

EXPLORER FINDS GOOD IN CANADA

Sir Ernest Shackleton Gives His Impressions After Tour of Western Country—Wants to Search for Minerals

WINNIPEG, June 3.—Sir Ernest Shackleton, the famous English Antarctic explorer, accompanied by Lady Shackleton, reached this city this morning from Vancouver. Since the explorer left Winnipeg last week, he has lectured at Brandon, Regina, Calgary, Edmonton and Vancouver, and at each of these places he has had a most gratifying reception. Asked what his opinion of the Canadian people was now he had been from one end of Canada to the other, Sir Ernest replied: "Everything has been made very nice for me, and the people have been hospitable to an extraordinary degree."

"What has impressed you more than anything else as you have gone about the country?" asked the interviewer. "Well, what has struck me most has been the note of justifiable optimism that seems to permeate everybody, and I must say it is well established and well founded."

"Do you believe in Canada's future?" "Undoubtedly, and not only in its future, but its immediate future. The greatness Canada will attain for itself is not a great way off. It is only just beginning, but the results will be surprising. I have seen this throughout the country."

"Is there any truth in the rumor that you are about to settle down in Canada?" "I don't know about settling down. I am not a settler down," and the great explorer smiled and asked: "Now, am I?"

"No, no settling down yet a while. I intend to work in Canada, that is, I am going to go over ground that is yet unknown, especially on the side of minerals. There are vast mineral areas in Canada which have not yet been touched. They are here, I believe, for the geological situation teaches that lesson, but they must be got at. I shall try to do that. I believe in the future there will be great mineral developments in Canada. I will not say they have been neglected in the past, but they have been eclipsed by agriculture and placed somewhat in the background. Agricultural needs is what have been considered in the past, but you must not forget that there is a mineral side. I believe the country possesses the material it requires for most of its own manufactures, and before very long we shall be getting in this country most of the material we are at present importing from other countries."

Sir Ernest went on: "I have got no definite plans yet, but I have got hopes, and when I have got hopes such as I have in regard to the matter of minerals, I don't take me long to make up my mind. Of course I know the places and districts where this mineral wealth is to be found."

Sir Ernest lectured here tonight before a large audience, and with Lady Shackleton will leave for Montreal tomorrow.

MAIL SERVICE TO PRINCE RUPERT

Complaint of Board of Trade Re Delays Resented by Boscowitz Steamship Company

Complaint having been made through the Board of Trade respecting the delivery of mails at Prince Rupert and particulars having appeared in the local press, exception has been taken by the Boscowitz & S. Company in a letter to the board, which came up for consideration at a council meeting held yesterday. The Boscowitz S. S. Company stated that under the agreement with the T.P. and the approval of the Dominion Mail Department, the steamers Vado and St. Denis had been running the Vado on her last two weeks here, Prince Rupert and Stewart since April 1st. They further state that on account of heavy weights the Vado on her last two trips had been one day late of schedule, but that otherwise sailings and arrivals have been on schedule time. The company complains that the complaints against the steamers are unwarranted, and considers that investigations of the facts ought to have been made before any publicity had been given to the matter.

It was explained that at the time a complaint was considered no reference was made to the carriers, and any remarks were not intended to reflect particularly on any company. The general feeling was that the mails should be delivered as quickly as possible, regardless of what companies may be engaged in service.

At the meeting of the council there was present Mr. Simon Leiser, president, in the chair; and Messrs. L. A. Engle, J. A. Mara, A. W. McCurdy, J. Shullcross, J. L. Beckwith, E. H. B. Thomson and J. A. Turner.

DOMINION HATCHERIES

Superintendent of Fisheries at Harrison Lake Where Experiments Are Under Way

H. Cunningham, Dominion superintendent of fisheries, who is at present paying his annual visit of inspection to this western province, is now at Harrison Lake, where a series of experiments in fish culture in progress. The hatchery is under close observation. As already stated, Mr. Cunningham brings the good news that the replenishment of British Columbia stocks of game fish will shortly be established on Cowichan Lake, propagation of trout being the objective. He has also given out news that two new salmon hatcheries will shortly be established, both here on Vancouver Island, the one placed at the head of Anderson Bay, on Barkley Sound, and the other at Kennedy Lake, Clewcoque Sound. One of these is to have an initial stock of 500,000 fry, with facilities for enlargement so soon as this may be deemed necessary or desirable. They are at present more than forty hatcheries in Canada, each of which give employment to from three to twelve practical students of pisciculture habits and conditions.

