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Plants of Christmas Island

by

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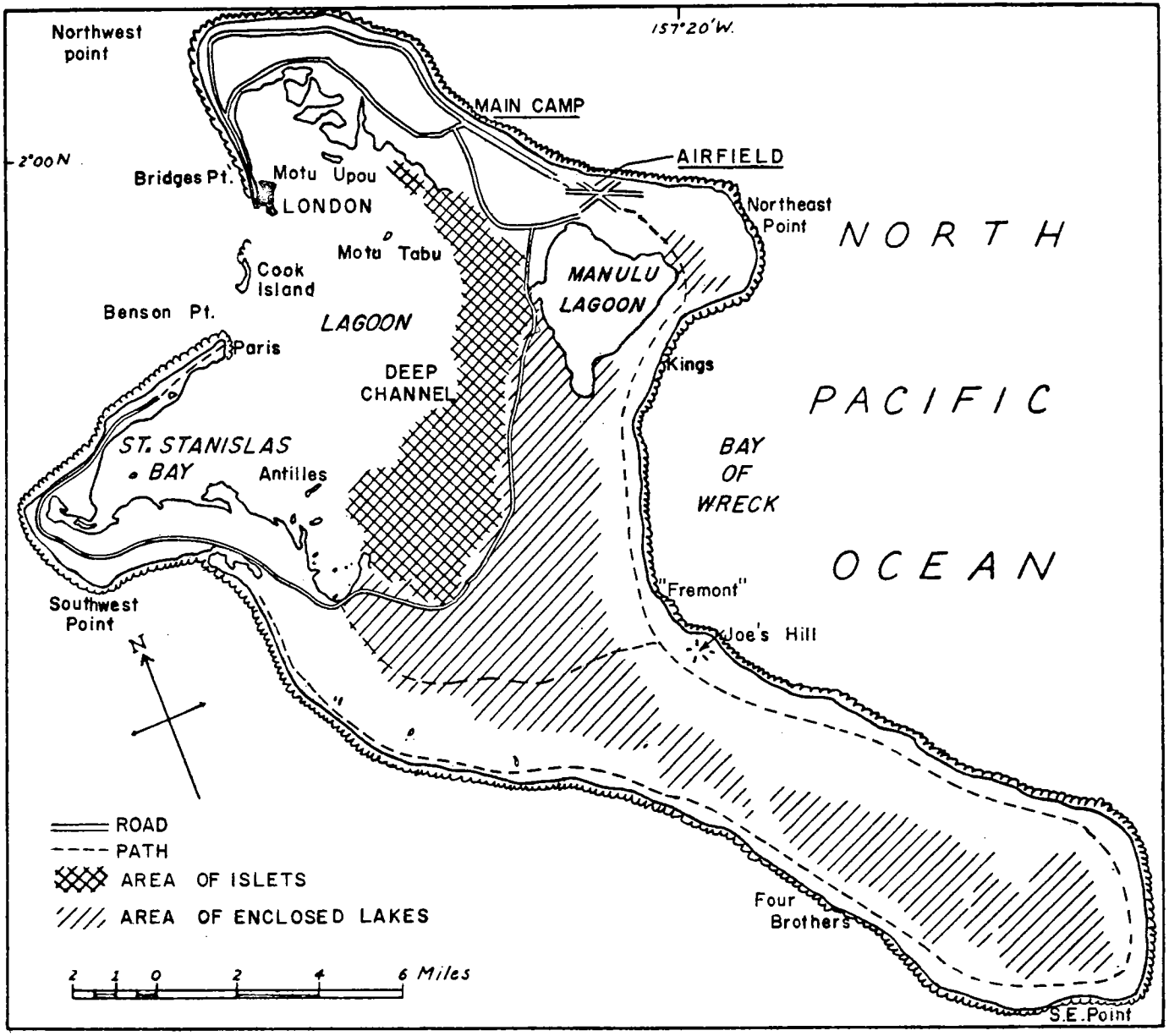

SKETCH MAP OF CHRISTMAS ISLAND

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Plants of Christmas Island[1]

by

Alvin K. Chock[2 & 3] and Dean C. Hamilton, Jr.[2]

During the period of April 11-14, 1962, the second author conducted an entomological survey of Christmas Island under the auspices of the Plant Quarantine Division, Agricultural Research Service, U. S. Department of Agriculture. In addition to the insect collections, 18 species of vascular plants were collected, and six additional cultivated ones were observed.

The collections were made on the northern portion of the island in the vicinity of the "Main Camp" and airport, as indicated on the map. The Division was primarily interested in the kinds of insects which would most likely hitch-hike on aircraft returning to Hawaii and which might be of potential agricultural significance. This area would also indicate recent accidental plant introductions. Due to the present use of the island for testing nuclear devices, no attempt was made to make collections elsewhere. Coconut is the only significant economic crop, and the plantations worked by Gilbertese natives would be areas of interest for future collecting.

