ATOLL RESEARCH BULLETIN

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7. The Plants of Arno Atoll, Marshall Islands

Issued by

PACIFIC SCIENCE BOARD

National Research Council

Washington, D. C.

November 15, 1951

THE PLANTS OF ARNO ATOLL, MARSHALL ISLANDS

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SCIENTIFIC INVESTIGATIONS IN MICRONESIA - PACIFIC SCIENCE BOARD

30 June 1950

This is a preliminary report on field work in botany during the period May 5 - 30, 1950, on Arno Atoll in the Marshall Islands.

1. To make possible the definite determination of species of plants referred to in Marshallese plant names.

2. To make as complete a collection as possible of Arno atoll plants.

3. To collect the Arno version of the Marshallese name of each plant species and variety collected.

4. To make tentative determinations of each species collected.

5. To correlate the Marshallese and the botanical names with each numbered herbarium specimen in order to make possible a careful study and check of the field identifications.

6. To furnish the other members of the study team with as much of this information as possible prior to their departure from Honolulu en route to Arno Atoll for their field work.

The major portion of the collecting was done on the island of Ine because of the easy access from Ine Village where the laboratory and quarters were established. Ine Island, which is situated on the south side of the lagoon, is thirteen miles in length and fairly characteristic of Arno Atoll floristically. Several species of Arno Atoll plants are missing from Ine Island, however.

The total collection on Arno Atoll was 169 herbarium numbers. Of these 134 numbers were collected on Ine Island. On a three day canoe trip to the north and west sides of the lagoon 35 more numbers were collected. Collecting during this trip was limited to species not collected in fruit or flower on Ine Island, or not occurring there at all. There were sixteen additional species collected on the trip, one being seen later on Ine.

Additional fertile specimens were also collected which previously had been collected only without fruit or flower on Ine Island.

In collecting information regarding local plant names care was taken to ascertain the accuracy of the informants in giving Arno Atoll names rather than names from other atolls. An attempt was made to use exclusively locally born informants. The people of Arno showed keen interest in the work and exhibited rather accurate knowledge as to localities in which each species could be found. They informed me prior to the canoe trip across the lagoon that there were a dozen more species to be found on these windward islands of the atoll, none of which was to be found on Ine Island. This was borne out in the collecting, for there were fifteen additional species which were not seen or collected on Ine.

Though only two additional species were collected on Bikarej Island, the mangrove swamp there was quite different from any seen on any other island visited. Sonneratia caseolaris was one of these two species. The other species was not a mangrove species but Portulaca samoensis, which was growing in the roadway. (Only two sterile plants were seen.) There is an aberrant form of Pemphis in the salt swamps, however. Pandanus was and still is an important food plant. Sixteen named varieties were collected on Arno Atoll and there are more varieties that were not collected. The Arno informants claimed that the seeds produced by these varieties do not produce the same variety but that the common wild variety usually results. They said it was necessary to plant a branch from the variety desired in order to increase a given variety. This seems to indicate that the varieties are merely clones. It is my opinion that there is but one species of Pandanus there and that it is Pandanus tectorius.

Breadfruit, Artocarpus altilis, also had a number of varieties. According to the informants there are six varieties of seedless and two varieties of seed breadfruit. Of the seed varieties two named varieties are easily distinguished by the leaf shape. "Mātete" variety has deeply incised leaves while "Mijwan" variety has entire to shallowly incised leaves. The initiated can distinguish the fruits by taste.

Attached is a list of species collected on Arno Atoll with Marshallese names and herbarium numbers.

Ecology

The outer shores of the windward islets are generally rougher and wider than those of the leeward islets.

The vegetation fringes of the seaward shores on the windward islets differ somewhat from those of the leeward islets. Working towards the lagoon from the sea on the windward islets the species are generally encountered in the following order: Scaevola frutescens, Messerschmidtia argentea, Pandanus tectorius, then Guettarda speciosa, Intsia bijuga, Ochrosia parviflora, Allophyllus timorensis, Terminalia litoralis, Pisonia grandis, with Polypodium scolopendria on the forest floor. In places where the shoreline is being eroded by wave action Barringtonia asiatica, Hernandia sonora, Cordia subcordata, and Calophyllum inophyllum overhang the shore.

The seaward shore vegetation fringe on the leeward islets of the atoll differs from the above pattern. Scaevola frutescens forms a nearly pure stand from the sea inland three to ten meters with scattered trees of Messerschmidtia, Guettarda, Pandanus; then these species are accompanied by Cordia subcordata, Ochrosia parviflora, and an occasional Intsia bijuga or Terminalia litoralis.

Pemphis acidula is common in areas where salt water washes across to the lagoon side at high tide. In such places they sometimes form pure stands.

