

BACTERIOLOGY

Watching Invisible Viruses May Solve Cancer Problem

New Electron Microscope Reveals Chemical Interaction Of Virus Molecules With Others; Like Seeing Disease

WATCHING invisible viruses at work, a feat now possible with the aid of the electron microscope, is yielding clues that may lead to solution of the cancer problem. Fresh evidence for the theory that viruses are the cause of cancer has already been obtained, it appears from studies reported by Dr. Wendell M. Stanley, of the Rockefeller Institute for Medical Research, on receiving the 1941 gold medal of the American Institute.

Dr. Stanley has isolated the virus which causes mosaic disease of tobacco plants and found it to be not only a disease germ but a crystalline chemical. With the electron microscope, which lets scientists see in photographs particles far too small to be seen through even powerful microscopes, Dr. Stanley and an associate were able to follow the interaction of tobacco mosaic virus molecules with certain smaller molecules.

This is like seeing disease viruses at work. If scientists can see far enough in this way, they might be able to follow the chemical process by which a cancer-causing virus, if it exists in the body's cells in a latent or masked form, is stirred into action.

"Several cases of the harboring of viruses by presumably normal cells," Dr. Stanley explained, "have already been discovered. For example, practically all of the potato plants grown in the United States are known to carry a virus. The plants might be regarded as normal, for the presence of this infectious agent, known as the latent mosaic of potato virus, cannot be demonstrated readily so long as one works with plants carrying the virus. Its presence can be demonstrated easily, however, by applying extracts of such plants to certain other plants, such as Turkish tobacco, which respond to the virus with obvious disease symptoms."

New and better vaccines for protection against virus diseases, which range from tobacco mosaic to yellow fever, influenza and infantile paralysis, may result from scientists' new-found ability to watch these invisible substances at work and

from knowledge that they are chemicals whose structure can be altered as can that of other, well-known chemicals. Such alterations in the chemical structure of a virus might yield a protective vaccine, and it might also lead to the "production of new and useful strains of viruses."

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AERONAUTICS

Post With Plunger Protects Planes in Crash

INJURY to an airplane pilot and his passengers, and serious damage to the plane, will be prevented, even if it noses over as it touches the ground and lands on its back, provided it is equipped with a device invented by Alexander P. de

Seversky, president of the Seversky Aircraft Corporation. The United States Patent Office has just granted him patent 2,230,614 for the invention.

It consists of a post which projects up from the fuselage, behind the pilot, to such a height that, if the plane does nose over, it receives the impact. Padded on the top and with a hydraulic plunger inside, it yields gradually, thus taking up the shock so that, the inventor states, "the occupants will not even be jarred if the plane lands on its back."

As the projecting post would interrupt the flow of the airstream, and reduce the plane's speed, it is normally retracted. It is connected with the retractable landing gear, so that, when the wheels are lowered for landing, the cover over the post opens and it is raised in place.

Leslie Everett Baynes, of Bourne End, England, was granted patent 2,230,370 for a new type of airplane which combines the usual type with a helicopter, raised by the rotation of large horizontal propellers. This is provided with a rather small wing area, enough to sustain the craft in straight flight, but not enough to enable it to take off.

As the ship leaves the ground, the pro-



IT'S DONE WITH MIRRORS

This light distribution test is one of a number of intricate check-ups given lamp units at the General Electric Illuminating Laboratory. The mirror at the upper right reflects light from the unit back to a photo cell at the other end of the room. Movement of the mirror gives light readings in the vertical plane, rotation of the lamp unit gives readings in the horizontal plane.