

## The First Collection of Hawaiian Plants by David Nelson in 1779. Hawaiian Plant Studies 55<sup>1</sup>

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CAPTAIN JAMES COOK initiated modern scientific exploratory expeditions. He made possible discoveries in distant lands in astronomy, botany, and in many other sciences. On his first world voyage (1768–1771), Sir Joseph Banks and Dr. Daniel Solander gathered plant specimens, and Sydney Parkinson made plant portraits so numerous that most of them are still unpublished. On the second voyage, Johann Reinhold Forster and Georg Adam Forster made good collections, and published them in two books. On the third voyage, there were two naturalists, William Anderson (surgeon's mate on the *Resolution*) and young David Nelson, gardener and botanist (on the second ship, the *Discovery*). Anderson made little pretense at collecting plants, became sickly, and died halfway through the voyage.

It was on this third voyage that Cook discovered the Sandwich (= Hawaiian) Islands, and there that he met his tragic death. This account is written to make known the details of the plant collections on the island of Hawaii made by Nelson.

David Nelson was apparently kept on board the *Discovery* nearly all the 25 days the ships were anchored in Kealakekua Bay, on the "kona," or leeward side of Hawaii Island. Ewan (1974:70) states that "Nelson had at least two weeks of good exploring for plants . . ." but that seems to be incorrect. His only chance to botanize was during the excursion initiated by John Ledyard, which spent 4 days in an attempt to climb Mauna Loa [not Mauna Kea, as stated by Ewan (1974)]. A full account of this ascent is given in St. John (1976a:3–4).

On this mountain trip Nelson collected good specimens and then dried them. On return to England, they were delivered to Sir Joseph Banks, who deposited them in the British Museum of Natural History, where they were studied by Dr. Daniel Solander. Solander classified and named some of them; many were new genera and all but 11 were new species. After Solander's death, his successor, Robert Brown, studied the residue of Nelson's collections. The generic names given were mostly like *Ilicoides* for *Pelea*, *Hydrangeoides* for *Perrottetia*, *Cestroides* for *Bobea*, *Coffeoides* for *Gouldia*, *Tachitoides* for *Myrsine*, *Iresinoides* for *Charpentiera*, *Moroides* for *Neraudia*, etc. That is, their *Ilicoides* was like *Ilex*, *Hydrangeoides* was like *Hydrangea*, etc., since the Greek suffix *-oides* means "like unto." Presumably, both Solander and Brown intended eventually to coin new and appropriate names for these new genera, but they did not live long enough to do so.

In 1935, the present author visited the British Museum of Natural History and made a prolonged search for the Hawaiian plants collected by Nelson. No list of the collection had been kept, so the only way to find them was to comb the herbarium in likely families and genera. The greatest difficulty encountered was that many of the specimens had been filed under these original, but unpublished, names, such as *Cestroides* and *Coffeoides*. The search took 4 weeks in 1935 and a week in 1974. Found were 136 species, and probably there are still a few more to be turned up. That was a very commendable collection for a young apprentice botanist in those days.

In the two centuries since Nelson's collection was made, many botanists have visited the "kona" side of Hawaii. They made collections, studied them, and reported upon

<sup>1</sup> Manuscript accepted 3 February 1976.

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them, and thus the great majority of the local endemic species were distinguished and published. However, the writer found a residue of unclassified ones in the Nelson collection. This totaled 15 species and 1 variety (St. John 1976*b*). Since none of these plants has been collected again, and as the area above Kealakekua is densely settled, and because of the extensive coffee plantations at higher altitudes, and due to the extensive grazing by domestic and by feral animals, it is considered certain that all of these 16 Nelson novelties are extinct. They are included in the following enumeration.

Evidently, after Nelson's return to the *Discovery*, he wrote and delivered to Capt. Charles Clerke a "List of Plants." This contains 31 plants, with a generic name for each (such as *Artocarpus*, *Cocos*), and an English common name (such as bread-fruit tree, coconut). This list is printed in Beaglehole (1967: 600-602) and in Ewan (1974:70-71) with modern identifications. Nelson had collected ten of these plants; the 21 remaining are based on his observations only. Many of these remainders were common economic plants cultivated by the Hawaiians, and his observation of them is to be accepted. These species are marked with an asterisk in the enumeration below.

