PUBLIC SAFETY

Body Armor Would Save Civilian Life in War

➤ BODY ARMOR which has proved itself on the battlefields in Korea should be issued to civilians in the event of another war, Lieut. Col. Robert H. Holmes, Maj. William F. Enos Jr. and Capt. James C. Beyer of the Armed Forces Institute of Pathology, Washington, suggest in a report to the *Journal of the American Medical Association* (Aug. 21).

The armor worn by our fighting men in Korea was made of nylon and Doron, a compressed Fiberglas. It "defeated" two out of every three missiles hitting it.

This does not necessarily mean a casualty or death was prevented, because of the probability of multiple wounds. But it does mean a reduction in the number of wounds any one of which could have been fatal or disabling.

Turning from the battlefield to problems of civilian defense, the Army officers state:

"The battlefield is no longer confined, and the spector of atom-bomb and H-bomb blasts on homeland cities is an accepted prospect. Injury from flying debris, such as masonry, metal, glass, etc., is of great importance after such blasts, and conceivably the use of body armor could lessen appreciably the staggering morbidity and mortality anticipated in such a mass civilian disaster."

Science News Letter, August 28, 1954

PHARMACOLOGY

Prescriptions Often Seem Mysterious

➤ MANY A person, taking a doctor's prescription to the drug store, has read it on the way and wondered how the druggist would ever decipher it. As one such perplexed person has said, "the doc writes with a chisel and the pharmacist is a student of Sanskrit."

However, the "hen scratches" on a prescription are no more confusing to the pharmacist than are the intricacies of a watch to a watchmaker, declares Dean Roy A. Bowers of the Rutgers College of Pharmacy at the State University of New Jersey.

"Pharmaceutical education stresses the reading of the difficult prescription," he says. "Textbooks, journals and actual photographs of the hard-to-read requests are used in course work."

Ill-written prescriptions, he explains, are usually the result of both haste and deliberation on the doctor's part.

"Doctor's frequently write hurriedly and, in many cases, may deliberately use Latin names and abbreviations to prevent the patient from resorting to self-medication that may be detrimental to health," Dean Bowers said in a recent report.

Confronted with this problem of "translation," the druggist can become a sleuth and seek clues such as quantities, directions, age and sex of patient, even the physician's handwriting. However, in such delicate, even life or death situations, these clues are flimsy ones to lean upon.

The prescription must be read quickly and accurately. And only training and experience provide unfailing accuracy.

Where does the pharmacist get his experience in prescription reading? Most of it comes in the college prescription laboratory and in course work dealing with both the old Latin-named chemicals and the latest trade-named pharmaceuticals.

In addition, the pharmacy student learns much in a year of internship under an experienced pharmacist. He may attend post-graduation seminars and read journals dealing with advances in his field. Thus he keeps up to date with the latest drugs and how each and every one affects the body.

Science News Letter, August 28, 1954

ENTOMOLOGY

Cotton Gin Holds Secret Of Killing Cotton Pest

➤ THE COTTON gin itself may hold the key to the destruction of the pink bollworm, the insect credited with being the world's most destructive cotton pest.

U. S. Department of Agriculture officials are investigating a new weapon in their battle against the cotton insect: modern cotton gins are somehow able to kill a high percentage of the bollworms during the ginning process.

Agriculture engineers and entomologists are bent on isolating the individual process or machine that destroys the pest. Their work, they hope, may help develop a simple, inexpensive machine or process for the destruction of the worms in gin trash.

Much of this valuable gin trash must now be burned because untreated trash, if used as fertilizer or soil conditioner, would spread the pink bollworm throughout more areas of the country.

In 1909, the pink bollworm caused such severe damage in the Hawaiian Islands that cotton production had to be abandoned. Cotton loss caused by the worm averages from 15% to 25% in India, Egypt and Brazil.

Science News Letter, August 28, 1954

GENERAL SCIENCE

AAAS Builds New Washington Home

See Front Cover

➤ THE WASHINGTON home of the American Association for the Advancement of Science in 1956 will be a full-scale version similar to the artist's model pictured on the cover of this week's SCIENCE NEWS LETTER, according to present plans.

The AAAS is now located at 1515 Massachusetts Ave., N.W. The new building will be erected at the same address, and will provide about three times as much office space as the present structure.

