Science Is Harnessing the Blizzards To Get Heat and Light for Rural Homes

—BY— Rene Bache

North Dakota Experiment Station Demonstrates Wind Mills Can Generate Electricity; Will Revolutionize Rural Life, Making Country Homes Warm and Light at Little Cost.

WASHINGTON, D. C., Feb. 1.—Why use coal? At all events, why should farmers and other dwellers in rural districts use it? They can get along without it, suffering no discomfort for the lack, and so help to win the war.

This has been a hard winter. It has been particularly hard on the farmers. In the west many of them have been obliged to burn their fences and outbuildings, to keep their families from freezing.

Dreadful. But it really wasn't necessary. They might more easily have kept warm by other and cheaper means. Electricity would have furnished them with all the heat they needed.

But, it will be said, it takes coal to make electricity, or water power.

Make Blizzards Produce Heat.

Don't you believe it. You can make electricity out of wind. The farmers of the Dakotas could make the very blizzards heat their houses if they chose.

A nonsense idea? Believe it not. The department of agriculture gives it full endorsement, and would be only too glad to persuade the farmers of this country to accept it and act upon it.

Concretely expressed, the idea is represented by a windmill. But not the old fashioned kind of windmill; oh, dear, no! It is what an up to date engineer calls a "wind turbine." More than strange is it that the windmill should have remained just about the same primitive contrivance for thousands of years. Nobody seems to have thought of trying to improve it. But recently inventors took hold of the problem and evolved the wind turbine—itself a simple affair enough though scientific—which converts wind power into electricity.

Electricity is power. It is light. It is heat. Wind will make it in quantity to meet any farmer's requirements, with the help of apparatus that is rather remarkably cheap.

Already farmers all over the country are beginning to take up the idea, and are substituting wind turbines for gasoline engines for all sorts of uses. Wind costs nothing; gasoline is high and going up steadily.

Is Harnessing the Sun.

It is a mode of harnessing the sun; for it is the sun that makes the winds. The North Dakota agricultural experiment station reckons that a 16 foot windmill, properly managed, should keep a farmhouse at 70 degrees Fahrenheit all winter, even though the temperature outside were 40 below zero. Electric heaters suitable for the purpose are already on the market.

Incidentally (says the experiment station) such a windmill should furnish enough electricity to light the biggest farmhouse and illuminate all the stables and outbuildings of a farm of 1200 acres. A good sized storage battery connected with the outfit will hold a reserve supply of current to last over for a period of ten days of windless weather.

For the moment, disregard the farmer. How about that much overworked person, his wife? Think what a plentiful supply of electricity means to her.

It will operate her bread mixer, her potato peeler and her meat chopper. It will run her sewing machine and her vacuum cleaner. It will freeze her ice cream. In the laundry, it will heat her flatiron and drive her mangle; it will turn her washing machine.

Electricity in cities is too expensive to be used for cooking, but the farm housewife may have it literally "to burn." Wind is cheap. She can dispense with ordinary fuel, and employ the current to prepare the meals for the family and hired hands. There is no coal to be carried; no ashes to be sifted. Her smokeless kitchen is one of the cleanest rooms in the house.

She is freed from the drudgery of caring for lamps and lanterns. They are not needed indoors or outdoors because the barns and other outbuildings are illuminated by electricity controlled from a switchboard in the farmhouse kitchen. The switchboard is placed in the kitchen in order that it may be most conveniently accessible. The women can manage it.

Making Rural Homes Brighter.

There is no reason why, under such circumstances, the rural home should not be as brightly and cheerfully lighted as any city dwelling. This, in itself, seems a new notion. In summer the farmer may enjoy the luxury of electric fans, ministering to the comfort of tired workers.

The gasoline engine hitherto has been the accustomed source of electricity. It serves the purpose very well. But the windmill is wonderfully cheaper. It was far cheaper when "gas" costs only 15 cents a gallon; at the present price of gasoline there is no comparison.

