

## **'A'ali'i**

*Dodonaea viscosa*

Indigenous

### **Nā hi'ohi'ona (features):**

- Medium-sized shrub to small tree between 6 to 20 feet tall.
- **Bark:** Reddish-brown to black-gray. Twigs slender, slightly angled, light brown, hairless.
- **Leaves:** Longer than they are wide & most often pointed. 1 to 4 inches long. Shiny green with reddish midribs or stems.
- **Flower cluster:** Grows at the ends of twigs, about 1 inch long, finely hairy, sticky. Flowers partly male, female, and bisexual on the same plant or different plants.
- **Fruit (capsule):** Small with three or four, sometimes two, papery round wings, of colors ranging from yellow green to pink to brown to dark maroon.

**Habitat range:** From almost sea level to 7,500 feet. Found in open areas such as ridges, low pastures and lava fields and the understory of dry to mesic and wet forest to subalpine shrublands

### **'Ōlelo no'eau:**

- He a'ali'i kū makani mai au; 'a'ohe makani nana e kula'i.
  - "I can hold my own even in the face of difficulties."

### **Ho'ohana 'ia (uses):**

- Wood used for digging sticks, spears and posts for (hale) house construction.
- Fruit/seed pods and leaves used in lei.
- **Medicine:** Skin Rash, Itch
- **Dye:** Fruit/seed pods are crushed and boiled to make a red dye.

### **Nā mea hoihoi (interesting facts):**

- 'A'ali'i is sacred to the goddess Laka.
- Primary food source for the larvae of the Blackburn butterfly; one of just two native butterfly species in Hawai'i.

## **'Ama'u**

*Sadleria cyatheoides*

Endemic

### **'Ōlelo No'eau:**

- Huli ka lau o ka 'ama'u i uka, nui ka wai o kahawai.
  - When the wind blows the leaves of the 'ama'u fern so they bend toward the mountains it is also blowing clouds inland, which will produce rain.
- Pepe'e a palaholo
  - A rolled-up frond – paste for tapa cloth.
  - Said of the 'ama'u fern, sap used in tapa-making.

**Kinolau:**

- Kamapua‘a- pig god can come in the form of ‘ama‘u

#### **Ho‘ohana ‘ia:**

- During times of food scarcity, the pith of the ‘ama‘u was cooked. The hard outer layer of the trunk was removed and the inner pith would be wrapped in kī and baked in the imu. Young fronds were also eaten, cooked or raw.
- The stems of ‘ama‘u were used for plaiting, for thatching houses (when pili wasn’t available), for covering the walls of houses and for sizing kapa.
- The sap of the ‘ama‘u was mixed with fresh water and sprinkled on the bark strips during the beating process. A slimy extract from the fronds is known as palaholo, and was used to glue pieces of kapa together.
- Young ‘ama‘u fronds were also used to create a red dye used on kapa.
- Fronds were used to mulch dry-land kalo fields.
- The soft hair-like scales of the young leaves were gathered commercially with those of the larger tree ferns for stuffing mattresses and pillows
- Medicine: Treatment for hano (asthma). ‘Ama‘u is mixed with ‘uhaloa, kukui bark, ‘uala mōhihi and kō kea. ‘Ama‘u shoots are used with kukui bark and nuts and salt to bind and drain boils, sores or pimples.
- Dye: young fronds create a red color.

#### **Nā mea hoihoi:**

- These ferns serve as nurse plants and soil for ‘ōhi‘a lehua. The tiny windborne tree seeds lodge in the scaly and leafy fern stems and germinate there. Then the young trees, deriving moisture and nutrients from the fern leaves, crowd and replace the ferns.

#### **Mo‘olelo:**

- According to legend, the pig god Kamapua‘a may take the form of ‘ama‘u, and has done so at Halema‘uma‘u Crater, a crater within the larger Kīlauea Crater on Hawai‘i Island. It is said that during a battle with Pele, Kamapua‘a took the form of the ‘ama‘u

### **‘Ōhi‘a Lehua**

*Metrosiderous polymorpha*

Endemic

#### **Nā hi‘ohi‘ona:**

- Shrub to large tree that can stand 100 + feet tall.
- Bark: Light gray, becoming rough and thick, fissured and scaly, sometimes shaggy. Inner bark light brown. Twigs slender, from hairless to covered with dense coat of white hairs.
- Leaves: Oval shaped.. Mature leaves are generally leathery and smooth dark green, but some forms are woolly or hairy underneath and may appear grayish.
- Liko (leaf buds): Range in color from pale green, pink to red.
- Lehua (flower): Short-stalked flowers in groups of three forming mass of threadlike stamens to 3 inches in diameter, varying in color found on Hualālai: predominantly deep red, scarlet to pink, salmon, and yellow.

