SCIENTIFIC KITE FLYING

CONDUCTED AT BLUE HILL OBSERVATORY.

Some Enormous Flyers That Carry Up Very Delicate Instruments.

Mr. S. F. Cody's recent experiments with his man-lifting kites and his success in crossing the English Channel in a boat drawn by kites have called attention to the scientific use of these minature airships. But there is one department in which kites play an important role, and that is as a successful explorer of the upper atmosphere. To-day they are extensively used both on the continent and in America for obtaining meteorological observations. Numerous kite-flying stations have been opened in France, Germany and the United States, where kites are daily flown for securing meteorological and other data. Some of them are under the control of the respective Governments, while others are purely private institutions.

By far the largest and most interesting of these is Blue Hill Observatory, a private station, near Boston, Massachusetts, U.S.A. Here kites may daily be seen far away on the horizon, almost out of sight. The observatory is presided over by Mr. A. Lawrence Rotch, who needless to add, is an enthusiastic kite-flyer. Indeed, he has brought kite-flying to a science. He knows more about kites and their varied use than any other man living.

HARGRAVE KITE.

The type of kite in general use at the various meteorological stations is the Hargrave, or cellular kite. It was the invention of an Australian, Mr. Hargrave, who hails from Sydney. It consists of two light boxes, without tops or bottoms, fastened some little distance one above the other. The wind exercises its lifting force chiefly upon the front and rear sides of the upper box, the lower box, which inclines to the rear, and so receives less pressure, preserving the balance, while the ends of the boxes being in line with the wind keep the kite steady. Experts declare this type to be the best flyer ever designed.

Curiously enough it was in Britain that kites were first flown for a scientific object—namely, at Glasgow, in 1749. Four kites were sent up, some of them measuring seven feet in length. They were all attached to one line, and their work was to lift a thermometer into the air. It is related that "the uppermost one ascended to an amazing height, disappearing at times among the white summer clouds, while all the rest in a series, formed with it in the air below such a lofty scale, and that too affected by such regular and conspiring motions, as at once changed a boyish pastime into a spectacle which greatly interested every beholder."

CARRYING INSTRUMENTS.

The kites at Blue Hill, and for that matter at all the up-to-date stations, carry up a wonderful little instrument, called a meteorograph. Virtually it is a combination of a barometer, a thermometer, and a hygrometer, all of which record their readings automatically on one cylinder, turned by clockwork. These little instruments are the invention of M. Richard, of Paris, and are made of aluminium, and weigh three pounds. By flying two or more kites, a greater lifting power is obtained, while there is also less risk of the kites breaking away and getting lost. Indeed, five, six, and even eight kites are often attached to the same line when it is desired to lift a heavy instrument in the air, while there is a record of twelve kites having been fixed to the same rope.

An interesting device is employed at Blue Hill for bringing down the kites. In design it resembles an ordinary deep-sea sounding apparatus. There is a drum round which the wire is wound by a small steam engine when the kites are drawn in, and another drum for playing out the wire.

STEEL WIRE USED.

It has been found that the pull of the kites during ascents is sufficient to unreel the wire, which by means of a pulley is deliveryed to the kites as required, an attached wheel meanwhile recording the pull on the line and the length paid out. Mention may here be made of the wire used at Blue Hill. It is a fine steel music-wire, weighs but fifteen pounds to the mile, and is capable of withstanding a pull of three hundred pounds. The wire is spliced in lengths of more than a mile with the greatest care, special pains being taken that no sharp bends or rust spots occur which would cause it to break. When the kites are to be drawn in a 2-h-p steam engine is called into requisition, and the wire pulled in at a rate of three to six miles an hour.

The kites at Blue Hill vary in height from five to twelve feet and more, and are fairly heavy. The larger ones contain about seventy square feet of supporting surface, and exert a pull of from seventy to a hundred pounds. It would be impossible to manage such an airship by hand, but by means of the steam windlass or reeling apparatus referred to they are kept under control.

GREAT HEIGHTS REACHED.

