

MEDICINE

Getting 'Flu Depends on Normal Mucous Secretions

➤ **WHETHER** or not a person gets influenza when it is going the rounds seems to depend in part at least on substances in the normal mucous secretions of his nose, throat and breathing tract generally.

One of these substances can check the infection-causing ability of the PR8 strain of influenza virus. Another of these substances can increase the ability of this 'flu virus to cause infection when injected into mice.

Enough of the first substance may keep up resistance to influenza, while too much of the second substance may make a person more susceptible to the virus.

Discovery of these two substances and a third one with little or no effect on the infectious property of the virus was announced by Dr. Harry M. Rose of the College of Physicians and Surgeons, Columbia University, at the meeting of the Federation of American Societies for Experimental Biology.

Science News Letter, April 29, 1950

ENTOMOLOGY

Grasshopper Menace Great This Year

➤ **SPOTTED** in red, blue and yellow across 20 states on a map released by the Department of Agriculture are the areas where grasshoppers are expected to hit hardest in 1950.

Favorable summer weather last year for grasshoppers, followed by a mild winter, makes crop and rangeland damage almost a certainty, the Department's division of grasshopper control in Denver indicates.

Heaviest grasshopper belt will be midway across the continent, in a giant V from Texas north to Montana on the west and Minnesota to the east. From that line west to the Pacific, the Department warns, every state will have isolated areas where grasshoppers will be a menace.

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AGRICULTURE

Plant Corn at Normal Time, Beat Pesky Corn Borer

➤ **FARMERS** can best beat the corn borer by planting their corn in the normal spring sowing season, researchers at the Iowa State College Agricultural Experiment Station report.

Drs. G. F. Sprague, J. H. Lilly and David Rubis, studying effects of planting dates on corn yields, looked also to see how planting time might influence damage by the stalk-shredding, ear-munching European corn borer.

"Don't plant first. Don't be last," they

advise in the journal, *IOWA FARM SCIENCE*. The pesky borer produces two major flights of moths in the spring.

Corn planted very early will be just high enough to be attractive to the first squadrons, looking for stalks on which to lay their eggs. Late-planted corn will be prime targets for the second invasion of pregnant moths.

Of course, planting could be delayed until after the second borer flight. But that would cut final yields more than would damage by borers, the scientists say.

"There is no special planting date that is a cure-all," their report concludes.

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CHEMISTRY

Chemicals Fight Fungus, Save Money, Add to Yield

➤ **EFFECTIVE** fungus-fighting chemicals that promise to increase America's fruit and vegetable crops and save millions of dollars annually were described to the American Chemical Society in Philadelphia by Dr. Wendell H. Tisdale of Du Pont's Grasselli Chemicals Department, Wilmington, Del.

The fungicide compounds, which are derivatives of dithiocarbamic acid widely used in the rubber industry, can protect corn, peanuts, onions, cherries, cranberries, apples, as well as lawns.

These organic sulfur compounds, on which Du Pont laboratories have worked since 1931, compare in fighting mildews, rusts, smuts, blights, scab and rots of plants with DDT and its relatives in the insecticide field.

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METALLURGY

New Alloy, Principally Zinc, Is Strong as Brass

➤ **A NEW** alloy, principally of zinc, has approximately the same strength and electrical characteristics as brass, Dr. R. H. Harrington, General Electric scientist, revealed in Schenectady. It has, he said, about eight times the useful strength of any zinc alloy now in use.

Small quantities of copper and beryllium are added to the zinc in the new alloy. The resulting metal has a springy, resilient quality. It is suitable for use in lamp and socket fuses, panels, containers, mild springs and other forms of hardware. It is cheaper than brass, but is claimed to be a good substitute in certain applications.

The development of this alloy means wider uses for zinc in engineering and construction. Zinc ores are widely distributed throughout the world and over 1,500,000 tons of the metal are produced each year.

