SCIENCE NEWS

Science Service, Washington, D. C.

SCIENTIFIC EVENTS OF 1926

PHYSICS

DR. W. D. COOLIDGE, of the General Electric Company, demonstrated a new cathode ray tube, with which these rays are for the first time obtained in quantity outside the tube. The effect of the tube is estimated to be equivalent to a ton of radium.

Professor A. A. Michelson, of the University of Chicago, announced his new determination of the speed of light as 299,786 km. or 186,284 miles per second.

Helium was prepared in solid form at a temperature of 457 degrees below zero Fahrenheit by Professor W. H. Keeson, of the University of Leyden, Holland.

Magnetism of hydrogen atom was measured by Drs. J. B. Taylor and T. E. Phipps, of the University of Illinois.

The penetrating cosmic rays vary daily with the aspect of the heavens according to Dr. Werner Kolhoerster, German physicist.

Experiments made by means of midnight balloon ascensions in Belgium showed no ether drift, thus substantiating the Einstein relativity theory.

Dr. Roy J. Kennedy, of the California Institute of Technology, repeated the Michelson-Morley experiment and obtained no evidence of ether drift.

Experiments by Dr. Carl T. Chase, of the Norman Bridge Laboratory of Physics, at Pasadena, gave support to the Einstein theory of relativity in opposition to Dr. Dayton C. Miller's results.

Experiments by Dr. Rudolph Tomaschek, of the University of Heidelberg, Germany, fail to confirm the ether drift indicated by experiments of Dr. Miller at Mt. Wilson, California.

Dr. G. M. B. Dobson and Professor F. A. Lindemann, of Oxford University, showed that the temperature 50 miles above the earth is as high as that of a warm summer day.

A vacuum switch which stops immense electrical currents safely was devised in the new high-tension laboratory of the California Institute of Technology.

A new kind of vacuum tube with which electric currents can be amplified two million times was developed by Dr. Albert W. Hull and H. N. Williams working in the research laboratory of the General Electric Company.

The sound of a single atom of radium was made audible to radio broadcast listeners when Dr. H. P. Cady, chemist of the University of Kansas, amplified minute electric currents 700 billion times.

The proposition that beats of a master pendulum of great precision might be signalled throughout the world by radio, so that all telegraphic, astronomical and radio instruments would be in exact tune with each other was urged by Albert Einstein before the League of Nations Committee on Intellectual Cooperation.

Dr. James Franck, of the University of Göttingen, and Dr. Gustav Hertz, of the University of Halle, divided the 1925 Nobel physics prize and Professor Jean Baptiste Perrin, of the Sorbonne, Paris, was awarded the 1926 Nobel prize for physics.

Professor Niels Bohr, physicist, received the Franklin Medal from the Franklin Institute, Philadelphia, for his work on the structure of the atom.

Dr. W. D. Coolidge, inventor of the type of X-ray tube now almost universally used in hospitals and laboratories, was awarded the Howard N. Potts Medal of the Franklin Institute for his invention which "has simplified and revolutionized the production of X-rays."

CHEMISTRY

Hydrogen was transmuted into helium by Professor F. Paneth and Dr. Peters, of the University of Berlin.

Gold was claimed to have been transmuted to mercury by Dr. A. Gaschler, of the Berlin Technical High School.

Nitrogen is changed to fluorine and then to hydrogen and oxygen when hit by the nucleus of an atom of helium, Dr. William D. Harkins, of the University of Chicago, told the National Academy of Sciences.

Professor S. B. Hopkins, of the University of Illinois, discovered a new chemical element, No. 61 in the periodic table, and named it illinium.

Elements 75 and 43, reported discovered by Professor Walter Noddack, of Berlin, in 1925, have been relegated to the limbo of still undiscovered metals, by experiments at the Platinum Institute of the Russian Academy of Sciences which failed to substantiate the German results.

A synthetic drug called plasmochin, more powerful than quinine, was made in the Elberfelder Farbenfabriken.

Compounds analogous to chaulmoogra oil were made in the laboratory by Dr. Roger Adams, of the University of Illinois, and were found to act as an effective germicide against leprosy.

The valuable constituent of insulin was prepared in crystalline form by Dr. John J. Abel, of the Johns Hopkins University.

The first enzyme, one of an important class of substances involved in digestion, to be isolated was made in a crystallized form by Dr. James E. Sumner at the Cornell University Medical School.

An extract of the parathyroid gland, which controls the lime content of the blood, was prepared successfully from animal glands by A. M. Hjort and H. B. North, Detroit chemists.

Luminous flames radiate more heat than non-luminous flames, according to tests made by Professor R. T. Haslam and M. W. Boyer, of the Massachusetts Institute of Technology.

A new method of welding pieces of metal together was announced by Dr. Irving Langmuir, of the General Electric Company, by which hydrogen molecules are broken into atoms and recombined to give an intensely hot flame.

