

MEDICINE

Tumor Responds to Drug

A possible breakthrough in chemotherapy research is reported with the discovery that a cancer tumor has responded to treatment with a chemical compound.

► THE FIRST SOLID malignant tumor to be completely suppressed by a drug is still responding to the treatment.

The continued success with the drug treatment was hailed by Dr. John R. Heller, director of the National Cancer Institute, Bethesda, Md., as "offering the possibility that this may be a definite breakthrough in chemotherapy research."

The tumor is choriocarcinoma, a hormone-producing cancer that occurs most often in women during the child-bearing process. The chemical compound that has suppressed the tumor is called methotrexate.

Continued success with the drug treatment was reported to the National Crusade meeting of the American Cancer Society by Dr. Roy Hertz, chief of the endocrinology branch of the Institute.

Dr. Hertz was one of three scientists who reported the first successful use of methotrexate to suppress choriocarcinoma in November, 1956. The others were Dr. M. C. Li and D. Spencer.

To date, 16 women with far-advanced choriocarcinoma have been observed during and following methotrexate therapy.

Six of the women, Dr. Hertz said, have remained completely free of evidence of the disease. Five more had shown the same type of response but the disease recurred and additional treatment is now being given.

Three women have shown a decisive initial response and two women died during early phases of attempted treatment.

Dr. Hertz cautioned more than 700 cancer control leaders that the full value of the treatment remains to be determined.

At the same time, Dr. Heller drew a statistical picture of cancer for the crusaders, pointing out that cancer is still our second largest killer. There are 550,000 new cases and 250,000 deaths annually. At any given time, there are 700,000 persons under treatment for cancer in the nation.

On the other hand, Dr. Heller noted, 800,000 Americans living today have been saved from cancer. One in three cancer patients are being saved today in comparison with one in seven 20 years ago.

The four mechanisms by which cancer spreads was outlined by Dr. Warren H. Cole, University of Illinois College of Medicine. They are: by means of the lymph channels into the lymph glands, by way of the blood vessels, by direct growth into tissue next to the primary tumor, and by implantation of the cells.

Dr. Cole disclosed that current research has already turned up three chemicals, Clor-pactin, nitrogen mustard and iodine, that are effective in preventing growth of the implanted cancer cells.

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showed, however, that "the lung-cancer mortality rate among the foreign-born white males, which was higher than among the native white males in urban areas, did not drop appreciably in rural areas."

The Ohio scientists call for additional comparative studies in other states, as well as future cancer mortality studies to include places of birth "so the extent of the foreign-born influence on cancer mortality rates can be determined."

Drs. Mancuso and Coulter report their findings in the *Journal of the National Cancer Institute* (Jan.). Their work was made possible by a cancer research grant from the U. S. Public Health Service.

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CHEMISTRY

Transparent Film Made From Aluminum

► FILMS OF aluminum rust only one-millionth of an inch thick are being used by Westinghouse Electric Corporation scientists to support sensitive materials inside experimental electronic tubes.

The films, which are so thin they are almost perfectly transparent, are prepared from ordinary aluminum foil such as most housewives use in their kitchens. Westinghouse scientists dissolve the aluminum, 99.9% of the foil, in an acid and use only the very thin film of aluminum oxide, or "rust," which remains undissolved.

Ultra-thin discs of aluminum oxide over two inches in diameter are now prepared routinely, Dr. Max Garbuny said.

Because of their extreme thinness, the films do not interrupt the path of electrons directed at the sensitive materials they support in experimental imaging tubes.

Science News Letter, February 22, 1958

MEDICINE

Find New Cancer Factor

► AN INDIVIDUAL'S birthplace may be a factor in his developing cancer.

This is indicated in a study of male residents of Ohio who had cancer of the lung, larynx, bladder and central nervous system, and reported by Drs. Thomas F. Mancuso and Elizabeth Jackson Coulter of the Ohio Department of Health, Columbus.

The study shows that in Ohio "mortality was higher among foreign-born white males than among native white males for each of the four cancer sites in the 25-to-64-year age range."

In Cuyahoga County, where Cleveland is the principal city, the scientists found mortality of the foreign-born white male residents varied considerably by country of birth. Lung-cancer deaths, for example, were higher "than expected" among males born in Poland, Yugoslavia and the U.S.S.R., and relatively low among Irish and Italian males. Mortality due to cancer of the larynx was particularly high among males born in Russia.

Other findings in the Cuyahoga County study were that the lung-cancer deaths among male immigrants from Italy were

similar to mortality due to this cause among the male population of Italy but lower than among native white males of Cuyahoga.

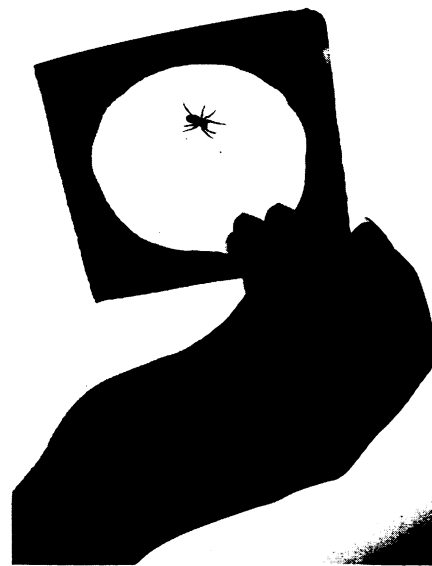
On the other hand, the lung-cancer mortality rate for English and Welsh immigrants is similar to that of native whites in Cuyahoga County, but considerably lower than among the men back in England and Wales.

The findings, Drs. Mancuso and Coulter state, raise a basic question: Are the birthplace differences in cancer deaths due to factors associated with the place of birth or the place to which one migrates?

Some of the factors that must be considered, they say, are the inherent characteristics of the population of different racial stocks in the country of birth; cultural, socioeconomic, or other environmental circumstances; reasons for migration; and characteristics of the new country or location.

In their study, which included native white, foreign-born white and nonwhite males, Drs. Mancuso and Coulter also made urban and rural comparisons.

They found mortality was generally higher in urban than rural areas for each of the cancer sites studied. The study also



"NOTHING" SUPPORTS SPIDER
—A transparent film of aluminum oxide, varying not more than one molecule in thickness over the entire surface, supports the weight of a crawling spider.