

Panicum torridum Gaudichaud Gramineae, grass family.

A native Hawaiian grass, called kākōna-kōna, "Torrid panic grass".

It is endemic to the Hawaiian chain and thrives in dry localities. It is good forage for cattle. It is characterized by a thick covering of long silky hairs, even on the dense flowering panicle.

The attached illustration and page of data are from "Flora Hawaiiensis" by Otto Degener. There is also an article and illustration of it in A.S.Hitchcock, The grasses of Hawaii, Bishop Museum Memoirs, VIII (3): 184-185, 1922.

Chenopodium oahuense (Meyen) Allen. Chenopodiaceae, Goose-foot family. Synonym: (Chenopodium sandwichicum) Aheanea is one of several Hawaiian names.

A low shrub, the branching stems and angled leaves so covered with short white hairs that it makes the plants look pale green, almost white.

Sesuvium portulacastrum L. Aizoaceae, carpetweed family.

A prostrate herb, usually found near beaches. It is a prostrate herb, with fleshy narrow leaves and small flowers and fruits.

The fleshy parts of the plant can be eaten like spinach or greens, raw. This drawing is from E.D.Merrill's "Plant Life of the Pacific World." Hawaiian name: "akulikuli."

(over)
#20

Portulaca lutea Solander, "Ihi" Family Portulacaceae. Indigenous to Pacific Islands.

A fleshy herb, erect, with soft, thick fleshy, edible stems and light green leaves, and yellow flowers. Native name "ihi", and is one of the "pig-weeds". The sketch, from Merrill, is of Portulaca oleraceae, which is more slender, low and bushy, with purplish stems.

(over)
#122

Sesbania tomentosa Hooker & Arnott, "ohai". Family Leguminosae, "bean family".

A nearly prostrate shrub, with silky, wool-covered branches and leaves. The flowers are red to orange, about an inch long. The accompanying plate and description are from J.F.Rock, The leguminous plants of Hawaii, plate 65 and pp.155-156.

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Gramineae, grass family.
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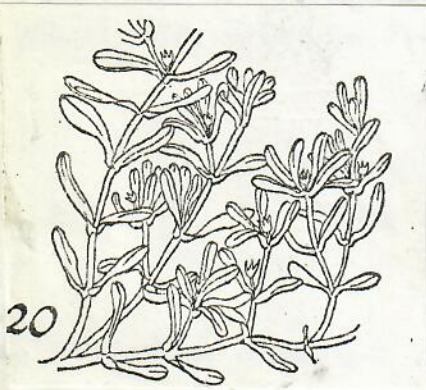
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Chenopodium oahuense (Neyen) Allen. Chenopodiaceae, Goose-foot family. Synonym:
(*Chenopodium sandwicense*) A species is one of several Hawaiian names.
A low shrub, the branching stems and angled leaves so covered with short
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Aizoaceae, carnation family.

Sesuvium portulacastrum L.

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The fleshy parts of the plant can be eaten
like spinach or greens, raw. This drawing
is from E.D. Merrill's "Plant life of the
Pacific World." Hawaiian name: "kanihala".



Portulacaceae, Family Portulacaceae "Ihi"

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is one of the "pig-weeds". The sketch, from
Merrill, is of *Portulaca oahuensis*, which is
more slender, low and bushy, with purplish
stems.



Sesbania tomentosa Hooker & Arnott, "ohai". Family Legum.

A nearly prostrate shrub, with silky, wool-covered branches
and red to orange, about an inch long. The accompanying
from J.F. Rock, The Leguminous plants of Hawaii, plate 65 and pp. 122-123.

edge of the southern cliff, about the middle of the island, and the other in the pocket of a stream bed just above the sand beach.

Sicyos sp. Observed only below Tanager Peak.

NECKER ISLAND

Necker Island, like Nihoa Island, is the remnant of a volcanic cone. It is much smaller, covering an area of about 41 acres only, and with a maximum elevation of 276 feet (29, p. 20). The backbone of the island forms a gently rounded plateau from which the cliffs descend steeply, especially toward the south and west. The soil is shallow, coarse, and most of it mixed with a great amount of loose rock. It is basaltic with some admixture of bird guano.

