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Introduction

The following copies of tables, graphs, correspondence and reports of the Laboratory of Radiation Biology, University of Washington, have been brought together and placed in one folder for the purpose of providing the current available information on the radioactivity of the plants and animals at Rongelap. These data are preliminary in nature and should not be used for publication without further refinement and review. Essentially the data provided herewith are the results of observations and the analysis of samples from collections made in July, 1957 and March and September, 1958. In some instances information from earlier surveys have been included but most of the results of surveys in 1954, 55 and 56 have been reported in UWFL-42 and 43 and in Dr. Dunning's 1956 report of the radiological conditions in the Marshall Islands.

The information has been grouped into twelve sections and an index to each section is provided. For some groups of organisms a brief, concise table summarizing the results for all years has been prepared, e.g. the table on page 20 and on page 69. Similar tables are to be prepared for all major groups of data and to these basic tables the results of future surveys will be added as well as the work that has not yet been completed from past surveys.

Two sets of data have been prepared. The UWFL reports are not included in either set and the descriptive information about the soil profiles is included in only one of the sets.

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## Grouping of Data

- Section I Program for March, 1959
- II Maps
- III Survey Meter Readings
- IV Foods Prepared by the Natives
- V Fish
- VI Invertebrates
- VII Plants
- VIII Rats
- IX Plankton
- X Lagoon Bottom Samples
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## Index to Sections

- I Program for March, 1959
  - pp. 1-3 "Samples to be collected at Rongelap Atoll for radiation monitoring, February-March 1959" by E. E. Held.
- II Maps
  - p. 4 Map of Rongelap Atoll showing all islands
  - p. 5 "Key to islands of Rongelap Atoll"
  - pp. 6-9 Base maps of Rongelap Island to be used as reference maps for survey meter readings, flora plotting, collection sites, etc.  
Maps were constructed from aerial photographs.
  - pp. 10-12 Base maps of Eniaetok Island
  - pp. 12-15 Base maps of Kabelle Island
  - pp. 16-19 Location of soil pits at Rongelap, Kabelle and Eniaetok Islands.
- III Survey Meter Readings
  - p. 20 Average values of survey meter readings for eight surveys between March, 1954 and August, 1958.
  - pp. 21-25 "Survey meter readings at Rongelap Atoll, August, 1958.
  - pp. 26-30 "Survey meter readings at Rongelap Atoll, Feb.-March, 1958.
- IV Foods Prepared by the Natives
  - p. 31 " $Cs^{137}$  in daily rations of foods grown at Rongelap Atoll".
  - p. 32-38 Letter of Sept. 23, 1958, from Held to Seymour listing specific food intake of 14 natives and with notes about the preparation of native foods.
- V Fish
  - p. 39-42 A note by Bonham on "Decline of gross beta radioactivity in fishes at Rongelap Atoll to March 1958" which includes a table of values for collections from 1954 to March, 1958 and a graphical presentation of these data.

- p. 43-44 Letter of December 31, 1958, from Seymour to Wolfe with limited information on the radioactivities of reef fish from the August, 1958 collection.
- pp. 45-46 "Average gross beta activity in Rongelap fish muscle collected August 1958". Completed 2/13/59 by Eisler.
- pp. 47-48 Total gamma activity of fish tissues from the Aug. 1958 collection. (Eisler)

