

INVENTION

New Type Punch Press Speeds Up Production

► INVENTION of a new type punch-press by an ex-soldier increases speed of Canadian production of brass washers more than twenty times.

The water-tight doors into which these brass washers fit form a vital part of Canada's warships. They spell the difference between a ship's sinking and staying afloat after an enemy shell, mine or torpedo allows water to flood into the sealed-off sections of the vessel.

The inventor, Harold Ker of Vancouver, was hurt so badly two years ago by a German sailor whom he was escorting to an internment camp, that he had to be discharged from the Army. But he is back in the war as a machinist fitter in a West Coast shipyard, building Frigates for the Royal Canadian Navy and inventing gadgets to help hasten victory.

Science News Letter, July 10, 1943

PUBLIC HEALTH

Women's Safety Shoes Called Tools of Industry

► FOUR STANDARDS for women's safety shoes, designed to save valuable war materials and protect women workers against injuries, have just been completed by the American Standards Association. Women's safety shoes, considered primarily as tools of industry, may be obtained by the workers in addition to shoes normally allowed under rationing.

Women workers in war plants, of whom there are now approximately 4,000,000, are surrounded by hazards with which they are totally unfamiliar. Injury to the worker's foot by falling objects is one of the most common causes of accidents resulting in absenteeism. Open toes and flimsy playshoes have no place in war industries, and even the more sturdy shoes now on the market fail to afford adequate protection. Working at the request of the War Production Board and the Office of Price Administration, the American Standards Association has approved four types of safety shoes. The type designed to be most generally used is a work shoe with a steel toebox. Shoes of this type, which furnish adequate protection from falling objects, have not been manufactured for women heretofore.

High safety-toe shoes afford ankle-high coverage for use of women filling such

jobs as that of welder. Women's non-sparking shoes are designed to protect the wearer and the plant from hazards due to explosions set off by sparks. Women's conductive shoes minimize hazards to workers and property from electricity accumulated in the bodies of workers. Different colored tongues will be used to help differentiate the various types of safety shoes.

Science News Letter, July 10, 1943

ENGINEERING

Future Houses Insulated With Snow-Like Plastic

► VISITORS at the Goodyear Research Laboratory were shown through a "synthetic house" which may help solve the post-war housing problem. It is entirely prefabricated, with walls consisting of plywood bonded to very light-gauge metal, with the less than three-inch space between the inner and outer layers filled with a new, extremely lightweight plastic foam that looks like dry-ice or packed snow and has even better insulating properties than the snow blocks used by Eskimos in building their houses.

Science News Letter, July 10, 1943

NUTRITION

Army Tells Grounded Fliers How to Get Along In Arctic

► DON'T eat polar bear liver; it's poisonous. But seal kidney is good meat, and so is seal heart. They're not in the meat-ration list, either—all you have to do is first catch your seal.

These are among the food suggestions in a new Army Air Forces book, titled *Arctic Emergencies*, intended for the use of aviators who have to bail out or make forced landings on the far northern tundra. There is enough to eat in the summer Arctic, if you know how to go about it: cranberries, for example; and if there aren't any turkeys you can sometimes catch a goose. There are lots of mushrooms, all edible except one species and that one is easily identifiable by its bright red cap.

The book also tells how to get maximum warmth from your flying suit, how to make goggles to prevent snow-blindness, and gives other useful camping-out hints for high latitudes.

Like its recently published companion volume for use in tropical jungles and deserts, this book is printed on water-resistant paper and has a water-proof cover.

Science News Letter, July 10, 1943

IN SCIEN

CHEMISTRY

Heat Causes Deterioration Of Fabrics Put in Attic

► THE BEST storage place for fabrics is not the traditional attic but a dark storage closet on a lower floor, according to results of a four-year test conducted by textile scientists of the U. S. Department of Agriculture. Most attics become very hot in the summer, and heat has been found to cause deterioration of stored fabrics.

Tests were made of both new and de-sized cotton sheets and degreased woolen samples stored at 102 degrees Fahrenheit, the average attic temperature, and at room temperature. Changes in these fabrics were not enough to make them unserviceable, but they were found to deteriorate more in hot-storage. The fabrics became weak and tender, and cottons and linens yellowed. Linen stood up better than other fabrics under the Department of Agriculture tests.

Greater chemical deterioration was caused when light reached the stored fabrics, light damaging linen more than high temperature.

Science News Letter, July 10, 1943

PUBLIC HEALTH

American School Children Healthiest in the World

► AMERICAN school children are "among the healthiest in the whole world," a report from the Metropolitan Life Insurance Company's statisticians declares.

The current death rate among white children aged 5 to 14 years is just under one per 1,000. This is one-half the rate prevailing only one year ago.

There is still considerable room for improvement, the statisticians point out. The five chief causes of death among children of school age are, in order of numerical importance: accidents, appendicitis, influenza and pneumonia, rheumatic fever and tuberculosis.

Accidents cause more than one-fourth of all deaths of school children in America. These can be prevented and the killing of children by the four diseases can be greatly reduced by further efforts to protect child health.