The windmill outfit costs about the same as a gasoline outfit, for a given power capacity, but the subsequent expense is trifling relatively. See how it works out. Electricity from wind (as estimated by the North Dakota station) costs 5 cents a kilowatt, which is about one and a third horsepower. Obtained by burning gasoline, it costs five times as much.

The wind plant is cheap to maintain. It furnishes power far cheaper than that obtainable from any other source of energy, with the possible exception of a conveniently situated water fall. The amount of power delivered depends primarily on the size of the wind wheel. One with a diameter of 16 feet is big enough for any farmer's use. But it depends measurably upon the height of the tower that supports the wheel. If the tower be 50 feet high, it will yield 50 percent more electricity than a tower 20 feet high in the same situation. But an equivalent advantage may be secured by placing the tower on a natural elevation.

Have Kitchen Switchboard.

The switchboard in the kitchen has special service switches for the house, the barn, the blacksmith shop, and other outbuildings. Thus the whole outfit is under a ready to hand central control, the current being available for pumping water, grinding feed, cleaning grain, working the feed lift, and operating the milking machine, the milk separator, the horse clipper, the lathe, the grindstone, etc.

The storage battery (conveniently placed in the attic) is a prime essential, inasmuch as at times there must be periods of calm weather when the windmill generates no electricity. It is a very simple arrangement. The battery charges itself, an automatic "cut in" and "cut off" rendering it fool proof.

When there is a lively breeze, and the generator gets to running beyond a certain speed, the "cut in" connects it with the battery and charging begins. On the other hand, when the generator's speed drops below a certain point the "cut out" disconnects it, at the same time interposing a check to prevent the escape of electricity already stored.

It will be understood that the battery may be charged while the current is being used, if there be a surplus. Thus the farmer's wife may be using five amperes (the amperes is a measure of quantity) for heating her irons a day every day in the year, flatiron. But if the generator be running fast enough to yield a current of seven amperes, two amperes will be stored meanwhile in the battery upstairs.

Store It For Calm Days.

Enough electricity may ordinarily be stored in the battery to last ten days of calm weather, when the generator is idle. The wind turbine utilizes every wind, from a gentle breeze to a moderate gale, and whatever power is not used at the moment goes into storage in the farmhouse attic. In the winter the wind blows harder and more constantly—a circumstance of no small importance, inasmuch as during the cold months of the year more electricity is required, not only for heating the house, but also for cheerful lighting during the long evenings.

At Fargo, N. D. (where the experiment station is located) it was found that a 16 foot wheel would yield in the month of January a quantity of electricity representing 310 horsepower. The figures for February was 627 horsepower; for March, about the same; for April 1000 horsepower; for May 929 horsepower. The calmest months in that region are July and August, during which the wheel delivered 188 and 232 horsepower, respectively.

The estimate is that such a wheel will deliver (wherever located) an average of at least 2 horsepower ten hours a day every day in the year.

A Serial of Universal Appeal

The Other Woman

By Virginia Terhune Van de Water.

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(Continued From Wednesday's Herald)

Louise Has a Good Time in Stockbridge and Waits For Jack To Take Her Home.

MY HEART was heavy when I bade Jack goodby the following morning. I had telegraphed my mother that I was coming to her, but now that my husband and I were to part for the first time, I clung to him longingly.

"I hate to go, darling!" I whispered.

"Never mind," Jack murmured, "you will have a lovely time, and a week from next Saturday I will be with you—if I can get away from the office long enough to make the trip worth while. Think of that—a week from Saturday—and this is Thursday."

"If I had known I would have minded so much, I would not have promised to go to Stockbridge," I insisted.

We were in the Grand Central station now, and I would not let the tears come, as they threatened to do, suppose Jack should be ill—suppose he should be fearfully lonely? And how could he do his own marketing? I had tried to instruct Jennie how to purchase the proper things—but she was not a good manager. I might never to have promised to leave home. It was not right.

"I shall worry all the time about you and the housekeeping," I stammered. "I know I'm not competent—I shall be so anxious."

