

## MEDICINE

## Cancer Cells Make Measles Virus Harmless

► THE VIRUS that causes measles can be made harmless by growing it in cancer cells, Drs. Francis L. Black, Magdalena Reissig and Joseph L. Melnick of Yale University School of Medicine have discovered.

The measles virus was added to rapidly growing human cancer cells in laboratory test tubes, and the scientists later harvested 1,000,000 times the amount of virus they had put in.

The virus underwent a drastic change while being grown in its new environment, the scientists reported, and lost its ability to cause sickness.

When the cancer-grown measles virus was tested on monkeys known to be susceptible to measles, none of the animals became ill, even though the virus could be found in their blood.

When the virus was withdrawn from the monkeys and put back into the cancer cells, the researchers found that still another change had taken place. The virus had lost much of its ability to infect. It took 30 to 56 days to infect the cancer cells, instead of the two days needed before.

Whether these findings will lead to a good measles vaccine is still unknown. Future research may disclose whether or not the cancer-grown type of virus can create immunity against the disease-producing type, in much the same way that cowpox vaccine helps to immunize against smallpox.

The research work of Drs. Black, Reissig and Melnick was supported by the American Cancer Society and the National Institutes of Health.

Science News Letter, January 19, 1957

## BIOCHEMISTRY

## Live Virus May Give Life Polio Immunity

► LIVE polio virus is now being fed to a group of children who have previously received Salk vaccine injections.

It is hoped that this new procedure of giving live but weakened virus, in gelatin capsules or in milk, after Salk shots may offer lifelong immunity against paralytic polio, Dr. John R. Paul, Yale University School of Medicine, New Haven, Conn., reported in New York to a conference on cellular biology, nucleic acids and viruses at the New York Academy of Sciences.

The virus being used is a weakened strain of Type I polio virus, the type responsible for the great majority of paralytic cases.

The major practical question about the presently used Salk vaccine is whether or not it will give as long lasting immunity as Dr. Salk believes, Dr. Paul reported.

If not, Dr. Paul questions whether it is best to supplement the Salk vaccine with revaccination every so often, or just to "depend upon natural 'alimentary' infections

or reinfections in a vaccinated child to keep his or her immunity automatically in repair . . ."

These natural infections have been found to stimulate the production of polio-fighting antibodies in children who have already received the Salk vaccine and thus give a "durable" immunity, Dr. Paul reported.

But this may be leaving things up to chance, he said, whereas a planned program of oral vaccination in Salk vaccinees with live but weakened virus "theoretically would eliminate pure chance in the production of a more complete and lasting immunity — an important point."

In an earlier series of tests, 13 persons received varying doses of live virus after being immunized by the Salk vaccine, Dr. Paul reported.

"At no time did illness occur nor was there any spread of the infection to eight close associates living in the same hospital ward," the scientist said.

Co-authors of the report with Dr. Paul were Drs. Dorothy Horstmann and Joseph Melnick, Yale University School of Medicine, Dr. Joyce Deutsch, Southbury, Conn., and Dr. James Niederman, New Haven, Conn.

Science News Letter, January 19, 1957

## GEODESY

## Survey Celebrates 150th Birthday

► THE COAST and Geodetic Survey, whose findings and charts are used by millions of people in everyday life, celebrates its 150th anniversary on Feb. 10 this year.

To mark its continuous growth since the administration of Thomas Jefferson, Secretary of Commerce Sinclair Weeks has announced a series of public events. The sesquicentennial program will be under the direction of Admiral H. Arnold Karo, director of the Coast and Geodetic Survey.

Plans include issuance of a special commemorative postage stamp, special publications and demonstrations of the many ways the agency is performing services essential to public safety, commerce, defense and science.

The Survey was founded in 1807 to chart the bays and harbors of the United States, then later it was sent inland. Now it has drawn in from coast to coast the imaginary lines on which the position of every citizen's back fence depends.

With polite regrets, the Survey answers letters from small boys asking for charts of sunken treasure.

Although the meaning of the Coast part of the Survey's name is clear, the Geodetic part puzzles many. Geodesy is the kind of surveying that takes into consideration the size and shape of the earth, and checks its calculations by the fixed stars. The local surveyor, who deals in straight lines, has to have a point to start from. These points, called plane coordinates, are fixed by the Coast and Geodetic Survey.