In the summer of 1897 a kite at Blue Hill attained the then record height of 11,716 feet. It was regarded as remarkable achievement. Since then the distance has been gradually increased, the present record being 15,800 feet above the level of the sea—an ascent of over three miles, and exceeding the highest scientific balloon ascent in America. When this unique record was achieved, a combined weight of a hundred and seventy-five pounds was lifted into the air. Six kites of the improved Hargrave type were used. They had curved flying surfaces, modelled after the wings of a bird. The length of wire paid out to the kites was over five miles. According to the recording instruments, the temperature at the highest point attained was fifteen degrees below freezing point, and the wind velocity was about twenty-five miles an hour. Flights have been made at Blue Hill in gales, in rain, and in snowstorms, but never in a thunderstorm. The high flights occupy ten or twelve hours. Occasionally the kites are left out all night.

Many know of the success accomplished in kite-photography, and it would seem that the kite in the hands of a scientist is a weather chart, a photographer, a signalling apparatus; a telephone, a collector of electricity, a parcel and letter carrier, and a medium for lifting man into space.

In America alone there are now some eighteen kite-flying stations. It is only fair to add, however, that at many of them kites are only flown at certain seasons of the year. One of the latest countries to resort to kites is Russia, which has equipped four observatories with kite-flying outfits. There is also a private kite-flying station near Paris, and another in Scotland—the birthplace of scientific kite-flying.

MORE EVIDENCE FROM MONTREAL

THAT DODD'S KIDNEY PILLS ALWAYS CURE DROPSY.

It Is a Kidney Disease and is Cured by Curing the Kidneys—Dodd's Kidney Pills Never Fail to Cure the Kidneys.

Montreal, Que., June 27.—(Special).—Every day brings forth fresh proof that Dropsy is caused by diseased Kidneys and that the one sure way to cure it is to make the Kidneys steong and healthy by using Dodd's Kidney Pills. Mr. Geo. Robertson, 392 St. James Street, this city, is one of those who has proved this beyond the shadow of a doubt. Mr. Robertson says:

"My feet were so much swollen from Dropsy that when I got out of bed in the mornings I could hardly put them on the floor. My arms used to swell at times so that I could not put on my coat.

"I had to be tapped to relieve me of the terrible pains.

"On the advice of a friend I began to take Dodd's Kidney Pills, and before I had used the second box I began to feel better. Seven boxes cured me completely."

Rheumatism, Diabetes, Bright's Disease, are some of the many forms of Kidney Disease that Dodd's Kidney Pills never fail to cure promptly and permanently.

HE KNEW THE GENUS.

During a lesson on the animal kingdom the teacher asked if any one could give an example of an animal of the order of edentata, that is, one which is without teeth.

"I can!" cried Reginald, his face beaming with the pleasure of assured knowledge.

"Well, what is it?" said the teacher.

"Grandpa!" he shouted.

FOOD FACTS.

What an M. D. Learned.

A prominent physician of Rome, Georgia, went through a food experience which he makes public:

"It was my own experience that first led me to advocate Grape-Nuts food and I also know from having prescribed it to convalescents and other weak patients that the food is a wonderful rebuilder and restorer of nerve and brain tissue, as well as muscle. It improves the digestion and sick patients always gain just as I did in strength and weight very rapidly.

"I was in such a low state that I had to give up my work entirely and go to the mountains of this state, but two months there did not improve me; in fact I was not quite as well as when I left home. My food absolutely refused to sustain me and it became plain that I must change, then I began to use Grape-Nuts food and in two weeks I could walk a mile without the least fatigue and in five weeks returned to my home and practice, taking up hard work again. Since that time I have felt as well and strong as I ever did in my life.

"As a physician who seeks to help all sufferers I consider it a duty to make these facts public." Name given by Postum Co., Battle Creek, Mich.

Trial 10 days on Grape-Nuts when the regular food does not seem to sustain the body will work miracles.

"There's a reason."

Look in each package for the famous little book, "The Road to Well-ville."

SUNLIGHT SOAP REDUCES EXPENSE

$5,000 Reward will be paid by Lever Brothers Limited, Toronto, to any person who can prove that this soap contains any form of adulteration whatsoever, or contains any injurious chemicals.

Ask for the Octagon Bar. 815

WAR.