ROCK GARDENS

By Charles Downing Lay in American Homes and Gardens.

Rock gardens are more common and better in England than in America, or seem to be, if one can judge by the many excellent photographs in English books and periodicals. It may be because all gardening is easier in that moist climate, but chiefly, I think, because



A Rock Garden Which Needs More Grass and More Paths

English people care more for gardening than we, who "love flowers," though not enough to spend much time or thought in growing them.

The delight in gardening is a different and more serious and active passion than the love of flowers, and the last and highest expression of this delight is perhaps rock gardening, which demands all one's skill and knowledge, besides much patience and taste. It is more continually absorbing than the growing of roses, for instance, because the season is much longer, and the triumphs greater and less often attained.

Anyone with some intelligence and much persistency can grow roses, but it takes much more than that, something akin to genius, to grow the rare plants of a rock garden.

Cabbages and roses are similar horticultural triumphs, and in perfection appeal to like natures, though in different strata of society! Rock gardening, on the other hand, appeals to a smaller number of people, who are more sensitive to the delicate charm of uncommon flowers. It is intimate and personal; it must be done by hand, so to speak, and the labor is light, though the time actually given to it may be considerable.

No one who can move about out of doors is too much of an invalid to enjoy the care of a rock garden, and no one who has ever had such a care, is willing to give it up to a gardener. It is too full of detail; on too small a scale for any hired gardener, trained to grow roses and cabbages, to care for, unless he too be an enthusiast and the garden is to be his and not your own. It is like golf: if you would enjoy the game you must play it yourself.

The compensation for all this personal attention is a knowledge and keen enjoyment of the smaller and more beautiful flowering plants, things not commonly seen, and which must be seen close at hand, as they are in a rock garden, to be fully enjoyed.

Many of the plants which can be grown there are nearly impossible to grow in other places, because they cannot endure crowding, or because they must have special and peculiar conditions provided for them. Many are above ground but a few weeks in each year, and in the large flower garden would inevitably be lost. They are often rare, and come in poor condition, and must be nursed for a year or more, by shifting to different position, trying different soils, until they become established.

Physically a rock garden is an attempt to provide each plant with its natural environment, and this means approximations varying from a temperate desert to an alpine summit.

The rock garden should be on natural rocks. Ugly piles of stone (rock work) on the lawn can never be a rock garden or anything but an eyesore. As a substitute for a natural ledge, large stones can be arranged in a sloping bank with some success in the imitation of natural conditions, as shown herewith in the plan and sections of a rock garden. Rough stones should be used rather than smooth boulders, and they must be firmly imbedded in the earth so as to form small and deep compartments or pockets. Each compartment must have loose stones in the bottom, for drainage, and must be filled with good earth sloping on the surface so that no water can stand on the ground in winter, but sloping so little that the beds will not wash or fail to soak up the water which falls on them in summer. Little of the stones should show when the

planting is finished. The appearance should be rather that of an outcropping ledge covered with plants, than a pile of stones with plants growing between them. The artificial rock garden may start in the open and lead through a glade with trees on each side to give shade, but so far away that their roots cannot reach the beds. A natural glade with a brook would be a lovely place for our garden.

The rock garden should never be seen next to a lawn. It is too fussy and lacks the

which is served on the low stone table, so we are often there, and almost always when passing through I stop to pull up a weed or two, or to pick some flowers. Sometimes in the cool morning before breakfast the sun shines pleasantly there, and I may spend a half hour fussing with things—the keenest pleasure of the day!

Doing the work in this way it ceases to be work, and there is never a time except in April and September when a half day is devoted to it. On summer evenings we lie there with our backs to the warm stones, enjoying the sounds and fragrance of the night and watching the stars. Even in winter the rock garden has charm.

