

strictive legislation against cigarettes may come, the journal warns, unless the industry undertakes voluntary policing restriction.

The A. M. A. JOURNAL, like many other medical publications, carries cigarette advertising. This brings in about a dozen protests per year from physicians. On the health aspects of cigarette smoking, the journal says the following:

"Actual surveys indicate that the majority of physicians themselves smoke cigarettes. Extensive scientific studies have proved that smoking in moderation by those for whom tobacco is not specifically contraindicated

does not appreciably shorten life. Post-mortem examinations do not reveal lesions in any number of cases that could be definitely traced to the smoking of cigarettes. From a psychologic point of view, in all probability more can be said in behalf of smoking as a form of escape from tension than against it. Several scientific works have been published that have assembled the evidence for and against smoking, and there does not seem to be any preponderance of evidence that would indicate the abolition of the use of tobacco as a substance contrary to the public health."

Science News Letter, November 6, 1948

DENTISTRY

Mouthwash Cuts Decay

➤ A MOUTHWASH has been devised by a Philadelphia dentist that has reduced dental decay on an average of 75% in a group of his patients.

Formula for this caries-preventive is: 40 grams of sodium alkyl aryl sulfonate, a synthetic detergent; 80 grams of carbamide or urea; one-eighth of an ounce of flavoring; and one grain of color to one gallon of pure water.

Dr. David J. Goodfriend, in a report to the JOURNAL OF THE AMERICAN DENTAL ASSOCIATION (Nov. 1), states that the mouthwash cleans the teeth and penetrates between them where food particles may be lodged, prevents the formation of decay-producing acid in carbohydrate food particles and neutralizes acids that may be formed.

For the home care of the mouth and teeth he recommends that a mouthful of the mouthwash be swished around and between the teeth for one minute after eating and after toothbrushing.

The mouthwash stops bleeding in addition to its preventive action. Dr. Goodfriend points out this is an aid to dental surgical procedures.

"In a manner which I do not understand," he states, "it will stop bleeding without soiling or contaminating the field

as most hemostatic agents do. Held in the mouth for three to five minutes after tooth extraction, it usually completely controls bleeding and leaves an uninjured wound full of clotted blood. Sprayed on bleeding gingivae (gums) during scaling or cavity preparation, it controls the bleeding and cleans the operative field."

Dr. Goodfriend discovered the effectiveness of his mouthwash after treating 186 of his patients who were especially susceptible to tooth decay. They had abnormalities of bite which required that fixed bite overlays be placed on the teeth for from six months to two years. This device collected many particles of food which encouraged dental decay.

For contrast, Dr. Goodfriend compared the 186 patients receiving the mouthwash with a group treated for the same condition without the mouthwash. In the first group the incidence of caries was reduced by 55% to 95%. "In the control group there was such a high incidence of caries that it interfered with treatment of the bite and frequently caused the loss of teeth," he points out.

This work was done under the auspices of the Edward C. Kirk Research Fund of the University of Pennsylvania.

Science News Letter, November 6, 1948

METEOROLOGY

Rain-Making with Fire

See Front Cover

➤ SILVER IODIDE smoke particles, created by fire in special burners, give promise as tools for artificial snow and rain makers. In this they may replace dry ice and other substances successfully used during the past year.

Artificial snow-making by the dry-ice method is actually two years old but was first a laboratory process. Later snow was made in super-cooled clouds high above the earth by distributing in them finely-divided

solidified carbon dioxide particles from an airplane. The particles become the nuclei of snowflakes.

The experiment has been tried out several times during the past year in various parts of the United States and under various weather conditions. A degree of success was achieved. Other materials besides dry ice have been tried but this is probably the first time that fire has been employed to generate smoke for snow-making.

The dry-ice method of making artificial snow is credited to Dr. Vincent J. Schaefer,

SCIENCE AT WAR

By J. G. CROWTHER

Chairman, Association of British
Science Writers

and

R. WHIDDINGTON

Head, Dept. of Physics,
University of Leeds

THE first detailed account of science's contribution to the war effort, based on the official archives and documents assembled by the Scientific Advisory Committee to the British Cabinet. Because of the close and intimate collaboration between the American and British forces during World War II, this volume is of fundamental interest to the American scientist, as well as to the intelligent layman interested in science.

Although the use of science as an aid to war is a perversion from its proper purposes, we may find reassurance in recognizing that much of the discovery and invention which came to hand in response to the recent war demands will find immediate and beneficent uses in peace.

Among the basic topics dealt with in this book are: *Radar, The Atomic Bomb, Operational Research, Science and the Sea, Submarine Detecting, Under Sea Observations, The Magnetic Mine, Underwater Explosions, War Diving, etc.*

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General Electric scientist. The silver iodide technique is the work of Dr. Bernard Vonnegut, shown on the cover of this week's SCIENCE NEWS LETTER, also of General Electric. His generators for the smoke particles have been laboratory tested thus far, but they are expected to undergo extensive experimentation in actual weather conditions in the near future. The air tests will be made by the U. S. Army Signal Corps and the Office of Naval Research.

