SCIENCE NEWS

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SOME ADVANCES IN THE SCIENCES DURING 1930

(Continued from the issue of January 2)

Biology

QUARANTINE restrictions on Florida fruit and vegetable shipments, designed to prevent the spreading of the Mediterranean fruit fly, were wholly removed on November 15.

The plant breeder who originates a new variety of plant propagated by asexual or vegetative means was given, by act of Congress, the right to a patent of his living product.

The world's largest fish hatchery was completed near Lonoke, Arkansas, for the propagation of the warm-water nest-building fishes, such as bass and bream.

A new instrument, a modification of the interferometer, was devised by Professor K. W. Meissner, of Frankfort, Germany, making it possible for the first time to see a plant grow.

A swarm of locusts appeared across northern Africa, from Egypt almost to Gibraltar, and extended into the Near East and Balkans.

That the fungus of black-stem rust is capable of producing hybrids and thus multiplying the strains which attack wheat, was discovered by Dr. J. H. Craigie, of the Dominion Experimental Farms at Winnipeg.

Two sets of human identical triplets were reported by Alfred E. Clarke and Daniel G. Revell, biologists of the University of Alberta, Canada.

Animals can manufacture the growth-promoting vitamin A in their bodies from carotin, it was found by Dr. Thomas Moore, Cambridge, England.

A herd of 30 musk-oxen was transplanted from Greenland to Alaska by the U. S. Department of Agriculture in an effort to re-establish them in the latter country.

Dr. J. Markowitz and Dr. H. E. Essex, of the Mayo Foundation, were successful in keeping alive the internal organs of an animal for 12 hours after the animal had died.

Man lowered himself farther into the ocean depths than ever before when William Beebe and Otis Barton descended 1,426 feet in a steel sphere off the coast of Bermuda.

Geology and Geography

The decennial census of the United States was made, showing the population to be 122,775,046.

The most severe drought and hot season recorded by the Weather Bureau gripped practically the whole of the United States from June until mid-autumn, causing severe damage to crops and range lands and bringing new records for low water in the rivers.

An extremely heavy rain visited France in which over 3,000 tons of water crashed down on each acre, and a rainfall equal to the normal annual average of 30 inches fell in two days.

A landslide destroyed part of the city of Lyons in France, taking many lives and destroying much property.

The largest meteoric stone whose fall was observed and which has been recovered intact, an 820-pound meteorite, fell near Paragould, Arkansas.

Great deposits of fossil mammal and bird bones were found in Wyoming.

Professor Wilhelm Freudenberg found in Ice-Age gravels near Heidelberg fragments of skull, face-bones, jaw and shoulder-blade of a big ape-like creature with a brain larger than that of any known anthropoid ape and equal in size to that of the Neanderthal man.

The fossil remains of a species of ape previously unknown were dug up in southern France.

Fossils of a redwood species were discovered on St. Lawrence Island in Bering Straits, bridging the gap between previously known occurrences in Asia and North America.

Huge deposits laid down in pre-Cambrian times were found in the Grand Canyon of Arizona.

The Polish Academy of Science announced the discovery of the complete body of an Ice-Age rhinoceros, with muscles and skin complete and in place, in the frozen soil of the district of Starunia, Poland.

The bodies of S. A. Andrée, pioneer aerial explorer of the Arctic, and his two companions were found, with Andrée's diary and other important historic documents, on White Island, Fridtjof Nansen Land.

A small airship was used by a party of U. S. National Park Service officials and scientists in a survey of an area in the southern Everglades which is to become a National Park.

The rebuilding of a submarine was begun for use by an Arctic expedition planned by Sir Hubert Wilkins.

Seismological reports of 29 earthquakes were collected and epicenters located by *Science Service* with the cooperation of the U. S. Coast and Geodetic Survey and the Jesuit Seismological Association; these included 15 violent shocks, six of which were destructive, on land in Italy, Japan, India, Persia, Guatemala and Chile.

Medicine

A hormone from the cortex of the suprarenal glands was isolated by Drs. W. W. Swingle and J. J. Pfiffner, of Princeton University, and used by Drs. Leonard G. Rowntree and C. H. Greene, of the Mayo Clinic, to treat hopeless victims of Addison's disease, in the same way that insulin affects the coma of diabetes. Drs. F. A.

Hartman and K. A. Brownell, of the University of Buffalo, also obtained an extract of the same gland.

The filterable virus germ which causes multiple sclerosis, or "creeping paralysis," was discovered with the aid of a special ultramicroscope at a magnification of 1,800 diameters by Sir James Purves-Stewart and Kathleen Chevassut, of the Westminster Hospital, London.

