

PLANTS OF THE SANDWICH ISLANDS COLLECTED BY
JAMES MACRAE

HAWAIIAN PLANT STUDIES 77

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James Macrae was a Scottish horticulturist, plant collector, and botanist, but his origin and parentage are unknown. In 1823 he was on the staff of the Botanic Garden at St. Vincent, West Indies. From 1824-1826 he was botanist on H.M.S. Blonde, a frigate of 46 guns, under Capt. George Anson, Lord Byron. From 1827-1830 he was superintendent of the Ceylon Botanic Garden, and he died in Ceylon in June 1830.

The Blonde was detailed to carry to Honolulu the bodies of the young Hawaiian king and queen, Liholiho and Kamamalu. While on a visit to the Court of St. James, they had both contracted measles and died of it.

Among the crew were Andrew Bloxam, naturalist, and James Macrae, botanist. Bloxam's diary has been published, but in it there are but few and insignificant mentions of plants.

The Blonde sailed on Sept. 28, 1824 from Spithead, and her route is here stated briefly: Oct. 18-23, Madeira; Nov. 27-Dec. 18, Rio de Janeiro; Dec. 24-Jan. 1, 1825, Santa Catharina, Brasil; Feb. 4-March 5, Valparaiso, where several of the crew and passengers caught small pox and died of it; March 14-17, Callao; March 25-April 2, Galapagos Islands; May 3-July 18, Hawaiian Islands; Aug. 1, Starbuck Island; Aug. 8, Mauke Island of the Cook Islands; Sept. 4, passed Juan Fernandez; Sept. 6, Valparaiso; Sept. 29, Talcahuana (Concepcion), Chili; Oct. 13, Valparaiso; Dec. 5, Coquimbo, Chili; Dec. 29, doubled Cape Horn; Jan. 23-28, 1826, St. Helena; March 15, arrived at Spithead, after a voyage of 17 month, 15 days.

Macrae was an industrious plant collector. On May 13, 1825, with Bloxam, he tramped up Nuuanu Valley, Oahu to the Pali, descended to the Kaneohe lowland, and slept in a hut. On the 14th

they returned by the same route. He collected plants and recorded some others.

May 17. He went by boat to Pearl River, and on the 18th returned overland via Moanalua Hill where he noted Argemone and Portulaca.

May 19. He botanized on Tantalus, and found 12 kinds of ferns.

May 21. He climbed Diamond Hill where he noted little but dry grass.

May 24. He explored Manoa Valley.

May 26. He explored Palolo Valley.

June 12. He arrived at Hilo, Hawaii.

June 15. With purser Wilson, Lt. Talbot, the missionary Mr. Goodrich, and 11 natives, they voyaged by canoe 30 miles to Laupahoehoe. In the afternoon with 6 natives as porters, they started inland to climb Mt. Kaah (Mauna Kea), and at 4 P. M. stopped at a hut near the lower border of the woods.

June 16. They ascended by a path through the woods, under lofty Acacia, and noted Metrosideros, Besteria (in error for Besleria, now our Cyrtandra), may Psychotrias, and 25-foot tree ferns, raspberries, and strawberries. After an estimated 18 miles they emerged from the woods and camped.

June 17. Temperature 52 degrees. They arose at 2 A. M., started at 3. After 3 miles tramping over pulverized lava, they found a "plant of the Syngenesia tribe, in growth much like a Yucca, with sharp pointed silver coloured leaves and green upright spike of three or four feet producing pendulous branches with brown flowers, truly superb, and almost worth the journey of coming here to see it on purpose." (This was evidently the silversword, Argyroxiphium sandwicense). Here Messrs Talbot and Wilson played out, and were left behind. Macrae and the native, Mantle, pushed on. At 12.30 they reached the snow line, and by 1 P.M. the summit. After 2, feeling unwell from mountain sickness, they descended to the hut. Macrae calculated the summit as at not less than 18,000 feet altitude.

June 18. They continued their descent. June 19. At 3 P. M. they reached Laupahoehoe, to find that the natives with the canoe had not waited for them.

Hence, they started for Hilo on foot, and after 10 miles journey made camp.

June 20. Their route crossed deep ravines, and forded swift streams, in one of which Mr. Talbot was washed down and nearly drowned. At 5 P. M. they reached Hilo.