Science News Letter, August 28, 1954

IN SCIEN

INVENTION

Cement Coated Pills Cannot Be Chewed

➤ PATIENTS WHO prefer to chew a pill or capsule instead of swallowing it whole may have a hard time if the pills prescribed are made with the cement coating on which a patent has now been granted.

When given 18 coatings of portland cement, a tablet requires 24 to 33 pounds pressure to crush it with a hardness tester, say the inventors of the cement-coated pills, Richard H. Carroll of Old Chatham and Daniel J. Spadaro of Albany, N. Y.

Object of the cement coating is to keep out of the mouth medicines that might injure the lining of the mouth, such as internal antiseptic agents and digestive enzymes. Dyes used for diagnosis, for example gentian violet, which stain or discolor mouth or teeth, and substances with an unpleasant odor or taste could also be kept out of the mouth by the cement coating on the pills.

Once swallowed, the cement coating would resist action of the stomach juices for about 12 minutes and that of intestinal fluid for about 17 minutes, tests with artificial stomach and intestinal juices showed. The entire tablet distintegrated in the artificial stomach juice in 50 to 60 minutes and in the artificial intestinal iuice in 70 to 80 minutes.

The patent, No. 2,685,553, has been assigned by the inventors to Winthrop-Stearns Inc., pharmaceutical manufacturers of New York.

Science News Letter, August 28, 1954

HOME ECONOMICS

Dip Keeps Peeled Spuds Snowy White

➤ UNAPPETIZING, BROWNISH-GRAY potatoes sometimes seen in restaurants and institutions can be avoided in the future. The remedy is an inexpensive sodium bisulphite dip, Prof. Karla Longree of the College of Home Economics, Cornell University, Ithaca, N. Y., has discovered.

Home cooks keep their potatoes snowy white by putting the peeled spuds quickly into water. However, this method does not work for the machine-peeled potatoes.

A 30-second dip in a mixture of two tablespoons of sodium bisulphite in a gallon of water keeps the mechanically peeled potatoes from discoloration, Miss Longree found. After dipping, the potatoes are drained, covered with a cloth wrung out in the solution, and covered tightly until time for cooking. If they have to be held overnight, they are refrigerated.

Science News Letter, August 28, 1954

CE FIELDS

VITAL STATISTICS

1954 Death Rate Setting New Low

➤ THE YEAR 1954 seems on the way to setting a new record low death rate. The low rate of 650 deaths per 100,000 population has already been set for the first six months of the year among industrial policyholders of the Metropolitan Life Insurance Company, New York.

These insured persons constitute a broad cross section of wage earners and their families in the United States and Canada, and their mortality experience may be a reflection of that for the population generally.

Previous low mortality for the first six months of the year for the industrial policyholders was 667 per 100,000, set in 1950.

Deaths from heart, blood vessel and kidney diseases, although accounting for well over half the deaths in this insured group, dropped to 346.1 per 100,000 during the first six months of 1954, compared to 360.9 during the first half of 1953.

Cancer and allied conditions were the only major causes of death to show a rise in mortality during the first half of the year, increasing to 129.5 from a rate of 124.8 per 100,000 in 1953.

Science News Letter, August 28, 1954

PSYCHOLOGY

Paralysis, Amputation No Bar to Walking

➤ IF A person wants to walk badly enough, he can do it even with such handicaps as two artificial legs and paralysis.

Evidence for this comes in a report by Drs. Abraham O. Posniak, Charles Long II, Michael M. Dacso and Howard A. Rusk of New York to the *Journal of the American Medical Association* (Aug. 21).

As examples they cite:

1. The case of a little boy who, at the age of five, became paralyzed on the right side of the body and lost both legs below the knees because of gangrene. He also suffered loss of speech. But after three years of rehabilitation, he was able to walk on artificial legs without support, such as cane, crutch or someone's arm, had a fair gait and was almost independent in activities of daily living.

2. A 58-year-old man who was paralyzed on the right side and later had to have his right leg amputated in the middle of the thigh. Within a year and a half, he was able to walk even on rough surfaces on an artificial leg, using two Canadian canes, and could climb stairs.

3. A 66-year-old man who lost his left leg above the knee and then had two strokes that affected his right side and made it almost totally impossible for him to communicate by words. After training, he was able to walk with a single cane in his right hand and could get up and down stairs using a single hand rail and cane.

