

MEDICINE

**1-A Army in A-1 Health;
Better Record Than 1917**

THAT 1-A man in the Army is staying A-1 in health, records in the Office of the Surgeon General, U. S. Army, show.

Not so long ago, going soldiering was an unhealthier job than it was dangerous. Up to the last World War, more casualties were due to disease than to battle wounds. Many can remember the influenza and meningitis epidemics that ravaged the army camps a war ago, killing the boys before they got near the front. All that is changed today.

Uncle Sam's large and growing Army for this present war has fought disease to a standstill. It is a much healthier Army than that of World War I. It not only has a better health record than that of 1917-1918 but one which equals and in some months has surpassed the health record of the small standing Army maintained during peaceful years between 1931 and 1940.

Science News Letter, August 15, 1942

GENERAL SCIENCE

**Science Teachers Advised
To Stick to Their Jobs**

MOST important war work that science teachers can do is right in their own laboratories and classrooms. To leave those tasks, however humdrum they may seem, is to endanger the country's future supply of scientifically trained men, needed now as never before, declares Dr. John S. Nicholas (*Science*, Aug. 7). Dr. Nicholas represents the National Research Council on the National Roster of Scientific and Specialized Personnel.

The speeding up of scientific training that is going on now in all universities and colleges involves the revision and "unfreezing" of many courses that have been permitted to become routine and conventionalized, Dr. Nicholas points out. The teacher must constantly face the challenge of differences in personalities of his students, and adapt his educational methods to the individual needs and peculiarities of the human material on his "production line".

Whatever else happens, Dr. Nicholas reemphasizes, the drain on the teaching personnel must be checked: "The devastation of science departments by armed and government services must be rigidly scrutinized in the light of necessity. The

resultant deterioration which shows absence of planning and foresight must not be allowed to continue. The universities' own needs must be weighed against other demands. The colleges and universities can play their part only by keeping active staffs intact and maintaining the morale of their teachers by recognizing this as a dominant part of the war effort."

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INVENTION

**Brake for Cannon Gives
More Rapid, Steady Fire**

STEADIER, more rapid fire by the light cannon that now form part of the armament of practically all warplanes is claimed for a type of weapon patented (No. 2,291,867) by Marc Birkigt of Bois-Colombes, France.

The invention applies to automatic weapons which operate by the sliding back of the whole barrel under the force of the recoil. To shorten this oscillating movement and reduce the jar, a muzzle brake consisting of a slotted sleeve is provided. This "lift-by-the bootstraps" arrangement takes up much of the force of the recoil. To reduce jar on the return of the barrel in its forward movement, there is a cushioning pneumatic cylinder.

Science News Letter, August 15, 1942

INVENTION

**Filament Drawn Like Wire
Used In Synthetic Fabric**

FILAMENTS of some of the newer synthetic fabric materials can be made tougher, stronger and more resilient by cold-drawing them through a die, as wire is drawn, states Merlin M. Brubaker of Wilmington, Del., in applying for patent 2,291,873, rights which he has assigned to E. I. duPont de Nemours and Company. The effect is due to the pulling of the large molecules in the material until their long axes are oriented in the same direction.

Filaments of relatively large diameter made by this method are described as being particularly useful for use in tennis rackets, fishline leaders and for musical instruments. By changing the shape of the die they can be given "fancy" cross-sectional forms, such as square, oblong, elliptical, triangular, even star-shaped.

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IN SCIENCE

LANGUAGE

**Russ-English Lists Sought
For Scientific Dictionary**

SCIENTISTS who are fluent in Russian and have compiled lists of Russian-English equivalents for scientific words and terms for English-speaking colleagues are invited to send copies of these glossaries to a British organization that is now collecting materials for the eventual publication of an English-Russian scientific dictionary. The appeal is published in *Science* (Aug. 7) by E. J. Russell, chairman of the Anglo-Soviet Scientific Collaboration Sub-Committee, whose address is 3 Hanover Street, London W 1, England.

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ENGINEERING

**Radio Locators May Find
Meteor, Measure Velocity**

RADIO locators may locate meteors and measure their velocity. From India comes word that radio short waves can be reflected from shooting stars.

While listening to the Delhi short-wave station only 10 miles distant, members of the Research Department of the All-India Radio report that they frequently heard whistles of a peculiar nature. Beginning with a shrill note, the pitch fell rapidly to nothing or disappeared in one-fifth to several seconds. This is the Doppler effect, which may be observed when a locomotive whistle is rapidly receding. From it can be determined the velocity of the object.

In this case the velocities measured ran as high as 40 miles a second. Only meteors ever travel that fast through the air. In fact, watching the sky, the observers noted that when a meteor passed the peculiar whistle was heard. This provides a new method, they pointed out, of measuring the velocity of a meteor. It cannot be used at present because of restrictions on the use of radio, but after the war perhaps some of our many radio locators may be put to astronomical uses.

