

MEDICINE

War Provides Remedy

Poison gas made in England for war use, discovered to have useful role against paralysis of the intestines, declares president of British Association.

Scientists gathered this week in Dundee, Scotland, for the first time since the beginning of the war, for the meeting of the British Association. This is the first report received from the gathering.

➤ AMERICAN scientists have found an "invaluable remedy" for a dangerous paralytic condition in a poison gas made in England for war use, Sir Henry Dale declared in his presidential address to the British Association for the Advancement of Science meeting in Dundee, Scotland.

The condition is the paralysis of the intestines which sometimes follows an abdominal operation and may even kill the patient. Intestinal paralysis is also sometimes a complication of infectious diseases such as pneumonia.

Discovery of this useful role for the poison gas was made by Prof. A. M. Harvey and Drs. D. Grob, J. L. Lilienthal, Jr., and B. F. Jones of the Johns Hopkins Hospital and Medical School.

The chemical is known as DFP, short for di-isopropylfluorophosphate. English scientists first made and studied it because they knew a series of chemically related poisons were under trial in Germany as potential weapons of chemical warfare.

Scientists of the U. S. Chemical Corps at Edgewood Arsenal and civilian doctors at the University of Pennsylvania reported more than a year ago that DFP might be useful in the serious eye disease, glaucoma, and in the muscle weakness condition, myasthenia gravis.

Its use for intestinal paralysis has only just been reported. It has been given to almost 100 patients with this condition and the surgeons using it are very pleased with it.

Doctors using it, however, are warned by the Hopkins group to remember that it is a poisonous substance and must be used with great care.

DFP produces its many effects by destroying a body chemical called cholinesterase. This body chemical, called ChE for short, plays an important role in relation to the transmission of nervous effects. There are other chemicals, such as neostigmine, which can check ChE activity for a short time, but they do

not destroy it as DFP does.

DFP not only causes a tremendous activity of the stomach and intestines but sensitizes the gut to other substances, such as neostigmine and pitressin. Patients with intestinal paralysis which is not helped by neostigmine or pitressin can be given a dose of DFP and then further doses of neostigmine if necessary.

In spite of this and other examples of practical peacetime results of wartime scientific research, scientists must beware, Sir Henry warned, of continuing "the spendthrift habit in research, the policy of trading for quick returns which six years of war experience may so easily have fostered and may even have made congenial to many of us."

Political and administrative activities of scientists may be a dangerous waste of their talents, he warned.

"The building up of our scientific capital of fundamental knowledge by those who have the creative gift should," he declared, "have prior claim over its practical exploitation and over any cultivation of its political influence."

Science News Letter, August 30, 1947

CHEMISTRY

New Soapless Soap Kills Germs Without Excess Suds

➤ SOAPLESS SOAP that kills germs efficiently in the washing machine and yet doesn't produce excessive suds to prevent cleansing action has been invented.

Cleanliness in laundry work is increased by the new chemical attack on the dirty clothes problem, reported to the Eleventh International Congress of Pure and Applied Chemistry, which has just been held in London.

Bacteriological cleanliness is now achieved by washing with strongly alkaline chemicals, but they are bad for the clothes. Some of the new ammonium compounds used as detergents are good wetting agents and disinfectants, but build up so much foam that it interferes with the operation of the washing machine.

Drs. J. C. L. Resuggan and J. G. Davis, British chemists, reported to the

meeting their solution of the dilemma by remaking the chemical structure of the detergent. Ammonium compounds heretofore used have been formed of long chains of 12 to 18 carbon atoms.

"It has now been found," Drs. Resuggan and Davis state, "that by substituting for the single long chain two shorter chains in a quaternary ammonium compound, ability to form stable foams in all but relatively high concentrations is destroyed, while, when suitable chains are used, the compound has considerable bactericidal and wetting powers."

The new compounds, with or without addition of a mild alkali instead of the present strong ones, are expected to kill germs better, help get the clothes cleaner, and avoid too much suds. Patents on this type of compounds have been applied for.

Science News Letter, August 30, 1947

PHOTOGRAPHY

Exposure Meter Described As Having a "Memory"

➤ A NEW photographic exposure meter, described as one having a "memory," is now in production by the General Electric Company. It is for use by both amateurs and professional photographers, and can be used with movie cameras.

The device enables photographers to determine proper exposures under varying lighting conditions. It is a photoelectric type. The makers say that it contains among its many features a pointer-locking mechanism, which "remembers" the light seen by the photocell; a louver-coupled dial, which "remembers" to shift the meter, automatically, from high light to low and back again as the scene requires; and the trident analyzer, which "reminds" the photographer to check the range of light on the subject.

Basically, every photoelectric exposure meter includes a light-sensitive cell, an indicating instrument, and some form of calculator for interpreting the instrument reading in terms of shutter speeds and f-stops. These are the sizes of various diaphragm openings. In the new meter, these various elements are so synchronized that it is not necessary to read the light scale, except under special conditions.

Science News Letter, August 30, 1947

America's record crop of corn in 1946, the largest in history, was due largely to the hybrid seed now planted and to an increased use of commercial fertilizer.