

## PUBLIC HEALTH

# Inadequate Dye Research

Special committee of National Academy of Sciences—National Research Council charges that public is endangered because Government research on coal tar colors is inadequate.

► SEVEN SCIENTISTS have charged that the Government's research program on coal-tar dyes used to color food, drugs and cosmetics is inadequate and constitutes a danger to the public.

Pointing out that certain dyes certified as "harmless and suitable for use" have been found to be poisonous, the scientists urged the research program not only be continued, but stepped up and expanded. They said that, under present conditions, it would take 25 years to test all the dyes.

The scientists, a special committee of the National Academy of Sciences-National Research Council, issued their findings of the Food and Drug Administration's research on coal-tar dyes in a 17-page report.

The report points out that modern scientific research is turning up facts about coal-tar dyes that were unknown factors when the compounds were first listed in 1939 and 1940. Some have proved to be toxic to animals, others have proved to be cancer-causing in laboratory tests.

The report notes that a total of 116 dyes are certifiable under the Food, Drug and Cosmetic Act for various uses. Only 15 of the 19 certifiable for food use, for example, have been studied by the FDA to some extent since 1945. Of the 116, 101 have not been intensively studied.

"These studies have disclosed," the report says, "that several of these dyes are distinctly toxic when fed to rats at levels as low as 0.25% of an otherwise standard diet. On the basis of available information, only five dyes have not manifested some deleterious effects on experimental animals."

The problem of cancer and chemical compounds is treated widely in the report. The scientists state it has been impossible to say that a particular compound will produce cancer in human beings.

However, they report, "it has been found that agents such as some dyes and certain crude coal-tar derivatives are capable of inducing similar types of cancer in human beings and laboratory animals.

"In the absence of a better guide it is usually assumed that compounds capable of producing cancer in animals are potentially dangerous to human beings.

"The demonstration that laboratory animals may develop cancer after being exposed to the action of some dyes is an important observation, and should not be ignored in evaluating the safety of the dye for human use. However, innumerable variables, including species differences, site and manner of administration of an agent, nutritional status of the test animals, action of co-carcinogens, and other factors

may determine the effectiveness of an agent in inducing cancer."

The committee explains that, although it would encourage more investigations of possible cancer-causing effects of coal-tar dyes, "it is not of the opinion that there are large numbers of dyes on which such investigations are of sufficient urgency that this work should be permitted to displace unduly other important or equally urgent research."

Coloring material from natural sources should also be tested and evaluated as to possible toxic effect on the public, the committee urged.

In conclusion, the committee said that it "feels compelled to indicate that certification of a compound as 'harmless and suitable for use' in food, drugs, and cosmetics as required under the present law is un-

realistic unless the level of use is specified."

"In practice," the report states, "it is possible to certify many useful compounds only on the assumption that they will be used in customary concentrations. However, a manufacturer might assume that he may safely incorporate in his product any quantity of a certified dye. FDA will be handicapped in setting up a sound research program designed to determine the safety of colors for human use and consumption so long as it is denied authority under the law to specify levels of use."

The committee consisted of Drs. William J. Darby, chairman, head of the department of biochemistry at Vanderbilt University School of Medicine; Carl A. Baumann, professor of biochemistry at the University of Wisconsin; Charles E. Dunlap, professor of pathology at Tulane University School of Medicine; Charles J. Kensler, head, biology laboratories, Arthur D. Little, Inc., and lecturer in pharmacology at Harvard University Medical School; Wilbur H. Kretlow, vice-president and head of color division, Wm. J. Stange Company; Robert S. Long, manager, dyes research, research division, American Cyanamid Company; and Henry F. Smyth Jr., administrative fellow, Mellon Institute of Industrial Research.

Science News Letter, July 28, 1956



**SCATTER PROPAGATION STUDIES**—Useful amounts of microwave energy can be transmitted beyond the horizon by the method of scatter propagation. Shown here beneath the 60-foot antenna built by Bell Telephone Laboratories for research on the nature of this future communication technique are (left to right) W. C. Jakes Jr., H. T. Friis and M. B. Crawford. Built of aluminum, the solid surface of the antenna is a paraboloid accurate to about three-sixteenths of an inch.