June 23. He went 9 miles east into Puna, with little success.

June 25. Macrae, Talbot, Wilson, a guide, and natives started for Kilauea, marching 20 miles. He found quantities of three sorts of cranberries (presumably Vaccinium reticulatum, etc.).

June 26. Wet and foggy, so they did not start until 8 A. M. Traveled 18 miles.

June 27. At 8 A. M. they reached Kilauea, and descended the rim of the crater (Halemaumau) and went close to the erupting pillars. For the night they returned to the last camp.

June 28. They reached the first night's hut at 8 P. M., and the next day returned to Hilo.

July 2. Macrae visited Rainbow Falls and gathered specimens, one a "beautiful climbing plant, resembling an Erythrina" (which was evidently Strongylodon ruber).

July 7. The ship sailed northward.

July 9-13. At Honolulu.

July 14. Landed at Karakaakua (=Keālakekua), Hawaii.

July 15. Macrae had a few hours in the nearby lowlands.

July 16. Trip to Honaunau by canoe, but return overland, "over uneven masses of lava, and meeting with only a few plants such as tufts of low-growing euphorbias, convolvuluses, sidas, etc."

July 18. The Blonde sailed towards Otahite.

Macrae's Hawaiian collections total at least 184 species and varieties of vascular plants. They are preserved in the British Museum of Natural History, London. He did not publish anything concerning them. However, his manuscript diary was preserved, and the part dealing with the Sandwich Islands was printed (Wilson, 1922). In it is a good account of his collecting trips, and it has numerous mentions of the plants collected and observed.

List of Macrae's Hawaiian Plants

Pteridophyta

Lycopodiaceae

Lycopodium cernuum L. Woahoo, Maio, 1825.

" *phyllanthum* H. & A., Woahoo, Maio.

" *polytrichoides* Kaulf., Owhyhee, ad montem
ignivomen, Junio.

Selaginellaceae

Selaginella arbuscula (Kaulf.) Spring, Kaah, Junio.

" " Owhyhee, Volcano.

Psilotaceae

Psilotum complanatum Sw., Woahoo, Maio.

" *nudum* (L.) Griseb. Owhyhee, ad montem
ignivomen, Junio.

Botrychiaceae

Botrychium subbifoliatum Brack., Woahoo, Maio.

Ophioglossaceae

Ophioglossum falcatum (Presl) Fowler, Woahoo, Maio.

Marattiaceae

Marattia Douglasii (Presl) Baker, Sandwich Is.

Gleicheniaceae

Dicranopteris emarginata (Brack.) W. J. Robins.

Volcano, Oahu.

" " Woahoo, Maio.

" " Owhyhee, ad montem ignivomen.

Hicriopteris pinnata (G. Kunze) Ching, Owhyhee,
ad sinum Byron.

Sticherus owhyhensis (Hook.) Ching, Sandwich Is.

" " Owhyhee, ad montem Kaah, Junio.

Grammitidaceae

Adenophorus pinnatifidus Gaud., Woahoo, Maio.

" " Owhyhee, ad sinum Byron, Julio.

" *tamariscinus* (Kaulf.) Hook. & Grev.

Woahoo, Maio.

Gramitis tenella Kaulf. Woahoo, Maio.

Polypodiaceae

Pleopeltis Thunbergiana Kaulf. Oahu.

Microsorium spectrum (Kaulf.) Copel. Woahoo, Maio.

Phymatodes Scolopendria (Burm.) Ching, Owhyhee,
ad montem Kaah, Junio.

Polypodium pellucidum Kaulf. Owhyhee, ad montem
Kaah, Junio.

Sinopteridaceae

Doryopteris decipiens (Hook.) J. Sm., Owhyhee,
ad montem ignivomen, Junio.

Pellaea ternifolia (Cav.) Link, Owhyhee, ad
montem Kaah, Junio.

Pteridaceae

Pteris cretica L., Owhyhee, ad montem Kaah, Junio.

" *excelsa* Gaud., Woahoo, Maio.

" *irregularis* Kaulf., Woahoo, Maio.

Hemionitidaceae

Coniogramme pilosa (Brack.) Hieron., ad montem
Kaah, Junio.

Vittariaceae

Vittaria rigida Kaulf., Owhyhee, ad montem
ignivomen, Junio.

