

MEDICINE

Chemical Warfare New Hope In Battle Against Disease

Virus Diseases Cannot Be Fought as Bacteria Infections Are; New Weapons Must Be Developed

PREVENTION or control of diseases like infantile paralysis, influenza, and others caused by viruses may soon be achieved as a result of recent research. This optimistic opinion was expressed by Dr. Ernest W. Goodpasture of Vanderbilt University Medical School at the meeting of the American Public Health Association.

"It is not too much to expect very soon," he said, "the introduction into practical prevention of new and more effective methods of control of this great group of infective disorders."

Dr. Goodpasture used as an example of these newer methods the alum-picric acid spray for the prevention of infantile paralysis which was tried out on a large scale during the outbreak of the disease in Tennessee, Alabama and Mississippi this summer. How effective this nasal spray is cannot be told at present, but the method is a step in the right direction, it appears from Dr. Goodpasture's discussion.

He explained that virus diseases cannot be fought in the same way that scientists have learned to fight diseases caused by bacteria, such as typhoid fever and diphtheria. Scientists have been able to fight such diseases successfully by sending reinforcements to the body's own disease fighters, the antibodies produced by body cells in response to bacterial invasion. This is the strategy of vaccination, serum treatments and the like. The fight against virus diseases, it appears, will have to be advanced by chemical warfare.

Inside Cells

The reason is that the virus takes a different line of attack from bacteria. The viruses, whether they are living or not, can only multiply and cause disease when they get inside the cells of the body. This is true of some bacteria, but many of them can live and multiply as well between the cells as inside them. Many viruses, in addition to requiring the environment within the cells for multiplication, have a special predilection for nerve cells. This means that in the cases of infantile paralysis, for

instance, the virus enters the nerve cells without ever coming in contact with the fluid between the cells that contains the body's disease-fighting antibodies.

This is where the chemical warfare may prove effective. The alum-picric acid spray is designed to create a barrier through which the virus cannot pass into the nerve cells. Another piece of chemical strategy suggested by Dr. Goodpasture would be to inject into the body chemicals that would make the nerve cells unsuitable for the growth of viruses once they got in.

Science News Letter, November 14, 1936

BACTERIOLOGY

New Cold-Loving Bacteria Spoil, But Not Sour, Cream

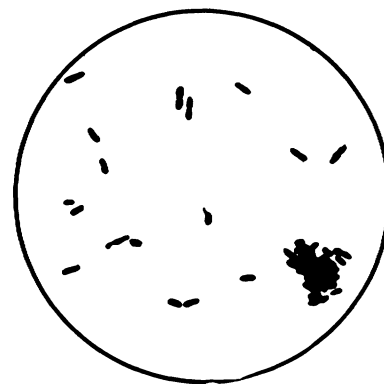
A NEW bacterium which spoils milk and cream without souring it has been discovered and is being investigated at Rutgers University, under the direction of Drs. J. A. Anderson and J. B. Allison.

This bacterium is very unusual in that it spoils milk and cream rather rapidly at temperatures just above the freezing point and fails to grow at body heat. As a matter of fact, the bad flavor is conspicuous only when the bacteria are grown in cream in the refrigerator instead of the usual warm cupboard.

The organism seems to act only on fats, producing a bitter taste and irritation to the throat, "like the beginning of a sore throat," which can be duplicated very closely by adding certain products of broken-down fats, the fatty acids, to pure milk.

This new germ can cause no harm beyond making foodstuffs taste badly, but since it can live in a refrigerator it creates a difficult problem for dealers in foods which it is undesirable to pasteurize.

The organism was first discovered in a lot of cream brought to Dr. Anderson by a local dairyman for examination. It was later found in water of wells a thousand feet deep, driven deep into rock and sealed with concrete.



NEW GERMS

Newly discovered cream - spoiling germs, that can grow at temperatures just above freezing. They give refrigerated cream a bitter, nasty taste without any warning change in its appearance. Photomicrograph shows them enlarged 1,500 times.

The organism, Dr. Anderson found, looks like a series of very short rods held together end to end. Besides growing at remarkably low temperatures, it is unusual in that it uses up the fat and produces a disagreeable taste without any change in the appearance of the bottle of milk or cream. It seems to attack only fats, never solutions of sugars or starches to which it is added.

"The organisms are a unique kind; they do things bacteria rarely do," summarized Dr. Allison. "The investigation of what they do and how they produce changes at temperatures where most living things are inactive should be very valuable."

Science News Letter, November 14, 1936

PSYCHOLOGY

Eccentricities in Art Blamed on Eye Defects

MOST persons who are nearsighted or have astigmatism get themselves eyeglasses to correct the visual defect and go unhampered about their business. These rather common defects, however, are held responsible for some of the vagaries that puzzle the ordinary viewer of modern art.

How nearsightedness or astigmatism in the artist's eyes can make him draw or paint pictures that look queer to the rest of us is explained by a Los Angeles eye specialist, Dr. Lloyd Mills (*Archives of Ophthalmology*, August.)

What we see, he explains, is a combination of images produced by the central part of our eye-lenses and the peripheral or outer parts of them. In