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DELTOR

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DEVELOPMENT OF HELIUM GAS IS STORY OF ROMANCE IN THE WORLD OF SCIENCE

WASHINGTON, Aug. 24.—The story of the development of helium gas, which, because of its non-inflammability, is eagerly sought for the operation of gigantic military dirigibles, is one of the romances of science, according to officials of the United States Bureau of Mines. Helium, which exists in the air we breathe in the proportion of one part of volume to 185,000, is one of the best examples of a discovery in pure science that has wide commercial application.

In 1868 an eclipse of the sun was visible in India. Several scientific men who were making observations of the eclipse turned a spectroscopic for the first time on the solar atmosphere—that part of the atmosphere of the sun which merges into the corona. A bright yellow line was observed and was thought at first to be due to sodium.

Janssen showed, however, that this line was not just the same as either the D1 or D2 line of sodium, although it was extremely close to these lines. Hence he suggested that the new line have the designation Ds. Frankland and Lockyer decided that Ds was due to an element in the sun not previously discovered on the earth and suggested for it the name of "Helium" from the Greek word helios, meaning the sun.

For several years nothing more was done in connection with this element. In 1891 Sir William Ramsay, in connection with Lord Rayleigh, made his memorable discovery of argon in the atmosphere. After this discovery Ramsay looked for other sources of the element. He learned that Dr. W. F. Hillebrand, of the United States geological survey, had obtained an inert gas from certain uranium minerals, which gas he had decided was nitrogen. Ramsay believed part of it might be argon. He obtained from Hillebrand for experimental purposes a sample of the mineral—cleveite, one of the uranium minerals, and, after extracting gas from the mineral and purifying it, he ran it into a spectrum tube. The lines obtained, however, were different from those of argon. Among them was the bright yellow line noted by Janssen. This was terrestrial helium discovered.

Dr. R. B. Moore, chief chemist of the bureau of mines, says that from samples of air taken at an altitude of several miles the proportion of helium has proved to be about the same as at lower levels—one part by volume to 185,000. At extremely high altitudes, such as 100 miles or more, the proportion may be greatly increased, Dr. Moore says.

Before the world war the Germans had developed a type of dirigible called Zeppelin, after Count Zeppelin, its inventor. The French and British had no dirigibles at the beginning of the war, but later hastened to acquire their deficiency. From experience gained in the defense of London it was recognized that the dirigible was vulnerable against a well-organized attack. The Germans too, recognized this and invariably made attacks on England at night, operating from a high altitude in order to minimize attacks by airplanes, as a single incendiary bullet fired into a dirigible would quickly bring the ship down, a mass of flames.

The inflammability of the hydrogen contained in the ship was the one weak point in this method of attack.

The remedy for this situation was to be found in a non-inflammable gas, light enough to replace hydrogen as a lifting force. Helium is the only gas known to have these qualities.

When the United States entered the war helium for use in dirigibles was discussed among Bureau of Mines officials, and the matter was presented to the war and navy departments. The air service approved the proposition, and allotments of money were made from the army and navy appropriations to carry it forward.

Three experimental plants were constructed in Texas under the direction

of the Bureau of Mines—two at Fort Worth and one at Pecos.

One of the plants at Fort Worth was completed in October, 1920, and was operated during part of 1921. It produced about 2,000 cubic feet of helium, which makes available at the present time a total of about 2,400,000 cubic feet of helium over 90 per cent in purity. Most of the gas is graded around 95 per cent.

Two helium purification plants have been constructed by the army. One of these is at Langley Field, Virginia. The other unit has been installed on two railroad cars so it can be moved about as needed. Complete equipment for conducting research at low temperature—the Cryogenic Laboratory at Washington, Helium can probably be reduced in this plant from ten cents a foot, but officials think this cost can be reduced to three or two cents a foot.

Epidemic Prevention Added To Child Feeding By A. R. A. To Save Millions of Lives



Scientific methods are used by the American Relief Administration in its child-feeding work in Russia. The children who are fed are first given a thorough physical examination to determine what their needs are. They are weighed and records are kept of their underweight. The Pelidai system is used in caring for the undernourished boys and girls. In addition to the examination given for the purpose of determining the amount of nourishment necessary and to facilitate the treatment of disease, the children are also inoculated against cholera, typhoid, paratyphoid and small-pox.

The lower picture shows a group of children waiting in front of the medical rooms of the American Relief Administration at one station in Odessa for their examination. Some exception of the work that confronts the doctors and nurses can be gained from this picture. All those children are to be carefully examined and prescribed for. The upper view shows a group of medical workers, all of whom are Russian volunteers and work without salary in appreciation of the Amer-

ican Relief Administration efforts to check death from disease as well as famine.

