SCIENCE NEWS

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ICE FORMATION IN ALASKA

A STRANGE "near-glacier" of mammoth proportions was discovered in Alaska this summer during the expedition of the National Geographic Society to study volcanoes along the Alaska peninsula, according to C. P. McKinley, of the U. S. Geological Survey, who has returned to Washington after acting as topographic engineer on the trip. The expedition was led by Dr. Thomas A. Jaggar, director of the Hawaiian Volcanic Laboratory.

For lack of a better name, Dr. Jaggar termed the near-glacier an "ice-jumble," since he never before had seen anything like the peculiar geological formation. He expressed the belief that it is the result of the continuous dumping of volcanic ash into the area for hundreds of years. The materials consist, Mr. McKinley explains, of ice, gravel boulders, pumice, ash and sand in a vast hummocky sea. Four streams flow from the front of this near-glacier in virtually the same fashion as from an actual glacier. Near-by and above, the mighty Pavlof volcano fumes constantly from its symmetrical cone, a veritable American Fujiyama.

Another natural phenomenon witnessed by the explorers at close range for probably the first time in history was the great group of pinnacle-formed peaks on the peninsula known as the Aquileen Pinnacles. Averaging 4,800 feet above sea-level, they resemble a vast number of symmetrically formed church spires.

The expedition's route lay from Squaw Harbor on Unga Island, in the Shumagin group, to Canoe Bay, head of Pavlof Bay on the Pacific side of the Alaska peninsula, then along the shore of the Pacific westward to King Cove. Besides Dr. Jaggar and Mr. McKinley, the personnel consisted of R. H. Stewart, photographer; John Gardner and Peter Yatchmeneff, field men and a cook.

From a scientific standpoint, Mr. McKinley says, the expedition was a signal success. This was the second summer of the society's four- to five-year survey, under Dr. Jaggar, of the greatest chain of volcanoes in the North American continent. The party scaled a newly found volcano peak in the northern part of the Alaska peninsula; collected data for a topographic map of 1,500 square miles of hitherto unknown territory, and assembled a wide variety of geological, botanical and biological specimens.

Being marooned on an island without food for four days; hiking across miles of rough country filled with volcano ash that was knee-deep at times, and pulling horses out of almost impenetrable marshes, were a few of the unusual experiences that removed the daily routine from monotony.

GAS FUEL FOR THE COUNT ZEPPELIN

THREE thousand cylinders of special gas fuel for the German dirigible, *Count Zeppelin*, are lying at Lakehurst, N. J., ready to fuel the ship for its return voyage across the Atlantic.

Unlike the Blau gas fuel that the airship used on its voyage to America, the million cubic feet of American product is made from fractionated natural gas and is a synthetic mixture of ethane, about the density of air, methane, lighter than air, propane and butane, both heavier than air. These gases are carefully proportioned until the resulting mixture has a density of 1.05, only slightly heavier than air. Arrangements for the supply of this gas by a Louisville, Ky., concern were made by the U. S. Navy as an act of courtesy to the German ship, which is the guest of its sister, the dirigible *Los Angeles*, in its large two-berth hangar at Lakehurst.

Both the German Blau gas, so-called because it was first made by a German by that name, and the American substitute allow the dirigible to carry fuel which adds practically no load and does not make the ship lighter when it is burned, since it is nearly the weight of air. The fuel gas is carried in extra balloonets at the bottom of the giant envelope.

Blau gas is made by the distillation or cracking of gas oil, one of the heavier constituents of the refining of petroleum. In Germany it is obtainable commercially for heating and illuminating purposes, and a plant is located at Friedrichshafen, the home port and place of manufacture of the *Count Zeppelin*.

The use of air-weight gas fuel eliminates the necessity of a water-recovery apparatus such as devised by American government engineers for the conservation of weight on the dirigible *Los Angeles*. Any fuel when burned produces water by the union of the hydrogen of the fuel and the oxygen of the air and as this water is about equal in weight to the fuel consumed, it will maintain equilibrium of the ship if it is condensed from the exhaust gases and conserved. Such water recovery has worked successfully on the dirigible *Los Angeles* and it will be a question for future experience to determine which system will be used on the dirigibles of the future. Not all the fuel of a trip can be carried in the form of fuel gas, however, and *Count Zeppelin* relies largely on gasoline as the hundred or so Zeppelins did before her.

CARBON MONOXIDE POISONING

CARBON monoxide victims in closed garages and suicides by gas will in future become less numerous if the resuscitation method now being tried out by Dr. Ludwig Schmidt-Kehl, of the University of Würtzburg, works as well on human beings as it has on cats in the laboratory. Cats so far gone with carbon monoxide asphyxiation that they would surely have died have been "brought to" by placing them in a closed chamber of pure oxygen under pressure which is alternately decreased and increased in time with their own natural breathing rate.