Christmas Island was given its name because of its discovery on Christmas Day 1777, by Captain James Cook. During World War II it was one of the outposts of the Royal Air Force. This large coral atoll is located at 1°55'north latitude, 157°20' west longitude, and is part of the Pacific Equatorial or Line Islands. The island, with an area of 200 square miles, has an open salt water lagoon and many ponds of varying salinity; the highest elevation is 40 feet.

There was no basic change or difference in the character of the vegetation, from the beach inland, in the areas observed. The dominant species were Scaevola taccada (Gaertn.) Roxb. and Messerschmidia argentea (L.f.) Johnston occurring in clumps, with Pluchea [illegible]florata (L.) Cass. on the edges. Coconut trees were common on the northern coast and made up approximately one-third of the vegetation of the northwestern portion of the island.

Forty-one species of vascular plants have now been recorded from Christmas Island. [illegible] records of plants made as a result of this recent

for publication by the Director, Plant Quarantine Division, Research Service, U. S. Department of Agriculture, D. C.

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ɔn are: Fimbristylis atollensis St. John, Artocarpus altilis (Park.) two varieties of Hibiscus sp., Carica papaya L., Lycopersicon ntum Mill., and Pluchea indica (L.) Less.

The first significant botanical survey of Christmas Island was made in August 1924 by the Whippoorwill Expedition of the Bishop Museum. Plant collections totaling 24 species plus two additional ones observed were made by Erling Christophersen (1927) and H. F. Bergman. G. P. Wilder also collected there in December of the same year. In October 1934, three additional species were recorded from collections made by Harold St.John, C. Montague Cooke, Jr., and F. Raymond Fosberg. Five additional new records were established in the August 1936 collections of Fosberg (1939, 1943), Alfred Metraux and E. M. Metraux.

No additions from Christmas Island were made to the Bishop Museum's Herbarium until October 1958, when Major M. D. Gallagher of the Royal Air Force Natural History Society (Christmas Island) sent specimens for determination to Mr. E. H. Bryan,Jr. They were identified by Miss Marie Neal, and the identifications published by the Society (1959).

The authors would like to acknowledge the cooperation and courtesies extended by Joint Task Force 8 during the recent trip, and the Christmas Island map supplied by Mr. Bryan, which was redrawn by Miss Yona Bielefeldt. [For technical reasons, another map had to be substituted.--Eds.]

All the collections cited in the checklist below are deposited in the Herbarium of the Bishop Museum. Collection numbers follow the collector's initials, as indicated below:

EAB	E. A. Bessey	FRF	F. R. Fosberg
HFB	E. F. Bergman	FRF & AM	Fosberg & A. Metraux
EC	E. Christophersen	FRF & EMM	" & E. M. Metraux
DCH	Dean C. Hamilton,Jr.	RAF	RAF Nat. Hist. Soc. (Gallagher)
CPW	Gerritt P. Wilder	St.J & CMC	St. John & C. M. Cooke,Jr.
		St.J.& FRF	St. John & Fosberg

Fungi imperfecti

These were found and determined by E. A. Bessey on the indicated gramineous host collections.

Phoma sp.
EAB 762, on Eragrostis amabilis (FRF 13229)

Cladosporium sp.
EAB 760, on Eragrostis whitneyi (FRF 13230)

Curvularia lunata (Wakker) Boed.
EAB 757, on E. whitneyi (HFB 14)

Diplodia sp.
EAB 757, on E. whitneyi (HFB 14)

Heterosporium sp.
EAB 756, on E. whitneyi (FRF 13230)

Pandanaceae

Pandanus tectorius Sol.
HFB 32

Gramineae

Cenchrus echinatus L.
DCH 2

Digitaria pacifica Stapf.
Syntherisma pelagica F.Br. var. F.Br. (HFB 7, type)
HFB 7; StJ & FRF 17492; FRF & AM 13218, 13231, 13265.
Plants identified as Panicum stenotaphroides Nees by Christophersen (1927, p. 22) belong here (cf. Fosberg 1939)

Eleusine indica (L.) Gaertn.
DCH 17

Eragrostis amabilis (L.) W.& A.
HFB 15; FRF 13229

E. whitneyi Fosberg var. whitneyi
FRF 13195 (type), 13230, 13266; HFB 14; StJ & FRF 17489
Plants identified as E. falcata (Gaud.) Gaud. by Christophersen (1927), and as E. paupera Jedwabnik by J. R. Swallen belong here (Fosberg 1939)

Lepturus repens (Forst.) R. Br.
HFB 1; StJ & CMC 17481; FRF & AM 13196, 13206; DCH 11

Cyperaceae

Cyperus rotundus L.
FRF 12172, 13282

Fimbristylis atollensis St. John
DCH 1

Palmae

Cocos nucifera L.
Christophersen (1927, p.22) says "about 300,000 trees, almost all of which have been planted. Chief plantations are at 'London' and northwards, 'Poland' and 'Rapa.' Smaller plantations are scattered."

