THE GROWTH OF PLANTS

ELECTRIC LIGHT AS A SUBSTITUTE FOR SUNSHINE.

Fruits Ripen and Flowers Blossom More Speedily Under It.

A most interesting project is being considered by the scientific section of the Royal Horticultural Society. As soon as the necessary funds can be raised it is proposed to establish at the new gardens at Wisley, near Weybridge, England, a scientific station or botanical laboratory, and one of the special studies to be undertaken will be the growth of plants by electric light as a substitute for sunshine. To be independent of our gloomy climate, and to produce the most beautiful flowers, and even ripen strawberries and other delicious fruits in winter, is one of the gardener's most cherished dreams. The fact that artificial light will enable plants to grow and fruits to ripen has long been known to scientists. More than 40 years ago M. Herve Mangon found that the electric rays would enable plants to form the green chlorophyl or coloring matter of their leaves, and that flowers turned toward the electric lamp just as they turn towards the sun.

In 1879 and 1880 the late Sir William Siemens made some remarkable experiments at Tunbridge Wells, the results of which he showed to the Royal Society. By supplementing the sunlight of day with electric lamps at night, both in the open air and in green-houses, he caused roses and arums to bloom long before their usual time, melons and cucumbers, vines and strawberries also responding most gratefully to the stimulus of the added light. The sunlight of millions of years ago, stored up in plants which afterwards became coal, was thus disinterred and made to do its work over again in ripening fruits and causing flowers to bloom. Although electricity then cost three times as much as now, Dr. Siemens, as he then was, was enthusiastically convinced of the value of the electric light for the garden.

As usual, there were many objectors to the new proposal. A sort of humanitarian outcry was started on behalf of the poor plants themselves. To make them grow night and day would give them no rest. They would be old and exhausted before their time, and would perish miserably as the result of their artificial mode of life. Experience since then has shown, however, that the plant does not need rest, like an animal. In Norway, Sweden and Finland, during the short two months of summer, while the sun never goes down, vegetation flourishes with astounding luxiance and rapidity. Flowers take on the most gorgeous colors and have exquisite perfumes, vegetables grow like magic, and then comes the long winter, and they have a correspondingly long rest.

An even stronger illustration of the power of plants to do without a nightly rest is the great natural gas fire, a steeple of flame, which has burned for generations in the Pittsburg district in America. All around and just outside the circle of its scorching heat is a ring of tropical vegetation, which the warmth and light have produced, the plants seeming all the richer and more luxuriant for living in a blaze of light night and day alike. Even if plants were really exhausted by artificial light, we grow them not for their own sakes, but for our use. When a green-house plant dies there are plenty of recruits to fill its place. The objection to using up plant life is not on the same footing as a protest against using up, say Chinese coolies on the Rand.

VEGETABLE IDIOSYNCRASIES.

Dr. Siemens found that all plants could not be treated alike. Particularly they varied in the amount of stimulation they could undergo. The delicate lily of the valley, grown by the aid of heat alone, and with a deficiency of sunlight, was sickly and anaemic, flimsy in texture, and with its petals thin and colorless. The electric light gave the flowers their natural rich, white, creamy color, and made the leaves strong, firm and green. Generally the natural colors of flowers were enriched by the light, and plants which would wither in a high temperature without the light, with its aid flourished exceedingly. The electric light, Dr. Siemens pointed out, would almost save its cost in stove fuel by the heat it supplied and the quicker maturing of plants, and it might be used in the orchard to counteract the effects of night frosts.

But banana leaves too near the lamp were scorched by its rays. Melons, cucumbers, strawberries, mustard, carrots, beans, tulips, pelargoniums, all matured under the electric lamp long before the same plants under daylight alone. Subsequent investigations have shown that a great deal of caution must be used in the application of artificial light. Every plant has its own way of responding to the stimulus.