Gunpowder has spoiled war. War was always detrimental to the solid interests of mankind. But in old times it was good for something; it painted well, sung divinely, furnished Iliads. But invisible butchery, under a pall of smoke a fur-long thick, who is any the better for that?—Charles Reade.

As long as mankind shall continue to bestow more liberal applause an their destroyers than on their benefactors the thirst of military glory will ever be the vice of the most exalted characters.—Gibon.

Mad wars destroy in one year the works of many years of peace.—Benjamin Franklin.

CURE FOR INDIGESTION.

Scientific investigation has discovered that that troublesome disease, dyspepsia, can be cured by short intervals of exposure to intense cold, followed by hearty eating. M. Raoul Pictet, a Swiss gentleman was experimenting with a low temperature. He had produced an artificial temperature in a sort of pit which caused the thermometer to sink to 140 or 150 degrees below zero. Among other experiments he exposed himself for a brief interval to this temperature by lowering himself into the pit. On emerging he found himself intensely hungry and ate freely. The process was repeated several times, and as a result he found himself cured of chronic indigestion, from which he had suffered for years.

How's This

We offer One Hundred Dollars Reward for any case of Catarrh that cannot be cured by Hall's Catarrh Cure.

F. J. CHENEY & CO., Toledo, O.

We, the undersigned, have known F. J. Cheney for the last 15 years, and believe him perfectly honorable in all business transactions, and financially able to carry out any obligations made by his firm.

WALDING, KINNAN & MARVIN, Wholesale Druggists, Toledo, O.

Hall's Catarrh Cure is taken internally, acting directly upon the blood and mucous surfaces of the system. Testimonials sent free. Price, 75c. per bottle. Sold by all Druggists.

Take Hall's Family Pills for constipation.

We may beat our swords to ploughshares
And our spears to pruning-hooks,
And betake ourselves to farming
In the peaceful country nooks;
But we want them back as weapons
When we find at early dawn
That our neighbor's scraggy chickens
Have been scratching up our lawn.

Lever's Y-Z (Wise Head) Disinfectant Soap Powder dusted in the bath, softens the water and disinfects.

Mr. Totterly—"Could you marry a very old man with a good deal of money, if he told you frankly how old he was and how much he was worth?" Miss Timely—"How much is he worth?"

OVER THE WABASH.

To the Great World's Fair St. Louis, Mo., everything is now wide open, round trip tickets on sale until December 1st, at lowest first-class one-way fare, good fifteen days, fare and a third good sixty days. Now is the time to see this, the greatest of all Expositions in the history of the world. The great Wabash is the Banner Line, the shortest and quickest route from Canada to St. Louis. The through trains on the Wabash are the admiration of all travelers going to St. Louis.

For time tables and descriptive folder, address J. A. Richardson, District Passenger Agent, Northeast corner King and Yonge Streets, Toronto.

A man in trouble is apt to discover that his friends are not as friendly as they might be.

Minard's Liniment is used by Physicians

An old bachelor who was very bald fell in love with a pretty widow, whose late husband's name was Robin. One evening the bachelor dropped in to have a cup of tea with the widow. After tea was over she commenced to sing 'Robin Adair." The bachelor picked up his hat and said: "Madam, even if your husband did have hair, it's no fault of mine that I haven't." Then he fled.

"Harkins," said the head of the firm to the foreman, "the firm has decided to inaugurate a system of profit-sharing with its employes." "Good!" replied the foreman. "What were the firm's profits last year?" "Last year the firm lost $3,000. That necessitates a reduction of 10 per cent. in wages under the new system. Tell the men the new arrangement comes into effect immediately."

Quality should always be the first consideration, price the next, remember this if you are ever tempted to buy a Tea which does not bear the brand

Blue Ribbon

Potatoes, Poultry, Eggs, Butter, Apples

Let us have your consignment of any of these articles and we will get you good prices.

THE DAWSON COMMISSION CO, Limited
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HAUNTS OF FISH AND GAME.

Attractions for Sportsmen on the Line of the Grand Trunk.

