

ORDNANCE

"Ghost Army" Victories

Army of inflated pneumatic tubes and painted fabric won victories without fighting; true nature of decoy trucks and ships undetectable within a few hundred yards.

See Front Cover

► AN AMERICAN "ghost army" that never fought but won decisive victories has been revealed by the Army. Made up not of flesh and metal, but of inflated pneumatic tubes and painted fabric, this decoy army included men who couldn't move, two-and-a-half-ton trucks weighing only 86 pounds and field artillery that couldn't shoot. The picture on the front cover of this SCIENCE NEWS LETTER shows a decoy LCT and an actual LCT.

Enemy reconnaissance many times reported large-size mechanized units which in reality were only decoys constructed to stimulate 19 different weapons and pieces of equipment used by our forces. Set up during the night by specially trained units, the true nature of these decoys was undetectable even within a few hundred yards.

Two or three men could unfold a mass of tubes and cloth from an 18-cubic-foot bundle and within ten minutes a two-and-one-half-ton truck would stand beside them. The structural system of pneumatic cloth cemented to the tubing resembled perfectly from both the air and the ground the bulk and silhouette of its prototype.

Trucks of various capacities, tanks, anti-aircraft and anti-tank guns, landing craft tanks, as well as various field artillery pieces, could be blown up with compressed air like gigantic Tony Sarg figures to represent large convoys or emplacements. An army could move to aid an endangered sector leaving behind what the enemy took to be fully equipped divisions. A weakened position was thus undetected and enemy breakthroughs were prevented.

Ten per cent of the number of men from a division were required to erect and maintain the decoys and create the appearance of normal activity. Many of the pneumatic decoys could stand ten days without repairs, but changes in temperature as well as handling methods made it necessary to keep a constant check and maintain correct pressure.

The idea for such decoys came out of the North African campaign, during which discarded barrage balloons were made into dummies to confuse the enemy. Success there made it advisable to perfect the method. The Engineer Board at Ft. Belvoir, Va., took the task in hand. By November, 1943, units were in production. Shortly after D-day completely equipped and trained forces were in action.

The problems of decoy construction were many. Proper fabrics coated with neoprene had to be developed. Four-inch-diameter tubing had to be constructed that could be bent and held in desired shapes. The decoys had to be easily erected and dismantled in the dark. They had to be of minimum bulk and weight. After extensive tests with various constructions the pneumatic construction was found more suitable.

Lace, theatrical equipment, tire and rubber companies aided in the production. The first large pneumatic decoy was an LCT. These were most effectively employed to give the enemy misleading in-

formation on ports of embarkation. Loaded with other decoys the ruse was even more successful.

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CHEMISTRY

DDT Patent Reissue Becomes Best Seller

► IT IS NOT often that the U. S. Patent Office publishes a best seller, but they got out one last week—somewhat to their embarrassment when requests for copies continued to come in and they could not supply them immediately.

The unforeseen best seller was a reissue of the American patent on DDT—officially Reissue 22,700, to Dr. Paul Mueller, assignor to J. R. Geigy, A. G., Basel, Switzerland. Dr. Mueller is the young Swiss chemist who discovered the insecticidal value of DDT, and the Geigy firm is the original manufacturer. Reissue of the patent was necessary to correct some omissions in the first U. S. patent, No. 2,329,074, issued Sept. 7, 1943.

Following the usual custom, the Patent Office ordered 400 copies of the reissue—and had orders exhausting the supply before noon on the day they were printed. A new printing has been ordered.

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Fall blooms on roses come more slowly and last longer than earlier blooms.



FOOLED THE ENEMY!—Here is a decoy LCT that misled the enemy on Allied ports of embarkation shown being assembled.



QUICKLY ASSEMBLED—The three sections of the pneumatic LCT packed in their compact bundles prior to inflation.

ENTOMOLOGY

612 Repels Mosquitoes

New war-born repellent kept yellow fever mosquitoes away for 20 hours under laboratory conditions; it is also effective against chiggers.

