

MEDICINE

New Cancer Idea Advanced

► MORE lives may be saved from cancer as a result of a new idea of the disease advanced by Dr. L. Foulds of the Imperial Cancer Research Fund in London.

"Progression" is the key word in Dr. Foulds' concept. It gives a new explanation for much that has baffled doctors and medical scientists such as why a patient has a recurrence of malignant growth many years after the primary cancer was cured.

Chemical treatment of cancer may become more successful through further knowledge of "progression," Dr. Foulds suggested.

The kind of cancer development Dr. Foulds calls progression is independent of growth, duration or size of the tumor. It may be continuous or discontinuous, that is, off and on. Progression characters include growth, invasiveness, spread and responsiveness to environmental stimuli. These characters may develop independently of each other, Dr. Foulds finds.

A cancer that appears to the physician to be a small, early one may, according to progression, be advanced in aggressive characters. This would explain why the prog-

nosis in early cancers is erratic. The small size of the tumor would lead to a hopeful prognosis for the patient after removal of the cancer, but the independently developed aggressive character of the growth might, contrary to the apparent outlook, lead to the patient's early death.

The unpredictable behavior of some tumors such as the spread of apparently harmless ones and the failure of locally malignant ones to spread, or metastasize, is accounted for by progression.

PHOTOGRAPHY

Fast Cameras Described

► PICTURES in one twenty-millionth of a second exposure are taken by a camera described in New York to the Society of Motion Picture Engineers by Dr. A. M. Zarem of the Stanford Research Foundation, Los Angeles. Other fast cameras were described by several scientists, but the Zarem camera is the fastest still-picture technique known.

The heart of the Zarem system is what scientists know as a Kerr cell. One form of this cell is a glass vial filled with nitrobenzene in which a pair of electrodes are placed. The cell is between two polarizing plates which are so placed that light emitted by one cannot ordinarily pass through the other. However, when high voltage is passed between the electrodes in the Kerr cell, the plane of polarization is changed, and the light emitted from it can pass the second plate and into the camera. Controlled timing of the voltage does the rapid-action lighting trick.

The Baird high-speed camera, that uses 16-millimeter film and can take motion pictures at rates up to 50,000 a second, was described by D. S. L. Durie of the Canadian National Research Council, Ottawa. Such speedy cameras are used to obtain motion pictures for review as slow motion pictures of various industrial actions, or of a rifle bullet in flight.

A camera developed by the National Advisory Committee for Aeronautics was explained by C. D. Miller of Battelle Memorial Institute, Columbus, Ohio. This camera employs the novel scheme utilizing rotating mirrors and a series of re-focusing lenses which are stationary to form a series of pictures on a non-moving film. These pictures are taken at rates up to one-half million per second. Motion pictures can be produced from the film.

High-speed motion pictures, taken by employing the principle of a multiple aperture focal plane camera, were described by Dr. Fordyce E. Tuttle of the Eastman Kodak Company.

Long delayed recurrences after a primary cancer cure are, Dr. Foulds believes, due to progression independent of initial regrowth.

Ultimate failure following immediate favorable response to chemical treatment is due to progression in the tumor that has been checked but not entirely destroyed.

Dr. Foulds' report is based on study of several hundred mouse breast tumors. In this he found that multiple tumors in the same mouse each developed independently and that unpredictably different characters in a single tumor developed independently.

Further knowledge of progression is of prime importance for the management of human cancer, he declares in the 46th annual report of the Imperial Cancer Fund.

Science News Letter, April 30, 1949

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A 20-lens high-speed camera, which takes 3,000 pictures per second on standard 35-millimeter film was described by Charles Wyckoff of the Massachusetts Institute of Technology. This particular camera was developed during the war at the U. S. Naval David Taylor Model Basin, Washington, D. C.

Science News Letter, April 30, 1949

Words in Science—

CHLOROMYCETIN

► FIRST member of the mold-germ-killer family of medicines to be made synthetically on a practical basis is chloromycetin. You say it clo-ro-mice-e-tin, stressing the clo and mice. It has been found effective against typhus, Rocky Mountain spotted fever, undulant fever and typhoid fever.

Originally made by a mold, *Streptomyces venezuelae*, found in the soil of Venezuela, it is now also being produced by synthetic process that is expected to lead to reduction in the price and to its more general availability.

Science News Letter, April 30, 1949

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