

## SCIENCE NEWS

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## SCIENCE IN 1928

*Geology and Geography*

## II

A blow to theories of land in the Arctic was dealt by the flight of Wilkins and Eieleson over the unknown Polar region during which no land was sighted.

Four ships carried the Byrd Antarctic expedition far south to the Bay of Whales, from which base attempts will be made by aeroplane to explore the Antarctic region.

Polar explorations in the dirigible *Graf Zeppelin*, which successfully made a round trip from Germany to the United States, were announced by a German organization known as *Aeroarctic*.

An expedition to study the birthplace of the icebergs, between Greenland and Baffin Land, was sent out by the U. S. Coast Guard on the *U. S. S. Marion*, under command of Lieutenant Commander Edward H. Smith.

The non-magnetic yacht *Carnegie*, of the Department of Terrestrial Magnetism of the Carnegie Institution of Washington, set out on a three-year cruise to all parts of the world to make new observations of electrical and magnetic conditions as well as other scientific researches, under the command of Captain J. P. Ault.

A new volcano was discovered in eastern Ecuador by Joseph H. Sinclair, leader of an expedition sent out by the American Geographical Society.

The Mayon volcano, after being quiet for 28 years, became active and destroyed Libog and several neighboring villages in the Philippines.

Vast fields of pumice and volcanic ash, floating on the surface of the South Pacific Ocean between the Fiji and Tonga groups of islands, revealed the existence of a new submarine volcano.

Falcon Island, in the South Pacific, famed for its sudden disappearances, showed its head above the waves again.

A wheeled boat, able to travel on land and water, was used in an exploration of the volcanic islands of Alaska by Dr. T. A. Jaggard, of the Hawaiian Volcano Observatory.

Roy Chapman Andrews returned to America at the close of the 1928 season of the Central Asiatic Expedition, bringing much fossil material with him.

The discovery by two high-school boys of Fillmore, Utah, of an unfossilized skull of an extinct camel, found in a lava cave some twenty miles southwest of their home, revolutionizes our ideas of the course of events in recent geological time, according to Professor Alfred S. Romer, of the University of Chicago, who examined the skull.

The greatest geyser now active in the world and the greatest of all history, except the old Excelsior Geyser which has been extinct since 1888, became active in Yellowstone National Park.

New knowledge of the origin and history of the Grand Canyon of the Yellowstone was obtained as a result of

the geological research of the Princeton Summer School of Geology and Natural Resources.

A new national park, Bryce Canyon, was established on September 15.

New fossil footprints were found on the north rim of the Grand Canyon of Arizona.

Fossil seaweed found in the rocks along the Penobscot River demonstrated that the ancient Cambrian Sea once flowed over the region of Maine.

Plans were laid for the first international census of agriculture, to be taken in 1929 and 1930.

More than 1,000 square miles of Alaskan wilderness were surveyed by the new airplane-packhorse method by the U. S. Geological Survey.

Twenty-one earthquakes, of unusually severe character, in the various parts of the world, were located by experts of the U. S. Coast and Geodetic Survey, in co-operation with Science Service, within a few hours after they occurred, in many cases anticipating by several days actual reports from the damaged area.

A new electrical seismograph, for recording distant earthquakes, was invented by Dr. Frank Wenner, of the U. S. Bureau of Standards, and was proved satisfactory in numerous tests.

Severe landslides occurred at Santos, in southern Brazil, early in March.

*Biology*

A moving picture record of the living rabbit's egg which discloses many new phenomena hitherto unknown was obtained by Dr. W. H. Lewis and Dr. P. W. Gregory.

The parathyroid gland plays a large part in the control of sex of unborn offspring, according to Dr. Simon B. Chandler, of the Loyola University School of Medicine, Chicago.

A new vitamin, needed by young trout for normal growth, was discovered in raw liver by a group of biologists at Cornell University, and received the provisional name "Factor H."

Legs and hearts were transplanted from axolotls to tritons, animals related to frogs and toads, by Dr. W. M. Copenhaver, of the University of Rochester.

Emanation of rays from living cells, which speed up the division of other cells, as claimed by the Russian scientist, Dr. Gurwitch, was denied by two German plant physiologists at the University of Rostock, Professor H. von Guttenberg and Dr. Rossman, who repeated the Russian experiments with negative results.

Insects neither male nor female but containing characteristics of both sexes were produced in X-ray experiments by Professor James W. Mavor, of Union College, Schenectady, working in a London laboratory.

Successful crossbreeding of Alaska reindeer with native caribou and the production of fawns of materially increased weight was accomplished by the U. S. Biological Survey.

A case of a mare mule which not only bore two healthy colts but had a grandchild was reported by A. H. Groth, of the Agricultural and Mechanical College of Texas.

Canada undertook a census of the animals remaining in her musk-ox herds.

