cm long, all axes pilosulous and sparingly glandular; verticels 7–12; internodes 1–2 cm long, with 6–12 flowers at each node; peduncle 3–3.5 cm long; bracts foliose, oblanceolate, stipitate, at the lower nodes exceeding the calyx, but progressively smaller upwards; pedicels 2–5 mm long, slender; calyx in flower 4.4–5 mm long, narrowly campanulate, the tube 3–4 mm long, 1.9–2.2 mm in diameter, with many strongly raised veins, pilosulous and glandular atomiferous without, glabrous within, the lobes 1.5–2.2 mm long, 0.7–1.2 mm wide, deltoid lanceolate, acute, pilosulous on both sides; corolla strongly bilabiate, the lower lip tripartite; lateral lobes 2.5–2.7 mm long and wide, rotund; central lobes 3.5 mm long, 4 mm wide, semiorbicular; upper lip 2.7 mm long and wide, rotund; the tube 9–11.5 mm long, 2–2.5 mm in diameter, flaring slightly apically; corolla pilosulous and gland-dotted externally, glabrous within on the lobes but lanulose in the tube; stamens with minute capitate glandular pubescence on the filaments, the proximal pair with filaments 2.5 mm long, the other pair 3 mm long; anther cells 0.5 mm long, 0.3 mm wide, oval, glabrous; stigma glabrous; style 7.5 mm long, glabrous, included; ovary 0.5 mm long, 0.7 mm wide, depressed globose, black, glabrous; calyx in fruit 7 mm long, obconic; nutlets 2 mm long, 1 mm wide, dark, broadly triangular in cross section, the dorsal face 1.5–1.7 mm wide.

**HOLOTPUS:** Sandwich Island [Hawaii Island, slopes of Mauna Loa above Kealakekua, 1779, on Captain Cook’s third voyage], Dav. Nelson (BM).

**DISCUSSION:** The most similar species is *P. stachyoides* Gray, var. *stachyoides*, of Maui and Hawaii, which may be recognized by having the blades 6–13 cm long, 3–8 cm wide, firm chartaceous, lance-ovate to oblong-lanceolate, the base rounded to subcordate, the apex cuspidate, acute to acuminate; whorls of inflorescence 10–14-flowered; pedicels 2–7 mm long; calyx 5–6.5 mm long in anthesis, cuneate basally, the lobes subulate, and the corolla tube 5–9 mm long, almost straight. On the other hand, *P. Ledyardii*, of the western slope of Hawaii, may be known by its blades 3–8.5 cm long, 2–6 cm wide, thin chartaceous, ovate, the base cordate, the apex acute, acuminate; whorls of inflorescence 6–12–flowered; pedicels 2–5 mm long; calyx 4.5–5 mm long in anthesis, truncate basally, the lobes deltoid lanceolate; and the corolla tube 9–11.5 mm long, curved throughout at about 15°.

The species is doubtless now extinct, being known only from the single collection made in 1779 by the Mouna Roa (Mauna Loa) expedition. John Ledyard, a Connecticut Yankee, corporal of the marines, was in command of the shore party on the beach of Karakakooa
(Kealakekua) Bay. He initiated the expedition and took part in the 5-day exploration of the rugged, forested slope of the snow-capped volcano. Without his initiative the botanical discoveries would have been few indeed. This new species is named in tribute to John Ledyard.

