

## MEDICINE

# To Inject Tobacco Tars

➤ A TECHNIQUE originally worked out to give calories to wounded soldiers too sick to eat will now be applied to solving the question of whether tobacco causes lung cancer.

This was learned from Dr. Frederick J. Stare, professor of nutrition at the Harvard School of Public Health, Boston, after the Tobacco Industry Research Committee announced Dr. Stare would receive one of nine grants it is currently awarding.

Getting fats into emulsions that can be safely injected into the veins is the technique Dr. Stare will adapt to the lung cancer-tobacco problem. He and his associates worked out the emulsion technique for vein feeding during World War II. Before then it had not been possible to feed fats by vein.

Now Dr. Stare and associates will try to incorporate material from tobacco tars into emulsions. If they succeed in this, they will inject the emulsion into the veins of laboratory rats and see whether the material is carried by the blood to the lungs, and whether it lodges there and causes irritation and, perhaps, cancer. If it does, this will be pretty good evidence for material in tobacco tars causing lung cancer. And in that case, the technique will give a good testing system for tobaccos treated to get rid of the cancer-causing material.

If the animals do not get lung cancer, the

evidence will be pretty good that the material in tobacco tar does not cause this condition.

Dr. Stare and his group think they can be sure of getting the material into the lungs by making the particles in the emulsion the right size for tending to lodge in the tiny blood vessels, called capillaries, in the lungs.

Which answer will come from the studies is not yet known, Dr. Stare emphasized.

All known cancer-causing chemicals are soluble in fat. Knowing that, Dr. Stare and associates previously used their emulsion technique to inject into the veins of female rats one known cancer-causer, dimethyl-benzanthracene. It produced cancer of the breast in 100% of the animals.

Heretofore, this chemical had only been tested by painting it on the skin of laboratory animals. The skin painting method has also been used for testing possible cancer-causing activity of tobacco tars.

The results have been considered by some scientists to show only that tobacco tars might cause skin cancer in laboratory animals but to prove nothing about lung cancer. The vein injection of tobacco tar material should, Dr. Stare feels, give a more positive answer since it will get the chemicals into the lungs.

Science News Letter, January 29, 1955

## GENERAL SCIENCE

# More Funds for Science

➤ PRESIDENT EISENHOWER has recommended to Congress that the Federal Government spend more money than ever before on research and development during the fiscal year 1956.

In his annual budget message, he proposed spending \$2,218,000,000 on scientific programs from July 1, 1955, to June 30, 1956, the government's budget year. This is an increase of \$147,000,000 over the amount estimated to be spent for this purpose during the current fiscal year.

Funds asked by the President for scientific research and development are about half the total spent on such programs in the United States. The National Science Foundation is charged with coordinating Federal support for basic research. To do this job, President Eisenhower recommended that the Foundation get \$20,000,000 in fiscal 1956, an increase of about \$7,400,000 over its current budget.

Another \$11,000,000 was asked for the Foundation to support United States participation in the International Geophysical Year, scheduled for 1957-58, a world-wide program to learn more about the earth, its seas and air.

Scientific data accumulated during this period are expected to contribute to ad-

vancements in "weather forecasting and control, radio communications, navigation and upper atmosphere flight," according to the budget.

The increase in the total requested to run Federal research and development programs is seen in higher totals for practically every government bureau or agency concerned.

As recommended by a committee of top flight scientists, more money has been requested to run the National Bureau of Standards so that it will "serve more adequately to meet the scientific needs" of this country. President Eisenhower asked Congress for \$7,750,000 to do this, an increase of \$1,760,000 over its present budget.

Also in line with recommendations of another review committee, the President requested \$27,850,000 to run the Weather Bureau during the fiscal year 1956. This is \$3,100,000 more than was appropriated in 1955. Another \$5,000,000 was asked for the Weather Bureau for setting up new weather observing stations as well as for modernizing existing facilities.

Science News Letter, January 29, 1955

The *electricity* to make a ton of aluminum would supply the electrical needs of a six-room house for 15 years.

## ENGINEERING

# Uranium-Paved Road Once Thought Worthless

➤ A ROAD on the outskirts of Carcoar, in western New South Wales, Australia, is paved with uranium.

So are the bush tracks leading to the town's long disused iron ore shafts.

Tests conducted by the New South Wales Government's Department of Mines revealed that the iron-ore shafts are rich with uranium, and that the horseshoe of hills ringing the town also contain large deposits.

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