An artificial lung or respirator was invented by Drs. Philip Drinker and L. A. Shaw, of the Harvard School of Public Health, to keep alive patients whose breathing muscles are paralyzed in infantile paralysis or who are victims of gas poisoning.

A new method for studying the microscopic growth of living tissue in a warm-blooded animal was developed at the University of Pennsylvania School of Medicine.

An enzyme which has both protective and curative action on Type III pneumonia in mice, and possibly also in man, was extracted from a bacillus found in the soil of New Jersey cranberry bogs.

Vitamins in sufficient amounts will prevent infection of animals, and possibly man, with leprosy, it was reported by Dr. J. Shiga, dean of the Imperial Medical Faculty, Seoul, Korea.

Fever produced by short radio waves was found helpful in the treatment of paresis by Professor W. T. Richards, of Princeton.

The National Institute of Health was created by act of the Congress replacing the Hygienic Laboratory of the U. S. Public Health Service.

A new species of the meningococcus organism, cause of meningitis, was found by investigators of the U. S. Public Health Service.

Cancer studies were reported by numerous investigators. Drs. Walter B. Coffey and John B. Humber, of San Francisco, announced a method of treating cancer by injection of a glandular extract. Drs. Shigemitsu Itami and Ellice McDonald, of the University of Pennsylvania, reported they were unable to cure cancer in mice by this method. Dr. Frederick S. Hammett, of Philadelphia, found that the application of partly oxidized sulfur compounds caused tumors in mice to disappear.

Postgraduate demonstrations of cancer, in which radiologists, pathologists and other specialists tested and increased their diagnostic ability, were held under the auspices of the Surgical Pathological Laboratory of the Johns Hopkins University.

Experiments proving that the common cold is caused by a filterable virus were reported by two groups of investigators: Dr. Gerald S. Shibley, Katherine C. Mills and Dr. A. R. Dochez, of the Columbia University College of Physicians and Surgeons and the Presbyterian Hospital of New York; and Drs. Perrin H. Long and James A. Doull, of the Johns Hopkins Medical School.

An extensive outbreak of psittacosis, popularly known as parrot fever, occurred in the United States and many other countries. In this country 169 cases with 33 deaths were reported. Investigators of the U. S. National Institute of Health made an extensive study but did not find the *Bacillus psittacosis* which a French scientist, E. Nocard, had reported as the causative germ in 1892. They concluded that the disease was caused by a filterable virus. They did find an organism which might be the cause of the disease, but it was not *B. psittacosis* or any other member of that germ family.

A phenol compound, tri-ortho cresyl phosphate was found by the U. S. Public Health Service to be the adulterant which caused thousands of cases of partial paralysis from drinking bootleg Jamaica ginger, known as "ginger jake."

A new chemical method of standardizing ergot, widely used in childbirth, was devised by Dr. M. I. Smith, of the National Institute of Health, formerly the U. S. Hygienic Laboratory.

A large increase in the number of cases of infantile paralysis, almost reaching epidemic proportions, occurred during the fall of 1930.

An occupational disease causing an involuntary to and fro shifting of the eyes was found among train dispatchers by the Industrial Health Conservancy Laboratories of Cincinnati.

The time required for blood to clot, vitally important in surgical operations, is shortened by feeding the patient vitamin D.

Study of the chemical changes taking place in the brain was made possible for the first time through a technical procedure developed by Dr. Abraham Myerson, of Boston, whereby blood is taken from the artery leading to the brain and from the vein which drains the brain and the chemical contents of the two samples compared.

New hope for recovery of child victims of serious burns was given by a treatment, making use of a tannic acid solution, devised by Dr. Edward C. Davidson, of Detroit.

That radio waves, shorter than those commonly used for sending messages, are able to weaken materially the poison elaborated by the diphtheria bacillus was discovered by Drs. Waclaw T. Szymanowski and Robert Alan Hicks, of the Western Pennsylvania Hospital Institute of Pathology.

A new method for measuring the heart's output of blood determining the amount of acetylene gas taken up by the lungs in a certain time was devised by Dr. Arthur Grollman, of the Johns Hopkins University.

An international birthday party, with the celebrations round the world united by radio, was given in honor of the eightieth birthday on April 8 of the "dean of American medicine," Dr. William Henry Welch.

The three hundredth anniversary of the first use of cinchona bark, from which quinine is obtained for the treatment of malaria, was celebrated.

To study the problems of the American child, scientists from all over the country at call of President Hoover met in a White House Conference on Child

Health and Protection, at Washington, from November 19 to 22.