Conspicuous in this list of observed plants, as now identified, are *Ludwigia octovalvis* (Jacq.) Raven, *Indigofera suffruticosa* Mill., *Oxalis corniculata* L., and *Urena lobata* L. The *Indigofera*, or indigo, was then a common and important crop plant. It was not found in Tahiti by Banks and Solander in 1769, and it was recorded as first introduced to Hawaii in 1829 by A. P. Sevier (Crawford 1937:145). It did not succeed as a cultivated crop in Hawaii, but it seeded, dispersed, and became a weed. It was first collected here by the botanists H. Mann, Jr. and W. T. Brigham in 1864. Nelson certainly knew indigo when he saw it, and his observation of it is not to be questioned. His record of the indigo in Hawaii in 1779 is amazing and inexplicable.

The other three plants mentioned above are simply weeds. *Oxalis corniculata* and *Urena lobata* are common tropical weeds; they were present in Tahiti in 1769 and were

collected there by Banks and Solander. The *Oxalis* produces quantities of tiny seeds (Knuth 1930) which can be blown, and when ejected will cling to persons or objects. About *Oxalis corniculata* Ridley (1930:654) writes, "This little creeping plant is very widely spread all over the world, mainly by human agency. It is certainly a native of Southern Europe, and was described by Clusius as coming from that region in 1549. In most parts of the world it is known only from greenhouses and cultivated land. . . . The capsule is explosive, and contains a large number of small seeds, which probably get into pots or among the soil attached to plants, in which it is conveyed across the globe. . . . It is absent from islands not cultivated by man, so that it seems clear that its seeds are carried about accidentally. It seems remarkably abundant in the Polynesian Islands, where it appears to have been established before the advent of Europeans."

Ridley (1930:664-665) writes of this species, "When ripe the seeds are surrounded by an abundant mucilage, and, according to Chauvel and Bullerstaedt, the mucilaginous layer over the seed contracts and splits from the seed. The layer, drying, rolls up with rapidity as the mucilage contracts, and the seed is shot out much as the stone of a cherry is when the fruit is pressed by the finger and thumb. . . . The distances to which the seeds fly is about 2 or 3 feet, as far as I have seen in *O. corniculata*." My son-in-law, Robert T. Martin, knew of the shooting seeds, and in his plant nursery on Maui showed me seeds adhering to the plastic wall as much as 5 feet from the ground.

The weeds already established, and collected by Nelson, are:

*Thelypteris interrupta* (Willd.) Iwatsuki

*Digitaria setigera* R. & S.

*Waltheria indica* L.

*Merremia aegyptia* (L.) Urban

Of these, the *Thelypteris* and the *Ludwigia* (long known as *Jussiaea*) mentioned earlier are characteristic of wet habitats. The first one is still abundant, but grows almost wholly in abandoned taro patches. It forms a dense thicket. The spores or seeds of both plants could have been close to growing taro

in Tahiti, and could have been in the mud packed around the taro corms in transit to Hawaii.

Other weeds are characteristic of ruderal habitats and could have been carried on the Polynesians' clothing or belongings. *Waltheria* has prickly fruits that can adhere to objects. *Digitaria* abounds about pig pens; it produces a multitude of seeds that are small, flat disks and can adhere to anything moist.

The seeds of the *Oxalis*, *Urena*, and *Waltheria* would adhere if they touched the plumage of birds, so that bird transport is a possibility for them. The *Urena* has tiny fruits covered with barbed prickles. The *Ludwigia* was not collected in Tahiti by Banks and Solander, but there is no reason to doubt Nelson's observation in Hawaii. In the list printed by Beaglehole (1967:601), the consultant stated that it was "present before Cook," but the basis for this statement is unknown.