Hymenophyllaceae

Callistopteris Baldwinii (Eaton) Copel., Woahoo,
Maio.

" " *Owhyhee*, ad sinum Byron, Julio.

Mecodium recurvum (Gaud.) Copel., Owhyhee, ad
sinum Byron, Julio.

Spaheroscionium lanceolatum (H. & A.) Copel.,
Woahoo, Maio.

" *obtusum* (H. & A.) Copel., Woahoo,
Maio.

Vandenboschia davallioides (Gaud.) Copel., Woahoo,
Maio.

Dicksoniaceae

Cibotium Chamissoi Kaulf., Sandwich Is.

Dennstaedtiaceae

Microlepia setosa (Sm.) Alston, Woahoo, Maio.

Hypolepidaceae

Pteridium aquilinum (L.) Kuhn, var. *decompositum*
(Gaud.) Tryon, Owhyhee, ad montem ignivomen,
Junio, no. 17.

Lindsaeaceae

Sphenomeris chinensis (L.) Maxon, Woahoo, Maio.

Thelypteridaceae

Christella cyatheoides (Kaulf.) Holttum,
Ind. Sandwich, Maio.

Pneumatopteris stegnogrammoides (Brack) Holttum,
Woahoo, Maio.

- Thelypteris hawaiiensis* (Hbd.) Reed, Owhyhee, ad
montem Kaah, Junio.
" *hudsoniana* (Brack.) Reed, Owhyhee, ad
montem ignivomen, Junio, no. 3.
" *interrupta* (Willd.) Iwatsuki, Owhyhee,
ad montem ignivomen, Junio.

Aspleniaceae

- Asplenium acuminatum* H. & A., Woahoo, Maio.
" *Adiantum-nigrum* L., Owhyhee, ad montem
Kaah, Junio, no. 5.
" *contiguum* Kaulf., Owhyhee, ad montem
ignivomen, Junio.
" *densum* Brack., Mowee, Maio.
" " *Mouna Keah*, 1825.
" *enatum* Brack, no. 16, Sandwich Is.
" *Kaulfusii* Schlecht, Owhyhee, ad montem
Kaah, Junio.
" *nidus* L., Owhyhee, ad montem ignivomen,
Junio
" *pavonicum* Brack., Owhyhee, ad montem
Kaah, Junio.
" *schizophyllum* C. Chr., Owhyhee, ad montem
Kaah, Junio.

Athyriaceae

- Athyrium Macraei* (Hook. & Grev.) Copel., Owhyhee,
ad sinum Byron, Julio.
" *microphyllum* (Sm.) Alston, Woahoo, Maio.
" *Arnottii* (Brack.) Milde, Sandwich Is., 1825.

Aspidiaceae

- Dryopteris rubiformis* W. J. Robins., 1837.
Polystichum haleakalense Brack., Owhyhee, ad montem
Kaah, Junio.
Tectaria Gaudichaudii (Met.) Maxon, Owhyhee, ad
montem Kaah, Junio.

Elaphoglossaceae

- Elaphoglossum hirtum* (Sw.) C. Chr., var. *micans*
(Met.) C. Chr., Owhyhee, ad montem Kaah,
Junio.
" *pellucidum* Gaud., Owhyhee, ad
montem Kaah, Junio.

Nephrolepidaceae

- Nephrolepis exaltata* (L.) Schott, Woahoo, Maio.

Phanerogamae

Monocotyledones

Gramineae

Chrysopogon aciculatus (Retz.) Trin., Woahoo, Maio.

Heteropogon contortus (L.) Beauv. ex R. & S. Mowee.

Isachne distichophylla Munro ex Hbd., Owhyhee, ad
montem ignivomen, Junio.

Trisetum glomeratum (Kunth) Trin. in Steud.,
Owhyhee, ad montem Kaah, Junio.

Cyperaceae

Cyperus javanicus Houtt., Mowee, Maio.

" *phleoides* (Nees ex Steud) Mann, Owhyhee, ad
montem Kaah, Junio.

" *polystachyos* Rottb., Woahoo, Maio.

" *trachysanthos* H. & A., Owhyhee, ad sinum
Byron, Julio.

Fimbristylis pycnocephala Hbd., Mowee, Maio.

