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Dr. Chris Havran
Biological Sciences



Conservation of Native Hawaiian Plants

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J. Christopher Havran

Department of Biological Sciences

Campbell University











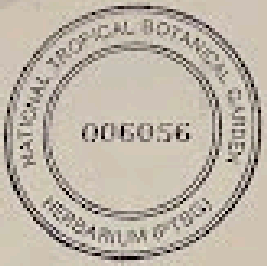


O'ahu profile

Viola kauaensis var. *hosakae*

In a huge step for *Viola kauaensis* var. *hosakae*, a miniature violet found only in the Ko'olau Mountains, 40 new plants were given a new home in protected habitat. This move more than doubled the total number of plants in the world!





How I help to conserve native Hawaiian Plants

Resolving the identity of
historically confusing plants:

- *Planchonella* (Sapotaceae)
- *Isodendrion* (Violaceae)



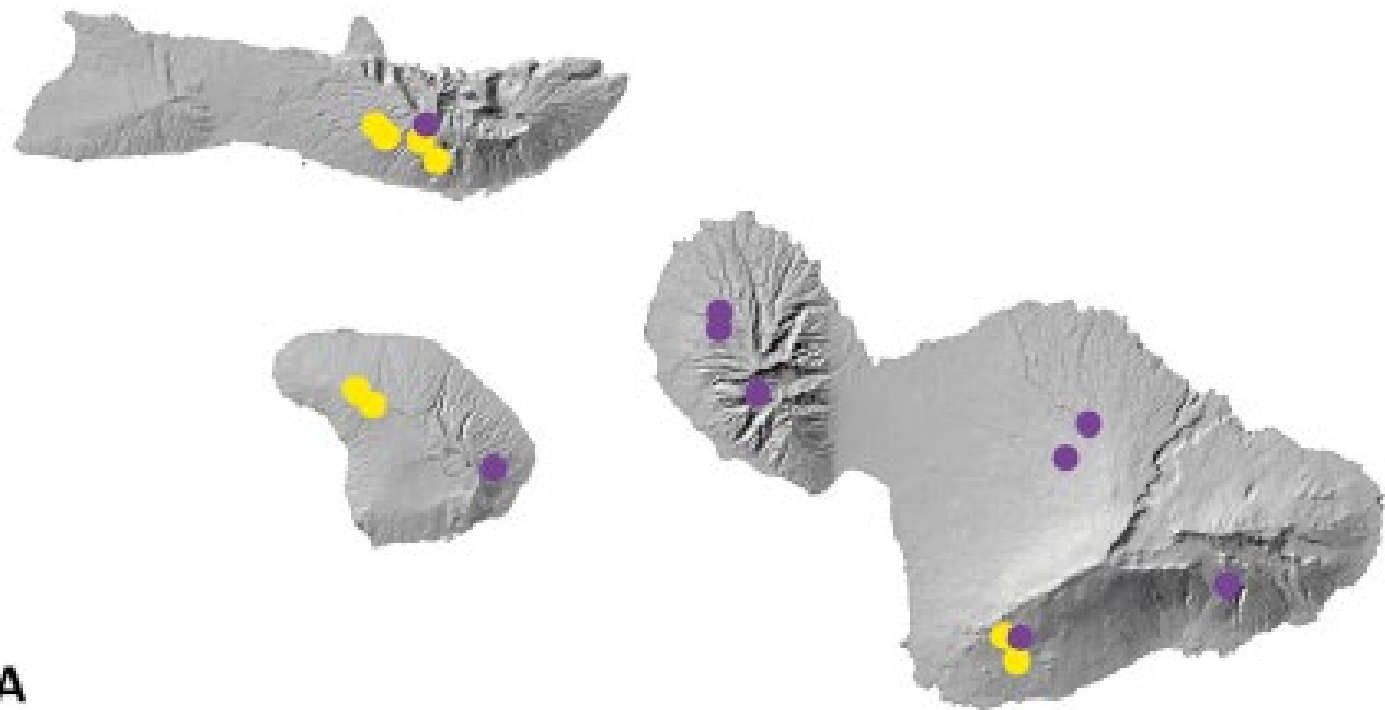


Taxonomy of
Planchonella
sandwicensis

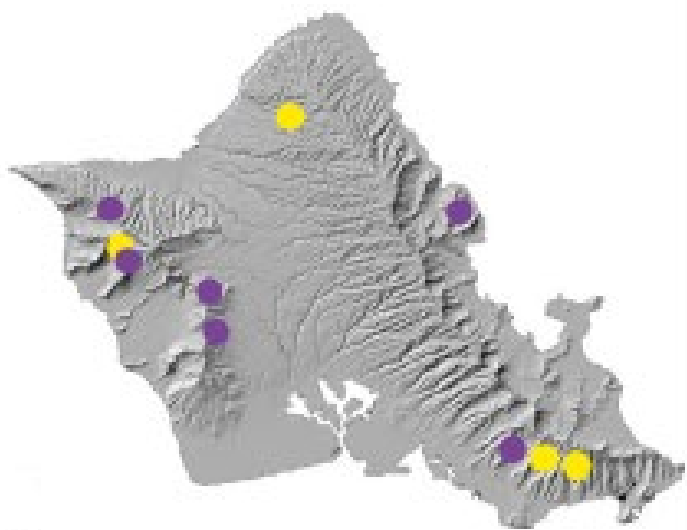
- Is *Planchonella* in Hawaii composed of one or more species?
- What are boundaries between species?



