

New Machines And Gadgets

Novel Things for Better Living

Dry warm air is needed for many processes connected with the war industries, such as drying black powder, making plastic bonded plywood for airplanes, processing lenses and assembling optical instruments, in the manufacture of engine magnetos and control instruments. To dry air without refrigerating it has hitherto required costly chemicals, used mostly in laboratories. Now a cheap substance has been produced that makes it possible for any factory requiring it to have a dehydration plant.

A new odorless paint, recently introduced, solves the problem of offensive paint odor. It is not perfumed but actually deodorized. This characteristic is particularly important when office, factory or other workplace must be repainted while the work goes on, as it must in these days.

Fibrated leather material has been introduced to replace the gaskets of rubber, cork, hemp and other vegetable substances formerly used for them and now hard to obtain. The leather is separated into its countless fibers and these are recombined with a protein adhesive and formed into large sheets from which the gaskets are cut. The material is resistant to hot oil, boiling water and to gasoline.



The tire shown in the illustration is being prepared for retreading by having its surface roughened so that the new tread will bond itself closely with the old tire and won't come off. The roughening is being done with a retreading brush composed of rope-twisted wires with needle points. The brush is sturdy and durable and the wires won't come out, due to a patented device. It is expected to speed up the rebuilding of tires to meet the great civilian demand expected.

Loss of gasoline in storage tanks can be reduced by a new white paint, having 10 to 15% higher reflecting power than aluminum paint. This reduces in-

side temperatures, keeps the gas cooler, and so cuts down evaporation losses. The new paint is resistant to oil and water, and can be put on with brush or spray.

Synthetic sponge rubber that is more resistant to oil, grease and other solvents than the natural product can replace the latter with advantage in many applications. The new sponge rubber is a synthetic rubber like that now being used for tires and is made from petroleum.

Plastic tubing can be substituted for copper gas lines. The plastic, vinylidene chloride, is flexible, semi-transparent and tough. It is unusually resistant to moisture, brines, solvents, acids and alkalies. Although the plastic softens at high temperature, the tubing can be used for short periods of time up to 275 degrees Fahrenheit with little loss of strength and resistance. The tubing may be joined by standard couplings or flare type fittings.

Puffed soy beans, analogous to puffed rice and other "exploded" cereals, may become an acceptable breakfast dish, according to the claims of a recent patent. The bitter beany flavor of soy beans has hitherto prevented this. Accordingly, the invention is mainly a method of removing this undesirable flavor. The hulls that remain as a by-product may also be turned to useful purposes, the inventor states.

If you want more information on the new things described here, send a three-cent stamp to SCIENCE NEWS LETTER, 1719 N St., N. W., Washington, D. C., and ask for Gadget Bulletin No. 91.
Science News Letter, February 14, 1942

AERONAUTICS

Weedy Fields With Bushes Best For Air Bases

WEEDY fields, dotted with low bushes and fringed with trees, are far better for war-time air bases than the beautiful, flat, pasture-like expanses of well-kept commercial airports, Maj. Hans C. Adamson, special assistant to the Chief of Army Air Forces, stated in an address at Schenectady, N. Y. Such ill-kempt looking areas are naturally camouflaged, and are exceedingly difficult to detect from the air.

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A wild-looking field of this kind, somewhere in the United States, was described by Maj. Adamson. The airplanes are hidden in little ravines, in thickets and beneath trees. Quarters for the men and necessary service buildings, more than 120 structures in all, are all similarly "sunk" into the landscape. No roof rises above treetop level.

As explained by Maj. Adamson, the fundamental principle of camouflage is to avoid hard, straight, continuous lines. Such lines are not found in nature, and when introduced into the landscape they are easy to find on air photographs—and a stand-out invitation to bombers making a return visit.