The flarimeter, an instrument which will disclose whether a person has heart disease in advance of serious developments by measuring shortness of breath, was demonstrated by Dr. P. V. Wells, of Newark, N. J.

A new barbituric acid derivative, the sodium salt of isoamylethylmalonylurea, was discovered and found to be valuable to the surgeon in producing a state just short of deep sleep.

Calcium gluconate, formerly only a laboratory curiosity, was discovered to be an effective medicine.

Recognitions and Awards

For his researches on light, particularly the discovery that monochromatic light when scattered by shining on certain transparent substances is partly changed to other colors, Sir Chandrasekhara Venkata Raman, professor of physics at the University of Calcutta, was awarded the Nobel Prize in physics.

The 1930 Nobel Prize in medicine was awarded to Dr. Karl Landsteiner, of the Rockefeller Institute of Medical Research, for the discovery that human blood is of four different types and that blood of one type does not always mix with blood of another type.

The Nobel Prize in chemistry was awarded to Professor Hans Fischer, of Munich, for his achievement in the laboratory production of hemin, one of the components of hemoglobin, the red coloring matter of blood.

The Daniel Guggenheim gold medal for notable achievement in aeronautics was awarded to Dr. Ludwig Prandtl, professor at the University of Gottingen, Germany, for "pioneer and creative work in the theory of aerodynamics."

The distinguished flying cross of the Navy was given to all members of the Alaskan Aerial Survey expedition which mapped nearly 13,000 square miles of wild country during 1926.

The Collier trophy for the outstanding contribution to aviation was given to the National Advisory Committee for Aeronautics for its cowling for radial air-cooled engines.

Dr. George H. Whipple, of the University of Rochester, and Dr. George R. Minot, of Harvard University Medical School, shared the first $10,000 *Popular Science* annual award given in recognition of their discovery of a successful treatment of pernicious anemia by the liver diet.

The Harmon Trophy for the outstanding achievement in aeronautics was awarded to Carl B. Eielson who piloted Sir George Hubert Wilkins across the Arctic.

The Perkin medal was awarded to the late Dr. Herbert H. Dow, president of the Dow Chemical Company, for his developments of improvements in the production of chlorine, bromine, magnesium and other chemicals.

The James Douglas Medal of the American Institute of Mining and Metallurgical Engineers was awarded this year to John V. N. Dorr, president of the Dorr Company, for "his invention of apparatus and achievement in developing and improving hydrometallurgical practice."

The National Academy of Sciences' public welfare medal was given posthumously to Stephen T. Mather, organizer of the U. S. National Park Service.

The National Academy of Sciences' Daniel Giraud Elliot Gold Medal was awarded to Dr. Henry Fairfield Osborn, of the American Museum of Natural History, in recognition of his scientific monograph describing the ancient titanotheres, a prehistoric creature somewhat resembling the rhinoceros.

A gold medal and accompanying annuity of from $100 to $500 to be given government workers for scientific achievements was proposed in a bill before the Congress.

The William H. Nichols Medal for 1930 was presented by the New York Section of the American Chemical Society to Samuel E. Sheppard, of the Eastman Kodak Company, for his "outstanding achievement in the chemistry of photography."

The Willard Gibbs Medal was awarded to Dr. Irving Langmuir for "fundamental work on atomic hydrogen and on surface relations and also on electrical discharge phenomena; also for his contributions of great importance to nearly all branches of physical chemistry, including high vacuum technique, electronics, thermochemistry and catalysis, and lastly for his presentation of a theory of atomic structure."

The John Fitz Medal was awarded Rear Admiral Watson Taylor, U. S. N., retired, for his engineering achievements, the most notable of which is his utilization of the bow wave in ship propulsion.

The Edison Medal of the American Institute of Electrical Engineers was awarded to Professor Charles F. Scott, of Yale University, for his pioneering work in electric transmission.

The Franklin Medal, awarded by the Franklin Institute, was given this year to Sir William Bragg, director of the Royal Institution of Great Britain.

In recognition of his demonstration that protons act like waves, Professor Arthur J. Dempster, of the University of Chicago, was awarded the $1,000 prize given annually by the American Association for the Advancement of Science.

The Hoover Medal was awarded for the first time, the first recipient being President Herbert Hoover.

The American Pharmaceutical Association gave its Ebert Prize for 1930 to Marvin R. Thompson, of the University of Maryland, for his work on the pharmacology of ergot.

Dr. R. R. Spencer, of the U. S. Public Health Service, was awarded the American Medical Association's gold medal for original work in preparation of a vaccine for Rocky Mountain spotted fever.