According to a report by Herbert Hoover, chairman of the American Relief Administration, to President Harding, dated July 1, more than 3,250,000 children were being fed daily on that date, together with 5,500,000 adults. During its stay in Russia, the American Relief Administration has handled 735,875 short tons of food and medical supplies, clothing and sundries, with an American staff of about 200 or less, and a Russian force of 18,000. Its supplies are now sufficient, Mr. Hoover states, to last until harvest time, and the surplus will take care of limited child-feeding even after that.

Referring to the American staff, Mr. Hoover says: "Their task has been difficult beyond description in a country of desperate poverty, with government, economic and social life just above chaos. All of these operations have been conducted at a personal sacrifice, in the face of danger and under great hardship, Mr. Hoover says.

SOUTH METHODISTS ANNUAL NORTHWEST MEETING AT MILTON

W. H. Birdsell, Phone 1173, has charge of the Milton-Freewater news and circulation bureau of the East Oregonian.

MILTON-FREEWATER, Aug. 24.—Dr. A. D. Woodmansee went down to Portland Friday of last week, driving his new car, and returned Monday bringing Mrs. Woodmansee with him, she having been down there several weeks visiting her old home and relatives.

L. B. Kicker has added very much to the appearance of his residence by having a new front porch built on it. Mr. and Mrs. Earl Williams and children of Pendleton came over to Milton Saturday evening and spent the night with his parents, Mr. and Mrs. B. F. Williams and they all drove down to the home of Mr. and Mrs. Chas. Dyer of Forndale Sunday afternoon, returning to their homes in the evening.

Mrs. Gertrude Benson who has been spending the summer with relatives in the Sound country has returned to Milton.

The annual Northwest Conference of the M. E. Church, South, is meeting in Milton this year, its sessions being held this week. There are about one hundred visitors, among them many prominent men of the denomination. Bishop H. M. Dubose of Seattle, C. L. McCausland of Seattle, Dr. W. H. Nelson, editor of the Pacific Methodist Advocate of San Francisco, Dr. C. D. Bulla of San Francisco, Dr. Bennett of Mississippi, Dr. L. R. Russell and Minnie Kennedy of Nashville, Tenn. and Dr. T. D. Ellis of Louisville, Ky. will be here and take an active part. Monday evening the services of the fourth quarterly conference of the local church was conducted by C. L. McCausland, beginning at 8:00 o'clock. Tuesday evening Dr. Nelson preached the opening sermon of the conference. Wednesday morning at 9:00 o'clock the conference will organize in business session and will continue throughout the week and Sunday, with business sessions mornings and afternoons and sermons in the evenings. The conclusion of the conference will be Sunday evening when Bishop Dubose will preach and the announcement of the pastors for the coming conference year will be made. This last evening's service will be a union service in which all the churches of the city will take part and it will be held in the Methodist church. This union service will be the last of the season, they having been kept up through the hot weeks of midsummer when so many have been out of town on vacations and when there is apt to be a lack of interest in church work. One of the local pastors expressed himself as highly pleased with the success of them, and he thinks the benefits derived from them more than justify the efforts that were put forth to keep them up.

Mr. and Mrs. J. D. Whitman have been favored with the company of a brother and his wife, Mr. and Mrs. J. L. Whitman of Eugene, Ore. for a few days, they having stopped here enroute to Iowa City where Mr. Whitman will enter the state university at Iowa City.

Mr. and Mrs. George Beller and little daughter drove up to the Hitchcock camp near Cold Springs Sunday and helped the campers to move down to the valley.

C. A. Seidling was awarded the contract for building the new Federal court in Freewater, at the meeting of the board last Saturday morning.

W. R. Anderson Sr. of Milton started on a trip to Seattle and other Sound points in his auto, taking Mr. and Mrs. H. C. Olsen, of Seattle, with him. They are old friends of Mr. Anderson who had the misfortune to have their car in a collision with another car in Walla Walla where they had been on a visit. Mr. Anderson will stay over on the coast until Merle Anderson, his grand son, who is at Camp Lewis taking military training is ready to come home when they will return together.

Monday morning the people of Milton were startled by the sound of the fire bell at 4:30 o'clock. The fire whose origin is unknown consumed the barn belonging to James H. E. Scott. The building was valued at about \$450. There was some furniture, a sewing machine and some law books stored in the barn besides coal and wood. It is not known for certain whether there was any insurance on the property or not.

Manager W. S. Ahern of the Milton-Freewater telephone exchange, and his family have returned to their home after a ten day's vacation in camp life near Cold Springs in the mountains.