Moraceae

Artocarpus altilis (Park.) Fosb.
DCH was told of 4 small cultivated trees in the Resident Commissioner's residence.

Nyctaginaceae

Boerhavia repens L.
StJ & CMC 17484, 17482; RAF D; DCH 9; HFB 10a; StJ & FRF 17495 (identified as B. diffusa var. pubescens (R.Br.) Choisy)
Plants identified as B. hirsuta L. by Christophersen (1927,p. 23)

belong here. Fosberg examined the Boerhavia material in the Linnean Herbarium, and found that the specimens of B. repens are similar to the plants with mostly axillary cymes found in the Pacific. B. diffusa, on the other hand, seems to be the paniculate one which is a common weed in Ceylon and other Asiatic areas. The latter name, however, has been used by most Pacific authors for this plant.

Boerhavia tetrandra Forst.
HFB 9, 10b, 11; GPW

Pisonia grandis R. Br.
HFB 8; StJ & CMC 17479

Aizoaceae

Sesuvium portulacastrum L. var. griseum Degener & Fosberg
HFB 13; StJ & FRF 17493; DCH 12
Called S. portulacastrum by Christophersen (1927)

Portulacaceae

Portulaca fosbergii von Poellnitz
FRF 13269; DCH 16

P. johnii von Poelln.
StJ & CMC 17478. This collection needs further study

P. lutea Sol.
HFB 4; GPW; FRF 13188; FRF & AM 13220, 13223; RAF I, S, R; DCH 14

Lauraceae

Cassytha filiformis L.
HFB 34; FRF & AM 13213, 13235; RAF M; DCH 7

Cruciferae

Lepidium bidentatum Mont.
EC 48 (identified as L. owaihiense C.& S. in Christophersen 1927,p. 24)

Leguminosae

Erythrina variegata var. orientalis (L.) Merr.
E. indica Lam.
This species cultivated on the island according to Christophersen (1927).
No specimens were collected.

Leucaena leucocephala (Lam.) de Wit
FRF 13249

Phaseolus lathyroides L.
FRF 13272

Zygophyllaceae

Tribulus cistoides L.
HFB (EC) 23; RAF G; DCH 13

Simarubaceae

Suriana maritima L.
HFB 5; GPW 6; StJ & CMC 17480; FRF 13192, 13264; FRF & AM 13217; RAF C; DCH 18

Euphorbiaceae

Euphorbia hirta L.
HFB 19; FRF 13268; FRF & EMM 13248

Phyllanthus amarus Sch. & Thonn.
HFB 16; FRF 13276

Malvaceae

Abutilon albescens Miq.
FRF & AM 13215. Wrongly identified as A. indicum Sweet (Fosberg 1943, p. 397), re-identified by Fosberg, 1962.

Hibiscus tiliaceus L.
HFB 17; FRF 13267; DCH 15. According to Christophersen (1927, pp.27,77) and Fosberg (1943, p. 397) this species is cultivated on Christmas I.

Hibiscus sp.
DCH observed two different varieties (one plant each) with pink flowers

Sida fallax Walp.
HFB 3, 21; FRF 13191, 13283; FRF & AM 13210; FRF & EMM 13225; DCH 6. Plants listed as S. cordifolia L. in Christophersen 1927, p. 26, belong here.

S. rhombifolia L.
HFB 18

Caricaceae

Carica papaya L.
DCH observed two cultivated trees near the airport.

Boraginaceae

Heliotropium anomalum H. & A. var. mediale Johnston
HBF 2; GPW 7; StJ & FRF 17486 (type), 17487, 17488, 17494; FRF & AM 13209; FRF 13190, 13232, 13273, 13274; RAF H, O_1 , O_2; DCH 3. Listed as H. anomalum H. & A. by Christophersen 1927.

Messerschmidia argentea (L.f.) Johnston
Tournefortia argentea L.f.
HFB 6; StJ & CMC 17477; FRF 13189; FRF & AM 13219; RAF A; DCH 5

Solanaceae

Lycopersicon esculentum Mill.
DCH observed 4 cultivated tomato plants near the airport

Rubiaceae

Hedyotis romanzoffiensis (C. & S.) Fosberg
Kadua romanzoffiensis C. & S.
Gouldia romanzoffiensis (C. & S.) A. Gray
HFB 12; StJ & FRF 17491; FRF 13194, 13234, 13284

Goodeniaceae

Scaevola taccada (Gaertn.) Roxb.
HFB 20; StJ & FRF 17496; FRF & AM 13216; FRF 13233; DCH 10. Wrongly called S. frutescens (Mill.) Krause in Christophersen 1927, p.27.

Compositae

Pluchea indica (L.) Less.
DCH 8

P. odorata (L.) Cass.
RAF J; DCH 4

Vernonia cinerea Lessing
HFB 22

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