

MEDICINE

Possible Cancer Weapon

Hope that impurities, possibly lecithin and lithium, in penicillin may be effective against this dread disease arises from laboratory tests.

► A CLUE to what may, and scientists hope will, become a weapon against cancer has been turned up in studies of penicillin. The latest of these studies are reported by Dr. Margaret Reed Lewis, of the Wistar Institute of Anatomy and Biology (*Science*, Oct. 6).

Penicillin itself, effective remedy for many germ-caused diseases, is not the anti-cancer weapon, but certain impurities that accidentally got into one lot of penicillin may be. Last March Dr. Ivor Cornman, now Corporal Cornman, found that a preparation of penicillin killed mouse and rat bone cancer cells growing in culture tubes outside the body. Non-cancerous cells were unharmed.

Subsequent tests by Mrs. Lewis, with whom Cpl. Cornman worked before induction into the Army, and by Dr. George O. Gey, of the Johns Hopkins Hospital and Medical School, showed that penicillin is not the anti-cancer weapon. Highly purified preparations of

penicillin, including those now being prepared for treatment of patients with germ diseases, have no damaging effect on either cancerous or noncancerous cells, these scientists found.

Tumor cells, however, were killed and normal cells unharmed, Mrs. Lewis now reports, when treated with certain dosages of a yellow sodium salt of penicillin. Apparently this preparation contains some substance that is lost in the highly purified penicillin preparations. Mrs. Lewis suspects that this substance, which may be the one that damaged the rat cancer cells, is either lecithin or lithium. She is starting tests now to check this point.

Lecithin is a compound found in egg yolk and nerve tissue as well as other animal tissues. Lithium is a white metal, the lightest of all metals. In the form of various salts, lithium has had some medical use.

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BAYEUX TAPESTRY—Protected by officials of the Louvre during German occupation, the famous cloth, which depicts the invasion of England by William of Normandy in 1066, is examined by an *attache* of the Louvre (left), Mr. Verrier, Inspector General of French Historical Monuments, and M. Jaujard, Director of the National Museums of France.

PUBLIC HEALTH

Typhus Likely Abroad

It is predicted that this coming winter will bring new outbreaks of this fever among foreign armies and civilians. We have effective weapons, however.

► THIS COMING winter will probably bring new outbreaks of typhus fever among both armies and civilians abroad, Dr. F. C. Bishopp, assistant chief of the Bureau of Entomology and Plant Quarantine, U. S. Department of Agriculture, predicted at the meeting of the American Public Health Association in New York.

With our present defensive weapons against typhus fever, however, our own military forces are not likely to suffer seriously, nor does Dr. Bishopp see any valid reason for widespread outbreaks of the disease among civilians.

These weapons consist of typhus vaccine developed by the U. S. Public Health Service; DDT, discovered abroad but developed for military use by Dr. Bishopp's own bureau; and methyl bro-

meide, another potent insecticide developed by Department of Agriculture scientists.

The last one has proved especially useful for delousing prisoners of war. It completely kills all lice and eggs in 45 minutes of treatment. A special fumigating bag or chamber is used for infected material.

Lice that carry deadly typhus fever germs are only one of the insects that threaten armies with disease. Others are the mosquitoes that carry malaria and filariasis; the mites which carry germs of scrub typhus or Japanese river fever, a disease found in the southwest Pacific and north into Japan; and flies which contaminate food with germs of typhoid fever and dysentery.

DDT is a powerful weapon against

both mosquitoes and flies. When available in sufficient quantities it will doubtless assist greatly in reducing food contamination from flies of all kinds, Dr. Bishopp stated. He pointed out that while our soldiers are protected by inoculation against typhoid fever, there is no such protection against dysentery and that blowflies are frequently abundant in areas previously held by the Japs. They emanate from the bodies of the enemy dead, from exposed enemy food supplies and from their unsanitary camps.

Soldiers who have seen for themselves how DDT aerosol bombs rout mosquitoes will demand these same bombs for ridding their homes of these pests after the war, Dr. Bishopp predicted. If methods of application and equipment can be perfected for using DDT in large scale operations against mosquito breeding places, it may play a part in eradicating malaria from the United States after the war, he declared.

Postwar use of DDT against lice to eradicate louse-borne typhus fever and relapsing fever throughout the world is seen by him as a "practical and highly desirable" program. (*Turn to next page*)

Flies which carry not only dysentery and typhoid but also cholera and other disease-causing parasites including worms, which are a serious pest in rural areas and on dairy farms, may be exterminated or nearly so by DDT in the postwar world. Bedbugs are another on the list for postwar routing by DDT.

Valuable timber stands may be saved by DDT from destructive forest insects such as the gypsy moth and the spruce budworm.

