New taxa of Hawaiian corticioid fungi are described with keys to

**Crustoderma, Radulomyces, and Scopuloides**

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Abstract: Four new species of corticioid fungi from
Hawaii are described and illustrated. The new genus
Hemmesomyces is described to accommodate the new
species *H. puauluensis*. Radulomyces tantalusensis,
Crustoderma fuscatum and Scopuloides magnacystidia-
ta are also described as new. In addition, the new
combination *Crustoderma vulcanense* is proposed.

Keys to the species of *Crustoderma, Radulomyces* and
Scopuloides are provided.

Key words: Corticiaceae, *Crustoderma fuscatum*,
*Crustoderma vulcanense*, *Hemmesomyces puauluensis*,
*Radulomyces tantalusensis*, *Scopuloides magnacystidia-
ta*, taxonomy

INTRODUCTION

Extensive collecting in the Hawaiian Islands over the
past decade has revealed a number of corticioid
wood-rotting fungi for which no species names are
known. Four taxa are described in this paper as new,
and a new genus is proposed for one of these. Re-
vised keys to species in the other genera are provid-
ed. Authors of fungal names follow Kirk and Ansell
(1992). Capitalized color names are from Ridgway
(1912). All specimens are deposited at University of
Arizona Herbarium, Tucson, Arizona (ARIZ). Ad-
ditional specimens are deposited at Center for Forest
Mycology Research, Madison, Wisconsin, (CFMR)
and U.S. National Fungus Collections, Beltsville,
Maryland, (BPI) as indicated. A list of botanical and
common names of woody substrates reported herein
is provided at the end of this paper.

**Hemmesomyces** Gib. & Nakasone, gen. nov.

Fructificatio resupinata; systema hypharum monomiti-
cum; hyphae fibulatae; lamprocystidia hyalina ad brunnea,
dextrinoidea, pseudoradicata; gloecystidia hyalina, cylin-
drica ad globosa 4–10 µm diam, apice mammiformi vel
obtuso; basidiosporae globosae vel subglobosae, hyalinae,
leviter crassitunicatae; ligno putrido albo.

Basidiocarps resupinate; hymenial surface smooth
to tuberculate; hyphal system monomitic with clamp
connections; cystidia of two types: (1) fusiform, ter-
nimal or lateral, with short, knobby branches at base
and appearing rooted, tapering to an acute point,
arising from subiculum and subhymenium, walls at
first hyaline and slightly thickened, then becoming
brown, thick, lightly encrusted, sometimes dextrinoid
in Melzer’s reagent; (2) globose, ellipsoid, or broadly
cylindrical, apex obtuse, attenuate or mammiform,
arising from subiculum and subhymenium, often
containing conspicuous refractive globules or oil-like
materials, negative in sulfovanillin, walls hyaline, thin
or slightly thick, smooth; basidia clavate, 4-sterigmate;
basidiospores globose to subglobose, walls hyaline,
smooth, slightly thick, negative in Melzer’s reagent;
causing a white rot.

Etymology. Named for Dr. Donald E. Hemmes, pro-
fessor of Biology, University of Hawaii at Hilo, in rec-
ognition of his contributions to knowledge of Ha-
waiian fungi.

The most striking feature of this new genus is the
development of terminal or lateral, fusiform cystidia
that often appear rooted. The cystidia have thick,
brown-pigmented walls that appear dextrinoid in
Melzer’s reagent but do not react in 2% potassium
hydroxide. Rooted cystidia are uncommon in the cor-
ticioid fungi. *Tubulicium* Oberw., *Tubulicrinis* Donk
and *Litschauerella* Oberw. develop large, rooted cys-
tidia with hyaline walls. Encrusted, fusiform, brown-
pigmented cystidia are common in *Amylostereum* Boi-
din and *Peniophora* Cooke but they are not rooted.

The new genus, *Hemmesomyces*, is proposed be-
cause of the unique combination of features: brown,
rooted, fusiform cystidia, gloecystidia (negative in
sulfovanillin), globose to subglobose basidiospores,
and nodose septate generative hyphae. The affinities
of *Hemmesomyces* are not known.