It is noteworthy that Nelson did not collect or mention observing *Dicranopteris* (or *Gleichenia*) *linearis*. Although these Nelson plants were filed in the herbarium of the British Museum of Natural History—and some of them in the correct modern genera—they have seldom been noted or studied. A few monographers have been thorough enough to find and study these specimens, though when first inserted nearly all of them were new species. The following species were based wholly or in part on the Nelson collections:

*Astelia Menziesiana* Sm.  
*Rumex giganteus* Ait.  
*Phyllostegia floribunda* Benth.  
*Stenogyne Nelsonii* Benth.  
*Solanum incompletum* Dunal  
*Solanum Nelsoni* Dunal  
*Lipochaeta perdita* Sherff

The Nelson specimens were mounted, each on a large herbarium sheet, just as is done today, but the data were handwritten on the back of the sheet in the upper left-hand corner. Most of the specimens are well separated, but the following are mounted together with Hawaiian specimens collected by Archibald Menzies, and there is no way

to tell which plant was collected by which botanist:

*Gossypium tomentosum* Nutt.  
*Sida Nelsonii* St. John  
*Cheirodendron trigynum* (Gaud.) Heller  
*Euphorbia celastroides* Boiss. in A. DC.,  
 var. *Nelsonii* St. John  
*Astelia Menziesiana* Sm.

A number of the sheets have the data: "Sandwich Isl., Capt. Cook's 2nd & 3rd Voy." These present no problem, since Capt. Cook visited the Sandwich Islands only on his third voyage, and they are certainly a part of Nelson's collections on Hawaii.

According to Britten (1916:351), "Nelson's Sandwich Island plants are cited in the Flora Vitiensis [that is, by B. Seemann]. . . ." In this great flora, Seemann cited a number of plants from other areas. Of the Nelson collections from the Sandwich Islands, he cited only the previously described *Solanum incompletum* Dunal, and *S. Nelsoni* Dunal. None of the other 134 species (even such conspicuous and well-known plants as *Capparis*, *Sida*, and *Waltheria*) were cited by Seemann, even though they were correctly named and readily available in the herbarium of the British Museum of Natural History.

LIST OF HAWAIIAN PLANTS COLLECTED OR  
OBSERVED BY NELSON

PTERIDOPHYTA

Ophioglossaceae

*Botrychium subbifoliatum* Brack., in montibus altis.  
*Ophioglossum falcatum* (Presl) Fowler, in jugis montium.

Marattiaceae

*Marattia Douglasii* (Presl) Baker, in sylvis umbrosis montium.

Hymenophyllaceae

*Vandenboschia davallioides* (Gaud.) Copel.

## Davalliaceae

*Nephrolepis exaltata* (L.) Schott, ad latera sylvarum.

## Dicksoniaceae

*Cibotium Chamissoi* Kaulf., "E'Tee," in locis apertis sylvarum.  
*C. glaucum* (Sm.) H. & A., in montibus juxta loca culta.

## Pteridaceae

*Coniogramme pilosa* (Brack.) Hieron., in sylvis densis montium.  
*Microlepia setosa* (Sm.) Alst., juxta loca collinis culta.  
*Pellaea ternifolia* (Cav.) Link, in summis jugis montium.  
*Pteris cretica* L., ad latere sylvara.  
*P. irregularis* Kaulf.  
*Sphenomeris chinensis* (L.) Maxon, irriguis umbrosis.

## Polypodiaceae

*Adenophorus periens* L. E. Bishop, parasitica in arboribus summorum montium.  
*A. pinnatifidus* Gaud., in sylvis arboribus putridis.  
*Microsorium spectrum* (Kaulf.) Copel., parasitica in arboribus virens.  
*Pleopeltis nuda* Hook., first sheet: in arboribus deciduis; second sheet: in truncis arborum putridis.  
*Polypodium pellucidum* Kaulf., in rupibus & prope arborum radices.

## Grammitidaceae

*Grammitis Hookeri* (Brack.) Copel., parasitica arborum.  
*G. tenella* Kaulf., in arboribus deciduis.