In the central portion of the islets the soil improves in humus content. The soil is gray to black with varying composition of sand, coral fragments and black humus. This area is the cultivated portion as a rule. Breadfruit, bananas, papayas, "Makmok" or Tacca leontopetaloides, and coconuts are grown. Here the deep pits for growing taro are located. Two species of taro are to be found: Cyrtosperma chamissonis and Colocasia esculenta. Limes are usually found growing on the edges of the pits.

On many of the islands there are saline swamps in the central portion of the island. Clerodendrum inerme is commonly found on the margins of these areas with Bruguiera the dominant tree, though occasionally Lumnitzera littorea is associated with Bruguiera conjugata, as is the case in the easternmost end of Ine Island. Sonneratia caseolaris was also found in a saline swamp on Bikarej Islet. There were less than a dozen old Sonneratia trees seen there, growing on the side of the swamp bordering a saline lake. The opposite shore of this salt lake was fringed with pure stands of Pemphis.

The lagoon shore vegetation fringe is largely planted to coconuts; however, there are areas in which the natural vegetation still exists.

In the drier lagoon shores Pemphis acidula, Suriana maritima, and Sophora tomentosa are growing in association with Scaevola

frutescens, Messerschmidtia argentea, and Cordia subcordata. Suriana is found on the beach where the salt water washes the roots at high tide. It was only seen in this type of situation.

Elsewhere on the lagoon shore, Calophyllum inophyllum, Pandanus tectorius, Terminalia litoralis, and the same elements mentioned above are found in various combinations.

Acknowledgments:

I wish to acknowledge with sincere gratitude the assistance so generously given which made this field work possible. Thanks are due the Pacific Science Board of the National Research Council, the Office of Naval Research, the Navy administration of the Trust Territory, both in Pearl Harbor and the Marshalls, and the Military Air Transport Service. Special thanks go to Mr. Harold J. Coolidge, Executive Secretary of the Pacific Science Board; Miss Ernestine Akers, Honolulu Secretary of the Pacific Science Board; Dr. F. R. Fosberg; Captain Cecil Gill, Governor of the Marshalls; and Commander R. W. Kenney, and their staffs. King Tobo and Lajibli, Chief Magistrate of Arno Atoll, for their untiring efforts in my behalf deserve special mention, as do all the people of Arno Atoll. Thanks also go to LCdr Frank Avila at Kwajalein, and Mr. Robert P. Owen, Staff Quarantine Officer for Guam and the Trust Territory, for their generous help in many ways.

Donald Anderson
Honolulu
30 June 1950

BOTANICAL NAMES WITH MARSHALLESE NAMES OF PLANTS ON ARNO ATOLL

Herbarium No.	Botanical Name	Marshallese Name
3761	Acalypha wilkesiana	
3615	Adenostemma lavenia	Bwilbwilikkaj
3633	Allophyllus timorensis	Kitak
3733	Alocasia macrorrhiza	Wōt
3715	Alocasia species	Wōt
3677	Amyrillis species	Kiōp (?)
3611	Angelonia salicariaefolia	Jab Meloklok
3721	Artocarpus altilis	Mā. This particular variety - Mijwan.
3678	Asclepias curassavica	Kappok, Iālo
3631	Asplenium nidus	Kartōb
3757	Barringtonia asiatica	Oob
3729	Boerhavia diffusa	Marmilliñ
3600	Bougainvillea glabra	Ikdrelel
3646	Bruguiera conjugata	Joñ
3732	Bryophyllum pinnatum	Kibilia
3767	Caesalpinia crista	Kāliklik
3706	Caesalpinia pulcherrima	Jeimata
3613	Calophyllum inophyllum	Luwej
3604	Canavalia ensiformis	Joko, Mānen, Marlap
3607	Canavalia microcarpa	Marlap
3735	Canna (indica?)	Añ
3665	Capsicum frutescens	Pepa
3673	Cardamine species	

3668	Carica papaya	Keinabu
3664	Cassytha filiformis	Kanön
3662	Catharanthus roseus	Ran nön ran
3737	Ceiba pentandra	Kotin
3648	Cenchrus echinatus	Lellik
3636	Centella asiatica	Madriko
3680	Citrus sp.	Laim
3617	Clerodendrum inerme	Ulej
None	Cocos nucifera	Ni
3682	Codiaeum variegatum	Krotoñ, Loimjikitok
3637	Colocasia esculenta	Kötak
3705	Cordia subcordata	Köno
3649	Crinum bakeri (?)	
3638	Crinum macrantherum	Kiöp wan (white flower)
3717	" "	Kiöp wan (flower maroon and white)
3683	Cucurbita pepo	Bañke
3719	Cycas circinalis	Lokok
3666	Cyperus kyllingia	
3674	Cyperus rotundus	Tüteoneon
3616	Cyperus sp.	Bükor
3718	Cyrtosperma chamissonis	Iaraj
3761	Dryopteris dentata (sterile)	Kinen mennuel
3760	Duranta repens	Jab meloklok
3650	Eleusine indica	Katejukjuk
3601	Eragrostis amabilis	Ujoij