For instance, Professor Bailey, at Cornell University, and the authorities of the West Virginian Agricultural Station, have found that cauliflowers will grow very tall, but have smaller heads, and radishes develop extraordinary profusion of "top" under the influence of the lamp. But as we do not prize the cauliflower for its stature, or the radish as a foliage plant, these advantages were not worth the cost of producing them. Nearly all flowers are found to bloom sooner and sometimes with brighter colors. Lettuce becomes marketable four to ten days earlier, thriving best when the artificial light is only used half the night, but some other plants run to seed under its influence instead of developing weight and succelence, and still others mature very quickly, but do not grow big, ending as tough and ancient little dwarfs of no use for the table. Spinach is particularly grateful for the electric beam, but as society does not clamor for spinach out of season the game is not worth the candle. Peas grow more quickly and are larger in the pod. Endive does better without the electric light.

INVESTIGATION NEEDED.

Many points remain for investigation at the proposed experimental station of the Royal Horticultural Society. We want to know just what kind of light and how much of it is needed by each plant. It should be remembered that a plant five feet from the lamp gets ten times as much light as one 16 feet away. Then the "ultra-violet" rays of the arc lamp, of such immense value to the scientist, are not good for most plants.

Dr. Siemens thought if the bare light were used the benefit to the plant would increase, but the opposite has proved to be the case, and lamps with glass coverings or jackets of liquid to shut off the invisible rays have been found better. The incandescent or glow lamp and incandescent gas have also been tried at West Virginia with success. M. Deherain, at Paris, found that the invisible rays were most injurious from a 2000 candle power lamp unless shut off by glass. His conclusion was that the electric light will maintain a fully grown plant for two and a half months, but is too feeble to support a plant from infancy upwards. At the Winter Palace of St. Petersburg some ornamental plants placed under the electric light turned yellow and died in a single night.

Professor Bailey considers that it is well established that maturity and ripening can be greatly hastened by artificial light, and that plants are not injured by "want of rest," but considerers that there are many problems to be settled as to the production of plants from too much light, and the prevention of too rapid seeding and early maturity.

In short, it remains for the scientific investigator to observe the exact effect at each stage of growth of the artificial illuminant on the formation of chlorophyl, of starch, sugar, gluten, alkaloids and the plant's own essential oils, and to determine when and how long the imitation sun should be made to shine.

ANOTHER VOICE ON THE PRAIRIES

TELLS OF DIABETES CURED BY DODD'S KIDNEY PILLS.

W. G. Bartleman Could Get no Relief till He Tried the Great Canadian Kidney Remedy.

Wapella, Assa., N. W. T., Aug. 22—(Special).—This thriving town furnishes one of the most remarkable cures of Kidney Disease that has ever been reported on the prairies. Mr. Wm. G. Bartleman, a well-known farmer, is the man cured and he makes the following statement:—

"I had Kidney Trouble and it developed into Diabetes. I went to the doctor but his treatment was of no use whatever to me. I began to take Dodd's Kidney Pills in December, 1902. I took them all winter and summer while I was unable to work my farm. I took twelve boxes in all and in August I was able to work.

"Now I am quite strong. I worked all winter without pains in my back or any part of my body. Dodd's Kidney Pills cured me."

If the Kidney Disease is of long standing it may take time to cure it. But Dodd's Kidney Pills will do it.

BOSTON BY BOAT OR RAIL.

On August 13th, 14th and 15th, the Lackawanna will sell tickets to Boston at one fare, or less, for the round trip, good going either via Albany or New York. The National Encampment of the G. A. R. promises to be the largest and most attractive ever held. There will be many special features. It's a good time to visit the Seashore at small expense. Tickets will be good for stop-over at New York returning. For full particulars see nearest Lackawanna Agent, or write Fred P. Fox, D. P. A., Buffalo, N. Y.

Working in mines in the United Kingdom last year were 871,889 persons. Of these the vast majority, 842,066 worked in the coal mines, of which there are 3,449. The other mines, which number 673, employed 29,823 persons. Probably it will come as a surprise to the uninitiated that coal mining gives work to 28 persons to every one person employed in other mines.

"So she has broken her engagement to you?" "Yes." "Do you regret the love you wasted on her?" "No. It's the postage stamps I wasted on her that trouble me."

Results from common soaps: eczema, coarse hands, ragged clothes, shrunken flannels.