**Phyllostegia longimontis** sp. nov. (subsect. Holophylla)

**Figure 13**

**DIAGNOSIS HOLONOTYPE:** Ramulis quadrangularibus glabris, petiolis 2–3.5 cm longis gracilibus glabris supra profunde sulcatis, lamonis 6.5–10 cm longis 3.5–5.2 cm latiss chartaceis elliptici-obovatis apice abrupte breve acuminato basi acuto vel cuneata marginibus serratis supra costa adpressi-puberulenta cetera glabris nervis infra prominentibus, racemis terminalibus, nodis floriferis 5–10, internodis 17–45 mm longis, internodis supra strigulosis infra glabrescentibus, floribus 10–16 in verticillis, pedunculis 1–2 mm longis crassis deltoideis vel ligulatis 4–8-floriferis, pedicellis 7–15 mm longis filiformibus sparse strigulosis, calycin in flore 7 mm longis extra sparse adpressi-strigulosis valde multi-costatis in basi rotundatis in infra glabris, tubo 4–5.5 mm longo 3.5–4.5 mm diametro anguste campanulato in orifici pauc dilatato, lobis 5 et 1.2–2 mm longis 1–1.5 mm latiss ovatis late obtusis, tubo corollae 8.5 mm longo in basi 1.5 mm diametro in orifici 3 mm diametro et dilatato extra striguloso infra puberulenti, lobis corollae 4 lateralibus 2 cilio-latis, lobis lateralisibus 3 mm longis 3–3.5 mm latiss rotundatis, loba proxima 4 mm longa 4–6 mm lata subrotundata, loba distali 4 mm longa et lata rotundata lobis lateralibus et distalibus connatis labia infera 6–7 mm longa, lobis lateralibus binis 3 mm longis 3–3.5 mm latiss suborbicularibus, loba distali 4 mm longa et lata suborbiculari, staminibus 4, filamentis infra puberulentibus supra capitati-glandulosi-puberulentibus, filamentis jugalis proximis 12 mm longis liberis 4.5 mm alteris 11 mm longis sed liberis 5.5 mm, connectivis capitati-glandulosi-puberulentibus, pistulis glabris, ovariiis 1.8 mm alitis in apice 2 mm diametro in basi palae angustioribus, stylo 11 mm longo, 0.6 mm diametro subulato, stigmatibus bifidis ramulis brevibus truncatis, fructubus ignotis.

**DISCUSSION:** This new species is related to the well-known *P. glabra* (Gaud.) Benth., var. *Macraei* (Benth.) Sherif, which is abundant on Oahu, and rare on Lanai and Maui. This variety
Figure 13. *Phyllostegia longimontis* St. John, from holotype. 

- **a**, habit, ×1/2;  
- **b**, flower, ×3;  
- **c**, corolla throat and lobes, ×3;  
- **d**, stamens, ×5;  
- **e**, pistil, ×5.
is known by being wholly glabrous; blade base rounded (or less commonly subcordate to widely cuneate); flowers constantly 6 per whorl, each axil with 3 on a common filiform peduncle 4–8 mm long, with subulate, persistent bracts 1.5–2 mm long; pedicels 3–11 mm long; calyx tube 2–3 mm long; calyx lobes 1–2 mm long, narrowly deltoid, acute; filaments puberulous below, glabrous above. *P. longimontis* differs by being somewhat hairy, the blades appressed puberulent above on the midrib, the base cuneate; raceme sparsely strigulose in the upper portion; flowers 10–16 per whorl, with 4–8 in each axil on a thick deltoid or ligulate common peduncle 1–2 mm long, bearing subulate, puberulent, caducous bracts 0.7–1.5 mm long; pedicels 7–15 mm long, sparsely strigulose; calyx tube 4–5.5 mm long, sparsely appressed strigulose; calyx lobes 1.2–2 mm long, ovate, broadly obtuse; corolla glandular pubescent on the upper portion; and the anther connective capitade glandular pubescent.

The species has not been collected since 1779, and is now evidently extinct.

The new epithet is coined from the Latin *longus*, long; and *mons*, mountain, and it refers to the type locality, on Mauna Loa, which is Hawaiian for mountain long.

*Phyllostegia villosa* sp. nov. (sect. *Lateriflorae*)

*P. floribunda* sensu Sherff, excl. typus, non Benth, 1835.

**Figure 14**

**DIAGNOSIS HOLOTYPHE**: Frutex est, ramulis 2–3 mm diametro quadrangularibus dense albihirsutis, caule principali 3–4 mm diametro quadrangulari angulis rotundatis lateribus sulcatis dense albi-hirsutis, nodis paullo incrassatis, internodis 2.5–4 cm longis, petioliis 3.6–4.3 cm longis dense adscendentibus albi-hirsutis, laminis 10–13.6 cm longis 4.8–5.5 cm latis lati lanceolati apice acuto basi rotundata subtilliter crenatae super obsoleta viridibus et hirsutulis et in nervis principaliibus dense hirsutulis infra pallide viridibus et molliter puberulis marginibus crenulatoris nervis secundarioribus 8–10 in dimidio quoque curvatibus adscendentibus, laminis infra copiose resinosis-atomiferis, racemis 3.5–6 cm longis 1–2 in axi quoque plerumque in ramis verustioribus nudis, pedunculis 6–9 mm longis, rachidibus et pedicellis dense albi-hispis et copiose resinosis-atomiferis, nodis omnibus cum 2 floribus, pedicellis 6–9 mm longis, bracteis 4–7 mm longis lanceolatis foliacesis, calycibus in flore 7.5–8 mm longis copiose resinosis-atomiferis et albi-hispis ab initio pilis glandulosi-capitatis, lobis 3–4 mm longis anguste lanceolatis, tube in flore anguste cananulato, corollis 16 mm longis bilabiatis 4-lobatis tubo 10 mm longo subtubuloso et in fauce 3 mm diametro labia inferiori 4 mm longa 5 mm lata suborbiculari, 2 lobis lateralis 4 mm longis 3 mm latis ovatis, labia superiores 4 mm longa et lata suborbiculari emarginata, staminibus 4 in jugis binis subaequalibus, filamentis 9 mm longis subulatis in parte 2/3 inferiori compressis, antheris 0.8–1 mm longis breviter bifidis, ovario 1.2 mm longo ellipsoideo profunde 4-lobatum, calycibus in fructu majoribus hemisphaericis, nucleis 2.9–3.2 mm longis 1.9–2.2 mm latis 1.3–1.7 mm crassis subnigris exlucidis.