Mrs. J. E. Olinzer and some of the children have gone on a trip by auto to Tacoma. Mrs. Marie Rink, who is a guest of the Olinzers, as driver.

Sunday Mr. and Mrs. Victor Coffman drove up to the camp of Victor's parents in the mountains.

Mrs. Addie Mayberry and her daughters, Genevieve and Lois Mayberry who have been camping in the mountains returned to their home in Milton Sunday.

Mr. and Mrs. J. M. Stadfeld of the Midway Crocker are enjoying the company of Mrs. Stadfeld's sister, Mrs. Earl Doane of Portland.

Mr. and Mrs. I. B. Sevy have returned to their home after an absence since the close of school last spring on the part of Mrs. Sevy who has been attending summer school in Portland. Mr. Sevy drove down to Portland and got his wife and they went on a trip of sight seeing in the wonderland of the Cascades of Oregon, visiting the Marble caves and Crater lake. They are all a fire with enthusiasm over that scenic part of our state.

Prunes commenced to come in Monday and it is thought there will be a heavier crop than was anticipated a month ago. The price will probably be lower than it has been for the past few years.

Mrs. Hugh Morgan of the human lake oven has returned home after twenty days absence, during which time she was helping her granddaugh-

Dorothy Jardon, Grand Opera Star, Invents Audience Test



Famous Singer Finds Public Preference Is For Popular Ballads

From grand opera to vaudeville may not sound like progress to the initiated but Dorothy Jardon of Chicago Grand Opera fame has a different notion. When she entered vaudeville, admiring music lovers raised a cry of protest. They said Miss Jardon was throwing herself away and cited the grand opera opportunities she was giving up.

"They kept my mail heavy and my life miserable," Miss Jardon laughs. "They just wouldn't understand. But to be honest at the risk of being considered eccentric, I must go on record as regarding vaudeville and grand opera of equal importance artistically."

Souful Themes
"Operatic roles are wonderfully satisfying, but there's no bigger

thrill than that of putting over a heart string ballad like 'Wake Up Little Girl, You're Dreaming' or 'Why Should I Cry Over You' to a great audience."

"For after all, everybody must admit that more music lovers prefer ballads than grand opera. And why shouldn't they have what they want?"

"Take 'Why Should I Cry Over You'." It's the kind of melody every love sick youth gets miserable happiness out of soulfully singing to the parlor at twilight.

Instinct Guides Music Tastes
"Besides, even in vaudeville, I sing arias from 'Thais' and 'Zaza'."

But I'll tell you one thing—though there's applause aplenty for the aria, there's a positive thunder of sympathy for the ballad that follows.

"I don't believe in 'educating the public.' Instinct guides in musical taste and should do so—that's my sentiment."

ter, Mrs. Lawrence Christensen on the Richardson ranch west of Walla Walla.

W. C. McKinney and family were delayed by Mrs. McKinney's sickness in their return to their home from Burns where they have spent their vacation. Mr. McKinney wired that they would probably be home Tuesday of this week.

Mr. and Mrs. George Beller and little daughter drove up to the Hitchcock camp near Cold Springs Sunday and helped the campers to move down to the valley.

C. A. Seidling was awarded the contract for building the new Federal court in Freewater, at the meeting of the board last Saturday morning.

The building is to be of the brick veneer type and is to cost in the neighborhood of \$21,000 and the work of construction is to begin at once.

Theodore Walden from Weston Mountain came down to help his brother, Ernest in the harvest of his prime crop.

Mr. and Mrs. Ernest Walden and wife drove to Pendleton Sunday, calling on Mrs. Lina Storgis.

H. O. Mansfield, his brother and his son Pat went on a deer hunt up the Walla Walla river Saturday, expecting to be back Tuesday of this week.

Mr. and Mrs. A. L. Brunton and little daughter Allee who have been at Lewiston, Ida. for the past few weeks returned to Milton Monday. Mr. Brunton has been working on a carpenter job over there.

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COW GIVES MILK TO FEED 30 CHILDREN

WASHINGTON, Aug. 24.—(By the Associated Press.)—Breeding a dairy cow that will give milk enough to feed 30 children a day, more than six times the capacity of the ordinary cow, is one of the feats of the industry which has been accomplished by the U. S. department of agriculture, and which can be done by proper feeding and selective breeding. On its experimental farm near Beltsville, Md., the department has a herd of six cows, the result of breeding work, that have produced an average of more than 22,000 pounds of milk in 365 days. This little herd yields enough milk to provide a quart a day to 170 children.

