

TEXTILES

Soldier Can Be Wet But Warm in Certain Fabrics

► **WET BUT WARM** is a possibility for a soldier exposed in rainy cold weather if dressed in a fabric with a high wool content and the fabric is constructed so that as little of it as possible is in touch with the skin. The National Bureau of Standards has just concluded studies which not only confirm general experiences with wet clothing, but also emphasize the superiority of fabric construction that minimizes the area in contact with the body.

In the tests, various wet wool fabrics were laid on an artificial skin surface, and measurements were made of the extent of contact and of the drop in temperature of the artificial skin. Fabrics that made good contact with the surface produced considerable chilling in the skin; those that made poor contact because of the roughness of the weave caused only a relatively small drop in the temperature. Fabrics with a high percentage of wool caused less drop in temperature than those with lower wool content.

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MEDICINE

Rockefeller Foundation Was Angel of Penicillin

► **THE ROCKEFELLER** Foundation was the financial angel for the early stages of development of penicillin and blood albumin, substitute for blood plasma, it appears from the annual report of Raymond B. Fosdick, president of the Foundation.

A grant in aid of \$1,280 made in 1936 to Prof. H. W. Florey, of Oxford University, enabled that scientist to develop the chemical laboratory in which pioneer work on the clinical use of penicillin was done. Two further grants of \$5,000 each were made in 1939 and 1940 directly for the work with penicillin and it was a special travel grant from the Foundation which brought Prof. Florey and his associate, Dr. N. C. Heatley, to the United States in 1941 to confer with scientists on the possibilities of large-scale production of the germ-fighting mold chemical.

Blood albumin transfusion units, each taking less than one-sixth the space and about one-seventh the weight of a plasma transfusion unit, are now under commercial production at seven plants under Navy contract. Development of this

life-saving aid for our armed forces came from Harvard Medical School's laboratory of physical chemistry under the direction of Dr. Edwin J. Cohn. Rockefeller Foundation contributions to the laboratory, totalling some \$200,000, were started in 1930 when its work on the physical-chemical properties of large protein molecules seemed far from any practical application.

This same laboratory's program of "mining" human blood for materials that can be used to treat or prevent illness has led to development of concentrates of measles antibodies. These were used with beneficial results in prevention and treatment of the disease in epidemics last winter in Philadelphia, Baltimore and Boston.

Blood "mining" has also produced films, plastics and foams used in neurosurgical operations, to control hemorrhages and for other purposes.

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AGRICULTURE

Insect-Collecting Machine Can Be Run on Tractor

► **FARM** crop-destroying insects may soon find themselves blasted from the plants on which they feed or rest, and blown by the blast of air into a container for destruction. This will be done by an insect collecting machine, designed for mounting on the front of a farm tractor. Patent 2,346,270 on this device was granted to Alexander R. Nisbet, Plainview, Texas.

The machine consists of a rotary bellows attached in its housing to the front of the tractor and operated by a fan belt from the tractor's drive wheel. The blast of air is directed downward through a conduit with two opposite curved ends out of which the air is expelled to the right and the left against the rows of plants on each side.

Opposite the air-blast openings, and on the outside of the plants, are enlarged receiving conduits into which the insects are blown and moved upward into bag containers which hold them but permit the air to escape. These conduits also support the plants from breaking in the blast.

The frame composed of the air-blast conduit and the collecting conduits is adjustable telescopically so that insect collections may be made at any height from the ground. The machine is particularly effective with potato and cotton crops, it is claimed.

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IN SCIEN

PSYCHOLOGY

Custard Pie Humor Recommended for Navy

► **CUSTARD PIE** humor and other laugh-producing techniques of movie comedies may serve a serious purpose in relaxing war-strained nerves of Uncle Sam's sailors on ships at sea and distant advance bases if the Navy follows the recommendation of Lt. J. E. Baurenschmidt, USNR, speaking before the Society of Motion Picture Engineers in New York City.

Training films will be more effective, Lt. Baurenschmidt believes, if humor of all possible types is used in the films to get a laugh. The best teaching, he said, is done in a relaxed atmosphere, and humor is one of the most effective methods of creating a relaxed atmosphere.

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FORESTRY

Lumber From Empress Tree May Become Important

► **THE PAULOWNIA**, or Empress tree, long grown in America as an ornamental, is now attracting the attention of lumbermen who see in its fairly strong, light-weight lumber a material suitable for crating and boxing articles to be shipped by airplane. It is now common in much of the eastern half of the United States as far north as New York.

Paulownia wood, used commercially in Japan for 30 years, is fairly coarse in grain, glues well, resists warping to a remarkable degree, and has considerable strength for its weight. A cubic foot weighs from 14 to 19 pounds, about twice as much as balsa and one-half as much as white pine. Its physical properties have not yet been thoroughly tested in the laboratory as far as known.

The use of Paulownia lumber commercially is advocated in *American Forests* by Joseph L. Stearns of the National Lumber Manufacturers Association. He reviews its use in America for ornamental purposes since first imported from Japan in 1834, and some of its possible commercial uses in the United States.