- **Habitat range:** From lowland dry shrub lands to rain forests, from high elevation bogs to dry lava flows. It grows from near sea level to 8,500 feet.

### **‘Ōlelo No‘eau:**

refer to ‘ōhi‘a as a positive symbol of strength, sanctity, and beauty

- Ho‘i ka ‘o‘opu ‘ai **lehua** i ka mapunapuna. The **lehua**-eating ‘o‘opu has gone back to the spring. It symbolizes returning to one's source. To do so, we must protect it.

### **Ho‘ohana ‘ia:**

- Wood used for religious images, rafters, household implements, fences for temples, canoes and construction of luakini heiau.
- Flowers and leaf buds used in lei.
- Native birds feed on the nectar of the lehua.
- Placed on hula altars.
- **Medicine:**
- **Dye:** Liko – pink to reddish, orange. Leaves – green, purple, gray. To be verified on our site.

### **Nā mea hoihoi:**

- Extremely variable and divided into numerous varieties based on leaf shape, hairiness, and flower color, varying from scarlet to pink, salmon, and yellow.
- The Santa Fe Railroad Company used about 5 million ‘ōhi‘a ties on the West Coast in the early part of the century until the wood was found not durable.
- Many other names were applied to variations in flowers and leaves, according to Rock. Lehua mamo had orange-yellow flowers; lehua pua kea, white flowers; lehua kū makua, stalkless heart-shaped leaves; lehua lau li‘i, very small leaves.

### **Mo‘olelo:**

Pele was once attracted to a man named ‘Ohi‘a. She wanted ‘Ohi‘a to herself, but he rejected her because of his love for his ipo (sweetheart), Lehua. In a rage of jealousy, Pele transformed ‘Ohi‘a into a tree and Lehua into the flowers upon the tree of ‘Ohi‘a. It is said that when a flower is plucked from the ‘Ohi‘a, it will start to rain; this signifying the sadness of ‘Ohi‘a and Lehua being separated.

## **Pilo**

*Coprosma montana, Coprosma ernodeoides*

Endemic

### **Nā hi‘ohi‘ona:**

- Low sprawling shrub to small tree up to 26 feet.
- **Bark:** Gray and smooth or slightly fissured. Twigs slender, green to gray and has fine hairs.
- **Leaves:** Small, elliptical, dull green above, paler beneath.
- **Flowers:** Small greenish-white or yellow. Male and female flowers grow on different plants.
- **Fruit:** Orangish-red or black and grow along the stems. Each fruit contains one seed.
- **Habitat range:** Often a dominant component of the vegetation in subalpine woodland and occasionally in mesic forest from 6000 to 10,000 feet on East Maui and Hawai‘i Island.

### **Ho‘ohana ‘ia:**

- **Dye:** Bark makes a yellow dye.
- Food for the nēnē and other native birds.

### **Nā mea hoihoi:**

- The thirteen Hawaiian endemic species of *Coprosma* belong to Rubiaceae or Coffee family and all appear to be common to fairly common in their habitat.
- The genus name *Coprosma* means "smelling like dung" and refers to the rotten cabbage smell given off when the leaves of some species are crushed.

## **Māmāne**

*Sophora chrysophylla*

Endemic

### **‘Ōlelo No‘eau:**

- ‘A‘ole i ‘ena‘ena ka imu i ka māmāne me ka ‘ūlei, i ‘ena‘ena i ka la‘ola‘o.
  - To be powerful, a ruler must have the loyalty of the common people as well as the chiefs.

