Hawaiian Novelties in the Genus *Solanum* (Solanaceae)

Hawaiian Plant Studies 30

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*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 HOLOTYPi:** 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 dense aculeatis, novellis a pilis stellatis dense obtectis et cum aculeis obscursius juvenalibus, foliis alternatis, petiolis 45–70 mm longis cum pilis et aculeis simulantibus, laminis 10–15 cm longis 66–83 mm latis latiter ellipticus 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 pricipalibus cum aculeis 3–4 mm longis multis gracilibus fere bruneis et nervis tertiis cum aculeis minoribus paucis, pagina inferiori cum pilis stellatis luteis densis occultata, midnervio infra et nervis secundariis cum aculeis, cymis oppositifoliiis 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 juvente cum pilis stellatis remotis paucis tunc glabris 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, filamentos 0.5 mm longis in basi dilatatis, antheris 1.8–1.9 mm longis glabris ellipticis oblongis arcuatis denique in fissuris apicalibus transversis dehiscentibus, ovario 1 mm longo ovoideo ad apicem minute puberulo, stylo 1.5 mm longo crosso ad basim minute puberulo, stigmatico crosso 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 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-lobed, 5-lobed, the lobes about 2 mm long, ovate, firm, unequal; corolla about 7 mm long (immature), broad funneliform, lobed 3/4 way to base, chartaceous, heavy-veined, within glabrous except near the hirsutulat margin, without densely hirsutulat, the lobes ovate; stamens 5, connivent; filaments 0.5 mm long, dilated at

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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.

HOLOTYPUS: Sandwich Islands, East Maui, south side of Haleakala, Dr. Hillebrand 113 (received July, 1865), (K).

DISCUSSION: *S. hillebrandii* 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. incompleatum* Dunal, of the island of Hawaii, a species having the suckers and strong vegetative shoots sparsely 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. hillebrandii* has the branchlets, petioles, and principal veins of the underside 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 -*emis*, -*eme*, the Latin adjectival place ending.

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

Fig. 2

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; corymb 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-lobed 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, × 1; *b*, flower, × 2; *c*, stamens, × 2; *d*, pistil, × 2; *e*, infructescence, × 1/2; *f*, seeds, × 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.

HOLOTYPUS: 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 relative 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.