

## MEDICINE

# Public Must Aid Doctors

In order to solve the problem of the shortage of professional personnel, full support of government and the man on the street is needed.

► **FEDERAL**, state and municipal governments, private philanthropists and the man in the street must all chip in to solve our most urgent medical and health problem, the shortage of professional personnel, Dr. Leonard A. Scheele, Surgeon General of the U. S. Public Health Service, declared at the meeting of the Medical Society of the District of Columbia in Washington.

"The total problem of medical education is so vast," he said, "that we should not expect it to be solved with less than active support from all sources."

Medical students of the future will again receive part of their training in the patient's home, as they did when they served their apprenticeships with the old family doctors, Dr. William S. McCann, of the University of Rochester School of Medicine and Dentistry, predicted at the same meeting.

This is part of the major change in trend of medical education toward emphasis on the emotional and sociological phases of sickness.

A change in the rules for postgraduate training set by specialty boards which certify doctors as competent to practice as experts in a special field of medicine must also come, Dr. McCann believes, as part of the evolution of medicine. Without such change he sees the downfall of the boards which have in the past done much to raise the level of competence in the specialties.

The current plans of the U. S. Public Health Service, Dr. Scheele stated, follow

three major trends which were established before World War II and have been extended during the postwar period. These are: 1. expansion of research in medical and related sciences; 2. rapid development of public health programs to accomplish specific purposes, such as tuberculosis control or control of degenerative and other chronic diseases; 3. expansion of Federal support for these activities, primarily through aid to state agencies, public and private non-profit institutions, and individual professional men and women.

"The recent emphasis on cancer, cardiovascular diseases and mental health are logical developments in public health," he said.

A continuous rise in death rates from these diseases has accompanied the aging of the population, he pointed out. For the past 15 years there has also been an increasing volume of mental disease and psychic maladjustment.

"As yet," he said, "we have done very little to deal with the major problems of adults or to change these mortality trends. All of the new medical knowledge and skills have added only two and a half years to the life expectancy of the 40-year-olds. The major steps in public health during the next few years must be toward prevention and control of degenerative and other chronic diseases, including mental disease."

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from the new method for getting rid of insect stowaways, aside from sparing passengers the discomfort of the aerosol-mist fumigation at the end of a transoceanic ride. It will not only stop, much more effectively than the aerosol mist, any unintentional international traffic in insects, but will also kill insects stealing interstate rides, which is now done ineffectually or not at all.

A minor benefit will be the elimination of the occasional bees, yellowjackets and wasps that now make air passengers uneasy by their buzzing buttings against plane windows.

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## MYCOLOGY

## Fungus Growths Found To Damage Paint Surfaces

► **PAINTS** and certain types of plastic surfaces can be damaged and made unsightly by the growth of a widely distributed mold to which little attention has hitherto been paid. Inroads of this fungus, which is known by the deceptively melodious name of *Pullularia*, have been studied in Miami by Dr. Ernest Shaw Reynolds, industrial plant physiologist.

*Pullularia* spots were first noticed on a series of painted test panels, exposed to determine the resistance of various kinds of paint to fungus attack and to weather conditions generally. They were black, like soot spots, but would not brush off. On microscopic examination, they proved to be made up largely of dark spore masses. This color characteristic may have been responsible for its name, which is from a Latin word meaning dusky.

Dr. Reynolds grew cultures from spores in the laboratory, and tested the fungus under controlled conditions. It proved ready to attack paints and one type of plastic coating, and was much less discouraged by fungicidal chemicals than several other common types of mold.

A search of the botanical literature showed that *Pullularia* has been found all over the world, from flax-processing establishments in New Zealand to paper mills in Finland. It has been found associated with diseased conditions in certain warm-climate fruit trees, though it has not been definitely found guilty of causing the diseases. Its newly discovered role as attacker of paints must now be taken into account.

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## ENGINEERING-AERONAUTICS

## Greater Plane Range Seen From New Type of Engine

► **LONGER RANGES** and more power for future planes are predicted from the announcement of a new combination aircraft engine.

The new engine combines a reciprocating engine with three turbines. It is ex-

## ENTOMOLOGY

# DDT Coatings in Planes

► **INSECTS** hitch-hiking in airplanes will be "taken for a ride" in the sinister sense if experiments now being conducted by the U. S. Department of Agriculture work out as well as they promise.

Instead of subjecting the interior of the plane (including the passengers) to a fuming with an aerosol bomb on landing, as at present, the idea is to spray everything with an invisibly fine but lasting film of a deadly DDT-pyrethrum combination that will knock down and kill any insect alighting on it. Laboratory tests have been satisfactory, and field tests are now in progress on several airplanes.

As in the ordinary household aerosol bomb, the pyrethrum is counted on to score a quick knockdown, followed by slower but surer death from the DDT. The tests so far conducted have shown that the

solution used will remain effective for eight months or more under laboratory conditions. Shorter useful life under ordinary operating conditions is expected. The solution is applied either as a spray or an aerosol.

In one test described by P. N. Annand, of the Bureau of Entomology and Plant Quarantine, a plane full of Army officers (considerately forewarned) had loosed upon them an assorted lot of flies, mosquitoes, grasshoppers, plantbugs and Mexican bean beetles. Life in the plane was far from dull—for about two minutes, during which the insects contacted the poisoned walls. At the end of three minutes, the six-legged fellow-travellers were all on their backs, waving their legs. At the end of a half-hour they were all dead.

Considerable advantages are expected

pected to give 20% more range on the same fuel than conventional engines. It is manufactured by the Wright Aeronautical Corporation, a division of the Curtiss-Wright Corporation. Wright engineers said that the new engine is the most powerful of its kind in the world.

