

Soils and Crops

Address communications to Agronomist, 73 Adelaide St. West, Toronto

R. H.—Can I use lime as a filler for fertilizer containing nitrogen, phosphorus and potash?
Answer—Lime is quite unsuitable for the purpose suggested, for the reason that lime would cause a destruction of the nitrogenous portion of the fertilizer material.

A. McL.—Will you kindly advise what to do for hens which have large lumps growing between toes inside of which is composed of substance like hard black bone and one on the body about size of a walnut floating about under the skin. Have not noticed any mites but hens are constantly looking for dust baths. Would the eggs be O.K. for eating?

Answer—The symptoms described would indicate trouble of a tumorous nature. Unless the infected fowls are exceedingly valuable, it would be well to destroy them. Definite information regarding the character of the trouble could be secured by sending a specimen of an infected foot as well as the floating lump beneath the skin to the Poultry Division of the Experimental Farm at Ottawa. The specimens should be put up in a strong solution of salt and sent by express, prepaid. The eggs from such fowls should be quite wholesome.

G. H.—Please print a spray formula for blight on tomatoes.
Answer—Bordeaux mixture is regarded as an effective spray to prevent blight on tomato plants. It should be applied when the plants are quite young, again soon after the plants are set out in the field, and at such

intervals following as the leaves are noticed to curl. The following is the method of preparation:

Copper sulphate (bluestone) . . . 4 lbs.
Unslaked lime 4 lbs.
Water (1 barrel) 40 gals.

When spraying peach and plum foliage which may be injured by the ordinary formula, it is safer to use Bordeaux mixture in the proportion of 3 lbs. copper sulphate, 4 lbs. lime to 40 gallons water.

Dissolve the copper sulphate (by suspending it in a wooden or earthen vessel containing 4 or 5 more gallons of water). Slake the lime in another vessel. If the lime, when slaked, is lumpy or granular, it should be strained through coarse sacking or a fine sieve. Pour the copper sulphate solution into a barrel, or it may be dissolved in this in the first place; half fill the barrel with water; dilute the slaked lime to half a barrel of water, and pour into the diluted copper sulphate solution, then stir thoroughly. It is then ready for use.

Never mix concentrated milk of lime and copper solution.

A stock solution of copper sulphate and milk of lime may be prepared and kept in separate covered barrels throughout the spraying season. The quantities of copper sulphate, lime and water should be carefully noted. Bordeaux mixture deteriorates with age and should be used as soon as made. To test Bordeaux mixture, let a drop of ferro-cyanide of potassium solution fall into the mixture when ready. If the mixture turns reddish-brown, add more milk of lime until no change takes place.

Spreading Cheer With a Paintbrush

By Norman Collart and Berton Elliott

Farm homes offer many more opportunities to employ light colors than do city homes. The farm home is not subjected to the action of soot, dirt, smoke and grime, which cause the city home to lose its cleanly appearance, so that color schemes may be employed in painting the country home which are impractical in the city.

Though the farm home is less limited in range of effective color schemes than the home situated in a dusty, smoky neighborhood, there are a few basic principles in the choosing of colors which it will be well to remember.

It is fairly safe to say that no color is interesting in itself. Rather, a startling statement? No! Any color project requires a favorable setting. An incorrect trim color on your house or a body color that does not harmonize with the surrounding background will cause you to dislike your favorite color. Without shadows nothing could be bright; without proper contrast there can be no interest. For example, if you expect a surface to be beautiful or interesting simply because the paint is snow-white, a sea-son's grime will make it very ugly. But if your white seems pure and charming because it is contrasted with a rich trim color, time will soften the contrast but not destroy the interest.

If the house is to be painted in white or ivory, introduce a trim color. This need not mean painting cornice and corner boards in the trim color. Shutters, sash or flower boxes might be just right for your trim effect.

On the other hand, don't feel that you have to paint in some heavy, gloomy shade just to be practical. If your home is subjected to a great deal of road dust, a dust color or cream gray or a dust color and trim with a rich antique brown or a moss green. The sash can be done in ivory or black as preferred. The scheme can be reversed, and the dark brown used for the body color if the setting is just right; but don't get the impression that the dark colors do not show dust. In reality dark colors show dust about as much as light colors.

The general effect of a color upon a surface is interesting. Red causes a surface to seem closer at hand, and you will notice, is often used in large theatres to make the stage appear nearer the eye. Blue is usually a retreating color. Green is static. Yellow is expanding. Dark, cold colors are contracting, making objects seem smaller. This explains why houses painted in light, warm colors, such as colonial yellow and buff, are bright, attractive and conspicuous, especially against a bank of foliage. Small houses appear larger, and big houses still larger in light yellow. This expanding effect may be counteracted somewhat by using a dark trim color for corner boards and trim. A white trim is generally expanding.