**Hemmesomyces puauluensis** Gilb. & Nakasone, sp.
nov.

Fructificatio resupinata; superficies hymenii laeve vel tub-
erculatae, grisea vel vinaceo-bubalina; systema hypharum
monomiticum; hyphae fibulatae; cystidia biformis, aliquot

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FIG. 1. Microscopic elements of *Hemmesomyces puauluensis* (RLG 17040, HOLOTYPE): a, subicular hyphae; b, thick-walled, brown metuloid cystidia with rooted or knobby outgrowths at base; c, apically encrusted, slightly thick-walled, developing metuloids; d, embedded gloeocystidia, ellipsoid form; e, embedded gloeocystidia, subphaerical form; f, embedded gloeocystidia, cylindrical form; g, hymenial gloeocystidia with mammiform, attenuated apices; h, basidia; i, basidiospores.

Crassitunicatae, subulatae, brunnea, dextrinoidea, radicata, aliquot tenuitunicata, hyalinae, late cylindricea, usque ad 10 µm diam, mammiforme vel attenuata; basidia clavata, 4-sterigmatibus; basidiosporae hyalinae, laeve, globosae vel subglobosae, leviter crassitunicatae, 4.5-6 × 4-4.5 µm; ligno putrido albo.

HOLOTYPUS. U.S.A. HAWAII: Hawaii, Ka‘u District, HVNP, Kipuka Puaulu, on olopua, Robert L. Gilbertson (RLG) 19370, 19059, on pilo, RLG 18747, 18748, 18791, 18819, on aulu, RLG 23317, on olopua, RLG 17425; Kipuka Ki, on manele, RLG 20537. South Hilo District, Kolekole Beach County Park, on ‘ōhi’a loke, RLG 17128; University Hawaii at Hilo farm, on wiliwili, RLG 20842. South Kohala District, Waipi’o Ridge Trail, on common bamboo, RLG 21027. Maui, Hana District, Hana Highway, Sacred Pools, on Chinese banyan, RLG 23100A.

The microscopic characters of *H. puauluensis*, particularly the cystidia and slightly thick-walled basidiospores, distinguish it from other genera and species of known corticioid fungi.

Crustoderma fuscum Gilb. & Nakasone, sp. nov.

Fructificatio resupinata, mollis et carnosa; superficies hymenii tuberculata, ochracea vel avellanea, ultima nigrescens; systema hypharum monomiticum; hyphae fibulatae; cystidia cylindracea, tenuitunicata, 50–70x 4–6µm; basidia clavata, 4-sterigmatibus, 23–40× 4.5–5.5 µm; basidiosporae up to five tubercules per mm, appearing minutely tomentose with a 30 × lens; margin indistinct, fertile, gradually thinning out, smooth, concolorous with hymenium; hyphal system monomitic; subiculum up to 120 µm thick, a dense tissue of hyphae and cystidia, often stratose; subicular hyphae 2.5–4 µm diam, nodose septate, moderately branched, walls hyaline, thin, smooth; subhymenium thin, dense tissue of indistinct, agglutinated hyphae; hymenium a dense palisade of cystidia and basidia; cystidia of two types: (1) fusiform, with short, knobby outgrowths at base and thus appearing rooted, tapers to an acute or rounded apex, 28–50 × 7–9.5 µm, arising from subiculum and subhymenium, protruding up to 20 µm beyond hymenium, walls brown in KOH, weakly to moderately dextrinoid, up to 4 µm thick, lightly encrusted on the upper half, young forms more or less fusiform lacking knobby outgrowths at base, 27–35 × 5–6.5 µm, arising from subhymenium, walls hyaline, slightly thick, and lightly encrusted at apex; (2) gloeocystidia from hymenium obclavate to fusiform, at apex attenuated or mammiform, 18–40 × 4–10 µm, often containing conspicuous refractive globules, walls hyaline, thin, smooth, negative in Melzer's reagent, those embedded in context ellipsoid to broadly cylindrical, 20–70 × 8–15 µm, empty or filled with dense, refractive, hyaline materials, walls hyaline, slightly thickened, smooth; basidia narrowly clavate; four-sterigate, 15–30 × 44.5 µm, with a basal clamp, sometimes with adventitious septa; basidiospores subglobose to globose, 4.5–6 × 4–4.5 µm, walls hyaline, slightly thick, smooth, negative in Melzer's reagent. Associated with a white rot.

Specimens examined. U.S.A. HAWAII: Hawaii, Ka‘u District, HVNP, Kipuka Puaulu, on olopua, Robert L. Gilbertson (RLG) 19370, 19059, on pilo, RLG 18747, 18748, 18791, 18819, on aulu, RLG 23317, on olopua, RLG 17425; Kipuka Ki, on manele, RLG 20537. South Hilo District, Kolekole Beach County Park, on ‘ōhi’a loke, RLG 17128; University Hawaii at Hilo farm, on wiliwili, RLG 20842. South Kohala District, Waipi‘o Ridge Trail, on common bamboo, RLG 21027. Maui, Hana District, Hana Highway, Sacred Pools, on Chinese banyan, RLG 23100A.

