MEDICINE

Find Polio Virus Antibodies in Cows

➤ DISCOVERY OF antibodies to all three types of polio in blood serum of cows was announced by Drs. P. Bartell and M. Klein of Temple University, Philadelphia, at the meeting of the Society of American Bacteriologists in New York.

Cats, dogs, lambs and calves lacked the polio antibodies. Chickens, hogs, horses and steers showed a little. Cows, however, showed the highest number of positive reactions in the tests for the polio antibodies.

No virus itself was found in several hundred specimens of spinal cord, spleen, lymph node or feces from cows, steers and calves.

Where the antibodies came from is not known, but the scientists conclude that antibodies to polio viruses are "widely distributed in nature, with a peculiarly high concentration" in the blood serum of cows.

Antibodies, as most persons now know in these days of polio vaccination, are the substances that protect against the virus. They are formed in response to invasion of the body by the virus or, as in the case of vaccine, in response to injections of killed virus.

Science News Letter, May 21, 1955

ELECTRONICS

Tin "Whiskers" Studied At Very Low Temperature

➤ TIN "WHISKERS" that grow off the surface of tin much as whiskers grow on a man's face are being studied at temperatures near 459 degrees below zero Fahrenheit by scientists at the National Bureau of Standards.

Only a millionth of an inch in diameter, the tin crystals are being made into what are probably the world's smallest electrical circuits.

Experiments with them at temperatures within one degree of the very lowest attainable are expected to extend present knowledge of superconductivity. Certain metals, including tin, lose their electrical resistance completely at these very low temperatures, a phenomenon known as superconductivity.

Because of their microscopic size, tin whiskers exhibit characteristics different from larger specimens of tin when going through the superconducting state. By making the minute electrical circuits containing tin whiskers, then cooling them to superconducting temperatures, O. S. Lutes and Dr. E. Maxwell of the Bureau staff, are studying this remarkable class of materials.

Although superconductors have no immediate practical applications, there is a possibility that, if materials could be found that are superconducting at considerably higher temperatures, resistance-free telephone circuits using little or no power might be constructed.

Science News Letter, May 21, 1955

MEDICINE

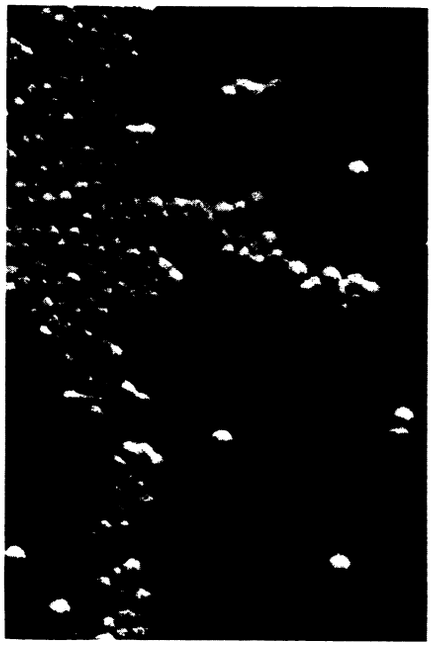
Anti-Virus Drugs Seen

New chemical stops influenza virus from multiplying in test tube. Gives doctors hope that new wonder drugs will provide weapons against influenza, common cold and polio.

➤ HOPEFUL PREDICTION for early discovery of drugs to stop viruses such as those causing influenza, colds, and perhaps even polio appeared in a report by Dr. Igor Tamm of the Hospital of the Rockefeller Institute for Medical Research, New York, to the Society of American Bacteriologists meeting in New York.

In test tube experiments, influenza virus was completely stopped from multiplying by a compound made from the chemical, benzimidazole. The cells in which the 'flu virus was growing were not harmed at all by this new compound.

None of the benzimidazole derivatives has yet proved useful in treating people with virus infections, Dr. Tamm stressed.



SPHERICAL VIRUS — These tiny balls, each only 1/250,000th of an inch in diameter, are the cause of some colds. Called R1-67 virus, they were photographed from an electron microscope image.

But he thinks development of anti-virus drugs for humans may not now be too far off.

Benzimidazole is a chemical building block for many important living structures.

Bacteriologists have hope, also, that some antibiotics may yet be found which can stop virus diseases as the antibiotics now stop many other infections. Two groups of scientists reported on first steps toward this. Newcastle disease virus, cause of a frequently fatal epidemic in poultry which can also cause eye inflammation in humans, can be inactivated by the antibiotic, subtilin, Drs. A. J. Salle, G. D. Jann and C. W. Molander of the University of California have found.

Chickens can even be vaccinated against this virus when subtilin is used to kill the virus for the vaccine.

Two other antibiotics, streptothricin and noformicin, and ethionine, a chemical related to an amino acid, are effective against Newcastle disease virus in the test tube, Drs. C. O. Gitterman and A. H. Larsen of Merck and Co. reported.

Viruses that cause ailments commonly diagnosed as virus pneumonia, grippe, severe colds, catarrhal fever and acute sore throat are uniform spherical particles measuring 1/250,000 of an inch, Drs. M. R. Hilleman, A. J. Tousimis and J. H. Werner of the Army Medical Service Graduate School, Washington, D. C., said.

They showed electron microscope pictures of the spherical virus particle, called R1-67 virus, that attacks about three-fourths of recruits in winter during their first eight months of basic training and which is also widespread among civilian populations.

Electron microscope pictures of AD-6, another respiratory disease virus found in human adenoid tissue by Public Health Service scientists, show it to be about the same size and shape as the military R1-67.

Science News Letter, May 21, 1955

GENERAL SCIENCE

A Dry Huff and a Puff Make Smoking Easier

➤ PUFFING ON unlighted cigarettes helps to make smoking lighted cigarettes easier, it was reported at the 33rd annual Virginia Academy of Science meeting at Madison College in Harrisonburg, Va.

Airflow through an unlighted cigarette serves as a means for telling how much ease or difficulty a smoker is going to have when he smokes one, P. M. Pederson and E. S. Harlow of The American Tobacco Company's Richmond research laboratory said. This is one of the testing methods used by manufacturers.

Tests have shown, they reported, that airflow is not affected by the amount of moisture nor the width of the tobacco strands in a cigarette if weight, length and circumference are kept constant.

Science News Letter, May 21, 1955