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Some Recently Collected Dicotyledonous Plants
from the Hawaiian Islands and Mexico

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INTRODUCTION

Recently a large consignment of Hawaiian dicotyledonous plants was sent to me for detailed study and determination. These had been collected mostly by Drs. Otto and Isa Degener in the latter half of 1963 and in January, 1964, and almost entirely upon the Island of Lanai.¹ Several proved new or otherwise important to science and are noted in the present paper. There is appended a treatment of one other dicotyledonous plant, a new variety of *Bidens oligocarpa* Sherff that I found in an assortment of Mexican Compositae sent to me on loan by Dr. Lyman B. Smith, Curator of the Division of Phanerogams, Smithsonian Institution. Although collected more than three decades ago, it was unknown botanically when my treatment of the genus *Bidens* for North America was published (Sherff, 1955, pp. 70-129).

Herbarium-name abbreviations used in the citation of specimens examined are those to be found in Lanjouw and Stafleu (1956).

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DESCRIPTION OF PLANTS

Euphorbia Celastroides laehiensis Degener, Degener & Sherff, var.
nov.

Habitu varietati *amplectenti* similis sed foliis numerosioribus minoribusque (tantum 4-10 rarius usque ad 15 mm. longis) differt; lamina varie oblonga elliptica obovata vel late oblanceolata, apice rotundata usque ad truncata vel emarginata, marginibus integerrimis, petiolo minimo sub 1 mm. longo, pubescenti. Involucrum valde pubescens, capsula viridi glabrescenti. Semina grisea extus sed intus rubida, tetragona, tantum circ. 1 mm. longa.

In habit similar to var. *amplectens* but differs in its more numerous and its smaller leaves (these only 4-10, more rarely up to 15 mm. long); blade variously oblong, elliptic, obovate or widely oblanceolate, apically rounded to truncate or emarginate, margins very entire, petiole very minute (under 1 mm. long) and pubescent. Involucre very pubescent, capsule green and glabrescent. Seeds grayish externally but reddish underneath the outer coat, tetragonal, only about 1 mm. long.

Specimens examined: *Otto & Isa Degener*, 28760, only on calcareous, rounded slope, altitude 100 feet, Lae Hi, Island of Lanai, January 26, 1964 (type, F; also a dozen or more isotypes as yet undistributed); *O. & I. Degener* 28375, prostrate or nearly so, 15-45 centimeters wide, on windy, arid, calcareous outcrop up to about 500 feet altitude, Lae Hi Point, Island of Lanai, July 31, 1963 (F; also several folders of additional material yet to be distributed to herbaria).

Antidesma pulvinatum var. **leigogonum** Sherff, Field Mus. Nat. Hist. Bot. Ser. 17: 576. 1939.

The type of this variety (*Yuncker & Hosaka* 3214) was collected in the fourth gulch east of Puu Kaupakuhale, Waianae Mountains, northwestern Oahu, October 23, 1932 (formerly in Herbarium Yuncker, but later, on my urgent plea to Dr. Yuncker, deposited in the Chicago Natural History Museum herbarium, "F" where represented also by my photograph No. 3404). Recently a suite of essentially identical material has been collected by Drs. Otto and Isa Degener, No. 28413, in forest at 2,500 feet altitude, Kapohaku Gulch, Island of Lanai, August 16, 1963 (F; also several duplicates yet to be distributed).

The type had several leaves partially broken away toward their tips. The leaves were described as "at least a few of them apically obtuse though perhaps never acuminate." In the Degener collection the leaves are well preserved and mostly more or less acuminate at their tips.

Dubautia laxa intercedens Degener, Degener & Sherff, var. nov.

Frutex patens \pm 1 m. altus, varietati *hispidae* valde similis sed foliis latior, lamina plerumque obovata rarius late oblanceolata circ. 4-8 cm. longa et 2-3.3 cm. lata.

