

CHEMISTRY

All-Wool Suits For Hot Weather

► ALL-WOOL suits for hot weather, and warmer winter wool suits of lighter weight than present clothing, are predicted by use of a new textile chemical which also controls shrinkage and gives long-lived creases in the trousers. The chemical, a development of the Monsanto Chemical Company in St. Louis, held shrinkage to less than 2% after five washings of a treated wool shirt in soap and water.

Wool yarn, treated with the chemical which will be known as Resloom, is capable of imparting "extreme coolness" to woolen textiles because it stabilizes the wool fiber so that it can be woven into an extremely thin yet highly serviceable fabric, the company claims. At the same time, it imparts smoothness and flatness to the cloth, instead of the hill-and-valley contours of ordinary woolen weaves. A year may elapse before the new wool suits are on the market.

The same stabilizing influences will enable wool processors to make winter suits of lighter weight and greater strength, it is stated. This will involve increasing the thickness dimension of the cloth and decreasing the amount of wool actually used without sacrificing strength, style and serviceability.

Resloom is a melamine-formaldehyde resin used to impregnate the tiny hollows of individual fibers, imparting shrinkage control, stability, wrinkle resistance, and crease retention. It can be applied on existing mill equipment. It can also be used with rayon and cotton. To them, it gives a superior finish and, a company scientist states, "makes possible a dress which does not bulge in the wrong places after it has been worn a few times."

Science News Letter, March 16, 1946

ENGINEERING

Peat Processing Machine Perfected in Sweden

► A PEAT PROCESSING machine, perfected in Sweden where considerable peat is used as fuel, is reported by the U. S. Department of Commerce (*Foreign Commerce Weekly*, Feb. 9). The machine produces hard tubular sections of compressed peat. They do not absorb water, and remain dry so that they can be transported, stored and burned without crumbling. The peat tubes can be handled like coke.

The machine, weighing one ton, is easily portable and is used adjacent to the peat beds. The wet peat is pulped to a uniform mixture. The machine presses the pulp through a nozzle which forms it into tubular sections which are air-dried for two weeks. The moisture content is then about 20%, and the peat ready to be used as fuel. Further storage under roof reduces the moisture content to about 15%.

These peat tubes, prepared at a reasonable cost, burn well because of the air circulating through and around them. They burn, also, without the detrimental formation of tars, and without waste through the grates due to crumbling.

Science News Letter, March 16, 1946

ETHNOLOGY

Study of Ancient People Who Fought "Nazis" Honored

► FOR HIS study of an ancient people who successfully fought off the Nazis of their time, Boris Piotrovsky has been awarded the Stalin Prize.

Mr. Piotrovsky's book, *The History and Culture of Urartu*, summarizes many years of work by Soviet historians and philologists on an ancient civilization in the territory of modern Armenia about the thirteenth century B.C.

The Land of Urartu, a powerful kingdom of more than 30 centuries ago, was an important civilization in the Trans-Caucasus area, and the prize-winning book relates the successful struggle of the people of Urartu against the Assyrians who tried to dominate the civilizations of the ancient world.

Science News Letter, March 16, 1946

CHEMISTRY

Three Plants to Produce Anhydrous Ammonia

► THREE PLANTS that produced anhydrous ammonia for Army Ordnance use during the war have been turned to civilian production of the critical material, needed for fertilizer manufacture, the War Department has announced.

Army Ordnance plants in Ohio, Kansas and Arkansas will supply 4,000 tons of anhydrous ammonia per month for fertilizer production to help relieve the shortage.

It was also reported that Army Ordnance has sold an excess supply of 35,000 tons of anhydrous ammonia through the Office of Defense Supplies since V-J day.

Science News Letter, March 16, 1946

IN SCIEN

MEDICINE

Ice Bag on Arm Used In Penicillin Injections

► A NEW METHOD of giving penicillin, with an ice bag on the arm for two hours before the injection, is reported by Lt. Comdr. Max Trumper and Comdr. Gershom J. Thompson, of the National Naval Medical Center, Bethesda, Md. (*Journal, American Medical Association*, Mar. 9).

The object of the ice bag is to chill the tissues and slow blood circulation so that the penicillin will be absorbed more slowly and its action will be prolonged.

Patients will be pleased with this method of giving penicillin because it makes the injection, or "shot", painless, and reduces the number of times the penicillin must be given. In uncomplicated gonorrhea, in which the new method was tried, the penicillin was all given in one dose, instead of in four or more as has been customary.

The cure rate, 91%, when 100,000 units of penicillin was given in the single dose, compares favorably, the Navy doctors report, with the cure rate when penicillin is given by other schedules or in mixtures of beeswax and peanut oil to delay absorption.

Science News Letter, March 16, 1946

ENGINEERING

Jordan Valley Development Planned by Engineer

► JORDAN river water, to redeem the desert land along much of the river's course, flows closer to realization of a vision of modern prophets with the departure for Palestine of John Lucian Savage, who made the plans for Boulder and Grand Coulee dams, and more recently outlined an ambitious project for taming China's terrible Yangtse river and putting its waters to useful work.

Mr. Savage, until recently chief designing engineer for the U. S. Bureau of Reclamation and now on loan to the State Department, will appear before the Anglo-American Commission in Jerusalem, to discuss the technical details of a plan for developing the water resources in the Holy Land, to produce power as well as to irrigate arid lands in the Jordan valley.

