

FORESTS AND RAINFALL

Rainfall is Increased by the Forests of the Rockies

It is commonly thought that the moisture which forms clouds and falls as rain is almost entirely due to evaporation from the ocean, but scientific investigations show that seven-ninths of the rain which falls over land areas is supplied by evaporation over such areas, the ocean supplying only two-ninths of such precipitation. It was estimated by Dr. Fernow, of the University of Toronto, that 75 per cent. of the rainfall over forested areas is returned to the atmosphere as watery vapor, which does much to increase the amount of moisture carried by air currents passing over such forests.

In Canada, the prevailing winds blow from the west and the provinces of Alberta and Saskatchewan are largely dependent for their rainfall on air currents which come over the Rocky Mountains. It is a well known fact that winds passing over mountains become cooled to such an extent that they lose much of their moisture, which falls in the form of rain, and hence the land areas for many miles to the leeward of such mountains receive an ample rainfall that they are often arid. But if the seaward slopes of these mountains are covered with forests, as is the case in the Rocky Mountains, these forests will evaporate and render available a large amount of the rainfall over these mountains, which might otherwise pass off through underground channels, and by returning with moisture the winds blowing over the prairies, such forests make possible a much greater rainfall than might otherwise occur. Should the east slope of the Rocky Mountains become denuded of tree-growth, it is likely that much larger areas in Alberta and Saskatchewan would be arid than is now the case.

SUCTION COTTON PICKER

Vacuum Apparatus Straps Across Back of the Workman

Several hand devices in the form of gloves have been invented to facilitate cotton picking, but it remained for a southern man to apply the vacuum principle to this work. A glance at the illustration tells the story. A reservoir containing a suction fan is mounted on a leather plate, which straps around the waist and



DOES WORK OF MANY HANDS.

across the shoulders of the operator. In this casing is also a screening device, and from it a tube leads up and over the user's shoulder. This tube has a flaring nozzle. To pick the cotton the workman sets his suction fan in operation and moves the nozzle of the tube from plant to plant, the fluffy particles flying into it and into the reservoir, where the screen prevents them from clogging the movement of the fan. From time to time, of course, this reservoir must be emptied.

A HORSE'S WORK MADE WATER-BOIL

Count Kumford's Experiment Helped to Disprove the Prevailing Theory of Heat

Up to about 100 years ago heat was supposed to exist in various substances in varying quantities—the expression that this or that substance "draws the heat" is still occasionally heard.

Correct knowledge of heat dates back to about 1793 when Count Rum-



At the foundation of Great Britain a series of experiments on the effect of heat by friction. In 1827, when he was working on the boring cannon in Munich, he was so forcibly struck by the large amount of heat developed in the process that he questioned the theory of heat then prevailing, and he thereupon devised a special apparatus for the examination of the generation of heat by friction. He had constructed a hollow cylinder of iron into which was fitted a solid steel plunger, which was made to press against the bottom of the cylinder with great force. A box which surrounded the cylinder contained about 20 pounds of water, in which a thermometer was placed. The original temperature of the water was 60 degrees. The machinery was turned by power supplied by a horse, and in an hour after the friction had commenced the temperature of the water was 107 degrees, having risen 47 degrees; half an hour afterward he found the temperature was 148 degrees. The action was continued, and at the end of 8 hours and 20 minutes from the commencement the water actually boiled. Remond's description of the effect of this clever experiment on those who witnessed it is quite delightful. "It would be difficult," he said, "to describe the surprise and astonishment expressed in the countenances of the bystanders on seeing so large a quantity of water heated, and actually made to boil without any fire."

It was, of course, the work performed by the horse that created the heat by friction which caused the water to boil.

TASTES OF THE FAMOUS

It is well known that people of artistic temperament have idiosyncracies which sometimes amount to a positive weakness. Colonel Roosevelt has put himself on record as preferring skimmed milk and doughnuts to champagne. Madame Bernhardt has an inordinate fondness for Belgian artichokes and truffles; Coquelin could make a meal on jar after jar of pate de fois gras; Byron said that he got his strongest stimulant from successive doses of Rochelle salts; Schiller had a mania for dried apples; the late Pierpont Morgan was never so happy as when leaning over a live broiled lobster and a glass of sparkling Burgundy; Balzac shortened his life by over-indulgence in the blackest of Arabian Mocha; Dr. Johnson could drink oceans of Oolong; De Maupassant wrote his greatest work while snuffing and chewing opium; and Mark Twain was seldom seen without a big black cigar between his lips.