Spreading shrub \pm 1 m. tall, strongly similar to the var. *hispidae* but with wider leaves, their blade commonly obovate but more rarely wide-oblanceolate, about 4-8 cm. long and 2-3.3 cm. wide.

The varietal name is given in allusion to the approach in shape made by the leaf blades to those of var. *waianensis* Deg. & Sherff (Sherff, 1934, p. 151; 1935, p. 104 and fig. 36). Indeed, some four years ago I mistakenly referred an earlier suite of *Dubautia laxa* material from Lanai to var. *waianensis*, being reluctant at that time to add to the list of varieties proposed for *D. laxa*. That suite is now included in the following list of specimens.

Specimens examined: *Otto Degener, E. Desha & Arthur Lawrence* 26860, 3-foot shrub, in sunny, open rain forest, Munro Trail, Island of Lanai, January 18, 1960 (F, etc.); *Otto & Isa Degener* 28392, spreading, 3 feet tall, shrub, heads pale, dull yellow, in windy, shrubby rain forest at 2,750 feet altitude, near Puu Alii, Island of Lanai, August 13, 1963 (type, F; also a dozen or more undistributed isotypes); *O. & I. Degener* 28393, in windswept, scrubby rain forest along Munro Trail northwest of Lanaihale, Island of Lanai, August 26, 1963 (F; also a dozen or more undistributed duplicates).

In my key, constructed some thirty years ago, to the varieties and forms of *Dubautia laxa* (Sherff, 1935, p. 97), this form would trace to var. *hispidae*, a variety the precise habitat of which Gaudichaud, the original collector, did not cite. Elsewhere (Sherff, 1956, p. 477) I have listed two collections of var. *hispidae* from northwestern Kauai: *Hatheway & Lane* (*O. Degener* distrib. no. 20511), edge of Alakai Swamp between Kauaikinana and Kawaikoi streams; *Degener & Degener et al.* 23953, edge of swamp, Lehuamakano Bog, Kokee, Island of Kauai. From a consideration of these two suites of Kauai specimens and their matching of the original Gaudichaud specimens as known from my three cited photographs, Nos. 2603, 2604, and 2646 (Sherff, 1956, p. 477), it may be concluded safely that var. *hispidae* is native to Kauai. The two recent collections by Dr. and Mrs. Degener, as also the one by *Degener, Desha & Lawrence* 26860 on Lanai, have a leaf outline differing strikingly in the characters noted.

***Dodonaea eriocarpa costulata* Degener, Degener & Sherff, var. nov.**

Frutex \pm 1-2 m. altus. Ramuli rufidulo-brunnei, plus minusve subalati, longitudinaliter irregulariterque sulculati ultimi sparsissime adpresso-setulosi. Folia oblongo-oblancoolata, lamina (basim versus sensim angustata apicem subobtusum saepe subabrupte mucronatum versus rotundato-angustata, 7-10 cm. longa et 1.5-3.5 cm. lata, exsiccata raro facie superiore aegerrime subpurpureo-viridi, subrugosa, venis lateralibus conspicuis, elevatis infra et costulis albidis similibus, petiolis tenuibus, 0.4-1.5 cm. longis. Fructus glabrati, semper 2-alati, alis inclusis 7-1.3 cm. longi et sub 1.6 cm. lati.

Shrub \pm 2 m. tall. Branchlets reddish-brown, more or less subalate, lengthwise and irregularly sulcate, the ultimate ones very sparsely appressed-setulose. Leaves oblong-oblancoolate, blade gradually narrowed toward base but round-narrowed toward subobtusum often subabruptly mucronate tip, 7-10 cm. long and 1.5-3.5 cm. wide, in dry state rarely very weakly purplish-green on upper surface, subrugose; lateral veins conspicuous, salient below and similar to minute whitish ribs; petioles slender, 0.4-1.5 cm. long. Fruits glabrate, always 2-winged, wings included 0.7-1.3 cm. long and under 1.6 cm. wide.

