

MEDICINE

Gene Theory Dims Cancer Conquest Hope

► CONQUEST of cancer is one of the most hopeless problems of science if the theory proves true that tumor growth is caused by changes in the form of the genes, which are the irreducible units of living systems.

Dr. George W. Beadle of the California Institute of Technology, in delivering a Silliman lecture at New Haven, Conn., in connection with Yale's Sheffield Scientific School centenary, explained that while the frequency of mutations of the genes can be increased in many ways, there is little immediate hope of decreasing them.

Progress in cancer research is discouragingly slow, he emphasized, although great sums of money are being spent and an impressive array of talent is directed upon this problem. The idea that change in the fundamental living bits that carry heredity is the fundamental cause of cancer is very discouraging and Dr. Beadle feels that makes scientists reluctant to look with favor on the idea.

Radiation from the atomic bomb, X-rays, cosmic rays, and even the ultraviolet light in strong sunshine are all known to be able to cause change in the inheritance of living things, human beings included. Radiations do this by changing the genes. Some of the changes may not show up until scores of generations have lived and died. This is the basis of some of the real fear that some scientists have of the genetic disaster for mankind and other living things contained in the atomic bomb.

Science News Letter, October 25, 1947

ASTROPHYSICS

Sun's Energy Measured By New "Langley" Unit

► WEATHER-MEN and physicists have a new scientific unit for use in measuring the sun's heating power—the "langley", abbreviated as "ly". It is named in honor of Dr. Samuel P. Langley, who was a pioneer student in this field as well as one of the founders of modern aviation. Formal notice of the adoption of the new unit has been given by a group of leading meteorologists and astrophysicists in a communication to the British science journal (*Nature*, Sept. 6).

Curiously enough, the adoption of the term "langley" was recommended in a German scientific publication, *Hand-*

buch der Physik, issued in Berlin during 1942, while the Hitler's Reich was at war with the United States. Nazi thought - controllers apparently overlooked that one.

A langley is defined as the amount of solar radiation received on one square centimeter, capable of raising the temperature of one gram of water one degree Centigrade. Phrases like "langleys per minute", abbreviated to ly/min, can be expected to appear in future scientific literature.

Signing the communication that formally sets up the new unit were: Loyal B. Aldrich, director, Astrophysical Observatory, Smithsonian Institution; Harry Wexler, chief, Special Scientific Services, U. S. Weather Bureau; Sigmund Fritz, meteorologist, U. S. Weather Bureau, L. F. Hand, official in charge of solar radiation section, U. S. Weather Bureau; Arnold Court, meteorologist, Office of the Quartermaster General, War Department; Maj. William P. Milten, Air Corps.

All the signers have headquarters in Washington, with the exception of Mr. Hand, who works in Boston.

Science News Letter, October 25, 1947

PSYCHOLOGY

Family Life Determines Character of Child

► LIFE with Father—and the rest of the family—determines the character and personality of Junior, three University of Chicago psychologists discovered in a study of 13-year-old children in a Midwestern town.

Most important part of family life, as far as building junior's character goes, is his sharing in family decisions. Next most important are the attitudes of the parents toward each other and their attitude toward the child's relations with his peers.

These findings are reported by Andrew W. Brown, Joan Morrison and Gertrude B. Couch in the *Journal of Abnormal and Social Psychology* (Oct.). Their work is a part of a study being conducted by the Committee on Human Development of the University of Chicago in a "typical small Midwestern town," referred to as "Prairie City."

A group of school children answered questions about their family relationships, while teachers, other adult leaders and the pupil's schoolmates rated their character in different tests.

Among ten phases of family life, sharing in decisions ranked highest in relation to character, but all ten were found to be a part of character-building.

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IN SCIENCE

OPHTHALMOLOGY

One Donated Eye Gives Normal Sight to Two Boys

► A WAY to make two eyes see again for two boys through a single gift eye from a third person was described by Dr. George P. Landegger of Los Angeles at the meeting of the American Academy of Ophthalmology and Otolaryngology, in Chicago.

A rectangular piece of cornea, transparent part of the eye that admits light, was cut from a donor eye and divided in half. One of the squares thus formed was grafted into the eye of one boy and the other into the eye of another boy, each of whom had such advanced deformity of the corneas of their own eyes that not even contact glasses could help them to see.

The grafts healed perfectly and 11 months after the operation each boy had normal 20/20 vision.

Science News Letter, October 25, 1947

MEDICINE

Hope to Prolong Action of Penicillin with Metals

► PENICILLIN may be made more useful as a remedy by combining it with metals or with various organic dyes, Samuel Monash of New York suggests in a report to the journal, *Science*, (Oct. 17).

The greater usefulness would come from the fact that the mold remedy would stay in the blood longer when combined with a metal or a dye.

Metals inactivate penicillin, other scientists have previously reported. But Dr. Monash thought the inactivated penicillin might become active again after it gets into the body.

He tried it on rabbits. Penicillin in peanut oil, material generally used to slow penicillin escape from the body, could not be found in the rabbit's blood five hours after it had been injected. Penicillin combined with silver, mercury or iron could be detected in the rabbit's blood from 17 to 20 hours after injection. Much the same results were obtained when penicillin was combined with the dyes, brilliant green and gentian violet.