PEPPING UP THE INTERIOR

A tall house seems lower in an upper and lower body effect with light trim. A squat house will seem taller in gray or greens with dark trim. With this type of house also avoid emphasizing any horizontal lines, painting them in the body color wherever possible. A home situated in an open exposed plot is best in neutral colors.

Now to the interior of the house. Walls are not for shelter alone. They

are backgrounds. They can be suitable and pleasing backgrounds, or they can be irritating and unhomelike, according to their colors.

Color is so active a thing that it is necessary to study for a moment the influence of different colors upon human nature. When a man comes home from a hard day's work he wants relaxation. But, in addition, he needs the invigorating effect of a cheerful home atmosphere. It is astonishing how much the right color scheme in the living room will "pep" up a fellow after a trying day.

Don't think for a moment that the housewife isn't in need of just the same treatment, but with this added factor: much of her time is spent in the kitchen, laundry and sewing room. There should be well-planned color schemes for these workshops of the home as well as for those spots where quiet relaxation and recreation are sought.

What are good workroom colors? Generally speaking, they are neutral colors primarily, enlivened by a touch of sunshine in the form of cream wall paint or rich ivory curtains.

For the modern kitchen, for instance, there are two combinations which are eminently suitable: One is gray and ivory, using suitable tones of each; the other green and ivory in suitable tones. In all events, keep the woodwork and wall colors simple. A figured wall pattern in working rooms tends to make one nervous and fatigued. Also, enameled woodwork is more soothing in these rooms than where the grain of the wood is seen.

KITCHEN COLOR COMBINATIONS

In the first color scheme mentioned—let the woodwork be in a soft French gray. Put the upper wall and ceiling in cream. Most kitchen walls are divided about four feet up from the floor by a chair rail. For the lower wall use a cream-gray enamel. A most charming effect may be secured by putting the wood-work in two-tone gray—the door and window frames, for instance, in French gray, with the panels, window sash, and the like, in cream gray, or some other combination of the two tones of gray especially adapted to the woodwork design in your home. The walls should be a soft cream or ivory, or possibly on the order of a buff yellow, so they will not soil too easily. A stencil design about an inch and a half wide, in blue or gray, may be placed just above the chair rail, completing the wall and ceiling treatment. The walls may be done with either enamel or flat wall paint in the desired cream color, enamel probably being more suitable for the kitchen, where walls and ceiling are subjected to grease and steam from cooking. Window curtains for this room may be ecreu or white with a dainty blue figure. If linoleum is used, a blue and old-ivory block pattern would be ideal. If the floor is to be painted, one can use a dull terracotta color.

The second color scheme previously mentioned—in soft sea green and ivory—will have very much the same handling as the gray scheme. It will be appreciated that in the kitchen one wants to avoid colors that have too exhilarating or irritating an effect. For this reason too pure white has been avoided as being too glaring.

The living room and dining room

should be restful but of a richness of tone that seems to invite pleasant conversation. Haven't you ever observed how hard it is to be pleasant after you have been visiting friends and have sat in a gloomy room, or in a room where the colors of walls, rugs and furnishings were in discord? You do not have to have these surroundings in your own home. The sun room, which has now become so popular in modern houses, is a gray room. Plenty of sunshine and darning eye of bright color are wanted. Like one's hobby, the sun room should be different—something to be enthusiastic about.

Now all this can be put into your home. The magic of the paint pot was never more effective than in the decorating of the home. Color will do almost anything for you. Light, warm colors, such as cream, will make a small, poorly lighted room seem larger and more sunny. Rich browns and greens will make a large, bare, over-bright room much more agreeable. With paint one can have any color and any wall finish he may desire—and all washable, sweet and sanitary.

Now that texture can be had in painted wall finishes through practical stippling and mottling processes, there is an increasing vogue for them. Unfortunately, in the past, painted walls meant something dreary, shiny and without any suggestion of hominess. You couldn't blame folks for choosing beautiful patterns of wall paper, even with the easy cleaning, sanitary and enduring properties of painted walls.

There are two principal methods of stippling and mottling walls: One is by glazing and stippling with a cloth to produce mottled effects, the other by printing the texture on with a sponge. In both types the pattern is applied over foundation brush coats of flat wall paint in plain colors.

STIPPLED WALLS IN VARIETY

The only equipment necessary in sponge stippling is a flat wall brush and a sponge. First, give the walls two or three brushed coats of flat wall paint of the desired color. Two coats will be sufficient for many colors. If the walls are in good painting condition. If the walls are not in good condition three coats will be necessary to cover well.

