



cancer in general and, in those localities where the mean temperature is less than about 42 degrees Fahrenheit, even to skin cancer; 2. at mean temperatures above 42 degrees Fahrenheit, sun rays produce more cancer on those parts of the skin exposed to them, in spite of a generally raised immunity.

Besides the statistics of cancer deaths in various climates, Dr. Apperly cited animal studies by other scientists which, though not completely applicable to humans, have a bearing on the question. When mice were given a large dose of X-rays before application of a cancer-causing coal tar chemical, methylcholanthrene, they died at almost three times the rate of animals not previously X-

rayed. Small doses of X-rays before the chemical treatment, however, protected the mice against the cancerous effect of the chemical to such an extent that the cancer mortality was only one-third that of the non-X-rayed group.

"We may be able to reduce our cancer deaths," Dr. Apperly concluded, "by inducing a partial or complete immunity by exposure of suitable skin areas to sunlight or the proper artificial light rays of intensity and duration insufficient to produce an actual skin cancer.

"The study of the effects of sunlight on the living organism, and of those conditions in the skin which modify its action, may produce results of inestimable value."

Science News Letter, March 30, 1940

MEDICINE

Reports New Optical Test For Presence of Cancer

Measurement With Interferometer of Blood Serum Mixed With Human Cancer Cells Reveals Disease

A NEW optical test that tells whether a person has cancer and whether after operation that cancer has been successfully treated is claimed by Dr. M. W. Mettenleiter, New York surgeon, connected with St. Clare's Hospital.

In a preliminary series of 325 cancer cases, the test is reported to have proved 96% correct.

Developed from German studies reported over the last 30 years, the Met-

tenleiter test involves the measurement of the densities of a number of samples of the person's blood serum by use of an interferometer. The blood serum from the patient is mixed with an extract of human cancer cells from a patient known to have carcinoma of the breast.

Varying amounts of the suspected patient's blood serum are placed in four test tubes containing equal amounts of the cancer extract. After incubation and

settling, the densities of the four dilutions are obtained, and plotted out graphically. The curves are reported to show a characteristic difference between cancerous and the non-cancerous blood serum.

Dr. Mettenleiter believes that the test will prove of assistance in the early diagnosis of cancer and in determining the course of a case. He finds that a curve indicating cancer slowly changes to a normal curve after a successful operation. He reports that it changes again from a normal to a cancer curve in the earliest stages of recurrence. A cancer curve, it was found, does not change postoperatively if metastases or spreading of the cancer have already occurred or are about to take place elsewhere in the body.

The test reaction failed to appear when serum of a pregnant woman or of a person with tuberculosis, syphilis or numerous other diseases was used, it was reported. However, as was to be expected, fever and intensive X-ray treatments influenced the serum so as to make the test uncertain. Extract of normal organs, for example, fibroid tissue, failed to show any reaction.

Dr. Mettenleiter made known his researches through a communication to the British science journal, *Nature*. He is a fellow of the American Medical Association and of the American College of Surgeons. Born and educated in Germany, he has practised in New York since 1927.

A successful, practical test for cancer has been sought by many experimenters. About a score of such tests have been announced from time to time. The Mettenleiter test will undoubtedly be received with interest. Others working on cancer will try it and they must report success before it can be expected to come into use.

Science News Letter, March 30, 1940

To make *radios* dependable, one company tests sets in weather rooms which duplicate steamy jungle heat, sub-zero cold, and desert dryness.

● RADIO

Dr. Otto Struve, director of Yerkes Observatory and McDonald Observatory, will give information on the annular eclipse of the sun to occur on April 7, as guest scientist on "Adventures in Science" with Watson Davis, director of Science Service, over the coast to coast network of the Columbia Broadcasting System, Thursday, April 4, 4:15 p.m., EST, 3:15 CST, 2:15 MST, 1:15 PST.

Listen in on your local station. Listen in each Thursday.