"If the housekeeping is what's worrying you," Jack proposed, "I'll get mother to keep house while you're gone."

Under ordinary circumstances, I might have resented this. Now my terror at leaving him and my panic of homesickness made me forget all petty jealousies.

"Will you ask her to do that?" I demanded eagerly. "Oh, please do, Jack! Perhaps she might come around and stay with you while I'm away. She could sleep on the divan in the living room—and be comfortable there, too."

"All right, dear," Jack soothed. "I will ask her to come."

"Explain to her that I had to leave so unexpectedly that I could not arrange things for her—but that I will be very grateful to her if she will take care of you for me," I said.

"All right— I will—don't worry!" my husband urged, hurrying me into the train and finding my seat for me. "It is time you were off," he added with a glance at his watch.

He Leaves Abruptly.

He kissed and left me so abruptly that I might have fancied he was anxious to have me gone had I not seen him looking eagerly at the window of my car as he went down the platform. And as he caught sight of me I saw in his eyes a look of love and yearning that made me once more afraid I was going to cry.

I would never leave him again, I vowed inwardly as the train started. Why had I said I would go to my mother? Well, I was thankful that Mrs. Hampton was to stay with Jack. She certainly was devoted to him, I remembered consolingly.

All at once the recollection came to me of the luncheon of which she must have some suspicion and of which I had not told Jack. I did not worry about it now. Mrs. Hampton did not know that I was really going to luncheon anywhere—only that I had said something about "one thirty, Wednesday." I had been foolish to suppose she would speak to Jack of this trifle.

Now, when I was depending upon her to care for my husband during my absence, I could be just to her. My conscience hurt me for having doubted her. I even wished I had told Jack about that luncheon. I would tell him when he came out to Stockbridge next week. It would be silly to write to him about it.

Those who know Stockbridge, know how alluringly beautiful it can be. Surrounded by its loveliness, and in the companionship of my own mother, I did not miss Jack as cruelly as I had feared I would. Moreover my anxieties with regard to him were set at rest the evening of my arrival by the receipt of a telegram from him.

"Mother will stay with me during your absence. Don't worry," I read. I actually laughed aloud in my relief.

"I am perfectly delighted that Mrs. Hampton is to be at the apartment," I told my mother. "You see, poor old Jack has never had to look after himself or keep house for himself—and it would have been very torture for him. Before he was married he always had his mother with him. Since he married he has had me. And I was awfully worried lest he might be sick—or lonely—or something!"

My mother smiled sympathetically. She always sympathized with my loving anxieties.

"I can well understand that, darling," she assented. "The price we pay for caring so much for any one is that we are correspondingly solicitous about him. Still, I have no doubt that Jack would have done very well, even by himself. He will do doubly well now that his blessed mother is to be with him and look after him. She is such a lovely character."

"Yes, indeed, she is," I agreed earnestly.

Innanthew-in my 'eart I meant the words. Whether she and I were congenial or not, she was certainly a wonderful mother to her son. I found solid satisfaction in dwelling upon this fact. Here was a time when the interests of my mother in law and myself did not clash. I knew that Jack loved me more than he loved her, and that he would miss me keenly. So I could afford to be generous in my thoughts of Mrs. Hampton—especially as she was making it possible for my mind to be at ease during my absence.

I did not put all this into words, even in my own musings. Now, in the retrospect, I can deal with myself mercilessly and honestly. I was selfish, and I did not know it.

Therefore, I felt a sense of self approval when I found that, at a distance from my mother in law, I could actually think of her with gratitude that closely resembled affection.

The summer days slipped by happily. My mother and I walked, motored and talked together. Other guests in the hotel were charming to me. So, in spite of my missing Jack, it was not long before the day arrived on which he was to come out to Stockbridge to spend the week end with me. And on Monday I was to go back home with him.

(To Be Continued)

News Notes From Movieland

By DAISY DEAN.