Science News Letter, July 10, 1943

CE FIELDS

ENGINEERING

Secret Computing Sight Takes Guess Out of Gunnery

See Front Cover

➤ AUTOMATIC computing sights now take the guess out of aerial gunnery and help make B-17 bombers the deadliest heavyweight fighters of the war.

The secret sight, developed by the Sperry Corporation, makes .50 caliber machine guns effective at ranges up to 1,000 yards, Thomas A. Morgan, president of the company disclosed.

Comparatively little skill and training is required of gunners using the sight. It automatically figures the fall of the bullet because of gravity, the deflection caused by wind, and the amount of "lead" required to hit a moving target.

If a duck hunter aims directly at a flying bird, his target will be out of the line of fire by the time the shot reaches its objective; learning to judge the proper "lead" takes long experience. Aerial gunners shooting from a fast moving plane at a fast moving target have an even more involved problem to face.

Using the computing sight, however, the gunner seems to aim directly at the target. The sight points the guns automatically and continually at the spot where the target will be by the time the bullets arrive. No mental calculations need be made.

The sight is an integral part of Sperry designed ball turrets which make possible the mounting of more than one gun per sight. A hydraulic "muscle" moves the turret, guns, sight, and gunner as a unit, turning as slowly or fast as the operator wishes.

Science News Letter, July 10, 1943

ASTRONOMY

Old Nova of Northern Crown Develops Stationary Shell

➤ THE OLD NOVA of T. Coronae Borealis, one of the stars in the constellation of the northern crown now high in the evening sky, is believed to have developed a stationary shell. This phenomenon is occasionally observed in early type stars, reports Dr. Rudolph Minkowski of Mount Wilson

Observatory, but this is the first time on record than an old nova has shown such a development.

T. Coronae Borealis is believed to be a binary system composed of a normal M-type giant and a blue variable star, the old nova. The hotter component of this star, probably the old nova of 1866, is credited by Dr. Minkowski (*Publications of the Astronomical Society of the Pacific*, April), with not only having become brighter, but also having developed a stationary shell.

The actions of many stars can best be determined by a study of the star's spectrum. A comparison of the spectrum of Nova T. Coronae Borealis made in February, 1943, with one made in May, 1942, states Dr. Minkowski, shows a profound change in the violet and near-ultraviolet while the two are very similar in the red.

A number of absorption lines, characteristic of light shining through a glowing gas, have recently appeared in the spectrum. The faint presence of one or two absorption lines of helium in the earlier spectrum was probably the first indication that this transformation was taking place.

Science News Letter, July 10, 1943

AERONAUTICS

Anti-Aircraft Guns Latest To Join Flying Procession

➤ ANTI-AIRCRAFT GUNS are the latest additions to the flying procession of weapons and vehicles—light tanks, jeeps, anti-tank guns, howitzers—that are carried in long, locust-like leaps from bases to remote battlefields by the Army's growing fleets of transport planes. Capt. John J. Stark, Coast Artillery Corps, describes the weapons in their new role in the *Coast Artillery Journal*. (May-June)

With the guns go their crews and enough ammunition and supplies to set them up in business. More ammunition, food and other necessities follow by later planes.

Arrived at destination, it is only a matter of seconds until the guns are snaked out of the planes and set up, ready for action against enemy aircraft. They are expected to be especially useful in strengthening our forces' hold on captured airfields, supply areas, etc. Because of their high velocity, they can be used with effect against counterattacks by enemy mechanized ground forces as well as planes.

Science News Letter, July 10, 1943

MEDICINE

Plasma Can Greatly Aid Conditions Besides Shock

➤ SHOCK is not the only condition which can be helped by blood plasma, Dr. Max M. Strumia, of Byrn Mawr, Pa., told the American Society of Clinical Pathologists meeting in Chicago.

Dr. Strumia was selected by the society's general research committee for the 1943 Ward Burdick Award.

Plasma, he reported, can be of great aid in conditions unrelated to shock in which the body is holding water far in excess of the normal amount without visible dropsy. Patients in this condition, among whom may be many who have had operations on the stomach and digestive tract, are also generally in a state of protein depletion. The digestive tract itself may become dropsical, interfering with digestion and absorption of proteins.

Plasma, Dr. Strumia believes, may aid recovery in these patients.

Science News Letter, July 10, 1943

MEDICINE

Attack on Malaria to Take A New Line in the Future

➤ A NEW LINE of attack on malaria was predicted by Dr. W. McDowell Hammon, of the University of California Medical School, at the meeting of the Northern California Public Health Association.

The new attack will probably aim at stopping the disease during the six days between the bite of the infected mosquito and the appearance of the malaria trophozoites in the red blood cells. This six-day period represents a stage in the cycle of malaria germs which scientists have only recently studied.

Treatment heretofore has been aimed at the germs after they are seen in the blood stream. Studies of malaria in birds, however, show that the malaria germs develop in the reticulo-endothelial cells of the spleen, bone marrow and capillaries of the brain before they enter the blood cells.

Although future research will probably be directed toward stopping the infection at this early stage, Dr. Hammon declared that "at present we must depend on mosquito repellants and larvae control. We must not relax our vigilance or our mosquito abatement budgets."

Science News Letter, July 10, 1943