### **Nā hi‘ohi‘ona:**

- Small to medium-sized tree 20–40 feet tall and to 2 feet in diameter, or a shrub.
- **Bark:** Gray brown, smooth, becoming furrowed into scaly ridges. Twigs silky hairy when young. Branches are golden brown with ridges running along them.
- **Leaves:** Each leaf consists of 6 to 10 pairs of oval shaped leaflets and looks similar to young Koa leaves and give the māmāne a lacy appearance. Leaves are often covered with golden hairs on the underside and are light green on the top.
- **Seedpods:** 4–6 inches (10–15 cm) long and more than 1/4 inch wide, with 4 long wings, deeply narrowed between the seeds, hard and not splitting open. Seeds 4–8, beanlike, elliptical, 5/16 inch long, slightly flattened, yellow, very bitter.
- **Flower clusters:** Grow at ends and sides of twigs, unbranched, less than 2 inches long. Usually golden yellow.
- **Habitat range:** Dry mountain forests at 4000–8000 feet altitude, ranging down almost to 100 feet and up to 9500 feet, on the highest mountains of the island of Hawaii, Mauna Kea, Mauna Loa, and Hualālai.

### **Nā mea hoihoi:**

- Primary food source for the endangered Palila (native bird). Palila is only bird that can process the actual seeds. Other birds such as the ‘i‘iwi and ‘apapane also feed on the tree.
- Livestock, particularly sheep, browse the foliage and destroy seedlings. It has been demonstrated that animal damage has seriously depleted the mamane forests on Hawaii.

## **Koa**

*Acacia Koa*

Endemic

### **‘Ōlelo No‘eau:**

- E ola koa.
  - Live a long time, like a koa tree in the forest.

### **Ho‘ohana ‘ia:**

- Wood use to make holua, canoes paddles, ‘umeke (containers for storage, but not for food items), surfboards, firewood, kahili handles and bearing sticks, paddles, weapons and part of a large pump drill, cabinetry.
- Dye: bark – golden yellow to dark brown.
- Medicine: Young leaves used to induce sleep for cramps or fevers. Ashes of burnt leaves smeared on sores to cure ‘ea (thrush) in children.

### **Nā mea hoihoi:**

- Worldwide there are about 1,200 species in the genus *Acacia*, though only two, *Acacia koa* and *Acacia koai‘a*, are formally recognized as native (and endemic) to the Hawaiian Islands\
- Koa in dry areas tend to be shorter with a thick trunk and rough bark. Koa in wet areas grow taller, with straighter trunks and smooth bark.
- Provides habitat to many native birds and is the food source for the ‘Akiapolā‘au (which feeds on the larva of the koa bug).

### **Nā hi‘ohi‘ona:**

- Koa are the largest of Hawai‘i’s trees, grows to 100 feet tall and 5 feet or more in trunk diameter.
- Bark: Light gray, smooth on small trunks, becoming very rough, thick, and deeply furrowed, scaly and shaggy. Twigs brown, becoming hairless. Trunk straight and tall or becoming crooked and branched; crown spreading, rounded to irregular, dark green.
- Young Leaves: Young koa trees produce leaves with a lacy appearance (similar to that of the Māmane). Leaves consist of 13 to 24 pairs of leaflets. Also known as the koa’s “true leaves,” it is only found on very young trees and on older trees where the tree has been injured.
- Mature Leaves: Mature koa trees develop crescent-shaped phyllodes (flattened leaf stems) which is often mistaken to be leaves.
- Flower: Clusters of light yellow balls; one or few on slender stalks about 1/2 inch long at leaf base. Flowers tiny, numerous, ball-shaped. Flowering mostly in late winter and early spring.
- Fruit/seed pods: Brown, broad, flat, 3–6 inches long. Seeds are long, oblong, flattened, straight, dark brown or blackish, slightly shiny.
- Habitat range: Grows in dry and rain forests at 600 to 7,000 feet altitude.

### **‘Ōhelo**

*Vaccinium reticulatum*

Endemic

### **‘Ōlelo No‘eau:**

- Mai hahaki ‘oe i ka ‘ōhelo o punia i ka ua noe.
  - Do not pick the ‘ōhelo berries lest we be surrounded by rain and fog.
  - A warning not to do anything that would result in trouble.

**Ho‘ohana ‘ia:**

- Berries are eaten raw and also made in to jelly, jam and pies.
- Leaves can be made into a tea.
- Medicine: To treat stomach pains, aid in child birth,

**Nā mea hoihoi:**

- Scared to Pele. Fruiting branches are thrown into (or in the direction of) Kīlauea as an offering to the goddess. Often done before one eats the berries.
- Related to the blueberry, huckleberry, lingonberry and cranberry.
- Food source for the nēnē and other native birds.