**EXPANDED DESCRIPTION**: Suffrutescent and 3–6 dm tall; leafy branches 3–4 mm in diameter, quadrangular, with broad rounded angles and deep intervening valleys, densely white hirsute; internodes 1–4.5 cm long; petioles 3–6.5 cm long; densely ascending white hirsute; blades 10–15 cm long, 4.5–8 cm wide, lanceolate to ovate, broadly obtuse; corolla glandular pubescent on the upper portion; the anther connective capitade glandular pubescent.

The new species has not been collected since 1779, and is now evidently extinct.

The new epithet is coined from the Latin *longus*, long; and *mons*, mountain, and it refers to the type locality, on Mauna Loa, which is Hawaiian for mountain long.

- **a**, habit, × ½;  
- **b**, blade underside, × 2;  
- **c**, flower, × 3;  
- **d**, corolla throat and lobes, × 3;  
- **e**, pistil, × 5;  
- **f**, stamen, × 5;  
- **g**, fruiting calyx, × 3;  
- **h, i**, seeds, × 5.
Hemispheric; corolla 16 mm long, dark magenta or pinkish, bilabiate, 4-lobed, the tube 10 mm long, subtubular, 3 mm in diameter at the throat; lower lip 4 mm long, 5 mm wide, suborbicular; 2 lateral lobes 4 mm long, 3 mm wide, ovate; upper lip 4 mm long and wide, suborbicular, emarginate; stamens in 2 pairs, only slightly unequal in length; filaments 9 mm long, subulate, flattened in the lower 2/3; anthers 0.8–1 mm long, dimidiate; style 8 mm long, filamentous; stigma 0.8 mm wide, shortly bifid; ovary 1.2 mm long, ellipsoid, deeply 4-lobed; peduncles 2.5–5 mm long, these and all the axes densely villous-hispid; bracteoles 3.5–6.5 mm long, villous-hispid, obovate to oblanceolate; calyx in anthesis 5–6.5 mm long, villous hispid with hairs at first capitulate glandular, and atomiferous glandular without, the tube 0.6–0.7 mm wide, the lobes 2.5–2.7 mm long, in fruit the calyx 6–7 mm long, the tube semi-orbicular; corolla strigulose, and at tip villous hispid and apically glandular without.

The collections cited above were studied by Sherff, and in his monograph of the genus (1935: 55) were classified as *P. floribunda* Benth. Since they differ from that species in numerous details, they are here removed and made a distinct species.

The new species is named *villosa*, because of its villous pubescence.

**Stenogyne biflora** (Sherff) comb. nov. (sect. Sarmentosae)


**Figure 15**

**Original Diagnosis:** “Folia numerosa, quam internodia longiora, lamina rotundato-ovata, basi subcordata, apice obtusa, supra sparsim infra paulo densius adpresso-hispidia, 2.5–3.7 cm. longa et 1.8–2.8 cm. lata. Vertilastra biflora, pedicellis pubescentibus. Calyx usque ad 1.2 cm. longus, lobis plus minusve obtusis. Corolla non visa. Achaenia oblongo-cuneata, apice irregulariter corniculata, circ. 4 mm. longa.”