After the plain color coats have been applied you are ready for the stippling. The sponge is now brought into use. In the selection of the sponge, one should be picked out that has an interesting, lacy open-work pattern.

As a rule ceilings should not be stippled, and generally a very light shade of paint in plain color should be used—something just a little off the white, such as ivory or cream.

If desired, two stippling colors may be used, the second one being put on after the first color has been applied over the entire wall.

Following are a few harmonious color schemes:

Foundation color, ivory tan; stipple color, cream. Foundation color, sky blue; stipple color, sky blue and white, equal parts. Foundation color, silver gray and cream, equal parts; stipple color, silver gray. Foundation color, pink and cream, equal parts; stipple color, pink, cream and ivory, equal parts. Foundation color, silver gray; first stipple color, sage green; second stipple color, silver gray and ivory, equal parts. Foundation color, silver gray and cream; first stipple color, shell pink, cream and buff stone, equal parts; second stipple color, sky blue and silver gray, equal parts.

A stencil border will add much to the room. It gives a finishing touch that is most pleasing. Suitable stencils for any room are carried by most paint stores. Regular stencil colors in small tubes are also carried. A regular stencil brush should be used for the purpose, the color being applied by holding the brush at right angles to the stencil and pouncing the brush with a vigorous rotary scrubbing motion.

The application of a stencil border is really very simple.

Guides are provided, so that the stencil can readily be moved along length after length, joining perfectly, and two-color stencils are provided with guides, so that there is no difficulty in getting a perfect register of color.

The unscreened home swarms with danger of disease.



PRINCE AT A LIVESTOCK SHOW

The Prince of Wales has a keen interest in the welfare of British livestock and frequently visits fairs where prize animals are exhibited. The picture shows him inspecting some prize sheep. Note how well the sheep are trimmed.

POULTRY

Sudden deaths in the poultry yard are hard to deal with, since there is absolutely no chance of treatment. If, however, some inkling can be had as to the cause of the death, there is the possibility of preventing further losses in the flock. One of the causes of sudden death in the summer time is heat prostration. This does not always result in sudden death, since some birds will show symptoms of the trouble in time to allow for treatment. In extremely hot weather birds that crouch down on the floor or ground with wings outstretched panting are undoubtedly affected by the heat. In extreme cases they drop insensible or paralyzed. Any birds that give the indications of being affected by the heat should be removed immediately to some cool, quiet spot and their heads and legs treated with cold water. Needless to say, the more shade provided in the runs—especially natural shade—the less likelihood of losses from heat prostration.

A very common cause of trouble in warm weather, although it may happen at any season, is poisoning. Poultry poisoning is the most common type and is caused by the birds eating decayed flesh or impure or moldy feed. In one case last summer several hundred growing pullets were lost because they were fed moldy wheat. Usually the birds die suddenly and in large numbers.

Before they die they show lack of control of their muscles, due to a partial paralysis, as manifested in an unsteady gait, finally resulting in loss of use of the legs entirely and in limber neck.

Usually the reaction to the poison is so quick that treatment is impossible. The cause of the trouble must be located immediately; examine the range or run carefully, looking for carcasses of dead birds or animals. I have known cases of plover poisoning to be caused by a dead rat or rabbit under a nearby house. Such cases occur most frequently on range where the young stock is being reared. A careful examination of the range at least once a week in warm weather will eliminate the possibility of poisoning loss of valuable birds from such a source as this.

Controlling Insect Pests of Roses.

There is scarcely a garden that is not beautified by roses in greater or less abundance and the insect pests are ever present to weaken the plants and to destroy the foliage and flowers. Fortunately, however, a little care and the proper use of simple insecticides will eliminate most of these troubles.

The common pests are the leaf-eating insects, such as the slug and the sucking insects, including aphids or plant lice, leaf hoppers, and scale. White grubs occasionally attack plantings in new beds which were in sod the previous year.

The rose slug is readily controlled by arsenate of lead at the rate of one half ounce of powder, or about eight level teaspoonfuls (twice as much if paste form is used) to a gallon of water, and if aphids are present add a teaspoonful of forty per cent. nicotine sulphate. If slugs only are present, the arsenate of lead may be applied as a powder, either pure or mixed with equal parts of air-slaked lime or dry flour as a carrier. If aphids and young leaf-hoppers only are present, spray with a forty per cent. nicotine sulphate, one teaspoonful to a gallon of water in which is dissolved an ounce of soap. Applications should be thorough, a forcible misty spray applied and care should be taken to reach the undersides of the leaves.

