

MEDICINE

Cancer Follows Injection Of Germ From Proved Case

Conventional Ideas Attacked as Culture From Human Makes Guinea Pig Cancerous at National Health Institute

DEVELOPMENT of cancer following the injection of a germ or micro-organism has been announced by the U. S. Public Health Service's National Institute of Health.

The discovery was made by Drs. T. J. Glover and J. L. Engle who have been working at the Institute, although they are not attached to the regular government staff nor to the U. S. Public Health Service.

They have succeeded in producing typical, unmistakable cancer in a guinea pig. This cancer followed the injection of a culture of a micro-organism or germ isolated from the tissues of a proved case of cancer of the human breast.

Medical scientists here are frankly excited by the discovery. They realize that it attacks the prevalent opinion that cancer is not a germ disease.

Application of the new discovery to the treatment of human cancer is far in the future, but the experiments of Drs. Glover and Engle promise to blaze a new line of cancer research that appears very hopeful.

"It promises to open a valuable field for further research," commented Dr. George W. McCoy, director of the Institute.

Drs. Glover and Engle have also found that cancer in rats follows injection of their culture of germs from human cancerous tissue. But rats develop cancer so very easily that this was not considered convincing evidence that the germ or culture actually could cause cancer. The production of cancer in guinea pigs which, so far as anyone knows or can find out, do not readily develop it, is considered much more of a feat and more convincing that the germ culture of Drs. Glover and Engle is cancer-producing.

The cancer produced in the guinea pig has all the characteristic appearance of cancer when examined by the unaided eye and under the microscope. Furthermore it spread, producing cancer in other parts of the body, thus ful-

filling another of the criteria for the diagnosis of the growth as cancer.

The germ itself is what scientists call a spore-bearer. It was isolated on special media from the tissues of the human cancer.

In the report made public, only one case of cancer in the guinea pig is described. The diagnosis of cancer in this case was confirmed by a pathologist of the National Institute of Health, and the foremost staff bacteriologist is now checking the bacteriological side of the work.

Dr. Glover started his investigations several years ago in New York. For the last three years, the work has been carried on by himself and Dr. Engle at the National Institute of Health where the director and staff scientists could follow and check various steps of the research.

In their report made public recently they do not claim specifically to have discovered the cause of cancer, but state with characteristic scientific reserve:

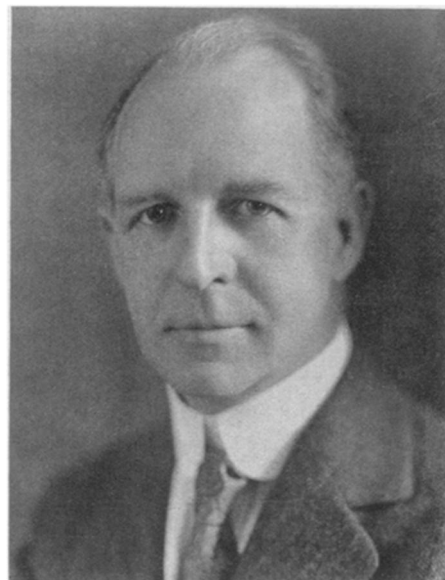
"It is the purpose of this report to place on record the production of metastatic malignancy in one of a group of guinea pigs inoculated with a culture containing a spore-bearing micro-organism which (*Turn to Page 220*)

GEOLOGY

Internal Fires Make Mountain Move

INTERNAL FIRES of Carbon Mountain, near Durango, Colo., are the cause of the "moving mountain" phenomenon now attracting attention, scientists of the Colorado Museum of Natural History at Denver explain. The explosion under this mountain producing additional avalanches of rock, heavy smoke and fumes, indicates fire in the underlying deposits. The original movements are doubtless traceable, in the opinion of the scientists, to expansion and pressure imposed through the heat of underlying fires.

Science News Letter, April 8, 1933



DR. LYMAN J. BRIGGS

GENERAL SCIENCE

New Bureau of Standards Head Chosen From Ranks

PRESIDENT ROOSEVELT'S nomination of Dr. Lyman J. Briggs to be director of the National Bureau of Standards of the Department of Commerce is received with acclaim in scientific Washington as evidence that there will be no playing of politics in the operation of the scientific research bureaus of the government under the Roosevelt administration.

The elevation of Dr. Briggs to succeed Dr. G. K. Burgess who died last year is a promotion from the ranks of scientists who labor at the Bureau of Standards for Uncle Sam. He has been acting director since Dr. Burgess' death and President Hoover nominated him to the directorship but his nomination, with all others made to the lame-duck Senate by Hoover, died because of inaction by the Senate. President Roosevelt, by renewing Dr. Briggs' nomination, has followed the tradition that directors of this great government testing, research and standardization laboratory are eminent scientists who have won research laurels in the organization. Dr. Briggs is the third director in the history of the Bureau of Standards. The late Dr. S. W. Stratton who resigned to become president of the Massachusetts Institute of Technology was director at the formation of the institution shortly after the turn of the century. Dr. Burgess was chief of the

bureau's metallurgical division before being made director.