**Description of Nelson Specimen:** Branchlets sharply 4-ribbed-quadrangular, sparingly hispidulous on the faces, the angles marginate,
with remote ascending spinelike hairs; nodes hispid; petioles 2–4 mm long, deeply canaliculate above, long hispid ciliate on the margins; blades 2.2–3.1 cm long, 1.5–2.1 cm wide, ovate, above sparsely hispid, below sparsely hispidulous, then glabrate, the apex acute, the base cordate, the margins crenate-dentate, venation impressed above, salient below, secondary veins 4–6 in each half, curved ascending and inarched interconnecting; flowers 1–3 in each of the upper axils; pedicels 2–7 mm long, hispidulous; calyx in flower with the tube 4–6 mm long, 3 mm wide, ob lanceoloid, sparsely hispid without, strigose within, the 5 lobes 2–6 mm long,
irregular, sparsely hispid without, strigose within; proximal lobe 2 mm long, 1.5 mm wide, the other lobes 5–6 mm long, 2 mm wide; corolla 22–28 mm long, densely hispidulous without, glabrous within, the tube 12–22 mm long, 1.5 mm in diameter at base, 6–7 mm in diameter at the throat, decurved at about 50°, the lobes unequal, and the lateral ones particularly variable in shape; proximal lobe 5.5–8 mm long, 4 mm wide, oval to oblong oval, truncate to rounded apically; lateral lobes 2.5–5 mm long, 2.5–3 mm wide, ovate to oblong-ovate, obtuse; distal lobe 3–4.5 mm long, 2–4 mm wide, ovate to suborbicular; proximal pair of stamens with filaments 6–9.5 mm long, 0.4 mm in diameter, sparsely hispid on the enclosed parts; distal stamens with filaments 7–10.5 mm long; anthers 4.5 mm long, glabrous, the cells superposed; ovary 7 mm high, 7 mm in diameter, glabrous; style 25 mm long, glabrous; stigma 1 mm long, unilateral, geniculate at right angles to the style; calyx in fruit accrescent, subglobose, the tube 6–7 mm wide; nutlets 3.5–4 mm long, 2.5 mm wide, 2 mm thick, glabrous, smooth, dark, triangular in cross section. (Color of the corolla not evident.)

**Stenogyne hirsutula** sp. nov. (sect. Sarmentosae)

**Figure 16**

**Diagnosis** of **Holotype:** Liana 7 m longa est, ramulis 2–3 mm diametro glabris primo 4-angulosis demum teretibus laevibus pallide subbadiis, nodis incrassatis, internodis 1.2–6.8 cm longis, petiolis 15–22 mm longis gracilibus supra canaliculatis, laminis fere 3.8–4 cm longis 2.1–2.8 cm latis ellipticis basi rotundata marginibus remote apiculati-serrulatis vel denticulatis crasse chartaceis supra obscure viridibus remote albi-hispidis nervis depressis infra viridibus remote albi-hispidis nervis elevatis prominentibus nervis lateralis 3–4 in dimidio quoque curvatis adscendentibus et interconnectis, floribus ex axilibus foliosis 6 in verticilli quoque, pedicellis 12–14 mm longis graciilibus glabris, “floribus rubris,” calycibus in fructu 7 mm longis suborbicularibus remotiore hirsutis sed in aspectu glabro, 5 lobis 2.5 mm longis deltoideis intra albi-hirsutulis, nuculis 3.3 mm longis 2.3–2.8 mm latis 1.5 mm crassis tetracarpicis obscuris laevibus.

**Diagnosis of Holotype:** Known only from a poor, battered specimen, showing stems, parts of three leaves, and five fruiting calyces. Vine 7 m long; branchlets seen 32 cm long, 2–3 mm in diameter, glabrous, at first 4-angled, later terete, smooth, pale brownish; nodes enlarged; internodes 1.2–6.8 cm long; petioles 1–1.5 mm long; corolla tube 8–9 mm long; filaments almost glabrous; and the anthers 1 mm long. **S. biflora**, of the Kona side of Hawaii, differs by having the petioles 2–4 mm long, long hispid on the margins; blades above sparsely hispid, glabrate, below sparing hispidulous, the base cordate, the margins crenate-dentate; pedicels 2–7 mm long, hispidulous; calyx sparsely hispid without, the lower lobes 4–6 mm long; corolla tube 12–22 mm long; filaments sparsely hispid below; and the anthers 4.5 mm long.

