

masses of chestnut pollen grains, which have not previously been reported from less than 100 miles to the east of the bog. These were not from the same depth as the conifer pollens, but came from nearer the surface, especially at

the eight- and six-foot levels. This former chestnut forest, therefore, flourished at a later date than the very ancient conifer forest represented by the spruce-fir pollens.

Science News Letter, January 15, 1944

MEDICINE

Penicillin on Battlefield

Germ-fighting chemical proves itself of immense value in the control of infection in war wounds of armed forces in Sicily and North Africa.

► **PENICILLIN**, the powerful germ-fighter from mold, has proved itself on the field of battle, it appears from enthusiastic reports of its use in treating war wounded in Sicily and North Africa now reaching the United States. The reports in the *British Medical Journal* (Dec. 11, 1943), and the *Lancet* (Dec. 11, 1943), another leading British medical publication, cover a special three-months investigation made by Prof. H. W. Florey, of Oxford University, Brig. Hugh Cairns and other medical officers in the British Army.

"There can be little doubt that the preventions of infection with pyogenic cocci (pus-forming germs) or its control in war wounds is within reach," the *British Medical Journal* account states in quotation, apparently, from the report to the War Office and Medical Research Council. This formal report is said to be for official circulation only, corresponding apparently to a "restricted" report in the United States.

For the first time, the editor of the *Lancet* points out, surgeons can now sew up a gunshot wound without fear of dangerous spread of infection to the blood stream. Heretofore it has been considered necessary to leave infected wounds open until all pus had drained out. The change means not only a saving of life and limb but also of valuable fighting man-hours, dressings, hospital service, equipment and transport services.

Wounds treated with penicillin healed from three to six weeks faster than otherwise, the experienced war surgeons who shared in the investigation agreed.

A way to save precious supplies of penicillin was also found by Prof. Florey and his colleagues. By applying penicillin directly to the wound as early as possible, they found, much smaller quantities are required to check infection than when the drug is given by injection into

muscles or veins after the wounded man has reached the base hospital with a well-developed infection. If penicillin were plentiful, however, the surgeons would prefer giving it by injection in nearly all cases since by this method the drug would be carried by the blood stream to all living tissues and prevent multiplication of germs in them.

In some cases a powder of penicillin and a sulfa drug was dusted into the wound at the casualty clearing station. For the most part, however, penicillin

was not used this close to the battle field but was used at the forward base hospitals.

For flesh wounds, the preferred method, apparently, was to inject a solution of the calcium salt of penicillin through small rubber tubes. These were inserted into the wound after it had been surgically cleaned and decaying tissues cut away. Surgeons who do this preliminary job at the casualty clearing stations were warned not to cut away any more skin than absolutely necessary, so that the wounds can be sewed up after the penicillin application.

Wounds closed after this treatment may, after eight to 12 days, be found bathed in pink or green pus, but when this is wiped away, the wounds are seen to be clean and free from swelling or redness. Of 170 flesh wounds treated in this way at Tripoli and Sousse, most of them only three to seven days old when closed, only seven had to be classed as failures and those occurred early in the investigation before the technic had been fully worked out.

In case of gas gangrene, compound fractures and head and brain wounds, good results were also obtained.



HELLDIVER—This low-mid-wing monoplane, the latest of the Curtiss-Wright Helldiver series, proved its value in the attack against the Japanese stronghold at Rabaul in November. It was designed to carry a greater bomb load faster and farther than any similar aircraft type in the world. The bomb load is housed entirely within the belly of the fuselage, making the lines of the fuselage as aerodynamically clean as possible.