#### VI Invertebrates

- p. 49 A description of the procedure of evaluating the self absorption correction factor for the invertebrate and plankton samples. (Bonham)
- p. 50 A note on the contribution of Hardtack to the gross beta activity of the invertebrates. (Bonham)
- pp. 51-56 Decline curves (graphs of gross beta activities for collections from March 26, 1954 to August, 1958 of the following invertebrates: coconut crab, hermit crab, clam, sea cucumber, snail and coral.
- pp. 57-65 Tabulated data upon which the declines curves are based. Data for the July, 1956 - July, 1957 - March, 1958 - and August, 1958 collections are given.
- pp. 66-67 "Comparison of levels of beta radioactivity in invertebrates at Rongelap Atoll in March with those in August 1958 ---".
- p. 68 Sr<sup>90</sup> in the muscle of land crabs, 1956 - Aug., 1958.
- p. 69 Sr<sup>90</sup> in the liver of land crabs, 1956 - March, 1958.
- p. 70 Sr<sup>90</sup> in the skeletons of land crabs, 1956 - March, 1958.
- p. 71 Gross beta activity of fat and non fat fractions of coconut crab liver.
- p. 72 Strontium units and calcium in coconut crab liver, March, 1958.
- p. 73 Distribution of Sr<sup>90</sup> within the liver of the coconut crab.

#### VII Plants

- p. 74-75 Decline curve of gross beta radioactivity in coconut and Pandanus.
- p. 76 Gross beta radioactivity of Pandanus, March 1954 to Aug. 1958.
- p. 77-81 "Gross beta activity in land plants - Rongelap Atoll - Feb.-March, 1958".
- p. 82 Cesium-137 in Pandanus samples collected at Rongelap Atoll March and August, 1958".
- p. 83 "Sr<sup>90</sup> in land plants collected at Rongelap I. March 1958.
- p. 84 "Sr<sup>90</sup> in land plants collected at Eniastok I. March 1958.
- p. 85 "Sr<sup>90</sup> in land plants collected at Kabelle I. March 1958.
- p. 86 Sr<sup>90</sup> in Scaevola leaves - July, 1957, March, 1958.
- p. 87 Sr<sup>90</sup> and total calcium of edible plants, July, 1957.
- p. 88 Sr<sup>90</sup> and total calcium of plants and soils, July, 1957.
- p. 89-90 Gross beta radioactivity land plants and algae, Kabelle, 1957.
- pp. 91-92 Gross beta radioactivity land plants and algae, Rongelap I., 1957.
- pp. 93 Gross beta radioactivity land plants and algae Ailinginae, 1957.

#### VIII Rats

- p. 94 "Strontium-90 in bone samples from rats collected at Rongelap Island, March 1958".

- IX Plankton**  
pp. 95-114 A report "Gross beta radioactivity of plankton at Rongelap Atoll, 1954-1958" by Bonham.
- X Lagoon Bottom Samples**  
pp. 115-121 A report "Gross beta radioactivity of bottom samples from Rongelap lagoon in August 1958" by Bonham.
- XI Soils**  
pp. 122-124 Gross beta activity in soils, Rongelap I., March, 1958.  
p. 125 Sr<sup>90</sup> in soils, Rongelap I., March, 1958.  
p. 126 Sr<sup>90</sup> in soils, Kabelle I., March, 1958.  
p. 127 Nitrogen and exchangeable bases in soils.  
p. 128-130 "Data Summary for Rongelap Atoll Soils."

The following information is provided in only one of the two sets of data.

- p. 131-150 A description of the soil profiles.  
p. 151 A photograph of soils from various types of profiles.  
p. 152 Root distribution of a plant growing in sterile soil.  
p. 153 Graphs of the relationship of % nitrogen and exchange capacity to soil depth.  
p. 154 Relationship per cent nitrogen and exchange capacity.

**XII UWFL Reports**

The following reports are not included with these sets of data but have been published by Technical Information Service Exchange.

- UWFL-55** Radiobiological Studies of the Fish Collected at Rongelap and Ailinginae Atolls, July 1957. By A. H. Welander, Printed by TISE March 5, 1958.
- UWFL-56** The Occurrence of Antimony-125, Europium-155, Iron-55, and other Radio-nuclides in Rongelap Atoll Soil. By R. F. Palumbo and F. G. Lowman. Printed by TISE April 7, 1958.
- UWFL-42** A Radiological Study of Rongelap Atoll, Marshall Islands, During 1954-1955, TISE August 15, 1955.
- UWFL-43** Radiobiological Resurvey of Rongelap and Ailinginae Atolls, Marshall Islands, October-November 1955. TISE.