The vegetation on Necker Island is very inconspicuous (Pl. III, A). In no place do the higher plants form a closed cover, and great parts of the island are destitute of any plant life whatsoever. Only five species of vascular plants are found:

Panicum torridum. In 1923, moderately common on the north side of the main part of the island, but most of the plants were dead. In 1924 only two clumps were observed: one on the slopes of Annexation Hill; another on the east side of Bowl Hill.

Chenopodium sandwicheum. The commonest plant on the island; abundant on the sloping sides, but rare on the flat top; plants low and straggling; few exceed a height of 2 feet.

Sesuvium portulacastrum. Found only on the southern slopes of Annexation Hill where it grows in great abundance in the talus within reach of the spray.

Portulaca lutea. Common on the flat tops, as well as on the small ledges of the precipitous cliffs; most of the plants are rather small and poor.

Sesbania tomentosa. A few plants, low and widespreading, along the flat top of the main part of the island; most of these less than 2 feet high, but spreading as much as 6 to 10 feet in diameter; much favored as nesting site by boobies and frigate birds. (See Pl. III, B.)

On the shores of Shark Bay seeds of *Aleurites moluccana* were found. In June, 1923, C. S. Judd sowed seeds of the following species in the saddle between Flagpole Hill and Summit Hill: *Haematoxylum campechianum* Linnæus, *Thespesia populnea* Solander, *Casuarina equisetifolia* Linnæus, *Pritchardia pacifica* Seemann et Wendland, *Pritchardia* sp., *Livistonia australis* Martius, and *Lycopersicon esculentum* Miller. In July, 1924, no seed plants of these species were found.

FRENCH FRIGATES SHOAL

French Frigates Shoal is a crescent-shaped atoll consisting of 16 sand and 2 rock islets, the last remnants of a volcanic cone. The total area of the sand

Family: 47
Genus: Panicum
Species: Torridum

GRAMINEAE
GRASS FAMILY.

PANICUM TORRIDUM Gaud.
TORRID PANIC-GRASS; KAKONAKONA

Panicum torridum Gaud. Voy. Freyc. Bot. 411. 1829.*

Panicum torridum Hitchc. in Mem. B. P. Bishop Mus. 8.3:185. 1922.
(In part.)

Tufted annual. Culms 25-80 cm. tall, villous, erect, simple or often with one 10-15 cm. long branch at each node. Sheaths 3-10 cm. long, shorter than internodes, densely villous with silky pale yellowish or fawn-colored hair, chartaceous, often loosely clasping the culm; ligule a line of bristly hair about 1 mm. long; blades flat, 8-20 cm. long, 1-2.5 cm. wide, densely villous with silky hair, chartaceous, abruptly acute, erect. Panicles 4-12 cm. long, 2-5 cm. wide, dense, pyramidal, erect, often partially included within its sheath, bearing fertile branches from nearly all older nodes; with densely villous crowded suberect 1-3 cm. long branches usually in fascicles of 3-5. Spikelets 4-6 mm. long, readily disarticulating, borne on 1-1.5 mm. long thickish pedicels. Glumes conspicuously unequal, densely papillose-villous with ascending or spreading hair 1-3 mm. long: first glume 4-6.5 mm. long, lanceolate, acute, 3- to 5-nerved, very conspicuous, second glume 2.5-3.5 mm. long, ovate, 5- to 7-nerved. Sterile lemma slightly shorter than second glume, 7-nerved, densely long papillose-villous, with slightly involute margins, with its obtuse hyaline palea about 1 mm. long. Fertile lemma about 2 mm. long, narrowly ovate, coriaceous, nerveless, shiny, slightly beaked, becoming brownish with age, with its palea of the same length and texture. Anthers about 1 mm. long, narrowly ovate, pale yellow. Stigmas 0.5-0.7 mm. long, narrow, very inconspicuous, sparingly plumose, yellowish. Grain 1.5-1.7 mm. long, narrowly ovate, somewhat compressed, whitish.

Type Locality: "Insulis Sandwicensibus."

Local Range: A grass limited to the arid lowlands of Maui, for example about Wailuku, and of Molokai especially in the western part. The closely related *P. cinereum* is found in less abundance in the same general regions, but is quite common on Oahu about Kaena Point, Diamond Head and Koko Head. *P. torridum* is plentiful enough locally to be of some value as forage.