Carbon monoxide poisoning, Dr. Schmidt-Kehl explains, is due to the abnormal appetite of the red blood corpuscles for the unwholesome gas. They take it up 250 times as readily as they do oxygen, which is the burden

they normally carry to the body cells. The latter, deprived of their ration of oxygen, die of internal suffocation.

With the red corpuscles out of commission, the situation might seem to be hopeless. But it is pointed out that the blood fluid itself, which ordinarily carries so little oxygen that it cuts no practical figure at all in respiration, may be induced to load up with an emergency ration by placing the asphyxiated animal or person in a closed chamber of oxygen under pressure.

If the pressure is kept at a uniform level it must be relatively high; but Dr. Schmidt-Kehl has found that much lower pressures can be used if these are alternately increased and lowered, in time with the breathing rate of the victim. This simulated breathing in a closed chamber he has found is much more likely to revive semi-asphyxiated animals than a uniform high pressure.

Thus far the work has been done only with a small experimental apparatus, with a chamber only large enough to contain a cat. Considerable difficulties have still to be overcome before the method can be adapted to clinical use for saving asphyxiated human beings.

A PACIFIC EARTHQUAKE

THE Mexican Province of Oaxaca, on the Isthmus of Tehuantepec, was again shaken by an earthquake centered out in the Pacific Ocean, on the evening of October 8. The U. S. Coast and Geodetic Survey, after studying data gathered by Science Service, stated that the center of the shock was at 15 degrees north latitude and 97 degrees west longitude. This is about 200 miles due south of the city of Oaxaca and about 75 miles off the coast. The quake occurred at 10:01 P. M., Eastern Standard Time.

As previous quakes in the same place during the last year or so have resulted in considerable damage on land, it is probable that a large amount of destruction was done by this one, though damage to communication lines may delay the news from the damaged area. A quake earlier in the year which shook Oaxaca opened up an ancient tomb and revealed valuable relics to archeologists.

Seismograph observatories throughout the world recorded the quake. Those reporting to Science Service were located at Georgetown University and the Bureau of Standards, Washington; Loyola University, New Orleans; St. Xavier College, Cincinnati; St. Louis University, St. Louis; stations of the U. S. Coast and Geodetic Survey at Chicago and Tucson, Arizona; the Dominion Observatory, Ottawa, Canada, and the Weather Bureau, Manila, P. I.

THE VALUE OF ULTRA-VIOLET GLASS

SCHOOLROOMS and offices should spend their money on outdoor sun-parlors rather than on the new windows that allow ultra-violet light to pass through, is the advice given by Dr. Walter H. Eddy, of Columbia University, at the meeting in Chicago of the American Public Health Association. In homes and apartments these windows would be a great mothers' helper, saving the mothers from some of the hours spent walking up and down with babies and sitting in the park watching small children while they get their daily dose of sunshine.

Dr. Eddy experimented with rats that were fed on a diet that would result in rickets, unless they got enough sunlight to counteract it. These rats were placed in cages in front of the new windows at various distances and angles and for the same length of time. Only those rats directly in the path of the sunlight failed to develop rickets. Those that were more than a few feet away or next to the window, but outside of the path of the sun's rays, developed the disease.

Apparently the windows do permit the ultra-violet rays to pass into the room, but they do not go far enough or in sufficient intensity to take the place of outdoor sunshine. For office workers and school children, a few minutes' walk at noon will be more beneficial than all day spent in a room with ultra-violet light-transmitting windows.

THE MATERNAL DEATH-RATE

REDUCTION in our present high maternal death-rate must be based on adequate obstetrical training in the medical schools, members of the American Public Health Association were told at the Chicago meeting, by Dr. Carl H. Davis, chairman of the section on obstetrics, gynecology and abdominal surgery of the American Medical Association.

In spite of the fact that we have relatively few midwives, our maternal mortality is rather high compared with that of other countries. Obstetrics is the specialty of the general practitioner, the nucleus around which he builds his practice. This subject should be given more attention in the medical school, Dr. Davis advised, in order to reduce this high death-rate.

At the same session Dr. Blanche M. Haines, of the U. S. Children's Bureau, announced that maternal mortality rates for the entire registration area have shown practically no change in the period from 1917 to 1926. In the cities, the rate increased by 3.9 for every 10,000 births during this period. In rural districts a slight decline occurred. The rate for the whole area in 1917 was 66.2 deaths in every 10,000 live births. In 1926 it was 65.6 per 10,000.

Factors credited with the decline in the maternal death-rate in rural districts are educational work, improvement in obstetrical training of physicians, instruction and supervision of midwives, assistance of lay organizations of women in the educational program and extension of improved highways.

Twelve states are now studying the subject with the assistance of the Children's Bureau. Results are not yet reported from all states and no conclusions can be drawn from the studies at this stage.

