

## FINDS INTERNAL CANCERS WITH RADIUM PHOTOS

Cancer has apparently received some heavy body-blows in the research laboratories of Europe during recent months, and may possibly be on the verge of a knockout, according to Dr. Erwin F. Smith, U.S. Department of Agriculture specialist on abnormal growths, who has just returned from a tour of cancer investigation centers on the other side of the Atlantic.

Dr. Smith told of two new methods of detecting internal tumors and cancers while they are still in the early stages and therefore more amenable to treatment.

"Drs. Kotzareff and Weyl, of Geneva," said Dr. Smith, "have discovered that if radio-colloidal substances are injected into a cancerous patient there is a selective fixation of the radium in the rapidly multiplying cancer cells. If now a sensitive photographic plate be exposed over the suspected part for some hours, the outline of the tumor is visible on the plate when it is developed. At present, the exact composition of the radium colloidal substances is a secret known only to Mr. Weyl.

"The other method of early diagnosis is a serum method discovered by Dr. Botelho, chief of the cancer laboratory of the surgical clinic of Dr. Hartmann in the Hotel Dieu, the great hospital near Notre Dame in Paris. It consists in adding to centrifuged blood serum dilute nitric acid and an iodine reagent. Normal serum and that from non-cancerous patients remains clear after the final treatment. That from cancerous patients remains persistently clouded."

Dr. Smith told of the researches of Dr. Otto Warburg, of Berlin, who has shown that cancer cells can live for long periods without oxygen, provided they have a supply of grape sugar, whereas normal cells must have oxygen. An acid condition arises under these conditions, which is unfavorable to the growth of normal tissue, but does not stop the growth of cancer.

The dispute as to the real cause of cancer continues lively, some scientists holding that it consists merely in the "running wild" of normal body cells, and others contending that there is a definite germ or virus that starts the cells on their career of anarchy. Dr. Smith inclines toward the latter view. He told of the work of Dr. Gye, of London, who took a filterable virus obtained from a chicken sarcoma long cultivated outside the body of its original victim, kept it in glass for a long time, and through a series of dilutions that thinned the original quantity out almost to nothing, and still was able to produce cancers in experimental animals.

Dr. Gye was unable to find the organism that did the mischief, Dr. Smith stated, but his colleague, Dr. Barnard, was able to demonstrate it by the use of a special microscope able to detect objects as small as four one-millionths of an inch in diameter. "I have been in his laboratory and have seen the body dancing about in the culture fluid," said Dr. Smith. "It is the same type of germ as the pleuropneumonia organism, but smaller."

Another type of bacterium claimed as the cause of certain types of cancer by Dr. Ferdinand Blumenthal, of Berlin, closely resembles the organism responsible for the crown gall disease in plants.

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