1. Dicliptera chinensis (L.) Juss.

[*Justicia chinensis* L.]

(nat)

Sprawling or decumbent perennial herbs; stems 2–7 dm long. Leaves green, lower surface slightly paler, ovate, 2.5–13.5 cm long, sparsely strigillose, especially on the veins, cystoliths prominent on upper surface as white raised streaks the size of the hairs, petioles 1–3.5 cm long. Flowers in axillary cymes, each one subtended by 2 green, ovate bracts of unequal size, the larger one ca. 12–14 mm long, the smaller one ca. 8–9 mm long, all bracts short-villous especially along the margins, the veins inconspicuous, pedicels 0–1 mm long; calyx lobes of unequal size, 5–7 mm long; corolla rose to purple, the throat with purple spots, 5–13 mm long. Capsules ovoid, 6–7 mm long, short-villous. Seeds 4, discoid. Native to tropical areas worldwide; in Hawai'i naturalized primarily in or near urban areas, at least on Kaua'i and O'ahu, but perhaps more widespread. Pope (1929) states that this plant was recently introduced to Hawai'i. First naturalized collection made on O'ahu in 1942 (*Caum s.n.*, BISH).—*Plate 1.*

1. Ruellia brittoniana E. Leonard

(nat)

Erect perennial herbs; lower stems sometimes becoming somewhat woody, 0.5–1 m long. Leaves linear-elliptic to linear-lanceolate, 8–22 cm long, 0.8–1.5 cm wide, glabrate, petioles 10–24 mm long. Flowers in cymose panicles, each flower subtended by 2 linear bracts 3–7 mm long; calyx lobes 5, linear, 8–12 mm long; corolla lavender, the throat purple, 4–4.5 cm long. Capsules ellipsoid, 2–2.5 cm long, glabrous. [$2n = 34$.] Native to Mexico; in Hawai'i cultivated as an ornamental but easily escaping, now naturalized and often found in dry habitats such as cracks in sidewalks and disturbed, shaded gulch bottoms, on Midway Atoll, Kaua'i, and O'ahu. First collected on O'ahu in 1930 (*St. John 10515,* BISH).—*Plate 2.*

This species is sometimes confused with *Ruellia malacosperma* Greenm., which does not occur in Hawai'i, and differs from *R. brittoniana* in having shorter lanceolate leaves and pilose pubescence.

3. Thunbergia grandiflora Roxb.

(nat) Bengal trumpet, blue trumpet vine

Lianas. Leaves hastate-ovate, (8–)11–22 cm long, 3–15 cm wide, margins with widely spaced triangular, acute to rounded teeth. Flowers often in pendent inflorescences, each one subtended by ovate bracts 25–40 mm long; calyx reduced to a truncate, ring-like structure; corolla blue or white, 5–7.5 cm long. [$2n = 56$.] Native to India; in Hawai‘i cultivated and sparingly adventive along hiking trails or margins of urban areas at least on Kaua‘i, O‘ahu, and Hawai‘i. First collected (cultivated material) on O‘ahu in 1937 (*St. John 18400*, BISH).

1. Trianthema portulacastrum L.

(nat)

Stems prostrate or ascending, somewhat succulent, up to 5 dm long, sometimes more, glabrous or sparsely pubescent. Leaves flat, elliptic to obovate or spatulate, 1–2(–4) cm long, 0.4–2(–3) cm wide, margins entire, apex obtuse or retuse, base rounded to cuneate, petioles 0.5–2.5 cm long, expanded into a sheath connate with opposing leaf base to form a cup. Flowers solitary, sessile, largely hidden in leaf axils; sepals adnate to leaf base, the lobes linear to narrowly deltate, 4–5 mm long, inner surface pink or white, sparsely pubescent externally; ovary cylindrical; style ca. 2 mm long. Operculum truncate, 2–3 mm long, with a prominent raised, denticulate rim along outer side. Seeds dull black, reniform, 1.5–2 mm wide, weakly ridged. [$2n = 26, 28$.] Pantropical; in Hawai'i first observed on coral fill along Lagoon Drive, Honolulu, in 1976, now found in several places between the Honolulu International Airport and the West Loch Estates development, Honouliuli (W. Char, pers. comm.) and at Salt Lake, O'ahu. First collected in the park adjacent to the Salt Lake Elementary School in 1987 (*Shigeta s.n.*, BISH).

long; sepals subequal, 5.5–6 mm long, glabrous, apex acute, subtended by a lanceolate, acuminate to spine-tipped bract 3–4 mm long, bracteoles 3.5–4.3 mm long, spine-tipped. Utricles 3–4 mm long. Formerly scattered on low sand islands, Kure Atoll, Midway Atoll, Pearl and Hermes Atoll, and Laysan of the Northwestern Hawaiian Islands. Last collected on Kure Atoll in 1964 (*Lamoureux 2794,* BISH).

Achyranthes atollensis is either extinct or existing as seeds in the soil; no plants could be located during a complete survey of these islands by D. Herbst in 1988.

2. **Achyranthes atollensis** St. John

(end, Ex)

Shrubs 1–2 m tall. Leaves obovate to elliptic, 2–6.2 cm long, 1.2–3.8 cm wide, densely white or yellow strigose, the leaf surface completely obscured, the hairs usually straight and sometimes some of them spreading, 2.5–3 mm long. Spikes congested, 8–17 cm long, the rachis densely tomentose, 3–7 mm in diameter (incl. hairs), each flower partially embedded among the hairs, peduncles 1.5–2.5 cm

3. Achyranthes mutica A. Gray

[*A. nelsonii* St. John]

(end, Ex)

Shrubs; stems 30–60 cm long, many-branched. Leaves obovate to elliptic or oblanceolate, (1.9–)3.2–4 cm long, (0.8–)1.5–2 cm wide, young leaves sparsely pilose, usually glabrate with age, petioles 0.3–1.5 cm long. Spikes 0.4–1.5 cm long, the rachis densely pubescent with spreading hairs, sessile; sepals unequal, 3–4.2 mm long, apex acute, subtended by a broadly ovate, acute to minutely spine-tipped bract 1–1.3 mm long, bracteoles broadly ovate, 1.8–2.3 mm long. Utricles unknown. Known only from 2 collections: *Rémy 208* (GH, BISH) from Kaua'i collected between 1851 and 1855; and *Nelson s.n.* (BM) supposedly from Hawai'i, collected in 1779.

Achyranthes mutica apparently existed as a few scattered relictual populations at the time the only 2 collections were made. St. John (1976a) described *A. nelsonii* from the Nelson collection, which he assumes was collected on the island of Hawai'i. Although these 2 collections supposedly are from opposite ends of the main archipelago, they differ only in minor ways. The Nelson collection has more pubescent leaves and pseudostaminodia 2.5 mm long, divided into 3–4 lobes, whereas the Rémy specimen has pseudostaminodia 0.5 mm long, divided into 2–3 lobes.

[redacted]

[redacted]

4. Amaranthus lividus L.

[*A. blitum* L.; **A. lividus** subsp. **polygonoides** (Moq.) Probst]

(nat)

Monoecious annual herbs; stems sometimes tinged reddish or yellowish, erect, ascending, or prostrate, 0.6–6(–9) dm long, unbranched or branched, striate, glabrous, rarely with unicellular to multicellular short hairs, especially above. Leaves ovate to rhombic-ovate, blades 1–8 cm long, 0.6–6 cm wide, glabrous, rarely the lower surface with scattered multicellular hairs along the veins, apex usually broad, widely emarginate, petioles 0.5–10 cm long. Flowers green, in slender to stout axillary or terminal spikes, rarely panicles, both sexes mixed throughout the spikes, bracts and bracteoles whitish, deltate-ovate to lanceolate, membranous, tipped with a short yellow or reddish mucro; sepals 3(4), lanceolate-oblong to spatulate, 0.7–2 mm long, apex subacute, mucronate, apex of pistillate flowers often more blunt; stigmas 2–3. Fruit globose to pyriform, compressed, exceeding the sepals, 1.2–2.5 mm long, indehiscent or rupturing irregularly at maturity, the surface smooth, occasionally wrinkled upon drying. Seeds dark brown to black, shiny, the margins duller, compressed, 1–1.8 mm long, faintly reticulate, minutely punctate-roughened. [$2n = 16, 34$.] Cosmopolitan in warmer regions; in Hawai‘i apparently sparingly naturalized in disturbed areas on Kaua‘i, O‘ahu and Hawai‘i. The earliest collection we have seen was made on O‘ahu in 1971 (*K. Nagata 910,* BISH); however, the earliest collection may be that made on Maui in 1869–1872 (*Wawra 2303,* W, not seen).—*Plate 4*.

Our plants are referred to subsp. **polygonoides,** which is distinct in having smaller leaves, rarely more than 4 cm long, usually prostrate to decumbent stems, and fruit 1.2–1.8 mm long.

[redacted]

3. Amaranthus hybridus L.

(nat) Green amaranth

Monoecious annual herbs 10–20(–30) dm tall; stems often tinged reddish, erect, occasionally ascending, branched, striate, glabrous to moderately pubescent with multicellular hairs. Leaves lanceolate to ovate or rhombic, blades 3–19(–30) cm long, 1.5–8 (–12) cm wide, lower surface glabrous or sparsely pilose along the margins and veins, petioles 0.5–15 cm long. Flowers yellowish green, reddish, or purple, in axillary and terminal spikes, both sexes mixed throughout the spikes, bracts and bracteoles deltate-ovate, tipped with a long, pale brown to reddish awn; sepals 5, 1.5–3.5 mm long, lanceolate or oblong, apex acute, often awn-tipped, sometimes the apex of pistillate flowers blunt, only the midrib green; stigmas (2)3. Fruit subglobose to ovoid, sometimes with a short, inflated or narrow and smooth neck below base of style, 2–3 mm long, dehiscent with a circumscissile lid, the lid smooth. Seeds black, sometimes shiny, compressed, 0.8–1.3 mm long, faintly reticulate near the margins. [$2n$ = 17, 24, 32.] Apparently native to the New World; in Hawai‘i sparingly naturalized at low elevations on O‘ahu and Maui. First collected on O‘ahu in 1930 (*Wilder s.n.*, BISH).

Our plants are referred to subsp. **hybridus**, which is distinct in that the bracteoles of the pistillate flowers are usually 1.5–2 times longer than the sepals and the fruit has a distinct inflated neck.

3. **Charpentiera obovata** Gaud.

