

AERONAUTICS

Fighter Command Models Made by Volunteers

See Front Cover

MODEL planes made by volunteers will be used for instruction in 9,000 Observation Posts along the Atlantic seaboard.

The illustration on the front cover of this week's SCIENCE NEWS LETTER, is an official U. S. Army Air Corps photograph showing Captain Ralph T. Millet and Captain A. K. Mills (seated), of the First Fighter Command, U. S. Army Air Force, examining the models at Science Clubs of America Headquarters.

The models were constructed in response to an appeal by Brigadier General A. K. Cannon.

Science News Letter, August 8, 1942

ANTHROPOLOGY

Uzbeks, Kazaks, Mordvians All Friends of Ours Now

UZBEKS, Kazaks, Mordvians, Chuvash, Tajiks: ever hear of them? No? Well, you should. They're all friends of ours now, allies in this war we're in. Only they've been in it longer than we have; many of them have been shooting at Nazis for more than a year now. And the Udmurts, Maritsi, Osetians, Karakalpaks, Komi, Khakasi, Oirots, Bolgars and Ingush are mad at Hitler, too.

You've probably guessed it by now. They're all minor but definitely distinguishable peoples living in the huge section of the map under the blanket label of USSR. Some of them, like the Uzbeks and Kazaks, number several millions; other groups are counted in a few tens of thousands.

The many peoples who make up what we lump as Russia are described, and their family histories outlined, in a new Smithsonian Institution study written by the veteran anthropologist, Dr. Ales Hrdlicka, who has travelled extensively in both European and Asiatic Russia and is in constant correspondence with fellow-scientists throughout the vast area. (*Smithsonian Institution War Background Study No. 3.*)

Many of the minor peoples in Asiatic Russia Dr. Hrdlicka classifies as "yellow-browns," related to our own American Indians. Altogether they comprise about a tenth of the 197 million people in the Soviet lands. Eight-tenths are white, the remaining tenth mixtures. Fair-

skinned Russians intermarry freely with their darker neighbors, so that the eventual absorption of the minor groups into the great mass of the Russian people can be expected.

The three great stocks of European Russia, the Great Russians, Little Russians and White Russians, together number over 132 million, thus constituting a heavy majority of the total population of the USSR. In general, they are fairer of skin, hair and eyes than the mixed-race "Herrenvolk" who despise (and fear) them; though they are less blond and rounder-headed than the real Nordics of the Scandinavian lands.

Russian population increases at 15 per thousand per year, is nearly twice as rapid as that of Germany or the United States, both standing at eight per thousand per year. Dr. Hrdlicka terms the Russian stock "a great human reserve of the European population."

Science News Letter, August 8, 1942

BOTANY

Fungus-Killing Chemical Causes Faster Growth

A RECENTLY developed chemical treatment of pea seed, to combat a disease-causing fungus that caused serious losses in fresh-sown pea fields, proves to be a good growth-and-yield stimulant as well, reports Dr. George L. McNew of the New York State Agricultural Experiment Station (*Science*, July 31).

The chemical is a synthetic product, bearing the formidable-looking but accurately descriptive name of tetrachloro-para-benzoquinone. It is, Dr. McNew states, "the first strictly organic, non-metallic compound to show much promise as a plant protectant against fungous diseases."

Better growth and increased yields of peas treated with this compound were at first attributed to the better start their seedlings got, unhampered by attacks of vicious fungi. But when treated seed were planted in steam-sterilized, fungus-free soil, and untreated seed planted alongside them in similar soil, the treated lot outgrew and outyielded the untreated plants just the same.

Dr. McNew therefore suggests, "As a growth stimulant, the material should pay dividends in practically every field, irrespective of disease conditions."

Investigation of the effects of the compounds on other plants is now planned, as well as studies on growth-promoting value of related chemicals.

*Science News Letter, August 8, 1942***IN SCIEN**

AERONAUTICS

Jap Zero Planes Fear To Attack Flying Fortresses

JAP Zero planes hesitate to attack Yank Flying Fortresses nowadays, because the fire from the 50-caliber tail guns is too hot for them. So they have developed a new trick, state Col. A. S. Newman and Capt. R. H. Lawson. (*Infantry Journal*, August.)

They fly along, about half a mile from the big planes, at the same altitude and speed, and radio these data to the anti-aircraft guns on the ground, which are thus able to fire with considerably greater accuracy.

Sort of an "I'll sic my big brother on you!" tactic.

Science News Letter, August 8, 1942

ICHTHYOLOGY

Difference in Fin Growth Marks Wild-Grown Trout

HATCHERY-RAISED trout can be distinguished from those that were hatched and grown entirely in the wild by examining their back fins, C. N. Feast, director of the Colorado Game and Fish Commission, has discovered.

Trout grown to legal size in a hatchery, he says, have dorsal fins somewhat degenerated through crowding. When they are released into the roomier waters of streams, the fins develop to full size, but are always malformed, and their cartilage structures are always cracked. This does not detract from the fish's health, gameness or flavor, but does form an identifying mark.

Using this means of detecting hatchery-raised fish, Mr. Feast cruised the Gunnison, one of Colorado's best known streams, and found that 80% of the trout in it are hatchery-raised, a result of the Commission's policy of raising its fish to full legal size instead of releasing them as fingerlings.

Despite the war, Mr. Feast adds, there has been only a slight decline in number of fishing licenses. The decrease has probably been mainly among out-of-state fishermen, who find it more difficult to get to their favorite angling streams.

