MICROBIAL METABOLISM AND ITS BEARING ON THE CANCER PROBLEM

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Soon after receiving the invitation to speak here to you on a biochemical subject I had the good fortune to come across Dr. Ellice McDonald's most illuminating paper published in Science last summer.

His condemnation of the trial and error method in cancer research and his convincing plea for a study of cancer on the basis of cell metabolism made it seem to me possible to speak to you on some results obtained in the metabolism of unicellular micro-organisms. The more so because investigations of the last decade tend to establish a quite unexpected degree the unity in metabolism of all living organisms, either microbes or higher plants or animals.

It needs hardly to be emphasized that micro-organisms lend themselves quite exceptionally for studies in cell metabolism. Since many of them are readily available in pure culture, it is quite possible to start at any moment experiments with a uniform biocatalytic material. Moreover, we owe to the genius of Pasteur the remarkable observation that several of the colorless unicellular organisms can thrive in a medium which contains only one single organic compound besides the necessary mineral constituents. It is clear that this circumstance simplifies the study of metabolism quite especially.

We have profited by this favorable situation to study the metabolism of several microbes in somewhat more detail.

In considering the metabolism of any living cell one is immediately struck by the remarkable fact that the compounds in the food are never integrally con-