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MONTHLY REPORT - BIOLOGY DIVISION

ABSTRACT

August - 1946

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Action
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File

ARGONNE NATIONAL LABORATORY OFFICE of the DIRECTOR

SEP 3 - 1946

Biology Div

Voc # 25509

Pathologic observation of animals treated at chronic levels is continuing. Data on bone tumors now appear to indicate that after injection of Sr<sup>89</sup> (and probably after other bone-seeking agents as well) the expectancy of tumor development is a linear function of time and of dose.

Studies on the patient who has gradually accumulated about 1.5 µg of radium include the effects of various agents on radium excretion. In all instances, the radium excretion has been exactly parallel to that of calcium.

The LD<sub>50</sub> (total body x-ray) for goats appears, on the basis of 11 animals treated at critical levels, to be about 350 r. Examination of plasma of four of these goats (400 and 600 r) by electrophoresis showed an increase in the β<sub>2</sub> globulin fraction. Similar plasma analysis of four individuals involved in the recent radiation accident at Los Alamos was performed. The only significant changes were noted in the fatal case, which showed a marked increase in the alpha globulin fraction. The precise significance of these blood protein changes is not understood.

A detailed report of the work of the division will be assembled next month.

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CLASSIFICATION CHANGED  
 TO: NOT CLASSIFIED  
 0-5-53 H.D. Young  
 Authority of: USAEC  
 JUL 2 1969

*Austin M. Brues*

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Division Director

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Biology Division

August - 1946

Percent of Divisional Activity by Subject

Preparation of radioactive materials	2%
Instrument development	1
Metabolism of injected radioactive materials	5
Effects of radioactive materials on blood	4
Effects of radioactive materials on tissues	1
Physiology of radiation damage	3
Chronic effects of radiations	9
Comparative physiology of radiation toxicity	1
Maintenance of animals	14
Late effects of x-irradiation	2
Physiologic therapy of acute irradiation	1
Dosimetry of radioactive substances	2
Biostatistics	1
Preparation of reports	50
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	95%

Not included: Administration, 3%; detachment of personnel to operation crossroads, 2%.

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