(end)

Trees up to 4.5(–6) m tall, often shrubby; stems 0.6–1.8 mm in diameter directly below apex, internodes (0.7–)3–10(–16) mm long, apices and leaf primordia pale brown tomentose. Leaves somewhat coriaceous, obovate to somewhat elliptic, 3–12.5 cm long, 1–5.5 cm wide, lateral veins 10–15 pairs, usually glabrous, margins entire with usually well-developed marginal ribs, apex acute, obtuse, or rounded, base acute or obtuse, petioles 0.2–5.5 cm long. Panicles 10–40 cm long, with 5–20 primary branches 2–20 cm long, each branch subtended by 1 bract 0.6–1.25 mm long, glabrous to tomentulose in the axils of branches and bracts, peduncles 1–5 cm long, flowers 5–20 per branch, internodes between individual flowers 3–9 mm long, but some flowers as close as 1.1 mm apart; sepals 1.5–2.25 mm long, 3–5-veined. Seeds ca. 1.5 mm long. Occurring in mesic to sometimes wet forest, 190–1,750 m, on all of the main islands except Ni‘ihau and Kaho‘olawe, but apparently most abundant in the Wai‘anae Mountains, O‘ahu.—*Plate 5*.

[redacted]

2. Nototrichium sandwicense (A. Gray) Hillebr.

[*Ptilotus sandwicense* A. Gray; *Nototrichium fulvum* Schinz; *N. sandwicense* var. *decipiens* Sherff; *N. s.* var. *dubium* Sherff; *N. s.* var. *forbesii* Sherff; *N. s.* var. *helleri* Sherff; *N. s.* var. *kauaiense* (A. Gray) Hillebr.; *N. s.* var. *kolekolense* Sherff; *N. s.* var. *lanaiense* Sherff; *N. s.* var. *lanceolatum* Sherff; *N. s.* var. *latifolium* Sherff; *N. s.* var. *leptopodum* Degener & Sherff; *N. s.* var. *longespicatum* Hillebr.; *N. s.* var. *macrophyllum* Sherff; *N. s.* var. *mauiense* Degener & Sherff; *N. s.* var. *niihauense* St. John; *N. s.* var. *olokeleanum* Sherff; *N. s.* var. *pulchelloides* Degener & Sherff; *N. s.* var. *pulchellum* Sherff; *N. s.* var. *subcordatum* Degener & Sherff; *N. s.* var. *syringifolium* Sherff; *N. viride* Hillebr.; *N. v.* var. *kalaupapae* St. John; *N. v.* var. *oblongifolium* Sherff; *N. v.* var. *subtruncatum* Sherff; *Psilotrichum sandwicense* (A. Gray) Seem.; *P. s.* var. *kauaiense* (A. Gray) Drake; *P. s.* var. *longespicatum* (Hillebr.) Drake; *P. viride* (Hillebr.) Drake; *Ptilotus sandwicensis* A. Gray var. *kavaiensis* A. Gray]

(end)

Shrubs or small trees, branched from base or rarely a single trunk with a branched crown; stems (0.8–)1–4(–7) m long, 2–10 cm in diameter, silky canescent with straight, appressed hairs. Leaves usually elliptic, often broadly so, to ovate, broadly ovate, or lanceolate, rarely obovate, (1.5–)3–10(–13) cm long, (1–)2–4 (–7.6) cm wide, usually densely pubescent with closely appressed or sometimes spreading hairs, especially on lower surface, upper surface usually less densely pubescent, sometimes both surfaces only sparsely pubescent or rarely glabrate, apex acuminate, acute, or obtuse, rarely retuse, base cuneate to truncate, petioles (3–)6–20 mm long. Flowers lanceoloid to narrowly ovoid, in stout spikes 0.5–3(–5) cm long, 5–10 mm in diameter, peduncles (0.5–)2–5 (–7.5) cm long; sepals lanceolate to ovate, 2–3(–4) mm long, pubescent with long spreading hairs and with a large tuft of hairs at base, or rarely glabrous, subtended by an ovate, scarious bract ca. 1.5–2.5 mm long, ± with a spine ca. 2 mm long, usually densely pubescent, usually persistent on the rachis, bracteoles ovate to lanceolate, scarious, ca. 1.5–2 mm long, deciduous with the calyx and fruit. Fruit ca. 2 mm long, enclosed by the calyx. Scattered to sometimes common in open dry forest, on exposed ridges, and lava fields, 0–750 m, on all of the main islands.—*Plate 6.*

Sherff described over 20 varieties of *Nototrichium sandwicense* based upon pubescence density, leaf size, and the shape and length of the spikes. These characters are often quite variable even on a single plant. Based on current information, it does not seem possible to subdivide the species. Moreover, *N. viride,* which has been separated from *N. sandwicense* based on being less densely pubescent and having shorter stamens and styles, seems doubtfully distinct. The less densely pubescent leaves of plants assigned to *N. viride* appear to only represent extreme endpoints of a rather continuously variable character. When we examined a number of specimens, we also found the stamen and style length feature to be quite variable, and thus it cannot be the basis for separation of 2 species.

The illustration of *Nototrichium viride* by Degener, Degener, and Stone (1960) is clearly *N. humile,* and the material it was based upon is probably not from Kaua'i. The text indicates that the specimen illustrated is *Stone 830,* which we could not locate; however, a specimen of *N. humile* that closely matches the illustration is *Stone 900* (BISH) from the Wai'anae Mountains, O'ahu. The *Stone 900* collection is labeled *N. viride,* in further support that it was the basis of the illustration. Furthermore, Degener et al. (1960) state that *Stone 830* was collected along the Nāpali Coast, Kaua'i, in June 1955, but the only material of *Nototrichium* Stone collected at that time is a specimen of *N. sandwicense* (*St. John & Stone 25544,* BISH).

[redacted]

1. Rhus sandwicensis A. Gray

[*R. chinensis* Mill. var. *sandwicensis* (A. Gray) Degener & Greenwell; *R. semialata* J. A. Murray var. *sandwicensis* Engl.]

(end) *Neleau, neneleau*

Small trees 3–8 m tall, with milky sap, producing numerous suckers from spreading roots to form dense patches; stems with prominent lenticels. Leaves green on upper surface, lower surface paler, young leaves often red, odd-pinnately compound with (2)3–5(6) pairs of leaflets, alternate, lateral leaflets oblong-elliptic to lanceolate, (5–)7–16 cm long, 2.5–6 cm wide, the terminal leaflet ovate, very broadly elliptic to lanceolate, (5–)9–14 cm long, (2.5–)3–6(–9.5) cm wide, veins prominent on lower surface, upper surface sparsely short-villous to strigillose, the hairs reddish brown, lower surface moderately to densely so, margins serrate to crenate, apex acute to acuminate, base often oblique, petioles 6–10(–17) cm long. Flowers apparently perfect, in dense terminal panicles, densely reddish brown tomentose; sepals 5, lanceolate, ca. 1–1.5 mm long, margins ciliate; petals 5, pale yellow, elliptic, ca. 3–3.5 mm long, margins ± ciliate; stamens 5. Drupes red, globose, somewhat depressed, tomentose. Scattered in relatively wet to dry, disturbed areas, especially along roadsides and in pastures, 150–750(–2,150) m, from Makaweli, Kaua'i (now known only from a newly discovered population at Kamali'i Ridge; R. Hobdy, pers. comm.); Nu'uanu and Moanalua valleys and Ho'omaluhia, O'ahu; Pelekunu Valley, Moloka'i; and scattered localities on Maui and Hawai'i; the species is most common in areas near Hilo and Waimea (Kamuela), Hawai'i.—*Plate 6.*

Hillebrand (1888) mentions that the plants are "apparently dioecious"; however, the specimens that we examined were all morphologically perfect. The breeding system of this species is in need of study. The wood is lightweight, coarse-textured, and tough and was formerly used for saddle trees, yokes, and plows. The bark was once used locally for tanning.

[redacted]

[redacted]

2. Schinus terebinthifolius Raddi

(nat) Christmas berry, *wilelaiki, naniohilo* (Moloka'i)

Shrubs or trees 1–7 m tall. Leaves with 2–3(–6) pairs of opposite leaflets, these elliptic to rarely oblanceolate, 1.5–7.5 cm long, 0.7–3.2 cm wide, terminal leaflet larger than lateral ones, glabrous, margins entire to serrate or crenate, the rachis distinctly winged. Sepals deltate, ca. 0.7–0.8 mm long; petals white, oblong to ovate, 1.2–2.5 mm long; style 1; stigmas 3. Drupes red, 4–6.5 mm in diameter. [$2n = 60$.] Native to Brazil; in Hawai'i cultivated and now naturalized in usually mesic, disturbed areas, 3–920 m, on Midway Atoll and all of the main islands except Ni'ihau and Kaho'olawe. First collected on Hawai'i in 1911 (*Forbes 351a.H,* BISH).—*Plate 6.*

Schinus terebinthifolius is now a serious weed in many places, often forming dense thickets on steep slopes. Its bright red berries and green foliage are popular for Christmas wreaths and decorations. *Wilelaiki* is the Hawaiian name for Willie Rice, a politician who often wore a hat *lei* made of the berries (Neal, 1965).

[redacted]

[redacted]

1. **Centella asiatica** (L.) Urb.

[*Hydrocotyle asiatica* L.]

(nat) Asiatic pennywort, *pohe kula*

Plants slender; stems 1 to several, creeping, rooting at the nodes, glabrous to floccose and glabrate. Leaves orbicular-reniform to ovate-cordate, 2–6 cm long, 1.5–5 cm wide, 5–9-nerved, margins crenate to entire, petioles 3–30 cm long. Flowers 2–3 in umbels, peduncles 1.2–4 cm long, involucral bracts usually 2, ovate to suborbicular, 2.5–3 mm long, 1.5–2.5 mm wide, scarious-margined, pedicels short, 0–4 mm long; petals white to purplish or rose. Fruit ovoid to orbicular, 2–5 mm in diameter, mericarps strongly flattened laterally, ribs usually 7–9. [$2n$ = 17, 18*, 19, 20, 22, 33.] Native to Asia; in Hawai'i naturalized in a wide range of habitats including meadows, ditches, bogs, and wet forest, 0–1,700 m, on all of the main islands except Ni'ihau and Kaho-'olawe. Naturalized prior to 1871 (Hillebrand, 1888).—*Plate 6.*

The plant widespread in the Hawaiian Islands is apparently the ubiquitous Asian diploid of this polyploid complex.

[redacted]

1. Cryptotaenia canadensis (L.) DC

[*Sison canadense* L.; *Cryptotaenia canadensis* var. *japonica* (Hassk.) Makino; *C. japonica* Hassk.]