Methods for liquefying coal and obtaining motor fuel and other valuable products from coal were perfected by

Dr. Friedrich Bergius and Dr. Franz Fischer, of Germany, and by General Georges Patart, of Paris.

A process for making sugar from wood was developed by Professor Friedrich Bergius, of Heidelberg University.

Tests made by government chemists showed that a thin film of metallic chromium electroplated upon printing plates of finished steel or copper-nickel would make the plates wear longer than plates of hardest steel.

A world famine in rubber by 1930 was predicted by the U. S. Department of Commerce.

Commercial application of carbon dioxide ice for refrigeration purposes has reached the practical stage.

The wide-spread supplanting of cotton by rayon and similar fabrics made from wood began a revolution in American agriculture.

A project was set on foot to produce levulose sugar in large quantities from the roots of dahlias.

A system of zoning was evolved at the International Conference on Oil Pollution in an attempt to solve the problems arising from the discharge of waste oil by vessels at sea.

A set of world standards for gasoline and other liquid fuels was proposed at the meeting of the International Union of Pure and Applied Chemistry.

Professor Richard Zsigmondy, of the University of Göttingen, Germany, received the 1925 Nobel prize for chemistry and Professor Theodor Svedberg, of the University of Uppsala, Sweden, was awarded the 1926 prize.

Poland elected as its president Professor Ignatz Moscicki, well-known in the field of chemical engineering.

The American Chemical Society celebrated the fiftieth anniversary of its foundation.

A meeting of the International Union of Pure and Applied Chemistry was held at Washington, from September 13 to 15.

ASTRONOMY

Observable region of space was shown by Dr. Edwin Hubble, of Mount Wilson Observatory, to be a sphere of 140 million light years' radius, including some 2,000,000 nebulae, all of them embryo or grown stellar systems.

Mars came closer to earth than it will come again until 1939.

The temperature of the moon was found to be above boiling point when the sun is shining directly on it, by Dr. Donald H. Menzel, of the University of Iowa, as a result of observations at the Lowell Observatory in Arizona.

New evidence that our sun is a variable star was obtained by Dr. Charles G. Abbot, of the Smithsonian Institution, by means of a new system he devised for measuring and recording the changes in the energy reaching the earth from the sun.

American astronomical expeditions traveled to Sumatra to observe a total eclipse of the sun on January 14.

Some 125,000-mile long sunspots, the largest seen in years, were observed by Professor George H. Peters, of the U. S. Naval Observatory, in September.

An unusual display of sunspots, the largest being 45,000 miles in diameter and the largest group 150,000 miles long, was observed in October. Some of the spots could be seen with the naked eye through smoked glass.

Great increase in sunspot activity was marked on earth by auroral displays and magnetic storms, which caused much disturbance in radio and telegraphic communication.

Eight comets, two of which were new, were discovered during the year. One of the new ones was discovered in January by an amateur astronomer named Blathwayt in South Africa. The second was discovered by Dr. J. Coma-Sola, of Fabra Observatory, at Barcelona, Spain, in November.

A new star was found in a spiral nebula in the constellation Virgo by Professor Max Wolf, of Heidelberg.

A telescope with a 41-inch lens, to be the largest refractor in the world, was ordered by the Russian government from the Parsons firm in England.

BIOLOGY

Dr. James B. Sumner, of Cornell Medical College, isolated and crystallized the first enzyme, urease.

A "death whisper" consisting of highly intense "beams" of sound-waves too short to be audible, at frequencies as high as 300,000 per second, was shown by Professor R. W. Wood and A. L. Loomis to be capable of killing certain small animals and plants and to have other strange biological effects.

The human body grows in three distinct spurts, Dr. Charles B. Davenport, of the Carnegie Institution of Washington, told the National Academy of Sciences.

Eyes of an embryo chicken removed from the egg and planted in a culture medium continued to grow and develop in "a surprisingly normal way" according to two British physiologists, Dr. H. B. Fell and T. S. P. Strangeways.

The theory that vitamins have opposites, "toxamins," which occur in certain foods and prevent proper bone formation and cause serious nervous diseases, was advanced by Professor Edward Mellanby, of the University of Sheffield, England.

An eleven-day-old human embryo, the youngest human specimen ever available for observation, was studied and described by Dr. George L. Streeter, embryologist of the Carnegie Institution of Washington.

The mystery of the giant cells in the blood, which are present in tubercular conditions and some other pathological cases, was solved by Dr. W. H. Lewis, of the Carnegie Institution of Washington, who announced that these cells are formed by the fusion of a number of white blood cells.

An international school of fisheries was inaugurated at the University of Washington.

A fly imported from Europe to help save New England shade trees from two insect pests was found to be an enemy to 92 other insects as well.

White pine blister rust, which has for several years been devastating the pine forests of the East, was discovered to be threatening the white pine stands of the West.

New corn-harvesting machinery was invented to combat the spread of the European corn borer.