Science News Letter, January 19, 1957

# IN SCIEN

## GENERAL SCIENCE

## Endowed Professorship Honors Enrico Fermi

► AN ENDOWED professorship at the University of Chicago will be set up to honor the "father" of the atomic age, the late Enrico Fermi, the president of Bell Telephone Laboratories, Dr. M. J. Kelly, announced.

A Nobel Prize winner, Dr. Fermi is best known as the first man to achieve the controlled release of nuclear energy in a chain reaction. However, his other contributions to modern physics would have earned him a high place as a scientific leader.

The professorship, to be established at the University's Institute of Nuclear Studies where Dr. Fermi was both teaching and conducting research at the time of his death in 1954, is designed to perpetuate and memorialize Dr. Fermi's many scientific contributions.

Dr. Kelly will serve as chairman of a national committee to establish the professorship. Serving with him will be Walker L. Cisler, president of Detroit Edison Company, Dr. Crawford H. Greenewalt, president of Du Pont Company, and Admiral Lewis Strauss, chairman of the Atomic Energy Commission.

The Honorable Clare Boothe Luce, former United States ambassador to Italy, and His Excellency Dr. Manilio Brosio, Italian ambassador to the U. S., are honorary committee members. An advisory subcommittee will be formed.

Science News Letter, January 19, 1957

## AERONAUTICS

## Detector Protects Planes From Crash Fires

► A NEW detecting system to protect all airplanes from crash fires has been devised by two scientists at the Lewis Flight Propulsion Laboratory in Cleveland, Ohio.

It acts immediately and automatically and is so constructed that accidental operation is improbable. Only damaged areas where fire breaks out are put out of commission, leaving the rest of the airplane for normal operation.

Drs. Jacob C. Moser and Dugald O. Black who developed the method report it can be used on all airplanes, whether they are powered by reciprocating, turboprop or turbojet engines. The system is based on the use of mechanically simple switches that detect linear movement of vulnerable parts or contact pressure.

It was developed after a study of full-scale experimental and accidental airplane crashes.

Science News Letter, January 19, 1957

# CE FIELDS

## BIOLOGY

### Big Horns Roam Again in North Dakota Badlands

➤ EIGHTEEN BIGHORN SHEEP, obtained from the British Columbia Game Commission, were released in the Badlands of North Dakota in an attempt to re-establish these big game animals in the Badlands.

A 200-acre pasture was fenced off on federal land in the rough country west of Grassy Butte, in McKenzie County. The new home of the bighorns is located in some of the most rugged country in the state, directly west of Grassy Butte, deep in the badlands of the Little Missouri River.

Bighorn sheep were native to the Badlands of North Dakota before the turn of the century. They were hunted by early settlers, trappers and explorers. However, they completely disappeared, along with the grizzly bear and buffalo. State biologists expect the introduction of these 18 sheep to be the nucleus of a future herd of bighorns in North Dakota. They will be kept inside the huge pasture for at least one year, to keep a close watch over their progress.

Science News Letter, January 19, 1957

## MEDICINE

### Law Regulating Filters Urged

➤ CIGARETTE FILTERS sooner or later must be standardized by law, and manufacturers required to state how effective each filter is in removing the tobacco tars suspected of causing cancer, Dr. E. L. Wynder, Sloan-Kettering Institute, New York, contends in a leading article in the *British Medical Journal* (Jan. 5).

The "supposed health protection" smokers get from filtered cigarettes is based on large advertising claims and other factors, the scientist said.

With present filters, removing "specific components" from a particulate phase of the smoke does not seem possible. Therefore, to be effective at all, the filters must allow only a minimum amount of smoke to pass, Dr. Wynder states. This minimum amount would still give a satisfactory pressure drop and tobacco taste but would remove a large percentage of the cancer-inducing tars.

"Present work indicates that it is entirely possible to develop a filtered cigarette with a good pressure drop and satisfactory tobacco taste which will remove about 40% of nicotine and tar from a given cigarette. Uniform acceptance of a filter in this range will be a partial answer to the present problem, provided, of course, that the smoker does not decide to smoke twice as many cigarettes," Dr. Wynder reports.

Aside from filtration, Dr. Wynder sug-

gests two other practical methods that might help solve the problem.

