

Hawaiian Novelties in the Genus *Solanum* (Solanaceae)  
Hawaiian Plant Studies 30

HAROLD ST. JOHN<sup>1</sup>

SOLANUM is an enormous genus, and it is represented in the Hawaiian flora by endemic, adventive, and cultivated species. Below are presented descriptions of two new endemic species.

*Solanum haleakalaense* sp. nov. (subsect. *Morella*)

Fig. 1

DIAGNOSIS HOLOTYPE: Planta lignosa est, ramis rubri-brunneis, cortice laevi sed cum pilis stellatis paucis persistentibus et aculeis 3–5 mm longis ferocibus multis eis complanatis et 1.5–4.5 mm latis, cicatricibus foliorum 4–5 mm altis suborbicularibus, ramulis foliosis densiter adpresse stellatis luteis pilosis et dense aculeatis, novellis a pilis stellatis dense obtectis et cum aculeis obscuris juvenalibus, foliis alternatis, petioliis 45–70 mm longis cum pilis et aculeis simulantibus, laminis 10–15 cm longis 66–83 mm latis latiter ellipticis obtusis et cum lobis sinuatis vadosis sinibus 1/7–1/10 ad midnervum lobis latiter deltoideis vadosis obtusis inconcinnis lamina chartacea supra obscure viridi et glabra excepta nervis principalibus pubescentibus, midnervo et nervis secundariis cum aculeis 3–4 mm longis multis gracilibus fere brunneis et nervis tertiis cum aculeis minoribus paucis, pagina inferiori cum pilis stellatis luteis densis occultata, midnervo infra et nervis secundariis cum aculeis, cymis oppositifoliis dense pilosis stellatis, pedunculo in flore 8 mm longo 7–9-florifero, pedicelis 8–10 mm longis, floribus (immaturis) cum calycibus 3.5–4 mm longis 3/4–4/5-lobatis in juventa cum pilis stellatis remotis paucis tum glabratis bilabiatis 5-lobatis lobis fere 2 mm longis ovatis firmis inaequalibus, corolla fere 7 mm longa (immatura) late infundibuliformi 3/4 lobata chartacea crassiter nervosa intra glabra excepta ad marginem hirsutulam extra dense hirsutula lobis ovatis, staminibus 5 conniventibus, filamentis 0.5 mm longis in basi dilatatis,

antheris 1.8–1.9 mm longis glabris elliptico-oblongis arcuatis denique in fissuris apicalibus transversis dehiscentibus, ovario 1 mm longo ovoideo ad apicem minute puberulo, stylo 1.5 mm longo crasso ad basim minute puberulo, stigmatibus crasso discoideo, fructu incognito.

DIAGNOSIS OF HOLOTYPE: Woody plant; branches reddish brown, the bark smooth but with a few persisting stellate hairs and abundant ferocious prickles 3–5 mm long, flattened in the plane of the stem length, 1.5–4.5 mm wide; leaf scars 4–5 mm high, suborbicular; leafy branchlets closely appressed stellate buff pilose and abundantly prickly; young shoots covered by the dense stellate pilosity and showing a few dark beginnings of prickles; leaves alternate; petioles 45–70 mm long, with similar pubescence and prickles; blades 10–15 cm long, 66–83 mm wide, broadly elliptic, obtuse, shallowly sinuate lobed, the sinus going 1/7–1/10 way to the midrib, the lobes obliquely low broad deltoid, obtuse, the blade texture chartaceous, above dark green and glabrate except for the persistent pubescence on the main veins, the midrib and secondaries abundantly prickly, the prickles 3–4 mm long, slender, flattened, brownish, and also there are a few smaller prickles on the tertiary veins; lower surface obscured by the dense tawny stellate pilosity, prickles present on the midrib and secondaries; cymes oppositifolious, densely stellate pilose; peduncle in flower 8 mm long, 7–9-flowered; pedicels 8–10 mm long; flower (probably half grown) with calyx 3.5–4 mm long, lobed 3/4–4/5 way to base, at first with a very few remote stellate hairs, glabrate, 2-lipped, 5-lobed, the lobes about 2 mm long, ovate, firm, unequal; corolla about 7 mm long (immature), broad funnellform, lobed 3/4 way to base, chartaceous, heavy-veined, within glabrous except near the hirsutulous margin, without densely hirsutulous, the lobes ovate; stamens 5, connivent; filaments 0.5 mm long, dilated at

<sup>1</sup> B. P. Bishop Museum, Honolulu, Hawaii 96818, U. S. A. Manuscript received September 9, 1968.



