

flexibility, personal ability, social maturity and "social inventiveness."

Maintenance of these characteristics together with sound mental health is essential for the overseas worker to perform efficiently.

Science News Letter, May 30, 1959

## BACTERIOLOGY

## Double Dose Antibiotics Kill Bacteria in Cells

ANTIBIOTICS can be used successfully against bacteria growing within living body cells.

Research reported by a Michigan State University scientist supports the theory that bacteria growing in cells in a laboratory tissue culture and bacteria growing in cells in the body are similarly affected by drugs.

A tissue culture technique for determining how great an effect drugs have on undulant fever (brucellosis) bacteria when they are growing within the cell was described to the Tissue Culture Association meeting in Atlantic City, N. J., by Dr. Marvis A. Richardson. The same technique, she said, can be applied to other diseases caused by organisms which grow within the cell, such as tuberculosis, leprosy, typhoid fever, malaria and many fungal diseases.

Undulant fever is characterized by an initial rise in temperature which falls as bacteria in the blood are killed and then rises as those within cells reproduce and their "offspring" enter the blood.

The M.S.U. microbiologist grew cells from various organs of the cow in test tubes and then exposed them to brucellosis bacteria.

As they do in humans and animals, these bacteria grew within the cell. This makes them hard to kill. Normal body defenses or antibiotics will readily inhibit brucella in the blood but not those within cells. However, Dr. Richardson found that very high concentrations of either penicillin or streptomycin kill some of the bacteria within the cells.

But a much greater kill, she also found, occurs when the two antibiotics were given together even though the dosage of each one was too small to have any appreciable effect by itself. Such a combination of drugs is known to be effective against many diseases.

This test is believed to be the first to show the degree of effectiveness of antibiotics against organisms growing within cells. One other test indicates if an antibiotic is effective against tuberculosis infection but does not reveal the degree of effectiveness.

Science News Letter, May 30, 1959

## Do You Know

Practically all cotton imported into the Philippines is from the U.S.

Each year more than 12,000,000 anesthetics are administered in the U. S.

Copper enzymes in the body speed up oxidation of oxygen from the air.

## MEDICINE

# Treating Snake Bites

SUMMER is the season for increased outdoor activities, and snake bites.

The number of such victims may increase as outdoor activities such as camping become more popular, two Philadelphia physicians warn.

Most cases of snake bite occur in the southern and southwestern states where there are more snakes and the conditions favor greater exposure. However, all states except Maine and Alaska harbor poisonous snakes.

Therefore, all physicians must be prepared to treat poisonous snake bites, Drs. Thomas McCreary and Harold Wurzel of the Hospital of the University of Pennsylvania, remind colleagues in the *Journal of the American Medical Association* (May 16).

As many as 3,000 snake bites per year have been estimated for the United States alone. Only 10 to 20 of these prove fatal, however.

There are at least 35 species or subspecies of poisonous snakes in this country, the doctors point out. Most of these are pit vipers or Crotalidae, which include the

many species of rattlers, the copperhead and the cottonmouth or water moccasin. The coral snake, found in southern states, is a relative of the cobra and is not a pit viper.

The Crotalidae are generally nocturnal in their habits and are dangerous on land or in water. Yet, they are not aggressive and only strike for food or in self defense when endangered or attacked.

The doctors listed a number of factors that affect the seriousness of a snake bite. They include:

1. age; the young and old are more susceptible to serious aftermath.
2. site of the bite; snake bites are less dangerous on an extremity than near a vital organ.
3. early treatment; the earlier, the better.

Their advice for the victim that is bitten far from a doctor's office includes the application of a tourniquet (to close off the superficial lymphatics to lessen the spread of the venom), incision and suction at the site of the bite, and a dose of antivenin from a physician when available.

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