Because of the numerous and significant differences from **S. scrophularioides**, the var. **bijlora** is here raised to specific status, as **S. bijlora**.
15–22 mm long, slender, glabrous, channeled above; blades about 3.8–4 cm long, 2.1–2.8 cm wide, elliptic, the base rounded, the margins remotely apiculate serrulate or denticulate, thick chartaceous, above dark green, remotely white hispid, the veins impressed, below green, remotely white hispid, the veins raised and prominent, the lateral veins 3–4 in each half, curved ascending and interconnected; flowers borne from the leafy axils, 6 in each whorl; pedicels 12–14 mm long, slender, glabrous; “flowers red,” calyx in fruit 7 mm long, suborbicular, very remotely hirsute, appearing glabrous; the 5 lobes 2.5 mm long, deltoid, white hirsutulous within; nutlets 2.3 mm long, 2.3–2.8 mm wide, 1.5 mm thick, tetraspheric, dark, smooth.

HOLOTYPUS: O-whai-hee [Hawaiian Islands, Hawaii Island, west slope of Mauna Loa], in montibus, planta volubilis saepe 20 pedes, fl. rubri, David Nelson (BM).

DISCUSSION: S. hirsutula is most similar to S. scrophularioides Benth., var. scrophularioides, of Hawaii Island, a species with the young stems retrorsely setose; petioles 7–15 mm long; blades 2.5–3.7 cm long, ovate, mostly subpedately 3–(5)-lobed, more or less ciliate; calyx in fruit about 6 mm long, the lobes glabrous. S. hirsutula has the stems glabrous; petioles 15–22 mm long; blades about 3.8–4 cm long, elliptic; calyx in fruit 7 mm long, the lobes white hirsutulous within.

S. hirsutula also resembles S. rotundifolia Gray, var. rotundifolia, of eastern Maui, a species with the internodes spreading hirsute; petioles 8–18 mm long, hirsute; blades 2–3.8 cm long, ovate-orbicular, the margins crenate denticulate; calyx hirsutulous without, glabrous within; nutlets 4 mm long. S. hirsutula has the internodes glabrous; petioles 15–22 mm long, glabrous; blades 3.8–4 cm long, elliptic, the margins remotely apiculate-serrulate or denticulate; calyx remotely hirsute without, the lobes white hirsutulous within; nutlets 3.3 mm long.

The new epithet is given with reference to the hirsutulous calyx lobes.
Clermontia konaensis sp. nov. (sect. Clermontioides)

Figure 17

DIAGNOSIS HOLOTYPI: Frutex est, ramulis glabris 5-8 mm diametro, petiolis 25-33 mm longis glabris vel ad apicem in lateres inferioriis sparse pilose angustis marginatis, laminis 12-17 cm longis 2-3 cm latiss chartaceis linear-oblanceolatis apice acuto cum mucroni minuto basi longe decurrenti margini minuto denticulato dentibus plerumque mucronulatis nervis supra subobscuris infra prominentibus, laminis supra glabris infra in costa et nervis secundariis sparse hirtellis costa glabrescenti, inflorescentiis axillaris 2-floriferis, pedunculo 28-31 mm longo glabro vel sparse hirsutulo, pedicellis fere 26-32 mm longis sparse hirsutulis, bracteolis 2.2 mm longis 0.4 mm latis lineari-oblanceolatis acuminatis supra pilosis, corolla 45 mm longa glabra, tubo filamentarum 37 mm longo glabro, antheris superioribus 15 mm longis, antheris inferioribus 12 mm longis at apex penicillatis cum pilis 1.5 mm longis, fructu immaturo 9 mm diametro late campanulato.

HOLOTYPUS: Sandwich Island. [Hawaiian Islands, Hawaii Island], David Nelson (BM).

DISCUSSION: C. konaensis is a member of the section Clermontioides, as is its closest relative, C. pyrularia Hbd., a species found on the northeast side of Mauna Kea, Hawaii, and one with the blades 20-28 cm long, 4.5-5 cm wide, the margins mucronate crenate; peduncles 35-60 mm long, glabrous, divergent or nodding, (1-) 2-3-flowered; pedicels 8-20 mm long; hypanthium 14-20 mm long, puberulent; calyx 4-6 mm long; corolla puberulent. C. konaensis, of the west side of Mauna Loa, has the blades 12-17 cm long, 2-3 cm wide, the margins minutely appressed mucronate toothed; peduncles 28-31 mm long, glabrous to sparsely hirsutulous, ascending, 1-flowered; pedicels 28-32 mm long; hypanthium 11 mm long, glabrous; calyx 6-10 mm long; corolla glabrous.

The new epithet is formed from Kona, and -ensis, the Latin adjectival geographic suffix. Kona is the name of the district containing the type locality.

