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THRU: General Manager **E. J. BLOOM**

SUMMARY REPORT BY DR. ROBERT CONARD, MEDICAL DEPARTMENT, BROOKHAVEN NATIONAL LABORATORY, OF THE CURRENT MEDICAL STATUS OF THE MARSHALLESE EXPOSED TO FALLOUT FROM THE MARCH 1, 1954 TEST ON BIKINI

Dr. Conard, on returning from his annual medical examination of the Marshallese during March 1970, reports no new serious cases of thyroid disease among this population. The five Marshallese who underwent diagnostic procedures at Brookhaven National Laboratory and thyroid surgery at the Cleveland Metropolitan General Hospital last August were in good condition.

The present status may be tabulated as follows:

- 1. Young Rongelapese exposed to fallout March 1, 1954, when they were 1 to 8 years of age. (Estimated dose: 175 rads external gamma plus 600 to 1400 rem internal irradiation.)

Total - 19

- 1. Currently normal by clinical and biochemical tests. 2 (11%)
- 2. Currently hypothyroid with minimal nodularity. Responding satisfactorily to oral thyroid hormone therapy. 3 (16%)
- 3. Have undergone surgery in the U. S. prior to 1969 because of nodular thyroid disease; histologic diagnosis of adenomatous goiter and Huerthle cell tumor. Responding satisfactorily to oral thyroid hormone therapy with one exception: This patient shows some enlargement of the remnant of thyroid left from a partial thyroidectomy in 1964; as she has not followed her post-operative thyroid hormone regimen, there is question as to whether she should have further surgery. 11 (58%)

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4. Young people operated on for thyroid disease during August 1969 and recovered. Diagnoses: Primary benign adenomatous goiter in two and papillary adenoma of serious grade malignancy in one. 3 (16%)

(None of six Ailinginae children exposed to an estimated external dose of 70 rads have shown thyroid dysfunction.)

- II. Surviving adult Rongelapese exposed to fallout. (Estimated dose: 175 rads external plus 160 rem internal irradiation.)

Total - 34

1. Papillary carcinoma removed surgically at age 41. No recurrence. Taking oral thyroid hormone therapy. 1
2. Small nodule at age 40 which disappeared under oral thyroid hormone therapy. 1
3. This patient operated on in 1969 for removal of an invasive adenoma; has recovered satisfactorily. 1

- III. Surviving adult Ailinginae people exposed to fallout. (Estimated dose: 70 rads external gamma irradiation.)

Total - 8

1. Adenomatous goiter removed at age 45; recovered and was on thyroid therapy. Died of influenza in 1968. 1

- IV. Surviving adult Utirik people exposed to fallout. (Estimated dose: 14 rads external gamma plus 15 rem internal irradiation.)

Total ~120

1. One person developed a nodular thyroid gland and underwent surgery in 1969. As the tissue resembled a follicular adenoma in frozen section, a total thyroidectomy was performed; histologic sections confirmed the diagnosis and upgraded the degree of malignancy. She has recovered satisfactorily.

No new cases of nodular thyroids were found during a visit to Utirik, nor were nodular thyroids found in controls on Likiep and Kwajalein Atolls.

The major medical problem is to persuade the people to take their thyroid hormone supplement on a regular routine schedule. This has not yet been solved.

To summarize, all but 2 of 19 children exposed on Rongelap have now exhibited thyroid dysfunction as have a smaller but significant number of adults. Statistics on the frequency of thyroid cancer in Micronesians do not seem to be available; the figures for 25 countries around the world range from 0.25 (Japanese males) to 1.54 (Austrian females) per 100,000 population.

Dr. Conard also visited Bikini to collect urine samples from the 25 Bikini men temporarily there working to rehabilitate the island; these specimens plus coconut crabs will be analyzed for  $^{90}\text{Sr}$ ,  $^{137}\text{Cs}$  and  $^{238-239}\text{Pu}$ . Plans are going forward for whole body counting of the population before they return from Kili to Bikini.

A low key public announcement of these findings is being considered by Brookhaven National Laboratory.

The same information is being forwarded to Mr. Bauser for the information of the Joint Committee on Atomic Energy.

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