

## THE CAUSE OF CANCER.\*

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Being interested in the subject of cancer, I have followed the work in the New York State Laboratory for the last two years and learned with interest the results obtained by Dr. Gaylord and embodied in his lecture at the Johns Hopkins Hospital and in his paper in the *American Journal of the Medical Sciences* for May of this year.

In order to prove conclusively that a given organism is the cause of cancer it is necessary :

- (1) To find or isolate the organism.
- (2) To produce cancer by inoculating the organism into another body.
- (3) To recover the organism from the cancer thus produced.

I have had the opportunity of examining some of Dr. Gaylord's specimens and it is certain that the nodules he produced in the guinea-pig's lungs are cancer. He, however, used peritoneal fluid and not a pure culture of the organism and hence the first and second requisites are not properly fulfilled. He cannot exclude the possibility of cancer-cells from the patient having been carried over in the fluid to the guinea-pig, and it is a well established fact that cancer-cells may be transplanted and grow. The third requirement is barely touched upon and no proof of its successful accomplishment is adduced.

On page 511 of the journal above mentioned he speaks of being able to cultivate his germ with "comparative regularity," and we are given the medium upon which

\* Remarks made before the American Surgical Association at Baltimore, Md., May 7, 8 and 9, 1901.

it grows. And yet, no word as to its appearance or behavior on the culture medium is mentioned. Nor have we a picture of it, although both Plimmer's and Sanfelice's organisms are depicted on plate 7. This omission is difficult to account for. Further, on page 537 a list of his injections into animals is found, and here also we fail to find a single instance where there is conclusive evidence of a pure culture of a germ being employed.

The major portion of the article is taken up with the examination of tissues hardened according to different methods, but, as Professor Welch pointed out at the Hopkins meeting, we might argue indefinitely upon the histologic changes without making an iota of progress. In fact, for years one body of men has been claiming that these peculiar bodies found in carcinoma are due to cell degeneration; the opposite faction, that they are parasites. It is only by cultivating the organism, if there be any, and then producing the disease afresh with this newly-found germ that we can prove the cause of this dread malady. As a matter of fact, Dr. Gaylord has confirmed the results of others but added little or nothing new,\* and the cause of cancer is still an unknown factor. It is very unfortunate that the suggestion that cancer parasites were floating around in the blood has led a portion of the daily press to infer that cancer is a blood disease and consequently that the removal of a cancer will be useless, as the disease is sure to appear at another point. Such is certainly erroneous. We know that cancer is not a blood disease, but that in the early stages it is an entirely local process; that it is permanently curable is evidenced by the results in European and, to come nearer home, in our own hospitals, where patients are living and well, years after complete removal of the growth.

Dr. Gaylord and his associates should in no wise be discouraged. Many of the world's most able investi-

\*In justice to Dr. Gaylord, it must be added that the above-mentioned article is a preliminary communication and that the completed work may solve many of the still obscure points.

gators have been seeking the same goal, and as yet none have reached it. They should be encouraged at every point, as in their love for science they are willing to forego financial prosperity in the hope that they may eventually rid mankind of this scourge. New York State is to be congratulated on its wisdom in establishing a cancer laboratory, and is showing a commendable spirit in increasing instead of diminishing the support accorded its scientific men.