An ordinary cow or scrub produces only enough milk to feed five children a quart a day, while a good cow yields enough to give 20 children a quart a day. The supercow, as the department calls her, and there are more and more of them in this class every year, gives enough milk so that a small herd might easily supply this quantity to all the small children in a small town.

The improvement of dairy cows means more than increased profits to the dairyman, the department declares. It means cheaper and more milk, the best bone and muscle maker for children. Good breeding and good feeding have made the difference. What this means is brought out forcibly in a poster prepared by the department which is available to all those interested in the subject.

In the same connection, the department shows that culling the poultry flock to get rid of all birds except the vigorous, prolific layers, results in noticeable improvement in the progeny, as well as in an increase of eggs.

Recent experiments with the poultry at the Beltsville farm showed that the late moulters selected from a flock of 100 Rhode Island feds in the fall of 1920 laid seven more eggs per bird during their second year than the original flock of pullets. They were used as breeders the following spring and the first-laid pullets to commence laying in the fall of 1921 were found to be the offspring of these late moulters. Their pullets in a period of seven months have already averaged about two dozen eggs per bird more than the original flock.

It is not alone in number of eggs that the late moulters progeny excel, the department report continues, but also in the value of the product, as the distribution was more even, a much larger proportion of the eggs being laid during the winter months. In the last seven months the daughters of the late moulters not only averaged two dozen eggs per bird more than the original flock, but the value of their product was figuring at the same prices, about \$1.04 per bird more during the same period. It is expected that this margin will increase.

PROLONG THE LIFE OF HEAVY CANVAS COVERS

WASHINGTON, Aug. 24.—(A. P.)—Those who use heavy canvas covers to protect their crops, machinery, materials, etc., against the weather, can almost double the life of the fabric if they treat them to afford protection against light as well as moisture and mildew, the Department of Agriculture declares in a recent circular. After a series of experiments with canvas in which waterproofing mixtures were made with the addition of earth pigments such as used in paints, the experimenters arrived at the conclusion that keeping out the light from the inner fibers affords considerable protection to the fabric.

Since several pigments are suitable, there is more or less freedom of choice as to color, the statement continues. For a buff or khaki color, yellow ochre can be used. For a darker buff or light brown, raw sienna is good, for dark red or reddish brown, burnt sienna; for olive brown, raw umber; and for dark brown, burnt umber is added to the mixture.

The usual formula for waterproofing canvas may be used with the addition of the earth pigment, using one pound, either dry or ground in linseed oil, to each gallon of the prepared solution. The department experts have also found that a solution of dark or yellow petroleum (kerosene) beeswax, gasoline and kerosene with the desired pigment, makes a good waterproofing and lightproofing mixture. Another recipe just as good is the same as the first, substituting asphalt (petroleum or bermudez) for the beeswax.

The waterproofing or lightproofing of canvas is important for a number of uses, it is explained. The introduction of long-distance truck hauling has created a greater demand for stout wagon covers, which are widely used; great quantities are used for covers to protect grain or hay in the shock from the weather; the merchant uses covers to protect his produce; contractors and builders need them to protect machinery and materials. The army and navy use great quantities of canvas and the summer camper is another large consumer. It is often possible for these users to have the cost of their canvas by prolonging the life of the material.

For canvas that remains in a fixed position, such as permanent wagon covers, the circular adds, baled linseed oil containing one pound of the desired pigment to each gallon may be used. The treatment, however, stiffens the canvas and is therefore, not suitable for covers that are frequently folded. Lamp black was found to be one of the best protective pigments for use with linseed oil, giving the most flexible coating. Aluminum bronze powder, and for a white color, zinc oxide, also are good, but the latter stiffens the canvas more than any other of the pigments tried.

Winipeg Grain Market.

WINNEPEG, Aug. 24.—Cash wheat No. 1 northern, \$1.89 3-4; No. 2, \$1.87 3-4; No. 3, \$1.85 1-4; No. 4, \$1.83 1-4; No. 5, \$1.81 1-4; feed, \$1.45; track, \$1.43 1-4. Oats—No. 1 white, \$1.14 1-4; barley, \$1.24 1-4. Rye—No. 2, \$1.43 1-4. Futures, wheat—October, \$1.91 1-4.

Futures, wheat—October, \$1.91 1-4; December, \$1.93 3-4; May, \$1.92 3-4.

Jack Lockett, blind painter of Dallas, Tex., rode a tandem bicycle to Rochester, Minn., a distance of 1700 miles, with his son, Chester, 12, in the front seat as guide. Specialists at Rochester told Lockett they could not restore his sight, so father and son are on their 1700-mile return journey.