PHOTOPLAY "fans" who were devotees of the photoplay theaters a few years ago will welcome the news that Kate Price is again to be seen upon the screen in the support of Henry B. Walthall in his second Paralta play "Hundrum Brown." A few years ago Kate Price was one of the most popular actresses of the screen appearing in photoplays of the Vitagraph company. At that time Miss Price was one of the most versatile of the screen actresses and appeared in productions ranging from heavy melodrama to the lightest comedy. That was in the days when the late John Bunny was at the zenith of his popularity and Kate Price appeared opposite him infrequently.

In "Hundrum Brown" Miss Price will be seen in the role of Aunt Kyira, a character part which is bound to bring to memory the kind of acting that at one time made her one of the most popular women of the screen.

TOO MUCH ACTION!

There was a period when nearly every producer thought that action made a photoplay. Every scene and incident was full of restless movement. Then came the day of characterization as opposed to and superseding the "action" period, and this method has come to stay.

Nearly all of the melodramas and westerns of two years ago raced through from two to four reels of film and there was little reserve force or character acting brought out. The hero was always distinctly heroic and good looking, the heroine was just that, and the supporting cast, as a rule acted all over the shop and if you will remember the general run of photoplays run to periods, with the title "several years later" showing up with tiresome frequency.

In other words we were satisfied with swiftly moving action and did not really get acquainted with the characters of our stories. Nowadays the directors "place" their characters so that an audience actually knows who and what they are and what sort

Kate Price.

of lives they lead, which makes what they do and how they do it understandable and real. You will also notice that many of the most entertaining singles cover comparatively short intervals of time.

The directors are more than ever before endeavoring to present life and incidentals as people know them to be.

The Buffalo Motion Picture Corporation has been recently formed, and negotiations are afoot to secure the signatures of Amelia Bingham, Tyrone Power, and Edna Goodrich to contracts, as well as those of other stars. It has been practically decided that Miss Bingham will star in the initial feature, which will be located about Niagara Falls.

THEATERS SUFFER SEVERELY AS A RESULT OF ORDER TO CLOSE IN EAST ON MONDAY NIGHTS

In the NEW YORK THEATRES

BY EMORY B. CALVERT.

All Accept the Order Cheerfully, However; Vaudeville, Pictures Suffer.

NEW YORK, Feb. 2.—New York's theaters succumbed to the Garfield fuel orders with such grace as to leave no doubt of patriotism on the part of owners, managers and actors.

Naturally enough, managers sought to have the closed day be set for Tuesday instead of Monday, but their efforts were in vain. They argued that because of enforced holidays the theaters should remain open as entertainment for the idle public.

Federal officials failed to take the same view and immediately New York's theatrical world replied.

"All right. We stand ready and anxious to do our bit. Your orders will be complied with in the minutest detail."

From the smallest motion picture house to the Metropolitan Opera house and the Hippodrome they announced that the administration would be supported in the spirit as well as in the letter of the law, and they kept their word.

Vaudeville and Pictures Suffer.

Vaudeville and motion pictures seemed to be hit the hardest by the closing order, though all branches of the theatrical profession were vitally affected. Nevertheless, there was little complaint heard. Those theaters which normally change their bills on Monday generally decided to make the usual weekly change one day later.

The out of town shows which are playing throughout the east were most seriously affected by the closing, because in many cases they were playing one, two and three night engagements, which would entail shifts in the booking. The Klaw & Erlanger office and the Selwyn interests reported that few of their companies would have to make any long jumps as a result of the orders, however.

Some Are Big Hard.

Frank Underwood, general stage director for Oliver Morosco, said there were eight companies out on the road. "Unfortunately," he added, laughing, "all but one of them are in the east. There are two companies of 'The Bird of Paradise' and 'So Long Letty' out, and these two second companies are naturally badly inconvenienced. But we are only too willing to make the best of it, as everyone else seems willing to do."