Among the silver iodide smoke generators developed are two charcoal-burning units, one for use on the ground and one for use on a plane, and a hydrogen-burning

unit. The charcoal burners use a special charcoal impregnated with silver iodide and emit thousands of sparks, each of which produces millions of silver iodide particles.

The ground-based hydrogen burner is described as similar to an ordinary paint sprayer, except that hydrogen is used instead of compressed air and a spray solution of silver iodide and sodium iodide in acetone is substituted for the paint. When the hydrogen is ignited, the flame vaporizes the silver iodide spray. This vapor condenses into minute silver iodide particles, which stream out into the atmosphere.

Science News Letter, November 6, 1948

GENERAL SCIENCE

Young Scientists Wanted

► MORE THAN 50 industrial scientists are joining in a statewide search for science-talented boys and girls in Virginia. The industrial scientists will go directly to high schools in the state to find seniors who show promise of becoming scientists and give them first-hand encouragement and assistance.

Dr. Frank C. Vilbrandt, head of the department of chemical engineering at the Virginia Polytechnic Institute in Blacksburg, Va., announced that prominent scientists may be secured as speakers for school assemblies or science club meetings from such industrial firms as Newport News Shipbuilding and Dry Dock Company, Virginia-Carolina Chemical Corporation, Merck & Company, Inc., American Viscose Company, Norfolk and Western Railway Company and from the laboratories of Virginia Polytechnic Institute, Hollins College and the University of Virginia.

This latest innovation in locating science talent is part of a long-range program of the Virginia Academy of Science which is conducting a Virginia Science Talent Search for the fourth consecutive year. The dozens of able boys and girls, thereby located and given financial assistance to further their education in science, have aroused the interest of many colleges, universities and industries in the state. Other companies and institutions which will supply speakers will be announced later.

Boys and girls still in high school can now hear up-to-the-minute information about such subjects as atomic energy, insects, penicillin, photosynthesis, ultrasonics, genetics or fiber photomicrography. Many of the speakers will use slides, films or demonstrations. For students who want vocational guidance their principal may request a speaker to explain "How to Select a Scientific Profession," "What Industry Expects of a Chemist" or "Job Possibilities for Scientists in Virginia."

Dr. Sidney Negus, president of the Virginia Academy of Science, declared, "Finding and helping the boys and girls with science talent is the most important work of our Academy." Dr. Negus is one of the originators of the State Science Talent Search plan tried first in Virginia and now being copied by 15 other states.

All state Searches run concurrently with the Eighth Annual Science Talent Search for the Westinghouse Science Scholarships by special arrangement with Science Clubs of America, administered by Science Service. The closing date for entries in the state and National Science Talent Searches is Dec. 27, 1948.

Science News Letter, November 6, 1948

MEDICINE

"Sound-Conditioned" Cats Aid Treatment of Disease

► "SOUND-CONDITIONED" monkeys and cats may help toward better treatment for Meniere's disease.

This condition is characterized by attacks of violent dizziness, which are often disabling, and gradual loss of hearing with noise or ringing in the ear. Medical treatment is often tried for this condition. It can be cured by an operation in which the vestibular branch of the hearing nerve within the skull is divided. This branch of the nerve carries impulses of equilibrium from the semicircular canals within the ear. After this operation, the dizzy attacks are banished and the hearing may be defi-

nately better but it is not always completely restored.

A simpler operation is one in which the electrocautery is used to destroy parts of the semicircular canals. This, however, destroys hearing in most cases. With the aid of the sound-conditioned animals, Dr. John R. Lindsay of the University of Chicago is now trying to refine this operation to the point where hearing can be saved but the canals destroyed to banish the dizzy spells. He described his studies to the American Academy of Ophthalmology and Otolaryngology meeting in Chicago.

The animal is trained, or conditioned, to associate each of a series of pure tones with an event such as a puff of wind that ruffles its fur or a mild electric shock that causes it to lift a paw. When the conditioning is complete, an operation is performed like that intended for human ears. The sound-conditioned animal then can tell the surgeon how much hearing, and for what tones, has been saved.

Science News Letter, November 6, 1948

MEDICINE

Vitamin B₁₂ Promising in Anemia Complication

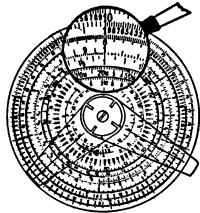
► HOPE that a vitamin may remedy the spinal cord complication of pernicious anemia appears in results of research by Drs. Tom Spies and Robert E. Stone of Northwestern University Medical School, Chicago.

The vitamin, B₁₂, has been recently isolated and is still hard to obtain. The amount available is so small that complete evaluation of its effectiveness cannot yet be made and the studies are still going on.

So far Drs. Spies and Stone have been able to treat only seven patients with it. But in all seven symptoms improved and some of the abnormal physical findings were reversed.

The condition for which this vitamin shows promise is known medically as subacute combined degeneration of the spinal cord. Symptoms include great pain, tingling and numbness of feet, legs, fingers and arms, and finally paralysis. No other chemical substance has ever given relief from it.

Science News Letter, November 6, 1948



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