Individual cells that have lived as long as two centuries were discovered in Arizona cacti by Dr. D. T. MacDougal.

That plants will respond to strong light if it is flashed on them for as little as one one thousandth of a second was demonstrated by Dr. F. A. F. C. Went, of Utrecht.

Suction powers in vegetable growth as high as 500 pounds per square inch were demonstrated by Dr. A. Ursprung, of the University of Freiburg, Switzerland.

The discovery that plants, as well as animals, have in their cells the special bits of living matter known as the sex chromosomes, was announced by Dr. Kathleen B. Blackburn, British botanist.

The popular idea that big seeds are better than small ones was exploded by the experiments of Dr. Felix Kotowski, of the College of Agriculture at Warsaw, who showed that size of seed has no effect on the size of vegetables.

The relationship that plants bear to each other as branches of the evolutionary family tree was demonstrated by means of serum chemistry by Professor Karl Mez and Dr. H. Zeigenspeck, German botanists.

Luther Burbank died on April 11.

Plants living for months in hermetically sealed glass bulbs were exhibited to the National Academy of Sciences by Raymond H. Wallace, of Columbia University.

Anti-evolution bills were defeated in Louisiana and Kentucky.

Mississippi enacted an anti-evolution law.

MEDICINE

Partial immunization to measles, by means of injections of blood serum from persons who have had the disease and recovered, was claimed in a report to the League of Nations Health Committee.

The germ of oroya fever, or Peruvian fever, was isolated at the Rockefeller Institute by Drs. Hideyo Noguchi and T. S. Battistini.

Dr. E. B. Krumbhaar, of Philadelphia, announced the discovery that the spleen is an important source of the anti-bodies in the blood, which aid the body in resisting bacterial infection.

A skin test for susceptibility to infantile paralysis was originated by Dr. Edward C. Rosenow, of the Mayo Foundation.

Bacteriophage, the enemy of germs, discovered by Dr. F. d'Herelle, was declared by him to be a living parasite of parasites and not just a chemical factor.

Cause of creeping eruption was found to be a small parasitic thread worm by experts at U. S. Bureau of Entomology.

Mrs. Margaret R. Lewis, of the Carnegie Institution, and Howard B. Andervont, a Johns Hopkins University graduate student, discovered that a form of cancer occurring in chickens is the result of the white blood cells running wild.

Experiments on 50,000 mice by Dr. Maud Slye, of the University of Chicago, showed that resistance as well as susceptibility to cancer in mice is hereditary.

Virus from chicken sarcoma was found to be absolutely resistant to X-rays by workers at Cancer Research Laboratory at Middlesex, England.

Rat bite fever was found to be an effective cure for general paralysis or paresis.

The Pasteur Institute claimed that babies may be protected from tetanus infection by giving prenatal doses of tetanus anatoxin to mothers.

Indications were found that trachoma, a disease of the eye for which immigrants have been barred from entering the United States, is due to a deficient diet, by Dr. B. Franklin Royer, medical director of the National Committee for the Prevention of Blindness.

Two Prague scientists discovered a way of using washed animal blood in human transfusions.

By coating them with gold, Professor H. Bechold, German scientist, made visible minute bacteria formerly beyond the power of any microscope.

Polonium, the radioactive element isolated by Mme. Curie, was declared to be of possible use in treating syphilis as a result of preliminary tests made at the Pasteur Institute.

The theory that some diseases may be the result of a partnership of two kinds of germs was advanced by Dr. Aldo Castellani, internationally known for his studies of tropical diseases.

Protection against typhoid fever by swallowing vaccine was tried out experimentally in bacteriological laboratories at the State College of Washington.

Discovery of the chemical compound in tuberculin that causes the skin reaction in persons that have tuberculosis was announced by Dr. Florence B. Seibert, of the University of Chicago, as a new step toward understanding the chemistry of tuberculosis.

The belief that the adrenal glands play an important part in the production of body heat was advanced by Dr. Charles Sajous, professor of endocrinology at the University of Pennsylvania.

It was shown that ultra-violet light is necessary for the formation of vitamin B, which prevents beri-beri and similar diseases, and of the growth-promoting vitamin A, at least to a certain extent.

Nickel and cobalt were shown to be necessary to the proper functioning of the pancreas, which prevents diabetes, by Gabriel Bertrand, of the Pasteur Institute of Paris.

The Health Organization of the League of Nations built up an epidemiological service to check the spread of infectious diseases between countries.

A drive for full birth and death registration throughout the United States was inaugurated by the American Medical Association.

Tetraethyl lead "anti-knock" gasoline was declared not unduly dangerous to health by the U. S. Public Health Service.

A movement to secure uniform milk ordinances for all the states was instigated by the U. S. Public Health Service at a conference of health authorities from the different states.

Berlin established a matrimonial bureau where candidates for marriage can receive medical and genetical advice.