DDT, Dr. Bishopp warned, is not a

panacea for all insect ills, though it is effective against more insect species than any other synthetic organic insecticide. It is poisonous to man and animals when injected in considerable quantities or applied to large areas of the body in an oil solution. Its acute toxicity is less than that of many insecticides now used, but its persistence which makes it so effective must be considered from the standpoint of chronic poisoning. It is also highly poisonous to fish and many beneficial insects.

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PUBLIC HEALTH

Heart Disease Increase

Constitutes a serious threat to future generations, unless cause and a means of control can be discovered.

► THE INCREASE of heart disease, particularly among younger persons, is "alarming" and constitutes a "serious threat to future generations" unless its cause and a means of control can be discovered, Lieut. Howard M. Odel, of the U. S. Naval Medical Center, Bethesda, Md., declared at the meeting of the Medical Society of the District of Columbia.

Disease of the heart's own arteries, known as coronary disease in medical terms, is the condition he discussed. The future of this disease, he said, depends on early recognition and "judicious management" of the patient.

In managing patients, he pointed out, doctors must steer between the danger of restricting their activities so far as to make chronic invalids of them and the equally great danger of too early return to normal activity, especially business.

The important thing, he said, is to allow enough time for other arteries to take over the damaged one's job of supplying sufficient blood to the heart muscle. This may take many months. The patient may be allowed out of bed for eight or nine hours a day and may do a little walking, but return to business may have to be delayed for months and maybe a year or more.

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Malaria Carriers

► MILITARY demobilization will introduce a large number of malaria carriers into the country, Dr. L. L. Williams, Jr., of the U. S. Public Health

Service, declared at the same meeting.

He warned physicians and surgeons to be on the alert to recognize as a malaria relapse cases which might appear to be a post-operative infection or some other kind of germ disease.

Much may be done after the war to control malaria by spraying homes with a "long lasting insecticide" which he did not identify by name but which, from his description, may be DDT. This long-lasting insecticide, he said, is so successful in ridding homes of vermin as well as mosquitoes that its use is likely to become widely popular. This has been the experience with it in experimental trials.

Other measures of malaria control, such as eliminating mosquito breeding grounds, will also be necessary.

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MEDICINE

Hope for Penicillin Cure Of Rheumatic Fever Fades

► HOPE THAT penicillin might prove effective as a remedy for the acute stage of rheumatic fever gets a severe setback from two reports. (*Journal, American Medical Association*, Sept. 30.)

From the U. S. Navy Research Unit at the Hospital of the Rockefeller Institute for Medical Research in New York, Lieut. Comdr. Robert F. Watson, Dr. Sidney Rothbard and Dr. Homer F. Swift report:

"Penicillin in doses ranging from 1,975,000 to 3,470,000 Oxford units given over a two-week period to eight young adults with acute rheumatic fever ap-

parently failed to alter the course of their disease."

Even more discouraging is the report of six Army officers working under the Army Air Forces Rheumatic Fever Control Program. They tried penicillin in 38 cases of rheumatic fever at Army Air Force installations and found that it not only failed to help the patients but in some cases made the course of the sickness worse.

The officers conducting this study were: Maj. Frank P. Foster, Maj. George E. McEachern, Capt. John H. Miller, Lieut. Col. Fred E. Ball, Lieut. Col. Charles S. Higley, and Maj. Harry A. Warren.

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MILITARY SCIENCE

M-18 Tank Destroyer Had Part in Recent Drive

► THE SPEEDY M-18 tank destroyer helped make possible the fast movement of troops across France into Germany, the War Department revealed.

The 18.75-ton tank destroyer is both mobile and speedy, and it mounts a powerful 76-millimeter cannon to punish German tanks. Under fire, one of the units made up of M-18 TD's covered 65 miles in three and a half hours, and in another drive it traveled 165 miles in a day and a half, under blackout conditions part of the way.

The mechanical system of the TD permits the installation of a new engine in less than two hours. The 10 wheels operate independently, so that one broken wheel will not throw the vehicle out of action. It has dual controls that permit a change in drivers without switching seats. Its speed and smooth performance compares favorably to that of a command car.

Not long ago one of the tank destroyers was dispatched to blast a German pillbox near Brest. About 6,000 yards of water separated the TD from the pillbox. For 30 minutes the TD fired on the pillbox, changing its position frequently, and streaking away to protective cover between rounds, before the enemy could direct fire on it. The pillbox was put out of action.

The M-18 moves so rapidly that the enemy finds it almost impossible to strew new mines in its path.

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Limited quantities of *American penicillin* have been sent to the Swedish government for use by its health authorities.