Liliaceae

Astelia Menziesiana Sm., Owhyhee, ad montem Kaah,
Junio.

Cordyline terminalis (L.) Kunth, var. *Ti* (Schott)
J. G. Baker, Woahoo, Maio.

Dianella sandwicensis H. & A., Woahoo, Maio.

Smilax sandwicensis Kunth, Woahoo, Maio.

Zingiberaceae

Zingiber Zerumbet (L.) Roscoe in Sm., Owhyhee, ad
sinum Byron, Julio.

Taccaceae

Tacca Leontopetaloides (L.) Ktze., Owhyhee, ad
sinum Byron, Julio.

Dicotyledones

Piperaceae

Peperomia latifolia Miq., Woahoo, Maio.

" *Macraeana* C. DC., Owhyhee, m. Kaah, Junio.

" *membranacea* H. & A., Woahoo, Maio.

" *sandwicensis* Miq., Woahoo, Maio.

" *tetraphylla* (Forst. f.) H. & A., var.
parvifolia (C. DC.) Deg. & Deg.,
Woahoo, Maio.

Piper methysticum Forst. f., Sandwich Is.

Moraceae

Broussonetia papyrifera (L.) Vent., Woahoo, Maio.

" " Owhyhee, ad sinum Byron, Julio.

Urticaceae

Hesperocnide sandwicensis Wedd., Owhyhee, ad montem
Kaah, Junio.

Neradudia melastomiaefolia Gaud., var. *parvifolia*
(Wawra) Hbd., Woahoo, Maio.

Pilea peploides (Gaud.) H. & A., Woahoo, Maio.

Pipturus albidus (H. & A.) Gray, Woahoo, Maio.

" *Gaudichaudianus* Wedd., Owhyhee, ad sinum
Byron, Julio.

Touchardia latifolia Gaud., no. 2, Owhyhee, ad
sinum Byron, Julio.

Loranthaceae

Korthalsella complanata (v. Tiegh.) Engler, Woahoo,
Maio.

Santalaceae

Santalum ellipticum Gaud., Woahoo, Maio.

" *paniculatum* H. & A., Owhyhee, ad montem
ignivomen, Junio.

" " Owhyhee, ad montem Kaah, Junio.

Polygonaceae

Rumex giganteus Ait. f., Owhyhee, ad montem Kaah,
Junio.

Chenopodiaceae

Chenopodium oahuense (Meyen) Aellen, Woahoo, Maio.

" " Owhyhee, ad montem Kaah, Junio.

Nyctaginaceae

Boerhavia diffusa L., Woahoo, Maio.

" " Mowee, Maio.

Pisonia (fragmentary, perhaps *P. umbellifera*).

Phytolaccaceae

Phytolacca sandwicensis Endl., Woahoo, Maio.

Portulacaceae

Portulaca oleracea L., Woahoo, Maio.

Ranunculaceae

Ranunculus hawaiiensis Gray, Sandwich Isl., 1825.

Capparaceae

Cleome sandwicensis Gray, Mowee, Maio.

Cruciferae

Lepidium o-waihiense C. & S., Woahoo, Diamond Hill,
21 May, 1825.

Saxifragaceae

Broussaisia arguta Gaud., f. *arguta*, Woahoo, Maio.

Pittosporaceae

Pittosporum confertiflorum Gray, Owhyhee, ad montem
Kaah, Junio.

Rosaceae

Fragaria chiloensis (L.) Duch., var. *sandwicensis*

Deg. & Deg., Owhyhee, ad montem ignivomen, Junio.

Osteomeles anthyllidifolia Lindl., Woahoo, Maio.

Rubus Macraei Gray, Owhyhee, ad montem Kaah, Junio.

Leguminosae

Acacia Koa Gray, var. *hawaiiensis* Rock, Owhyhee,
ad montem Kaah, Junio.

" *Koa* Gray, Woahoo, Maio.

Caesalpinia Bonduc (L.) Roxb., Woahoo, Maio.

Cassia Gaudichaudii H. & A., Woahoo, Maio.

Dioclea Wilsonii Standl., Owhyhee, ad sinum Byron,
Julio.

Sophora chrysophylla (Salisb.) Seem., subsp. & var.

chrysophylla, f. *obovata* Chock, Owhyhee, ad montem
Kaah, Junio.

