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Notes on Ngaruangel and Kayangel Atolls, Palau Islands

by

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NGARUANGI

Ngaruangi is an incipient atoll which includes the northernmost land of the Palau Islands. It is situated about eight kilometers northwest of Kayangel Atoll and 39 kilometers north of Babelthuap Island. Ngaruangi has a reef which is broadly oval; longest north and south, and about 5.4 by 2.7 kilometers in size. The reef has an opening at the northern end, with the reef extending farther north on the west side of the entrance. The lagoon is fairly shallow, being mostly less than three fathoms in depth, and having some coral heads. On the east side of the reef the sea bottom slopes gradually at first, from the reef platform, then suddenly. Soundings between Ngaruangi and Kayangel are mostly between 344 and 430 fathoms, beyond two kilometers off of either reef. The ocean directly north of Ngaruangi is mostly from six to 23 fathoms in depth.

Ngaruangi reef has but a single small islet, near the middle of the east side. In the Carolines, the majority of the atoll islets are on the east sides of the reefs, the prevailing winds being from the east. This islet is about 80 meters north and south, and about 35 meters east and west. It is slightly curved on its eastern, seaward side, and strongly curved on the lagoon side. It is broadest north of the center and considerably tapered at the southern end. The islet consists almost entirely of pieces of rough coral rock thrown up by surf. Most of the pieces are rough or sharp and are largely of the Acropora reticulata type, or of similar form. The majority range from 15 to 60 centimeters, or more, in diameter. Sand and sandy gravel are limited to the lagoon side and the southern tip. The latter is of coral gravel and sand, and its lagoon shore, north nearly to the middle of the island, has a narrow sand beach with coral fragments on the upper portion. The coral rocks are piled higher near the borders of the main portion of the islet and thus the central portion is lower, but quite uneven. The altitude is a little less than one meter above high tide level. A few logs have been washed up on the shore on both east and west sides. Just south of the center is a tripod erected of poles. The reef surface seaward of the islet is gently sloping, but irregular and with rough coral rock or coral fragments.

There is no vegetation on the islet. Animal life is represented by numerous marine crane flies, probably Limonia, subgenus Dicranomyia. Terns were abundant on the islet, but no nests were observed.

Near the north end of the reef, close to the opening to the lagoon, a Japanese freighter, bombed during the war, has been washed up on the reef. A short distance to the northwest of it there is either a large coral boulder or a detached portion of the ship on the reef. On the southwestern portion of the reef there are two or three coral boulders washed up.

Ngaruangel presents an interesting step in the development of an atoll, with the reef well developed and complete except for the single opening, and with a single small islet in an early stage of development, with very little sand, no soil and no vegetation. It may be assumed that if vegetation and additional sand were present earlier, they must have been washed away in storms, and that plants may reappear within the space of ten or more years.*

* Kubary (Die Palau-Inseln in der Südsee, Jour. Mus. Godeffroy 1(4): 1-62, 1873) says, translated, on p. 32, "Northwest of Kayangel is a reef which marks the place, according to the traditions, where the land of Ngaruangel was, but which was destroyed by the sea." And on p. 33, "The Kayangel Group; it was once subject to Ngaruangel...." On p. 47 a legend is recounted, "For a long time there was to the northwest of Kayangel a great beautiful land, and its inhabitants ruled Kayangel....land....called Ngaruangel...." As a result of magic performed by a Kayangel man who had lost his son at the hands of the Ngaruangel people: "The heavens became frightfully dark, and a storm of unprecedented violence raged over all of Palau. Ngaruangel sank into the deep sea and four other small lands on the east side of Palau were likewise swallowed by the waves....."

These beliefs and legends may have no factual basis, but on the other hand, they are suggestive and might justify careful examination of the reefs of Ngaruangel for evidence of former larger islets.--Editor's note.