## Aspidiaceae

*Athyrium microphyllum* (Sm.) Alst., in sylvis.  
*Ctenitis latifrons* (Brack.) Copel., sylvis inter juga montium.

*Cyclosorus truncatus* (Poir.) Farw., sylvis umbrosis.

*Cyrtomium caryotideum* (Wall.) Presl, in summis arborum; and in sylvis in truncos arborum.

*Diplazium Fenzlianum* (Luerss.) C. Chr., sylvis.

*D. Meyenianum* Presl.

*Dryopteris paleacea* (Sw.) C. Chr., var. *fuscifera* (Hbd.) C. Chr., in sylvis. This probably belongs in *Thelypteris*.

*D. unidentata* (H. & A.) C. Chr., montes.

*Elaphoglossum alatum* Gaud., var. *alatum*, montes sylvis.

*E. hirtum* (Sw.) C. Chr., var. *micans* (Mett.) C. Chr., in truncis arborum emortuis.

*Thelypteris cyatheoides* (Kaulf.) Fosb., ad latera sylvarum.

*T. glabra* (Brack.) Ching, montes.

*T. interrupta* (Willd.) Iwatsuki, "Ulaietea."

*T. sandwicensis* (H. & A.) Fosb., sylvis.

*T. stegnoagrammoides* (Baker) Fosb.

## Blechnaceae

*Sadleria cyatheoides* Kaulf., ad latera sylvarum.

## Aspleniaceae

*Asplenium acuminatum* H. & A., montes.

*A. caudatum* Forst. f., in sylvis.

*A. contiguum* Kaulf., montes.

*A. densum* Brack., in arboribus emortuis; and in arboribus deciduis (illegible) montosis.

*A. gemmiferum* Schrad.

*A. Macraei* Hook. & Grev., in arboribus putridis deciduis.

*A. monanthes* L.

*A. nidus* L.

*A. unilaterale* Lam., in rupibus.

*A.* no. 8. aff. *A. caudatum*, montes ad latera ruposis.

*A.* no. 29, montes ad latera ruposis, undetermined.

## Adiantaceae

*Doryopteris decipiens* (Hook.) J. Sm., in collibus prope littora.

*D. decora* Brack.

## Vittariaceae

*Vittaria rigida* Kaulf., in arboribus vere dependens.

## PHANEROGAMAE

## MONOCOTYLEDONES

## Pandanaeae

*Pandanus tectorius* Warb. Listed by Nelson as "papa," the plant from which they make sails. The name "papa" is also used for a variety of *Piper methysticum*, but the only source of sails was the leaves of *Pandanus*.

## Araceae

\* *Colocasia esculenta* (L.) Schott, var. *antiquorum* (Schott) Hubb. & Rehd. This was reported by Nelson (Beaglehole 1967:601) as "cala," "African arum," or "Tarrow."

## Gramineae

*Digitaria setigera* R. & S., var. *setigera*. (*D. pruriens*).

\* *Saccharum officinarum* L. Listed by Nelson as *Saccharum* (Beaglehole 1967:602); long cultivated by the Hawaiians.

\* *Schizostachyum glaucifolium* (Rupr.) Munro. Listed by Nelson as "Arundo, Bamboo Cane." The informants of Beaglehole (1967:601) considered it to be *Bambusa vulgaris*, but that is a recent introduction in Hawaii. The bamboo or "ohe" of the Hawaiians was *Schizostachyum*.

## Palmae

\* *Cocos nucifera* L. "Coco-nut," not collected, but reported by Nelson in his list given to Capt. Clerke (Beaglehole 1967:601).

\* *Pritchardia* sp. In Nelson's list to Capt. Clerke this was reported as "*Borassus*, Palm Tree." It was certainly a species of *Pritchardia*, the only genus of palms native to Hawaii.