SERUM TREATMENT FOR INFANTILE PARALYSIS

SERUM treatment in the early stages of the illness provides a definite cure for infantile paralysis with preven-

tion of permanent deformity and paralysis, Dr. Wardner D. Ayer, of the Syracuse College of Medicine, stated at the assembly in Atlanta of the Interstate Post-Graduate Medical Association of North America. Dr. Ayer cited a series of 129 patients seen and treated by himself, of whom 96 made complete recoveries, 25 developed paralysis and eight died.

Of the eight who died, three received the serum too late and three did not receive enough, Dr. Ayer said, leaving only two cases as frank failures. Of the twenty-five that developed paralysis, ten were mild involvements that cleared entirely in six months and eleven were moderately severe with permanent weakness of one or more extremities. Of these twenty-five, only four were seen and treated within the first twenty-four hours of sickness.

The serum used in the treatment was mainly that taken from the blood of patients who had recovered from the disease. In a few cases non-immune horse serum was used. It is given by hypodermic injection into the spinal canal.

The extreme importance of the early use of the serum was particularly emphasized by Dr. Ayer, who pointed out that there is a three-day period of illness before paralysis, and that the disease can be definitely determined in that period. The best results are obtained when treatment is started during the first 24 hours of the illness. The serum is practically useless after the paralytic stage has begun.

SCIENTIFIC FOOD ADVERTISERS

IF advertising would invoke the aid of science it must follow the rules that govern research in science, said Dr. E. V. McCollum, of the Johns Hopkins University, at the meeting in Chicago of the American Public Health Association. Particularly in food advertising, the public is being misled by a wrong use of science. Dr. McCollum presented a plan for an advisory board to consider food advertising.

The board would be composed of eminent scientific men and would only act to advise publishers on strictly scientific matters. This board would decide on questions of accuracy, authenticity, propriety and applicability of scientific statements in food advertisements.

Advertisers themselves are feeling the need of such a board, for the idea was first suggested by John Benson, president of the American Association of Advertising Agencies. Dr. McCollum believes that publishers are also feeling perplexed over the developments in advertising of food products, which have become so extravagant in their claims.

The reason for the fierce competition prompting this wave of so-called scientific advertisements of food is that we are at present eating all we possibly can without harm, says Dr. McCollum. Advertisers, in order to sell more of any kind of food, must take advantage of present scientific knowledge of our nutritional needs. However, too many of them are being led to give the public half-truths in place of scientific facts.

ITEMS

TRENCH warfare is recommended by the U. S. Department of Agriculture as an effective mode of combat against the fall army worm, now on the march northward from the Gulf States, toward the Mason-Dixon Line. Reports on the progress of this insect enemy, which causes enormous damage to cereal and forage crops, are arriving periodically at headquarters, and indications are that it may not reach the northern objective this year. Southern farmers whose crops are endangered by the foe are advised to dig or plow a narrow ditch, with steeply sloping sides, directly across the path of the marching raiders. The worms, attempting to cross, fall into such a ditch where they can be massacred by crushing them with a log dragged back and forth through it. Post-holes dug at frequent intervals in the furrow serve also as traps. These, says the department, should be partially filled with water. A layer of coal oil, or petroleum, spread on the surface of the water kills the worms that fall in.

IF success crowns an experiment now being made, fishermen will have an opportunity to catch California's golden trout in Glacier National Park, according to a statement recently made by M. J. Elrod, naturalist of Glacier Park. The golden trout are natives of California's High Sierra, and to the lakes tributary to Kern River. They are beautiful fish of a golden color, and are limited in their distribution. The eggs for Glacier Park are being reared in troughs in the hatchery, and the young fry will be liberated in some of the barren lakes of the park this fall. Other fish plants at Glacier Park this season include native and rainbow trout and grayling. Over a million eggs have been furnished by the United States fish hatchery at Bozeman, Montana, for this purpose, and possibly another million may be supplied before the season is over. The native trout fry, of which there is a great preponderance, will be planted principally in the waters west of the Continental Divide, where this species does particularly well.

MILK or milk products are probably the source of undulant fever, the new disease that is becoming more and more prevalent throughout the country. This statement was made at the meeting of the American Public Health Association by James G. McAlpine, of the Storrs Agricultural Experiment Station, and Friend Lee Mickle, of the Connecticut Department of Health. Cattle of all kinds may be infected with the germ of the disease. In countries around the Mediterranean the goats carry the germs, but in this country it has been traced to cows, where it appears as infectious abortion. When human beings drink milk from such infected cows, they may get the human form of the disease, undulant fever. However, cows are infected with two kinds of the *Bacterium abortus*, the germ causing the disease. Probably only one of these two is capable of producing the disease in human beings, which is the reason why not every person drinking infected cow's milk gets it.