Cyanea Nelsonii sp. nov. (sect. Pilosae)

Figure 18

DIAGNOSIS HOLOTYPI: Laminis 35 cm longis 7.3-7.5 cm latiss lineari-oblanceolatis tenuiter chartaceis supra obscura viridibus glabris non scabris infra in intervallis glabris sed nervis hirsutulis basi gradatim cuneatis marginibus 1/3-2/5-crenati-lobatis marginibus lobis sinuatis, pedunculo plus 4 cm longo, pedicello 12 mm longo sparse puberulo, lobis calycorum 3-3.5 mm longis angustis deltoides foliaceis, corolla 5 cm longa hamatiiformi, lobis et parte supera tubi puberulentibus, lobis 15-20 mm longis linearibus, tubo filamentarum et antheris glabris, antheris connatiss superis 11 mm longis inferis 8.5 mm longis penicellatis, hypanthio
6 mm longo anguste turbinato, caulibus fruticosusque ignotis.

**DIAGNOSIS OF HOLOTYPE:** Blades 35 cm long, 7.3–7.5 cm wide, linear oblanceolate, thin chartaceous, above dark green, glabrous, not scabrous, below with the intervals glabrous and the veins hirsutulous, the base gradually cuneate, the margin crenately lobed 1/3–2/5 way to the midrib, and the margin of the lobes sinuate;
FIGURE 18. *Cyama Nelsonii* St. John, from holotype. *a*, leaf, ×½; *b*, flower, ×1; *c*, filament column and anthers, ×2.
peduncle more than 4 cm long; pedicel 12 mm long, sparsely puberulent; calyx lobes 3–3.5 mm long, narrowly deltoid, foliaceous; corolla 5 cm long, 5 mm wide (when dried), sharply curved and hamatiform, the lobes and upper tube puberulent, the lobes 15–20 mm long, linear; filament tube and projecting anther sides glabrous; anthers united, the upper ones 11 mm long, the lower 8.5 mm long, penicillate; hypanthium 6 mm long, narrowly turbinate; stem and fruit unknown.

HOLOTYPUS: Sandwich Islands [Hawaiian Islands, Hawaii Island], Dav. Nelson (BM).

DISCUSSION: The new species belongs in the section Pilosae. The nearest relative is C. stictopsylla Rock, based only upon Rock 10,055 from Kaiholena, in Kau, on the southern slopes of Mauna Loa. This older species has the blades 20–50 mm wide, the texture firm chartaceous, the margin crenately lobed 1/10–1/5 way to the midrib; peduncles 1–2.5 cm long; calyx lobes 2 mm long, triangular; corolla yellowish white (other details of perianth and androecium unknown); hypanthium puberulous. In contrast, C. Nelsonii has the blades 73–75 mm wide, the texture thin chartaceous, the margin crenately lobed 1/3–2/5 way to midrib; peduncle more than 4 cm long; calyx lobes 3–3.5 mm long, narrowly deltoid; corolla apparently dark magenta; and the hypanthium glabrous. Since C. stictopsylla has a smooth stem, one might perhaps infer that C. Nelsonii would be similar in this regard. The material of this new species is meager, but it is clearly distinct from any previously described species. Because of long continued grazing, and other agricultural exploitation, there has been extensive deforestation on western Hawaii. It is probable that the habitat of C. Nelsonii has been destroyed, and that the species has long been extinct.

The new epithet is given in honor of the collector, David Nelson, botanist on Captain Cook’s third voyage, and the first botanist to collect on Hawaii.
in fructu 1.8–2.2 mm longis 0.5 mm latis crassisqueanguste ob lanceolatis trigonis obscure rubri-badiis elucidis angulis acutis et apice albi-hispidulis, 2 aristis 0.5–1 mm longis subulatis obscure badiis et adscendente albi-hispidulis.

