CODE 3-213A

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R.C.LILLY

(Copy sent 15 Mar 54)

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3-922C
VPB:jh
21 SEP 1954

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AIR MAIL

Dr. John Dugan
Director, Division of Biology and Medicine
Atomic Energy Commission
Washington, D. C.

Dear Dr. Dugan:

The first follow-up study on the Rongelap people exposed to fallout radiation during Operation Castle has been completed and the following brief preliminary summary of findings is offered for information at this time. A more complete evaluation of the present medical status of these people will be possible when analyses of specimens and data collected are completed.

It was considered appropriate, in addition to complete re-examination of the exposed individuals, to attempt establishment of a suitable control group for possible long-term observation and comparison. Thus each exposed individual was matched as closely as possible with an unexposed Rongelap resident of the same age and sex, and as many baseline observations as was practicable were carried out on both groups. The matched control group assumed particular importance in evaluating the effects of the measles epidemic encountered (described below).

Procedures carried out on both Rongelap and paired control individuals included the following:

1. A complete systematic physical examination on each individual, including rectal examinations on adults and pelvic examinations on married or parous women.

2. Additional detailed skin, hair and fingernail examinations. Colored photographs were taken where indicated.

3. Body measurements on each individual 19 years of age or less. These measurements were intended to serve as a baseline in terms of which rate of growth can be measured. As a further index, an x-ray of the left wrist was included.

4. Routine chest x-ray of each individual. X-rays of the leg on

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3-240
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3-901(R)
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Initials hereon indicates that the person initialing h[redacted]ed the correspondence and has no recommendation to make as to change therein.

S—signature
R—review
I—information

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IAW OPNAVINST5513.16
Signature: James Vater CDR USN
Code: N312Q Date: 8 Feb 95

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approximately 40 individuals to indicate possible bone changes resulting from deposition of internal emitters were taken.

5. Peripheral blood determinations including WBC, differential, platelet count and hematocrit. Two determinations on each individual, approximately one week apart, were made.

6. Bone marrow aspirations from the anterior or posterior iliac crest on 22 Rongelap and 20 control individuals. Adult Rongelap people having the lowest white counts during the acute period following exposure were selected for this procedure.

7. Skin biopsies on 13 Rongelap people, and on 2 unexposed Majuro residents.

8. Kahn examinations on 40 Rongelap individuals, 20 of whom had clinical indications for serology (history of yaws; physical findings consistent with old lues). Complete serological examinations were not attempted.

9. Twenty-four hour urine specimens on each individual, to be analyzed at the EERDL and the NOO.

The Rongelap people in general appeared healthy and were normally active. Three babies have been born since the acute observation period (one during the present examination period), none of which displayed detectable abnormalities. One miscarriage at three months occurred during the interim period; however no specimen was available for study.

A measles epidemic on Majuro was in progress during the examinations. The severity of the disease in the Rongelap people was no greater than in the control population, nor was the incidence higher in the Rongelap population (28 per cent vs. 40 per cent, respectively).

Physical examination revealed the usual abnormalities to be expected in a heterogeneous population of this size. There were no findings, aside from dermatological that could be ascribed to radiation exposure. Essentially all have gained weight in the interim period.

The skin lesions previously prominent in these individuals have now healed essentially completely. Occasional slight hyperpigmentation, usually questionable, was noted at the sites of previous lesions. Depigmented scarred areas were observed in 8 individuals who had early severe skin lesions; however the scars and surrounding areas were soft and pliable. There were no clinical findings to portend later breakdown.

Regrowth of hair had commenced during the month of May and was complete at this examination. The hair of all individuals was normal with regard

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to quantity, distribution, color and texture.

Residual of the fingernail discoloration previously noted was found in 5 individuals.

Preliminary x-ray readings revealed no abnormalities ascribable to the fallout radiation. Further study of the chest and bone x-rays is being made.

Analysis of hematology data with respect to age, sex, and presence or absence of measles must be completed before final evaluation is possible. The mean total white count of the Rongelap people was not different from that of the control population. Four white counts of the Rongelap people (both determinations) were less than 5000, as compared with none below 5000 in the control group. The means of the two determinations in these individuals were 3300, 3500, 4250 and 4350, respectively. The mean platelet count was 75 per cent of the control value. Eighteen individuals had mean counts between 150,000 and 200,000 and 3 counts were between 100,000 and 150,000. This compares with 2 and 0 individuals, respectively, in the control group.

Bone marrow aspiration specimens and skin biopsies are being processed and studied at present. No findings are available as yet.

Serology revealed positive Kahn tests in three individuals. Two of these gave a history of, or had physical findings consistent with late Lues. Previous yaws per se did not result in a positive Kahn test.

No deaths have occurred in the Rongelap people. Written recommendations on autopsy procedures were left with the Medical Officer at Majuro. A Gilbertese Medical practiconer employed by the hospital, Dr. John Lemen, is interested in pathology and apparently will be quite valuable in this phase of the work.

No major difficulties were encountered in the course of the trip. The excellent advance planning and local arrangements completed by LCDR Smith allowed work to begin immediately on arrival. Some difficulties were encountered on the outbound trip at Travis AFB and at Hickam AFB in scheduling and in keeping personnel and the large amount of gear together; however no significant delays resulted. A copy of the dispatch from CNO to CCN 12 regarding transportation for the trip, and your letter of 13 August to CAPT Turney proved most useful in expediting arrangements. The DISTAD and Medical Officer at Majuro placed all possible facilities and personnel at our disposal. Their complete cooperation, coupled with the competency, experience and industry of members of the medical team, especially CDR R. A. Conard, MC USN, LT R. A. Redan, MC USN, LT J. S. Robertson, MC USNR and P. T. Schork, HM1 USN made it possible to complete the survey in minimum time.

Complaints on the part of the Rongelap people regarding the adequacy of

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food supplied them, to the extent of initial reluctance to appear for medical examination, were encountered. These complaints appeared to stem, in part, from the following: a) expected unhappiness of a people removed from their home b) dissatisfaction more with the kind of food supplied, rather than with the total quantity. The basis of comparison apparently was the lavy chow supplied them at Kwajalein. c) The addition of 44 reported relatives, absent from Rongelap at the time of the fallout who have since returned to their people. Native custom dictates that food received will be shared with these newcomers.

Since no malnutrition, dietary deficiencies or other medical implications were apparent, and since conversations with the DISTAD and Marshallese counsellors indicated that sociological and political implications beyond the purview of the medical resurvey team were involved, the above is offered only as information and no recommendations are submitted. The difficulties were satisfactorily ameliorated during the stay of the resurvey team by the arrival of a ship with suitable supplies, and it is understood that the DISTAD, Majuro, is submitting recommendations to further aid in correcting the situation.

Sincerely yours,

V. P. BOND, M.D.

Copy to:
Code 74
E. P. Cronkite, CDR

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