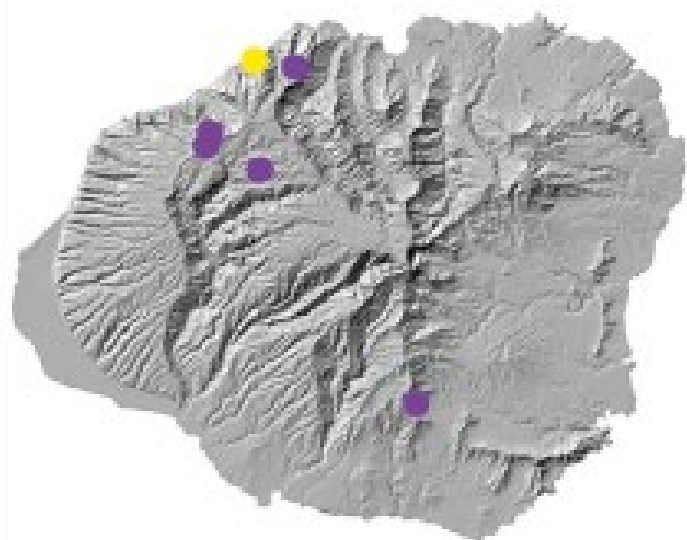




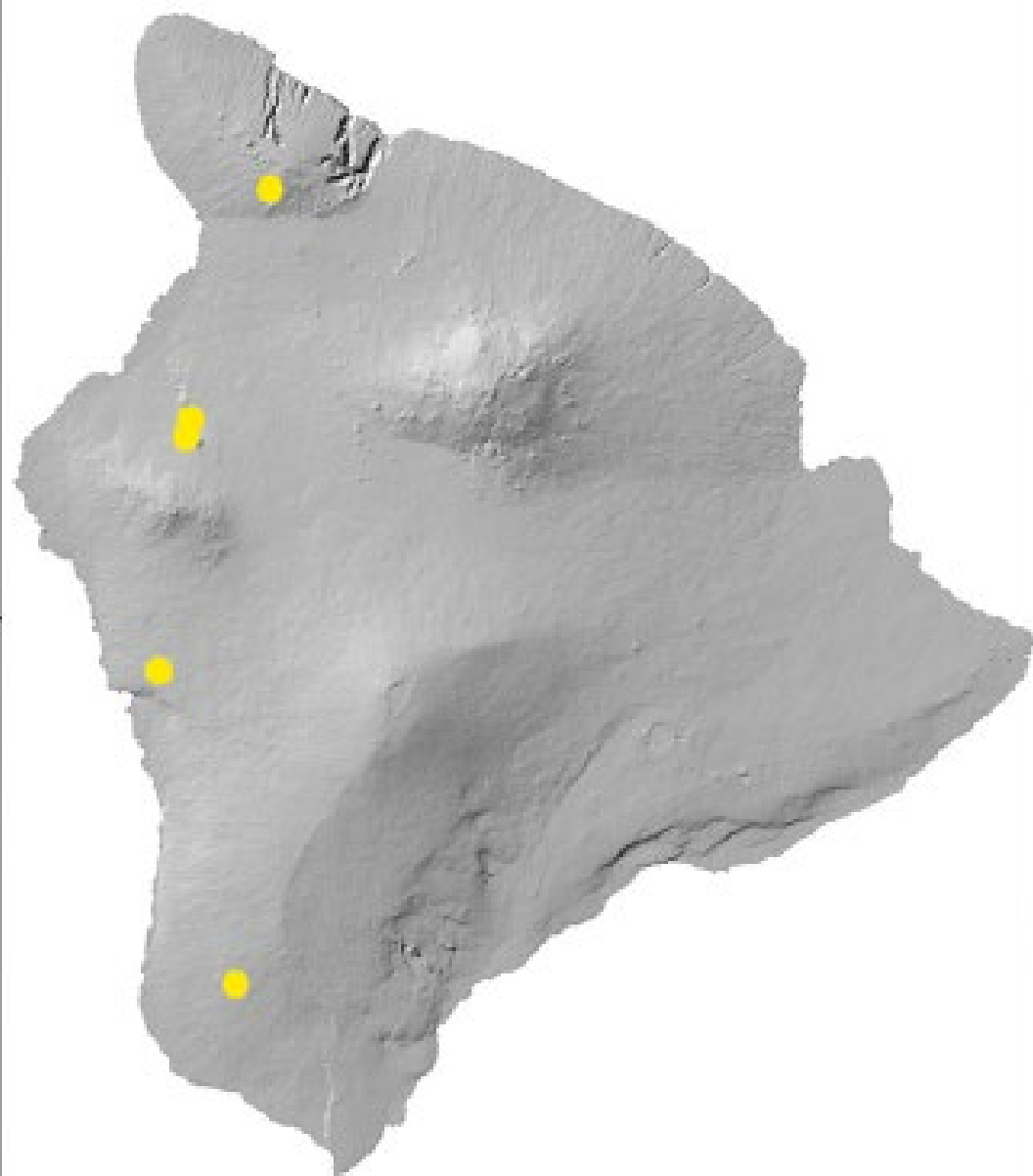
A



B



C



D

Metapopulation Vicariance, Age of Island Taxa and Dispersal: A Case Study Using the Pacific Plant Genus *Planchonella* (Sapotaceae)

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Abstract.—Oceanic islands originate from volcanism or tectonic activity without connections to continental landmasses, are colonized by organisms, and eventually vanish due to erosion and subsidence. Colonization of oceanic islands occurs through long-distance dispersals (LDDs) or metapopulation vicariance, the latter resulting in lineages being older than the islands they inhabit. If metapopulation vicariance is valid, island ages cannot be reliably used to provide maximum age constraints

Taxonomic Reevaluation of Endemic Hawaiian *Planchonella* (Sapotaceae)