**‘Ākala**

*Rubus hawaiiensis*

Endemic

**Nā hi‘ohi‘ona:**

- Two species found in Hawai‘i (*Rubus hawaiiensis* and *Rubus macraei*)
- Shrub that grows from 5-15 feet in height.
- Bark: Shredding bark sparingly branched. Stems and branches are covered with soft, slender, yellow-to-reddish prickles.
- Leaves: Three-parted leaflets grow to 6 inches long and are toothed along the edges (serrated).
- Flower: Dark pink flowers (5 petals) form at the tips of new growth.
- Fruit: Vary in color from pink, red to dark purple, rarely yellow. 1-2 inches long. Tart.
- Habitat range: Found in moist, middle elevation forest and sub-alpine woodlands (2,165 to 10,000 feet altitude).

**Ho‘ohana ‘ia:**

- Berries are used to make jam, jelly and pies, dressing.
- Medicine: Treatment for burning in the chest and stomach problems that are accompanied by vomiting, dandruff.
- Dye: berries make a pink dye for kapa.

**Nā mea hoihoi:**

- Food source for many Native birds.
- This native raspberry has lost their sharp thorns that their cousins used to deter herbivores.
- In the 1930s, the Hawaiian raspberry was studied for potential commercial use by crossing the ‘ākala with other varieties of berry, but the fruits were too bitter and tart.
- ‘Ākala is one of the only native plants in Hawai‘i that loses its leaves during certain seasons (deciduous).
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**Pūkiawe**

*Styphelia tameiameia*

Indigenous

**Nā hi‘ohi‘ona:**

- Two varieties are distinguished in Hawai‘i.
- Small, low-growing shrub, between 3 to 10 feet in height. Can grow to a small tree of 15 feet depending on habitat.
- **Bark:** Gray, finely fissured, becoming scaly and shaggy; inner bark thin, greenish and fibrous. Twigs very slender and wiry, finely hairy, pinkish when young, becoming brown as it matures.
- **Leaves:** Slender and oblong. Sharp-pointed, rounded at base. Upper surface dull green, smooth. Lower surface is whitish with many fine, nearly parallel veins.
- **Flower:** Tiny, white, bell-shaped flowers (1/8 inch long).
- **Fruit:** Small and round forming at leaf bases. Varies in colors from pink, red or reddish-white, slightly shiny.
- **Habitat range:** Grows in wet and dry forest areas, sub-alpine shrub land and bogs up to 10,000 feet elevation or above. Also grows on lava flow areas; in this habitat pūkiawe grows taller and pricklier than those found in the forest and at higher elevations.

#### **Ho‘ohana ‘ia:**

- Fruit and leaves strung into lei.
- Wood used to make kua kuku, the kapa-beating anvils that were used in the second-stage beating kapa.
- Wood used to cremate the bodies of outlaws.
- **Medicine:** Leaves of pūkiawe are ground with salt, mixed with water and inhaled through the nose to treat congestion.

#### **Nā mea hoihoi:**

- Food source for the nēnē.
- If an ali‘i wanted to mingle with common people, they would first go into a smokehouse filled with the smoke of pūkiawe as a kahuna chanted.

### **Kūkaenēnē**

*Coprosma ernodeides*

Endemic

#### **Nā hi‘ohi‘ona:**

- Many branched, trailing shrub. Grows up to 6 feet in height.
- **Bark:** Gray to dark-brown. Thin branches that stand erect or crawl along lava rocks or cinder.
- **Leaves:** Medium green, shiny and narrow, under an inch long.
- **Flower:** Cream to yellow in color. Male and female flower grow on separate plants.
- **Fruit:** Small, shiny black berries.
- **Habitat range:** Commonly found in open sites on lava & cinder fields to high elevation subalpine woodlands (100 to 8,500 feet altitude).

#### **Ho‘ohana ‘ia:**

- The black, shiny fruits used to make lei.
- **Dye:** The inner bark of the stem produces a yellow dye; the fruit a purple to black dye.

### **Nā mea hoihoi:**

- Food source of the nēnē.
- The genus name *Coprosma* means "smelling like dung." The Hawaiian name kūkaenēnē literally means "nēnē dung." This refers not to the smell but to the dung-like appearance of the dark fruits, which do in fact resemble nēnē droppings (kūkae).

