MEDICINE

Heart Disease Treatment

Penicillin is advised for subacute bacterial endocarditis, if the ailment is due to a streptococcus sensitive to the drug.

➤ PATIENTS with the kind of heart disease known as subacute bacterial endocarditis, heretofore almost always fatal, should be treated with penicillin if the heart ailment is due to a streptococcus sensitive to the drug.

This advice is given to the medical profession in a report by Dr. Martin Henry Dawson and Dr. Thomas H. Hunter, of Presbyterian Hospital and Columbia University College of Physicians and Surgeons, New York (*Journal, American Medical Association,* Jan. 20).

It is based on apparent success of the treatment in 15 out of 20 patients. These patients are in excellent health, free of all signs of the infection that caused their heart trouble, and all but three are back at work, housekeeping, or whatever their former occupations were. They might be called "cured" except for the fact that the period since the treatment was stopped is only a matter of months and in a chronic disease such as this more time is needed to be sure the germs have really been defeated.

Of the other five patients, two relapsed as soon as treatment was stopped but they are in excellent general condition and the doctors hope they will yet be able to cure them. The other three patients died. In two cases the infection was still present at the time of death and in the third the situation was doubtful.

Since the report on the 20 patients was written, seven more have been treated. Of these, six are well and one relapsed and is now getting additional treatment.

Drs. Dawson and Hunter first used penicillin to treat subacute bacterial endocarditis in 1942 and 1943. The results were encouraging but because supplies of penicillin were then so limited, only two got enough to make recoveries. Another two have since been treated with larger doses combined with the anti-blood-clot chemical, heparin, and they also have now recovered. The fifth died of stoppage of a blood vessel in the brain but post mortem examination showed "substantial healing" of the heart condition.

Besides giving much more penicillin to the patients treated during the past year, heparin was also used. The combination of penicillin and heparin was first tried by Dr. Leo Loewe and associates at the Jewish Hospital, Brooklyn.

They tried heparin, with good results, because the germs that cause subacute bacterial endocarditis grow on the lining membranes of the heart in clumps mixed with fibrin from the blood. Buried in these clumps or clots, the germs are protected from chemical remedies circulating in the blood. Heparin counteracts the tendency of the blood to form clots in which the germs can grow safely and so should make the germs more vulnerable to attack by penicillin.

Drs. Dawson and Hunter found, however, that in five cases they got as good results without heparin as with it in other cases when large doses of penicillin were used. Giving this drug by continuous drip into the muscles instead of into the veins or by repeated injections into the muscles keeps more of it in the blood and is more comfortable for the patient, they report.

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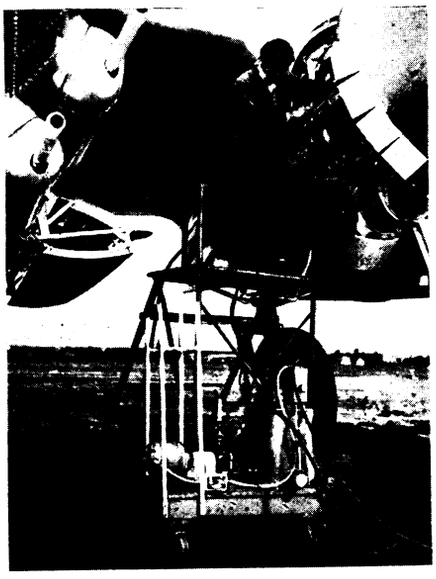

PORTABLE PRE-OILER—This compact device delivers pre-heated oil under pressure to the engines of B-26 Marauders. Developed at the Glenn L. Martin Company, it has demonstrated its value both as a saver of man hours and a preventer of failures due to improper lubrication of an engine prior to its first start.

MEDICINE

Jaundice Weapon

Gamma globulin can apparently either prevent the disease or reduce severity of an attack if given in time, tests indicate.

➤ BLOOD DONATED to the Red Cross to save the lives of our wounded fighting men may also provide a weapon to protect them against infectious hepatitis or infectious jaundice, which is said to be one of the most important diseases of the present war.

The blood's weapon against jaundice is the gamma globulin which is also medical science's most recent weapon against measles. Promising results with gamma globulin in jaundice are reported by Dr. Joseph Stokes, Jr., of Philadelphia and Capt. John R. Neefe, of the Army Medical Corps (*Journal, American Medical Association,* Jan. 20).