## Liliaceae

*Astelia Menziesiana* Sm., var. *Menziesiana*. Sandwich Islands, Messrs. Menzies & Dav. Nelson. There are two sheets—one in young flower, the other in old flower. Since Menzies was on a later voyage, it is obvious that the two men did not collect together. The data, written by Solander, is identical on the two sheets, but it would appear that each man collected a single sheet, and that Solander merged and confused the two. One of the two sheets is the type of the species (Skottsberg 1934:13).

(*Pleomele aurea*) is suggested (Beaglehole 1967:600) as the probable equivalent of the "*Alletris*" reported by Nelson. The species probably known by him in cultivation was *Aletris farinosa* L., an acaulescent herb with narrow lanceolate basal leaves, a scape, and a narrow spike of small flowers. The *Pleomele* is a tree with ligulate leaves and a thick panicle of flowers and fruit. To the present author this seems an unlikely equivalent. *Astelia Menziesii*, an acaulescent herb, with linear lanceolate basal leaves, and a scape bearing racemes in a panicle, seems probably what Nelson had in mind. He also collected it.

## Taccaceae

\* *Tacca Leontopetaloides* (L.) Ktze. Nelson listed as "*Jatropha*, Cassava" (Beaglehole 1967:601). This was thought to be the *Tacca* species, which was a root crop, and it is likely the correct identification.

## Dioscoreaceae

\* *Dioscorea alata* L., a crop plant in Hawaii. Nelson listed "*Dioscoria*, Yams." This was the only important food species of the genus in Hawaii. If in saying yams, Nelson meant several species of yams, the other ones would have been *D. bulbifera* L., and *D. pentaphylla* L.

## Musaceae

\* *Musa*. Three sorts of the plantain tree.

There were over 50 cultivars of *Musa* in old Hawaii.

### Zingiberaceae

- \*A ginger, reported as observed by Nelson as "*Amomum*." It was probably either *Curcuma domestica* Valet. or *Zingiber Zerumbet* (L.) Roscoe in Sm.

### DICOTYLEDONES

#### Piperaceae

*Peperomia plinervata* St. John. Sandwich Islands. Dav. Nelson, holotype.

#### Moraceae

- \**Artocarpus*, "Bread-fruit Tree," reported as observed by Nelson (Beaglehole 1967: 601). This was certainly *Artocarpus altilis* (Parkins. ex Z) Fosb.  
 \**Broussonetia papyrifera* (L.) Vent., "Chinese Paper Mulberry Tree." This was cultivated and was the source of the best "tapa" cloth of the natives. Nelson's listing of it is to be accepted.

#### Urticaceae

- Neraudia Cookii* St. John. Sandwich Islands, Dav. Nelson, holotype.  
*N. ovata* Gaud. Owhyhee in cultis. This locality above Kealakekua is a new record, more than 25 miles to the south of the known stations at Puuwaawaa and Huehue.  
*Urera konaensis* St. John, in sylvis sum (?) montes, holotype.

#### Polygonaceae

*Rumex giganteus* Ait. f., holotype.

#### Amaranthaceae

- Achyranthes Nelsonii* St. John, Sandwich Islands, Dav. Nelson, holotype.  
*Charpentiera obovata* Gaud., Owhai hee in sylvis densis.

*Nototrichium sandwicense* (Gray in Mann) Hbd., var. *sandwicense*.

### Phytolaccaceae

- \**Phytolacca sandwicensis* Endl., var. *sandwicensis*. Sandwich Islands. This was listed as "*Petiveria*, Guinea Henwood" in Nelson's list given to Clerke (Beaglehole 1967: 600-602).

### Aizoaceae

*Sesuvium Portulacastrum* (L.) L., var. *Portulacastrum*.

### Portulacaceae

*Portulaca villosa* Cham.

### Menispermaceae

*Cocculus Ferrandianus* Gaud. Owhai hee, in sylvis.

### Capparaceae

*Capparis sandwichiana* DC., var. *Zoharyi* Deg. & Deg. This was reported as "*Copparis*, Caper Bush" by Nelson in his list given to Clerke (Beaglehole 1967:601). It was also in Nelson's collection.

### Cruciferae

*Lepidium o-waihiense* C. & S.