A UNIQUE STRUCTURE

An Interesting Bridge Crosses a Gorge in Indo-China

What is claimed to be one of the most interesting railway structures in the world is the bridge over the Faux Namti gorge in Indo-China, where, owing to the peculiar difficulties in the way of building a bridge of any type, it was necessary to adopt a special design suited to the only method of erection that seemed possible.

The sides of the gorge, according to a writer in Popular Mechanics, are practically vertical and have no chance of the approach to the bridge from either side except through tunnels.

The track grade is 555 feet above the river, so that no system of false-work could be used in building the bridge, while cantilevers went out of the question owing to the lack of "elbow room."

The design finally adopted consisted of two steel trusses, each hinged at the cliff side, which were erected in a vertical position and then lowered so that the ends met, forming a structure of inverted V-shape.

The ends of the two trusses were firmly connected, steel towers were erected on the humps of the trusses and on this support the steel deck truss, carrying the track, was placed. At the beginning of the work it was necessary to let the workmen down by ropes from the tunnel mouth to prepare the foundations of the supporting trusses.

The track trusses were built in the tunnels and were then moved into position on rollers. From end to end this bridge measures 220 feet 4 inches while the distance between the heels of the supporting trusses is 180 1/4 feet.

USE CARE WITH EGGS TO GET TOP PRICE

Give the Customer Benefit of the Doubt First Principle of Good Marketing

In marketing eggs the highest prices can be obtained in supplying a retail trade. This is also one of the most satisfactory trades to cater to and is easy to get. There are hundreds of families in every large town or city that are looking for the person who will furnish eggs regularly each week the year around at several cents above the retail store prices.

The largest profits must come from superior marketing, and from special market advantages in selling eggs and stock. A difference of only a few cents a dozen makes a large increase in the income when several hundred hens are kept.

A neat package is a very good investment. An attractive shipping crate has much to do with fixing the product. The person who will take the trouble to prepare a neat package may be depended upon to be equally careful and painstaking about the quality of the goods which he puts into it.

The first principle of good marketing is to have good quality to sell. Quality sells itself. A fancy egg should be new-laid; that is, not more than one week old when it is delivered to the customer. It should be free from any foreign flavor due to improper feeding or to the absorption of objectionable odors.

To produce eggs of the highest quality requires skill and care. First, one must keep pure-bred fowls in order to get uniformity in color, shape and size of egg. Second, eggs must be selected for hatching that fulfill all the market requirements for strictly fancy eggs.

Eggs for a first class trade must be gathered regularly each day from nests that are especially fitted. If there is any doubt about the freshness of eggs, give the customer, not the eggs, the benefit of the doubt. Do not take any chance. One bad egg will ruin the reputation gained by selling a thousand good ones. As soon as the eggs are gathered they should be carried to a cool place and covered with a clean cloth so that dust cannot settle on them.

A damp cloth is required to rub off any slight discoloration. If it is necessary to wet the eggs, they should be wiped dry before being placed in the crate. They should not be washed unless absolutely necessary, because washing destroys the natural appearance of the shell.

AN ARMY OF PEACE

Well Equipped Buildings Needed For Technical Education

Dr. F. W. Merchant in discussing "Technical Education," said there was a great deal of talk about conservation these days, but the loss to the nation in the matter of material things was nothing compared to the unrealized gift of its citizens, which had no chance to find an outlet for its genius. The present system of evening classes was not one conducive to the best results. Pupils came jaded to the classes after their day's work, and

the speaker contended that the day school must be depended upon more for the support of vocational education. The ages best suited for the making of industrial efficiency were between fourteen and sixteen, and it was here that the nation lost a large number of young members who might be drafted into the ranks of the technical schools. He was afraid that they would eventually have to take the action of Germany in this regard and make technical education compulsory. A great movement was going on with regard to militarism; halls were being erected all over the country, and Dr. Merchant declared that they wanted similar buildings equally well equipped for the training of what Lord Haldane calls "an army of peace to maintain industrial supremacy."

Ghost in a Negro Church

A ghost which appears nightly in a window of a negro church in Alabama, has caused much fear. The spook is described as being six feet tall, wearing a white gown with a long train, and standing with arms stretched and extended toward the altar in an attitude of worship. It is surrounded by a phosphorescent glow. Some advance the explanation that the figure is a freak caused by strange lighting angles. Others contend it is a reflection from the baptismal tank some distance away in a natural formation of rock. Still others think the apparition is a demented person or a hermit who comes to the building each night. But the figure apparently is light and phantom-like, with no definite lines or features.