The gamma globulin is obtained from blood as a by-product in the processing of human albumin for treatment of shock. It was tried during an epidemic of jaundice in a summer camp for boys and girls last summer. It was given, by hypodermic injection into the muscles, to 53 out of 331 persons who at the time showed no signs of the disease, though the epidemic had been under way for over two weeks. About one-fifth, 20.8%, of those injected got sick compared with 67% among the untreated who developed hepatitis. None of the 53 treated, however, developed visible jaundice of the skin although three girls showed yellowing of the whites of their eyes.

The gamma globulin can apparently either prevent the disease or reduce the severity of an attack if it is given soon after a person has been exposed to it. This is comparable to its effect in measles. It might also be useful in treatment of

jaundice if given before the skin-yellowing stage, the doctors suggest in their report.

"The results obtained in this epidemic are sufficiently encouraging to warrant further trials of gamma globulin in the control of future epidemics of this disease," Dr. Stokes and Capt. Neefe state. "This is especially desirable because no other effective control measures have as yet been developed."

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MILITARY SCIENCE

Novel Military Devices

The Nazis have four-man sleeping quarters that can be rolled to the front line; Russians fit loud-speakers onto airplanes.

➤ SLEEPING QUARTERS for Nazi soldiers on the eastern front are being made with logs in the shape of a huge cylinder so that they can be rolled to the main line of defense by a team of horses. Each bunker is constructed from about 45 logs obtained from the forests in the area, and is equipped with bunks to accommodate four men. They are buried in the earth at a suitable depth and heaped over with earth.

This is only one of several examples of Allied and enemy ingenuity reported in *Military Review,* published by the Command and General Staff School at Fort Leavenworth, Kans.

Worried by the magnetic mines which the Allies have been latching onto the outside of their tanks, the Germans have developed a plastic coat, somewhat like rough linoleum, to prevent the mines from being attached. This coat is put on the exterior surface of the tank and colored with camouflage paint.

In World War I, the Germans used disguised freighters and fishing boats to trap Allied submarines and destroyers. When one of our boats would get in close to investigate, hidden guns would pop out and open fire. Today, German trains, beating a swift retreat from French battle lines, are trying to trap low-flying Allied strafing planes by waiting until the attacking aircraft has reached a low point over the railroads cars, then dropping the sides, uncovering rapid-fire Borfors anti-aircraft guns. Reports from the front indicate that they have not been very successful.

A further example of Nazi ingenuity is the use of turrets from knocked-out German tanks to form miniature fortresses. The turret, and its 75-millimeter gun, are removed from the damaged tank, sunk low in the ground, and imbedded in cement. A hole is dug adjacent to the emplacement to house ammunition and crew, and the surrounding area is mined. British 17-pounders find it difficult to dislodge these tank-turret fortresses, and rocket-firing aircraft, which can dive straight onto the strongpoints have found them difficult targets to hit.

But the Nazis do not have a corner on inventiveness or ingenuity. Reports from German sources, published in England, reveal that the Russians are using airplanes fitted with loud-speakers. These talking sky-giants fly low over concentrations of Nazi troops and civilian areas spreading propaganda designed to lower their morale.

The British have revealed a formidable weapon in a new special mortar mounted on a vehicle similar to a Churchill tank, the interior of which is designed to accommodate a large crew and special explosive charges. Known as the AVRE, the assault weapon hurls a charge containing many times the weight of explosive of any other known projectile of similar dimensions against concrete, steel, or masonry obstacles. This bomb is called the "Flying Dustbin." The AVRE is also equipped to carry and place in position carpets of flexible tracks (made from chestnut palings) to enable vehicles following after it to cross beaches, sand dunes, or patches of marshy ground.

The Royal Air Force is chasing cyclones these days in the Bay of Bengal with a long-range flying meteorological station. When land reports suggest that a treacherous storm is brewing, they fly out hundreds of miles deliberately seeking out bad weather. The flying meteorological station was put into use when it was discovered that ground reports might not give enough warning of devastating cyclones which spring up in that part of the world. As much as three days warning of the approach of bad weather can be given by making these weather flights.

Our own Wright Field's equipment laboratory has developed special emergency equipment for the Air Transport Command's India-China Wing. This specialized rescue kit contains both Arctic and tropic accessories for crews that might have to bail out over snow-covered mountains or jungle areas when flying "over the Hump." Because some of the trees in the jungle grow to a height of 100 feet, and jungle growth makes parachutes difficult to spot, a 300-feet red and white streamer is attached to the kit to make it easier to spot.

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