Scale insects, when present, occur on the canes and give them a scurfy appearance. During the winter months the heavily infested branches should be cut out and burned and the remaining canes thoroughly sprayed just before the buds open in spring with lime-sulphur one gallon of liquid concentrate to eight of water.

A farmer is known by the stock he keeps.

This principle is sound: To appreciate a thing we must sacrifice to secure it. The man who has gone through years of ups and downs to get a fine herd of cows is usually the last one to sell out his herd.

Home Education

"The Child's First School is the Family"—Frederick

Teaching Your Child Self-Confidence

BY HELEN GREGG GREEN.

"Mummy, look at my airplane. Look, Mummy dear! Look!" begged six-year-old Carroll. "Isn't it just a beauty?"

"Calm yourself, Carroll, your airplane is no better than Micky's. Besides, honey boy, it is nothing to get excited about."

Carroll's happy little face fell, and his eyes lost their sparkle.

"Guess it isn't much good, Mummy. But I did think you'd like it." And Carroll and Micky picked up their once-prized airplanes, and shuffled out of the room, as if half ashamed of having shown so much enthusiasm.

"I must kill my egotism," Carroll's mother exclaimed. "He's simply full of it."

But a mutual friend of Carroll's mother and of mine, a wise, young-for-her-years grandmother, thought differently:

"My dear Zelia, you haven't the right perspective at all. There's a vast difference between egotism and self-confidence. Nothing wrong with a dollar claiming it's worth a hundred cents, is there? The fault would be in claiming anything less for itself. A child will grow and expand because of self-confidence. He will learn to develop qualities and a character that will have to live up to his self-esteem."

Carroll's mother interrupted.

"But I think—"

"Pardon me, my dear, but I still have the floor," laughed the little

Wise One. "You did not play fair with Carroll when you told him Micky's airplane was as well built as his. It was not, and you know it! Carroll knows it, and Micky knows it. You were deliberately trying to shatter a wonderful possession, self-confidence. It's the 'I can't' and 'I won't,' that make the most out of life. Not the 'I can't' and 'I won't'."

Carroll's mother's face was radiant. "Thank you, dear, I'm so grateful," she smiled. "I guess all of us need to be awakened up sometimes. I had never thought of my boy's sureness in his ability in the light of self-confidence before. I'll change my 'system' this very day."

That was four years ago, and Carroll's mother's "system" has been a different one these four years.

Carroll is now a charming youngster, full of power and self-confidence. His teacher tells me she thinks he's an admirable boy.

"What is his best characteristic, Miss Lloyd?" I asked. "What is there about him that appeals to you most?"

"It's his self-confidence. His belief in himself," she told me.

"And do you encourage this in all your children?" I was very much interested.

"Indeed I do!" she answered. "Too many children get little encouragement at home. Will parents never learn the great difference between egotism and self-confidence?"

before a flower. Never was her mending accomplishment done in worse taste.

Could any self-respecting bird be expected to stand this? Mrs. Hummingbird just longed to fly at her, and give her one good peck, just one, with her long beak which made such an excellent weapon.

But no—with a great effort she held on tight to herself.

"Good evening, Mrs. Cat-bird," she responded quietly, and flew off as fast as she could before her wonderful self-control deserted her.

Mrs. Cat-bird was so astonished that she almost fell off her twig. Such a courteous retort to her unkind taunt was so unexpected and disconcerting that she actually blushed in discomfort.

"I declare," she said to herself, "that was just like me! I'm just ashamed of myself, so I am."

Thus Mrs. Hummingbird's suggestion instead of killing two birds with one stone, strengthened the character of two birds with one word.

Mrs. Hummingbird, at home in her nest, cuddled down beside her husband for comfort. She felt all in a mixture of sadness and gladness—but mostly the gladness predominated: gladness that she had been able to control herself well, at least once under severe provocation.

It happened that evening that Mrs. Stanley was taking a friend of hers around the garden. She showed her everything with pride in her eyes.

Mr. and Mrs. Hummingbird's sadness quite vanished away.

"The jeweled fairies of the garden," they whispered happily to each other, as they tucked their heads under their wings for the night.

Poison Bait for Cutworms.