**DIAGNOSIS OF HOLOTYPE:** Shrub, more than 23 cm tall, erect, widely branching; stems appressed whitish hispidulous, the branches axillary, opposite, but those of a pair unequal; the herbage appressed white hispidulous; the
nodes enlarged; internodes 1–4 cm long; petioles 3–6 mm long, narrowly winged; blades 2.2–3.7 cm long, 1.5–3.2 cm wide, firm charac-teaceous, ovate or deltoid ovate, acute, the wide base rounded or truncate, singly or doubly serrate (and a few of the larger ones slightly trilobed), above dark green and appressed hispidulous, below green and appressed hispidulous and with raised venation; secondary veins 4–5 in each half, curved ascending; heads 3–7 in cymes on slender peduncles, the lateral ones 2.5–3.5 cm long; heads radiate, at anthesis about 12 mm across, and 4–5 mm tall; phyllaries in 2 rows; exterior phyllaries 5 and 4 mm long, elliptic-ovate, firm, green, and appressed white hispidulous; inner phyllaries similar to the outer ones; ligulate florets about 8, yellow, the ray 6.5 mm long, 3 mm wide, oblong elliptic, the apex 3-toothed, with 2 strong longitudinal veins and 8 weaker ones; ray corolla tube 2 mm long; pappus awns 2, subulate, 0.3 mm long, ascending hispidulous; style 1.2 mm long; 2 stigmas 1 mm long, terete; the young ray achenes 1.3 mm long, ob lanceolate, trigonous, scaberulous up the sharp angles; when mature the ray achenes 2.3–2.4 mm long, 0.5 mm wide and thick, ob lanceolate, trigonous, dark brown, ascending scaberulous on the margins and apex, the 2 awns 0.5–1 mm long, minutely ascending hispidulous; style 1.7 mm long, 2 stigmas 0.6 mm long, ligulate, acute; pappus of 2 subulate awns 0.5–0.7 mm long, minutely puberulous; the young disk achenes 1.5 mm long, ob lanceolate; disk achenes when mature 1.8–2.2 mm long, 0.5 mm wide and thick, narrowly ob lanceolate, trigonous, dull dark reddish brown, the sharp angles and summit white hispidulous; the 2 awns 0.5–1 mm long, subulate, dark brown and white ascending hispidulous.

**Holotypus:** Sandwich Islands [Hawaiian Islands, Hawaii Island], David Nelson (BM).

**Discussion:** *L. scabra* is a member of the section *Lipochaeta*, as is its closest relative, *L. subcordata* Gray, of western Hawaii, a species with the heads 5–6 mm tall; outer phyllaries 4; ligulate florets 5–6; limb of disk flowers 1.5 mm long; stems and petioles spreading puberulous; blades 3–9 cm long, cordate-ovate to deltoid. *L. scabra* has the heads 4–5 mm tall; outer phyllaries 5; ligulate florets about 8; limb of disk flowers 0.5 mm long; herbage appressed white hispidulous; blades 2.2–3.7 cm long, ovate or deltoid ovate, the base rounded or truncate. The new epithet is the Latin adjective *scaber*, rough, and it describes the scabrous pubescence of the plant.

**Lipochaeta trilobata** sp. nov. (sect. *Lipochaeta*)

**Diagnosis Holotypi:** Frutex erectus ultra 30 cm altus cum ramis oppositis paucis est, caulibus et foliis adpresse adscendente albid-hispidulis, nodis paulo incrassatis, internodis 1.3–4.5 cm longis pluriangulosus, petiolis 3–5 mm longis in nodo anguste perfoliatis, laminis 2.5–5.5 cm longis 1–3.5 cm latis subcoriaceis ovatis vel lanceolatovatis apice obtuso mucronulato basi rotundata ad late breve cuneata marginibus dupliseriatis eis principalibus proxima basem breve trilobatis supra obscure viridibus et sparse adpresse hispidulosis infra pallide viridibus et cum pilis simulatis, nervis secundariis 4–5 in dimidio quoque curvatis adscendentiibus, cymis cum (1–) 2–4 scapis 5–11 cm longis adpresse puberulentis adscendentiibus omnibus cum capitula solitaria, capitulis radiatis in floribus 1.8–2.2 cm diametro, phyllariis oblongis 4–5 et 4.5–5 mm longis late ovatis subacutis firmis viridibus et adpresse adscendente albi-hispidulis, phyllariis in seriesbus duobus omnibus subaequalibus, floribus radiatis fere 10 marginalibus et fertilibus, ligulis 7.5 mm longis 6 mm latis anguste ellipticis luteis apice bidentato 10-nervosis, tubo corollae 2 mm longo, stylo 0.8 mm longo, 3 arisitis pappi 0.8 mm longis, ovario 0.7 mm longo, acaeneis radiatis 2.2 mm longis 1 mm diametro triangulosus cuneatis oblongis laevibus obscure badiis in angulis
FIGURE 20. *Lipochaeta trilobata* St. John, from holotype. *a*, habit, × ½; *b*, flower head, × 2; *c*, ray flower, × 4; *d*, disk flower, × 4; *e*, chaff, × 4; *f*, stamens, style, and stigmas, × 20; *g*, *h*, ray achene, × 6; *i*, *j*, disk achene, × 6.
remote glandulosis apice hispidulo, paleis disci 5 mm longis cuneatis acutis plicatis proxima apicem adscendente hispidulis, floribus disci multis 5.5–6 mm longis, ovario 1.5 mm longo, 2 aristis erectis pappi 0.5 mm longis, corollis 4–4.5 mm longis, tubo 3 mm longo, limbo 2 mm longo anguste campanulato, 4 lobis 0.5 mm longis late ovatis, 4 antheris 1.3 mm longis subnigris et cum projectione connectivi 0.2 mm longis, corollis ~.5 mm longis, tubo 3 mm longo, limbo 2 mm longo, 2 aristis erectis pappi 0.5 mm longis, ovario 1.5 mm longo, 2 aristis erectis pappi 0.5 mm longis, ovario 0.7 mm longo, limbo 2 mm longo, 2 aristis erectis pappi 0.5 mm longis, ovario 0.7 mm longo.

