

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."

Science News Letter, February 22, 1941

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

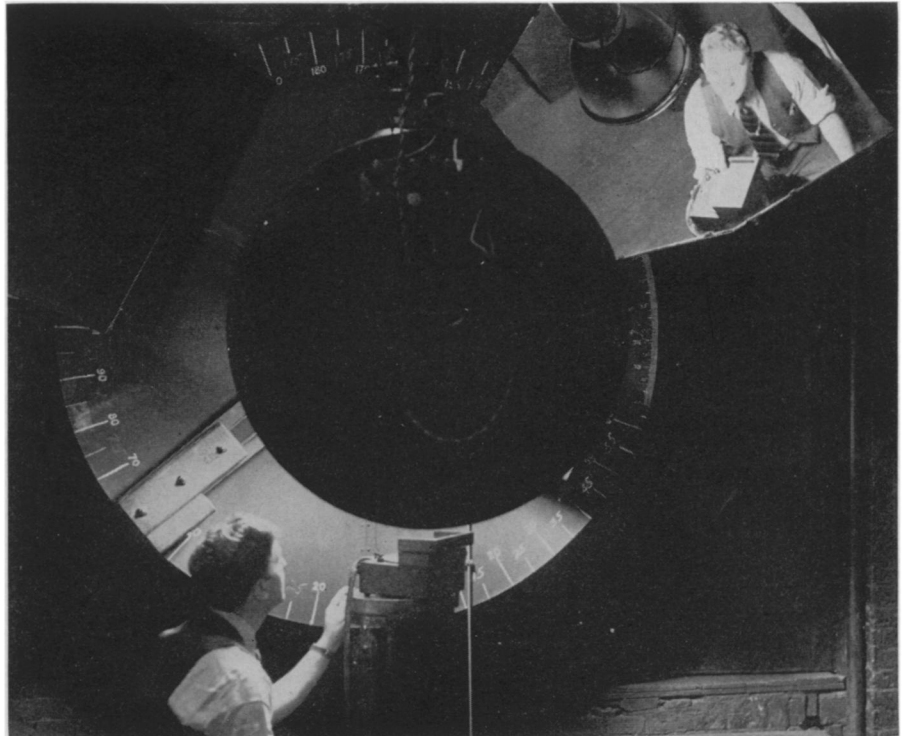
Seversky, president of the Seversky Aircraft Corporation. The United States Patent Office has just granted him patent 2,230,614 for the invention.

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.

propellers turn horizontally, or tilt slightly forward, and thus give extra lift. When in flight, the pilot can move the propellers to turn in a vertical plane, then they give maximum speed ahead. In landing, they are moved upwards, and nearly vertical descent is possible.

Mr. Baynes assigned his patent to Alan Muntz and Company, Ltd., of Hounslow, England.

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PUBLIC HEALTH

Children's Bureau Layette For Washington's Birthday

WHEN the Father of His Country was ushered into the world on a February day 209 years ago he was probably given for wearing apparel many layers of undergarments, very long dresses, socks, mitts and caps, the latter to be worn both day and night. Babies born on February 22 this year, the day now celebrated as Washington's birthday, will be well dressed, according to modern scientific ideas, with very much scantier wardrobes.

The staff of the U. S. Children's Bureau sent a layette to a baby born in Lima, Peru, on Washington's Birthday, as a token of friendship and in return for a similar courtesy extended to a poor baby of Washington, D. C., by Senora Rosalia Lavalle de Morales Macedo, wife of one of the Peruvian delegates to the Eighth Pan American Scientific Congress. The layette was taken to Lima by Mrs. Elizabeth Shirley Enochs, when she went as representative of the Children's Bureau chief, Miss Katharine F. Lenroot, to a meeting in Montevideo of the International American Institute for the Protection of Childhood.

The layette consisted of a pink silk coat and bonnet, a blue knitted jacket and bootees, three short, hand embroidered dresses, two slips, three cotton shirts, one dozen diapers, two knitted cotton nightgowns, one can of baby powder, two cakes baby soap, one box of cotton swabs for cleaning a tiny nose, one bath towel, two washcloths, one crib blanket and one receiving blanket for use after baby's bath. A few supplementary items were to be purchased by Mrs. Enochs in Lima.

The layette might serve as a guide to mothers in other American countries. Such fancy items as the silk bonnet and coat, embroidered dresses and slips, are not essential if the budget for the expected baby's wardrobe is small. The diaper,

nightgown, blanket and towel allowance might well be increased.

Baby should have his own individual towels, washcloths and toilet articles, to

cut down the risk of germ infections. His clothes should be easy to put on and off, and they should give him comfort and freedom for kicking and stretching.

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ARCHAEOLOGY

Find Homes of Plain Citizens Of Mayan Civilization

THROWING light on the home life of ancient America's plain citizens over 1,000 years ago, when the brilliant Mayan Old Empire in the tropics was America's leading civilization, two prehistoric Mayan homes have been unearthed in British Honduras, J. Eric S. Thompson has just reported to the Carnegie Institution of Washington.

Excavations at the ruined "city of the stone lady," Xunan Tunich, near the Honduras-Guatemala border, show that a wide gap existed between lower and upper classes in the Mayan Indian world, Mr. Thompson reports. Indian farmers, who made up the masses of the Mayan population, were concerned with their pottery making, basketry, weaving, and worship of simple earth gods. The erudition of the Mayan priests, mathematicians and astronomers, which amazes archaeologists today, not only went over the heads of the common people but the lofty scholars moved in a different world.

They even worshipped different gods, some concerned with more esoteric matters than the rain and winds and soil.

Mr. Thompson, who is now in the United States, made the discoveries just reported during his past season's work there.

The two buildings which he identifies as presumably Mayan homes were occupied during several generations and were extensively rebuilt and repaired by the tenants. One home is a one-room affair, small and with vaulted roof. The other is more pretentious, and Mr. Thompson excavated six of its rooms.

Handiwork of the people provides significant clues to the two sharply divided classes of Mayan society. From studying decorated pottery in the ruins, Mr. Thompson has been able to divide the history of the ruined settlement into six culture phases, marked by a succession of art styles.

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ANTHROPOLOGY

Bones of Incas to Be Studied By American, Off to Peru

NEW LIGHT on physical types of the conquering Incas and other prehistoric Indians whom the Incas fought and welded into ancient America's biggest empire will be sought in Peru by Dr. T. Dale Stewart of the Smithsonian Institution.

Setting out Feb. 28, on a one-man anthropological expedition, Dr. Stewart hopes to study skulls and other skeletal remains from such ruins as the holy Incan city of Pachacamac, and the famous cemetery of Paracas on the coast, where quantities of mummies of pre-Incan days have been unearthed from the sand and unwrapped.

Getting better acquainted with remains of the ancients in Peru itself will aid the Smithsonian Institution in study of the

remarkable Indians who evolved high aboriginal civilization in South America. From an expedition made by Dr. Ales Hrdlicka about 30 years ago, the Smithsonian possesses four or five thousand skulls of Peru's ancient people.

Quantities of such skulls in the past have been cast aside in Peru's pre-historic cemeteries by amateur digging parties in frantic search for Incan gold or for the lovely woven fabrics and decorated pottery of the ancient people, which might be sold. Dr. Stewart's expedition is expected to add to the Smithsonian's collections new skeletal material.

With progress in excavating Peru's ancient cities, the physical types that inhabited highland and sandy coast in several thousand years of Indian develop-