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E FIELDS

NUCLEAR PHYSICS

New Atomic Study Launched With Mass Spectrograph

➤ A NEW attack on secrets of the atom by researchers at the National Bureau of Standards in Washington may reveal whether man can unlock energy from other atoms than ones of the atomic bomb elements.

"A large new instrument of novel design" is planned "to indicate available atomic energy," the Bureau of Standards announced. This instrument will be a mass spectrograph. Being built at the Bureau in cooperation with the Office of Naval Research, the new instrument will give precise determinations of atomic masses.

The new spectrograph will be so sensitive that it will measure the mass of the particles which make up atoms. Measured with the new instrument, these subatomic masses may solve some of the mysteries of the structure of atoms—and give new hints on where and how to unlock the energy in other atoms.

This new tool for atomic scientists is one job of a new atomic physics division being established at the Bureau. The six sections of the division will do fundamental research and set standards in atomic fields.

Dr. E. U. Condon, director of the Bureau, also will head the new division with Dr. Robert D. Huntoon, a Bureau scientist who worked on the radio proximity fuze, as assistant chief.

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OTOLOGY

Pure Lead Used to Keep Ear Window from Closing

➤ THE famous window cutting operation on deaf ears to let them hear again has been improved by a lead burnishing.

This new development in the fight against deafness was announced at the meeting of the American Academy of Ophthalmology and Otolaryngology in Chicago by Dr. Julius Lampert, New York ear specialist and surgeon who was one of the first to perform this operation in the United States.

The operation itself consists essentially in making a new window in the inner ear for the passage of sound waves.

It is used in cases in which hearing is lost because of bone formation in the opening to the ear. This bone formation prevents the passage of sound waves to the nerve of hearing.

One drawback of the operation is the difficulty of keeping the new window open permanently. Covering the opening with a flap of scar tissue from the ear canal has been one method used.

Dr. Lampert's innovation is to burnish the rim of the new window with pure lead. When tried in monkeys, this prevented formation of bone, which would close the window again. He hopes that it will do the same in humans.

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MEDICINE

Stomach Cancer in Mice May Help Human Diagnosis

➤ CANCER of the stomach, which is the most frequent and highly fatal form of the disease in men, can now be experimentally produced in mice.

Confidence that this will lead to a better understanding of the disease in man and perhaps shed some light that will enable investigators to detect cancer of the stomach in its early stage was expressed by Dr. Harold L. Stewart of the National Cancer Institute, Bethesda, Md., who with Dr. Egon Lorenz reported his work to the International Cancer Research Congress.

Two powerful cancer-producing chemicals have been used to cause stomach cancer in the laboratory mice. But, whereas small injections of these chemicals are almost certain to produce cancer in four months, when given by mouth they have no effect on the glandular stomach. Mice were fed a dose of 20-methylcholanthrene, 350,000 times as high as that required to produce cancer by subcutaneous injection with this powerful chemical, without developing the disease. This again may be significant to man because suspicion has centered in the past on what was taken by mouth as a cause for the high rate of cancer in men.

Further studies will be made in an attempt to produce cancer in all strains of mice, to find a strain that is resistant to cancer and discover if possible what causes the resistance. The cells involved in the production of cancer will undergo intensive study and smears will be made of the cells shed in an attempt to discover a method for early detection.

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MEDICINE

New Blood Test to Aid in Treatment of Infections

➤ A NEW blood test that will help doctors give better treatment with penicillin or other drugs to patients suffering serious infections has been developed by Dr. Charles H. Rammelkamp, Jr., and Miss Margaret Hezebicks of Western Reserve School of Medicine, Cleveland, Ohio.

The test is for the staphylococcus, germ that causes boils but also such serious ailments as abscesses of the liver and kidneys, pneumonia, and osteomyelitis, or bone inflammation. If the doctor knows what germ is causing the trouble, he can tell better what medicine to give.

To make the test, a sample of the patient's blood serum is taken. To this is added a substance called coagulase, which comes from cultures of the staphylococcus germ. This is incubated and then fibrinogen, blood chemical that plays a part in making blood clot, is added. If there is no clotting, it shows that the patient has become infected with the staphylococcus.

Science News Letter, October 25, 1947

INVENTION

Car-Lifting Elevator Parks Autos Automatically

➤ PARKING six or eight cars where but one could be parked before is the alluring prospect held out by a Los Angeles inventor, Richard L. Sinclair, on whose automatic parking apparatus U.S. patent 2,428,856 has just been issued.

The apparatus consists of a car-lifting elevator which will carry a car driven onto its channelled tracks up to the level of an overhead stall. When it is opposite the stall entrance, the tracks slide out, carrying the car into the stall; then they slip out from under the wheels, leaving the car parked.

In its simplest form, the parking machine serves only two ranks of stalls. However, it is possible to increase the number by building the elevator tracks on a turntable, so that cars can be parked in radially arranged stalls, more or less like an old-time railroad roundhouse.

All operations are carried out by hydraulic mechanism, with electric controls centered at a single operator's station.

Rights in the patent are assigned to Park-O-Mat, Inc., of Los Angeles.

Science News Letter, October 25, 1947