One is the control of the burning process inside the cigarette itself, since this burning plays an important part in the formation of some of the cancer-causing agents. Ways might be found to stop this reaction from taking place and present studies of such things as oxygen supply used, temperatures reached, and the cut of the tobacco leaf may give new clues about the burning process, Dr. Wynder states.

Another possible method of control may be removing the hydrocarbons that occur naturally in tobacco.

If these hydrocarbons "represent one of the main precursors of tobacco-tar carcinogens," a reduction of the hydrocarbons may reduce the cancer-causing agents, the scientist reported. It may become practical, Dr. Wynder reports, to remove some of these substances from the tobacco by washing it with chemical solvents, a method that is now being tried.

Science News Letter, January 19, 1957

## VETERINARY MEDICINE

### Tranquilizers Make Pets Easier to Handle

➤ EVEN MAN'S best friend, the dog, is getting tranquilizing drugs these days.

The next time you take Fido to the vets, he may go willingly if you follow the treatment prescribed by Dr. Jack O. Knowles, a Miami, Fla., veterinarian.

When dogs are scheduled to come in for treatment, Dr. Knowles has their owners give them tranquilizer pills an hour beforehand. The drugs, Miltown or Equanil, usually take effect by appointment time and then snarling, snapping canines become as docile as lambs.

The drugs are also good for car sickness and other minor conditions such as fear of thunder and lightning, and for keeping the four-footed patients from becoming too fretful while being penned up at the vet's, Dr. Knowles reports.

Other more powerful tranquilizers are used for dangerous dogs or when an "unusual amount of cooperation" is needed, such as in X-ray therapy. Their big advantage is that they can be injected on the spot and take effect within 15 minutes.

Hard-to-handle pets are usually held by their owners until they get a shot in the hip muscle and then everything is rosy.

Owners are as happy with the new therapy as the pets are, the veterinarian says, since the drugs usually make the dogs more quiet and peaceful when taken home. They also reduce the animals' tendency to molest stitches and bandages.

"These are useful drugs," Dr. Knowles states. "They are quite safe," he added, "even when tested with several doses per day over a period of time much longer than most veterinarians would wish to use them."

Dr. Knowles reports on his use of the tranquilizers in the *Journal of the American Veterinary Medical Association* (Jan. 1).

Science News Letter, January 19, 1957

## PUBLIC SAFETY

### Man-Made Resins Stop Skidding on Highways

➤ MAN-MADE resins show "great promise" as surface coatings for highways, and they can be used to prevent skidding at toll booth entrances, the Highway Research Board was told at its annual meeting in Washington.

The chemicals, a by-product of the oil industry, are known as epoxy resins. They have some of the same properties as natural resins plus certain special qualities such as hardness, flexibility and resistance to chemicals.

Epoxy resins, C. V. Wittenwyler and T. G. Nock of the Shell Chemical Corporation reported at the meeting, have been tested as a road surfacing material on a heavily-traveled highway near New York since 1954.

Results so far, they said, indicate the coating has "great promise for use in critical areas."

The entrance to a toll booth on Connecticut's Wilbur Cross Parkway has been coated with epoxy resins, Warren M. Creamer of the Connecticut State Highway Department and R. E. Brown of Shell Chemical Corporation reported to the meeting.

Heavy traffic volume, they said, had caused an excessive amount of wear, resulting in a dangerously slippery area where cars must continuously stop and start. The epoxy resins, when mixed with tiny stones and applied to the surface, have prevented skidding and are protecting the concrete apron around the toll booths from further deterioration.

Science News Letter, January 19, 1957

## BIOCHEMISTRY

### Two More Major Polio Viruses Crystallized

➤ ALL three of the major polio virus strains have now been crystallized and purified, Dr. Carlton E. Schwerdt of the University of California virus laboratory reported to the conference of the New York Academy of Sciences in New York.

The work is important in understanding and fighting infections. Dr. Schwerdt told how he had determined the physical properties of the Mahoney and Usaukett strains of polio virus. Similar work on the MEF-1 strain was reported by him in the fall of 1955.

The physical properties of all three strains are similar. All are nucleoproteins of ribonucleic acid type. Chemical studies, limited so far to the Mahoney and MEF-1 strains, suggest detectable chemical differences between the strains of the different types.

Further work, also supported by the National Foundation for Infantile Paralysis and with collaboration of Dr. Frederick L. Schaffer, is in progress to determine the differences.

Science News Letter, January 19, 1957