PLANTS OF KAYANGEL

The following plants were collected or observed on Kayangel Atoll on December 16, 1952 by J. L. Gressitt. The specimens taken were identified by F. R. Fosberg and are deposited in the U. S. National Herbarium. Numbers 1-8 are from Ngariungs Islet, 9-43b from Ngajangel Islet. Those asterisked were seen on both Ngajangel and Ngariungs islets, the remainder only on Ngajangel. The unnumbered ones were seen but not collected. Since these observations were made on a very short visit it is probable that the flora includes many more species not recorded here.

* *Asplenium nidus* L., no. 12

Nephrolepis biserrata (Sw.) Schott, no. 37 (The taxonomy of this species is unsatisfactory. Pacific plants may be something else.)

N. hirsutula (Forst.) Presl, no. 13 (Very young plant, identification uncertain.)

Polypodium scolopendria Burm. f., no. 36

Cycas circinalis L., no. 21

- * *Pandanus tectorius* Park., no. 18
- Digitaria longissima* Mez, no. 40
- D. pruriens* var., no. 43a
- D. timorensis* (Kunth) Balansa, no. 43b
- Eragrostis amabilis* (L.) W. & A., no. 42
- Ischaemum muticum* L., no. 41
- Lepturus repens* (Forst.) R. Br., no. 34
- Saccharum officinarum* L.
- Areca cathecu* L.
- * *Cocos nucifera* L.
- Alocasia macrorrhiza* (L.) Schott
- * *Colocasia esculenta* (L.) Schott
- * *Cyrtosperma chamissonis* (Schott) Merr.
- Epipremnum pinnatum* (L.) Engl., nos. 17, 16 (No. 16 is a young plant and its identity is not certain.)
- Xanthosoma sagittifolium* Schott
- Rhoeo discolor* (L'Herit.) Hance
- Cordyline terminalis* (L.) Kunth
- Tacca leontopetaloides* (L.) O. Ktze.
- Musa paradisiaca* L.
- M. sapentum* L.
- Piper betle* L.
- Artocarpus altilis* (Park.) Fosb.
- Ficus senftiana* Warb., no. 14
- Elatostema calcareum* Merr., no. 25 (Palau material is with some doubt referred here.)
- Fleurya ruderalis* (Forst.) Gaud. ex Wedd., no. 22 (Specimen fragmentary, determination doubtful.)
- Pipturus argenteus* (Forst.) Wedd., no. 15

Achyranthes aspera L., no. 33

Pisonia grandis R. Br., nos. 1, 5

Portulaca samoensis v. Poelln., no. 23

Cassytha filiformis L., no. 7

Hernandia sonora L.

Crataeva speciosa Volk., no. 9

Canavalia microcarpa (DC.) Piper, no. 24

* *Mucuna* sp.

Vigna marina (Burm.) Merr., no. 11

Citrus aurantifolia (Christm.) Swingle, (Lime)

C. sinensis (L.) Osb. (Large round green orange)

Acalypha amentacea var., nos. 19, 39

Codiaeum variegatum (L.) Bl.

Euphorbia chamissonis (Kl. & Gke.) Boiss., no. 8

Manihot esculenta Crantz

Phyllanthus niruri L.

* *Triumfetta procumbens* Forst., no. 32

* *Hibiscus tiliaceus* L.

Thespesia populnea (L.) Sol. ex Corr.

Calophyllum inophyllum L.

Carica papaya L.

Cucurbita sp.

Terminalia samoensis Rech., no. 6

* *Barringtonia asiatica* (L.) Kurz, no. 4

Psidium guajava L.

Polyscias fruticosa (L.) Harms no. 28 (Cultivated as hedge plant.)

P. scutellaria (Burm. f.) Fosb. (Cultivated as hedge plant.)

Centella asiatica (L.) Urb., no. 35

Ochrosia oppositifolia (Lam.) K. Schum., nos. 17, 38 (No. 38 is sterile, determination doubtful.)

Plumeria rubra L.

Ipomoea batatas L.

* *Messerschmidia argentea* (L. f.) Johnst., no. 3

Clerodendrum speciosissimum Van Geert, no. 20

Asystasia blumei Nees, no. 26

* *Scaevola frutescens* (Mill.) Krause, no. 2

Wedelia biflora (L.) DC., no. 30

An unidentified seedling, no. 31