Science News Letter, February 14, 1942

ASTRONOMY

Big Telescope for Mexico Sent By Truck From Harvard

New Instrument for National Astrophysical Observatory Is Symbol of Spirit of Inter-American Cooperation

THE second largest telescope for Latin America has rolled down to Mexico by truck after having been inspected by the staff of the Mexican Embassy in Washington, D. C.

At dawn on Saturday, January 31, this new and modern telescope left the Harvard Observatory, where it was built, with Dr. Harlow Shapley, director of the Harvard Observatory, driving the first lap of its long journey to a hill in the ancient valley of Cholula near Puebla, Mexico.

There the new telescope will go into service at Mexico's new National Astrophysical Observatory as a symbol of the spirit of Inter-American cooperation. Its dedication by President Avila Camacho on February 17 will be the occasion of of an Inter-American Scientific Conference.

The new telescope is of the Schmidt type that is more effective for the exploration of the universe of stars and galaxies than more conventional instruments of much larger size. Its spherical mirror has a diameter of 31 inches while the correcting lens of 27 inches diameter insures excellent star images over a large range of sky.

The only larger instrument in Latin America is the 60-inch reflecting telescope of the Argentine National Observatory at Cordova, but the new Mexican instrument because of its more modern design will do several types of work better than the Argentinian telescope.

Despite war priorities and labor shortages, the new telescope was built in the record time of six months. The mirror and plate are optically accurate to within a few millionths of an inch. The mounting of duraluminum and cast iron

weighs 4,500 pounds and consists of a tube fourteen feet long and four feet in diameter and a polar axis of 11 feet.

At Laredo, Texas, the truck was met by Prof. Luis Enrique Erro, director of the new Mexican Observatory, and sped to Tonanzintla so that the telescope may be installed for the dedication.

Science News Letter, February 14, 1942

MEDICINE

Organized Blood Bank Is Complex Job

BETWEEN the donor station where you may give your blood to save life and the hospital blood bank where it is on call for desperately sick patients lies a complicated organization of doctors, nurses, technicians, record clerks and general management.

When the New York Academy of Medicine and the Blood Transfusion Betterment Association first started on the blood plasma for Britain project, in 1940, they thought it would be relatively simple and that preparing plasma "would be not much more difficult than mixing a cocktail," one of their officers, Dr. DeWitt Stetten, reports. Much to their distress, they learned that such was not the case.

A community hospital about to establish its own blood bank does not face quite so many problems. It must, however, equip itself with such things as iceboxes, incubators, centrifuges, electric pumps, and suitable bottles for collection and for storage of the blood.

One important problem it must settle is whether to establish a blood bank or a plasma bank. Some hospitals have both.

Plasma is blood minus the red blood cells. These may be removed by allowing them to settle out of the blood, or they may be separated from the fluid portion by centrifuging the blood, as cream is separated from milk.

Plasma is considered nearly as satisfactory as whole blood for transfusions. Its chief disadvantage is that it does not contain the coloring matter in the red cells, hemoglobin, which carries oxygen. In some conditions such as severe anemia or poisonings such as carbon monoxide or nitrobenzol which damage the red blood cells, whole blood may be preferred to plasma.

Plasma has the advantages of keeping longer and of being usable without typing or matching with the patient's blood. It may also be dried, which makes it easy to transport. Dried plasma keeps several years without refrigeration.

Typing before use is unnecessary when plasma from many people is put into a common pool. This pooling greatly dilutes the agglutinins from each person's blood and thus avoids the danger of a patient getting so much of the wrong kind of agglutinin that his red blood cells would be clumped together or otherwise kept from their vital job of carrying oxygen to all parts of the body. Before pooling each collection of plasma is of course tested to make sure it is free from dangerous disease germs.

Science News Letter, February 14, 1942

Usual height of a stroke for the big diamond back *rattler* is about the middle calf of the leg, not higher.

Though *aluminum* was a curiosity as late as 1855, this element comprises 7.3% of the earth's crust.

If iron and steel were not so cheap, shipbuilders would use other metals or alloys more resistant to *corrosion*.

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