(nat) Honewort

Plants slender, 3–12 dm tall. Basal and lower cauline leaves ternately compound, deltate, 2–10 cm wide, the leaflets obovate to rhombic-obovate, margins doubly serrate, the teeth mucronate, apex obtuse to acuminate, base cuneate; upper cauline leaves reduced, the leaflets narrow, petioles usually longer than blades, 7–20 cm long. Rays 2–7, slender, stiffly ascending, 1–6 cm long, pedicels 2–10, ascending, 2–35 mm long. Fruit linear to ovoid-oblong, 3.5–8 mm long, 1–3 mm wide, mericarps readily separating. [$2n = 18, 20, 22$.] Native to North America and eastern Asia; in Hawai‘i occasionally cultivated and naturalized on Kaua‘i, O‘ahu, and Hawai‘i. First collected on O‘ahu in 1925 (*Pope 1271,* BISH).—*Plate 7.*

[redacted]

1. Daucus pusillus Michx.

(nat?) American carrot

Annual herbs 3–90 cm tall; stems usually solitary, unbranched or few-branched above, retrorsely papillate-hispid. Leaves oblong in general outline, 3–10.5 cm long excluding the petioles, 1.5–7 cm wide, the ultimate divisions linear, 1–5 mm long, 0.5–1 mm wide, ± hispid, apex acute, petioles 4–15 cm long. Flowers white, peduncles 1.1–4.5 dm long, retrorsely papillate-hispid, involucre of foliaceous, pinnately decompound bracts, the divisions short, linear or lanceolate, rays few to numerous, unequal, 0.4–4 cm long, compact in fruit, pedicels unequal, 2–9 mm long, involucel of linear, acute bractlets, about equalling the pedicels; calyx teeth 0.1–0.2 mm long. Fruit oblong, 3–5 mm long, ca. 2 mm wide, usually broadest below the middle, the commissural surface with 2 rows of hispidulous hairs, mericarps readily separating. [$2n = 22$.] Native to North and South America; in Hawai'i introduced or perhaps native, found in dry habitats such as cinder slopes on O'ahu, Moloka'i, Lāna'i, and Hawai'i. According to Hillebrand (1888), a native or pre-contact introduction, since in his day it grew chiefly in uninhabited mountainous regions. Further support for this idea is given by the discovery of mericarps of this species in archeological remains in the Mauna Kea adze quarry complex (Allen, 1981). This site was abandoned prior to contact.—*Plate 7.*

[redacted]

1. Foeniculum vulgare Mill.

[*Anethum foeniculum* L.]

(nat)

Stout perennial herbs 9–12 dm tall. Leaves glaucous to dark green, ovate to triangular, ca. 30 cm long, ca. 40 cm wide, pinnately decompound, the ultimate divisions filiform, 4–40 mm long, ca. 0.5 mm wide, petioles 7–14 cm long, wholly sheathing. Peduncles 1.5–6.5 cm long, rays 15–40, spreading-ascending in flower, ascending to suberect in fruit, unequal, pedicels 2–10 mm long, subequal. Fruit 3.5–4 mm long, 1.5–2 mm wide, ribs acute. [$2n = 16, 22, 26, 30, 44$.] Native to Eurasia; in Hawai'i cultivated and naturalized along roadsides, in pastures, and other open sites on Kaua'i, O'ahu, Lāna'i, Maui, and Hawai'i. First collected on Maui in 1910 (*Forbes 131.M*, BISH).—*Plate 7.*

1. Hydrocotyle bowlesioides Mathias & Constance

[*H. sibthorpioides* Lam. var. *oedipoda* Degener & Greenwell]

(nat)

Stems slender, creeping, hirsute, roots distinctly swollen. Leaves not peltate, roundish-reniform with a sinus at base, 1–2 cm long excluding the petioles, 1.5–3 cm wide, both surfaces hirsute, shallowly 5-lobed, the lobes obtusely triangular, crenate, subequal, petioles slender, 1–12 cm long, reflexed-hirsute especially above. Umbels not proliferous, 2–10-flowered, globose, peduncles much shorter than the leaves, axillary, slender, 2–12 mm long. Fruit ellipsoid, ca. 1 mm long, 1.5 mm wide, sessile, finely hispidulous in the intervals, ribs evident, acute, subequal. [$2n = 48$.] Native to Costa Rica; in Hawai'i naturalized in open, sunny sites, sometimes in dense, disturbed wet forest, on Kaua'i, O'ahu (ca. 10 m), and Hawai'i (ca. 730–2,050 m). First collected on Hawai'i in 1943 (*Degener & Wiebke 3002,* UC).—*Plate 8.*

2. Hydrocotyle sibthorpioides Lam.

[*H. rotundifolia* Roxb.]

(nat)

Stems slender, creeping, glabrous, roots fibrous, slender. Leaves not peltate, suborbicular, 0.5–1 cm wide, glabrous, shallowly 7-lobed, the lobes crenate, the apical crenation slightly larger than the lateral one, petioles slender, 0.5–2 cm long, glabrous. Umbels not proliferous, 3–10-flowered, globose, peduncles filiform, longer than the leaves, 5–20 mm long, glabrous. Fruit orbicular, 1–1.5 mm in diameter, sessile, glabrous, ribs evident, filiform, subequal. [$2n = 24, 48, 64$.] Native to tropical Asia; in Hawai‘i naturalized in lawns and other moist, disturbed sites on Kaua‘i, O‘ahu, Maui, and Hawai‘i. First collected on O‘ahu in 1932 (*Meebold s.n.*, BISH).

[redacted]

1. **Petroselinum crispum** (Mill.) A. W. Hill

[*Apium crispum* Mill.; *A. petroselinum* L.; *Petroselinum hortense* Hoffm.; *P. sativum* Hoffm.]

(nat)

Plants 3–13 dm tall. Leaves deltate, leaflets ovate-lanceolate to linear, 2–5 cm long, 1–4 cm wide, distinct, toothed or lobed, petioles 1–2 dm long. Peduncles 3–8 cm long, involucre of a few inconspicuous, entire bracts or absent, rays 10–20, subequal to unequal, 1–5 cm long, pedicels 2–5 mm long, involucel of 5–6 linear, acute, entire bractlets shorter than the flowers. Fruit ovoid-oblong, 2–4 mm long, 1–3 mm wide, mericarps readily separating. [$2n = 22$.] Native to southern Europe; in Hawai'i cultivated and naturalized on Kaua'i, O'ahu, Maui, and Hawai'i. First collected on Maui in 1910 (*Forbes 74.M,* BISH).—*Plate 8.*

[redacted]

[redacted]

1. Peucedanum sandwicense Hillebr.

[*P. kauaiense* Hillebr.; *P. sandwicense* var. *hiroe* Degener & I. Degener]

(end, E) *Makou*

Parsley-scented, stout, erect or sprawling perennial herbs 5–10(–20?) dm tall, from a short caudex bearing a circle of several fleshy roots, glabrous and glaucous. Leaves pinnately to ternate-pinnately compound, distichous, ovate to triangular-ovate, 1–3.5 dm long, the leaflets ovate-lanceolate to orbicular, the larger, especially the terminal, ones often 1–3-lobed, 7–13 cm long, 2.5–7 cm wide, palmately veined, margins serrate or serrate-dentate, apex subacute to obtuse, base truncate to obliquely cuneate; cauline leaves few, like basal ones but reduced upward, the sheaths inconspicuous, petiolate to sessile, petioles stout, 1–5 dm long, rather narrowly sheathing at base. Flowers in a fertile terminal umbel and usually 1 or more staminate, lateral, axillary umbels, the terminal peduncle stout, 1–2 dm long, involucre of several linear-oblong to lanceolate bracts up to 2 cm long, these deciduous or sometimes absent, rays 15–25, spreading-ascending, 5–8 cm long, unequal, webbed, umbellets 10–20-flowered, the mature pedicels spreading-ascending, 5–12 mm long, unequal, webbed, involucel of 6–8 linear-oblong, scarious-margined bractlets 2–5 mm long; calyx lobes relatively prominent, ovate, persistent, ca. 0.5 mm long; petals white, orbicular, with a narrower inflexed apex; stylopodium conical, exceeding the short styles. Fruit oblong to oblong-ovoid, 10–13 mm long, 5–8 mm wide, the mericarps flattened dorsally, glabrous, the dorsal ribs low and rounded, the lateral ones broadly winged, the wing narrower to broader than the body, vittae small, 2–4 in the intervals, 5–12 on the commissure, commissural face plane, mericarps readily separating. Seed with cotyledons lanceolate, 2.5–4 cm long, 6–12 mm wide, long-petiolate. [$2n = 66^*$.] Occurring on windward cliffs, 1–250 m, on Kaua‘i, Moloka‘i, West Maui, and Keōpuka Islet off the coast of East Maui.—*Plate 8.*

The root was once used medicinally for some diseases of children.

[redacted]

[redacted]

1. **Sanicula kauaiensis** St. John

(end, E)

Rather stout, erect perennial herbs 1.5–4.5 dm tall, from a woody taproot; stems solitary, branched above. Basal leaves not seen; lower cauline leaves chartaceous, orbicular, 5–6 cm wide, palmately 3-parted or 5-parted nearly to petiole, the median segments cuneate-obovate, the lateral ones obliquely rhombic, biparted, the segments deeply lobed, margins spinulose-dentate, cauline leaves reduced upward, palmately divided and laciniately lobed, petiolate to subsessile, basal petioles not seen. Flowers white(?) with a purple midvein, in ± umbellately arranged terminal clusters of 1–5 pedunculate, capitate, 9–15-flowered(?) umbels plus similar clusters in upper leaf axils, peduncles 1–3.5 cm long, involucre of ca. 8 inconspicuous lanceolate to obovate bracts 3–6 mm long, perfect flowers 3–6, pedicillate, staminate flowers 6–9, their pedicels ca. 1.5 mm long; calyx lobes ovate-lanceolate, mucronate, 2–2.5 mm long, nearly distinct, in fruit exceeding fruit prickles; styles a little longer than calyx teeth, spreading. Fruit oblong-ovoid, 4–5 mm long, 2.5–3 mm wide, mericarps somewhat compressed dorsally in transection, covered with slender, straight, slightly bulbous-based prickles, vittae small, numerous, commissural surface shallowly sulcate, the commissural scar linear. Known only from 2 collections, the type (*Rock 5080,* BISH), apparently from Wai'ale'ale, and precipitous grassy slopes, Kalahua side of Kalalau Valley (*Degener & Hatheway 21439,* UC), Kaua'i. Rock's field notes do not mention the type collection, and only on the isotype specimen was written in pencil "Waialeale, Kauai," possibly by Rock.