Specimens examined: *Otto & Isa Degener* 28751, bush 4-8 feet tall, fruit always 2-alate, leaves rugose, on dryish, open slope of Puu Kole at 2,300 feet altitude, Island of Lanai, growing with No. 28752 (see discussion below), not a rain-forest plant, January 24, 1964 (F, type; also some two dozen as yet undistributed isotypes).

In an earlier paper, I have published a form of *Dodonaea*, *D. eriocarpa* var. *Forbesii* f. *straminea* Deg. & Sherff (Sherff, 1951, p. 60) with foliage very similar in size and outline, and coming (*Degener & Murashige* 19769a) from altitude 2,500 feet, in a decadent forest, Waiakeakua, Island of Lanai, August 4, 1949, my photograph No. 3988 in F, etc. To that variety must be referred another collection recently made by Dr. & Mrs. Degener, their No. 28752, lower slope of Puu Kole, altitude 2,300 feet, Island of Lanai, January 24, 1964 (F, etc.).

With the latter suite of specimens was collected the additional suite given by the collectors their No. 28751. The sprays of 28751 appear to differ in having the leaves more rugose (or rugulose) and less acute or subacuminate at the apex, fruits consistently 2-alate, etc. The name *costulata* alludes to the conspicuous ivory-white lateral veins as seen on the lower surfaces of the leaf blades (especially in the dry state).

***Bidens awaluana* Degener, Degener & Sherff, sp. nov.**

Frutex tener (forsitan \pm 6 dm. altus), subglaber, late ramosus, caule tantum circ. 1.5-2 mm. crasso, longitudinaliter sulcolato, infra minutissime

alato supra acriter tetragono. Folia opposita, longe gracillimeque petiolata petiolo 1-3.5 cm. longo saepe basim versus sparsim aciculato-ciliato; lamina circumambitu deltoideo-ovata, sub 6.5 cm. longa et 6 cm. lata, bipinnata, foliolis imis 1 jugo saepius tenuiter petiolulatis segmentis membranaceissimis oblanceolato-linearibus integrisque usque ad cuneato-expansis et 1-2-dentatis vel -lobulatis, apiculis rotundatulis callosisque vix acutis. Capitula pauca, tenuissime pedunculata pedunculis usque ad 1.5 dm. longis et solitariis vel ad apices ramulorum 2-5-adgregatis; radiata, pansa ad anthesin circ. 1.5-2.4 cm. lata et 7-9 mm. alta. Involucri bractee exteriores circ. 5-7, patentes, lineari-oblongae, circ. 4-5 mm. longae, tergo glabrae, marginibus setulosae, apicem callosum versus angustatae, demum interdum reflexae; interiores latiores, subaequales. Flores ligulati circ. 5, flavi, ligula oblongi et circ. 1 cm. longi, apice subtruncati et obsolete denticulati. Paleae oblongo-lanceolatae, glabrae, 5-7 mm. longae. Flores tubulosi paleas paulo superantes. Achaenia valde obcompressa, alata, corpore oblanceolato griseo atrove, 3.5-6 mm. longo et circ. 1.5 mm. lato, acriter sulcato, ventraliter ad medium longitudinaliter unicostato, apice exaristato interdum paulum constricto et vix capitulato, marginibus plus minusve papillato; alis brunneo-stramineis sub 1 mm. latis, ad apicem rotundato-obtusis.

