

Cheap Helium

Helium has been produced at the government plant at Amarillo, Texas, at a cost which compares favorably with that of hydrogen.

More than a million cubic feet of the non-inflammable airship gas, of which the United States has a monopoly, was made during January for a net cost to the government of \$9.64 the thousand cubic feet, the U. S. Bureau of Mines, which built and operates the plant, reports. Inflammable hydrogen, which is still used in lighter-than-air craft of other nations, can be made at costs varying from \$3 to \$9 the thousand cubic feet.

With greater output the cost of helium can be lowered still more. The plant did not operate during December and February because of lack of demand. The million cubic feet made in January would fill two-fifths the volume of the airship *Los Angeles*.

Helium contained in the Navy blimp C-7, which made the first trip with the new lifting gas in 1921 from Langley Field, Va., to Washington, cost approximately \$150 the thousand cubic feet. Since that time refinements in process and volume production have gradually reduced the cost of separating the rare element from natural gas in which it is found in small quantities.

Chemistry—Aviation

Science News-Letter, March 22, 1930

Metallic Poisoning?

The illness which has stricken some hundred persons in Oklahoma is baffling health authorities. Is it due to some chemical poison contained in the Jamaica ginger which all the patients seem to have drunk? Or is it caused by some germ? Perhaps this is another outbreak of meningitis. Frequently new and mysterious maladies turn out to be meningitis upon investigation, health officials have recalled.

So far not even a trace of any of the commoner metals has been detected in the samples of the suspected Jamaica ginger submitted for examination, the assistant state health commissioner of Oklahoma, J. P. Folan, has reported to the U. S. Public Health Service in Washington.

The symptoms of the illness seem to point to metallic poisoning, Mr. Folan said in his report. Most of the extract believed responsible for the outbreak of illness has been consumed or disposed of.

The report of the assistant state health commissioner seems to indicate that Oklahoma authorities believe the illness was caused by chemical rather

than bacterial, or germ, poisoning, health authorities pointed out. Possibly the suspected Jamaica ginger was the only common factor in all the cases of illness.

Medicine

Science News-Letter, March 22, 1930

1500 Miles for Food

Milk for New York City's 10,000,000 metropolitan population is hauled by rail an average distance of 300 miles. Billings Wilson, deputy manager of the Port of New York Authority, has determined.

The average haul of foodstuffs has been estimated to be 1,500 miles, he declared. This includes shipments from Florida, Texas and foreign countries.

"Old milk cars containing several hundred 40-quart cans, covered with ice in summer, are gradually being displaced by modern glass-lined, vacuum protected tank cars," Mr. Wilson told the engineers. The milk is pumped directly from the cars into pasteurizing plants.

Economics

Science News-Letter, March 22, 1930

Taking Temperature

The health of a Diesel engine is now determined by taking its temperature. A thermometer in the exhaust of these oil-burning, internal combustion engines, which are increasing rapidly in popularity, can be relied upon to show how combustion is proceeding in the cylinders, says a recent issue of *Power*.

Curves have been drawn to give operators the correct value of temperature for different loads. For example, the exhaust temperature of the four-stroke cycle, air-injection Diesel is directly proportional to the load, the points for the curve forming a straight line. Its full load temperature is 700 degrees Fahrenheit. Apparently most types of Diesels have a no-load exhaust temperature of about 230 degrees.

Engineering

Science News-Letter, March 22, 1930

Automatic Radio Station

Ten automatic weather bureaus, scattered about by airship on the arctic ice, equipped to broadcast weather conditions three times a day for a year without human attendance, are contemplated by the International Society for Exploration of the Arctic Regions by means of aircraft. The plans of the society, generally known as Aeroarctic, were described by Dr. Fridtjof Nansen, its leader.

IN VARIOUS

Already an automatic weather observatory has been constructed which tells the temperature, air pressure and humidity by radio for use on a small balloon. In inhabited regions, balloons are often sent up with small recording instruments, and the finder is expected to return it to the proper authorities. As there is no one in the Arctic regions to perform this service, it is necessary to provide the radio transmitter. This operates for about two hours, sending its observations back to the airship base.

The larger apparatus, like the other an invention of Prof. Meltchaneff, weighs about 1½ tons. It is said that ten of these could be carried on an airship and dropped on the ice at various points. Three times a day they would transmit their observations back to civilization. By visiting them once a year by airship, they could be kept in continual operation.

Radio

Science News-Letter, March 22, 1930

Observatory Moving

Astronomical observatories, with their solidly mounted telescopes and large domes, are not ordinarily thought of as wandering institutions, but the Radcliffe Observatory, at Oxford, is now preparing to move permanently to South Africa. With its instruments, which include a double telescope for both photography and visual use, the larger lens 24 inches in diameter, the southern skies will be studied. The trustees of the observatory have just sold their grounds, which extend over nine acres, to the Radcliffe Infirmary. They have, however, taken a five-year lease on the grounds, so that the present researches on the motions of stars can be completed.

Dr. W. H. Steavenson, prominent British astronomer and authority on optics, is now in South Africa. With a 6-inch telescope he is testing the astronomical conditions in the neighborhood of Pretoria, to locate the best site for the observatory.