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E FIELDS

PUBLIC HEALTH

British Prepare for Gas; Ointment Is Distributed

BBRITISH civilians are asked to prepare for possible attacks of blister gas by getting "official bleach cream" from their pharmacists, writes the London correspondent of the *Journal, American Medical Association* (Aug. 1). This anti-gas ointment will counteract splashes of blister gas on the skin.

Since Churchill warned Hitler of retaliatory attacks if poison gas should be used against the Russians, the British have been preparing antigas measures for themselves.

Full instructions for counteracting mustard gas and lewisite, the two best-known blister gases, have been issued by the Ministry of Health. Since gas can penetrate clothes, they must be immediately removed and the skin washed with soap.

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ENGINEERING

New Inflatable Pontoon Saves Rubber by Using It

See Front Cover

SAVING rubber by using rubber is the paradoxical achievement of the Corps of Engineers, U. S. A. By adopting a new-type inflatable pontoon to replace the aluminum boats standard for Army use until now, it has been possible to cut the number of transport truck-and-trailer units needed for carrying a full-length pontoon bridge from 72 to 36 (*Military Engineer*, August).

The tires of the old bridge train required 95,000 pounds of rubber. Tires of the new train, together with the rubberized fabric pontoons, require 65,000 pounds. Thus there is a clear saving in rubber of 30,000 pounds in favor of the new-type unit, and it is expected that as synthetic materials become available the rubber saving will become even greater.

In addition, of course, the aluminum now used in pontoons can be eliminated

altogether, and thus made available to the always-hungry airplane industry. The aluminum pontoons now in existence will be continued in use until worn out or destroyed in action, but no more will be built.

One of the new bridges is shown on this week's SCIENCE NEWS LETTER.

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METALLURGY

Nobilize Stainless Steel With New Silver Alloy

STAINLESS steel nobilized with silver to the extent of 0.1% becomes more stainless and more workable, according to U. S. Patent 2,283,902 issued to Dr. John Wulff, professor of physical metallurgy at the Massachusetts Institute of Technology, and assigned to the Chemical Foundation.

This would speed up production of stainless steel articles and might even make the metal suitable for replacement of aluminum in some applications, such as for the skin of airplane wings and fuselage. The patent provides a new method by which the silver becomes uniformly distributed throughout the metal and oxidation of the silver is prevented. Previous methods had encountered difficulties in these respects.

The new method alloys the silver first with nickel or manganese, with which it unites more strongly than directly with iron. This alloy is then introduced into the melt. The new stainless steel is still in the experimental stage. No commercial applications have yet been made.

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MEDICINE

Other Chemicals May Act Similar to Sulfa Drugs

CHEMICALS which have their atoms built up into a structure resembling the life-saving "sulfa" drugs but actually contain no sulfo groups, might also be used in medicine, reports Dr. Julius Hirsch of the University of Istanbul (*Science*, Aug. 7).

Experiments showed that a chemical such as p-aminobenzamide has almost as strong an action against germs as equal amounts of sulfanilamide. Perhaps among derivatives of this chemical, Dr. Hirsch suggests, there can be found substances to supplement our arsenal of weapons against disease.

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MEDICINE

Sugar Excretion Not Bad In Some Diabetic Cases

ADDITIONAL evidence that diabetic patients treated with a daily dose of the protamine zinc form of insulin may continue to excrete sugar and still remain in good health, is reported in the *Journal, American Medical Association* (Aug. 8).

Large doses of insulin administered in severe cases to prevent excessive amounts of sugar in the kidney excretion, often result in alarming illness due to reactions from the treatment. But after careful study, Dr. Edward Tolstoi and his associates suggest that the daily dose of protamine zinc insulin without too much regard for sugar level in the body fluids, often results in loss of other diabetic symptoms, maintenance of weight, and satisfactory control of the disease.

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NUTRITION

Butteroil and Milk Powder Make Butter for Tropics

BUTTER for troops in the tropics is practicable without the elaborate and costly refrigeration mechanisms that now make it such a problem. It can be "assembled" out of two milk constituents, butteroil and skim milk powder, Charles S. Trimble of the Bureau of Dairy Industry, U. S. Department of Agriculture, has demonstrated. Powdered skim milk and water are stirred into the butteroil, and the emulsion is poured slowly into cold water. Butter granules are formed, and may be worked into butter in the usual way.

Butteroil is a clarified form of butterfat, which has been used in India for generations, under the name of "ghee." It also has some use in other dairy countries, notably Sweden and Switzerland.

Butteroil can be kept from spoiling in hot climates by packing in airtight containers with all oxygen excluded. Dr. George E. Holm, in charge of the Bureau's fat-spoilage research, demonstrated long ago that butter fat is spoiled by oxidation. He has now developed a practicable method for packing butteroil so that it will keep. At present, tin or other metal containers are used, but research is now under way to test the possible use of wooden kegs.

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