

## MEDICINE

# Chemicals in Cigarettes

➤ ARE THERE two dangerous chemicals in cigarette smoke? Or one? Or several?

These are among the questions raised by the American Cancer Society's finding that cigarette smokers among men aged 50 to 70 have a higher death rate, by as much as 75%, than non-smokers of the same age.

Nicotine, tar, carbon monoxide and unknown chemicals in the tobacco leaf may each or all cause enough damage over the years to shorten a smoker's life.

Heavy cigarette smokers die earlier, and it is not lung cancer alone that takes them. The death rate is higher for cancer regardless of the type among heavy smokers than non-smokers, and it is higher for heart and blood vessel diseases.

This last fact points to nicotine as being at least partially responsible, since nicotine is known to affect the heart and blood vessels, making the heart pump faster and adding to its work by narrowing the arteries through which it must pump blood.

Cigarette tars are under investigation now. Drs. E. Cuyler Hammond and Daniel Horn of the American Cancer Society think their new statistical evidence that smoking shortens life will spur more, faster research to

find the possible cancer-causing chemical in these tars. Then should come efforts to remove it—that is, if people want to continue smoking.

A radical change in smoking habits will not come for a generation among the general population, Dr. Charles Cameron of the American Cancer Society predicted. He thinks, however, doctors will stop now, because they will feel morally obliged to be an example to their patients whom they advise to stop smoking.

In the "admittedly grim" picture of smoking, cigarettes show up worse than cigars and pipes. They seem to deserve the label, "coffin nails," given them a generation or more ago. This, again, may be a matter of tobacco chemistry. The fast burning types of tobacco used for cigarettes may come from plants that have some dangerous chemical other than nicotine.

This smoking report does not rule out air pollution as a contributing cause of lung cancer. On the contrary, Dr. Hammond seriously fears that this relatively new factor added to the effects of heavy smoking may make the situation even worse.

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of the American Cancer Society, has explained that there is a possibility that the smoke particles actually absorb and, therefore, immobilize the substances in the products of cigarette combustion that possibly cause cancer.

If filters or filter-tip cigarettes are used to hold back the smoke particles, the suspected carcinogenic materials may not be absorbed by the smoke and, therefore, pass on into the lungs. Reduction of smoke may thus give a false sense of security to the smoker.

This is one possibility now being investigated.

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## ENTOMOLOGY

## Tiger Beetles to Be Freed in New Jersey

➤ TIGER BEETLES will be freed in the New Jersey pine barrens as part of a study in evolution.

Dr. Mont Cazier, American Museum of Natural History entomologist, this summer will collect these colorful beetles in Nevada, Arizona, California and Mexico. Mature adult beetles will then be let loose in a naturally isolated area of southern New Jersey where they will have little chance of escaping.

When a new beetle generation appears and grows up during the next three years, the changes in color and markings will be observed. Scientists suspect that these variations are caused by different environments. Tiger beetles will also be transferred from place to place within the Southwest.

If the beetles escape from their new New Jersey homes, the scientists say that farmers need not worry. The tiger beetles feed on other insects harmful to crops.

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## ENGINEERING

## Swedes Boost Voltage To Cut Power Cost

➤ SWEDISH ELECTRICAL engineers have cut transmission costs 40% by upping the voltage on their long-distance power lines from 230,000 to 400,000 volts.

Results of an economic study covering the high-voltage experiment were reported to the American Institute of Electrical Engineers meeting in Los Angeles by B. G. Rathsman, Gunnar Jancke and Sven Lalander, engineers from the Swedish State Power Board.

The men attributed the savings to new and better line equipment and substation switchgear.

Annual consumption of electricity in Sweden equals that in the United States on a per capita basis—3,100 kilowatt hours. But transmission problems are different since most Swedish power is generated in the northern part of the country and since 75% of the population lives 300 miles away in south Sweden.

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## MEDICINE

# Recipe For Long Life

➤ IF YOU want to live long, you may have to give up a number of things many people now enjoy but which doctors know or suspect shorten life.

At the top of the list right now is smoking, particularly cigarette smoking. This is on the basis of the American Cancer Society's statistical study of 187,766 men between the ages of 50 and 70. This showed that heavy smoking, a pack or more a day of cigarettes, more than doubles the death rate from cancer and nearly doubles that from coronary artery type of heart disease.

Alcohol would get a place on the list of things to give up. A study like the smoking study might well be made to determine the effects of heavy and moderate drinking on the death rates from various diseases and length of life.

"Doctors know alcohol does not do your heart any good," Dr. Charles Cameron, medical and scientific director of the American Cancer Society, told SCIENCE SERVICE.

As for cancer, there is, he said, fragmentary evidence from the Scandinavian countries that cancer of the esophagus, or gullet, and of the pharynx, or throat, is higher in barkeepers and hotel men.

Many people have already been advised to give up the sweet and fat foods they like. Overeating and consequent overweight have long been held responsible for shortening life.

Perhaps some would add tea and coffee

to the list of enjoyable things to be given up on the basis that of these, also, there may be a point at which one gets "too much of a good thing."

Sexual activity also is a suspicious link with cancer. A Canadian scientist found in an extensive study of nuns that cancer of the cervix, or neck of the womb, did not occur among these women although it is the leading cancer killer among women in the general population.

With all of these things, including smoking, there is probably a constitutional factor that makes some persons more resistant to any damaging effects. How to pick the resistant or the susceptible ones, and how to know the critical point of "too much" are questions that cannot yet be answered.

"One cannot avoid the conclusion," says Dr. Cameron, "That austere people are less susceptible than the full-blooded, sthenic ones."

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## Filtered Cigarettes May Not Stop Cancer

➤ FILTERING CIGARETTE smoke in the hope of preventing cancer of the lung may be the wrong thing to do, inquiries in New York suggest.

Dr. Charles S. Cameron, vice president