**DIAGNOSIS OF HOLOTYPE:** Erect shrub, more than 30 cm tall, with few opposite subequal branches; stems and herbage appressed ascending white hispidulous; the nodes slightly enlarged; internodes 1.3–4.5 cm long, several-angled; petioles 3–5 mm long, narrowly perfoliate at the node; blades 2.5–5.5 cm long, 1–3.5 cm wide, subcoriaceous, ovate to lanceolate, the apex obtuse, mucronulate, the base rounded to widely short cuneate, the margins doubly serrate, the principal ones shortly trilobed near the base, above dark green and sparsely appressed hispidulous, below pale green and similarly hispidulous; secondary veins 4–5 in each half, curved ascending; cymes with (1–) 2–4 scapes 5–11 cm long, appressed puberulent, ascending, each with a single head; heads radiate, at anthesis 1.8–2.2 cm across; exterior phyllaries 4–5 and 4.5–5 mm long, broadly ovate, subacute, firm, green, and appressed ascending white hispidulous; phyllaries in 2 rows, the inner ones subequal to the outer ones; ray flowers about 10, marginal and fertile, the ray 7.5 mm long, 6 mm wide, narrowly elliptic, yellow, the apex bidentate, 10-nerved; the corolla tube 2 mm long, styles 0.8 mm long; pappus of 3 awns 0.8 mm long; ovary 0.7 mm long; ray achenes 2.2 mm long, 1 mm in diameter, trigonous, cuneate oblong, smooth, dull brown, the angles remotely capitulate glandular, the upper rim hispidulous; chaff 5 mm long, cuneate, acute, folded, near the apex ascending hispidulous; disk flowers numerous, 5.5–6 mm long; ovary 1.5 mm long; pappus of 2 erect bristles 0.5 mm long; corolla 4–4.5 mm long; the tube 3 mm long; the limb 2 mm long, narrowly campanulate, included, the 4 lobes 0.5 mm long, broadly ovate; 4 anthers 1.3 mm long, blackish, including the 0.2 mm pale lanceolate tip, stigma lobes 0.9 mm long, oblanceolate; disk achenes 2.3–2.4 mm long, 1.2–1.3 mm wide, plano-convex or plano-4-angled, densely verrucate, the apex hispidulous and with 2 scabrous awns 0.5–0.6 mm long.

**HOLOTYPE:** Sandwich Island [= Hawaiian Islands, Hawaii Island, mountain slope above Kealakekua, 1779, Captain Cook’s third voyage], Dav. Nelson (BM).

**DISCUSSION:** *L. trilobata* is a member of the section *Lipochaeta*, as is its closest relative, *L. perdita* Sherff, also of Kona, Hawaii, collected only by D. Nelson, and now extinct, a species with the petioles 6–14 mm long, slender; blades 1.5–2 cm long, 1–2.2 cm wide, ovate deltoid, entire, the base subtruncate, below softly appressed hispid; scapes appressed hispid; fruiting heads 12–13 mm in diameter; ray achenes 2.5–2.9 mm long, 2.5 mm thick at the top. *L. trilobata* has the petioles 3–5 mm long; blades 2.5–5.5 cm long, 1–3.5 cm wide, ovate to lanceolate, the principal ones shortly trilobed, the base rounded to widely short cuneate, or the base rounded and trilobed, below sparsely appressed hispidulous; scapes appressed puberulent; fruiting heads 8–9 mm in diameter; ray achenes 2.2 mm long, 1 mm in diameter.

The new epithet is the Latin word for three-lobed, and it refers to the shape of the leaves.

**LITERATURE CITED**


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