MEDICINE

War Stops Research Giving Lead on Cancer

GERMAN bombs have stopped a promising lead in cancer investigations and thus delayed possible development of means of saving cancer-threatened lives in Germany as well as elsewhere.

This effect of the war appears in a report from Dr. I. Hieger, of The Royal Cancer Hospital (Free), London, England, to *Science*. (March 14). Dr. Hieger, stopped by war conditions from breeding the mice needed for his experiments, has turned to this American publication to report his results to date, probably with the hope that other cancer researchers in peaceful countries will continue the work.

He has been trying to extract cancer-causing substances from "precancerous" tissues of mice. Other scientists have reported extracting such material from human breast cancer and from the liver of a patient dead of cancer of the stomach. Among the small number of mice with which Dr. Hieger was starting the work, one developed cancer at the place where he had injected fatty material extracted from precancerous breast tissue of other mice.

Science News Letter, March 29, 1941

AERONAUTICS

New Riveting Method For Use on Airplanes

A NEW method of riveting, especially valuable for airplanes in putting together the metal sheets that form its outer shell, is one of the 770 inventions protected recently with patents from the U. S. Patent Office. This method gives a perfectly smooth outer surface, without the projecting domed rivet heads used in earlier methods. It possesses great strength and makes an airtight seal, important where the cabin pressure of a plane at high altitude is kept at its sea level value.

Invented by Vladimir H. Pavlecka, of Santa Monica, California, and granted patent 2,233,820, rights on the idea are assigned to the Douglas Aircraft Co. Though especially designed for aircraft construction, Mr. Pavlecka states that his invention will be of use in other industries as well.

At the high speeds reached by modern planes, even the slight projections made by old style rivets cause a noticeable drag and loss of speed. In this invention, the rivet is hammered into a hole in the sheets to be joined. In back of the rivet is a cup, with a hole into which the shank of the rivet passes. The conical head of the rivet bends down the metal around the hole in the sheets until it is flush with their surface. Then, while the hammer is still in place, a piston-like rod in the hole of the rear support is driven up, and this mashes down the shank of the rivet over the inside of the metal sheets. Thus, on the inside of the plane, there are small bumps, but these do not affect the speed.

Science News Letter, March 29, 1941

ZOOLOGY

Two Albatrosses Brought Back From Galapagos

TWO MALE albatrosses, believed to be the only living specimens of their kind in captivity, are the special prizes of the Mandel Expedition of the Field Museum of Natural History, just returned from a three-months' expedition to the Galapagos islands. They will be turned over to Chicago's Brookfield Zoo, along with other birds and reptiles collected by the expedition.

The expedition has also brought back about 2,000 skins and preserved specimens representing the bird, reptile and fish faunas of the 15 islands visited during the cruise. These will be deposited at the Field Museum.

The bird collection, comprising 425 skins, will be used in preparing a museum exhibit illustrating the theory of evolution. It was during a scientific voyage that took him to the Galapagos islands a little more than a century ago that Charles Darwin conceived the famous theory connected with his name.

Science News Letter, March 29, 1941

INVENTION

Nickel Gadget Lifts Paraffin From Jelly

A PURE nickel handle and tab will be useful to housewives putting up jellies. It is laid on the top of the jelly, paraffin is poured around it. A tab projecting upward passes through a slit in the cap, also of nickel, and is bent down to hold it in place as a lock. When opened, the tab is a handle for lifting the paraffin. Unaffected by the preserves or the bending, it may be used over and over again. (*H & H Co., Mountain Lakes, N. J.*)

Science News Letter, March 29, 1941

IN SCIEN

GEOLOGY

U. S. Scientists Studying American Ore Deposits

SCIENTISTS of the U. S. Bureau of Mines are carefully examining American deposits of tungsten, manganese, nickel, mercury and other strategic metals with an eye to their use if present overseas sources should be suddenly cut off. Exploratory operations on 32 sites have been conducted, of which seven have been completed. Six new ones will be opened up as soon as weather permits, Dr. R. R. Sayers, director of the Bureau, stated.

Existence of these ore bodies has long been known, but many of them are too low-grade to be economic under normal conditions. A serious emergency might justify the higher cost of working them.

Tin remains the outstanding metal problem, for there is practically none of it in all North America. If we should lose access to overseas sources it would be necessary to rely on accumulated stockpiles and find substitutes.

Science News Letter, March 29, 1941

AGRICULTURE

Cotton Grown in Italy As During U. S. Civil War

COTTON is being grown in blockaded Italy, states *Die Umschau,* (January 19). Last year's crop was raised on a little under 125,000 acres, and it is planned gradually to increase the acreage to double that figure. Even so, this home-grown cotton can satisfy only about 6% of Italy's normal needs; yet greater acreage could be devoted to the crop only at the expense of the area now planted in wheat.

Italy's present cotton-raising venture repeats the country's experience during the American Civil War, when the supply of American cotton was cut off by the Federal blockade of Southern ports. In 1864, which was peak production year, Italy had well over 200,000 acres in cotton. In subsequent years, interest in cotton production declined, to a low of only a little more than 8,000 acres in 1930.