Extra Range: Not known elsewhere.

*Many plants described in Gaudichaud's work are still commonly cited with the incorrect date of publication. The following table supplies this little known information. Though certain plates properly illustrate certain pages, these plates were not necessarily issued according to their numeration but in a somewhat haphazard manner from time to time. For instance, Plate 85 (according to Cass. Dict. Nat. 51:475. 1827.) was published with the first livraison in 1826 though the plant it illustrates was not described until three years later.

PART	PAGES	YEAR	(illustrated by) PLATES
1	1—88	1826	1—20
2	89—216	1827	21—50
3	217—360	1828	51—80
4	361—464	1829	81—110
5	465—522	1833 ('30?)	111—120

(Illustrated on following page)

(Otto Degener & Leo D. Whitney, 11/2/'38)

Family: 47
Genus: Panicum
Species: Torridum

GRAMINEAE
GRASS FAMILY



PANICUM TORRIDUM Gaud.

(Original)

(Otto Degener, 11/2/'38) (Described on preceding page)

(Hoolehua, Molokai)

on the vacant lot opposite the Pleasanton Hotel. The red flowering variety (*Sesbania grandiflora coccinea*) was looked upon as a distinct species, *S. coccinea* (Linn. f.) Pers., but is nothing but a mere color form of the widely distributed *Sesbania grandiflora* (Linn.) Pers.

The red flowering variety is now commonly cultivated in the islands and specimens can be seen in Manoa Valley, at the College of Hawaii grounds, as well as in Makiki Valley and elsewhere. It is a very short-lived tree.

Two coloring principles have been extracted from the sap of the trunk, one red, which is called *agathin*, and the other yellow, which is called *xantho-agathin*. Besides these there have been found *arabin*, some *bassorin*, a resinous matter, and tannin. The bark, of which the inner portion yields a good fibre, is astringent. The leaves and flowers as well as pods are eaten by the poorer natives of India in curries and as a vegetable.

Sesbania tomentosa Hook. et Arn. Bot. Beech. Voy. 286. 1842.
Agati tomentosa Nutt. in Herb. Hook.

Oahu.

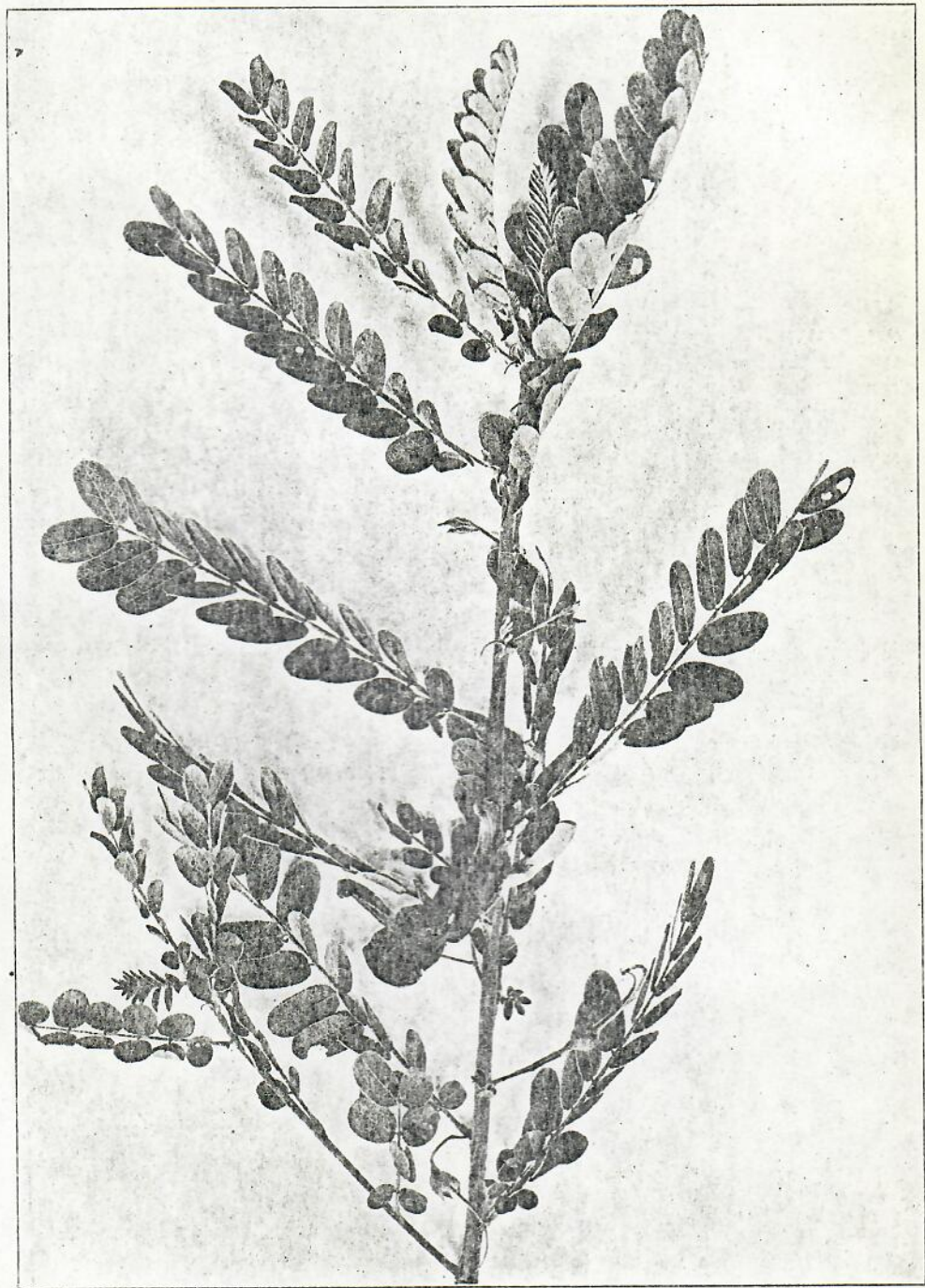
Plate 65.