Tephrosia purpurea (L.) Pers., Woahoo, Maio,

no. 53. Natives use to intoxicate fish.

Vigna marina (Burm.) Merr., Woahoo, Maio.

Zygophyllaceae

Tribulus cistoides L., Mowee, Maio.

Euphorbiaceae

Aleurites moluccata (L.) Willd., Woahoo, Maio, no. 17.

Euphorbia Degeneri Sherff, Woahoo, Maio.

Phyllanthus sandwicensis Muell.-Arg., Woahoo, Maio.

Sapindaceae

Dodonaea viscosa Jacq., forma *spatulata* (Sm.) Sherff,
Owhyhee, ad montem ignivomen, Junio.

Aquifoliaceae

Ilex anomala H. & A., Owhyhee, ad sinum Byron, Julio.

Celastraceae

Perrottetia sandwicensis Gray, Woahoo, Maio.

Elaeocarpaceae

Elaeocarpus bifidus H. & A., Woahoo, Maio.

Malvaceae

Abutilon incanum (Link) Sweet, Woahoo, Maio.

Hibiscus tiliaceus L. Woahoo, Maio.

Malva parviflora L., Mowee, Maio.

Thespesia populnea (L.) Soland. ex Correa, Owhyhee,
ad sinum Byron, Julio.

Sterculiaceae

Waltheria indica L. Mowee, Maio.

Theaceae

Eurya sandwicensis Gray, Woahoo, Maio.

Thymeliaceae

Wikstroemia oahuensis (Gray) Rock, Woahoo, Maio.

" phillyraefolia Gray, Owhyhee, ad montem
ignivomen, Junio.

Myrtaceae

Eugenia malaccensis L., Owhyhee, ad sinum Byron,
Julio.

" sandwicensis Gray, Woahoo, Maio.

Metrosideros macropus H. & A., Woahoo.

" polymorpha Gaud., subsp. polymorpha,
Woahoo, Maio.

" " "

Owhyhee, ad montem Kaah, Junio.

" " subsp. polymorpha, Owhyhee, ad
sinum Byron, Julio.

" " " Owhyhee, ad montem
ignivomen, Junio.

" " subsp. imbricata (Rock) Skottsb.,
Woahoo.

" " " Woahoo, Maio.

" tremuloides (Heller) Knuth, Woahoo, Maio.

Araliaceae

Cheirodendron trigynum (Gaud.) Heller, var. Degeneri
Sherff, Owhyhee, ad montem Kaah, Junio.

Umbelliferae

Sanicula sandwicensis Gray, Owhyhee, ad montem
Kaah, Junio.

Ericaceae

Vaccinium calycinum Sm., Owhyhee, ad montem Kaah,
Junio.

" dentatum Sm., Woahoo, Maio.

" reticulatum Sm., ad montem Kaah, Junio.

" " ad montem ignivomen, Junio.

Epacridaceae

Styphelia Tameiameiae (Cham.) F. Muell., Woahoo,
Maio.

Myrsinaceae

Myrsine sandwicensis A. DC., Owhyhee, ad sinum
Byron, Julio.

Plumbaginaceae

Plumbago zeylanica L., Woahoo, Maio.

Apocynaceae

Rauvolfia sandwicensis A. DC., Woahoo, Maio.

Hydrophyllaceae

Nama sandwicensis Gray, Woahoo, Maio.

Boraginaceae

Heliotropium curassavicum L., Mowee, Maio.

Verbenaceae

Vitex ovata Thunb., Owhyhee, ad sinum Byron, Julio.

Solanaceae

Solanum sandvicense H. & A., Woahoo, Maio.

Scrophulariaceae

Bacopa Monniera (L.) Wettst., Owhyhee, ad montem
Kaah, Junio.

Gesneriaceae

Cyrtandra cordifolia Gaud., Woahoo, Maio.

" *Lessoniana* Gaud., var. *Lessoniana*,
Woahoo, Maio.

" *Macraei* Gray, Woahoo, Maio.

" *paludosa* Gaud., var. *paludosa*,
Woahoo, Maio.

Myoporaceae

Myoporum sandwicense Gray, Owhyhee, ad montem
Kaah, Junio, no. 16.

