

MEDICINE

New Chemical Better Than Adrenalin for Asthma

► A NEW chemical, said to be better for acute asthmatic attacks than epinephrine, or adrenalin as it is also known, is reported by Dr. M. L. Tainter, of the Winthrop Chemical Company, and Dr. W. M. Cameron, Dr. L. J. Whitsell and Dr. M. M. Hartman, of Stanford University School of Medicine, (*Journal of Pharmacology and Experimental Therapeutics*.)

Ethyl-norsuprarenin is the name of the new chemical. It is a colorless, odorless, crystalline powder with a bitter taste chemically described as 1-(3, 4-dihydroxyphenyl)-2-amino-1-butanol. It may be injected under the skin, into the muscles or into the veins. It takes effect in from one to five minutes, the effect lasting 20 minutes to one hour. Fewer reactions such as pain over the heart, nausea, vomiting and nervousness were observed in the same patients when this drug's effect was compared with that of epinephrine.

Science News Letter, November 4, 1944

SAFETY

Reflecting Pavements Promote Driving Safety

► REFLECTING pavements that send back to the driver more of the light from the headlights of an automobile driven at night promote night-driving safety both to the driver and to pedestrians on the streets. This conclusion has been reached by Dr. Eugene C. Bingham of Lafayette College, who during the past few years has experimented with such reflecting pavings. He took his idea from the reflecting white cement curbs successfully used in many states.

Ordinary pavement ahead of the driver lights up poorly, he explains, because it has a comparatively smooth surface that reflects the light onward, to become a glare troublesome to approaching cars. Very little is reflected back to the driver, but it is this reflected light that makes the paving visible.

In his studies Dr. Bingham found that the light beam striking the pavement some 300 feet ahead of the car does so at an angle of roughly one-half of one degree and the small amount of the light reflected back has only one-hundredth of its original intensity. A controlled means of creating backward reflection and at the same time maintaining the same satisfactory driving sur-

face is what is needed, he states.

Dr. Bingham's proposal, based on his experiments at the college, is a driving surface made up of a series of bricks laid on a level, solid foundation, each brick being tilted up at an angle of one-half a degree, with the exposed edge bright in color, hardened and enameled. The light will graze the sloping surface but will be reflected back from the protruding edges. This will enable the driver to see a large area of pavement.

If the surface has its reflecting edges less than one-half inch wide and the bricks are properly arranged, it is possible to keep the tires of the car resting continually on the ends of the long, sloping planes and thus avoid the possibility of vibration and hum, Dr. Bingham finds.

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GENERAL SCIENCE

National Academy Resumes Its Scientific Sessions

► THE NATIONAL Academy of Sciences is resuming scientific sessions with its autumn meeting this year to be held Nov. 15 and 16. Since Pearl Harbor only brief business sessions at spring and fall meetings have been held by this top scientific body.

Science at war will be the subject of the scientific sessions with leading authorities speaking. The papers will deal with metallurgy, geology, the weather, aviation medicine, nutrition, materials, penicillin, and shock.

The public will be admitted again to the scientific sessions, which will be held in the U. S. National Museum auditorium instead of the hall of the National Academy which has during the war been cut up into temporary offices.

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HORTICULTURE

Cold-Resisting Apples For U. S. S. R. Farmers

► SEVERAL new hardy apple varieties, specially bred for resistance to Russia's winter cold, will be recommended to collective farmers in the U. S. S. R. These hybrids, which excel all existing Russian varieties in flavor, aroma and heavy yield, were developed by Dr. S. Chernenko, who directs the plant selection department of the Michurin Central Genetics Laboratory. Production of the new apple sorts is reported by the Soviet Scientists Anti-Fascist Committee.

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IN SCIENCE

MEDICINE

Anthrax in Mice Helped By Penicillin Treatment

► ANTHRAX, for which no completely satisfactory treatment has yet been developed, may yield to penicillin, it appears from a report by Dr. F. R. Heilman and Dr. W. E. Herrell of the Mayo Clinic.

In trials with mice, they found that slightly more than half the animals treated with penicillin could be protected against 10,000 times the lethal dose of anthrax germs even when treatment was not started until 16 hours after the mice had been inoculated with the germs. In other trials, starting treatment within an hour and inoculating fewer germs, all the treated mice survived and all the untreated ones died.

Anthrax, which humans get from hair, hides, bristles and wool of infected animals, has apparently decreased in incidence and fatality in recent years. It is still, however, an important disease problem in certain regions. Antiserum, arsenicals and sulfa drugs have proved of some value in its treatment but their use still leaves something to be desired, the Mayo doctors state.

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ENGINEERING

Talc Used As Lining For Fireboxes in Boilers

► TALC AS a firebox lining in boilers and locomotives is being used instead of the customary firebrick in the Soviet Union. It is found to withstand a temperature of 1700 degrees Centigrade, which is higher than the usual temperatures under such boilers. Talc is soft and easily worked, so that bricks cut from it may be given any shape. It heats more rapidly than firebrick, and cools more slowly, resulting in a 25% economy in fuel.

The proposal to use talc for firebox linings originated here with Prof. Pevzner, winner of a Stalin prize. Russia has extensive deposits of suitable talc. It is less difficult to make than conventional firebrick. It is pronounced by industrial concerns in the U.S.S.R. as a cheap and economical substitute.