[redacted]

[redacted]

3. Sanicula purpurea St. John & Hosaka

[*S. lobata* (Hillebr. ex Wolff) St. John; *S. sandwicensis* A. Gray var. *lobata* Hillebr. ex Wolff]

(end, R)

Rather stout, erect or ascending perennial herbs 0.8–3.6 dm tall, from a massive multicipital caudex; stems usually several, decumbent, tufted, paniculately-cymosely branched. Basal leaves numerous, coriaceous, reniform or orbicular to ovate-cordate, 2–8 cm wide, 3–7-lobed 1/2 or less to petiole, the lobes orbicular to obovate, the veins impressed on upper surface, prominent on lower surface, margins crenate-serrate with mucronate teeth; cauline leaves reduced upward, palmately 3–5-cleft to or below the middle, with obovate lobes, petiolate to subsessile, basal petioles slender, 5–25 cm long, abruptly sheathing at base. Flowers in paniculately arranged terminal clusters of 1–3 pedunculate, capitate umbels plus similar clusters in upper leaf axils, peduncles 0.5–1.5 cm long, umbels 6–10-flowered, involucre of ca. 10, rather conspicuous, oblong or oblanceolate bracts 3–6 mm long, perfect flowers 1–3, sessile, staminate flowers 5–7, their pedicels ca. 3 mm long; calyx teeth ovate, 1–1.5 mm long, obtuse, nearly distinct, in fruit exceeding fruit prickles; petals purple or cream, tinged purple; styles a little longer than calyx teeth, recurved. Fruit subglobose, 2–3.5 mm long, 2–3 mm in diameter, mericarps somewhat compressed dorsally in transection, covered with slender, straight or slightly curved, slightly bulbous-based prickles, vittae inconspicuous, commissural surface shallowly concave, the commissural scar lanceolate. Scattered on mossy precipitous slopes and in open bogs, rarely in low elevation wet forest, 700–1,460 m, in the Ko'olau Mountains, O'ahu, and on West Maui.—*Plate 9.*

[redacted]

4. Sanicula sandwicensis A. Gray

[*S. haleakalae* St. John]

(end)

Rather stout, erect perennial herbs 2–7 dm tall, from a caudex arising from a vertical fusiform root; stems solitary, profusely branched above. Basal leaves numerous, chartaceous, orbicular, 3–12 cm wide, palmately 3-parted or 5-parted nearly to petiole, the median segments cuneate-obovate, the lateral ones obliquely rhombic, biparted, the segments deeply lobed, margins spinulose-serrate; cauline leaves reduced upward, palmately divided and laciniately lobed, petiolate to subsessile, basal petioles slender, 1–3.3 dm long, narrowly sheathing at base. Flowers in ± umbellately arranged terminal clusters of 2–5 pedunculate, capitate umbels plus solitary to clustered umbels in upper leaf axils, peduncles 1.5–4 cm long, umbels ca. 20-flowered, involucre of 8–10 inconspicuous linear-lanceolate bracts 2–4 mm long, perfect flowers 3–7, subsessile, staminate flowers ca. 15, their pedicels 2 mm long; calyx teeth ovate, ca. 1 mm long, acuminate, evidently connate; petals yellow; styles twice as long as calyx lobes, recurved. Fruit ovoid, 3.5–4 mm long, ca. 3 mm wide, mericarps subterete in transection, covered with stout, uncinate, strongly bulbous prickles, vittae small, numerous, commissural surface broadly concave, the comissural scar linear. [$2n = 16$*.] Scattered in subalpine shrubland and woodland, 2,000–2,600 m, on the slopes of Haleakalā, East Maui, and Mauna Kea, Mauna Loa, and Hualālai, Hawai‘i.—*Plate 9.*

1. Spermolepis hawaiiensis Wolff

[*Apium echinatum* sensu St. John, non (DC) Benth. & Hook. ex S. Wats.; *Caucalis daucoides* sensu Hillebr., non L. (1753) nec L. (1767)]

(end, E)

Slender, erect annual herbs 0.5–2 dm tall, from a slender taproot; stems few-branched above, essentially glabrous. Leaves ternately decompound, oblong to ovate(?), the basal ones soon withering, 1–4 cm long, the ultimate divisions linear to linear-lanceolate, 3–6 mm long, scaberulous-margined, apex acute, the lowest divisions long-petiolate; cauline leaves smaller, less divided, sessile, basal petioles slender, 2–3 cm long, tapering into a narrow, scarious-margined sheath. Flowers in lax compound umbels arising opposite the upper leaves, peduncles 1–3 cm long, involucre of a single foliaceous bract or absent, rays 2–6, quadrangular, unequal, 5–15 mm long, spreading-ascending, umbellets 2–6-flowered, pedicels unequal, 2–6 mm long (a solitary central flower sometimes present), spreading-ascending to ascending, involucel of 1–5 linear-lanceolate, scaberulous-margined, acute bractlets 1–6 mm long; calyx absent; petals white, elliptic to obovate, without a narrower inflexed apex; styles very short, much shorter than the sharply conical stylopodium. Fruit ovoid, compressed laterally and constricted at the commissure, 3–4 mm long, 2–4 mm wide, apex attenuate, base rounded, mericarps suborbicular in transection, covered with irregularly arranged tubercles, some of which bear slender uncinate bristles, concealing the filiform ribs, vittae large, 1–3 in intervals, 2 on the commissure, commissural face sulcate, mericarps readily separating. Seed grooved beneath the vittae. [$2n = 22^*$.] Known from open areas on Kaua‘i, O‘ahu, Moloka‘i, Maui, and Hawai‘i; it has also been collected in cultivated fields at lower elevations, and hence has been mistaken for a European weed. The only recent collections, thus representing the only known extant populations, were made on O‘ahu in 1988 (*Takeuchi 3811, 3816,* BISH), and on West Maui in 1986 (*Hobdy 2506,* BISH).—*Plate 9.*

1. **Torilis nodosa** (L.) Gaertn.

[*Tordylium nodosum* L.]

(nat)

Plants slender, decumbent, 1–6 dm tall, hispid throughout, the branches spreading. Leaves 1–2-pinnately compound, oblong in general outline, the ultimate divisions linear to filiform, 1–2 mm wide, entire or lobed, apex acute. Peduncles 0–2.5 cm long, shorter than the leaves, involucre usually absent, rays 2–3, short to absent, involucel of 6–8 linear-lanceolate, acute bractlets longer than the pedicels; calyx teeth minute. Fruit ovoid, 3–5 mm long, 1–2 mm wide, the outer mericarps bristly, the inner ones warty or bristly externally, mericarps readily separating. [$2n = 12, 22, 24$.] Native to Europe; in Hawai'i sparingly naturalized and known from a 1911 collection near Kanahāhā, Kona, and recently (1980) collected again (*Corn ESP-235*, BISH) in Pōhakuloa Training Area, Hawai'i. First collected in 1911 (*Forbes 272.H*, UC).

[redacted]

1. Ochrosia compta K. Schum.

[*Bleekeria compta* (K. Schum.) Wilbur; *Ochrosia forbesii* St. John; *O. holei* St. John; *O. kondoi* St. John; *O. lamoureuxii* St. John; *O. microcalyx* St. John; *O. sandwicensis* sensu A. Gray, non A. DC; *O. tuberculata* sensu M. Pichon (1947) as to Hawaiian plants, non (Vahl) M. Pichon]

(end)

Trees 3–10 m tall. Leaves 2–4 per node, oblanceolate to elliptic, blades (5–)10–17.5(–20) cm long, 1.8–5.6(–7) cm wide, most of the secondary veins anastomosing and conspicuous, apex acute, occasionally rounded, base cuneate, petioles 1.2–3.3 cm long. Flowers in moderately open to congested inflorescences, primary peduncles (0.8–)2.5–4.2(–6.5) cm long, secondary ones (0.4–)0.8–2.3 cm long, pedicels 0–4 mm long; calyx 3–4(–5) mm long; corolla tube 6–10(–12) mm long, the lobes 6.5–9 mm long. Drupes yellow to dark purple at maturity, smooth, lanceoloid, 3.6–5.3(–5.8) cm long, 1.5–2.5(–2.8) cm wide. Scattered in gulches and on ridges in remnant dry forest and mesic forest, 300–500(–870) m, in the Wai‘anae and Ko‘olau Mountains, O‘ahu, and Pelekunu Trail, Wailau Valley, and Kahanui, Moloka‘i.—*Plate 10.*

mesic forest, often on lava, 700–1,200 m, on East Maui and 2 collections from Hāmākua District, one each in Pololū Valley and Kalōpā Gulch, Hawai‘i. Also it is cultivated at Kīpukapuaulu, Kīlauea, Hawai‘i. There are *Ochrosia* trees scattered throughout the *kīpuka;* these may represent progeny of the planted individuals, but flowering material is needed to verify their identity.

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2. Ochrosia haleakalae St. John

[*O. hamakuaensis* St. John]

(end, R)

Trees 2–8 m tall. Leaves 3–4 per node, elliptic to oblanceolate, blades (3.5–)6–15 (–19) cm long, (1.3–)2.5–4.6(–6) cm wide, most of the secondary veins anastomosing and conspicuous, apex acute to rounded, rarely retuse, base cuneate, petioles 0.8–2.5 cm long. Flowers in relatively open inflorescences, primary peduncles 2.3–4 cm long, secondary ones 0.6–2(–3) cm long, pedicels 0–5 mm long; calyx 3–4 mm long; corolla tube 10–11 mm long, the lobes 7–11 mm long. Drupes yellow or plum-colored streaked with brown, robust, ovoid to lanceoloid-ellipsoid, often with irregular ridges at maturity due to differential thickening of the exocarp, (3.8–)5–6 cm long, (2.3–)2.8–3.6 cm wide. Scattered in dry to