The microscopic characters of *H. puauluensis*, particularly the cystidia and slightly thick-walled basidiospores, distinguish it from other genera and species of known corticioid fungi.

FIG. 6. Microscopic elements of *Crustoderma fuscatum* (RLG 19063, HOLOTYPE): a, subicular hyphae; b, cystidia; c, basidia; d, basidiospores.

cylindricae-ellipsoideae, hyalinae, laeve, 4.5-5.5 × 2.5-3 µm; ligno putrido brunneo.


*Etymology.* from the dark coloration of mature and dried specimens.

Basidiocarps resupinate, annual or persisting, effused up to 10 cm, up to 500 µm thick excluding tubercules, soft and fleshy when fresh, drying soft ceraceous (cheesy), easily sectioned, often curling up and peeling away from the substrate on drying, producing a substance that stains paper brown; hymenial surface irregularly tuberculate, 2–4 tubercules per mm, Antique Brown, Saccardo’s Umber to Tawny-Olive, then darkening to Mummy Brown or Bone
Brown to almost Black, margin adherent, abrupt and distinct or gradually thinning out, smooth, Pinkish Buff to Cream -Buff; hyphal system monomitic; subiculum a moderately open tissue of partially agglutinated, more or less vertical hyphae, embedded with copious oil-like globular matter; subicular hyphae 2–4.5 µm in diam, nodose septate, frequently branched, walls hyaline, thin; subhymenium thickening, up to 70 µm thick, a dense tissue of much branched, short-celled, agglutinated hyphae; hymenium a dense palisade of cystidia and basidia embedded in oil-like matter; cystidia abundant, cylindric with a rounded, obtuse or tapered, acute apex, 50–70 × 4–6 µm, with a basal clamp, occasionally with secondya septa, arising from subhymenium, protruding up to 30 µm, walls hyaline, thin, smooth; basidia clavate, 4-sterigmate, 23–40 × 4.5–5.5 µm, with a basal clamp; basidiospores cylindric-ellipsoid to oblong, 4.5–5.5 × 2.5–3 µm, walls hyaline, slightly thick, smooth, negative in Melzer's reagent. Associated with a brown rot.

Specimens examined. U.S.A. HAWAII: Hawaii, Hamakua District, Honokaia Boy Scout Camp, on robusta eucalyptus, RLG 17848, 17863, 18239, 18938, 18948, 18957, Kalopa State Park, on robusta eucalyptus, RLG 18626, on ‘ōhi’a lehua, RLG 17356, 17362, 17363, 17494, on ironwood, RLG 18629, 18633, 18644; Ka’u District, HVNP, Crater Loop Rd., on ‘ōhi’a lehua, RLG 18967, Kipuka Pauulu, on ‘ōhi’a lehua, RLG 20503, on koa, RLG 20496, Hawaii Highway 11, Manuka State Wayside, on ‘ōhi’a lehua, RLG 22256; South Hilo District, Saddle ROAD, kipuka at Mile 18, on ‘ōhi’a lehua, RLG 18056, kipuka at mile 10.5, on koa, RLG 20960; Molokai, Ka’u District, Honokaia Boy Scout Camp, on robusta eucalyptus, RLG 17848, 17863, 18239, 18938, 18948, 18957, Kalopa State Park, on robusta eucalyptus, RLG 18626, on ‘ōhi’a lehua, RLG 17356, 17362, 17363, 17494, on ironwood, RLG 18629, 18633, 18644; Ka’u District, HVNP, Crater Loop Rd., on ‘ōhi’a lehua, RLG 18967, Kipuka Pauulu, on ‘ōhi’a lehua, RLG 20503, on koa, RLG 20496, Hawaii Highway 11, Manuka State Wayside, on ‘ōhi’a lehua, RLG 22256; South Hilo District, Saddle ROAD, kipuka at Mile 18, on ‘ōhi’a lehua, RLG 18056, kipuka at mile 10.5, on koa, RLG 20960; Molokai, Kamakou Forest Reserve, on robusta eucalyptus, RLG 19304, 19342, on cluster pine, RLG 21409, 21413.