FIG. 1. *Solanum baleakalaense* St. John, from holotype. *a*, Habit,  $\times 1$ ; *b*, flower,  $\times 2$ ; *c*, stamens,  $\times 2$ ; *d*, pistil,  $\times 2$ .

base; anthers 1.8–1.9 mm long, glabrous, arcuate elliptic-oblong, dehiscent by apical transverse slits; ovary 1 mm long, ovoid, minutely puberulous towards the apex; style 1.5 mm long, stout, toward the base minutely puberulous; stigma thick discoid; fruit unknown.

HOLOTYPE: Sandwich Islands, East Maui, south side of Haleakala, *Dr. Hillebrand 113* (received July, 1865), ( $\kappa$ ).

DISCUSSION: *S. haleakalaense* is tentatively placed in the subsection *Morella*, as its characters are in fair agreement with those of that subsection. It seems most closely related to *S. incompletum* Dunal, of the island of Hawaii, a species having the suckers and strong vegetative shoots sparingly prickly; leaves mostly geminate; petioles 12–55 mm long; blades mostly unarmed above, those of mature branches wholly unarmed; the lobes cut 1/4–2/3 way to the midrib; corolla 9–10 mm long, the lobes elliptic; anthers 2.2–2.3 mm long; and the calyx 5–6 mm long, stellate tomentose. *S. haleakalaense* has the branchlets, petioles, and principal veins of the under side of the leaves strongly prickly; leaves alternate; petioles 45–70 mm long; blades with the lobes going 1/7–1/10 way to the midrib; the midrib and secondaries abundantly prickly; anthers 1.8–1.9 mm long; calyx 3.5–4 mm long, at first with a very few remote stellate hairs, soon glabrate; and the corolla 7 mm long, the lobes ovate.

The new epithet is formed from the name of the type locality, Haleakala, and *-ensis*, *-ense*, the Latin adjectival place ending.

*Solanum Hillebrandii* sp. nov. (subsect. *Morella*)

Fig. 2

DIAGNOSIS HOLOTYPI: Arbor parva est, ramis subviridi- vel rubri-brunneis teretibus glabratis inermibus subcarnosis et in sicco cum rugis longitudinalibus, cicatricibus foliorum 2–3 mm latis transverse ovalibus depressis pallidis, ramulis foliosis gracilibus glabratis, novellis canescentibus stellati-hirsutulis, foliis alternatis, petiulis 11–35 mm longis glabratis, laminis 4.9–11 cm longis 13–38 mm latis anguste vel late lanceolatis obtusis cum lobis sinuatis vadosis tenuis 1/5 ad midnervum lobis deltoideis obliquis obtusis

vel acutis, lamina firme chartacea sparse hirsutula stellata infra persistenta supra glabrata, nervis secundariis in dimidio quoque 5–8, pedunculis oppositifoliis in flore 10–15 mm longis in fructu 12–25 mm longis glabratis, corymbis 11–17-floriferis, pedicelis in flore 11–18 mm longis in fructu 15–27 mm longis et clavatis, calycibus 3.5–5 mm longis infundibuliformibus glabris vel proxima basem cum pilis stellatis paucioribus glabratis 5-lobatis, lobis 2–2.5 mm longis ovatis inaequalibus firmis, corollis 17–19 mm diametro fere rotatis 3/4 lobatis chartaceis semitranslucentibus extra dense hirsutulis stellatis luteis nervis crassis intra ad basim sparse pubescentibus sed in bordinis densiter pubescentibus, staminibus 5 conniventibus glabris, filamentis 1 mm longis, antheris 3–3.2 mm longis elliptici-oblongis et denique in fissuris apicalibus transversis dehiscentibus, ovario 0.2 mm longo puberulento, stylo 1 mm longo, stigmatibus subcapitato, baccis 9–14 mm diametro subglobosis subviridi-luteis vel ravis, exocarpo crasso duro glabro lucido, seminibus 3.5–4 mm longis 3–3.5 mm latis complanatis reniformibus pallide brunneis.