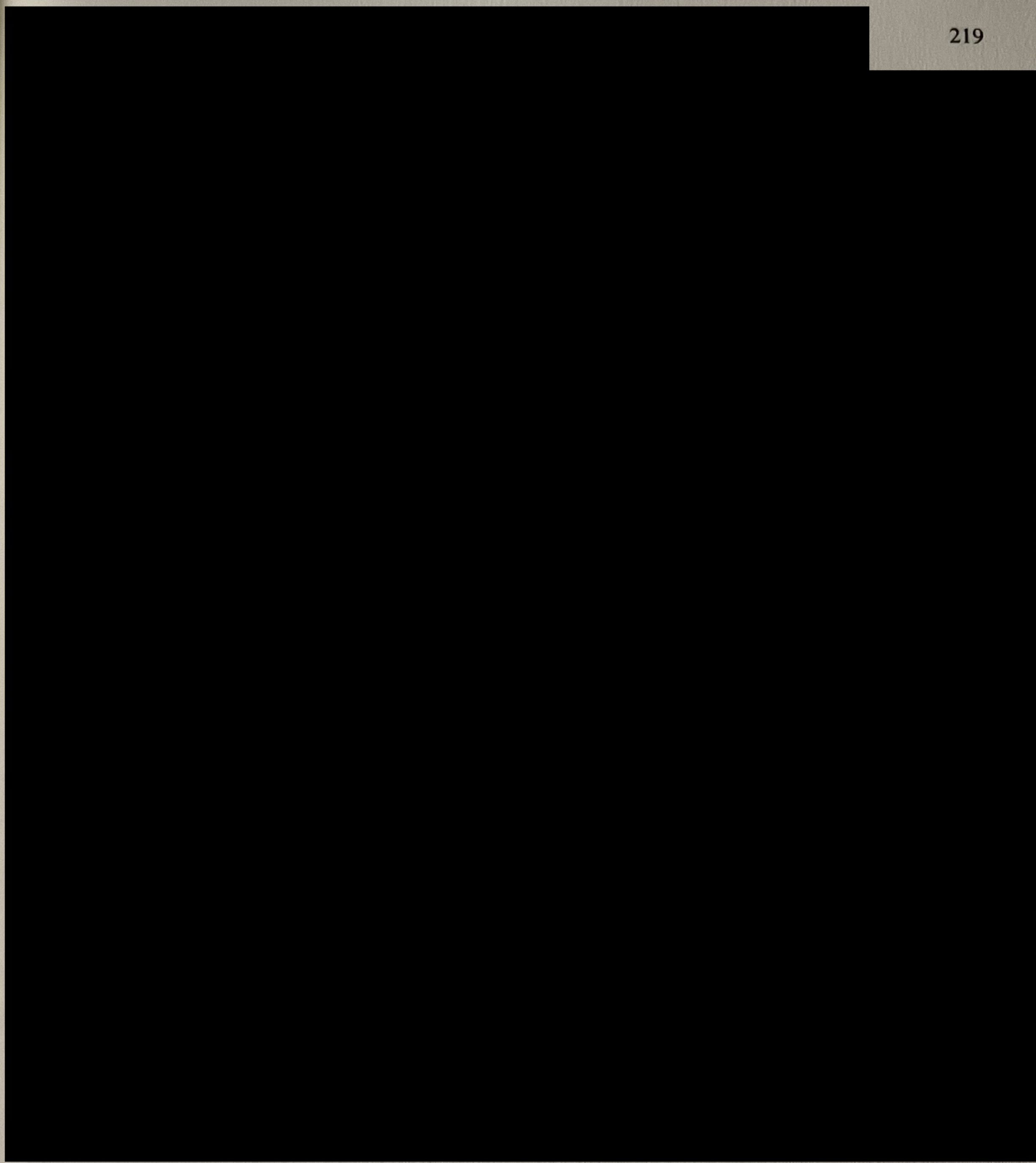
[redacted]

3. **Ochrosia kauaiensis** St. John

(end, R)

Trees 6–8 m tall. Leaves 3–4 per node, narrowly elliptic to oblanceolate, blades 7–18 cm long, (2–)4–7.1 cm wide, most of the secondary veins not anastomosing nor conspicuous, apex acute to rounded, base cuneate, petioles 1.2–3 cm long. Flowers in strongly congested inflorescences, primary peduncles 0.2–1.5 cm long, secondary ones 0.2–0.8 cm long, pedicels 0–1 mm long; calyx ca. 4 mm long; corolla tube 11–12 mm long, the lobes 7–8 mm long. Drupes yellowish brown at maturity, smooth, lanceoloid, 3.6–5.7 cm long, 1.5–2.6 cm wide. Rare in mesic forest, 200–350 m, Nāpali Coast and Hi‘i Mountains (slopes of Mount Kāhili), Kaua‘i.

[redacted]



1. Pteralyxia kauaiensis Caum

[*P. elliptica* St. John]

(end, R)

Trees 3–8 m tall. Leaves dark green and shiny on upper surface, lower surface paler and dull, oblanceolate to obovate, blades (9.2–)11–22(–32.5) cm long, 4–6.5(–9) cm wide, margins flat, sometimes slightly revolute, apex truncate, rounded to retuse, petioles (1.5–)2.3–3.5 cm long. Corolla tube 8–12 mm long, the lobes 3–4 mm long. Endocarp with the central and lateral wings or ridges small, 2.5–5 mm high, sometimes somewhat fenestrated toward distal end, the lateral wings or ridges usually reduced or aborted. Rare on slopes and ridges in diverse mesic forest to sometimes wet forest, 250–610 m, known only from Ku'ia, Mahanaloa, and Kalalau valleys, Hi'i Mountains (slopes of Mount Kāhili), Hā-'upu, Pāpa'a, Wai'oli–Waipā Ridge, and Limahuli, Kaua'i.

[redacted]

2. Pteralyxia macrocarpa (Hillebr.) K. Schum.

[*Vallesia macrocarpa* Hillebr.; *Pteralyxia caumiana* Degener]

(end)

Trees 8–15 m tall. Leaves dark green and shiny on upper surface, lower surface paler and dull, often brittle, very broadly elliptic to obovate to suborbicular, rarely broadly oblanceolate, blades 9.2–18(–23) cm long, 4.5–7.7(–10.5) cm wide, margins revolute or flat, apex acute to rounded, petioles (1.5–)2.3–4.5(–5.5) cm long. Corolla tube 7–9 mm long, the lobes ca. 2 mm long. Endocarp with the central and lateral wings or ridges prominent, 3–15 mm high, these often fenestrated, occasionally the central wings reduced. Scattered and uncommon in valleys and on slopes in diverse mesic forest, 215–730 m, known only from the Wai-'anae and Ko'olau Mountains, O'ahu.—*Plate 10.*

[redacted]

1. Ilex anomala Hook. & Arnott

[*Byronia anomala* (Hook. & Arnott) A. Heller; *B. helleri* H. Lév.; *B. sandwicensis* Endl.; *B. taitensis* A. Gray; *Ilex anomala* f. *sandwicensis* (Endl.) Loes.; *I. a.* f. *taitensis* (A. Gray) Nadeaud; *I. hawaiensis* S. Y. Hu; *I. marquesensis* F. Brown; *I. sandwicensis* (Endl.) Loes.; *I. taitensis* (A. Gray) J. W. Moore; *Polystigma hookeri* Meisn.]

(ind) *Kāwa'u, 'aiea* (Kaua'i)

Dioecious trees or occasionally shrubs (1–)5–12 m tall. Leaves dark green and glossy on upper surface, lower surface paler, thick and coriaceous, oblanceolate, elliptic to ovate, obovate, or sometimes suborbicular, (3–)4–12(–19) cm long, (1.5–)2–6 (–9.5) cm wide, venation conspicuously reticulate, the veins impressed on upper surface, appearing watery on lower surface in fresh material, glabrous, margins of mature leaves subentire, rarely serrate, seedling leaves serrate, apex rounded to obtuse, rarely emarginate, tapering to petioles 0.5–2.5(–3.5) cm long. Flowers in cymose panicles 2–10 cm long, peduncles flattened, 1.3–5 cm long, pedicels ca. 2–6 mm long with 2 bracteoles below the middle, these 2–3 mm long; calyx lobes 4, very broadly ovate, 1.5–2 mm long, 2–3 mm wide, margins hyaline and often erose; corolla lobes 6–10, oblong-elliptic, (3–)3.5–4.5 mm long; stamens in pistillate flowers with abortive anthers or perhaps sometimes anthers absent; ovary 10–24-celled, rudimentary in staminate flowers; stigma sessile with 12–24 lines, persistent. Fruit purplish black, globose, ca. 5–7 mm high, 7–10 mm in diameter. [$2n = 80$*.] Occurring in Tahiti, Marquesas, and Hawaiian Islands; in Hawai'i common in mesic to wet forest, sometimes in open bogs, (50–)600–1,400(–1,950) m, on all the main islands except Ni'ihau and Kaho'olawe.—*Plate 11.*

Ilex anomala is a highly variable species especially in the size of the inflorescence and leaf size and shape. In an anatomical and morphological study, Hu (1967) states that *I. hawaiensis* [= *I. anomala*] is the most primitive extant Aquifoliaceae, a contention that seems quite unlikely. Baas (1973, 1975) states that species from other areas also exhibit similar anatomical features and that the "primitive" features may be ecological adaptations correlated with high water availability. *Ilex anomala* is a member of subg. **Byronia** (Endl.) Loes., a small group of species from East Polynesia, Malesia, and Australia formerly segregated as the genus *Byronia*. According to Carlquist (1966a), *Ilex* in Hawai'i is completely dioecious, while those of Tahiti and the Marquesas Islands are polygamodioecious (Carlquist, 1974). The possible variation in the breeding system of *I. anomala* in Hawai'i, Tahiti, and the Marquesas should be studied.

The wood was formerly used for saddle trees, for canoe trimmings, and as an anvil for *kapa* beating. The Hawaiian vernacular name was spelled *kaawau* by Hillebrand (1888).

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3. Ilex paraguariensis St. Hil.

(nat) Yerba mate, Paraguay tea

Evergreen shrubs or small trees 4–7 m tall. Leaves dark green, coriaceous, elliptic to obovate, 2.5–13(–25) cm long, 2–6.4 cm wide, margins undulate and coarsely crenate in the upper 2/3. Flowers in numerous small cymes along the current year's growth, usually 1–2 cm long, peduncles 0.5–0.8 cm long; calyx lobes 4, 0.4–0.6 mm long; corolla lobes usually 4–5, 1.5–2 mm long; ovary 4-celled. [$2n = 40$.] Fruit dark red to brownish, ca. 6 mm in diameter. Native to Paraguay and adjacent Argentina and Brazil; in Hawai'i cultivated and sparingly naturalized in mesic valleys at least in Mānoa and Waiāhole valleys, O'ahu. First collected on O'ahu in 1934 (*Grant 7544*, BISH).