Its principal job now is as a protective coating on steel sheets and wire in the galvanizing industry.

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IN SCIENCE

PSYCHOLOGY

Baby's Consonants Show Development of Speech

➤ **YOU** can be more proud when your baby utters "B-b-b-b," "G-g-g-g" or gurgles other consonants than you are of his "Oo's," "Ah's" and other vowels.

Addition of new consonants to the baby's repertoire shows his development toward talking better than increase in vowel sounds, Dr. Regina Molloy Fisichelli, of Fordham University, reported to the meeting of the Eastern Psychological Association in Worcester, Mass.

Best sign of speech development is the ratio of consonant sounds to vowel sounds, Dr. Fisichelli found in a study of 20 babies, in institutions, of each of the following age levels: six months, nine months, one year, 15 months and 18 months.

Babies at home develop more rapidly in this before-talking speech than do the babies in institutions, she observed.

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MEDICINE

Nerve Gas Victims Need Rapid Treatment

➤ **THE** effect of military "nerve gases" cannot be reversed. The victim of such a gas must be treated within the first three minutes if he is to be saved.

This is one of the few bits of information which the Army Chemical Corps has declassified about these gases. It was not mentioned by Maj. Gen. Anthony C. McAuliffe, chief of the Chemical Corps, in his speech before the American Chemical Society in Detroit.

Other bits of information that have been declassified suggest that these gases do more than "destroy the enemy's will to resist."

A chemical which the Army calls "an example of a nerve gas" is DFP, short for diisopropyl fluorophosphate. When it turned out that this was not successful as a war gas, much information about it was declassified. DFP affects nerves, and has psychological effects. But in large doses it also kills. It is fast-acting and highly toxic, although small doses can be used in treating certain diseases. Some of the newer insecticides, newer than DDT, were also probably candidates for a military role as nerve gases in the early stages of their development and testing. These chemicals also are poisonous.

All this suggests that the new, still secret nerve gases may be lethal as well as will-destroying. How they are used may be what determines whether they put the enemy out of action or destroy him.

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E FIELDS

MEDICINE

Platelet Masses May Be Basis Fatal Blood Clots

➤ WHITE masses of platelets in the blood stream may be the basis of the sometimes fatal blood clots after surgical operations or injury, Dr. Brenton R. Lutz, Dr. George P. Fulton and Mr. Robert P. Akers of Boston University reported at the meeting of the Federation of American Societies for Experimental Biology.

Platelets are normal constituents of the blood.

Discovery of the platelet masses developing after various kinds of injury was made in studies on blood circulation in hamsters. Color motion pictures with high power microscopes and light were used to record the building up, channelling and breaking down of the platelets and their passage through the lungs and heart.

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MEDICINE

Find Best Kind of Digitalis for Heart

➤ BEST digitalis preparation for the usual treatment of patients with congestive heart failure is amorphous gitalin, five doctors from New York University College of Medicine reported at the meeting of the Federation of American Societies for Experimental Biology.

Gitalin is a mixture of chemicals obtained from an aqueous extract of the foxglove plant, or digitalis purpurea as botanists term it.

Its great advantage over other digitalis preparations seems to be that it is not so toxic and patients who get sick from other digitalis preparations can go on taking this one.

The studies comparing gitalin with other digitalis preparations were reported by Drs. R. C. Batterman, A. C. DeGraff, L. B. Gutner, O. A. Rose and J. Lhowe.

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ASTRONOMY

New Star Bursts Forth

➤ WITH an energy outpouring of more than a million suns a gigantic "new star" explosion has burst forth in the southern heavens. The nova was picked up among the million stars of the southern galaxy through use of the Schmidt reflector at Tonanzintla National Astrophysical Observatory in Mexico, which is equipped

with the largest prism in the world, one of 26 inches.

It takes over 2 million years for light from this nova to reach the earth.

News of the discovery was telegraphed to the Harvard Observatory, clearing house for astronomical information.

