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## SOME NEWER ASPECTS OF CANCER RESEARCH<sup>1</sup>

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HAVING spent a good part of the last eight months in Europe among cancer men it appears to me worth while to set down in simple words a few of the things I have seen and heard. What I have to say concerns diagnosis, treatment, biology and causation.

### DIAGNOSIS

Diagnosis is easy when the tumor is superficial, but difficult when the tumor is internal, and especially difficult in early stages of growth; yet it is in just these stages that cancer is most amenable to surgery. Any aid, therefore, that the biologist can give to the surgeon is all important for the patient.

Two methods of early diagnosis are now coming into prominence in Europe.

Kotzareff and Weyl, of Geneva, 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. Dr. Kotzareff now at the École medicale in Paris showed me very interesting photographic plates demonstrating this. The only other tissues giving the same or a similar reaction are young embryonic tissues. At present the exact composition of the radium colloidal substances is a secret known only to Mr. Weyl. They are said to be administered in such dilution as to be entirely harmless to man and the experimental animals, a few millicuries only, in serum derived from the patient. More work needs to be done so that the exact composition of these substances may be known generally and the limits of usefulness of the method determined. Dr. Kotzareff needs support for his work and would like to come to the United States.

The other method of early diagnosis is a serum method discovered and perfected 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, a method on which he has been at work for half a dozen years. It con-

<sup>1</sup> Opening address of the president at the eighteenth annual meeting of the American Association for Cancer Research, Navy Medical School, Washington, D. C., on May 4, 1925.

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