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CE FIELDS

AERONAUTICS

Airplane Has Real Teeth For Slashing Enemy Craft

► **TEETH**, merely painted on the shark-like noses of some present-day fighter planes, become real and capable of inflicting deadly bites in an invention on which patent No. 2,346,689 has been issued to a soldier-civilian team of aircraft designers, Gen. Robert Kauch of the Army Air Force and Charles L. Paulus of Wright Field, Dayton, Ohio.

The idea is simple but wicked: the forward edges of the wings, and possibly parts of the side of the fuselage, are armed with sawtoothed strips of metal, so that when a swift fighter swoops onto the tail or other exposed part of an enemy plane the toothed edge will bite right through, sending the luckless enemy spinning down to a crash.

Rights to the patent are granted, royalty-free, to the government.

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MEDICINE

\$2,000 Mayer Award Given Scientists in Chile

► **DISCOVERY** that certain hormones and synthetic chemicals may become weapons for fighting tumors of the uterus which develop in women during the child-bearing period has won the second \$2,000 Charles L. Mayer Award for Dr. Alexander Lipschutz, director of the department of experimental medicine of the Chilean National Health Service at Santiago, Chile.

Formal presentation of the award was made April 24 in Washington, D. C., at the meeting of the National Academy of Sciences which administers the award through its National Science Fund, Dr. William J. Robbins, chairman of the fund, and director of the New York Botanical Garden, has announced.

Dr. Lipschutz was born in Riga, Latvia. During the last six years he and the Chilean scientists working in his laboratory have studied the fibromyomas of the uterus which can be induced in guinea pigs by the injection of certain sex hormones of the female. The growths closely resemble the fibromyomas ("fibroids") which occur in women during the child-bearing

period, and Dr. Lipschutz has shown that like these they dwindle and vanish when the stimulation of the sex hormones is withdrawn, as happens after the menopause in women. He and his associates have sought means to prevent the occurrence and enlargement of the growths while the hormones are still acting and recently they have found that some other hormones, from other organs, have this effect, as do also certain substances synthesized by chemists. The molecular configurations responsible for the influence of the anti-fibromatic agents are now under investigation.

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CHEMISTRY

South Carolina Chemist To Receive Herty Medal

► **PRESENTATION** of the Herty Medal to Dr. James Edward Mills, chief chemist of the Sonoco Products Company, Hartsville, S. C., will be made at the Georgia State College for Women on May 6.

This medal, named after the late Charles H. Herty, known for his production of paper from Southern pine, is awarded annually to the scientist making an outstanding scientific contribution to the South.

Dr. Mills has applied chemistry to various phases of Southern industry.

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RESEARCH

Heart Disease Research Aided in Mexico

► **WITH MODERN** equipment and a large new building, Mexico's new National Institute of Cardiology has inaugurated its research program upon the problem of heart disease, an important cause of death.

President Manuel Avila Camacho, in connection with the dedication, announced that the Mexican government would make possible many other similar institutions for research in other fields of science.

Close coordination of the Mexican investigational program with research in the United States was promised by Dr. Ignacio Chavez, director of the Institute. Dr. Paul D. White, Harvard University cardiologist, and Dr. Agustin Castellanos of Havana joined in plans for such cooperation by medical scientists from the various American republics.

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ANTHROPOLOGY

Navajo Sand Paintings Copied for Preservation

► **SYMBOLIC** pictures, for centuries painted by Navajo medicine men in the sand, have only recently been copied for preservation.

Most ancient type of painting practiced by the Southwestern Indians, the symbols of sand painting, because of their association with religious observances and health cures, have been kept as secret as possible and have rarely been seen by white men until the present century.

Reproductions of sand paintings, made by staff members of the Museum of Navajo Ceremonial Art in Santa Fe, N. M., and now on exhibit at the Southwest Museum in Los Angeles are painted in the five sacred colors of Navajo mythology—white, blue, yellow, black and red—and represent in conventional forms various supernatural beings, divine ceremonies and objects of nature.

Originals were created by pouring pigments derived from powdered sandstone, charcoal and plant materials on the sand-covered floor of the ceremonial hut.

When the picture was completed, the patient was seated on the painting and given an infusion of the colors to drink, while sacred chants were being sung.

The rites over, the medicine man destroyed the picture, and the sand of which it was made was gathered in blankets and thrown away.

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CHEMISTRY

Researcher in Magnesium And Styrene Gets Medal

► **DISCOVERING** how to make enough magnesium to produce thousands of warplanes and sufficient styrene to supply our needs for synthetic rubber has won the 1944 Gold Medal Award of the American Institute of Chemists for Dr. Williard Henry Dow, president of the Dow Chemical Company of Midland, Mich.

One of the foremost leaders of research in this country, Dr. Dow's vision has opened new avenues of chemical development and inspired young chemists to greater endeavors. The coveted Gold Medal will be presented at the Institute's annual meeting, May 13, in New York.

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