

## MEDICINE

# Cancer Cure Sought

**Methotrexate is among the most successful anti-cancer drugs so far found in the \$100,000,000 push to save millions of lives in the future, Faye Marley reports.**

► THE DRUGS that can cure cancer may be hidden among the 160 or more that medical research is now actually using in treating patients with human cancer by clinical trials.

No one knows just what drugs may be successful—some of the compounds have not even been named—but the leading researchers on one of the world's great killers are confident they are on the right track.

So far, the great hope for those who have any form of this disease today is still, as all cancer advice tells, early detection, surgery and radiation. Cancer is not a completely hopeless disease, for 50% of the cases could be cured if patients got to physicians fast enough. Actually, 35% is the cure rate for curable cancer. There are, however, still many cancers that are hopeless from the time of their discovery.

Surgery and radiation have been used for treating and sometimes curing thousands of people in the United States, but these methods are frequently not effective against cancer that has spread to other parts of the body (metastasized), or against leukemia, cancer of the blood.

The treatment of such disseminated cancer is the major problem in cancer

treatment, and it is here that chemotherapy gives hope.

Treatment with drugs that can reach and destroy malignant cells wherever they may be in the body has been at least temporarily effective against some 30 forms of cancer.

Dr. Stuart M. Sessoms, associate director for chemotherapy, National Cancer Institute, Bethesda, Md., told SCIENCE SERVICE that one of the promising drugs is methotrexate, which has been used at the Institute for a number of years. Its primary use is against leukemia.

"This is the nearest thing to a cure that we can show," he said. Dr. Roy Hertz, chief of the Institute's endocrinology branch, has used methotrexate in treating a number of women patients with choriocarcinoma, a rare cancer that occurs in the placental tissues during the process of childbearing.

Dr. Hertz is a world authority on choriocarcinoma. More than five years have passed since he and his colleagues reported the first successful use of methotrexate to suppress this disease. Some of his choriocarcinoma patients have shown no return of the cancer since 1955.

Methotrexate was first synthesized in

1947 by Dr. Subba Row, now dead, when he was director of research for Lederle Laboratories, Pearl River, N. Y., working with others. Aiding in methotrexate research was Dr. Sidney Farber of Children's Medical Center, Boston, who acted as Lederle consultant and did the clinical tests in Boston.

Dr. Robert D. Sullivan of the Sloan-Kettering Institute for Cancer Research and Memorial Hospital, New York, has combined methotrexate with treatment at the same time by an antidote called leucovorin.

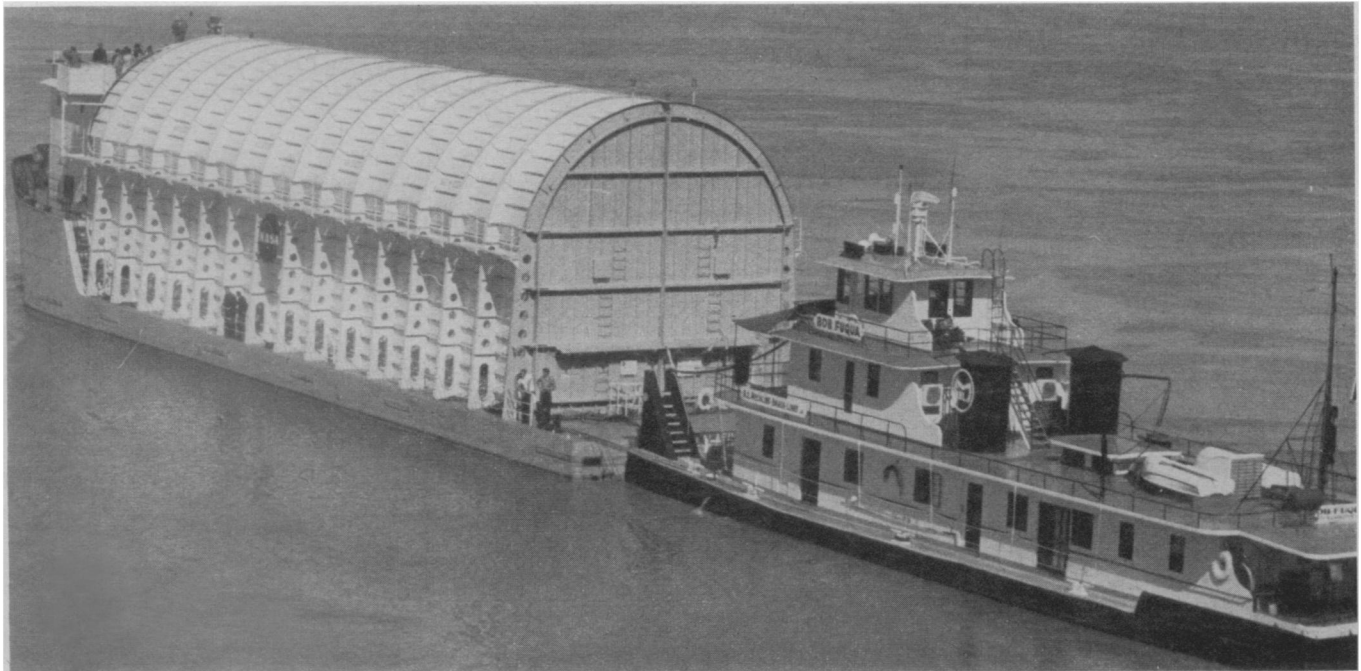
First tried in New York, leucovorin is now being tested along with methotrexate in Kenya, Africa, where cancer patients have had no previous treatment with surgery and radiation. Sloan-Kettering with the African Research Foundation is continuing work Dr. Sullivan began with 24 African patients.

Leucovorin is a derivative of folic acid and is a potent enemy of aminopterin and other folic acid antagonists such as methotrexate.

The reason for giving the antidote is that methotrexate is being injected into the arteries at about ten times the lethal dose ordinarily given for leukemia. At the same time, leucovorin is being injected intramuscularly every six hours to prevent damage to bone marrow.

Dr. Sullivan and his colleagues two years ago first treated patients with cancer in the head, sinus and cervix, but they are further exploring liver and brain cancer treatment by injecting methotrexate into the hepatic and internal carotid arteries, while at the same time they inject leucovorin intramuscularly.

One 72-year-old man who was treated



**SPACE-AGE BARGE**—The 180-foot Palaemon barge hauls the first Saturn static-test booster down the Tennessee River to study the stresses the rocket will be subjected to during its 2,200-mile trip to Cape Canaveral, Fla. The barge will carry the first and second stages of the Saturn space vehicle to the Cape.