SUNLIGHT SOAP REDUCES EXPENSE

Ask for the Octagon Bar

NINE TONS OF BIBLES.

The demands made on the British and Foreign Bible Society for Scriptures, from all parts of the world, has lately attained record dimensions. Not only is all the available space in its warehouse occupied with stacks of packing cases, but a huge overflow lines the corridors awaiting shipment to the far ends of the earth. On one day recently, eighty-one cases were dispatched, representing a total of nine tons of Scriptures in twenty-eight different languages.

Deafness Cannot Be Cured

by local applications, as they cannot reach the diseased portion of the ear. There in only one way to cure deafness, and that is by constitutional remedies. Deafness is caused by an inflamed condition of the mucous lining of the Eustachian Tube. When this tube is inflamed you have a rumbling sound or imperfect hearing, and when it is entirely closed, Deafness is the result, and unless the inflammation can be taken out and this tube restored to its normal condition, hearing will be destroyed forever; nine cases out of ten are caused by Catarrh, which is nothing but an inflamed condition of the mucous surfaces.

We will give One Hundred Dollars for any case of Deafness (caused by catarrh) that cannot be cured by Hall's Catarrh Cure. Send for circulars, free.

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

Sold by all Druggists, 75c.

Take Hall's Family Pills for constipation.

ANTI-MOUSTACHE SECT.

The German Baptist Church at Jacob's Creek, Pennsylvania, has passed regulations against men wearing moustaches and against women wearing hats. Nearly all the members of the congregation were expelled a few weeks back for disobeying the new rules.

INDEPENDENT ORDER OF FORESTERS.

Membership nearly	225,000
Surplus accumulated fund nearly	$8,000,000
This Order has already paid out to Widows and Orphans and disabled Brethren	$18,000,000

Thousand of farmers in Canada are members of the Institution.

Something of the great work it is doing may be understood when it is stated that each work-day of the year it is paying out to Widows and Orphans and disabled brethren as much money as would be received for the harvest—allowing 20 bushels to the acre—of 400 acres of wheat.

For full particulars see any member or address.

ORONHYATEKHA, J. P.,
Supreme Chief Ranger.
Home office,
Temple Building, Toronto, Ont.

A woman may look her age, but she seldom looks the age she says she is.

Minard's Liniment Cures Diphtheria

"Don't you think there should be music in every home?" "By all means. What I object to is music next door."

Minard's Liniment Cures Colds, etc.

Mabel—Mamma says our consciences should tell us when we are naughty. Kittie—Yeth, but I don't lithen to gothip!

For Over Sixty Years

MRS. WINSLOW'S SOOTHING SYRUP has been used by millions of mothers for their children while teething. Its 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—09

TAMING BY ELECTRICITY.

It is stated that a well-known lion tamer has introduced electricity in taming his animals. When a wild lion or tiger is to be tamed, electric wires are first rigged up in the cage between the tamer and the animal. After a time, the tamer turns his back, and the lion invariably makes a spring at him, but, encountering the charged wires, receives a paralysing shock sufficient to terrorise it for ever.

Few Flies last year

No Flies this year

if you use

Wilson's Fly Pads

If you are tired reading Blue Ribbon Tea advertisements, take a cup of the tea itself and you will be in a good humor again.

TRADE MARK — ISLAND CITY

USE—— "ISLAND CITY" HOUSE AND FLOOR **PAINTS**

Will Dry in 8 Hours.

On Sale at all Hardware Dealers

P. D. DODS & CO., Montreal, Toronto, Vancouver.

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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LOWER PRICES — USE — BETTER QUALITY

FIBRE EDDY WARE

ESTABLISHED A.D. 1858

CAN BE HAD IN

Pails, Wash Basins, Milk Pans, &c

Any First-Class Grocer Can Supply You.

INSIST ON GETTING EDDY'S.

MEDICAL CONVENTION.

Delegates to the Medical Association at Vancouver can return through San Francisco, Los Angeles, Salt Lake City, Denver and the "World's Fair" St. Louis, by purchasing tickets sold to San Francisco, account Knights Templar meeting.