No one has made any sort of investigation and members of the congregation declare they will not. However, it is becoming a serious matter with some of them, who say they will not go to church so long as there is any indication that it is haunted.

Oldest Priest Dies

Canon Joseph Watson, the oldest Roman Catholic priest in England died at the age of ninety-three in St Catherine's Convent, Newcastle-on-Tyne. The canon was provost of the Cathedral Chapter of St Mary's, Newcastle, and was ordained as long ago as 1847. He was at Tudhoe, in Durham, for 41 years, and while there built the beautiful church of St. Charles and an orphanage for girls.

The Cat That Walked

Will Jones, a farmer of Lipps, Va., gave his sister, who lives at Hazard, Ky., a distance of thirty-five miles, an Angora cat. When she arrived at her home with the animal she released it, and in forty-eight hours she received a telephone call from her brother that the feline had returned.

Timing the Rounds

Two Pennsylvania jewelers have patented a device to time rounds in boxing matches accurately and also to automatically designate the numbers of the rounds.

New Life Preserver

Worn deflated under the coat, a new French life preserver can be inflated and made ready for use by the insertion of a capsule of air compressed air.

Uruguay's Drydock

The government of Uruguay plans the construction of a drydock large enough for the greatest ocean liners.

Big Tobacco Bill

In a year Uncle Sam smoked just 7,707,000,000 cigars and 14,000,000,000 cigarettes.

The Candy Kid

The candy bill of the American girl is \$184,000,000, \$10,000,000 more than the cost of the nation's paint and varnish.

India Uses Quinine

India alone uses one-sixth of the world's supply of quinine.

CASHLESS MILLIONAIRES

Frequently a Lamentable Lack of Quick Assets.

Though Canada's basic position is undoubtedly sound, there is a lamentable lack of quick assets on the personal ledgers of most business men. Canada has hundreds, one might say thousands, of millionaires, and thousands of near-millionaires, but their wealth is, for the main part "on paper" and the average common or garden individual whose entire assets amount to not more than a few hundred dollars will be surprised to know that the millionaire or near-millionaire hasn't enough "hard cash" to meet his own personal obligations. This is no exaggeration. Of course



Drink
SEAL
BRAND
COFFEE

not because it is Made in Canada, but because it is the equal of coffee made in any country.

Quality First!



These wealthy men are fairly "liquid" during a boom season when it is easy to realize on land, property of various kinds, but when the boom wanes momentarily and the men credited with hundreds of thousands of dollars of personal fortune, are tied up as tightly as any lunatic in a straight jacket.

There has been so much speculative activity in all commodities and such a bright prospect for its continuance that everybody's account is extended to the utmost. It should require no argument to show that this is radically wrong and dangerous. There is not enough liquid resource in the great personal fortunes of Canadians, and it is bad for the whole country. It is clear enough that when everybody is "tied up" there can be no automatic support in time of liquidation. If the near-millionaire kept from 45 to 50 per cent. of their resources in hard cash, they would have ample funds to "play with" and at the same time have a reserve capital which would not only be an asset to themselves but to the whole country. Neither would they lose by this policy, as they would be in a position to take advantage of the "bargain counter" when the man "loaded up" had to sacrifice some of his extended and top-heavy commitments.—The Financial Times.

SWEAT SHOP FACTS

A Woman Gets Eighteen Cents For Making Twelve Shirts

The Duchess of Marlborough gave a most remarkable object lesson regarding the English sweat shop system, at her home, Sunderland House, when a dozen representative sweated workers told their stories to a large audience.

The first woman said she had been a chain maker for fifty-two years. Holding up a heavy chain, she simply said, "This used to be 87 cents a hundred; now it is \$1.25." Next she showed thirty-one links attached to a ring which were made for two cents—"a good lot," as she described it. She gave place to the match-box maker, who said she was now paid six cents a gross instead of the four cents, which was previously given. "It takes one and a half hours to make a gross, not losing a minute." Shirt-making was represented by a woman from the West End of London. Unfolding a coarse shirt, she remarked, "A dozen of these right out before earning 13 cents! Last week me and my husband sat from 5.30 in the morning until 11 at night and made fourteen dozen shirts, which came to \$2.52, out of which we had to pay 37 cents for the machine, and 45 cents for cotton."

Another woman had quite a cheerful countenance. Holding high above her head the uppers of two shoes, she remarked, with a laugh, "These are what are commonly called 'pumps,' but what we call in our factories 'patent dress shoes.' I get 20 cents for twelve pairs, and it takes me as long to make two pairs." The most I can earn is \$1.50 or \$1.75 a week, working very hard from morning till night, and finding my own machine and cotton.