Science News Letter, March 29, 1941

CE FIELDS

METEOROLOGY

Uncle Sam is Hunting New Weather Men

UNCLE SAM wants recruits for something besides the Army: he is on the keen lookout for new weather men. The U. S. Civil Service Commission announces new examinations for meteorologists, to fill positions paying from $2,600 to $5,600 a year.

Requirements for the new jobs are: first, at least four years of college work with majors in meteorology, physics, geology or other related subjects; second, responsible professional experience in meteorology. Teaching or graduate work will be counted in fulfilment of this requirement, under certain conditions.

Lists will be open until the end of the present year, but candidates are urged to apply at once. Information can be obtained at the larger postoffices, or directly from the Civil Service Commission, Washington, D. C.

Science News Letter, March 29, 1941

RESOURCES—MEDICINE

California Replaces Japan As Source of Needed Agar

AGAR, a laboratory and hospital necessity, hitherto obtained almost altogether from Japan, will still be available in adequate quantities from an American source if commerce with Japan is interrupted. The United States Agar Company, San Diego, has just completed a new plant which will triple its former output of a maximum of 20,000 pounds a year.

Agar is a gelatin-like substance of vegetable origin, extracted from two closely related species of seaweed. Used for food in Japan, it was found to be an ideal medium for the cultivation of bacteria, molds and other microorganisms. It has also come into considerable use in medicine, where filling bulk is wanted without roughness. Large quantities of agar have been imported, in the dried condition, from Japan every year.

Some years ago a group of Japanese in San Pedro, finding suitable quantities of the right kind of seaweed along the southern California and Lower California coast, undertook to manufacture agar in this country. They were bought out by an American company, which subsequently failed. A new firm, the present United States Agar Company, was formed; San Diego proved to be a more favorable location.

While Japanese agar was selling for 50 cents a pound a few years ago, its price has now gone up to $1.50 and is still rising. The American firm has held its price steady at $1.40, claiming superiority in quality to offset the price differential. Now it also enjoys the advantage of a lower price.

Production figures tell the story of the growth of the San Diego firm. In 1936 the output was 4,000 pounds. It rose to 5,000 pounds the following year, and to 7,000 pounds in 1938. Then, in 1939, the figure almost doubled, to 13,000 pounds, and last year the 20,000-pound mark was passed. With an apparently unlimited supply of raw material in sight on the nearby sea bottom, the company is confident of being able to carry its share of the scientific and medicinal defense load.

Science News Letter, March 29, 1941

MEDICINE

Quicker Discovery of Cancer Spread to Spine

A BETTER, quicker way to discover the spread of cancer to the spine appears in a report by Dr. Samuel A. Wolfson, Dr. Samuel Reznick and Dr. Lewis Gunther, of Los Angeles. (*Journal, American Medical Association,* March 15.)

Long before X-ray pictures suggest the spread of the cancer to the spine and even when a primary cancer is not suspected, three signs will give an accurate diagnosis. These signs are: (1) nerve root pain similar to that of arthritis of the spine but with certain distinct differences; (2) an increase in the speed with which red blood cells settle to the bottom of a tube, shown by a test known as the sedimentation test; and (3) an increase in the phosphatase in the blood plasma.

Early diagnosis of the condition is imperative, the Los Angeles doctors point out, because X-ray treatment is the only hope for successful treatment and often produces dramatic relief of pain and remarkable regression of the new growths that have spread from the original cancer.

Science News Letter, March 29, 1941

ENGINEERING—PHOTOGRAPHY

Speed X-Rays Permit Views of Moving Machines

See Front Cover

NO; the skeleton in the closet has not come out to shave. The cover picture on this week's SCIENCE NEWS LETTER represents one of the newest industrial applications of X-rays. By charging condensers to about 90,000 volts, then discharging them through a special type of X-ray tube, Westinghouse engineers are able to take pictures with them at exposures approximating a few millionths of a second.

The gentleman whose picture appears is of flesh and blood, and he is using a standard electric razor. The picture reveals just what happens inside the mechanism when it is in use.

Science News Letter, March 29, 1941

ENTOMOLOGY

Grasshoppers Not Expected To Be Serious This Year

GRASSHOPPERS will not be as serious a pest during the coming summer as they have been for the past three seasons, field surveys by U. S. Department of Agriculture entomologists indicate. They will be both fewer in numbers and less widespread in area under severe attack.

The only large areas shown in black on the grasshopper map comprise the Dakotas and western Minnesota, and western Kansas and parts of adjoining states. There are also smaller threatened spots widely scattered over the West.

However, even with the reduction in the menace, something over the weight of a new battleship (45,000 tons) in arsenic-poisoned bran-sawdust bait will still be required to hold back the hopping hordes in the threatened areas. Grasshoppers are like weeds, the scientists point out: if you let them go unchecked one year they come back at you the next with hundredfold reenforcements.

Science News Letter, March 29, 1941

ENGINEERING

Fan to Cool Radiator Has Thermostatic Control

A FAN used to cool the radiator of a gasoline or diesel engine has a thermostatic control. When the radiator is cool enough, the blades flatten, and move no air. (*Kontrol-Fan, Inc., Pasadena.*)

Science News Letter, March 29, 1941