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Location **LANL**
 Records Center *H-39* BROOKHAVEN TEAM REPORTS ON 1968 EXAMINATION
 Collection *B-39* OF MARSHALLESE EXPOSED TO FALLOUT IN 1954
 Folder *Pacific Proving Grounds General*

Upton, N.Y., May 24, 1968--Dr. Robert A. Conard (MD), head of the Brookhaven National Laboratory medical team that conducts the annual examination of the Marshall Islanders who were exposed to fallout from a 1954 Bikini bomb test, reported two new cases of thyroid abnormalities (in the form of nodules) in the group who were under ten years of age when exposed on Rongelap, the atoll nearest the test site. There were 19 children under ten exposed to the fallout, of which 17 have now developed thyroid nodules. These patients are currently 15 to 24 years old.

An unexpected wind shift during the 1954 test carried the fallout from Bikini at the western end of the Marshall Islands back over several islands located east of Bikini. Nearest and most heavily exposed were 64 Marshallese at Rongelap. There were 18 Marshallese at Ailingnae and 157 at Utirik receiving a much lesser exposure. These people are examined on a regular schedule. To provide a comparison with the exposed populace, a control group of 194 unexposed Marshallese is also examined, but on a less frequent schedule.

The selection of age 10 at the time of fallout exposure as a group designation did not occur until a few years ago, and was done primarily as the result of a statistical observation. According to Dr. Conard, the reason these children showed a higher incidence of thyroid abnormalities is probably because their thyroid glands were smaller and received a larger comparative radiation dose.

The estimated dose to the thyroid in the 19 children under 10 years of age on Rongelap was from 875 to 1575 rads, with 90 percent of them developing thyroid abnormalities. For the 45 Rongelap people greater than 10 years of age at exposure time, the thyroid dose was estimated at 335 rads, with 5.5 percent developing thyroid abnormalities. Six children under 10 years of age on Ailingnae and 40 children on Utirik received thyroid doses from 230 to 725 rads, with no development of any abnormalities. The exposed adult population had a much lower incidence of thyroid abnormalities.

The term rad means radiation absorbed dose. A dose of one rad means the absorption of 100 ergs of radiation energy per gram of absorbing material.

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Dr. Conard explained that the reason the thyroid gland received a much larger dose than the whole body is because of a process called selective absorption by the thyroid of radioactive iodine from food and water ingested by the Marshallese following the fallout.

The more serious cases of Rongelap individuals with thyroid nodules have been brought back to the United States for thyroid surgery. Included in this group were nine children who had benign adenomatous goiters and an older woman who had cancer of the thyroid gland. It is not known whether her cancer is related to the fallout.

All of the individuals with thyroid abnormalities were put on a special treatment of thyroid hormones in tablet form when the abnormalities were first noted. An analysis of blood samples in the past year showed that not everyone was taking the tablets regularly, which is necessary if normal thyroid hormone levels are to be maintained. It is especially necessary for the children if they are to grow and develop normally and remain healthy. To overcome this problem, a new treatment schedule was put into effect this year. Instead of relying upon each individual to take one tablet daily, seven tablets will be taken once a week in the presence of a responsible individual who will use a check-off list. There is no difference in body assimilation of the hormone between the once-a-week dosage versus the daily intake.

Dr. Conard reported that in the near future four Rongelap thyroid cases (three teen-age boys and a 29 year old woman) will be brought to Brookhaven National Laboratory's Medical Research Center for detailed study and evaluation of the need for thyroid surgery.

Outside of the thyroid abnormalities, there were no new medical effects or nutritional deficiencies noted as a result of the exposure. The general population is in good health and good spirits. In the exposed group, no death occurred and no miscarriages or still births were reported, although a number of normal, healthy babies were born to both the exposed and un-exposed people. Over the years a number of deaths have occurred, but none of them are attributed to the fallout or its effects.

Dr. Conard noted that the 1969 examination will be the 15th post-exposure year, and a complete examination of both the exposed and control population is planned.

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