From all over the east came advice that the theaters of the country were taking philosophically the news of the closing and stood ready to carry out the order as issued. Many shifts in engagements were made necessary by the order, but these were accomplished as gracefully as possible.

The motion picture industry was perhaps more upset by the new state of affairs than any other amusement enterprise. Because of the infinite ramifications of the business the distribution and delivery of films and the shifting of reels from one house to another, officials and executives were at their wits end to know what to do.

State Orders Conflict.

Howard Elliott, secretary of the National association, said at his office that the combined application of federal and state conservation orders was creating havoc in the ranks of exhibitors. Picture theaters in Detroit and Atlanta, he pointed out, were closed now by state order on Mondays and Tuesdays and open only five hours daily during the remainder of the week. In Indianapolis all theaters were closed tight and open only one day a week in some other parts of the state. Conflicting orders were what was principally bothering the pictures, he declared.

"Motion pictures do not want any favoritism," said Mr. Elliott, "nor do they expect to stay open where other businesses close. But the industry would like an established ruling throughout the east, so that we can find out what must be done. A uniform law is almost a necessity to the existence of the motion picture business, inasmuch as exchanges and shipments must be made. No system of accounting could keep track of how the law stands in each separate town and district at the moment and deliver film accordingly."

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Daily Novelette

CASHMERE NEARLY DIXES.

"YOUR honor," said Spielman P. Prindle, lawyer for the defense, "my client, Mrs. Sweetsmile-Ever, admits, with distressing humility, that she took the diamond necklace from a tray on the counter of the plaintiff's jewelry store, but your honor, knowing that a mere $19,000 diamond necklace means nothing at all in Mrs. Sweetsmile-Ever's wealthy young life, will no doubt be willing to agree that she could not have been in her right mind, when the action was committed. I will call Dr. Peerby Squiss, the eminent burglist, to the stand to clear up any possible doubts that your honor may have on this subject."

"I happened to call upon Mrs. Sweetsmile-Ever," testified Dr. Squiss, "on the morning of the day on which the incident occurred. She was undoubtedly suffering from a combination of carcheastic rindums and spinefloatie dermain willies."

"I discharge the prisoner and trust she will not get her feet wet on her return home through this nasty drizzle," said his honor kindly. "Marie Sqiurds, take the stand. Marie Sqiurds, you are accused by Hadder Speakles, grocer, of stealing a can of condensed watermelon. What have you to say in your own defence?"

"Thirty gibbety bow," replied Marie Sqiurds, smiling cheerfully but vacantly. "The dog ran up and the cleck ran down. I feel so jolly I can hardly realize it's Wednesday already."

"Stop that!" roared his honor. "What do you mean by feigning to be out of your head in this court? Just for that I sentence you to 15 years in prison."

And the prisoner was led out, muttering brightly, "I had a little goat once, but I gave him away because he was stolen from me."

Their Married Life

Warren Almost Misses an Appointment Because Helen Insists She Can Awaken at a Given Hour.

"HELEN, I've got to get down town early tomorrow morning; do you think you can manage to get me up?"

"Certainly, dear. What time must you be down town?"

"Well, I ought to get up about 6 o'clock. This is a business deal, and it is important that I get down early in order to see to things."

"I'll get breakfast for you myself," said Helen, triumphantly.

"What's the matter with Mary?" queried Warren.

"Why nothing, dear, but I thought I wouldn't bother to get Mary up so early."

"The idea! It won't hurt her for once. The way you spoil your servants, Helen, it's no wonder that they walk all over you."

"Well, if you'd rather have Mary get breakfast I'll tell her," said Helen, getting up and putting her knitting down on a chair.

"Wait a minute. Has Mary an alarm clock?"

"I don't think so, Warren."

"How are we going to wake up then?"

Warren Is Skeptical.

"I'm sure I'll wake up, dear. You can trust me to see that you get down town in time."

Warren looked at her doubtfully. It didn't sound logical to him. "I don't see how you're going to manage it," he grumbled.

"Well, I always wake up, if I have anything on my mind," Helen asserted.