Desire to walk plus the cooperation, love and understanding of the family are essential to rehabilitation in such cases, the doctors state.

Very bad eyesight and a severe heart condition may prevent fitting an amputee with an artificial leg and training him to use it. Age, however, is no bar to such rehabilitation procedures.

Science News Letter, August 28, 1954

ECONOMICS

Engineers' Starting Pay Leveling Off in Illinois

➤ THE STARTING pay for young engineers leveled off this year at the Illinois Institute of Technology in Chicago, but college officials say this is an indication of "stabilization" in business rather than recession.

Average starting salary for engineers in June was $363 a month, merely one dollar more than the average last year. The average for last January's graduates, however, was $373.

Earl C. Kubicek, director of placement at Illinois Tech, said business leaders and educators have been wondering how long engineering salaries would continue to climb.

"Salaries this June indicate that the spiral may have reached a plateau," he said.

Electrical engineering graduates received the most lucrative starting salaries this June, averaging $390 a month. However, this also is a dollar less per month than June, 1953, electrical engineering graduates were offered. It is $23 more than the January, 1954, graduates received.

Science News Letter, August 28, 1954

AGRICULTURE

Pennsylvania Farmers Drain Their Land

➤ WHILE FARMERS throughout much of the U. S. fight drought with irrigation and prayers, Pennsylvania farmers continue installing about 1,000 miles of drainage tiles per year.

In many areas too swampy for farm machines, dynamite has blasted open ditches and made pasture out of wasteland. Crops are now grown successfully in areas in which the crops would formerly have rotted. Farmers have reported immediate yield increases of up to 100%.

Active interest in tiling started in 1947 in Pennsylvania, Roger Grout, extension agricultural engineer, reports from Pennsylvania State University, State College, Pa.

Since 1947, drainage work has proved so valuable that there are now 30 active ditching machines in the state.

Science News Letter, August 28, 1954

BIOCHEMISTRY

Filaments on Germs Are Anti-Cancer Clue

➤ FILAMENTS FORMED by the colon bacillus are giving scientists leads to possible anti-cancer chemicals.

This bacillus, or germ, is a normal and usually harmless inhabitant of the intestines. It forms filaments under the influence of chemicals now used in attempts to check cancer and leukemia, Drs. Richard E. Maxwell and Violet S. Nickel of Parke, Davis and Co. report in *Science* (Aug. 13).

Among these chemicals are the new antibiotic, azaserine, a nitrogen mustard and triethylenemelamine.

Gamma rays, used in radium treatment of cancer, have long been known to induce filament formation by the colon bacillus.

Filament formation, the scientists find, is not peculiar to anti-cancer agents. However, it can indicate a type of cell poisoning that may or may not be extended to cells in human bodies as well as the single celled colon bacillus.

"It is hoped," the scientists state, "that biochemical investigations in progress will make it possible to evaluate further the significance and possible utility of filament formation in the search for antineoplastic (anti-cancer) compounds."

Science News Letter, August 28, 1954

INVENTION

Airborne Lifeboat Receives Patent

➤ AN AIRBORNE lifeboat packaged like a torpedo for fast and accurate rescue of survivors in the sea has been patented.

The lifeboat is so constructed that it can be carried on the wings, or in the bomb bay or cargo compartments. Its streamlined shape cuts down drag in flight and "minimizes the shock of impact with the water," the inventors claim. The airborne lifeboat was devised by Lewis C. McCarty Jr. and Harold G. Felio, New York, who assigned patent 2,686,323 to the Marine Aircraft Corporation, also of New York.

A novel feature of the boat is the way it is slowed down after being dropped. A drogue, or sea anchor, connected by cable to the lifeboat, is first shot into the water.

Because of the water's resistance to the drogue dragging through the water, the drogue cable operates the bomb release mechanism to eject the lifeboat. This allows a pilot to drop the boat much closer to survivors struggling in the sea than with a lifeboat released by parachute from comparatively high altitudes.

After the boat is in the water, compressed gas can be released to inflate sponsons, or chambers, along each side of the lifeboat to give it greater stability. The boat is self-righting and powered. Its engine can be started and the craft steered by remote control from the rescue airplane.

Science News Letter, August 28, 1954