DIAGNOSIS OF HOLOTYPE: Small tree; branches greenish to reddish brown, terete, glabrate, subcarnose and on drying with longitudinal wrinkles, unarmed; leaf scars 2–3 mm wide, pale, depressed transverse oval; leafy branchlets slender, glabrate; young shoots stellate hirsutulous canescent; leaves alternate; petioles 11–35 mm long, glabrate; blades 4.9–11 cm long, 13–38 mm wide, narrowly to broadly lanceolate, obtuse, shallowly sinuately lobed, the sinus going as much as 1/5 way to the midrib, the lobes obliquely deltoid, obtuse or acute, texture firm chartaceous, sparsely stellate hirsutulous, persistently so below but above glabrate; lateral veins 5–8 on a side; peduncles oppositifolious or nearly so, in flower 10–15 mm long, in fruit 12–25 mm long, glabrate; corymbs 11–17-flowered; pedicels in anthesis 11–18 mm long, in fruit 15–27 mm long, clavate; calyx 3.5–5 mm long, funnelform, glabrous or with a very few stellate hairs near the base and glabrate, 2-lipped and 5-lobed, the lobes unequal but 2–2.5 mm long, ovate, firm; corolla 17–19 mm in diameter, wide-spreading, almost rotate, lobed 3/4 way to base, chartaceous, semitranslucent,

