

Do You Know?

Tobacco requires more care in harvesting than almost any other field crop.

Wheat straw, millions of tons of which are wasted each year, is now increasingly used for blending with wood pulp to make paper and also to make building-board.

During the summer of 1947 nearly 50 different kinds of *prehistoric animals* were discovered in scientific diggings in New Mexico; they range from an extinct species of snails to the ancestral diminutive four-toed horse called *Eohippus*.

A new *wire* for wiring buildings is about two-thirds the size of the ordinary kind used but is coated with natural rubber over which is a synthetic rubber and then a hard shell of nylon; it resists gasoline, oil, fire, moisture, acids and light.

Five-sixths of *Maine*, over 16,000,000 acres, is wooded.

Aluminum can be used safely in the presence of sulfur because unattacked by it.

When two plants of different lines are crossed with one another, the resulting *hybrid* is often more vigorous than either parent.

returning it after processing to the doctors and hospitals of the region.

At the regional centers, the blood will be typed, tested and treated with preservative. After 21 days, when it can no longer be used as whole blood for transfusions, it will be separated into plasma and red cells. Some of these materials will be kept in the centers for distribution as needed. Some will be sent to pharmaceutical houses for processing into serum albumin, gamma globulin, for measles, thrombin and fibrin foam for surgeons to use in stopping bleeding, and anti-hemophilic globulin. Some will be sent to medical research centers, for investigation of possible further healing uses.

All the blood and all the products made from it will be supplied free to hospitals and physicians for the people who need it.

The Red Cross will pay the expenses of collecting, processing and distributing. The cost to patient or family will be for the physician's or hospital's services in making the transfusion or the injection of gamma globulin or administering one of the other products.

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ORDNANCE

"Alloy X" for Gun Bores

► "ALLOY X," a war-born metal for lining gun bores to prolong their firing life, has properties "so remarkable as to justify concealing even the basic metal from which it was evolved," it is disclosed in a new book, *Rockets, Guns and Targets* (Little, Brown and Company), edited by John Burchard of the Massachusetts Institute of Technology. The book as a whole is an account of the strides made in many fields of ordnance research by workers of the Office of Scientific Research and Development during the war.

Although the account does not state what Alloy X is, it seems safe to infer that it is not a new kind of steel, for it was one of the materials tested for barrel liners when it was found that no improvement in steel itself could prevent rapid erosion and hence loss of accuracy and velocity under the high powder-pressures used in modern military firearms and the even higher ones anticipated for the future. Steel gun linings are weakened and destroyed in three ways during firing: through the melting of a surface film by the intense heat of the burning powder, through its chemical action under the heat and high pressure, and through the friction of the projectile as it passes through the bore. Erosion results are serious: the exceedingly costly 16-inch naval gun becomes

useless after about 200 rounds and has to be relined; near the other end of the size scale, the .50-caliber machine-gun barrel sometimes loses so much in accuracy after a few minutes of aerial combat that the plane is as good as unarmed.

Two methods of protecting gun-barrel steel are disclosed in the new book. One is the insertion of erosion-resistant liners, either for the full length of the barrel or at least near the powder-chamber, where erosion is worst. Stellite, a cobalt-chromium-tungsten alloy, has proved especially valuable for this purpose. The other method is a chromium plating on the whole surface of the bore. This plating is sometimes made a little thicker towards the muzzle. This imparted a slight choke, thereby giving the bullet some extra foot-seconds of muzzle velocity.

Other topics discussed at length in the book are the development of the many types of rockets used in the war, the recoilless 4.2-inch chemical mortar that was really a low-angle cannon, and the frangible bullet that made combat target practice more realistic yet perfectly safe.

Resistance to innovations by civilian "interlopers," and toe-dragging tactics by some of the "heavy brass" of the old-line Services comes in for some salty discussion in a chapter headed "Sand in the Gears."

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ENTOMOLOGY

Fight Snail with Beetles

► A BIG BLACK BEETLE with long legs and an insatiable carnivorous appetite may possibly become man's next ally in his unending fight against the pests that devour his crops and garden plants. Dr. F. H. Williams of the Pacific Science Board of the National Research Council transported a small collection of the insects from Africa to Hawaii where they will be put through critical tests in a triply screened laboratory, to see if they are adapted to Pacific island life.

If they pass the tests, and are approved for introduction by the administrative authorities, they will be sent on to Guam, Saipan and other islands in the Trust Territory under American Administration, and more will be brought from Africa to join them. The job for which they are being considered is attack on the six-inch-long giant African snail, which is chewing to shreds the cultivated plants and much of the wild vegetation of the islands.

This huge snail, *Achatina fulica* by name, was introduced into the islands during the period of Japanese occupation, as a food animal. Because the Japs liked it, the big mollusk was kept down to reasonable numbers. But the Japs are gone now, and

neither the natives nor the Americans care to eat it. With nothing to hold it in check, the snail is flourishing—at the expense of anything green that gets in its path.

To find something that would be willing to eat it, Dr. Williams went to its native home in Kenya, East Africa. There he found this black beetle, whose name is *Tefflus*, attacking the much bigger snail as a leopard might attack a cow. Since *Tefflus* is one of the most promising predators thus far found, a test lot was collected and prepared for the long journey to the Central Pacific via the United States.

Dr. Williams also carried with him a couple of hundred scold wasps, which have already passed their entrance exams as attackers against a beetle enemy of the coconut trees on the Palau islands. They destroy the undesirable beetles by laying their eggs on their larvae or grubs after stinging them into paralysis; the wasp larvae kill the infant beetles by feeding on their tissues.

Funds for Dr. Williams' work were supplied by the Office of Naval Research, and the entire project has been carried out at the request of the Navy.

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