### Saxifragaceae

*Broussaisia arguta* Gaud., f. *arguta*.

### Pittosporaceae

*Pittosporum Hosmeri* Rock, var. *Hosmeri*, in sylvis montium.  
 var. *Saint-Johnii* Sherff, in sylvis montium.

### Rosaceae

- \**Rubus hawaiiensis* Gray, var. *hawaiiensis*. This was listed as "*Rubas*, Raspberry, very

fine sort," in Nelson's list given to Clerke (Beaglehole (1967:602).

### Leguminosae

- \* *Caesalpinia major* (Medic.) Dandy & Exell. Nelson listed "*Guilandina*, Nicker Tree." The Hawaiian plant is a woody, thorny vine, not a tree, but judging by the generic and common names, there is little doubt that he referred to the *Caesalpinia*.
- \* *Cassia Gaudichaudi* H. & A. This was also reported by Nelson in his list given to Clerke (Beaglehole 1967:600–602).
- \* *Indigofera suffruticosa* Mill. Nelson listed "*Indigofera*, Indigo" in his report to Clerke. Beaglehole's informants (1967:601) called this *I. suffruticosa*, which is a common escape in Hawaii now. There is no suggestion that it was a crop plant in old Hawaii. It was not collected by Banks and Solander in Tahiti on Capt. Cook's first voyage, and it is not known to have been present in Polynesia in pre-European times. A study of Nelson's list, made at the time in Hawaii, proves that he had a considerable knowledge of botany. He must have known *Indigofera*, and could not have been mistaken about it. His statement that he saw indigo is a proof that it was already in Hawaii in 1779. Its presence and its origin is a mystery.
- \* *Sophora chrysophylla* (Salisb.) Seem. This was listed by Nelson by the generic name only, but in Beaglehole (1967:602) it was correctly identified as *S. chrysophylla*. There are no recent collections of it near Kealakekua, but it still grows 15 miles to the north on Hualalai.

### Oxalidaceae

- \* *Oxalis corniculata* L. This was listed by Nelson in his list given to Clerke (Beaglehole 1967:602). It is amazing to have this reported as established in Hawaii in 1779. However, this is substantiated, since a weedy *Oxalis* was already in Tahiti in 1769, and was collected by Banks and Solander (Merrill 1954:219).

### Zygophyllaceae

*Tribulus Cistoides* L.

### Rutaceae

- Pelea clusiaefolia* Gray, var. *cuneata* St. John & Hume in St. John. O Whai-hee in sylvis inter Jugi Montes.
- P. grandifolia* (Hbd.) St. John & Hume in St. John.
- P. volcanica* Gray. Owhaihee, inter juga montium in sylvis.

### Euphorbiaceae

- \* *Aleurites moluccana* (L.) Willd. *Aleurites* was reported as observed by Nelson in his list given to Clerke (Beaglehole 1967:601).
- Euphorbia celastroides* Boiss. in DC., var. *amplectens* Sherff.
- var. *Nelsonii* St. John, holotype.
- E. Degeneri* Sherff, var. *Degeneri*.

### Aquifoliaceae

*Ilex anomala* H. & A. in sylvis inter Juga montium.

### Celastraceae

*Perrottetia sandwicensis* Gray, var. *tomentosa* Deg. & Greenw. Owhai hee, in sylvis montium.

### Malvaceae

- Gossypium tomentosum* Nutt. in Seem. Menzies & Dav. Nelson, in Solander's hand. There are no subsequent collections of this native cotton on the island of Hawaii (Stephens 1964:386), and it is unknown to the local authorities there.
- \* *Hibiscus tiliaceus* L. Nelson listed in his report to Clerke, "*Hibiscus*, Syrian Mal-low." *Hibiscus tiliaceus* is a common lowland species, and is probably the one noted by Nelson.
- Kokia drynarioides* (Seem.) Lewt. Evidently, this was reported as "*Bombax*, Silk Cotton Tree" in Nelson's list to Clerke (Beagle-

hole 1967:601). It was also collected by Nelson.