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CE FIELDS

MEDICINE

Gum Arabic Helpful in Kidney Disease Treatment

► A TREATMENT for kidney disease with dropsy which "restores many of the patients to work and eases the suffering of those who are bedfast, though it does not cure the disease," is reported by Dr. Raymond E. Smalley and Dr. Melvin W. Binger, of the Mayo Clinic, (*Journal, American Medical Association*, Oct. 28).

The treatment consists essentially in a diet containing little or no salt, a limited amount of fluid and an increased amount of protein food; three times daily doses of potassium nitrate, and, when kidney function is good, injection into the vein of a solution of gum arabic, or acacia.

Following up 109 patients given this treatment between 1937 and 1943, the Mayo doctors found that 72 were alive and 25 dead. On 12 no information was obtainable.

Of the 72 living patients, 49 were doing a full day's "substantial" work as business executives, stenographers, farmers, housewives and students. One woman was teaching school in addition to caring for her house and family. Two were slightly handicapped, 19 were working at least half a day, and two were bed patients. One of these was a man 74 years old.

No harmful effect of the acacia was found. How it acts is not certain but it does, the doctors report, facilitate excretion of salt and water, thus helping to relieve the dropsy.

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PUBLIC HEALTH

Scrub Typhus Kills Doctor In Hunt for Vaccine

► LATEST martyr to science, whose name might well appear on the rolls of dead heroes of this war, was Dr. Richard G. Henderson, senior assistant surgeon, U. S. Public Health Service, who died at the Naval Hospital in Washington on October 20.

Tsutsugamushi disease, also called scrub typhus, killed Dr. Henderson as he was working on the development of a vaccine to protect American fighting forces from this plague of the Pacific.

How he contracted the disease is a mystery. Ordinarily it is spread by mites, but there are no mites at the National Institute of Health where Dr. Henderson was working. Nor was there any laboratory accident to account for his getting the infection. The 32-year-old scientist started working on the disease three months ago, at the request of the military authorities.

Scrub typhus is caused by germs belonging to the rickettsia family to which also belong the germs of typhus fever and Rocky Mountain spotted fever. A rash, enlarged glands and lung inflammation like pneumonia are the chief symptoms. Dr. Henderson died of the pneumonia of the disease. No specific treatment or "cure" is known for scrub typhus. It is fatal in about seven per cent of the cases.

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AERONAUTICS

Latin Americans Receive Aviation Training by CAA

► CONTINUING its "good neighbor" policy of stimulating interest in aviation in neighboring American republics, the Civil Aeronautics Administration, in cooperation with the State Department, recently announced that applications are now being received for 128 aviation training scholarships in 19 Latin American countries under the CAA's fourth Inter-American training program.

These scholarships, financed by the State Department, entitle successful candidates to one year of training in the United States at CAA selected schools. Provision has been made under the present program to train 19 pilots, 37 mechanics, 35 communications technicians and traffic control workers, and 37 others who will receive on-the-job training in other aviation activities.

Examinations will be given on Dec. 1, and selection of successful candidates will be made by committees in each of the 19 countries. Training will begin in the United States about two months later.

To date more than 650 persons from other republics have been trained, or are now completing training, through the CAA program. In their respective countries, these trainees will play an important role in aviation development.

In Brazil and Mexico, representatives of the CAA are already at work assisting the governments of those two countries in organizing and carrying out civilian flight training programs.

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MEDICINE

Radium Successful for Treating Aviator's Ear

► RADIUM treatment for aviator's ear is enabling men grounded because of the condition to fly again, it appears from a report by Maj. E. P. Fowler, Jr., of the U. S. Army Medical Corps (*Journal of Laryngology and Otology*).

Aviator's ear, technically termed aëro-otitis media, is an inflammation of the middle ear caused by the pressure changes between the middle ear cavity and the surrounding atmosphere.

Men most susceptible to repeated attacks of this painful and sometimes deafening condition, Major Fowler found, were those who had bands of overdeveloped lymphoid tissue, like tonsil and adenoid tissue, back of the nose near the opening of the Eustachian tubes to the ears. Although the amount of such tissue in the flyers was not large, it seemed to be enough to clog their Eustachian tubes if they flew at high altitudes or engaged in dive bombing.

In civilian practice in New York City, Major Fowler had used radium to shrink down excessive lymphoid tissue about the Eustachian tubes of children. Partial obstruction of these tubes by the tissue is believed to cause progressive deafness.

The same kind of treatment has been given with good results to more than a hundred men of the air force and ground force at a U. S. Army general hospital in England. It takes three treatments before the condition improves. Treatments are given every three to six weeks up to four or more treatments.

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METEOROLOGY

Grapefruit Suffered Most In Florida Hurricane

► HURRICANE damage to the Florida citrus crop, as estimated by U. S. Weather Bureau observers in the field, was most severe in the grapefruit orchards, where 12 to 15 million boxes, representing 35% to 45% of the crop, were lost. Oranges suffered losses of four to six million boxes, or 10% to 15% of the total crop; early oranges were damaged more than late varieties. Relatively little permanent harm was done to the trees.

Outside of the coastal storm zone, the country continued to enjoy almost perfect harvest-season weather, with mild, sunny days and increasingly frosty nights. Corn picking, however, is greatly delayed because of the abnormally wet ears.

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