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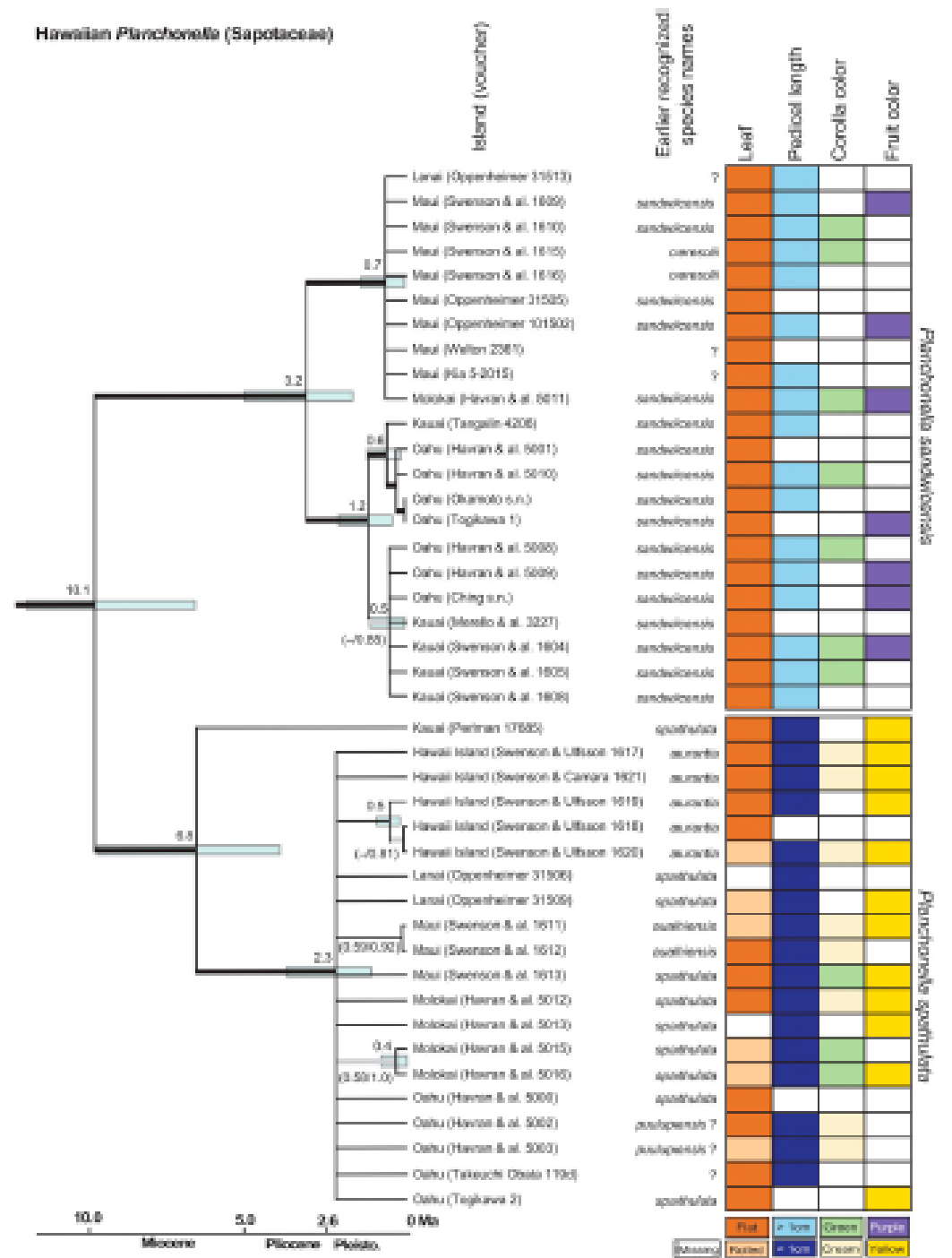
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Communicating Editor: Diana Jolles

Abstract.—*Planchonella* (Sapotaceae) in Hawaii has a complicated taxonomic history that has resulted in considerable confusion among botanists and conservation practitioners. Up to seven different species and several varieties have been described in Hawaii, with the most recent taxonomic evaluation recognizing one species, *P. sandwicensis*. We have conducted a phylogenetic study of Hawaiian *Planchonella* using molec-

Hawaiian *Planchonella* (Sapotaceae)

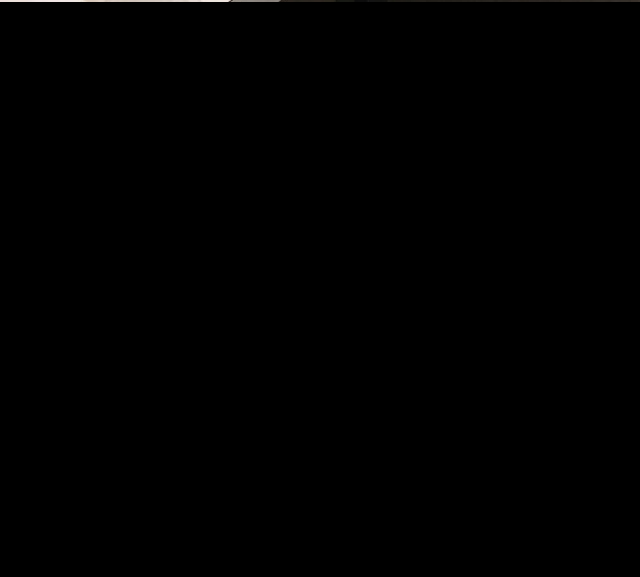




Planchonella sandwicensis



Planchonella spathulata



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Flora of the Hawaiian Islands