Slender shrub (perhaps \pm 6 dm. tall), subglabrous, widely branched; stem only about 1.5-2 mm. thick, lengthwise minutely grooved, lower down very minutely winged, above sharply quadrangulate. Leaves opposite, elongately and very slenderly petioled; petiole 1-3.5 cm. long, often sparsely aciculate-ciliate toward base; blade in outline deltoid-ovate, under 6.5 cm. long and 6 cm. wide, bipinnate, bottom leaflets a single pair, more often slenderly petiolulate, their segments exceedingly membranaceous, oblanceolate-linear and entire up to cuneately expanded and 1-2-dentate or -lobulate, apicules somewhat rounded and calloused or subacute. Heads few, very slenderly peduncled, peduncles up to 1.5 dm. long and solitary or 2-5-clustered at ends of branchlets; radiate, about 1.5-2.4 cm. wide and 7-9 mm. tall when expanded at flowering. Involucre's external phyllaries about 5-7, spreading, linear-oblong, about 4-5 mm. long, dorsally glabrous, marginally setulose, narrowed toward the indurated tip, finally sometimes reflexed; internal ones wider, subequal. Ligulate florets about 5, yellow, subtruncate and obsoletely denticulate at apex, the ligule oblong and about 1 cm. long. Chaff-scales oblong-lanceolate, glabrous, 5-7 mm. long. Tubular florets slightly surpassing the chaff-scales. Achenes much obcompressed, winged, the body oblanceolate and gray or dull black, 3.5-6 mm. long and about 1.5 mm. wide, sharply sulcate, lengthwise one-ribbed along middle of ventral surface, at apex awnless and at times slightly constricted and scarcely capitulate, margins more or less papillate; wings brownish-straw-colored, under 1 mm. wide, at top rounded-obtuse.

Specimens examined: *Otto & Isa Degener* 28769, locally common on arid, windswept pili and *Sida* slopes and not observed elsewhere; now more or less restricted to *Vachellia larnesiana*, where thorns protect from antelope, deer, and goat; at 500 feet altitude, *mauka* (i.e., inland or toward the mountains) from Awalua, Island of Lanai,

January 29, 1964 (type, F; also a large suite of duplicates or isotypes as yet undistributed).

This novelty may be regarded as almost an anomaly for the *Bidens* flora of the Hawaiian Islands. The foliar habit is suggestive of *Bidens triplinervia* var. *macrantha* (Wedd.) Sherff, a plant especially common in South America, but the achenes show a strong affinity with *B. macrocarpa* (Gray) Sherff, of the Island of Oahu. Because of this affinity, *B. awaluana* may be referred definitely to Sect. I. of *Bidens* L., namely *Campylothea* (Cass.) Nutt. Trans. Amer. Phil. Soc. Ser. II, 7: 368. 1841. (Compare, Sherff, 1937, p. 30.)

***Bidens oligocarpa* Viereckii, var. nov.**

A varietate *oligocarpa* ipsa differt: Capitula majora, pansa ad anthesin usque ad 2 cm. lata. Involucri bractee exteriores non tenuissime lineares neque supra moderate dilatatae apice acerrimae sed perspicue spathulatae apice extremo subrotundato-obtuso-apiculatae, non 1.5-2.3 mm. sed 3.5-4.5 mm. longae. Achaenia non circ. 6-8 sed plerumque 12-25, longiora, corpore non 6-10.5 mm. sed interdum usque ad 1.5 cm. longa.

Differs from typical *Bidens oligocarpa* Sherff: Heads larger, expanded at anthesis up to 2 cm. wide. Exterior phyllaries not very narrowly linear and not just moderately dilated above and very acute at the tip, but conspicuously spatulate and apically subrotundate-obtuse-apiculate, not 1.5-2.3 mm. but 3.5-4.5 mm. long. Achenes not about 6-8 but commonly 12-25, longer, the body not 6-10.5 mm. but at times up to 1.5 cm. long.

Specimens examined: *H. W. Viereck* 996, Tamaulipas, Mexico, December, 1930 (type in US, herb. no. 2,297,326).

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Date	Description	Amount
1/1/20	Opening Balance	10000
1/15/20	Cash Sales	5000
1/20/20	Sales Tax	1000
1/25/20	Accounts Payable	2000
1/30/20	Interest Income	500
2/1/20	Closing Balance	13500