

News of Science

Cigarettes and Cancer

A new study by scientists at the National Cancer Institute shows that the entire cigarette-smoking population of the United States appears to be subject to the same high risk of lung cancer which was found in earlier studies of selected groups of smokers and nonsmokers. This conclusion is reached by William Haenszel, head of the biometry section, and Michael B. Shimkin, chief of the biometry and epidemiology branch, National Cancer Institute. Their report, *Smoking Patterns and Epidemiology of Lung Cancer in the United States: Are They Compatible?* appeared in the June issue of the *Journal of the National Cancer Institute*.

This study represents the first attempt to test the consistency of data derived from a number of studies relating to the risk of smokers developing lung cancer, smoking habits of Americans, and the general distribution of lung cancer in the population. In general, consistency was noted.

The male-to-female ratio of lung cancer deaths, now 5 to 1, represents the highest sex ratio known for any major disease. The adjustment for smoking history brought the sex ratio for lung cancer into line with those observed for other causes of death. The authors further indicated that if smoking is, in fact, a cause of lung cancer, the following two trends should prevail: the rate of deaths from lung cancer for females will rise by 1965, in accordance with the trend to smoking at earlier ages among women; and the increasing rate of deaths from lung cancer for males will slow down by 1965.

Adjustment for different smoking patterns in rural and urban populations accounted for only a part of the urban-rural differences in lung cancer mortality. In the opinion of the authors, this urban-rural discrepancy represents a real finding and is a manifestation of multiple environmental factors in lung cancer.

Data from the Census Bureau survey, taken in February 1955, show a definite trend toward cigarette smoking at earlier ages among males. About 61 percent of men aged 25-34 had smoked cigarettes regularly by age 21, while only 41 per-

cent of the 55-64 age group had taken up regular smoking at that age.

The survey data also show that only a few women were smoking cigarettes regularly before 1930. In the 25-34 age group, 29 percent were regular smokers by 21, while only 2 percent of the 55-64 age group reported to have smoked regularly at that age. All sources of data used in the study agree that lung cancer incidence and deaths are higher in urban than in rural areas, particularly for males.

British and American Engineering Research

Government support of engineering research in American universities is about 100 times that given by Great Britain to British universities. When Donald F. Galloway, research director of the Production Engineering Research Association of Great Britain, delivered the Calvin W. Rice lecture at the recent semiannual meeting of the American Society of Mechanical Engineers, he said: "The total expenditure by the British government and industry on engineering research in the universities probably does not exceed \$700,000 per annum, compared with over \$70 million by the United States government." He added that the estimated total expenditure for research and development in the United States last year was about \$5 billion, compared with about \$700 million in Great Britain, and that research work employs about 500,000 persons in the United States and about 60,000 in Great Britain.

NSF Expands Soviet Translation Program

The National Science Foundation has announced expansion of its program for the translation into English of Soviet research literature. A grant of \$76,500 for this purpose has been awarded to the American Institute of Physics. The expanded program will include the *Zhurnal Tekhnicheskoi Fiziki* (*Journal of Technical Physics*), *Akusticheskii Zhurnal* (*Acoustics Journal*), and physics articles from the *Doklady Akademii Nauk SSSR*

(*Proceedings of the USSR Academy of Sciences*). First issues of the translated journals will appear this summer.

Subscription prices for the new journals are as follows: *Journal of Technical Physics*, approximately 4000 pages per year, \$90; *Acoustics Journal*, approximately 500 pages per year, \$20; *Proceedings of the USSR Academy of Sciences* (physics articles only), approximately 900 pages per year, \$25.

The foundation and the American Institute of Physics have already successfully collaborated in the publication of *Soviet Physics—JETP*, a bimonthly translation of *Zhurnal Eksperimentalnoi i Teoreticheskoi Fiziki* (*Journal of Experimental and Theoretical Physics*), six issues of which have now appeared.

In addition to the program in physics, NSF is supporting translations of Soviet papers in mathematics and biology; and plans for 1957 include the earth sciences and the engineering sciences. The American Mathematical Society publishes about 1000 pages annually of Soviet work under the title, *American Mathematical Society Translations*.

The foundation has just awarded a small grant to *Biological Abstracts* for the translation and publication of abstracts from the Soviet journal, *Referativnyi Zhurnal: Biologiya* will be translated by Consultants Bureau, Inc., of New York and reprinted in *Biological Abstracts*. The abstracts will be drawn from 31 primary journals covering a wide range in the field of biology.

Free Neutrino Found

Evidence for the existence of the free neutrino has been collected by Frederick Reines and Clyde Cowan, Jr., of the Los Alamos Scientific Laboratory, which is operated for the U.S. Atomic Energy Commission by the University of California. The existence of the free neutrino, a particle without charge and with vanishingly small mass, was postulated more than 20 years ago by Nobel laureates Enrico Fermi and Wolfgang Pauli in order to account for the disappearance of energy from the radioactive process known as beta decay.

In a statement of congratulations for the discovery, Willard F. Libby, commissioner and acting chairman of the AEC, said: "Detection of the neutrino by scientists at Los Alamos Scientific Laboratory and the Savannah River Plant of the U.S. Atomic Energy Commission is of great importance to nuclear research. The Commission congratulates the scientific team . . . on its magnificent accomplishment. . . ."

"One of the greatest mysteries facing scientists today is the nature of the 'glue'