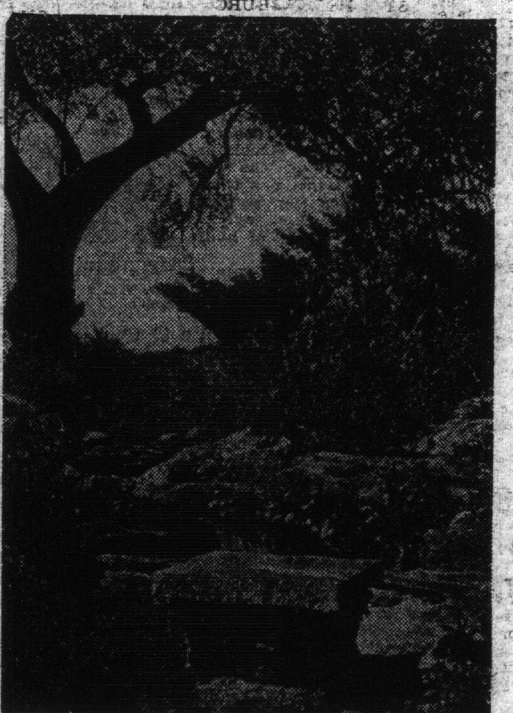
THE EFFECT OF COLORED LIGHT ON VEGETATION

By Jacques Boyer in American Homes and Gardens.

M. Flammariion for many years has been studying the effects of sunlight on vegetation. In his early experiments he had the assistance of M. Georges Mathieu, and he is now working in collaboration with M. Julien Loisel, at the agricultural station of Juvisy, near Paris.

In order to carry out these researches, which extend over considerable periods of time, he constructed four small forcing houses enclosed with glass. The glass of one house, which is used to establish the effect of the total solar radiation as a standard of comparison, is colorless, and the other houses are glazed with red, green and dark blue glass respectively. All these colored glasses are very nearly monochromatic, as was proved by a careful examination with the spectroscope. Thus the experiments were conducted in three well-separated regions of the solar spectrum: the red end, the middle of the green nearly coincident with the color of the foliage of most plants, and the extreme blue just within the violet. This last color was selected because it was impossible to obtain violet glass of sufficiently good quality.

The four houses are placed side by side, as shown in the photograph, in identical meteorological conditions. In order to assure uniformity of temperature, each house is provided with ventilating pipes, so arranged that the air moves from south to north, and no light is admitted through the ventilators.



The Stone Table and Seat

In general, it was found by M. Flammariion and his assistants that growth is promoted by red light. This fact was established in regard to plants belonging to families widely separated in the botanical series, from sensitive plants and lettuce, to begonias and oaks.

Blue light, on the other hand, exerted scarcely any effect. For example, sensitive plants of the same age and height—about one inch—were planted in the four houses on August 1. Three months later the blue house plants had hardly grown, though they continued to live in a latent and sluggish fashion. Meanwhile the plants in the house with colorless glass had attained a height of four inches, and the plants under green glass had reached that of six inches. But the most remarkable growth had been made in the red house, where the average height of the plants exceeded sixteen inches. Moreover, the sensitiveness of the plants in the red house was increased to such a degree that the slightest movement or the lightest breath of air caused their leaves to close and even whole branches to droop. The plants in the blue house, on the contrary, had almost completely lost their sensitiveness.

Similar, though less marked, effects were observed with begonias, geraniums, pansies, strawberry plants, oak seedlings, etc. In the blue house, strawberries remained edible, and almost unchanged from May to October. This result is of great practical importance, for it indicates the possibility of accelerating or retarding the growth of vegetables and the ripening of fruits by the employment of red or blue glass. The variously colored rays affected oaks somewhat differently from the other plants. The seedlings exposed to red light made the most rapid growth of all, but the plants in the

blue house grew more rapidly than the plants under either green or white glass.

