MEDICINE

Virus Weapon Sought

150 penicillin-like substances have been investigated in the hope of discovering anti-virus chemicals to fight colds, polio and similar diseases.

➤ SEARCHING for a weapon like penicillin and the other antibiotics that will conquer virus diseases such as colds and infantile paralysis, scientists at Rutgers University and the New Jersey Agricultural Experiment Station have tested 150 microorganisms that might produce anti-virus chemicals.

The experiments are reported in *Science* (June 29), by Miss Doris Jones, Prof. F. R. Beaudette, Dr. Walton B. Geiger and Dr. Selman A. Waksman.

Only three microorganisms showed signs of possible action against the fowl pox virus which was the virus chosen for the search. Of these three, the active principle of one was actinomycin A, known to be highly poisonous to animals and therefore unsuitable for consideration as a remedy. The other two have not yet been studied enough for claims to be made about their anti-virus potentialities.

The organisms were isolated from straw-compost, manure, soil, drainage material and soil enriched with virus concentrates.

Bacteria, fungi and actinomycetes living in such material might, it was hoped, have developed antagonism for the viruses of fowl pox, laryngotracheitis and chick bronchitis.

The action of the microrganisms was tested by exposing the viruses to culture filtrates of the organisms and then inoculating the virus in chick embryos which they ordinarily can infect. Failure to infect the embryos would indicate anti-virus action of the test organisms.

Science News Letter, July 7, 1945

PHYSIOLOGY

Can See by "Black Light"

Patients who have had the lens of the eye removed in an operation for cataract are able to see by ultraviolet light, invisible to ordinary vision.

➤ PATIENTS who have had the lens of the eye removed in an operation for cataract are able to see by ultraviolet light, invisible to ordinary human vision and popularly known as "black light." This fact was investigated in experiments conducted by Prof. George Wald of the Biological Laboratories of Harvard University.

Such patients could read the eye testing chart from top to bottom under ultraviolet lighting which made it impossible for Prof. Wald himself to see the chart.

The eye lens in man is yellow in color, Dr. Wald says in his report to *Science* (June 29). It acts like the yellow filter a photographer puts on his camera to photograph the sky. That is, it filters out light at the ultraviolet end of the spectrum, making the eye blind to it although the sense organs behind the lens, like the photographic film behind the filter, are sensitive to light of that color.

The liquid in the eye, the cornea and ocular humors, also absorb some light in the violet and ultraviolet, Prof. Wald reports.

With the yellow lens taken away, the sensitiveness of the eye to violet and ultraviolet is tremendously increased. For light of 365 milli-microns (in the upper part of the ultraviolet) the average sensitivity of the eyes with lenses removed is 1,000 times that for normal persons.

"In this radiation," Prof. Wald said, "I have frequently had 60- to 70-year-old aphakics (persons with lens removed) read a Snellen chart from top to bottom, under circumstances in which I was unable to see the chart."

"It has long been known that certain insects are highly sensitive to ultraviolet light," he pointed out, "and it has been alleged that they respond to it with a special quality of color sensation. . . . This need no longer be a matter of pure speculation."

The lens is not the only yellow filter in the human eye. In the center of the retina itself there is a yellow patch, the yellow coloring matter of which Prof. Wald found to be a chemical similar to the yellow coloring of plants. It probably is actually the same chemical, xanthophyll or $C_{40}H_{54}(OH)_2$.

The depth of the coloring in the yellow patch varies greatly, Prof. Wald found. In one person no pigmentation was perceptible; in another the pigment absorbed more than 90% of the light at 436 milli-microns. On the average, about 60% of light of wavelengths from 430 to 490 milli-microns, through the violet and blue range, is filtered out by this coloring matter.

Prof. Wald's findings were made in the course of an investigation designed to gain more exact knowledge of the sensitivity of the rod cells of the eye, and the cone cells, measured at the center of the eye and at its periphery, under bright light and dim illumination.

Science News Letter, July 7, 1945

CHEMISTRY

Luminous Paint Reduces Dangers in Operating Room

➤ THE USE of luminous paint on the walls, ceiling and floor of an operating room would eliminate shadows from the surgeon's hand and instruments, and reduce danger from the sudden failure of lights during an operation, reports Engineer Morozov of the Soviet Scientists Antifascist Committee.

The light rays appear to come through the solid walls and ceiling. An even light with no shadows is created by using a mercury vapor lamp with a black reflector in the room painted with the luminescent paint.

The paint is made by mixing small quantities of zinc or cadmium sulfide with ordinary paint pigments. It will give off light for about an hour and a half after the invisible ultraviolet rays have been switched off. It is also activated by natural daylight as well as artificial light.

These luminous paints have been thoroughly tested at the Union Electromechanical Institute under the direction of Prof. S. O. Maizel. Walls of a room, painted with the compound before the war, still continue to give off light despite the fact that all the windows were blown out of the building by bomb blast in January, 1941, and the paint was subjected to all kinds of weather conditions for almost three years.

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