3675	Eragrostis ciliaris (?)	Ujoij
3640	Euphorbia chamissonis	Bedrol
3612	Euphorbia heterophylla	Nukuni
3651	Euphorbia prostrata	
3602	Ficus tinctoria	Tobro
3654	Fimbristylis cymosa	Drolijman
3614	Fleurya ruderalis	Nëënkotkot
3622	Gomphrena globosa	Ebolastiñ
3685	Gossypium barbadense	Kotin
3641	Guettarda speciosa	Wut
3686	Hedyotis biflora	Kinoj
3734 3764	Hemigraphis reptans	Wut lamjen
3681	Hernandia sonora	Biñbiñ
3644	Hibiscus tiliaceus	Loo
3659	Hibiscus hybrid	Ros
3711	Hibiscus species	
3765	Hippobroma longiflora	Extremely poisonous (no local name)
3667	Hymenocallis littoralis	Kiöp in wau
3703	Intsia bijuga	Kubök
3724	Inocarpus edulis	Kürak
3784	Ipomoea batatas	Biteto
3625	Ipomoea gracilis	Walikok
3622	Ipomoea tuba	Narbele
3704	Ixora sp.	Kajdro

3629	Jussiaea suffruticosa	Wut i Lurlep
3647	Lepturus repens	Ujoij
3645	Lumnitzera littorea	Kimeme
3702	Messerschmidia argentea	Kidren
3687	Mirabilis jalapa	Emen auo
3670	Morinda citrifolia	Nen
3720	Musa cavendishii	Kabran, Binana
3728	Musa paradisiaca	Kabran, Binana. This particular variety-Moakadkad
3632 3626	Nephrolepis hirsutula	Anomkadredre
3676	Nerium oleander	Olianta
3603	Ochrocarpus excelsus	Ijoo
3640	Ochrosia parviflora	Kijbar
3679	Ocimum sanctum	Katrin
3628	Oplismenus species (sterile)	Baidrik
	Pandanus tectorius (Varieties follow under this heading)	Bop
3689	Pandanus tectorius variety	Ajbwirok
3699	" " "	Allorkon
3630	" " "	Anberia
3694	" " "	Antoklonar
3695	" " "	Benuk
3701	" " "	Bopiroij
3726	" " "	Bop in Kabilin
3688	" " "	Bukor

3697	Pandanus tectorius variety	Edrwan
3690	" " "	Edwanenannelu
3693	" " "	Jabönbok
3691	" " "	Joibeb
3696	" " "	Lerro
3700	" " "	Loarme
3692	" " "	Lejokdrer
3698	" " "	Lonlin̄
3766	Paspalum conjugatum	No local name known
3653	Paspalum vaginatum	Katejukjuk
3606	Pemphis acidula	Köñe
3756	Pemphis sp.	Keijor
3745	Peperomia sp.	Drebijdreke
3652	Physalis angulata (?)	Kaörör
3627	Phyllanthus niruri	Jil jino auö
3605	Pipturus argenteus	Arme
3729	Pisonia grandis	Kañal
3669	Plumeria rubra (?)	Meria
3618	Polypodium scolopendria	Kino
3656	Polyscias fruticosa	Ornamental hedge (shrub)
3655	Polyscias guilfoylei	" " "
3657	Polyscias guilfoylei var.	" " "
3658	Polyscias sp.	Large leafed hedge plant - no local name known
3624	Portulaca (lutea?)	No name known

3754	Portulaca samoensis	Bujon
3709	Psilotum nudum (?)	Bañ
3661	Pseuderanthemum atropurpureum	Tiros bin
3660	Pseuderanthemum reticulatum(?)	Tiros pilu
3714	Randia graeffei	Kielomar
3621	Rhoeo discolor	Kiop (?)
3712	Saccharum officinarum	To'o (sugar cane)
3609	Scaevola frutescens	Kölaeme (Purple flowered form)
3610	" "	Könnat, Marilik (common form)
3730	Sida fallex	Kieo
3672	Solanum nigrum	Name unknown. Only one plant seen.
3748	Sonneratia caseolaris	Bulabol
3708	Sophora tomentosa	Kille
3757	Soulamea amara	Keinwa
3608	Suriana maritima	Nione
3713	Tacca leontepetaloides	Makmók
3710	Terminalia catappa	Kotel
3642	Terminalia litoralis	Kukon
3643	Thuarea involuta	Kakkum
3623	Triumfetta procumbens	Atat
3614	Vernonia cinerea	Janailin Nonailin
3639	Vigna marina	Markinejojo
3663	Wedelia biflora	Marjej, Markwbwebwe
3716	Xanthosoma sp.	Wät in Kabilin (recently introduced)

3736	*Ximenia americana*	No name
3620	*Zephyranthes rosea*	No name known (small lily)
3723	Fungus - unidentified	Wutiabon
3734	" "	Jijabirbir
3755	Seaweed - unidentified	No name

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