[redacted]

3. **Cheirodendron forbesii** (Sherff) Lowry

[*C. kauaiense* Kraj. var. *forbesii* Sherff]

(end)

Trees 3–4.5 m tall. Leaflets 3 (occasionally 5 on juvenile leaves), subcoriaceous, elliptic to ovate, 5–12 cm long and less than ½ as wide, veins strongly sunken on upper surface in dried material (weakly so in juvenile leaves), margins entire, apex rounded-acute to acuminate, base narrowly cuneate to attenuate, petioles 3–7(–10 in juvenile leaves) cm long, petiolules 0.5–1.5 cm long, subterete. Inflorescences up to 10 cm long, pedicels 3–6 mm long; ovary (4)5-carpellate; styles (4)5, 1–1.5 mm long, connate ½–¾ their length into a conical-cylindrical stylopodium, the distinct arms divergent to spreading. Fruit globose, weakly (4)5-sided (strongly ribbed when dry), 4–5 mm long (incl. styles). Occurring in wet forest, 600–890 m, Mount Kāhili, north fork of Kamo-ʻoloa Stream, Makaleha Mountains, and the Powerline Trail, Kauaʻi.

This taxon was originally described as *Cheirodendron kauaiense* var. *forbesii,* but clearly warrants recognition at the species level. A possible hybrid involving *C. forbesii* and *C. fauriei* (*Lowry 3515,* BISH, F, K, MO, NY, P, US) was recently collected on Mount Kāhili, where both putative parents occur. This collection has the distinctive upper leaf surface of *C. forbesii,* a usually 3-carpellate ovary, and leaflets intermediate in shape between the putative parents, a combination of characters not seen in any other specimen.

1. Ambrosia artemisiifolia L.

(nat) Common ragweed

Erect, taprooted annual herbs; stems 3–10 dm long, branched at least above, ± hirsute. Leaves pinnatifid or bipinnatifid, the lobes lanceolate, blades narrowly to broadly ovate or elliptic, 4–10(–30) cm long, 4–7(–15) cm wide, upper surface hirsutulous, lower surface strigose and often hirsute on the veins. Staminate involucre 1.5–2 mm high; pistillate involucre 3–5 mm high in fruit with a single series of short, sharp, erect spines near or above the middle. [2*n* = 34, 36.] Native to the United States and southern Canada; in Hawai'i naturalized in low elevation, dry, disturbed habitats, especially along roadsides and in pastures, 0–900 m, on O'ahu, Moloka'i, Maui, and Hawai'i. Naturalized at least since 1854 (Hillebrand, 1888).—*Plate 15.*

Franseria strigulosa Rydb. or *F. tenuifolia* Spreng., both synonyms of *Ambrosia confertiflora* DC, does not occur in Hawai'i as has long been assumed (e.g., Hillebrand, 1888). All specimens labeled as this species were fruiting specimens of *A. artemisiifolia,* while those previously labeled as *A. artemisiifolia* were all immature specimens.

9. **Dubautia laxa** Hook. & Arnott

[*D. fauriei* H. Lév.; *D. knudsenii* Hillebr. var. *degeneri* Sherff; **D. laxa** subsp. **bryanii** (Sherff) G. Carr; *D. l.* var. *bryanii* Sherff; *D. l.* var. *greenwelliae* Degener & Sherff; **D. l.** subsp. **hirsuta** (Hillebr.) G. Carr; *D. l.* var. *hirsuta* Hillebr.; *D. l.* var. *hispida* Sherff; *D. l.* var. *intercedens* Degener, I. Degener & Sherff; *D. l.* var. *obovata* Sherff; *D. l.* var. *o.* f. *glabrescens* Sherff; *D. l.* var. *pedicellata* Rock; **D. l.** subsp. **pseudoplantaginea** (Skottsb.) G. Carr; *D. l.* var. *pseudoplantaginea* Skottsb.; *D. l.* var. *skottsbergii* Sherff; *D. l.* var. *waianensis* Degener & Sherff]

(end) *Na'ena'e pua melemele*

Shrubs up to ca. 5 m tall; vegetative stems glabrous to sparsely hispidulous, flowering stems copiously hispidulous. Leaves opposite, elliptic to obovate or oblong-oblanceolate, 4–20 cm long, 1–6 cm wide, usually 5–7-veined, upper surface glabrous to muricate-strigose, lower surface glabrous to papillose-hispid, margins shallowly toothed, often setose-ciliate at least basally, apex acute to acuminate, base gradually narrowed into a margined petiole. Heads numerous in erect, simple to somewhat glomerate-congested, corymbose inflorescences 2–17 cm long, 3–27 cm wide, peduncles hispid, ultimate ones 0–25 mm long; receptacle flat to broadly low-conical, false involucre consisting of 5–22 distinct receptacular bracts 2–6 mm long, 1 associated with each floret, green or tinged purplish, glabrous to densely hispid; florets 5–22 per head, corollas yellow, usually 2–3 mm long, coarsely glandular on the tube; pappus of 15–20 very narrowly linear-lanceolate, very short-ciliate-margined bristles 2–3 mm long. Achenes ca. 2–3 mm long, moderately to densely strigose. [$2n = 28^*$.] Occurring in wet forest and bogs, 360–1,700 m, on Kaua'i, O'ahu, Moloka'i, Lāna'i, and Maui. Flowering response variable.—*Plate 23*.

This highly variable species is divided into 4 subspecies: subsp. **bryanii** with 5–8 florets per head, false involucral bracts 2–3.5 mm long, and leaves narrowly elliptic-oblanceolate, glabrous or rarely midrib on lower surface strigose (Ko'olau Mountains, O'ahu); subsp. **hirsuta** [incl. *Dubautia laxa* var. *intercedens, D. l.* var. *pedicellata, D. l.* var. *skottsbergii, D. l.* var. *waianensis*] with 13–22 florets, false involucral bracts 3.5–4.5 mm long, and leaves uniformly muricate-strigose (Kaua'i, primarily Wai'anae Mountains, O'ahu, Lāna'i); subsp. **laxa** [incl. *D. fauriei, D. knudsenii* var. *degeneri, D. laxa* var. *greenwelliae, D. l.* var. *hispida, D. l.* var. *obovata, D. l.* var. *o.* f. *glabrescens*] with 8–12 florets per head, false involucral bracts 4–5 mm long, and leaves glabrous to moderately strigose (O'ahu, Moloka'i, Maui); and subsp. **pseudoplantaginea** with 4–9 florets per head, false involucral bracts 4–6 mm long, and leaves narrowly oblanceolate or elliptic-oblong, completely glabrous (Ko'olau Mountains, O'ahu).

A white-flowered form with finer pubescence than subsp. *hirsuta* was recently discovered in the vicinity of Kalalau Lookout, Kaua'i (e.g., *Flynn 1171,* PTBG; *Carr 1330,* BISH). It may represent a new taxon. It is apparently closely related to subsp. *hirsuta*.

[redacted]

1. Encelia farinosa A. Gray

(nat) Brittle bush

Many-branched, aromatic shrubs 3–8 (–16) dm tall; stems brittle. Leaves lanceolate to broadly ovate, 3–10 cm long, 2–5 cm wide, densely white tomentose, margins entire to dentate or undulate, petioles 1–4.5 cm long. Heads in naked panicles extending up to 2.5 dm above the leaves; involucral bracts 3.5–7 mm long; ray florets 10–12 per head, rays 7–12 mm long; pappus absent. Achenes 4–4.5 mm long, villous with brownish silky hairs. [$2n = 34, 36$.] Native to the hot deserts of North America from southern Nevada and Arizona south to Sinaloa and Baja California, Mexico; in Hawai‘i sparingly naturalized in low elevation, dry sites from Waikapū and Mā‘alaea to areas near Kēōkea and Wailea, Maui. First collected in 1909 (*Rock 10310,* BISH).

[redacted]

1. Helichrysum foetidum (L.) Cass.

[*Gnaphalium foetidum* L.]

(nat) Stinking everlasting

Foetid biennial herbs 2–10 dm tall. Leaves oblong to lanceolate, 3–7 cm long, upper surface green and sparsely pubescent, lower surface white woolly pubescent, lower ones gradually narrowed to petioles, upper ones with cordate bases clasping the stem. Heads several in clusters at the ends of the stems, 15–20 mm in diameter; involucral bracts shiny, bright yellow; corollas yellow. Achenes minutely tuberculate. [$2n = 14, 28$.] Native to South Africa; in Hawai'i naturalized in dry to subalpine vegetation and pastures on the high plains between Mauna Loa and Mauna Kea to Pu'uwa'awa'a and Kamuela, also on the eastern slopes of Mauna Loa, 750–2,300 m, Hawai'i. First collected in 1949 (*Degener 20235,* BISH). Probably introduced with grass seed for pastures; it is now a common weed.—*Plate 28.*

1. Parthenium hysterophorus L.

(nat) False ragweed, Santa Maria

Taprooted annual herbs 3–10 dm tall; stems unbranched in lower part, branched in upper part, longitudinally striate, hirsute. Lower leaves in a basal rosette, these deciduous at maturity and stem leaves remaining, 3–20 cm long, 2–10 cm wide, bipinnatifid or pinnatifid. Heads small, numerous in open panicles; rays white, 0.6 mm long; disk corollas cream-colored, ca. 1 mm long; pappus of 2 petaloid scales inserted close to the corolla on either side, entire or notched. Achenes black, obovate, 2–2.5 mm long. [$2n = 18, 34–36$.] Native to tropical America; in Hawai‘i naturalized in low elevation, dry pastures or along roadsides, southwestern Kaua‘i, Moloka‘i, Maui, and Kona region, Hawai‘i. First collected on Hawai‘i in 1960 (*Kawasaki s.n.*, BISH).—*Plate 33*.