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Query Results

Dicotyledons: Sapotaceae; *Planchonella*; Island = any . (2 records)

Sapotaceae

Planchonella sandwicensis (A. Gray) Pierre

Status: Endemic

Publication Information

Distribution: K/ O/ Mo/ L/ M

Specimens

Conservation Assessment: Apparently Secure

United States Status: No Status

Synonyms: *Planchonella ceresolii* (Rock) H. St. John, *Planchonella puulupensis* Baehni & O. Deg., *Planchonella rhynchosperma* (Rock) H. St. John, *Planchonella sandwicensis* var. *aurata* (Hillebr.) Dubard, *Planchonella sandwicensis* f. *densiflora* (Hillebr.) H. J. Lam., *Planchonella sandwicensis* f. *puulupensis* (Baehni & O. Deg.) H. J. Lam., *Planchonella spathulata* var. *densiflora* (Hillebr.) Dubard, *Pouteria aurantia* (Rock) Fosberg, *Pouteria ceresolii* (Rock) Fosberg, *Pouteria rhynchosperma* (Rock) Fosberg, *Pouteria sandwicensis* (A. Gray) Baehni & O. Deg., *Pouteria sandwicensis* f. *densiflora* (Hillebr.) Baehini, *Pouteria sandwicensis* f. *puulupensis* (Baehni & O. Deg.) Baehni, *Sapota sandwicensis* A. Gray, *Sideroxylon ceresolii* Rock, *Sideroxylon rhynchospermum* Rock, *Sideroxylon sandwicense* (A. Gray) Benth. & Hook. ex Hillebr., *Sideroxylon sandwicense* var. *auratum* Hillebr., *Sideroxylon spathulatum* var. *densiflorum* Hillebr.



Sapotaceae
Planchonella sandwicensis



Sapotaceae
Planchonella sandwicensis



Sapotaceae
Planchonella sandwicensis

Planchonella spathulata (Hillebr.) Pierre

Status: Endemic

Publication Information

Distribution: HI exc. Ni, Ka

Specimens

Conservation Assessment: Apparently Secure

United States Status: No Status

Synonyms: *Myrsine molokaiensis* H. Lév., *Planchonella auahiensis* (Rock) Skottsb., *Planchonella auahiensis* var. *aurantia* (Rock) Skottsb., *Planchonella aurantia* (Rock) Skottsb., *Planchonella sandwicensis* var. *molokaiense* (H. Lév.) Laueuer, *Planchonella sandwicensis* var. *spathulata* (Hillebr.) H. J. Lam., *Planchonella spathulata* var. *molokaiensis* (H. Lév.) H. St. John, *Pouteria auahiensis* (Rock) Fosberg, *Pouteria sandwicensis* var. *spathulata* (Hillebr.) Baehini, *Pouteria spathulata* (Hillebr.) Fosberg, *Sideroxylon auahiense* Rock, *Sideroxylon auahiense* var. *aurantium* Rock, *Sideroxylon spathulatum* Hillebr., *Sideroxylon spathulatum* var. *molokaiense* (H. Lév.) Rock, *Suttonia molokaiensis* (H. Lév.) H. Lév.



Aloha Chris!

I hope this email finds you well.

I have a question about an atypical planchonella if you don't mind!

Recently, Josh and I came across these Planchonella that we were originally calling P. spathulata in the southeastern ko'olau mountains. We had noticed that the fruit were going from green to yellow orange, but when Josh and Kobey collected the fully mature fruit, we noticed that the were red (see attached photo). I remember talking to you about the fruit color (purple to dark red = sandwicensis and yellow = spathulata) but this one seems to not fit nicely in the key. So you suggest a hybrid of some sort?

Mahalo,

Miles



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- Campbell University Faculty Summer Research Grant
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Plant Extinction Prevention
Program of Hawai'i



Naturhistoriska
riksmuseet