*Sida Ledyardii* St. John, holotype.

*Sida Nelsonii* St. John. Menzies & Dav. Nelson, in Solander's hand.

\* *Sida* sp., without fruit. Nelson in his list has "*S. viscosa*, Indian Mallow." This is identified in Beaglehole (1967:602) as *S. fallax* Walp., a common Hawaiian species. However, *S. viscosa* is now *Bastardia viscosa* (L.) HBK. This is a native of the West Indies, a plant with an oblate, indehiscent ovary, and is different from the Hawaiian kinds of *Sida*. Nelson's plant may well be the one collected and now described as *S. Ledyardii* St. John.

\* *Urena lobata* L. Given as "*Urena*, Indian Mallow" by Nelson in his list given to Clerke (Beaglehole 1967:602), where it was identified as *Urera sandwicensis*, a large Hawaiian shrub in the *Urticaceae*, and first published as *Urera* by Gaudichaud in 1830. Hence, Nelson could not have been thinking of *Urera*, and have written the name indistinctly, or have had it copied incorrectly by some copyist. Nelson had good botanical knowledge, and if he thought his plant was *Urena*, it must have been in the *Malvaceae*, not in the *Urticaceae*. According to Merrill (1954:219), *Urena* was already established as a weed in 1769 when Banks and Solander visited Tahiti. Consequently, Nelson's record should be accepted as *Urena lobata* L.

#### Sterculiaceae

*Waltheria indica* L. (*W. americana*), cultis.

#### Zygophyllaceae

*Tribulus Cistoides* L.

#### Thymeliaceae

*Wikstroemia phillyraefolia* Gray, var. *phillyraefolia*.

*W. sandwicensis* Meisn. in A. DC.

*W. Uva-ursi* Gray, var. *Uva-ursi*.

#### Myrtaceae

\* *Eugenia malaccensis* L. Listed by Nelson as "*Leptospermum*, The small red Apple of Otaheite." It was certainly correctly identified in Beaglehole (1967:602) as *E. malaccensis*.

#### Onagraceae

\* *Ludwigia octivalvis* (Jacq.) Raven, subsp. *octivalvis*. Observed by Nelson and listed as "*Epilobium*, willow Herb," and in Beaglehole (1967:601) identified as *Jussiaea suffruticosa*, var. *ligustraeifolia*.

#### Araliaceae

*Cheirodendron trigynum* (Gaud.) Heller, var. *ilicoides* Sherff. The umbelets have as many as seven flowers, but in all the other details it agrees with Sherff's concept of var. *ilicoides*.

#### Umbelliferae

*Spermolepis hawaiiensis* Wolff.

#### Ericaceae

*Vaccinium calycinum* Sm., f. *calycinum*.  
*V. dentatum* Sm., var. *dentatum*.

#### Epacridaceae

*Styphelia Tameiameiae* (Cham.) F. Muell., var. *Tameiameiae*.

#### Myrsinaceae

*Myrsine Lessertiana* A. DC., in *sylvis montium*.

*M. sandwicensis* A. DC., var. *sandwicensis*, in *sylvis montium*.

#### Loganiaceae

*Labordia Nelsonii* St. John, in *sylvis densis Jugum montium*, holotype.



Convolvulaceae

\* (*Convolvulus*). Nelson reported four species, one the "Sweet Potatoe Bindweed." Beaglehole's botanical consultants (1967: 601) suggest: (1) *Ipomoea batatas*, (2) *Ipomoea pes-caprae*, (3) *Ipomoea congesta*, and (4) *Ipomoea cairica*. About *Ipomoea batatas* (L.) Poir., there is no question, as it was a basic crop in the drier regions of Hawaii. Nelson collected four other species of *Convolvulaceae*, all of which at that time would have been called *Convolvulus*, but none of them are the ones suggested in Beaglehole. It is evident that Nelson's three other species were three of the four that he collected and are listed here.

*Ipomoea congesta* R. Br.

*I. stolonifera* (Cyrill.) J. F. Gmel.