Sr. Guillermo Haro found that the new object was magnitude 14 when photographed March 15 and 20.

The report from Director Luis E. Erro, of the Mexican observatory showed that the nova is in galaxy number 83 in Messier's catalog and that it is nearly 30 degrees south of the celestial equator in the constellation Hydra on the border of Centaurus.

The nova just discovered is of intermediate intensity. Ordinary novae are about a twentieth as bright, while the supernovae, only about 40 of which are known, average a hundred times brighter.

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ASTRONOMY

Very Faint Periodic Comet Rediscovered

➤ REDISCOVERY of a periodic comet, in just the place it was predicted, was announced by Harvard Observatory.

Of the seventeenth magnitude, far too faint to be seen by the naked eye, the comet returns every 6.7 years. It was rediscovered on April 14 by Dr. G. Van Biesbroeck of McDonald Observatory in Texas. The faint object revolves between Mars and Jupiter, getting a little closer to the sun than Mars.

D'Arrest periodic comet, as it is known, will make its closest approach to the sun on June 6, coming to within 128,000,000 miles of the sun. On July 3, it will come to within 113,000,000 miles of the earth.

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AERONAUTICS-MEDICINE

Counter-Pressure Suits May Treat Circulation

➤ ANTI-G suits, or counter-pressure clothing, developed for aviators during the war, may prove useful in treating blood circulation diseases such as Buerger's disease.

Studies suggesting this were reported by Drs. J. P. Henry, O. H. Gauer and E. E. Martin of the Aero Medical Laboratory, Wright-Patterson Air Force Base, Dayton, Ohio, at the meeting of the Federation of American Societies for Experimental Biology.

The rhythmic inflation of the clothing increases the blood pressure in the veins of the feet to a greater extent when a person is seated than walking about. Increased pressure in the veins helps drive the blood from the feet and legs back to the heart, thus aiding circulation.

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ARCHAEOLOGY

Roman Statues Work Of Greek Artists

➤ STATUES portraying great personalities of ancient Rome were actually made by Greek artists, Dr. Gisela M. A. Richter of the Metropolitan Museum of Art, New York, told the American Philosophical Society meeting in Philadelphia.

Heads are portraits of Roman individuals but the bodies were copied from idealistic Greek creations of the 5th to 2nd century B. C. The Roman statues are the concluding chapter in a long Greek tradition.

Progress in science is determined by events in the brains of its great men, but these brains depend upon the times in which they live for their effective productivity, Dr. Edwin G. Boring, Harvard University psychologist, declared.

The process of creative thinking involves insight and error, leading to insight and success. Dr. Boring likened this process to the trial, error and success of a rat in a psychologist's maze.

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PLANT PATHOLOGY

Incurable Virus Destroys Elms

➤ A DEADLY, incurable virus disease is destroying thousands of American elm trees in the Midwest. At least 15 states from West Virginia to Nebraska have the infection, states Dr. J. C. Carter, plant pathologist with the Illinois Natural History Survey.

Known as Phloem necrosis, the disease cannot be cured by any known method. No diseased tree has ever been known to recover.

Dr. Carter tells of Illinois cities and towns losing 300 to 400, or even more elm trees each year after the disease made its appearance. Springfield, Ill., held a community-wide "Dead Tree Day" last fall to remove elms killed by the virus.

The infection usually exists in a tree for a full year or more before symptoms appear, Dr. Carter said. After the first signs appear, however, the tree will die within days or weeks.

The U.S. Department of Agriculture in 1947 pinned transmission of the disease on one of the small insects known as leaf hoppers. This hopper apparently picks up the virus while sucking sap from infected elm leaves.

Thus science's only present hope for checking Phloem necrosis is control of the leaf hopper, Dr. Carter said. Special DDT sprays have been found effective by the Department of Agriculture. They must be blasted on the trees in large amounts and at high pressures to reach the insects on the undersides of leaves.

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