Entomologists recommend an inexpensive poison bait for cutworms, either broadcasted in the field or, in the case of small fruits, sprinkled about the base of each plant. The following formula will provide enough material for five acres: Bran, twenty pounds; Paris green, one pound; cheap syrup, two quarts, three lemons, and three and one-half gallons of water. The bran and Paris green are mixed dry. The juice of the lemons is squeezed into the water and the peel and pulp chopped to fine bits and added to the water. The syrup is then dissolved in the water and fruit mixture and the liquid stirred into the bran thoroughly in order to dampen it evenly. If a smaller quantity is wanted, the amounts of the different ingredients may be reduced proportionately. It is recommended that the poison bait be applied in the evening, because the cutworms are night feeders and the bait will thus be in a fresher condition than if applied earlier in the day.



Victim of Reverses

"Haven't your car any longer? Nothing but reverses since you bought it!" "Haven't missed it by much. The last one took me an embankment, you see."

Buy land that slopes toward the centre, and marry a girl whose mother is good.—Japanese Proverb.

LIME-HUNTING PLANTS

The little poplar tree has a decided chemotropism. It was hungry for lime, and since it was geographically situated on the border line between a well-limed plot and one that was almost entirely lacking in lime, its roots were nearly unanimously partial to the soil rich in lime.

Dr. P. M. Harmer, of the Michigan Agricultural Experiment Station, discovered this unusual demonstration of how the roots were drawn to lime like iron to a magnet. Usually investigators simply note the appearance of the above-ground portion of plants and do not trouble to dig up the roots to see what they are doing.

At one of the sandy-land substations of the University of Minnesota another remarkable instance of lime hunger was found. This time it was shown by alfalfa. This particular sandy soil is extremely low in lime, but is otherwise well provided with food and supports plant growth very well when water is available and lime is added. On the unlimed areas the stand of alfalfa was patchy—a luxuriant bunch here, another one there, and in between not even any lime ones. An analysis had shown the sand to be very homogeneous and it was hard to see why there was such irregularity.

So the investigators started excavating to see what the roots were doing. They found that the successful plants were those whose roots had managed to penetrate several feet below the surface and had negotiated a contact with a few chunks of limestone that were found there. If a plant had failed to reach a lime supply before moisture became too scarce it withered up and was seen no more.

If, however, it reached one of these pieces of limestone in time, it gained enough growth impetus to enable it to penetrate still deeper after water, and it showed above ground as a vigorous, well-nourished plant, with no sign of the close margin of safety that it had recently experienced. Thus the few scattered pieces of limestone, five or six feet below the surface, furnished the explanation for the patchy appearance of the crop on the unlimed plot.

Other excavations in an older field of alfalfa showed that the roots of five-year-old plants may penetrate twenty feet into the soil. Since there is always moisture at such depths, it is readily seen why a field of alfalfa always looks green and succulent, even during a drought that withers up the leaves of other crops.

Feeding Beef Cattle.

The results of a number of experiments in the winter feeding of beef cattle, undertaken in the winter of 1921-22 at the Dominion Experimental Station at Lennoxville, Que., are recorded in the Report of the Superintendent for 1921-22. In the fall of 1921, ninety-two head of beef steers, mostly two-year-old Shorthorn grades, and including some fairly good stockers, were purchased for the purpose.

In a test of light versus heavy stockers for winter fattening, two lots of ten steers were used, one averaging 719 lbs. per steer and the other 886 lbs. per steer. A table presented in the report shows that although the lighter steers cost a cent per pound less when purchased, the extra gains made by the heavier steers, coupled with the extra price realized on account of their superior finish when marketed, enabled them to make a gain of \$1.56 per steer over the lighter lot.

In a test to determine the length of time during which grain should be fed in order to produce the most economical gains in winter fattening, eighteen grade Shorthorn steers were selected in the fall and divided evenly, as nearly as possible, into three lots. They all received forty pounds of ensilage and as much hay as they could eat up clean. After grain feeding was begun, the ensilage ration was gradually reduced. Lots one and two are fed meal from November 15 and January 15 onward, respectively, while the third lot received only ensilage and hay until March 1. The meal mixture was made up of ground elevator screenings two parts and oats and bran one part each. During the last few weeks of feeding, corn meal was used in place of oats. The steers were stabled the first week in November and marketed about the first of May. The same experiment has been carried on for several years and the results so far indicate that the steers in lots one and two made a greater average gain than those in lot three. The latter, however, the Superintendent points out, made their gains largely on cheap home-grown feeds, and therefore, show a greater profit over cost of feed than the other two lots.

An experiment with loose versus tied steers, which has been carried on for four years, shows that, independent of the saving in labor and equipment, deboned steers, wintered and fattened in large pens, make cheaper and greater gains each year than tied steers.

"The Squarest Kind of a Square Deal—All for One and One for All."

Logically, the time to build up a beef herd is when conditions are in a bad way. Then, as these conditions improve, the producer's output increases and he is ready to sell when prices are relatively high.