The large cylindrical cystidia, thickening subhymenium and associated brown-rot suggest that the best placement of this species is in Crustoderma Parmasto. Crustoderma fascatum is further characterized by its dark brown, soft ceraceous basidiocarp that dries black, short basidia and small basidiospores. It has the smallest basidiospores in the genus.

Crustoderma vulcanense (Gilb. & Adask.) Gilb. & Nakasone, comb. nov. (basionym: Hyphoderma vulcanense Gilb. & Adask., Mycotaxon 49:376. 1993). When this taxon was originally described, it was mistakenly thought to be associated with a white rot. Numerous collections made subsequently are associated with a brown rot; therefore, it belongs in the genus Crustoderma. Examination of basidiospores in a large number of collections indicates the basidiospore size is 5–7 × 2–2.5 µm, slightly shorter than was reported in the original description. This is one of the most common wood-rotting fungi in Hawaii and is a major decomposer of native and exotic hardwoods.

Specimens examined. U.S.A. HAWAII: Hawaii, Hawaii Highway 137, Ophikao, near the Kilauea lava flow, on false kamani, RLG 16832 (ISO TYPE: ARIZ); Ka’u District, HVNP, Crater Loop Trail, on ‘ōhi’a lehua, RLG 17794, 18860, 19011; Manuka State Wayside, on ‘ōhi’a lehua, RLG 19032, 19033, 19038, 19040, 19044, 19046.

KEY TO THE SPECIES OF CRUSTODERMA

1. Basidiocarps primarily on dead conifers .................................. 2
2. With only one kind of cystidium ........................................... 3
3. Basidiocarps primarily on dead angiosperms .......................... 9
4. With two kinds of cystidia and hyphidia; basidiospores 7–9.5 × 4–5 µm; reported from British Columbia, Canada and Oregon ........ C. testatum (H. S. Jacks. & Dearden) Nakasone
5. Basidiocarps usually 3 µm diam ........................................... 4
6. Basidiocarps yellow to orange; basidiospores 7–8(–9) × (2.5–)3–4(–4.5) µm; reported from Europe and U.S.A. .......... C. dryinum (Berk. & M.A. Curtis) Parmasto
7. Basidia 30–40 × 4–5 µm; basidiospores 5–7 × 2–2.5 µm; reported from Maryland, U.S.A. .............................................. C. marnianum Nakasone
8. Basidia yellow; basidiospores 7–8(–9) × (2.5–)3–4(–4.5) µm; reported from Europe and U.S.A. .............................................. C. dryinum
9. Basidia small, usually less than 45 µm long .......................... 12
10. Basidiocarps gray or some shade of brown; basidiospores 5–8 × 10 µm diam ....................................................... 11
11. Hyphidia present; basidiocarps gray; basidiospores 8–9 × (5–6)–6.5(–7) µm; reported from North Carolina on Castanea sp. .............................................. C. carolinense Nakasone
12. Hyphidia absent; basidiocarps dull yellowish brown to pinkish brown; basidiospores 7–9(–10.5) × 6(–7)–6.5(–7) µm; reported from eastern U.S.A. and Panama .............................................. C. flavescens Nakasone & Gilb.
13. Basidiospores 9(–)10(–12)–13 × 5.5–6.5(–7) µm; reported from Maryland ....................................................... C. marnianum
14. Basidiospores 11(–)13(–15.5) × 4.5–5.5 µm; reported from Australia and New Zealand .............................. C. patricium (G. Cunn.) Nakasone [= Hyphoderma
Fig. 7. Microscopic elements of *Radulomyces tantalusensis* (RLG 18310, HOLOTYPE): a, subicular hyphae; b, hyphoid hymenial elements; c, basidia; d, basidiospores.

**Radulomyces tantalusensis** Gilb. & Nakasone, sp. nov.

Fructificatio resupinata, cornea; superficie hymenii melleana vel olivacea-ceracea, leaf vel leviter turbulenta, subiculum album, fibrosum; systema hypharum monomiticum; hyphae hyalinae, tenui- vel crassitunicatae, fibulatae; cystidia nulla; hyphidia hyphoid, 1.5–3 µm diam; basidia anguste clavata, 2–4 serigmatibus, 30–55 × 68.5 µm; basidiosporae cylindric-ellipsoidae, hyalinae, leave, 10–12 × 4–5 µm; ligno putrido albo.


Etymology. of Tantalus, an historical area in the foothills above Honolulu on Oahu.