*Jacquemontia sandwicensis* Gray, var. *sandwicensis*.

*Merremia aegyptia* (L.) Urban.

Boraginaceae

*Heliotropium curassavicum* L.

Labiatae

*Phyllostegia floribunda* Benth., holotype.

*P. Ledyardii* St. John, holotype.

*P. longimontis* St. John, holotype.

*P. macrophylla* (Gaud.) Benth., var. *macrophylla*. Menzies & Dav. Nelson.

*Stenogyne biflora* (Sherff) St. John, holotype.

*S. hirsutula* St. John, holotype.

*S. Nelsoni* Benth., holotype.

*S. scrophularioides* Benth., var. *Skottsbergii* Sherff. This was mixed with two branches of *S. Nelsoni* Benth.

*S. sessilis* Benth., var. *sessilis*.

Solanaceae

*Solanum incompletum* Dunal, holotype, a sterile specimen.

*S. Nelsoni* Dunal. The only record of the species from the island of Hawaii.

Scrophulariaceae

*Bacopa Monnieria* (L.) Wettst.

Myoporaceae

*Myoporum sandwicense* Gray, subsp. *sandwicense*, var. *Fauriei* (Lévl.) Kraenzl., form 1 of Webster. Menzies & Dav. Nelson.

Rubiaceae

*Bohea timonioides* (Hook. f.) Hbd., prope sylvis.

*Coprosma pubens* Gray, var. *pubens*, in sylvis montium.

*C. rhynchocarpa* Gray, in sylvis.

*Gouldia Hillebrandii* Fosb., var. *hawaiiensis* Fosb.

*G. Hillebrandii* Fosb., var. *hawaiiensis* × *G. terminalis* (H. & A.) Hbd., var. *antiqua* Fosb., f. *hirtellifolia* Fosb. Determined by Fosberg. In sylvis montium.

*Hedyotis centranthoides* (H. & A.) Steud., f. *diffusa* Fosb.

*H. Cookiana* (C. & S.) Steud., var. *Cookiana*.

*Psychotria hawaiiensis* (Gray) Fosb., var. *Hillebrandii* (Rock) Fosb., in sylvis.

Cucurbitaceae

\* *Lagenaria siceraria* (Molina) Standl. Listed by Nelson as "*Cucurbita*, Gourd" (Beaglehole 1967:601). This was certainly the *Lagenaria*, an important cultivated plant in Hawaiian agriculture.

Lobeliaceae

*Clermontia konaensis* St. John, holotype.

*Cyanea Grimesiana* Gaud., var. *cylindrocalyx* Rock. This seems a correct identification, but the specimen now consists of a part of a peduncle, parts of two large, pinnatifid leaves, and a cast in glue of the inflorescence and long curved corollas.

\* *Cyanea Marksii* Rock. Listed by Nelson as "*Euphorbia*, Burning thorny plant." One would expect Nelson to have known a *Euphorbia* at sight, but there are no thorny species of *Euphorbia* native to Hawaii. Beaglehole's consultants (1967:601) suggest that this was possibly *Cyanea solanacea*, which is thorny, but which grows only on Molokai. The *Cyanea*

species are shrubs and have milky sap. Several of them are spiny or thorny. *Cyanea Marksii* Rock has these characters, and it occurs in the Honaunau Forest Reserve, above Kealakekua. It seems likely that Nelson was referring to this species.

*C. Nelsonii* St. John, holotype.

#### Goodeniaceae

*Scaevola coriacea* Nutt.

*S. Taccada* (Gaertn.) Roxb., var. *sericea* (Vahl) St. John.

#### Compositae

*Gnapalium sandwicensium* Gaud., var. *sandwicensium*, f. *canum* Sherff.

*Lipochaeta integrifolia* (Nutt.) Gray, var. *integrifolia*.

*L. perdita* Sherff, holotype and only known collection.

*L. scabra* St. John, holotype.

*L. subcordata* Gray, var. *subcordata*.

*L. trilobata* St. John, holotype.

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