Acorns were planted in pots, at a uniform depth of one and a half inches, on March 6, 1905, and ten of the pots were placed in each of the four houses. Five plants made their appearance in the white, and the same number in the red house, but only three in the blue and two in the green. On September 26, 1906, the average heights in inches of the plants in the various houses were as follows: Red, 17½; blue, 10½; white, 6½; green, 4½. Thus the plants under red glass were four times as high as the plants under green glass. Furthermore, at the end of February, 1907, all the foliage of the oaks in the white house had turned yellow, while only a few leaves had turned in the red house, and the foliage of the young trees in the green and blue houses remained bright green. In October, 1907, the colors of the foliage in all the houses remained as they were in February. The growth of male ferns exhibited certain peculiarities. Very little growth was made under blue, green or colorless glass, while in the red house the plants developed rather more rapidly, but their stems were blanched. Lettuce plants in the red house sent up stalks five feet in height, while the plants under white glass remained headed, and only two feet high.

Several objections, however, suggest themselves in regard to this method of experiment. In the first place, the intensity of illumination is different in each house, the white house being the lightest and the blue house the darkest. Secondly, the temperature is subject to a similar variation, the highest temperature having been observed under the colorless glass, and the lowest under the blue. Now, there are for each species a temperature and a degree of illumination which are the most favorable for the growth of the plant.

In order to separate the effects produced by the three factors, color, illumination and temperature, M. Flammariion repeated the experiments described above, employing screens to moderate the temperature and illumination in certain cases. By this means he succeeded in making the temperature and illumination of the red house equal to those of the white house. The luminous intensities were measured with vapor actinometers and Crookes' radiometers. The temperatures of the soil were obtained by means of self-registering spirit thermometers, the bulbs of which were buried to depths of 10, 20, 30 and 60 inches, and a horizontal self-registering instrument gave the temperature of the surface.

It was thus shown that the differences in growth in the foregoing statement could not have been due to differences in temperature, for the comparatively low temperature of the blue house was the most favorable to growth. Even here the thermometer sometimes rose to 40 deg. C. (104 deg. F.), a temperature higher than commonly used in horticulture; while those between 45 and 50 deg. C. (113 and 122 deg. F.), which were occasionally observed under the white and red glasses, appear unfavorable to vegetation. After the addition of the screens, the differences between the temperatures of the houses never exceeded 3 deg. C. (37.4 deg. F.). In the second series of experiments, as in the first, the plants in the red house grew much more rapidly than those in the white, although the temperature was about the same in both. The radiometer showed that the illumination was the same in the screened white house and in the unscreened red house. Hence the increased growth under the red glass must be attributed to a specific action of the red rays. M. Flammariion has also succeeded in modifying the forms, sizes and colors of flowers and leaves, and the perfumes of flowers, by the employment of colored glasses.

Geranium leaves, for example, lost their circular russet markings, and became large, deeply incised and pale green under red glass, nearly circular and dark green under the blue, and small and very pale under the green. Similar results were obtained with fruits, including peaches, apples and cherries.

In regard to the development of perfumes under the influence of colored rays, M. Flammariion observed a great increase in fragrance of strawberries under red glass. Flowers of Crassula exposed to the open air, either in sunshine or in shade, possess little fragrance, but flowers of the same individual plant covered

with all the colored glasses, especially the blue. As the nutrition of plants depends to a great degree in the development of their roots, it is evident that the plants in the white glass house derive most nutriment from the soil. This partly explains the lack of vigor observed in the plants of all the colored glass houses. M. Flammariion has observed differences in height, vegetative activity, strength, sensitiveness, coloration and even anatomical structure, in plants exposed to light of different colors. The plants raised under white glass, for example, had the strongest stems, containing the greatest number of woody fibres, the best-formed and most numerous thick-walled cells, and the smallest pith.

Finally, MM. Flammariion and Loisel have made some new discoveries in regard to the accumulation of albuminoids in plants. They planted beans in pots, which were exposed to the open air until the flowers had been fertilized, and were then distributed equally among the four glass houses. On the same day, some of the young pods, which were then less than one inch long, were analyzed. The total nitrogen was found equal to 4.5 per cent, and the albuminoid nitrogen to 0.276 per cent of the dry weight. Analyses of fully-developed pods, taken from the various houses one month later, gave the following results:

	White	Red	Green	Blue
Percentage of total nitrogen	5.11	6.06	6.32	6.82
Percentage of albuminoid nitrogen	4.53	4.76	4.83	5.41

These figures show that the proportion of nitrogen is increased under colored glass, and that the greatest increase is produced by those rays which least affect the formation and activity of chlorophyll. The crop was normal under white and red glass (although the plants were blanched by the latter), and poor under the green and the blue glass.