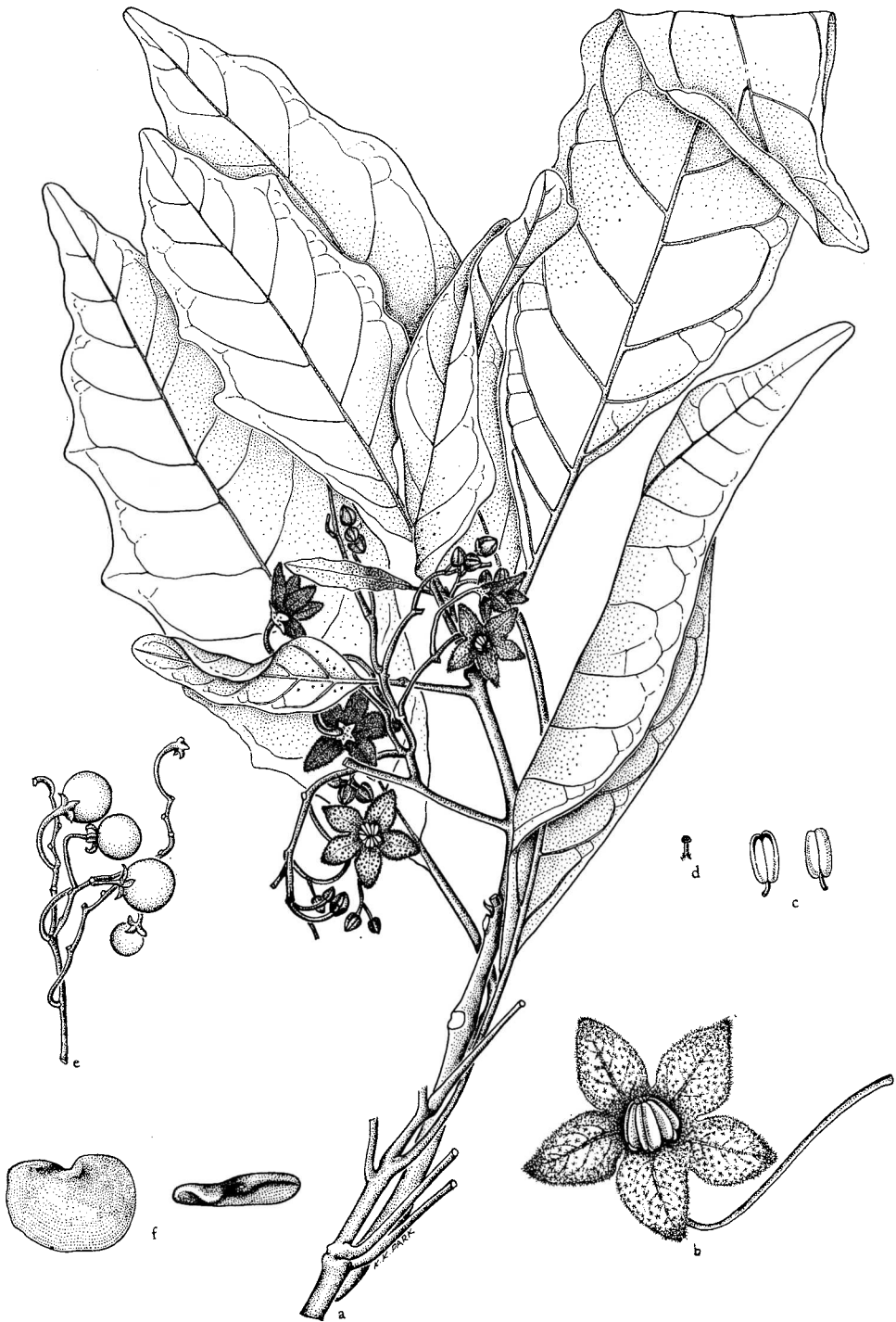


FIG. 2. *Solanum Hillebrandii* St. John, from holotype. *a*, Habit,  $\times 1$ ; *b*, flower,  $\times 2$ ; *c*, stamens,  $\times 2$ ; *d*, pistil,  $\times 2$ ; *e*, infructescence,  $\times \frac{1}{2}$ ; *f*, seeds,  $\times 4$ .

heavy-veined, without yellowish stellate hirsutulous, within sparsely so toward the base but more so on the lobes and densely so on the margin, without densely so; stamens 5 connivent, glabrous; filaments 1 mm long; anthers 3–3.2 mm long, elliptic-oblong, dehiscent by an apical transverse slit; ovary 0.2 mm long, puberulent; style 1 mm long; stigma subcapitate; berries 9–14 mm in diameter, greenish yellow or drab in color, subglobose; exocarp thick and hard, glabrous, shining; seeds 3.5–4 mm long, 3–3.5 mm wide, flat, reniform, pale brownish.

HOLOTYPE: Sandwich Islands [Island of Hawaii], Kohala range and base of Mauna Kea, 5,000 ft, (Received July 1865), *Dr. Hillebrand 116* (K). Isotype: [Sandwich Islands], Kawaihae Uka & base of Mauna Kea, (word illegible), *Hillebrand 116* (BISH).

DISCUSSION: *S. Hillebrandii* is tentatively assigned to the subsection *Morella*. Its near rela-

tive seems to be *S. haleakalaense* St. John, of eastern Maui, a species with the petioles 45–70 mm long, stellate pilose and prickly; blades 10–15 cm long, 6.6–8.3 cm wide, broadly elliptic, the midrib and secondary veins abundantly prickly; pedicels in flower 8–10 mm long; corolla 7 mm long, broad funnelform, within glabrous except at the margin; and the anthers 1.8–1.9 mm long. *S. Hillebrandii* has the petioles 11–35 mm long, glabrate; blades 4.9–11 cm long, 1.3–3.8 cm wide, narrowly to broadly lanceolate, unarmed; pedicels in flower 11–18 mm long; corolla 13 mm long, almost rotate, within stellate hirsutulous; and the anthers 3–3.2 mm long.

The new epithet is chosen to honor Dr. William Hillebrand (1821–1866), resident in Hawaii from 1851 to 1871, general medical practitioner, physician to the royal family and to the Queen's Hospital, immigration commissioner, etc., botanical explorer, author of the *Flora of the Hawaiian Islands*, and Hawaii's greatest botanist.