MEDICINE

New Antiseptic Solution

Acts through hydrogen peroxide. Used for wounds and ear, nose, throat and lung infections; tried in over 800 patients.

➤ A NEW TYPE of antiseptic solution for use in wounds and in eye, ear, mouth, throat, lung and skin infections is reported in the *Annals of Allergy,* (Jan.-Feb.), official publication of the American College of Allergists, Dr. Fred W. Wittich, secretary-treasurer of the college, announces.

The new antiseptic, called thenardol, was developed by Dr. Ethan Allan Brown of Boston and his colleagues. The antiseptic effect of thenardol is due to hydrogen peroxide, the household first aid for cuts of a generation or two ago.

In theory, it is explained, hydrogen peroxide is the safest antiseptic substance available since its end-products, water and oxygen, are non-poisonous and non-irritating, and do not cause allergic reactions. It is relatively non-selective bacterially, that is, it acts on all kinds of germs, and is also deodorizing, cleansing and will stop bleeding.

Hydrogen peroxide, however, does not stand up well in storage and its action when in contact with wound surfaces is transient. Dr. Brown and his collaborators overcame these disadvantages by using urea peroxide as a source of hydrogen peroxide. Dissolving urea peroxide in anhydrous glycerol gave them a stable solution for storage purposes as well as a new type of antiseptic for use on wounds or infected skin and the like.

The solution can also be used as an aerosol, or mist, in contact with tissue fluids. This makes possible its use by inhalation for lung infections.

The first patients on whom it was used were either sensitive to sulfa drugs or penicillin or suffered from mixed bacterial infections resistant to either type of medication. Especially gratifying were the results in middle ear infections, mouth infections, and empyema.

Thenardol was named for Louis Jacques Thenard, the French scientist who discovered hydrogen peroxide.

Its action is explained as follows: The urea peroxide decomposes into urea and hydrogen peroxide. Tissue peroxidase, an enzyme in the body, then acts upon the hydrogen peroxide to form water and oxygen. The oxygen, trapped by the glycerol, churns it continuously, renewing the interface between the antiseptic and the wound surface and forming an oxygenated cream. The remaining urea, itself germ-stopping, peptises dead tissue and hastens wound healing. Oxine, the secondary stabilizer, is also germ-checking. The glycerol, which does not dry, is viscous and remains where placed. It is hygroscopic, so that it draws plasma from the deeper parts of wounds, not only washing out bacteria but diluting toxins and irritants.

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AERONAUTICS

Largest Wind Tunnel

Will test steel models of guided missiles and jet and rocket aircraft at twice the velocity of sound. Is in use at Moffett Field, Calif.

➤ A 1500-MILE-AN-HOUR wind tunnel, the largest in the United States, designed to conduct tests upon models of guided missiles and jet- and rocket-propelled aircraft, is now in use in the Ames Laboratory of the National Advisory Committee for Aeronautics at Moffett Field, Calif. The new supersonic wind tunnel is designed to operate exclusively above the present limit of human flight imposed by the same phenomenon, the velocity of sound, which is approximately 760 miles an hour.

The tunnel will be used to conduct fundamental research to obtain knowledge of the design requirements for stable and controllable flight at the tremendous speeds made possible by recently perfected systems of propulsion.

Steel models will be used in the tests. They will be accurately made, and will be mounted in the three-square-foot test section of the supersonic tunnel. Air is forced through this restricted channel at velocities as high as twice the speed of sound, simulating the conditions encountered by a supersonic aircraft. Power is supplied by electric motors totaling 10,000 horsepower, driving four three-stage centrifugal compressors which rotate at a constant speed of 5,350 revolutions per minute.

Variation of the scale of flight is achieved by changing the pressure inside the tunnel from a near-vacuum up to almost three times atmospheric pressure. Sensitive regulators maintain the pressure automatically. Humidity in the tunnel is accurately controlled by means of air-driers, which can reduce the moisture content inside the tunnel to as little as 1% of that of normal atmosphere.

Another supersonic tunnel, now nearing completion at the same laboratory, will extend the available range of supersonic testing speeds to an extreme of 3.6 times that of sound for short periods of time, NACA officials announce. This means a velocity of more than 2,600 miles an hour. It will have a test section identical with the electrically-driven tunnel to permit interchange of models, but it will operate intermittently from a huge pressure tank. All observations will have to be made within about 10 minutes, in which time the entire supply of high-pressure dry air is exhausted.

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ORDNANCE

Japs Copied Garand Rifle; Failed to Manufacture

➤ THE GARAND RIFLE received the sincerest of flattery—imitation—from the notoriously copy-minded Japs, it is disclosed in *Army Ordnance* (Mar.-April). A semi-automatic weapon that was an almost exact copy of the American firearm was developed during the closing days of the war, but lack of material and industrial disorganization prevented quantity production.

An American war materiel recovery team found 100 of the rifles in the Washimo Seiki Sawania factory, in the Nagoya area.

The Japanese version of the M-1 differs chiefly in its lighter weight, due mainly to the use of a different kind of wood in the stock, and in having a caliber of .303 instead of .30 inch, to take the standard Japanese 7.7-millimeter cartridge. The rear sight also is different, and the magazine holds only five rounds instead of eight.

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