

PHARMACY

Drug Shortage Worry Ends

Wounded in Korea treated with methadone, a synthetic made from cheap, common chemicals called nitriles. Pain of hundreds at Hungnam beachhead "floated away."

► OUR WOUNDED MEN in Korea have been getting a new pain-relieving drug so good that the "pain just floated away on a cloud," as one of them said.

This pain-killing drug was given to hundreds of wounded Marines during the fighting just before evacuation from Hungnam beachhead and while recovering from operations in the Army General Hospital in Tokyo.

Results were so good that Army and civilian medical authorities are now convinced that we need never again fear any shortage of pain-killing drugs such as morphine.

Morphine comes from opium from poppies. China, now Red, is one big source. But the new pain-killer is a synthetic drug made from cheap, common chemicals called nitriles. Its name is methadone. Grain for grain, it is the exact equivalent of morphine in relieving pain. There is plenty of it now and it can be made in any needed amounts.

"There is no longer any necessity for stockpiling morphine," Dr. Henry K. Beecher, professor of anesthesia at Harvard and chief of the anesthesia department at

Massachusetts General Hospital, declared.

"I don't make statements like that lightly," he added.

Dr. Beecher, civilian consultant to the Surgeon General of the Army, has just returned from Korea where he saw the results of methadone in relieving steady, bad wound pain. They confirm a three-year careful trial of the drug on civilian patients at Massachusetts General Hospital.

Methadone was developed in Germany during World War II at the I. G. Farbenindustrie. Our Army, heretofore always concerned over a possible shortage of morphine, pushed trials of it in cooperation with the National Research Council and the National Institutes of Health. The methadone used in Korea is a new form, called iso-levo. It causes less nausea than the racemic form which is now on the market. It has addiction properties and its sale is therefore controlled under the federal narcotics law. But besides its pain-relieving quality, methadone can be used as a substitute for morphine to withdraw that drug from morphine addicts.

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MEDICINE

Nerve Gases a Threat

Civil defense authorities warn that air raid shelters should be designed to filter out germs, nerve and other poison gases and radioactive particles.

► NERVE gases and disease germs attacking humans, food animals and food crops now are officially joined to atom bombs as dangers against which civilians must prepare to defend themselves.

All air raid shelters should be designed with provision for adequate filters to keep out germs, nerve and other poison gases and radioactive particles, local civil defense authorities are advised by the Federal Civil Defense Administration.

On the germ warfare picture, technically termed biological warfare or B. W. for short, CDA authorities are somewhat reassuring. Man has been warring against germs for thousands of years, they point out. With vaccines, antibiotics and other drugs and sanitation, man lately has been on the winning side in this war. Strengthening and reinforcement of existing health and agricultural agencies is what we need to protect us from germ war with germs

used against us by human enemies.

The nerve gas picture seems less reassuring. These are more poisonous than any previously known war gases. They are nearly odorless and colorless. They are fast acting. Death comes in a few seconds if they are inhaled in sufficiently high concentration. A few drops of the liquid form on the skin, if sufficiently concentrated, is equally fast-killing.

The nerve gases block the action of a vital enzyme called cholinesterase. This enzyme destroys acetylcholine, a chemical produced by nerve stimulation. If acetylcholine is not destroyed at a proper rate, it overstimulates nerve endings which control breathing and circulation of the blood.

When large amounts of these nerve gas chemicals get into the body, severe bronchospasm results. The victim cannot take a breath or expel one. Involuntary contraction of muscle fibers, reaching the point

of epilepsy-like fits, is another result of nerve gas poisoning.

Antidote to the nerve gases is atropine, familiar to hundreds of thousands who have had it dropped in their eyes before examination for eye-glasses. But atropine is itself a deadly poison. It should be used only by a physician. Solutions of atropine loaded in disposable one-shot ampins or syrettes for use by physicians or health service workers might be included in local civil defense supplies, federal CDA authorities suggest.

Nerve gas warfare monitoring devices for civil defense are not presently available at prices that would make their purchase and use practical. Gas masks suitable for the civilian population are being worked on but are not yet available. More elaborate masks and protective clothing for rescue workers are presumably available but "wide-scale purchase" is not advised at present.

Since the nerve gases are heavy and stay close to the ground, persons in upper stories of buildings might escape an attack unharmed.

Artificial respiration will be needed to save some nerve gas victims. But first aiders doing this work will probably have to learn a new, more efficient method than the standard prone pressure method that now saves drowning, electrocution and carbon monoxide gas victims.

One reassuring feature of the nerve gas picture: While very dangerous to people, they are not destructive of property and facilities as atom bombs are. This might limit their use by an enemy.

Details on these "special weapons" is given in CDA's latest guide book for local civil defense authorities, Health Services and Special Weapons, 60 cents at the Government Printing Office. A booklet on biological warfare for the general public is promised soon.

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CHEMISTRY

Patent New Method To Produce Enzymes

► A NEW method for artificial production of enzymes, complex organic substances which speed up chemical processes such as fermentation and human digestion, is a top patent just issued.

The enzymes are produced by bacteria grown in tanks or vats on solutions of starches, proteins and bits of broken grain. This system, long sought with little success, is more efficient than producing enzymes on the surface of liquids or on solid nutrients such as yeast.

The inventors of the new process are Carl V. Smythe of Moorestown, N. J., and Billy B. Drake and Clifford E. Neubeck of Philadelphia. Their patent (2,530,210) has been assigned to the Rohm and Haas Co. of Philadelphia, a leading chemical firm.

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