The attempt of the Soviet Government to save from extinction the wisent, Europe's representative of the bison family, failed, since careful searches of the 1,100 square mile reserve made by naturalists showed no trace of a single living animal.

That the first milk a cow produces after giving birth to her calf should be fed to the calf because it contains substances that ward off diseases was reported by Dr. Theobald Smith.

The Carnegie Institution of Washington has completed a eugenical study concluding that laws for deportation of public charges becoming such from hereditary defectiveness should be extended and enforced.

Tuberculosis in livestock has declined, due to the cooperation of the Bureau of Animal Industry with local authorities; 11,300,000 cattle were tested during the past year.

The work of eradicating cattle ticks from southern states gradually reclaimed more territory from the pest.

A hybrid of the radish and cabbage was produced by Dr. George D. Karpenchenko, of the Botanical Institute at Detskoje Selo, in Russia.

Each species of tree has a definite pattern according to which sap and gases within its trunk are localized, and the gas body within each tree is continuous, studies by Dr. D. T. MacDougal, of the Desert Laboratory, Tucson, Arizona, disclosed.

Zinc and boron are needed by plants, Miss A. L. Sommer and Professor C. B. Lipman found at the University of California.

The fig growers of California cooperated with state officers in a strong effort to clean up the destructive brown-rot disease.

Two varieties of cattle grubs caused damage to livestock raisers estimated as \$100,000 for the past year.

Borax, in a concentration of one and one half parts to a thousand of water, was discovered by Professor Robert Matheson and E. H. Hinman, of Cornell University, to be a fatal poison for mosquito larvae or wigglers.

Experiments with enormous cages, constructed of copper wire screening under the supervision of Dr. W. H. Larrimer on a farm maintained by the U. S. Bureau of Entomology near Toledo, Ohio, indicated that while it will be impossible to eradicate the corn borer, it can be controlled sufficiently to reduce commercial losses to a negligible amount.

A comparatively new bacterial disease known as "halo spot" destroyed large acreages of beans in the regions of Montano, Wyoming and Colorado.

The \$1,000 annual prize of the American Association for the Advancement of Science, for outstanding research during the preceding year, was awarded to Professor H. J. Muller, of the University of Texas, for his work

on producing new varieties of fruit flies by X-ray treatment.

Scientists the world over celebrated the eightieth birthday of Hugo de Vries, foremost student of evolution since Darwin's time.

### Medicine

A new minimum death rate for tuberculosis in 1928 is reported by the Metropolitan Life Insurance Company. The new rate is 72.1 per 100,000.

Yeast exposed to ultra-violet rays, either from sunlight or an artificial source, has its fertility vitamin E destroyed, Dr. B. M. Strong, of the school of medicine at Loyola University, Chicago, found.

Vitamin D, which prevents rickets in young animals, may also play an important part in the development of the egg, Dr. Alfred F. Hess, of New York, announced.

The presence of copper in the diet is a preventive of anemia, Dr. E. B. Hart, of the University of Michigan, found.

Teeth, shining by fluorescent light in the dark under the influence of ultra-violet rays, reveal by dark spots the regions where decay will develop, Dr. H. C. Benedict, of the Northwestern University School of dentistry, found.

An instrument for measuring a person's sensitivity to sunburn was invented by Dr. Robert C. Burt, of Pasadena, Calif.

Dr. Hideyo Noguchi, of the Rockefeller Institute, died of yellow fever as a martyr to his researches on that disease, leaving research which may show that the disease has two forms.

Eleven lepers were released, by the U. S. Public Health Service, apparently cured and no longer a menace to the community, from the National Leper Home at Carville, La.

Means were found for administering chaulmoogra oil, the remedy for leprosy, without the pain and nausea which patients have had to endure in the past.

Epilepsy was produced artificially in dogs by a brain operation by Dr. Lawrence O. Morgan, of the University of Illinois.

A method of investigating the brain by means of X-ray photographs was perfected by Dr. Max Ludin, director of the Röntgen Institute of the Citizens' Hospital of Basel, Switzerland.

High-frequency electric currents were found to be beneficial in checking cancerous growths of mice and chickens.

For his work on tularemia, or rabbit fever, Dr. Edward Francis, of the U. S. Public Health Service, was awarded the gold medal of the American Medical Association, the committee on awards declaring that his contributions to the knowledge of the disease were the most important medical work of the year, judged on the basis of originality.

The final step in scientific conquest of Oroya fever, which afflicted the Incas and still occurs in Peru, was announced by four scientists of the Rockefeller Institute, who proved that the disease is spread by gnats.

Injections of glucose were found to be beneficial in acute cases of encephalitis, the European sleeping sickness.

A new theory that cancer is associated with and possibly controlled by the relative alkalinity of the blood was advanced by Dr. Ellice McDonald, chairman of cancer research of the University of Pennsylvania.

A lack of the important beta hormone, which controls the water depots of the body and the ability of the tissues to use water and which is in the post pituitary gland at the base of the brain, may be made up by an artificial supply from animal glands, according to Dr. Oliver Kamm, of Detroit, Michigan.