WINDOW BOXES

Window boxes are a striking addition to any house, whether in the city or the country. They seem a little more lovely in the city, however, where their brilliant color adds so much gaiety to a sometimes dull and monotonous street. They are a consolation to the dwellers in the house and a positive beneficence to the public. The owner who maintains window boxes on his city house when he himself is away, gives evidence of high citizenship and shows consideration for fellow-men less fortunate than he.

It is a pity that city houses must be closed in summer, for there is little more dreary than a house with dusty windows showing nothing but green shades within. If the windows could only be open, with gay colored curtains fluttering from them, and brilliantly striped awnings, and flourishing plants in the window boxes, how different and how picturesque our cities would be in summer!

In the country, too, window boxes are attractive and may be filled with a greater variety of plants than in the city, if one cares to take the trouble of frequently changing them. Any flowering plant whose roots are not too large may be transplanted to the window box, left there until its beauty is passed, when it can be replaced by something else.

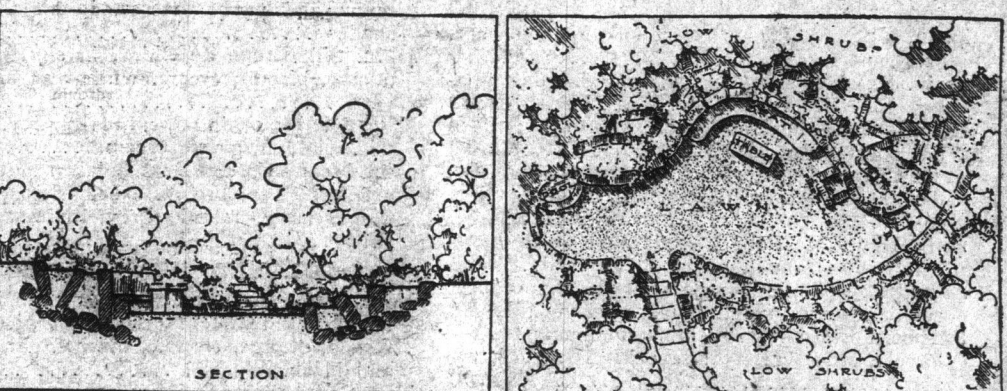
When the window sills are broad, as they usually are on stone houses, a box sufficiently large can be placed on the sill and will need no fastening. On a wooden house, however, there will not be room on the sill, and the blinds could not be closed, so the boxes must be supported on wooden brackets below the window.

The boxes must have holes in the bottom for drainage, and must be filled with good potting soil on top of a layer of sphagnum moss or potsherds, also for drainage.

The color of the flowers should be chosen with some regard for the color of the house. Pink geraniums rather, than red, with a brick house, seems an elementary canon of taste, but is often violated.

Nasturtiums, either the dwarfs for the back of the box, or the climbing kinds planted in front so that they will hang over, are very satisfactory.

The so-called German Ivy (Senecio scan-



Section through Rock Garden showing Beds for Plants, also Ideal Plan of Rock Garden

ed with colored bell glasses develop a delicate perfume resembling the scent of the banana. When these flowers are cut and put in vases, they retain their perfume, and partially regain the red color which they lost under the colored glasses.

The various rays of the solar spectrum not only modify the longitudinal growth of plants, but affect the entire vegetative system. The roots, for example, are poorly developed un-

der a good trailing vine in window boxes, and is almost as typical of such a situation as pansies, geraniums, lobelia, and sweet alysum. Petunias, begonias and many other annuals and house plants may be used as the taste of the owner dictates. The main thing is to have these boxes gay and brilliant—even gaudy—and for this geraniums and nasturtiums will probably be best.—Charles Downing Lay in American Homes and Gardens.