

PUBLIC HEALTH

Quit Smoking Early

► IF PEOPLE QUIT smoking cigarettes soon enough, chances appear to be good that tissue abnormalities, thought to be precancerous and regularly found in smokers, will clear up.

However, two researchers at the University of California School of Medicine, San Francisco, feel that this will happen only if smokers quit "before malignant and irreversible cell change takes place."

In a report to the American Cancer Society, which helped support the work, Drs. Dale L. Tipton and T. Timothy Crocker stated that they applied cigarette tars to the bronchi of animals. "In a startlingly short time—three days following tar application—drastic changes occurred in the bronchial lining."

They found that the cells that manufacture mucus, which oils the tubes and engulfs foreign particles, began to disappear. So did the cilia cells, which clean the tract with countless tiny brooms.

In their place there arose abnormal, pathological cells. The most common is called squamous metaplasia, described as a "disorganized growth of the top layer of the bronchial lining." The researchers regarded

the changes—extremely common in smokers and relatively infrequent among nonsmokers—as among the first in the development of lung cancer.

With no further exposure to cigarette tars, the different types of abnormal cells slowly began to disappear. Squamous metaplasia disappeared first. Healthy mucus-producing and ciliated cells once again appeared. In 18 weeks, all tissues again were normal.

The researchers concluded that the cells most sensitive to tars were not the mature, adult cells that line the surface of the bronchial passages but rather the basal cells.

Gradually basal cells become mature surface cells as older surface cells die and need to be replaced.

In the case of the diseased basal cells, they never did become normal throughout their life but died off and were replaced with healthy basal cells once the tars were withdrawn.

Asked how long it took for a "malignant and irreversible cell change" mentioned to take place, the research department of the Cancer Society said "It all depends on the individual—some right away—some a period of years."

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GENERAL SCIENCE

APS Elects 25 Members

► THE AMERICAN PHILOSOPHICAL Society announced election of 25 new members, 19 residents of the United States and six foreign residents, for distinguished activities in their fields. The announcement was made at the society's annual meeting in Philadelphia.

Dr. Henry Allen Moe was reelected president of the society, which was established in 1727 for the promotion of useful knowledge.

The new resident members are:

Class I—mathematical and physical sciences. Felix Bloch, physics, Stanford University; Leland J. Haworth, nuclear physics, National Science Foundation; John W. Milnor, mathematics, Princeton University; Walter H. Munk, geophysics, Institute of Geophysics and Planetary Physics, University of California, La Jolla.

Class II—geological and biological sciences. Hallowell Davis, physiology, Washington University Medical School; Heinrich Klüver, biology and psychology, University of Chicago; Ernst Mayr, ornithology, Harvard University; James Van Gundy Neel, genetics, University of Michigan.

Class III—social sciences. Abram Bergson, economics, Harvard University; Walter Gellhorn, law, Columbia University; Philip M. Hauser, sociology, University of Chicago; Davis M. Potter, history, Stanford University.

Class IV—humanities. Germaine Brée, philology, University of Wisconsin; Richard Krautheimer, history of art, New York

University; Stephan G. Kuttner, history, Yale University; Rodney S. Young, archaeology, University of Pennsylvania.

Foreign resident members elected are:

Aage Bohr, physics, University of Copenhagen, Denmark; Raymond W. Firth, anthropology, University of London; Hitoshi Kihara, genetics, National Institute of Genetics and Kihara Research Institute; Hon. Sir Steven Runciman, history, London; Baron Alexander Robertus Todd, chemistry, Cambridge University; Sir Solly Zuckerman, anatomy, University of Birmingham.

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TECHNOLOGY

Man Is Developing Machine That Thinks

► MAN IS ANOTHER step closer to creating a machine that thinks, the U.S. Air Force claims. Developed by the Research and Technology Division of the Systems Command, this machine learns by its own mistakes and is being incorporated into a "self-organizing flight controller"

Only a rudimentary demonstration model has so far been built. Nevertheless, the Air Force maintains it has recreated the function of a nerve cell in a device, the Artron, or artificial neuron

Networks of Artrons make decisions and seek new ways to improve performance.

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Questions

ENGINEERING—What new technique is being used to study weather damage to bridges? p. 319.

ENTOMOLOGY—What tiny insect may be imported to control the fire ant? p. 318.

GEOPHYSICS—What is a possible cause of the bright celestial objects called quasars? p. 310.

MEDICINE—How long can blood be safely stored just above freezing temperature? p. 313.

NUTRITION—Why can some people live to old age on inadequate diets while others are vulnerable to disease on the same diets? p. 312.

PHYSIOLOGY—How can the body survive when an "oxygen debt" is incurred? p. 311.

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