Scientific Events Make 1926 Notable Year

The year just closed was marked by notable advances in all fields of science and research. Among the highlights of the scientific events were the following:

Aeronautics

Construction of two rigid airships of approximately 6,000,000 cubic foot capacity at cost not over $8,000,000 for both authorized by Congress but no funds appropriated.

Italian airship Norge demonstrated by North Pole flight technical excellence of semirigid type.

Large Army semirigid airship RS-1 erected in United States.

Great Britain began construction of two rigid airships of not less than 5,000,000 cubic feet capacity, one to be made of duralumin, the other of stainless steel.

Germany began construction of new rigid airship of 3,500,000 cubic feet capacity for transatlantic use.

Construction of first metal-clad airship begun by Aircraft Development Corporation, Detroit, for U. S. Navy.

Airship mooring masts erected at Detroit, Mich., Scott Field, Ill.; Ismailia, Egypt; Karachi, India.

Air commerce act passed by Congress to promote commercial aviation.

Exhaustion of Petrolia, Texas, gas field endangers future supply of helium needed in airship operation.

Rubber lumber, made of hard sponge rubber, replaced wood and supplemented metal as aircraft construction material.

Amphibian airplanes developed for use of Navy, Army and Coast Guard.

Research determined pressure distribution over airship Los Angeles, data that will aid greatly in design of future airships.

Brakes on landing wheels of airplanes were perfected.

Anthropology and Archæology

Portions of the second Neanderthal skull to be found at Gibraltar were brought to light by Daisy E. Garrod, an English woman.

Discovery of ancient animal bones and relics of early man reported in Czechoslovakia by Dr. Karel Absolon.

Evidences of Neanderthal man were found in Egypt by a British expedition.

Remains of three distinct Indian cultures, one above the other, were found in the Fisher mounds in Illinois by George Langford of Joliet.

A cave home of Paleolithic man, 40,000 years old, was unearthed in Germany near Freiburg, by Dr. Lothar F. Lotz.

A great temple to Chaldean deities was excavated by the joint expedition of the British Museum and the University of Pennsylvania at Ur, the home town of the patriarch Abraham.

Evidence of a highly civilized Indian race of prehistoric times was discovered in the marshy bayou region of southern Louisiana by Henry B. Collins, Jr., ethnologist of the Smithsonian Institution.

Evidence that western Indians maintained complex trade relations with distant tribes was obtained by Herbert W. Krieger, ethnologist of the Smithsonian Institution, who examined graves of prehistoric Indians along the Columbia River.

A great sun dial, built by astronomers of the Maya race over 1,500 years ago, was discovered at the ruins of the Maya city of Copan, Honduras, by archæologists of the Carnegie Institution of Washington.

Excavations at the site of the old Philistine stronghold of Beth-Shan. made by the joint expedition of the University of Pennsylvania and the British Museum, shed new light on the history and career of King Saul of the Bible.

Gold and silver art objects of great scientific value, the most important since Schliemann unearthed Mycenæ, were dug up in Greece by Swedish archæologists from the University of Upsala.

A project of setting up the fallen columns of the Parthenon at Athens was undertaken by the Greek government.

The Archæological Institute of America announced plans to excavate the civic center of ancient Athens, at a cost of millions of dollars.

A chain of 5,700 beads, making a necklace 48 feet long, was found by Dr. A. V. Kidder, anthropologist of the National Research Council at Pecos Pueblo, N. M.

Dr. Manuel Gamio, excavating in Guatemala, found important clues to pre-Maya history.

A temple to the plumed rattlesnake god of the ancient Maya was discovered under a pyramid of a later date in Yucatan, by an expedition from the Carnegie Institution of Washington, which continued its excavations in Maya ruins.

Evidences that the ancient Maya of Yucatan had a great system of well-built stone roads radiating from their metropolis at Coba was discovered by Dr. Sylvanus G. Morley, explorer of the Carnegie Institution of Washington.