Science News Letter, August 8, 1942

CE FIELDS

PLANT PATHOLOGY

Japanese Fungi Attacking Wheat in New York

JAPANESE fungi are attacking American wheat, though as yet not causing really serious damage. Presence of the alien marauders, which cause diseased spots on the grain leaves, is reported from Western New York by Dr. M. F. Barrus of the New York State College of Agriculture, and from the experimental plantings of the U. S. Department of Agriculture's great experiment station at Beltsville, Md., by Dr. A. G. Johnson.

The disease was first detected in June, 1941, and the extent of its distribution suggests that it has been in this country for several years. The Plant Disease Survey is anxious to obtain further information about its occurrence, and collaborators and cooperators are now on the lookout for it in other localities.

Science News Letter, August 8, 1942

PHYSICS

Neutron Pictures for X-Rays Proposed in German Patent

NEUTRON pictures in place of or to supplement X-ray pictures, taking advantage of the far higher penetrating power of neutrons—higher than 1,000,000-volt X-rays or even than the gamma rays of radium—are proposed in U. S. patent 2,287,619, recently issued to Hartmut Israel Kallmann and Ernst Kuhn of Berlin, Germany.

The proposal is not new, and the invention is specifically confined to a compact self-contained device for producing the neutrons, slowing them down, that is, regulating their penetrating power, and protecting the operator and the objects, especially when the latter is a living thing.

The preferred source of neutrons is a beryllium target bombarded by positive ions of heavy hydrogen, accelerated by application of 1,000,000 volts. This gives a volume of neutrons, the inventors say, equal to that obtained from 7 grams of radium intimately mixed with beryllium

—more perhaps than has ever been gathered in one place.

This source gives fast neutrons which are then slowed down to the desired penetration by varying thicknesses of a hydrogen containing compound, such as paraffin or paraffin oil. This compound serves also to insulate operator and specimen from the high voltage. For further protection, the whole apparatus is surrounded by insulating material and this again by a conducting shell which is grounded.

While the inventors stress medical applications, it is obvious that the apparatus is also suitable for other applications, and we may be reminded that slow neutrons are the ones that have figured in the search for atomic power. Are the Nazis up to something?

Science News Letter, August 8, 1942

MEDICINE

Vitamin B Relieves Pain After Tooth Extraction

THE SEVERE pain of a "dry socket" after tooth extraction can be relieved by injections of vitamin B₁ (thiamine hydrochloride), Dr. Joseph P. Osterloh, of San Francisco, reports (*Journal, American Dental Association, Aug. 1*).

Pain ceases permanently in 69% of the cases within 20 to 30 minutes after injection of the drug, he finds. For best results, he advises injection into the buttocks, although injections in the biceps of the arm may also be given.

"Evidently a very small increase in the actual concentration of the vitamin substance is needed in the tissues to overcome the severe pain often associated with dry socket," Dr. Osterloh declares.

Experience with 130 cases of dry socket has led him to give the vitamin by mouth for from three to five days before teeth are to be pulled in "patients with visibly lowered resistance or with devitalized teeth." This is followed by hypodermic injection of the vitamin an hour or more before the dental operation. With this method, he reports, not one case of dry socket developed in 38 cases of broken-down and devitalized teeth.

Dr. Osterloh considers this method far superior to sedative packings in the wound which, he points out, give only temporary, partial relief that lasts only as long as the medicine in the packing remains active.

Science News Letter, August 8, 1942

FORESTRY

Keep Down Forest Fires As Aid in Winning War

"EVERY forest fire is an enemy fire," Secretary of Agriculture Claude R. Wickard declared, in launching a nationwide Wartime Forest Fire Prevention campaign. It makes no difference whether the blaze was started by saboteurs landed from submarines, crackpot fifth columnists from our own population, or loyal Americans forgetting to be careful with matches, cigarette butts and campfires, the result is the same: destruction of lumber that might be ships or troop cantonments, of cellulose that might become smokeless powder or rayon khaki shirts, of paper and cardboard that might find use as packages for cartridges or rations.

"Protecting our forests is a never-ending fight, waged by the Forest Service of the Department of Agriculture, and by State and local foresters," Secretary Wickard pointed out. "Even in normal times fires sweep over more than 30 million acres of woodland each year, destroying timber and property worth over \$35,000,000. That is just the commercial damage. It doesn't include things like destruction of young growth and losses of woodland birds and animals. It doesn't include loss of equipment, stoppage of industry, and damage to watersheds."

Science News Letter, August 8, 1942

RESOURCES

Essential Chemicals Can Be Saved From Spray Paints

MANUFACTURERS of war equipment have been asked by the War Production Board to start immediate programs for salvage of the "over-spray" of the paint spraying process, from which 100,000,000 pounds of essential chemicals can be recovered, according to estimates of the Chemical and Textile Units of the WPB Conservation Division.

Army tanks, trucks, jeeps, and other military machines must be mass spray-painted with the familiar olive drab. Millions of shells must have a protective coat of nitrocellulose lacquer enamel. It is estimated that about 30% of the materials used can be recovered from the sludge of the over-spray.

Pigments, glycerine, oils, resins, gums, chlorinated rubber, cellulose and plasticizers, are some of the materials that can be recovered by tried and tested methods, and the painting cost also reduced.

Science News Letter, August 8, 1942