"All right, I'll try you this once. You women have the strangest ideas! Imagine, now waking up because you have something on your mind."

"Well," said Helen, "it's a fact; ask anyone, dear."

"Just the same, I'd feel a lot safer if we had an alarm clock."

Helen resumed her seat. "There's no need of my telling Mary. I can wake her after I wake up, and she'd never wake up anyway unless she had something to get her started."

Warren yawned and stretched at about 9 o'clock. "Guess I'll turn in," he remarked. "You're sure you can turn the trick now?"

"Positive, dear; don't give another thought to it. I'll be there in about 15 minutes, as soon as I run in and see if Winifred's all right."

Warren did not say anything and he was sound asleep when Helen slipped into bed some time later. Helen found that she did not fall asleep as easily as usual. It was probably due to the fact that she had something on her mind. Try as she would, however, sleep would not come, and she finally decided to get up and read awhile.

After half an hour's reading she crept into bed once more and dropped into a heavy sleep almost as soon as her head touched the pillow. She was aroused from her deep slumber rudely by some one shaking her arm, and as she slowly gained consciousness, she realized that Warren was saying:

"You're a fine one! You were going to wake up so beautifully. Here it is 6:30, and I suppose I should have slept till doomsday if something hadn't waked me up."

Helen was wide awake in an instant. "Warren," she exclaimed, penitently, "I'm so sorry, dear." She leaped out of bed as she spoke and shivered in the cool morning air.

"It's enough to make anyone furious," said Warren angrily. "You always begged me not to get an alarm clock, and this morning of all mornings, you can't keep your promise to me."

"But I'll get you there on time, I promise you I will, Warren."

"Will you wake Mary, or shall I?"

"It will take me only a few minutes to get something for you to eat, dear, and Mary is always slow when she is hurried."

Warren made no answer to this, and Helen hurried into some clothes and slipped out into the kitchen to put the coffee on. She felt heavy and dazed, as one is almost sure to feel on being hurriedly awakened. Her hands trembled as she measured out the coffee, but she resolutely kept her mind on what she was doing, got out the bread, put on the water for some eggs and slipped a pan of cereal into the oven. Before Warren was shaved she was back in the bedroom with a pleasant:

"Breakfast is all ready, dear."

Warren, somewhat mollified, muttered an "All right," and Helen went back to her fixing of the table and the last few touches. When Warren came out into the dining room a few minutes later he found the center light turned on, a pot of coffee at his elbow, a tempting glass of orange juice, his favorite cereal, and everything that he could possibly desire. Helen was sitting by the table, her head in her hand, but she straightened up as he put in an appearance.

Helen poured his coffee and poured a cup for herself. After a few sips Warren vouchsafed a rather ungracious remark, "What on earth made you think you would wake up?"

"Well Warren, I always do; but I guess I was so wrought up about it that it kept me from sleeping. Anyway, I had to get up and read a little while in the night. But I think you'll be down town in time, won't you?"

"Oh, I guess I'll make it all right, but believe me, I won't trust to your psychological imaginations next time. Tonight I'll bring home a reliable alarm clock."—Copyright, 1917, by International News Service.

TODAY'S DAINTIEST DISH

By CONSTANCE CLARK

Beef Mold In Jelly.

TAKE a knuckle of beef weighing two or three pounds, simmer it with as little water as possible, adding an onion, a carrot, some herbs (tied up in muslin), and a blade of mace. When the meat will slip from the bones, lay it on a board, remove all the superfluous fat and gristle and chop it finely. Season all with pepper and salt, a little grated lemon peel and chopped parsley. Grease a loaf pan and place in it a layer of the meat, then a layer of chopped pickles, more meat, then continue until the dish is nearly full. The liquor the meat was boiled in should be reduced by fast boiling to half its original quantity, and one-half an envelope of gelatine added to it, and stirred until all is dissolved. Pour this over the meat in the mold and set aside until cool; turn out to serve; slice and garnish with parsley.