Art treasures brought from Turkestan proved the influence of ancient Greek sculptures on Buddhistic art, according to a report by Dr. Albert von Le Coq, ethnologist of Berlin.

A prehistoric pueblo was excavated near Flagstaff, Arizona, by Dr. J. Walter Fewkes.

A second skull of Pithecanthropus erectus, the ape-man of Java, was reported found but later was judged to be an oddly shaped piece of ancient elephant leg.

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 nebulæ, 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, largest seen in years were observed by Prof. 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 ob-

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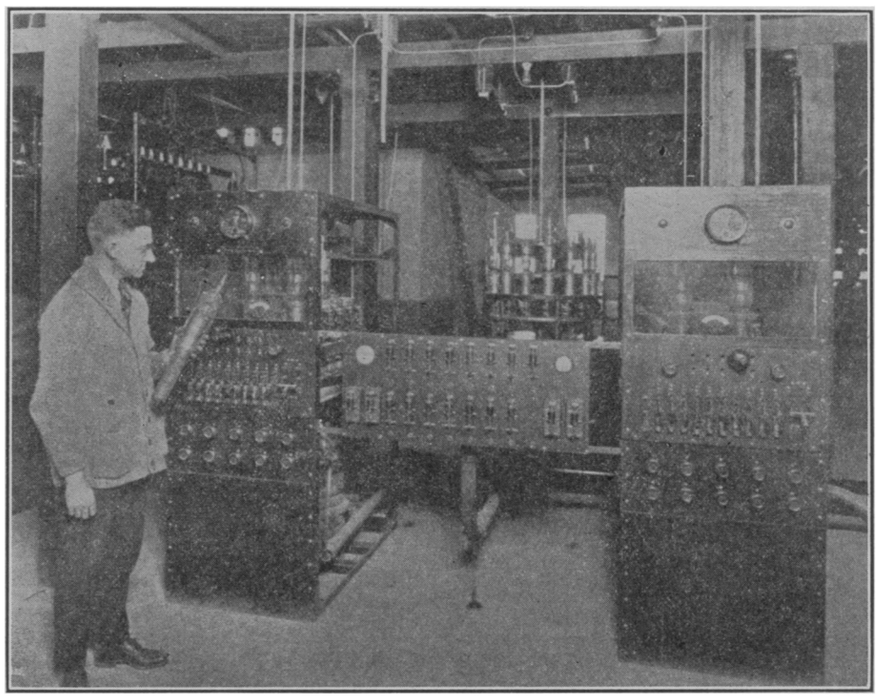

RADIO APPARATUS used in Telephony tests between New York and London

Scientific Events

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served 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 nebulæ in the constellation Virgo by Prof. 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 Prof. 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 Prof. Edward Mellanby, of Sheffield University, in 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 Pashington.

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 for as long as two centuries were discovered in Arizona cacti by Dr. D. T. MacDougal.

DR. FRIEDRICH BERGIUS, the German Chemist, who developed a method of turning coal into oil

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

Suction powers in vegetable growth as high as 500 pounds per square inch were demonstrated by Dr. A. Ursprung of the University of Fribourg, 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 seed 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 Prof. Karl Mez and Dr. H. Zeigenspeck, German botanists.

Luthed Burbank died, 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.

Chemistry

Hydrogen was transmuted into helium by Prof. F. Paneth and Dr. Peters of Berlin University.

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.

Prof. 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 Prof. 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 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 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 Prof. 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, both Germany, and General Georges Patart of Paris.

A process for making sugar from wood was developed by Prof. 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 was predicted by the U. S. Department of Commerce.

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

The widespread 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.

To be continued in the next issue of the Science News-Letter, January 8. Engineering and Invention, General Science, Geology and Geography, Medicine, Physics, Psychology, Radio, Seismology and Vulcanology will be covered in the concluding instalment.