A woody plant, with decumbent stems, 5-7 m long; the branches, foliage, etc., silky-tomentose when young, but less so when old; leaves abruptly pinnate, 10-17.5 cm long, very shortly petiolate, leaflets 8-16 pairs, oblong elliptical up to 28 mm long, 6-8 mm wide, pale, glabrous above, silky pubescent beneath even when old, retuse, mucronate; rhachis pubescent; stipules minute, caducous; peduncle up to 25 mm long, two to six-flowered, pedicels about 15 mm long, calyx cyathiform, about 1 cm long, with short deltoid teeth; corolla red or pale salmon-colored; standard orbicular, emarginate reflexed; keel and wings moderately falcate 2.5 cm or more long; stamens and pistil as in *S. grandiflora*; pod 12.5-17 cm long, 3-4 mm wide, glabrous, torulose, and constricted at intervals, slightly stipitate in the nearly persistent calyx; seeds 8-20 oblong, compressed shining.

Sesbania tomentosa H. et A. is endemic in the Hawaiian Islands and is usually found near the sea. It has been collected on Oahu in the district of Waianae, and also on the coast of Hawaii; Hillebrand collected it on Molokai. Specimens of his Molokai plants are in the College of Hawaii Herbarium. The writer collected it also on Molokai, on the sand dunes at Moomomi on the dry west end of that island. It forms dense mats over the white coral sands, covering quite an area. It is always prostrate there, but on Kauai, near Mana, it is a branching erect shrub several feet in height. Mrs. Annie Knudsen of Kauai has kindly sent specimens from the latter locality to the writer. In the Kauai specimens the raceme is six flowered, and the stems are white woolly.

The plant is not known to occur outside the Hawaiian Islands. Specimens are growing and flowering at the College of Hawaii grounds, grown from seed collected by the writer on Molokai.

Recently the arborescent type of *Sesbania tomentosa* has been discovered by Mrs. L. M. Dunbar on the slopes near Mahana on the west end of Molokai. She reports it as a tree 12 to 15 feet in height. The leaves are longer, the leaflets smaller and more numerous than the creeping variety on the same island at the beach sands of Moomomi. It is, however, identical with it with the exception of being arborescent; it may be distinguished as *Sesbania tomentosa* forma arborea Rock.



SESBANIA TOMENTOSA Hook. et. Arn.

Ohio.