A \$32,000,000 contract from the Navy was announced for construction of the new Wright Turbo Cyclone 18 Compound engine plus standard plane engines.

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#### CHEMISTRY

## Hydrogen and Helium Have Same Atomic Weight

► **HEAVYWEIGHT HYDROGEN** and lightweight helium are the newest research materials available to scientists from atomic energy piles.

Both the varieties of the two elements have the same atomic weight, three. Ordinary hydrogen, the lightest known chemical element, has an atomic weight of one, while helium, second lightest element, is commonly four.

Called tritium, hydrogen three is the only radioactive form of the element. It can be combined with oxygen to form heavy heavy-water, a different compound than the better known heavy-water.

Helium three is not radioactive and is extremely rare. There is about one-millionth as much helium three in nature as there is of the familiar helium atoms.

Both the new materials are produced at the U. S. Atomic Energy Commission's Argonne National Laboratory in Chicago.

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#### GENERAL SCIENCE

## Iceberg "Census" Taken From Coast Guard Plane

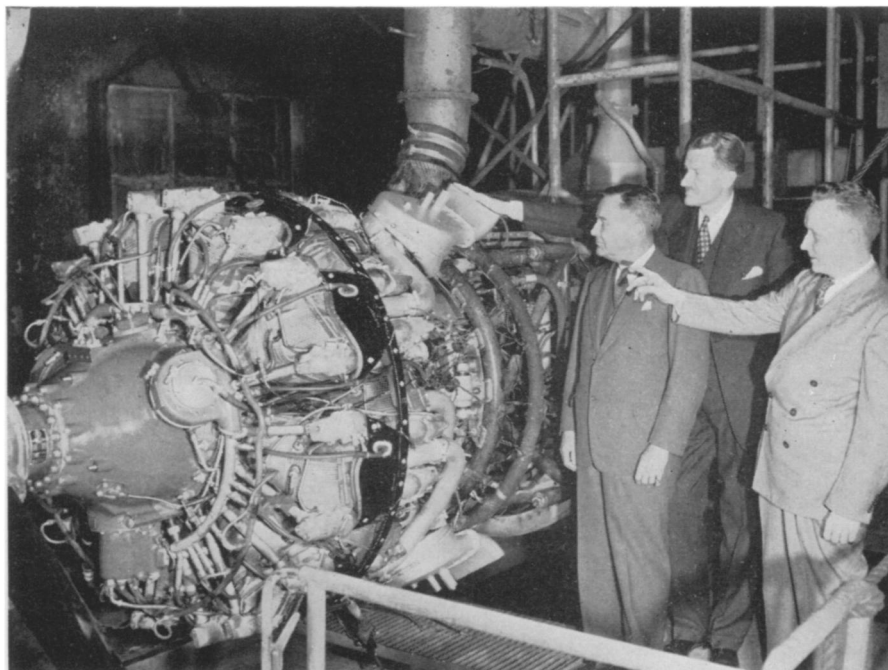
See Front Cover

► **THE ANNUAL ICEBERG "census"** was made from the air for the first time this year, the U. S. Coast Guard said.

The census is the post-season survey of icebergs, made as the last phase of the International Service of Ice Observation. By counting the thousands of icebergs, scientists can predict the number that may invade shipping paths during the next three years.

A Coast Guard converted B-17 plane was used to make a photographic survey, shown on the cover of this week's SCIENCE NEWS LETTER, of the many icebergs in the Baffin Bay area, source of the icebergs which move southward to menace North Atlantic shipping. With this more accurate record of the Baffin bergs, Coast Guard officials hope to be able to get more accurate predictions of iceberg activity. This will help provide more protection to ships in coming seasons.

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**COMBINATION AIRCRAFT ENGINE**—It combines a reciprocating engine with three turbines and is credited with being the most powerful aircraft engine of its type in the world. Three officials of the Wright Corporation are shown inspecting the new engine.

#### MEDICINE

## Penicillin Fights Colds

Inhalation of the antibiotic in dust form has proved beneficial in patients with bad colds and more serious diseases of the breathing tract.

► **GOOD RESULTS** in treating common colds, chronic sinusitis and other, more serious diseases of the breathing tract with inhalations of penicillin dust are reported by three Chicago physicians in the JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION (Oct. 2).

The physicians are Dr. Louis Krasno of the University of Illinois Medical School and Drs. Mary Karp and Paul S. Rhoads of Northwestern University Medical School.

Common colds were "considered cured" in 42% of the 169 patients treated, with 38% judged as three plus improved. Stiffness and congestion of the nose often improved immediately after treatment and sometimes the pain of an acutely sore throat was lessened within one-half to one hour after treatment.

Greatest merit of the treatment, the doctors believe, is in bronchitis and bronchiectasis. Twelve of the 38 patients with bronchiectasis were considered much improved and another 17 moderately improved.

The inhalations of penicillin dust were given one to three times daily, three to six

minutes usually being required to inhale the amount used. Patients were not allowed to eat or drink for one hour after each inhalation, to avoid washing the penicillin dust from the back of the throat. A mask over nose and mouth was used at first, but later patients were given the inhalations through a plastic mouth inhaler. This keeps the penicillin dust from coming in contact with the skin of the face and thus reduces the possibility of allergic reactions. These occurred in only three to six percent of 357 patients.

Treatments can be given at home and in the doctor's office as well as in the hospital. This permits the patient to "go about his business without loss of time and with minimum expense," the doctors report, adding that before the use of this treatment many patients with chronic lung disease were not given adequate treatment because of the expense of prolonged hospital stay and equipment.

A total of 517 patients have now been given the penicillin dust inhalation treatment.

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