Science News Letter, March 16, 1946

CE FIELDS

PHOTOGRAPHY

New Photographic Printing Papers Now Available

➤ NEW PHOTOGRAPHIC printing papers now available will save amateurs hours of wearisome waiting in the dark-room and enable professionals to do high-quality rush jobs.

The new papers shed water duck-fashion because the base is impregnated with an acetate which practically water-proofs it. Only one minute is needed for developing the prints, two minutes for fixing and four minutes for washing them. In a smooth, white finish, the papers are offered in both contact and projection printing types.

The papers were produced by the Research Laboratories of the Eastman Kodak Company to meet needs of the Army and Navy Air Forces. Because in addition to speed the Armed Forces demanded papers which would not stretch, shrink or swell, industrial and commercial photographers now have paper which can be used for exacting copy and reproduction work.

Science News Letter, March 16, 1946

ENGINEERING

Paper Houses May Help Solve Housing Problem

➤ PAPER HOMES may help solve the nation's tremendous demand for low-cost permanent houses that can be built in a short time.

Recent experiments by the Consolidated Water Power and Paper Company, of Wisconsin Rapids, Wis., have resulted in a paper plastic building material known as Consoweld, which is said to be stronger and more fire-resistant than wood and more enduring in some respects than steel, although it is comparable in weight to aluminum.

A sample three-room cottage, built almost entirely of this material, has been set up for tests. Except for a simple concrete foundation, the entire building was carried to its location on a single truck, including walls, ceilings, partitions, stove, sink, icebox, oil heater and plumbing fixtures, and was set up in a small fraction of the time needed to build a three-room cottage of conventional type.

The firm has also designed a "pack-

aged bathroom," complete with walls and plumbing fixtures, which may enable rural dwellers to acquire modern conveniences by simply ordering a complete bathroom which will come to them in one carton.

Consoweld consists of two thin panels of hard, compressed paper impregnated with resin and held apart by wood strips. The space between the panels is filled with a fuzzy gray corrugated paper core, which insulates and sound-proofs walls and doors.

Officials of the company state that they are not in a hurry to place their new product on the market, because they want to be certain that it is "just right" when they do. They are in the process of establishing specifications, they say, and these are not yet available for publication.

Science News Letter, March 16, 1946

AERONAUTICS

Hydraulic Catapults Used To Launch Carrier Planes

➤ HYDRAULIC catapults on the flat decks of aircraft carriers enabled American planes to get into the air faster than the enemy's aircraft, the Navy has revealed.

One of the Navy's most carefully guarded war secrets, the hydraulic catapult system launched planes from flat decks with more speed and under less favorable wind conditions than the more cumbersome equipment previously used.

The hydraulic catapult permitted the operation of 40% more planes by carriers, made night take-offs safe, allowed carrier forces to carry on full scale operations at sea for extended periods and made our carrier force the most potent in the world, the Navy said.

Used in the aircraft carrier war in the Pacific and by escort carriers in the anti-submarine patrol of the Atlantic, the hydraulic catapult allowed planes to be launched with other planes in position on the flight deck. This spotting of planes made possible take-offs at an average time interval of 30 seconds aboard escort carriers with much smaller flight decks than the larger units had.

The secret of how our large carriers operated for long periods at sea was hidden in the hydraulic catapults aboard the CVE's (carrier escorts). By using the catapults, these smaller ships were able to carry twice as many replacement planes to the fleet carriers as they could have otherwise.

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AERONAUTICS

Combination Gas Turbine Engine for Transports

➤ COMBINATION gas turbine engines that drive conventional propellers and also furnish jet-propulsion will power new transport planes under order by the United States Air Lines with the Glenn L. Martin Company. These new coast-to-coast airliners, which will be ready for use during 1947, will have a top speed of around 385 miles an hour and a cruising speed of 365 miles, it is expected.

The engine to be used is a General Electric turbine. It burns kerosene or other low-cost fuel instead of the high-octane gasoline used in conventional engines in present airliners. In addition, these engines have narrower nacelles than conventional engines, thus decreasing the air resistance. Fuel consumption of the combination engine will be approximately one mile per gallon, as against one and one-half miles per gallon with conventional engines, but the speed will be much greater, thus making fuel cost substantially lower.

Science News Letter, March 16, 1946

AERONAUTICS

Door Cracks in Planes Literally Frozen Shut

➤ AIRPLANES of the probably near future, that will cruise the thin, cold air of the stratosphere, will need something to make a tight seal around doors and other necessary openings, so that the precious pressurized, warmed air in their cabins will not leak out. The idea of Warren A. Custer of Newton, Pa., is literally to freeze such cracks shut with a substance that is liquid at ordinary ground-level cold temperatures but that freezes at the 67 degrees below zero Fahrenheit encountered at high-level cruising altitudes. On this he has been granted U. S. patent 2,395,852.

While the patent covers any substance that will accomplish this end, the one which Mr. Custer concretely proposes is based on a mixture of dibutyl phthalate and wet nitro-cotton, to which other ingredients may be added if desired. An oily liquid at ordinary temperatures, it solidifies in subzero cold, clinging tightly to the solid surfaces to which it has been applied. When it is frozen it behaves like thick grease or wax, with a certain amount of "give," instead of being rigid and brittle like ice.

Science News Letter, March 16, 1946