### **Banana Poka**

*Passiflora tarminiana*  
Invasive, Noxious Weed

### **Nā inoa hou aku:**

- Banana passion fruit

### **Nā hi'ohi'ona:**

- **Origin:** Native to Latin America (Colombia, Ecuador, Venezuela, Bolivia, Peru)
- **Growth habit:** High-climbing vine.
- **Vine:** Covered in hairs. Thrives in highly lighted areas, grows rapidly to upper forest canopy.
- **Leaves:** Shiny green with clearly defined veins. Three-lobed, hairy underneath
- **Flower:** Pink and green petals with a yellow-white center. Hangs downwards.
- **Fruit:** Similar to a straight small banana with rounded ends. Inside of the fruit is much like a liliko'i, yellow and orange with black seeds. It is edible.

### **Impacts & Dispersal:**

- Introduced to Hawai'i in 1926.
- Vines of the Banana Poka will overgrow and smother the native forest and other vegetation up to elevations of 3,000 to 5,000 feet.
- Seeds have a high rate of germination in sunny open areas and also in shady forested areas.
- Known as a noxious weed, meaning it is illegal to introduce or transport any part of this plant in Hawai'i.
- Seeds are dispersed primarily by the feral pig. Feral pigs eat the fallen fruit and pass the seeds intact. Germination is not enhanced by gut passage but pigs disturb the ground making a more favorable environment for germination of Banana Poka.
- Cultivated throughout the world for its fruit in locations including, California, Panama and Mexico.

### **Control:**

In Hawai'i, three biological control agents have been released in order to control the growth and expansion of Banana Poka.

1. **Fungus:** Released in 1996. Requires wind and rain to spread.
2. **Moths:** Two specific species have been released and failed to establish populations that will produce the desired control impact.
3. **Glyphosate:** Herbicide used in farming to kill weeds and unwanted grasses.



### **Fireweed**

*Senecio madagascariensi*

Invasive, Noxious Weed

#### **Nā inoa hou aku:**

- Madagascar Ragwort
- Madagascar Groundsel

#### **Nā hi'ohi'ona:**

- Origin: Native to Madagascar
- Growth habit: Annual or short-lived herb. Thrives in open spaces in a wide range of soils.
- Stem: Erect and slender, growing to around 20 inches high.
- Leaves: Bright to dull-dark green. Narrow leaves growing from around an inch to 2 inches in length.
- Flower: Yellow (similar to a Daisy) with 13 petals. Approximately the size of a nickel. Mature into white thistle balls.
- Seeds: Brown covered with lines of short white hairs and crowned by silky hairs.. Flowers produce up to 150 seeds. Each plant can produce 30,000 seeds per year.

#### **Impacts & Dispersal:**

- Introduction to Hawai'i is unknown. First discovered in Kohala, Hawai'i in the early 1980s.
- Seeds are dispersed by wind, animals, people and vehicles.
- Plant is toxic to livestock when eaten. It causes slow growth, illness, liver malfunction and even death.
- On Hawai'i Island, the impact of Fireweed is so expansive that the government has deemed it "too widespread to control," private landowners are encouraged to control and monitor where possible.

### **Mullein**

*Verbascum thapsus*

Invasive

#### **Nā inoa hou aku:**

- Ice Leaf
- Shepard's Club
- Velvet Dock
- Mullein Dock
- Cowboy Toilet Paper

#### **Nā hi'ohi'ona:**

- Origin: Native to Europe, Northern Africa and Asia.
- Growth habit: Herb found mainly on dry sandy soils and primarily colonizes sites of low fertility. Grows up to 6 or more feet in height. Grows in a variety of habitats, and is found most commonly in high elevations in Hawai'i.
- Leaves: Large and covered with hairy fibers, making the leaf soft to the touch.
- Flowers: Small, yellow and are densely grouped on a tall stem.
- Known as a biennial plant; it only grows for two years and dies after growing its flower stalk.

**Impact, Dispersal and Uses:**

- Native to Europe, Northern Africa and Asia.
- Unknown when it arrived in Hawai'i.
- Requires open ground to germinate seeds.
- Mullein can produce 100,000 seeds a year. These seeds can survive most conditions and can last up to 100 years in the seed bank.
- It is the home of many insects that may be harmful to other plants.
- Mullein is used for herbal remedies: coughs, ear aches and skin problems.
- Plant also used to make dyes and torches.