Tickets on sale from August 15th to September 9th, good for return until October 23rd, with stopover privileges in each direction. This is an open rate to the public, as tickets are not sold on the certificate plan. The rate from Toronto will be $70.25. Correspondingly low rates from other points. Tickets can be purchased going via Vancouver, returning through above cities, or vice versa.

By writing H. F. Carter, Traveling Passenger Agent, Union Pacific Railroad, 14 Janes Building, Toronto, Ont., he will give you full information.

Browne—"But why do you ask me to lend him a dollar as a personal favor to you? Are you under obligation to him?" Towne—"No, but if you don't he'll come to me for it."

C. C. RICHARDS & Co.

Dear Sirs,—I have great faith in MINARD'S LINIMENT, as last year I cured a horse of Ring-bone, with five bottles.

It blistered the horse but in a month there was no ring-bone and no lameness.

DANIEL MURCHISON.

Four Falls, N. B.

Mrs. Hashmore—"I am sorry to say the tea is all exhausted." Crusty Boarder—"I am not surprised; it has been awfully weak for some time."

Some men would rather put up a weak argument than furnish strong proof.

Wash greasy dishes, pots or pans with Lever's Dry Soap a powder. It will remove the grease with the greatest ease.

Hibson—"Where did you get these cigars?" Garner—"At Robinson's. Why?" Hibson—"I only wanted to know. Might get into the same shop by mistake."

Minard's Liniment Cures Distemper.

THE REAL EL DORADO.

A company has been formed in South America to exploit the real El Dorado. This is a lake situated in the territory of Colombia, near Bogota, and the story is that the chief of the State in pre-European times used, twice a year, solemnly to empty a boatload of gold into the water in order to purchase the pardon of the gods for the sins of his people during the previous six months.

Little Sammy—"What's your father, Willie?" Little Willie—"He's a man." Little Sammy—"Oh, I mean what does he do for his bread and butter?" Little Willie—"He's an artichoke, and draws houses!"

FOR SALE — SPLENDID STOCK and agricultural farm, nearly 200 acres, beautifully situated, 4 miles from London, well watered, good buildings; possession when required. Fraser & Moore, Barristers, London, Ont.

St. Margaret's College, Toronto.

Re-open Sept. 12th.

A high-class residential and day school for girls. Modern equipment. Specialists of European training and of the highest academic and professional standing in every department of work. Foe booklet apply to MRS. GEORGE DICKSON, Lady Principal; GEORGE DICKSON, M.A., Director (late Principal Upper Canada College).

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Moderate Rate Service.

Second cabin passengers berthed in last accommodation on the steamer at the low rate of $40 to Liverpool or $42.50 to London. Third class to Liverpool, London, Glasgow or Queenstown $15.00.

For all particulars apply to local agents, or

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CHENILLE CURTAINS and all kinds of house Hangings, also **LACE CURTAINS** DYED & CLEANED LIKE NEW.

Write to us about yours.

BRITISH AMERICAN DYEING CO., Box 158, Montreal

BUCHANAN'S UNLOADING OUTFIT

Works well both on stacks and in barns, unloads all kinds of hay and grain either loose or in sheaves. Send for catalogue to

M. T. BUCHANAN & CO., Ingersoll, Ont.

READY FOR THE FRAY.

The house of Singer Luigi Carbandi, of Sienna, has been burgled for the thirty-fourth time in ten years. Signor Carbandi has now posted this notice on his door: "I have bought two dogs, three guns, and water boiler with hose attached. Burglars are welcome."

Minard's Liniment Cures Garget in Cows.

"Talking of the angelic creature you danced with at Brown's ball," said Wagley, "supposing now, you were to meet a real angel, how would you address her?" "Don't you know? Well, I should ask her what on earth she was doing."

Summer Croup

A croupy cough is a dangerous thing for the little folks in summer time. The fever that accompanies it is liable to cause serious illness. Give them

Shiloh's Consumption Cure The Lung Tonic

It is pleasant to take, will cure them quickly and has no unpleasant after effects.

At all druggists, 25c, 50c and $1.00 a bottle.

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