Plantaginaceae

Plantago glabrifolia (Rock) Pilger, Owhyhee, ad
montem ignivomen, Junio.

" *princeps* C. & S., var. *elata* Wawra,
Woahoo, Maio.

Rubiaceae

Coprosma ernodeoides Gray, var. *ernodeoides*,
Owhyhee, ad montem ignivomen, Junio.

" *foliosa* Gray, Woahoo, Maio.

" *Menziesii* Gray, Owhyhee, ad montem
ignivomen, Junio.

" *pubens* Gray, var. *pubens*, Owhyhee, ad
Montem Kaah, Junio.

Gouldia terminalis (H. & A.) Hbd., var.

Woahoo, Maio.

Hedyotis Mannii Fosb., var. *scaposa* Fosb.,
Owhyhee, ad sinum Byron, Junio.

Psychotria kaduana (C. & S.) Fosb., Woahoo,
Maio, no. 72.

" *Mariniana* (C. & S.) Fosb.,
Woahoo, Maio.

" sp. Owhyhee, Byron's Bay, Julio.

Morinda citrifolia L. Woahoo, Maio:

" " Owhyhee, Byron's Bay.

Cucurbitaceae

Sicyos microcarpus Mann, subsp. *laysanensis* (St. John)
St. John, var. *ewaensis* St. John, Woahoo, Maio.

Goodeniaceae

Scaevola Taccada (Gaertn.) Roxb., var. *sericea*
(Vahl) St. John, Owhyhee, ad sinum Byron, Julio.

Compositae

Argyroxiphium sandwicense DC., Owhyhee, ad montem
Kaah, Junio.

Aster sandwicensis (Gray) Hieron., Woahoo, Maio.

Bidens sandwicensis Less., Woahoo, Maio.

Erigeron canadensis L., Woahoo, Maio.

Plants Mentioned in Macrae's Journal, but not Collected

Pandanaceae

Pandanus, Owhyhee, Laupahoehoe, p. 48.

Palmae

Coconut, Owhyhee, Hilo, p. 46; Kealakekua, p. 72, etc.

Araceae

Taro, Owhyhee, Kealakekua, p. 71; etc.

Musaceae

Banana, Owhyhee, Hilo, p. 46; Laupahoehoe, p. 49;
Laupahoehoe to Hilo, p. 59; Kealakekua, p. 71;
Woahoo, Palolo, p. 36.

Zingiberaceae

Ginger, Woahoo, Manoa, p. 35.

Turmeric, Woahoo, Manoa, p. 35.

Cannaceae

Canna, Woahoo, Manoa, p. 35, one specimen wild
among the grass.

Piperaceae

Awa, Woahoo, Manoa, p. 35.

Moraceae

Breadfruit, Owhyhee, south to Hilo, p. 59;
Kealakekua, p. 71.

Santalaceae

Santalum Freycinetianum, Sanderswood, Woahoo,
Palolo, one middle sized tree, p. 36.

Portulacaceae

Portulaca, Woahoo, Moanalua.

Papaveraceae

Argemone, Woahoo, Moanalua, p. 30.

Leguminosae

(*Strongylodon ruber*), Owhyhee, Rainbow Falls,
"vine like *Erythrina*," p. 66.

Euphorbiaceae

Euphorbia, low growing, Owhyhee, Honaunau, p. 72.

Anacardiaceae

Rhus, Owhyhee, montem Kaah, p. 49.

Malvaceae

Hibiscus, Woahoo, Nuuanu, p. 23.

Sida, Owhyhee, Honaunau, p. 72.

Convolvulaceae

Sweet potato, Owhyhee, Kealakekua, p. 71.

Convolvulus, Woahoo, Nuuanu, p. 23; Owhyhee,
Honaunua, p. 72.

Solanaceae

Tobacco, Owhyhee, Kealakekua, p. 71.

Gesneriaceae

Besteria, for *Besleria* (= *Cyrtandra*), Owhyhee,
montem Kaah, p. 51.

Cucurbitaceae

Gourd calabsh, Owhyhee, south to Hilo, p. 59.

Watermelon, Woahoo, Nuuanu, p. 24.

Lobeliaceae

Lobelia, 2-3 tall, Woahoo, Nuuanu, p. 25.

" many, Owhyhee, montem Kaah, p. 51.

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