Astronomy

Science News-Letter, March 22, 1930

Algae for Nitrogen

Bacteria, which have hitherto had a nearly complete monopoly on the important business of capturing nitrogen from the air and making it available for the feeding of higher plants, may have to yield a part of their throne to larger but almost equally

SCIENCE FIELDS

humble plants, the blue-green algae. Experiments reported to the technical journal *Science* by Dr. F. E. Allison and H. J. Morris of the U. S. Department of Agriculture indicate that at least one species of blue green algae, kin to the multitudinous plants that give color to stagnant water, is able to fix nitrogen in considerable quantity when supplied with normal sunlight, or in the absence of sunlight if it is given sugar.

Earlier experiments had indicated something of the kind, but the two Government scientists wanted to check up under more rigid control conditions, so they repeated the work with more elaborate precautions. One of the greatest difficulties was to get a culture of the algae without any bacteria in it, for bacteria have a habit of sticking very tightly to the slimy sheaths of the larger plants. They finally cleared their algae of the last bacterium by irradiating it with ultraviolet light, which kills bacteria but does not harm the algae in the doses used.

Chemistry
Science News-Letter, March 22, 1930

Rate of Radium Decay

Doubt that radium and allied substances can be made to change the rate at which they decay into other elements is expressed by Mme. Curie, discoverer of radium, in commenting on experiments by L. Bogojavlensky, which were supposed to show such a change.

In 1,750 years half of a given quantity of radium will have changed into radon, or radium emanation, and helium. Mme. Curie points out that very careful precautions are necessary before any change in this rate can be established. She has made a number of experiments herself, on radium, radon and polonium, another radioactive element, by exposing them to the action of various rays, and has not been able to find any evidence of a change in rate.

Physics
Science News-Letter, March 22, 1930

World Birthday Party

The "dean of American medicine," Dr. William Henry Welch of the Johns Hopkins University, Baltimore, will be given an international party on his eightieth birthday next April 8.

President Hoover will speak at the

celebration in Washington. Other celebrations will be held simultaneously in London, Paris, Berlin, Leipzig, Tokio, Peking, Baltimore, Cincinnati, New Haven and New York, where friends, colleagues and former students will gather to honor Dr. Welch.

The program in Washington will be broadcast so that those participating at the other ceremonies may hear what is said and done at Washington. The executive committee in charge of the celebration is headed by Dr. Simon Flexner, director of the Rockefeller Institute for Medical Research and a former pupil of Dr. Welch's.

"America owes more to Dr. Welch than can ever be told in any tributes," the committee stated. "Half a century ago he began his leadership in modernizing American medicine. Through the reforms which he has instituted in medical study, through his researches, the many hundreds of doctors trained by him, and the vital public health measures which he has inspired, it is literally true that millions have benefited from his contribution."

Medicine
Science News-Letter, March 22, 1930

Mountains Named

Two noted American scientists, one of whom is still living, have received the distinction of having mountains named for them, at a recent meeting of the United States Geographic Board.

A hitherto unnamed peak in the Sierra Nevada range, in Fresno County, Calif., was named Mount Merriam, in honor of Dr. C. Hart Merriam of Washington, D. C., an outstanding authority on the classification and systematic distribution of animals, and well known also for his botanical studies. Standing 13,067 feet high at the end of the range, his mountain is a landmark for the entire surrounding country.

A peak a few miles distant from Mount Merriam has been named Mount Royce, in honor of Dr. Josiah Royce, who died in 1916. Born in California, Dr. Royce first became a geologist and naturalist, but later made his reputation as one of the world's leading philosophers.

A third natural monument named at the session of the Geographic Board is less than a mountain in size, but still imposing. This is Rodley Butte in the Umpqua National Forest in Oregon. It was named for Oscar Rodley of the Forest Service, who met his death by drowning in 1928.

Geography
Science News-Letter, March 22, 1930

Philadelphia Ruins

The ruins of Philadelphia have been the subject of research by a German archæological expedition, which conducted preliminary surveys and determined the outlines of the principal streets of the forsaken city. Members of the party, however, have expressed great regret and disappointment over the fact that the farmers of the surrounding region were permitted to cart off the rubbish that covered most of the ruins, and even to carry away the building materials themselves, so that further scientific work has become impossible.

This is not the opening paragraph of an imaginative tale of 3030 A. D. Neither is it the story of what might have happened if the Great War had turned out differently. It is a summary of a sober scientific article in the German journal *Forschungen und Fortschritte*, written by Prof. Dr. Paul Viereck of Berlin.

The Philadelphia which he visited, and in which he conducted researches which were concluded mostly before the war, was once a town in the Faiyum, a valley oasis some distance southwest of Cairo, Egypt. It was, as its name suggests, Greek in origin. It was founded by a monarch of the house of the Ptolemies, which was set over Egypt by Alexander the Great and continued to rule until it was extinguished by the suicide of Cleopatra. There were at least two other Philadelphias in the ancient world, one in Palestine and the other in Asia Minor.

This Philadelphia of the Faiyum, Prof. Viereck states, seems to date from the third century B. C.; it was abandoned some time early in the Christian era. Like its modern namesake, it was laid out with straight streets in a checkerboard pattern, oriented to the points of the compass. The German expedition's hopes of making a detailed excavation of the whole town were defeated by the inroads of the Egyptian peasants, who removed the rubbish to use as fertilizer on their fields, and later carried off the bricks from the ancient walls.

The program of excavating a whole ancient town, to find out what the lives of the common people of ancient Egypt were like, was later realized by an American expedition, sent out by the University of Michigan, which excavated the ruins of a nearby Greco-Egyptian town, Karanis.

Archæology
Science News-Letter, March 22, 1930