The Grand Trunk Railway Company has issued a handsome publication, profusely illustrated with half-tone engravings, descriptive of the many attractive localities for sportsmen on their line of railway. Many of the regions reached by the Grand Trunk seem to have been specially prepared for the delectation of mankind, and where for a brief period the cares of business are cast aside and life is given up to enjoyment. Not only do the "Highlands of Ontario" present unrivalled facilities for both hunting, fishing and camping, but the 30,000 Islands of the Georgian Bay, Thousand Islands and St. Lawrence River, Rideau River and Lakes, Lake St. John, and the many attractive localities in Maine and New Hampshire, present equal opportunities for health, pleasure and sport. All these localities are reached by the Grand Trunk Railway System, and on trains unequalled on the continent. Abstracts of Ontario, Michigan, Quebec, New Hampshire and Maine fish and game laws are inserted in the publication for the guidance of sportsmen. The Grand Trunk Railway has also issued descriptive illustrated matter for each district separately, which are sent free on application to the agents of the Company and to Mr. J. D. McDonald, District Passenger Agent, G. T. R., Union Station, Toronto.

Crabshaw—He has the inventive faculty very highly developed. Crawford—What has he invented? Crabshaw—Nothing, so far as I know. But when his wife goes out he can think of things to keep the baby amused by the hour.

For Over Sixty Years

MRS. WINSLOW'S SOOTHING SYRUP has been used by millions of mothers for their children while teething. It soothes the child, softens the gums, allays pain, cures wind colic, regulates the stomach and bowels, and is the best remedy for Diarrhœa. Twenty-five cents a bottle. Sold by druggists throughout the world. Be sure and ask for "MRS. WINSLOW'S SOOTHING SYRUP." 22—04

When a widower begins to tell his troubles to a widow she knows he is going to ask her to share them.

At the Yarmouth Y. M. C. A. Boys' Camp held at Tusket Falls in August, I found MINARD'S LINIMENT most beneficial for sun burn, an immediate relief for colic and toothache.

ALFRED STOKES,
General Secretary.

"My boy," said the old gentleman, "there's only one thing that stands between you and success." "And what is that?" asked the youth. "If you worked as hard at working as you do at trying to find out some way to avoid working, you could easily acquire both fame and fortune!"

Keep Minard's Liniment in the House.

FACES IN COINS.

In connection with the new issue of coins it is not generally known that the Duchess of Portsmouth has been the Britannia on all British copper coins since Charles II. Mrs. Martha Washington used to beam from the United States Treasury notes. A century ago the Rothschilds similarly adorned their notes with the benevolent face of Baroness de Rothschild; and in 1897 the State Bank of Buda Pesth engraved the radiant countenance of Mme. Luise Blaha, the prima donna, on its thousand-gulden notes.

La grippe, pneumonia, and influenza often leave a nasty cough when they're gone.
It is a dangerous thing to neglect.
Cure it with

Shiloh's Consumption Cure The Lung Tonic

The cure that is guaranteed by your druggist.

Prices: 25c. 50c $1 S. C. WELLS & Co, 309 LeRoy, N.Y., Toronto, Can.

1—28

CLEVER TOMMY.

"Where do the bees get the honey from, daddy?"

"Why from the flowers, of course, Tommy. I did think you knew as much as that!"

"Oh, I know. But I wanted to find out if you did!"

Ask for Minard's and take no other.

"Bobby, won't you kiss me?" "Naw." "Well, Bobby, may I kiss you?" "Yes, if you kiss me easy on top of my head."

Minard's Liniment Lumberman's Friend

Jimjones—"I met a ghost last night and it spoke to me." Samsmith—"What did it say?" Jimjones—"Haven't the least idea. I'm not familiar with the dead languages."

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that are safe and earn good rates of interest. We offer good securities that are paying 3 to 4 per cent. half yearly, or better than 7 and 8 per cent. per annum. For full particulars address "Executor," No. 11 Queen St. East, Toronto.

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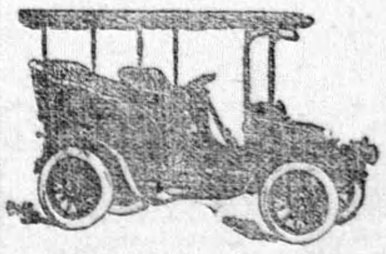
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