Dr. Briggs is a leading physicist and former chief of the bureau's division of mechanics and sound. He is the co-inventor, with Dr. Paul R. Heyl, of the earth inductor compass that is now widely used on aircraft. This invention was recognized by the award of the

Magellan medal. During the World War, Dr. Briggs developed with J. F. Hayford a gyroscopic instrument for maintaining an artificial horizon below decks as an aid in directing gun-fire from battleships. These instruments are now installed on many battleships of the Navy.

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PSYCHOLOGY

Chimpanzees Use Earphones In Tests of Hearing

TESTING the hearing of chimpanzees was the rather novel task of a psychologist, described by J. H. Elder, of Yale University, to the meeting of the New York Branch of the American Psychological Association.

Chimpanzees are no harder to test accurately than are human children, Mr. Elder reported. His method was to train the apes to press a key when the signal was given and not to press it when they heard nothing. Standard earphones were used and the apes were then allowed to listen to sounds of known frequency from an audiometer.

The frequencies heard by the chimpanzees are within the range audible to human beings, although several of the apes could hear frequencies lower than those heard by the average human.

Mr. Elder believes his method of testing would work well with very young children.

Reaching Quickly Learned

By the time he is 60 weeks old, an infant has built up a skill in reaching for objects which compares very favorably with that of an adult, Dr. H. M. Halverson, of Yale University, told the meeting of the Psychological Association.

This skill has been built up, too, with the initial handicap of having no repertoire of already learned movements on which to build. The first steps toward building of the reaching skill by the very young infant are reflexes or simple automatic movements without direction from the mind. The next stage is the period of slowly acquired voluntary movements which range from crude groping to direct reaching.

In the final stage the movements become largely automatic again. Practice has made the reaching a more or less

fixed habit on the part of the reacher.

Progress of infants in reaching has been studied by Dr. Halverson through the use of motion pictures taken of a group of babies at regular four-week intervals.

Science News Letter, April 8, 1933

PHARMACOLOGY

New Sleeping Potion Test May Aid in Poison Cases

A NEW TEST for some of the modern sleeping potions, which may aid in solving the mysteries of murders and suicides, has been developed by Dr. Theodore Koppanyi, Dr. William S. Murphy and Stephen Krop of Georgetown University School of Medicine, Washington.

The sleeping potions in question are of the type known to the public as veronal and known to scientists as barbital and derivatives of barbituric acid. Only a few chemical tests for them have previously been described, and these were not very satisfactory or reliable.

In the new procedure, the development of a blue color indicates the presence of barbital or other barbituric acid compounds. The amount of barbital in the blood or other body fluid being tested is determined by comparing the depth of this blue color with that of a solution containing a known amount of barbital. By this method the Georgetown investigators were able to detect the presence of barbital in body fluids or organs in such small amounts as five hundredths of a milligram, or about the amount that would cover the head of a pin, in one cubic centimeter of the fluid being tested.

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CHEMISTRY

Standard Proposed For Scurvy-Preventing Vitamin

AN INTERNATIONAL standard of the scurvy-preventing power of hexuronic acid, which is now almost positively known to be vitamin C, is proposed by T. W. Birch, Leslie J. Harris and S. N. Ray of the Nutritional Laboratory at Cambridge.

In a communication to the scientific publication, *Nature*, they suggest as the international standard an amount of orange juice equal to about four drops or 1 cubic centimeter, which is equivalent to about one-half a milligram of the hexuronic acid.

If this international standard is adopted, as has been done for other vitamins, a physician can prescribe a certain number of units of vitamin C or a certain amount by weight of hexuronic acid. Likewise, research scientists will have a better measure for the vitamin C activity of foods.

Little doubt remains that vitamin C and hexuronic acid are the same, the Cambridge investigators reported. They also described a rapid micro-chemical method by which the chemist in the laboratory can estimate the amount of hexuronic acid or vitamin C in foods. It will thus be possible to test for vitamin C nearly as easily as the fat content of milk is determined by the Babcock test, for instance. Ordinarily the determination of the vitamin content of foods must be done by the tedious process of feeding experiments.

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ARCHAEOLOGY

Relics of Famous Greeks Coming to Light in Athens

ARCHAEOLOGISTS excavating the famous Agora in Athens are finding this market place a veritable mine of relics associated with the great men of Greece, and further discoveries are expected.

Describing the most recent finds, Prof. T. Leslie Shear of Princeton, field director, says in a report:

"These discoveries prove that this area, where Athenian leaders planned and wrought events which have moulded history, will continually yield relics associated with those men and their deeds."

The Athenian Agora is being excavated by the American School of