

SCIENCE

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RECENT STUDIES ON THE BIOLOGICAL EFFECTS OF RADIOACTIVITY¹

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MSS. intended for publication and books, etc., intended for review should be sent to Professor J. McKeen Cattell, Garrison-on-Hudson, N. Y.

X-RAYS were discovered in 1895 and the first of the publications which placed Madame Curie, the discoverer of radium, in the position of foremost woman of science, appeared in 1898. The application of these results to biology, a matter of great importance, was brought about through accident. A knowledge of the physical properties of radio-active substances would lead one to expect that the physiological action would be acute, and that fact was accidentally proven to be true.

Becquerel carried a small tube of an impure radium preparation in his vest pocket for six hours. A few days later he observed a reddening of the epidermis of the abdomen opposite the location of the pocket in which he had placed the radium compound. It was not long before the inflammation became pronounced, and an ulcer developed which required several months for the healing.²

Giesel exposed the inner portion of his arm, for two hours, to 0.27 gram of a radium preparation, enclosed with a double celluloid capsule. After two or three weeks the skin reddened, blisters formed and the epidermis peeled just as with a burn. The growth of hair was also destroyed and did not come out anew, although a smooth white skin reformed.

Madame Curie had learned very early in her studies that radiation affects tissues, for she says in her thesis, "The action of radium upon the skin can take place across metal screens, but with weakened effect."

Thus early began the application of a

¹ Contribution from the Zoological Laboratory of the University of Texas, No. 125.

² From Baskerville, "Radium and Radioactive Substances," Williams, Brown and Earle, Philadelphia, 1905.