

PHYSIOLOGY

Antibiotics for the Starving

A pinch of penicillin or aureomycin added to the rice bowl in China, India and other hungry lands may stretch scanty proteins and save lives.

► THE MOLD remedies, such as penicillin and aureomycin, have a new future with "unlimited" possibilities.

They may be the way to give millions of the world's half-starved, undernourished peoples health and strength for happy lives, instead of their present miserable existence.

A pinch of penicillin or aureomycin added to the rice bowl in China, India and other rice-eating regions might solve a large part of the world's food problem and through this contribute to world peace.

This suggestion appeared in a report by Dr. Olaf Mickelsen of the National Institute of Arthritis and Metabolic Diseases, Bethesda, Md., to the American Dietetic Association meeting in Minneapolis.

Large numbers of people throughout the world live on all-vegetable, or meatless, diets, he pointed out. But the proteins from vegetables and plant foods, such as cereal grains, are not quite enough to keep people well nourished. Some animal protein, whether meat, eggs, fish, milk or poultry, is needed in addition.

Antibiotics, recent experiments show, have a protein-sparing action. That means that a little bit of fish or meat in the diet would go farther in terms of nourishment if an antibiotic was added to the diet.

In India and other parts of the Orient where rice makes up most of the day's food, the antibiotics might be particularly useful, it appears.

The experiments in Dr. Mickelsen's laboratory were done with rats fed a rice diet. These animals grew almost as well on the rice diet supplemented with vitamins, minerals, and small amounts of threonine and lysine as rats on the stock colony diet if penicillin or aureomycin were added to the diet. Threonine and lysine are two amino acids which the body uses to build protein and are essential ones which the body must have.

Heretofore, the nourishing effect of the antibiotics has been considered a growth-promoting and weight-increasing effect. This has led to extensive use of antibiotics in poultry and swine feeding.

Scientists have not had any explanation for this growth-stimulating effect. The experiments with the rats, made by Dr. Louis J. Pecora in Dr. Mickelsen's laboratory, show that at least in this case the growth-promoting antibiotics seem to act by sparing proteins.

"The implications and possibilities of this work in human nutrition are unlimited," Dr. Mickelsen declared.

"Further investigations will reveal its value as a supplement for the all-vegetable diets which, even today, are the exclusive diets of large numbers of people."

Science News Letter, November 1, 1952

PHYSIOLOGY

Tests Effect of Force on Muscles

► A SPECIAL instrument to test the effect of sudden, unexpected forces on muscles under tension has been devised by John Lyman and Donald Skilling of the department of engineering at the University of California at Los Angeles.

Its practical application is expected to be in the design of controls for jet planes, where sudden forces occurring at high speeds may cause pilots to lose control of the plane. It could also be related to artificial limbs research where compensation for loss of muscle sense must be developed.

The device will be used to study fundamental characteristics of the muscle sense and its relationship to other senses. Unexpected forces exerted upon muscles will be tested in three ways:

One situation involves maintaining a constant position of a lever in the face of varying forces. A second reverses this procedure. The third situation is a series of tracking problems involving the relationship of muscle, visual, auditory and tactile senses. In one phase of this situation the tactile sense will be blocked with drugs in an effort to establish the relationship between the muscle sense and sense of touch.

Science News Letter, November 1, 1952

AERONAUTICS

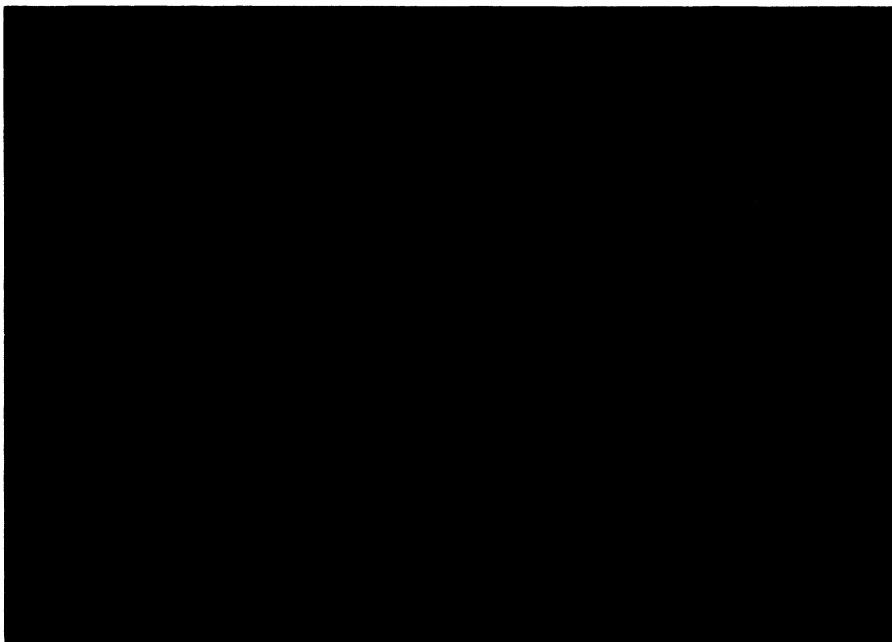
Japan Plans to Build Military Airplane

► A JAPANESE aircraft company has contracted with an American concern to build the scrappy little rocket-launching FD-25 "Defender" for sale to non-Communist countries of the Far East. It will be the first military airplane the Japanese have built since World War II.

Wendell S. Fletcher, president of the Fletcher Aviation Corp., Pasadena, Calif., said that the maneuverable little plane is to be built by the Toyo Aircraft Company of Tokyo on a production arrangement with Fletcher. A prototype of the FD-25 plus the necessary drawings have been cleared by the Department of State for transfer to Japan.

Statistics: The FD-25 is armed with two 30-caliber machine guns and 1,000 rounds of ammunition for each gun. It carries four 5-inch rockets or 40 2¼-inch rockets in clusters. It can use roads and ball parks for landing fields. Fully loaded, it can take off in 500 feet, climb 1,000 feet a minute and land in 330 feet. The plane was designed especially to support ground forces as a rocket launcher and fire-bomb carrier.

Science News Letter, November 1, 1952



JAPANESE FIGHTER—This rocket-launching "Defender" will be the first military plane built by the Japanese since the war.