

SURGERY

Cow Tissue Aids Grafts

Researchers attempting to find better techniques for treating burns and for plastic surgery in general have experimented with the use of animal tissues.

THE RUSSIANS claim to have developed a cheap, simple and safe method for treating burns.

Cattle tissue can be used to speed recovery from second and third degree burns, according to research note in *Scientific Information Report* (July 3), translated from the Russian by the Central Intelligence Agency.

A six-year study, which included animal research and clinical observations of 740 patients, "proved" that peritoneal cattle tissue shortens recovery time considerably. The peritoneum, a smooth, transparent membrane that lines the cavity containing the digestive organs, also "creates favorable conditions for the full regeneration of burned tissue," the Russians claim.

Prof. P. P. Khokhlov and A. D. Shilyayev of the Karaganda Medical Institute report their method reduces plasmorrhhexis, a change in the red blood cell in which particles split off and round, shiny granules escape from the cell. The dehydration that follows burns also decreased.

The method is simple and safe, the Russian scientists conclude, and the material

(preserved parietal peritoneum of cattle) is cheap and readily available.

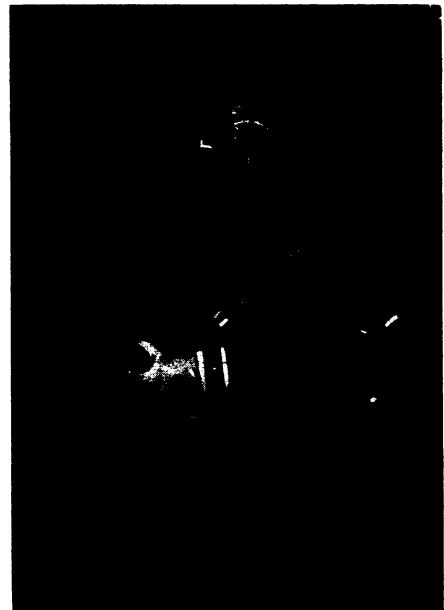
The *Scientific Information Report* is distributed by the Department of Commerce's Office of Technical Services.

"Promising in the beginning, but not much to it," is how one American scientist describes the use of cattle tissue in treating burns.

The consensus among plastic surgeons and others in the field is that other methods are more successful, Dr. Kenneth L. Pickrell of the Duke University Medical School said. There are still too many problems in using either cow tissue or embryo tissue, as has been done in the U. S., to make skin grafts. Certainly, he said, there appears to be nothing in the Russian research that "we have not studied or worked with."

Dr. Pickrell, recently returned from an international meeting of plastic surgeons, said that the animal tissue graft appears to have been generally abandoned in treating burns. Russian scientists with whom he spoke had "nothing new" on the subject to contribute.

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TOMORROW'S GI—To meet the threat of a nuclear ground war, the Army's Combat Development Experimentation Center, Fort Ord, Calif., has equipped a soldier to fight and raised his survival chances.

PUBLIC HEALTH

Treating Mastitis in Cows Presents Health Problem

STEPS ARE being taken to reduce the amount of penicillin found in milk.

The most recent survey of the nation's milk shows the amount of the antibiotic is down to approximately the same level reported back in 1954.

Food and Drug Administration officials, concerned over the health problem in which one in ten persons is highly sensitive to penicillin, are studying ways to reduce further the contamination.

The penicillin gets into the milk when cows are treated for mastitis, a costly cattle disease. Dairy men are warned to wait 72 hours—by which time the penicillin is eliminated—before marketing milk from doctored cows. Additional warnings to abide by this waiting period and a reduction in the penicillin dose are credited with bringing the percentage of contaminated milk down to 3.7. The previous high was 11.6% in 1955.

Discovery of a marker compound that could be added to penicillin, indicating its presence in milk, would help solve this public health problem, Dr. William R. Jester of the FDA said.

Other ways of reducing the penicillin contamination in milk would be to increase inspection of interstate milk shipments, seizing those not meeting the antibiotic regulations, or to limit the use of penicillin in treating cows.

Dr. Jester and two other FDA researchers, William W. Wright and Henry Welch, report results of the survey in *Antibiotics and Chemotherapy* (July).

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TECHNOLOGY

Describe GI of Future

THE SOLDIER of the future will be an unrecognizable mass of scientific equipment in welded nylon underwear.

He will carry a tiny radio in his helmet. A plastic mask will protect his face against the heat of nuclear blasts. Attached to his helmet will be a pair of infrared binoculars, and he will be clothed in welded nylon underwear to ward off shrapnel and bullets.

His mobility will be increased by a rocket belt around his waist. And he will carry with him an explosive fox-hole digger.

Tomorrow's GI was displayed at the Association of the U. S. Army meeting in Washington. According to Capt. Howard H. Osserman of the Combat Development Experimentation Center, Fort Ord, Calif., this soldier will be representative of the infantry by 1965.

Specifically, here is the soldier's new equipment, most of which is under development:

The one-pound transistorized radio, built into his helmet, has a quarter-mile transmitting range. He will receive at greater range by affixing a more powerful antenna to the helmet.

His rocket belt will assist him over streams and other obstacles. Fully equipped, he normally can broad jump about ten feet. With the belt, which provides a downward thrust, he can leap five times

farther. If he is faced with a plunge off a 50-foot cliff, he will be able to give his rockets a "squirt" of downward blast and cushion his landing.

Capt. Osserman told SCIENCE SERVICE a more powerful rocket belt, under development, will come close to making a human missile of the soldier.

Along with his infrared binoculars, the future GI will carry an infrared flashlight. This is a modification of the snooperscope used by U. S. troops in Korea to spot the enemy at night. In addition, he will have an image metascope slung on his chest that will warn him when he has been spotted by enemy infrared.

His fox-hole digger will be a tube supported by three legs. The legs are jammed into the ground, a fuse is ignited, and a shaped charge is fired into the terrain. It explodes out a hole about three feet in diameter and three feet deep.

His protective face mask is made of impregnated vinyl cloth. It will prevent burns at a reasonable distance from nuclear explosions. His hands will be covered by molded plastic gloves.

Sixteen layers of spot-welded nylon will give him a set of underwear weighing about nine pounds. However, it will resist puncture by some shrapnel and bullets.

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