► **CHIGGERS** as well as mosquitoes are discouraged in their nefarious business by the war-born insect repellent known as 612, Dr. Philip Granett of Rutgers University told fellow-entomologists at the New York meeting of the American Association of Economic Entomologists. As a chigger repellent, 612 is most effective when applied to the clothing; its effect then lasts for several days.

Under standardized laboratory testing conditions, one application of 612 on a limited skin area kept mosquitoes away for an average of about nine hours; applied in more liberal quantities, it held off *Aedes aegypti* (the yellow-fever mosquito) for as much as 20 hours. In the field, effectiveness does not usually last so long, because some of it is removed by rubbing against foliage and other objects, as well as by the user's own perspiration.

Chemically, the new repellent is 2-ethylhexanediol-1,3; its convenience-designation, 612, is simply its series number in tests that were run at Rutgers. It was used successfully by the armed forces and other war services under a wide variety of campaign conditions. It is a slightly viscous, colorless liquid with a mild, witch-hazel-like odor. It is non-irritating to the human skin, and lasts

well in storage even under extreme conditions.

Limited amounts of 612 were made available for civilian use late last summer; next season adequate quantities should be ready for general trade distribution.

While some entomologists are seeking chemicals that will drive off insects, others strive to find things that will bring the pests a-flying—to feast on Borgian banquets of poisoned bait or to fall to their death in traps. This has been the task of Dr. George S. Langford and Prof. Ernest S. Cory of the University of Maryland, who reported at the same meeting on success with new attractants for Japanese beetles.

Before the war, the standard Jap beetle attractant was a mixture of eugenol and geraniol—the latter more commonly known as geranium oil. War made these compounds scarce, and new ones had to be sought.

The two Maryland entomologists tried out 100 different mixtures, and found that 40 of them had definite attractions for Japanese beetles. Ten of them ranged from two to three times as effective as the geraniol-eugenol standard. Two compounds, phenyl ethyl butyrate and caproic acid, were found to be exceedingly promising as ingredients for beetle

baits. Caproic acid, especially, seems able to give previously used attractants even higher drawing power to beetles roving in the neighborhood.

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SEISMOLOGY

Earthquake on India Coast Strong as Tokyo Quake

► **THE EARTHQUAKE** that caused the disastrous tidal wave along the northwest coast of India was felt by instruments in observatories all over the world; no less than 19 of them transmitted data to the U. S. Coast and Geodetic Survey through Science Service. The observatory of the California Institute of Technology at Pasadena reported that the disturbance on the sea bottom where it centered was at least as severe as the earthquake that wrecked Tokyo and other Japanese cities in 1923.

Seismologists of the U. S. Coast and Geodetic Survey gave out a revised location for the epicenter, which places it a little to the southeast of the spot named previously. (See SNL Dec. 8.) The new location is in latitude 22 degrees north, longitude 60 degrees east; this is on the sea bottom near the head of the Arabian Sea, about 300 miles southwest of Karachi, where heavy wave damage was reported. First shock took place on Wednesday, Nov. 28, at 1:56.9 a.m., Karachi time.

Observatories reporting were those of the Jesuit Seismological Association at St. Louis University, Georgetown University, Fordham University, Xavier University (Cincinnati), Spring Hill College near Mobile, Ala., and Weston College, Mass.; of the U. S. Coast and Geodetic Survey at Chicago, Tucson, Ariz., Honolulu, Sitka and College, Alaska, and San Juan, P. R.; the U. S. Reclamation Service at Boulder City, Nev.; the University of Nebraska; Franklin Institute, Philadelphia; the private observatory of Fred Keller, Sr., at New Kensington, Pa.; the Carnegie Institution of Washington at Huancayo, Peru; Riverview College, Sydney, N. S. W., Australia; the Dominion Observatory, Wellington, N. Z.

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The valleys of *Ethiopia* are mostly about 8,000 feet in elevation.

The hemlock looper, *Ellopiu lugubrosa*, devours its weight of hemlock needles in an hour, and does it hour after hour.