[redacted]

[redacted]

5. Tetramolopium filiforme Sherff

[**T. f.** var. **polyphyllum** (Sherff) Lowrey; *T. polyphyllum* Sherff]

(end, E)

Monoecious, somewhat cespitose, dwarf shrubs 5–15 cm tall; stems intricately branched at base, glabrous when mature except for ciliate leaf bases, minutely capitate glandular when young. Leaves clustered at apex, linear to linear-filiform with margins entire, or linear-oblanceolate with margins coarsely dentate and teeth linear, 10–20 mm long, 0.4–1.2 mm wide, glandular punctate and sparsely strigose on margins and midribs, sessile or petiolate. Heads solitary or 2–4 in subumbellate inflorescences, peduncles (1.9–)2–4.7 cm long, sparsely to densely capitate glandular, bracts linear; involucre campanulate, 4–5 mm high, 7–10 mm in diameter, bracts (32–)40–50(–59), lanceolate, glabrous abaxially, outer involucral bracts with sparsely glandular margins, inner ones scarious hyaline-margined, lacerate at apex, acuminate; receptacle 1.5–2.5 mm in diameter; ray florets 35–52 per head, in a single series, rays white or pale lavender, 3–4 mm long, (0.5–)0.7–1 mm wide; disk florets functionally staminate, 18–30 per head, corollas maroon or rarely yellow, narrowly funnelform, 3.1–4(–4.3) mm long, the tube 1.3–2.1 mm long; anther tips linear-lanceolate, 0.15–0.2 mm long; pappus white, 2.2–3.2 mm long. Achenes oblanceoloid, 2–2.7 mm long, fertile achenes 0.6–1 mm wide, sparsely glandular strigose to glabrous, faces (0)1–3-nerved. [$2n = 18$*.] Scattered to common, known only from dry ridge habitats, 580–900 m, ʻŌhikilolo Ridge and adjacent Keaʻau Valley, Waiʻanae Mountains, Oʻahu.—*Plate 36.*

Two varieties of *Tetramolopium filiforme* are recognized: var. **filiforme** with linear to linear-filiform leaves with entire margins (xeric cliff faces below 770 m on ʻŌhikilolo Ridge and Keaʻau Valley); and var. **polyphyllum** with linear-oblanceolate leaves with coarsely dentate margins (submesic slopes of ʻŌhikilolo Ridge above 770 m). Variety *filiforme* usually flowers a few weeks earlier than var. *polyphyllum*. The populations of the 2 varieties were probably contiguous in the past but became separated recently due to heavy erosion. This erosion is largely the result of overgrazing by feral goats. The varieties are nearly sympatric yet they maintain their morphological integrity. Growth studies of the varieties conducted under uniform conditions show the morphological differences to be genetically based.

[redacted]

[redacted]

1. Batis maritima L.

(nat) Pickleweed, *ʻākulikuli kai*

Plants dioecious. Flowers initially enclosed by a membranous saccate organ that eventually splits near the top into 2 or 4 lobes. [$2n = 18, 22$.] Native to coastal regions of tropical and subtropical America and the Galápagos Islands; in Hawaiʻi naturalized in coastal areas on all of the main islands. First discovered by Hillebrand in 1859 in the salt marshes of Prison Island [Sand Island] near Honolulu, Oʻahu (Hillebrand, 1888).—*Plate 39*.

[redacted]

[redacted]

1. Macfadyena unguis-cati (L.) A. Gentry

[*Bignonia unguis-cati* L.; *B. tweediana* Lindl.; *Doxantha unguis-cati* (L.) Miers]

(nat) Cat's-claw climber

Lianas up to 15 m or more long, often rooting at the nodes, glabrous or nearly so. Leaves drying dark green to nearly black, dimorphic, juvenile plants with small leaflets 1–2 cm long, 0.4–0.8 cm wide, mature leaflets narrowly ovate to lanceolate, 5–16 cm long, 1.2–6.9 cm wide, both surfaces sparsely lepidote, tendril deciduous, 3-forked, 0.1–3.5 cm long, each fork bearing a small horny hook. Flowers usually in axillary clusters of 1–3(–15); calyx cup-like, 0.1–1.8 cm long, glabrous to sparsely lepidote, margins crenulate-undulate; corolla yellow with ca. 9 orange lines in the throat, tubular-campanulate, 4.5–10 cm long, 1.2–2.4 cm wide at the mouth, the tube 3.3–6.9 cm long, puberulent within along the throat ridges. Capsules drying blackish, linear, flattened, tapering at both ends, 26–95 cm long, 1–2 cm in diameter, inconspicuously lepidote. Seeds 1–1.8 cm long, 4.2–5.8 cm wide, the wings membranous, not sharply demarcated from the seed body. [$2n = 40$, 80.] Native from Mexico and the West Indies to Argentina; in Hawai'i commonly cultivated as an ornamental and sparingly naturalized at least on Kaua'i, O'ahu, and Lāna'i. Cultivated as early as 1928 based on records given by Neal and Metzger (1928).

[redacted]

2. Heliotropium anomalum Hook. & Arnott

[**H. a.** var. **argenteum** A. Gray; *Lithospermum incanum* G. Forster; *Pentacarya heliotropioides* DC]

(ind) *Hinahina, hinahina kū kahakai, nohonohopu'uone* (Ni'ihau), *pōhinahina*

Prostrate subshrubs, sometimes forming mats; stems prostrate, decumbent, or sometimes ascending, producing many short side branches along the length of the main stem, 1–5(–10) dm long, flowering stems ascending to erect. Leaves distributed along the stem or, on young or flowering stems, densely clustered toward the tips and appearing whorled, thick but not fleshy, linear-lanceolate to spatulate, 1–3(–5) cm long, (0.1–)0.2–0.5(–0.8) cm wide, densely soft, silky, appressed villous, gradually tapering to base. Flowers sweetly fragrant, in short, congested, bracteate cymes 0.8–1.3 cm long, peduncles (1.5–)3–6.5 cm long; calyx stiff, deeply 5-lobed, the lobes linear, unequal, 1–2 usually slightly broader than others, 2.5–3.5 mm long, densely appressed pubescent; corolla white to pale purple, funnelform, 5–6-lobed, twice as long as the calyx, 6–11 mm long, the tube 5–8 mm long, appressed villous externally, especially on the tube; stamens as many as corolla lobes, subsessile. Nutlets 4, 1-seeded, obovoid, slightly compressed, ca. 1 mm long, appressed villous. [$2n = 28^*$.] Widely distributed from Hawai'i nearly throughout Polynesia; in Hawai'i occurring in sandy sites in coastal areas on Ni'ihau, Kaua'i, O'ahu, Moloka'i, and apparently rare on Maui and Hawai'i, perhaps formerly also on Lāna'i and Kaho'olawe.—*Plate 41*.

Our plants are referred to the endemic var. **argenteum**, which is similar to var. *anomalum* except it has closely appressed, silky pubescence.

1. Descurainia sophia (L.) Webb

[*Sisymbrium sophia* L.]

(nat) Flixweed

Annual herbs, subglabrous to sparsely pubescent, but not glandular pubescent; stems 2–8 dm long, single from the base, branched above. Basal leaves usually quickly deciduous, 2–3 times pinnately compound, the segments sometimes toothed; cauline leaves similar, the segments usually linear, sometimes elliptic to obovate. Flowers in elongated, loose racemes, fruiting pedicels 7–15 mm long; sepals erect, narrowly elliptic to linear; petals yellowish green. Siliques terete, usually torulose and curved, occasionally straight, 1–3 cm long. Seeds in 1 row per cell, oblong-ellipsoid, 0.8–1.5 mm long. [$2n$ = 14, 20, 28.] Native to Eurasia; in Hawai'i known only from a single collection each from Haleakalā, Maui, and the Saddle Road area, Hawai'i. First collected on Hawai'i in 1963 (*Kawasaki 8*, BISH).—*Plate 44*.

3. Lepidium bonariense L.

(nat)

Annual or biennial herbs; stems ascending to erect, 1–5 dm long, ± branched from near base, usually densely hirsute, the hairs coarse. Basal leaves 3–7 cm long, 2–3 times pinnately dissected, the lobes 1–2 mm wide; cauline leaves present up to the inflorescence, somewhat reduced, pinnately lobed to deeply serrate, the segments apiculate, all leaves usually hirsute. Flowers in elongate racemes 3–15 cm long, becoming conspicuously narrowed toward apex; sepals ca. 0.6 mm long, caducous; petals linear, ca. 0.3–0.4 mm long, or absent; stamens 2. Silicles broadly ovate to suborbicular, 2.5–3.5 mm long, the apical notch broad, prominent, the margins clearly exceeding the style. Seeds ca. 1.5 mm long. [$2n = 64$.] Native to South America; in Hawai'i known from several collections made near Pōhakuloa State Park, Hawai'i. First collected in 1975 (*Herbst 5336,* BISH).—*Plate 45.*

According to Rollins (1986), this specimen is very similar to plants of *Lepidium bonariense* from Brazil in the density of pubescence.

[redacted]

1. **Nasturtium microphyllum** Boenn. ex Rchb.

[*N. officinale* sensu Hawaiian botanists, non R. Br.]

(nat) *Lēkō*

Aquatic or semiaquatic, somewhat fleshy, glabrous perennial herbs; stems floating, prostrate, or ascending, rooting at the nodes, hollow, 1–6 dm long, usually 2–6 mm in diameter. Leaves pinnately compound with (3–)6–9 leaflets, these ovate to elliptic, 1.5–4 cm long, 0.5–2 cm wide, margins subentire to sinuate-dentate, the terminal one often larger than lateral ones. Pedicels 11–20 mm long in fruit; petals white, ca. 4 mm long. Siliques 1.6–2.5 cm long. Seeds in 1 row per cell, with ca. 100 polygonal depressions on each face. [$2n = 64$.] Native to western Europe, widely cultivated as a food plant and widely naturalized in many areas; in Hawai'i naturalized in running water or seasonally wet areas on Kaua'i, O'ahu, Maui, and Hawai'i. First collected on Kaua'i in 1917 (*Forbes 773.K*, BISH).

