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## A PRELIMINARY REPORT ON THE SOILS OF THE ISLANDS OF PALAU

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### Introduction

Palau Islands are situated in the Circum-Pacific Zone and most of them are derived from volcanic origins. Their soils, therefore, have been formed mainly from extrusive volcanic rocks (basaltic) and tuffaceous breccia.

The authors have been studying on the tropical soils with special respects to changes of their fertilities (physio-chemical properties) with soil management or cropping. In this paper, sampling of soils are described.

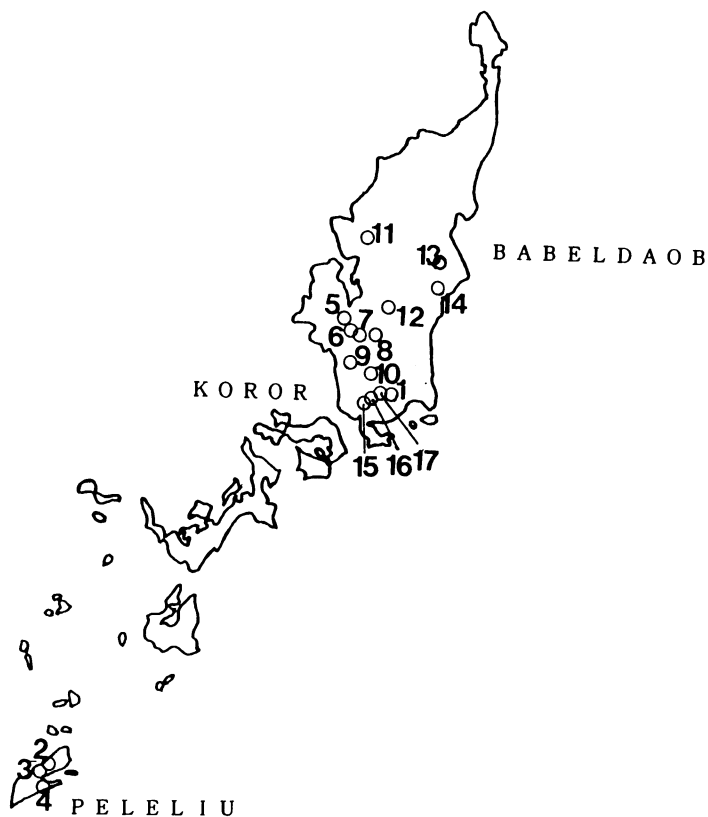


Fig. 1. Location of sampling plots.

### Description of soil samples

Soil samples were observed and collected on Babeldaob and Peleliu islands. The sampling sites are shown in Fig. 1 and Table 1.

The soils of Peleliu are very thin as less than 10 cm. In the soils, many whitish particles (sand to gravel) are commonly observed. The particles were rapidly dissolved out with bubbling by addition of HCl, which indicated the substance of the particles to be coral limestone, CaCO<sub>3</sub>. Reflecting the parent materials, the reactions of the Peleliu soils showed alkaline pH ranging 7 to 8.

Meanwhile the soils of Babeldaob, the largest island of Palau, are well-developed probably from volcanic material and they have thick red-yellowish deposits as to a few ten centimeters.

As the representatives of them, samples Nos. 1, 11 and 15 were collected uncultivated area. Soil samples from the profiles were collected at each 10 cm to 1 m depth. All three profiles were characteristic of thin and not so blackish colored A horizon with gradual transition to lower horizon and of very deep yellowish B horizon. The soil colors were expressed in the Munsell color chart. Different from Peleliu soils, all of the sample soils from Babeldaob showed low pH values ranging from 5.3 to 4.8 in H<sub>2</sub>O and from 4.3 to 4.0 in 1N-KCl suspensions (soil/soln. ratio of 1/2.5). All these observations were attributable to the low accumulation of humus on their surface due to rapid decomposition of organic matters and to the advanced stage of weathering from much of secondary minerals (clay) under tropical climate conditions.

Table 1. List of soil sampling place and description of its fields conditions in Palau

Sample No.	Name of sampling place	Kind of feilds and crops	Remarks
1	Airai	Grass land	Sampling from 0-100 cm in depth
2	Ngesias	Taro	2nd year after cutting the mangrove forest
3-2	"	Cassava	1st year after burning, good growth
3-3	"	"	Adjacent field to No. 3-1, poor growth
3-4	"	"	Adjacent field to No. 3-1, just planting
3-5	"	Forest	Near field of No. 3-1
3-6	"	Cassava	2nd year after burning
4	"	Forest	
5-1	Nekken	Pineapple	Applied fertilizers and composts, good growth
5-2	"	"	Adjacent field to No. 5-1, poor growth
6	"	Vegetables	After harvesting, applied fertilizers and composts
7	"	Taro	"
8	"	Daikon	Applied fertilizers, good growth
9	Ngetchum	Grass land	
10	Sechersoi	Vegetables	After harvesting, applied fertilizers
11	Asahi village	Grass land	Sampling from 0-100 cm in depth
12	Unknown (In Aimeliik State)	Grass land	
13-1	Melekeok	Grass land	
13-2	"	"	Adjacent land to No. 13-1
13-3	"	Forest	Adjacent land to No. 13-1
14	Ngerngesang	Upland field	Crop rotation field, applied fertilizer
15	Airai	Forest	Sampling from 0-120 cm in depth
16	"	Experimental field	Experiment of some fruits and trees growing
17	"	Fruits and Vegetables	Mixed cropping