Basidiocarps annual or persisting, resupinate, widely effuse, adherent, up to 400 µm thick, corneous to ceraceous, moderately rimose on drying; hymenial surface continuous, smooth to slightly tuberculate, Antimony Yellow, Yellow Ocher, Maize Yellow or Colonial Buff, younger areas Warm-Buff, older areas Tulleul-Buff, often with a hygrophanous aspect; margin abrupt, with adherent or detached, fibrilose edges, Buff-Yellow, Ivory Yellow to White; hymal system monomitic; subiculum 100–180 µm thick, a moderately open tissue composed of more or less vertical, branched, non-agglutinated hyphae; subicular hyphae 3–5 µm in diam, nodose septate with scattered simple septa, moderately branched, walls hyaline, thin to slightly thick, smooth; subhymenium thickening, 50–180 µm thick, a dense tissue of vertically arranged, short-celled, moderately branched hyphae; hymenium ~50 µm thick, a dense palisade of hyphoid elements and basidia developed in loose candelabrums; hyphoid sterile elements abundant, filiform, often somewhat moniliform or irregularly constricted with a knobby appearance, 1.5–3 µm in diam, with a basal clamp, walls hyaline, thin, smooth; basidia narrowly clavate with an elongated stalk, 2–4 serigmate, often containing large spherical globules, 30–55 × 6–8.5 µm, with a basal clamp; basidiospores cylindric-ellipsoid, 10–12 × 4–5 µm, walls hyaline, thin, smooth, negative in Melzer’s reagent. Associated with a white rot.

Specimens examined. U.S.A. HAWAII: Oahu, Honolulu District, Tantalus Drive, on mango, RLG 18300, 18306; Pu‘u Ohia Trail, on guava, RLG 18335. Hawaii, Hamakua District, Kalopa State Park, on guava, RLG 18636; Waipi‘o Valley, on kukui, RLG 17922.

Microscopic characters of *R. tantalusensis* and *R. submolaris* Parmasto (1968), from the Altai Mountains of Russia, are similar. Macroscopically they are quite distinct; *R. submolaris* basidiocarps are soft, fissile, and crack into small blocks on drying. Basidiocarps of *R. tantalusensis* are firm and compact, become hard and horny on drying, and do not crack into small blocks.

This key to the species of *Radulomyces* M. P. Christ. includes taxa accepted by Parmasto (1997), except for *R. repandus* (Fr.: Fr.) Boidin & des Pomeys because of a lack of critical information. Also included are three newly described species from Hawaii and *R. rickii* (Bres.) M. P. Christ., sometimes considered conspecific with *R. confluentis* (Fr.: Fr.) M. P. Christ.

KEY TO THE SPECIES OF **RADULOMYCES**

1. Hymenial surface hydroid, raduloid, plicate, or pitted
   1. Hymenial surface smooth or tuberculate
   2. Hymenial surface plicate to pitted, basidiospores 7.5–10 × 5.5–7 µm, reported from Tasmania and eastern U.S.A. **Radulomyces fuscus** (Lloyd) Ginn
   2. Hymenial surface hydroid or raduloid
   3. Basidiocarps with irregular spines, basidiospores 8–11(–13)
   3. Basidiocarps annual or persisting, resupinate, widely effuse, adherent, up to 400 µm thick, corneous to ceraceous, moderately rimose on drying; hymenial surface continuous, smooth to slightly tuberculate, Antimony Yellow, Yellow Ocher, Maize Yellow or Colonial Buff, younger areas Warm-Buff, older areas Tulleul-Buff, often with a hygrophanous aspect; margin abrupt, with adherent or detached, fibrilose edges, Buff-Yellow, Ivory Yellow to White; hymal system monomitic; subiculum 100–180 µm thick, a moderately open tissue composed of more or less vertical, branched, non-agglutinated hyphae; subicular hyphae 3–5 µm in diam, nodose septate with scattered simple septa, moderately branched, walls hyaline, thin to slightly thick, smooth; subhymenium thickening, 50–180 µm thick, a dense tissue of vertically arranged, short-celled, moderately branched hyphae; hymenium ~50 µm thick, a dense palisade of hyphoid elements and basidia developed in loose candelabrums; hyphoid sterile elements abundant, filiform, often somewhat moniliform or irregularly constricted with a knobby appearance, 1.5–3 µm in diam, with a basal clamp, walls hyaline, thin, smooth; basidia narrowly clavate with an elongated stalk, 2–4 serigmate, often containing large spherical globules, 30–55 × 6–8.5 µm, with a basal clamp; basidiospores cylindric-ellipsoid, 10–12 × 4–5 µm, walls hyaline, thin, smooth, negative in Melzer’s reagent. Associated with a white rot.