Operation of apparatus transmitting short radio waves was found to produce fever in bystanders, and Dr. Helen R. Hosmer, of Albany Medical College, began experiments with the electrically induced fever on animals, since fever is now an important treatment of progressive paralysis.

The effect of a dose of medicine depends not merely on the chemical makeup of the medicine but also on the alkalinity of the blood and on the particular balance of certain blood elements, experiments by Dr. William Salant, of the University of Georgia Medical School, indicated.

A new water purifier, succinylchlorimide, that will not deteriorate with age was announced by its discoverer, Major C. B. Wood, of the U. S. Army Medical School.

That a new industrial hazard, chromium poisoning, is definitely increasing as a result of the widespread use of chrome plating on automobile accessories, was reported to the American Medical Association by Dr. Jackson Blair, of Cleveland, and studied by the U. S. Public Health Service.

That paper mulberry is one of the plants responsible for "hay fever" is reported by Dr. Henry S. Bernton, of Washington.

Nobel Prize in medicine for 1928 was awarded to Professor Charles Nicolle, of the Pasteur Institute at Tunis, in recognition of his typhus fever researches which have shown how the disease may be prevented.

The Grand Cross of the French Legion of Honor was awarded to Dr. Albert Calmette, of the Pasteur Institute, for his work in producing a tuberculosis vaccine.

#### Aeronautics

The voyage of the *Graf Zeppelin*, with passengers and mail, from Friedrichshafen, Germany, to Lakehurst, N. J., established the practical value of transatlantic transportation lines.

The airplane *Southern Cross*, piloted by Captain Charles Kingsford-Smith and Captain C. T. P. Ulm, with Lieutenant-Commander Harry W. Lyon as navigator and James Warner as radio operator, flew from Oakland, Calif., to Sydney, Australia, a total distance of 7,800 miles, in approximately 88½ hours' flying time.

A transcontinental non-stop flight was made in 18 hours and 58 minutes.

Charles B. D. Collyer and John Henry Mears completed a trip around the world by airplane and steamer in the record time of 23 days, 15 hours and 8 seconds.

Captain Arturo Ferrarin and Major Carlo del Prete, flying a Savoia-Marchetti S-64, established a world's airline distance record of 4,466 miles in a flight from Rome to Brazil.

Captain Dieudonne Costes and Lieutenant-Commander Joseph le Brix, French aviators, completed on April 14, 1928, a 35,000-mile trip around the world begun October 14, 1927, flying their Breguet XIX biplane the entire distance except for the trip across the Pacific Ocean.

Captain Arturo Ferrarin and Major Carlo del Prete gained the world's closed circuit distance record of 4,763.7 miles.

Johann Risztics and Wilhelm Zimmerman, flying a Junkers W-33, established a world's duration record of 65 hours and 25 minutes.

Adjutant Louis Crooy and Sergeant Victor Gronen, flying a DH-9, established a world's duration record of 60 hours and 7 minutes, refueling in flight and returning to point of departure.

Eddie Stinson and George Haldeman, flying a Stinson-Detroiter, established a world's endurance record of 53 hours, 36 minutes, and 30 seconds.

Major Arturo Ferrarin and Major Carlo del Prete, flying a Savoia-Marchetti plane, established a world's duration record of 58½ hours.

Harry J. Brooks, flying a Ford monoplane, established a world's airline distance record of 972 miles for light airplanes weighing 440-771 pounds.

M. Maurice Finat, flying a Caudron C 109, established a duration record of 24 hours and 36 minutes for light airplanes.

Major de Bernardi, flying a Macchi 52 seaplane, established a world's speed record of 318.62 m.p.h.

Peter Hesselbach remained aloft in his glider, *Darmstadt*, for 4 hours and 5 minutes, thus establishing an American glider record.

Juan de la Cierva flew his autogiro from London to Paris.

The rigid airship, *U. S. S. Los Angeles*, was successfully landed on the deck of the airplane carrier *U. S. S. Saratoga*.

The airship *Italia*, under the command of General Umberto Nobile, was wrecked after successfully crossing the North Pole; Lieutenant Lundborg, of Sweden, rescued General Nobile from the ice floe where members of the *Italia* crew were stranded.

Roald Amundsen, Arctic explorer, who set out in search of survivors of the wrecked airship *Italia*, was lost.

Eventual propulsion of aircraft by motors operating on heavy oil fuel and self-igniting on the Diesel principle was forecast by experiment with new type engines by the Junkers aircraft concern.

A "foolproof" airplane, designed by Albert A. Merrill, of the California Institute of Technology, and constructed by him in association with Dr. A. L. Klein and Dr. Clark Millikan, was demonstrated in Los Angeles.

A new radio altitude meter for airplanes was developed by Dr. E. F. W. Alexanderson, of the General Electric Co.