[redacted]

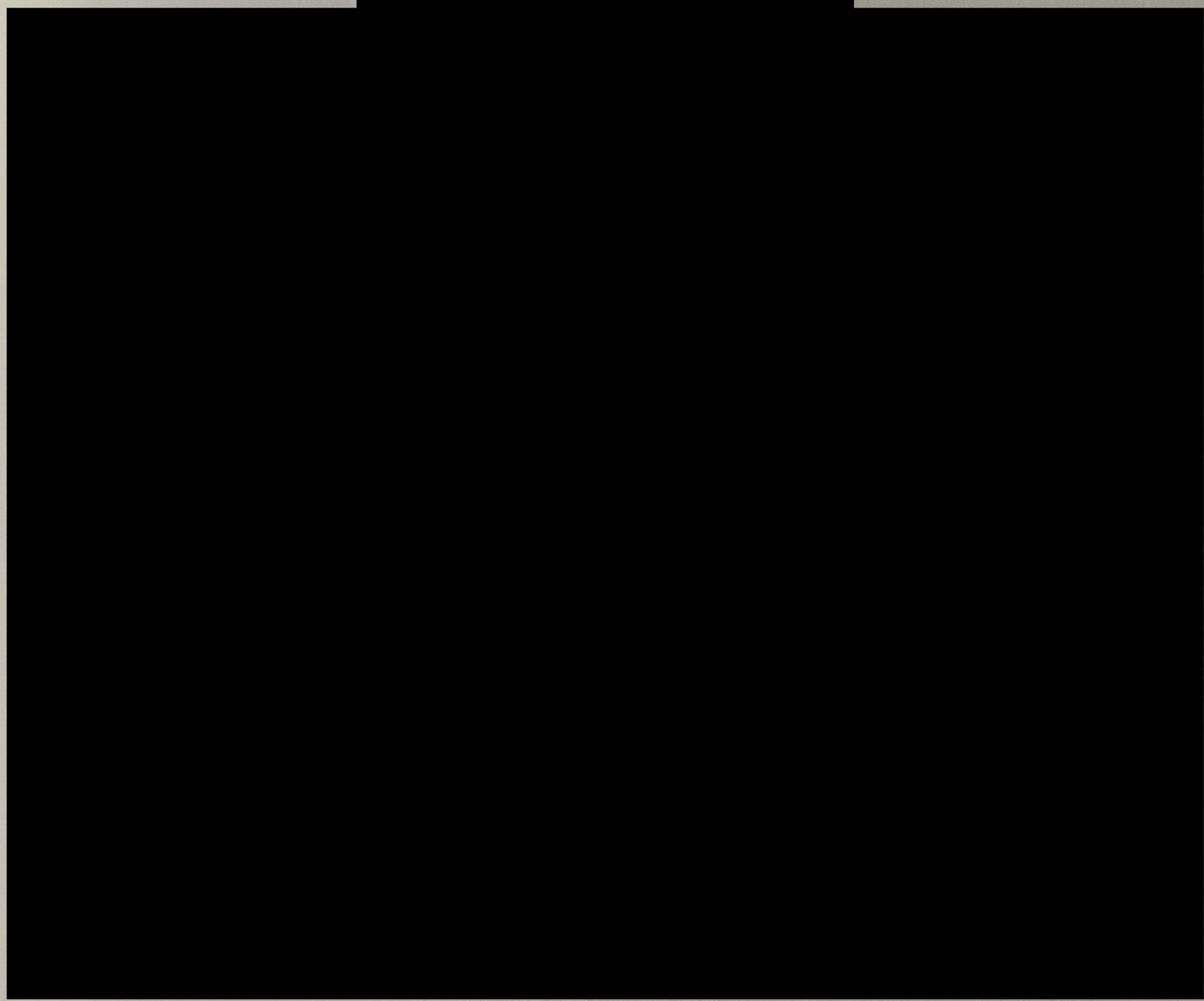
3. Sisymbrium officinale (L.) Scop.

[*Erysimum officinale* L.; **Sisymbrium officinale** var. **leiocarpum** DC]

(nat) Hedge mustard

Erect, unbranched to many-branched annual herbs, hirsute at least below. Leaves lyrate-pinnatifid to pinnately divided, 7–15 cm long, usually 3–7 cm wide, the segments coarsely dentate, upper leaves smaller, lanceolate to hastate. Pedicels stout, erect, ca. 2 mm long in fruit; sepals ca. 2 mm long, sparsely hirsute; petals pale yellow, ca. 3 mm long. Siliques subulate, strictly erect and appressed to the stem, 1–2 cm long, hirsute or glabrous. Seeds ca. 1 mm long. [$2n = 14$.] Native to Europe, now widely naturalized; in Hawai'i naturalized in cultivated land and pastures on Kaua'i, Moloka'i, Lāna'i, Maui, and Hawai'i.—*Plate 47.*

Two minor varieties, both present in Hawai'i, are often recognized: var. **leiocarpum** with racemes, pedicels, and fruit glabrous (Lāna'i and Hawai'i), first collected on Hawai'i in 1911 (*Forbes 201.H,* BISH); and var. **officinale** with racemes, pedicels, and fruit hirsute (distribution in Hawai'i same as the species), first collected on Hawai'i in 1909 (*Rock 3162,* BISH). The presence or absence of hairs may be rather simple genetically and may not represent 2 independent colonization events of this weed.



1. **Cereus uruguayanus** Ritter ex R. Kiesling

[*C. peruvianus* sensu auct., non Mill.]

(nat) Hedge cactus

Plants arborescent, up to 6 m tall, branched; stems cylindrical, 10–20 cm in diameter, ribs 6–9, rarely fewer. Areoles gray or brown, spines 6–8 per areole, brown or black, 1–4 cm long. Flowers nocturnal, 12–15 cm long, 8–10 cm in diameter; sepaloid perianth parts green or slightly pinkish, narrowly oblong to narrowly lanceolate, 4–5 cm long, 0.9–1.2 cm wide, inner perianth parts white, oblanceolate, 4.5–7.5 cm long, 1–2 cm wide; staminal filaments greenish; style green, 7.5–10 cm long; stigma lobes 12–15, green, ca. 1 cm long. Berries reddish or yellowish orange, 5–7.5 cm long, 4.5–5 cm in diameter, smooth or with a few scales, splitting along 1 side and exposing a sweet white pulp. [$2n = 22$.] Native to southern Brazil, Uruguay, and northeastern Argentina, now widely cultivated as an ornamental throughout warm parts of the world; in Hawai'i naturalized on southern Kaua'i where it was reportedly introduced by the Moir family (Benson, 1982). First collected in 1959 (*Au s.n.*, BISH).

This species has long gone under the name of *Cereus peruvianus* (L.) Mill. A recent study by Kiesling (1982), however, has shown that *C. peruvianus* Mill. is a Caribbean species different from *Cactus peruvianus* L., which has always been assumed to be the basionym of Miller's name. *Cactus peruvianus* is apparently based on at least 2 species, neither of which can be determined due to an absence of authentic material.

1. **Brighamia insignis** A. Gray

[*B. citrina* (C. Forbes & Lydgate) St. John; *B. c.* var. *napaliensis* St. John; *B. insignis* f. *citrina* C. Forbes & Lydgate]

(end, V) *ʻŌlulu, pū aupaka*

Leaves 12–20 cm long, 6.5–11 cm wide. Peduncle plus rachis 4–12 cm long, pedicels 10–30 mm long; hypanthium 10–12 mm long, 4.5–7 mm wide; calyx lobes deltate to ovate, 0.2–1 mm long; corolla yellow, the tube 7–14 cm long, 0.3–0.4 cm wide, the lobes elliptic, 1.3–2.2 cm long, 0.7–1.1 cm wide; anthers glabrous or pubescent along the connectives. Capsules 13–19 mm long, 9–13 mm wide, 4–5 mm thick. Seeds 0.8–1.2 mm long, conspicuously papillose. [$2n = 28$*.] Occurring on sea cliffs, 0–400 m, Kaʻali Cliff, Niʻihau, and the Nāpali Coast and Hāʻupu Ridge, Kauaʻi.

St. John (1969a) segregated the Kauaʻi populations as *Brighamia citrina* on the basis of minor differences in the pubescence of the staminal column and the shape of the papillae of the seed. However, the Niʻihau and Kauaʻi populations are here judged conspecific on the basis of their common possession of yellow corollas, papillose seeds, pedicels 1–3 cm long, and deltate to ovate calyx lobes up to 1 mm long. Last observed on Niʻihau in 1947 (St. John, 1969a).

[redacted]

11. Clermontia micrantha (Hillebr.) Rock

[*C. multiflora* Hillebr. var. *micrantha* Hillebr.; *C. m.* var. *m.* f. *montana* Rock]

(end)

Terrestrial shrubs 0.4–2 m tall. Leaves elliptic to oblong, blades 4–10 cm long, 1–2.5 cm wide, glabrous, margins callose-crenulate, apex acute or acuminate, base cuneate or attenuate, petioles 1.5–4 cm long. Inflorescences 2–3(–5)-flowered, peduncles 5–10 mm long, pedicels 7–14 mm long; hypanthium obovoid to turbinate, 5–8 mm long, 3–7 mm wide; perianth rose to dark pink, 18–28 mm long, 3–5 mm wide, glabrous, the tube suberect, the lobes recurved, about as long as the tube; staminal column rose to dark pink, glabrous; anthers purplish, glabrous. Berries orange, obovoid, 12–15 mm long, 9–10 mm wide. Occurring in bogs and occasionally wet forest, 670–1,460 m, on Lāna‘i and West Maui.—*Plate 49.*

Clermontia micrantha is rather common in bogs of West Maui (Pu‘ukukui, Mount ‘Eke, Lanililі). On Lāna‘i, it is known only from 3 specimens (*Munro 333,* BISH; *Munro 391,* BISH, L, M; *Munro 930,* BISH, L) collected in Kumoa Gulch during 1927–1929. An individual transplanted from Lāna‘i to Munro’s garden on O‘ahu died in 1935 (*Munro 9,* BISH). A single plant believed to be a hybrid between this species and *Clermontia kakeana* was observed at Lanililі in 1984–1985 (*Lammers & Sylva 5619,* OS; *Lammers 5847,* BISH, OS, US).

[redacted]

[redacted]

oblanceolate to elliptic or broadly elliptic, blades 5–10 cm long, 1.8–4.5 cm wide, upper surface dark green, often tinged purplish, glabrous or sparsely pubescent, lower surface pale green, sparsely to densely pubescent, margins callose-crenulate, apex acute, acuminate, or cuspidate, base attenuate, cuneate, or obtuse, petioles 0.5–2.5 cm long. Inflorescences 2(–5)-flowered, peduncles 4–18 mm long, pedicels 12–28 mm long; hypanthium obconical, 8–14 mm long, 5–10 mm wide; perianth rose or greenish white to white, curved, distinctly tubular, 36–55 mm long, 5–10 mm wide, glabrous, the lobes erect, ⅕–⅓ as long as the tube; staminal column glabrous; anthers glabrous. Berries unknown. Occurring in wet forest and margins of bogs, 610–2,100 m, Hāna District, East Maui.

Two subspecies may be recognized: subsp. **hanaensis** [incl. *C. kipahuluensis*] with perianth greenish white to white, 40–55 mm long, and blades broadly elliptic, 1.5–2.5 times longer than wide, lower surface sparsely pubescent (Kūhiwa Gulch to Pu'uiki, 610–915 m); and subsp. **samuelii** [incl. *Clermontia gracilis, C. rosacea*] with perianth rose, 36–48 mm long, and blades oblanceolate to elliptic, 3–4 times longer than wide, lower surface densely pubescent (Kīpahulu to Wai'ānapanapa, 1675–2100 m).

[redacted]

20. Clermontia samuelii C. Forbes

[*C. gracilis* St. John; *C. hanaensis* St. John; *C. kipahuluensis* St. John; *C. rosacea* St. John; **C. samuelii** subsp. **hanaensis** (St. John) Lammers]

(end)

Terrestrial shrubs 1.2–5 m tall. Leaves