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   3. Basidiocarps with irregular spines, basidiospores 8–11(–13)
Scopuloides magnacystidiata Gilb. & Nakasone, sp. nov.

Fructification resupinate, rimosa ubi exsiccata; superficies hymenii griseo-alba, cystidiata cum cystidia propria sub 10× lens; systema hypharum monomiticum; hyphae hyalinae, simple-septatae, 5–12 µm in diam; cystidia abundantia, cylindrica, incrustia, simple-septata, to 150 µm longa et 20 µm lat; basidia clavata, 4-sterigmate, 11–14 × 4.5–5.5 µm; basidiosporae oblongae vel brevi-cylindricae, hyalinae, laeves, 4–5 × 2.5–3 µm; ligno putrido albo.


Etymology. named for the large, prominent cystidia.

Basidiocarps annual or persisting, resupinate, effused to 3 cm, adherent, thin, 70–110 µm thick, corneous, brittle when dry, cracking moderately to extensively into small angular blocks on drying; hymenial surface smooth, translucent, Pale Smoke Gray to Pale Olive Gray, older areas Cartridge Buff, hispid from large, crowded cystidia clearly discernible with a 10× lens; margin indistinct and thinning out or abrupt, fertile to the edge; hyphal system mononitic; subiculum thin, up to 40 µm thick, a dense tissue with hyphae arranged parallel to substrate, concolorous with hymenial surface; subicular hymenial 5–12 µm in diam, simple septate with rare single clamps, infrequently branched, agglutinated, walls hyaline, thin to slightly thickened; subhymenium dense, up to 35 µm thick, composed of indistinct, agglutinated hyphae; cystidia abundant, cylindrical with simple septa, often constricted at septa, up to 150 µm long and 20 µm wide including incrustations, originating in subiculum and protruding up to 80 µm beyond hymenium, walls thin, hyaline, faintly dextrinoid in Melzer’s reagent, heavily encrusted with coarse crystals; basidia clavate, 4-sterigate, 11–14 × 4.5–5.5 µm, simple-septate at the base; basidiosporae oblong to short-cylindric, 4–5 × 2.5–3 µm, walls hyaline, smooth, thin-walled, negative in Melzer’s reagent. Associated with a white rot.

Specimens examined. U.S.A. HAWAII: Hawaii, Hamakua Dist., Kalopa State Park, on ironwood, RLG 18634 (CFMR), Honoka’a Boy Scout Camp, on guava, RLG 18199 (CFMR).

The abundant, large cystidia, clearly visible with a 10× hand lens, distinguish this from other species of Scopuloides. Macroscopic basidiocarp characters, including the translucent appearance when fresh, the corneous, brittle texture when dry, combined with the distinctive large cystidia make Scopuloides the appropriate generic placement for this species.

KEY TO THE SPECIES OF SCOPULOIDES

1. Cystidia with acute apices present
2. Cystidia with acute apices absent

Scopuloides magnacystidiata Gilb. & Nakasone
BOTANICAL AND COMMON NAMES OF TREES AND SHRUBS REPORTED AS SUBSTRATES IN THIS PAPER (from Wagner et al. 1999)

Acacia koa A. Gray, koa
Aleurites moluccana (L.) Willd., kukui or candle nut
Casuarina equisetifolia L. ex J.R. & G. Forst., ironwood or horsetail casuarina
Coprosma montana Hillenbr., pilo
Erythrina sandwicensis Degener, wiliwili
Eucalyptus robusta Sm., robusta eucalyptus
Ficus microcarpa L. f., Chinese banyan
Mangifera indica L., manako or mango
Metrosideros polymorpha Gaud., ‘ōhi‘a lehua
Nestegis sandwicensis (A. Gray) Degener, I. Degener & L. Johnson, olopu or pua
Pinus pinaster Ait., cluster pine
Pisonia sandwicensis Hillebr., ‘āulu
Psidium cattleianum Sabine, strawberry guava or waiawi
Psidium guajava L., kuawa or guava
Satindus saponaria L., mānele
Schizostachyum glaucifolium (Ruhr.) Munro, ‘ohe or common bamboo

Syzgium jambos (L.) Alston, ʻōhi‘a loke or rose apple
Terminalia catappa L., false kamani

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LITERATURE CITED