

Soils and Crops

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

KEEPING YOUNG CHICKS GROWING.

A quick maturity means heavy laying. The pullet that drags along, gaining slowly, very seldom is able to gather enough energy to make a record. While a chick properly hatched has a better chance for maturing rapidly, it is no guarantee unless subsequent feed and care are right. Stunted chicks will not respond even to the best of feed.

The diet of the chick is practically that of the hen. The feed that makes eggs will likewise grow bone, muscle and feathers. The food must consist largely of nitrogenous material, balanced with sufficient carbonaceous matter to offset any ill effect that might result from too much nitrogen. To have early laying pullets in the fall, and vigorous layers all winter, the chickens must be kept growing. If they are in good health they will have a growing appetite, and this must be supplied with a liberal quantity of the best quality of food in order that they may store up energy.

There is nothing better for growing chickens than a good grass range. Here the youngsters not only gather green food and insects, but they are continually exercising. At night their crops are as hard as bullets, and the good night's rest fits them for renewed foraging the next day. But the range must have some shade. There must be cool spots where the youngsters can rest on hot summer days. During the cool morning hours you will notice the chicks working on the west side of the tree, and as the afternoon sun strikes under the branches the birds will be found on the east side, and far enough away so they are out of the sun. They follow the shade.

Berry bushes make good shade, and also protect the chicks from hawks and crows. By all means use growing plants for shade, because they give off moisture which makes the spot cooler than shade obtained in any other way. There is nothing better than a range in a corn-field or a large patch of sunflowers. Here shade will be found, and there will be plenty of young tender green shoots and fat, delicious lugs and worms. Where natural shade is lacking, artificial shelters must be provided.

On the ordinary farm the growing chick is too often left to hustle for itself. This is not entirely a bad move, since there is so much grain, etc., about. But the demands made by the developing bodies of chicks are great; the materials the chicks have gathered to meet these demands are diverse. The chick in ten weeks shows a gain of 1,500 per cent., and duck-

lings may add from 50 to 100 per cent. to their weight weekly.

This growth is not merely of flesh, fat or soft tissue, for the extensive, strong, bony framework must be formed with equal rapidity. Ten per cent. of the body of an average fowl is made up of mineral bone elements or "ash"; and the percentage must be much greater in lean, immature birds. Hence you will see that grain is not enough for chicks. The ordinary grains will not supply this ash in the proportion needed. Corn contains only 1½ per cent. of ash; wheat less than 2 per cent.; wheat screenings or oats, 3 per cent.; middlings, 3.1-5 per cent.; and bran (the richest in this element of grains) carries less than 6 per cent.

To obtain the needed amount of ash must either force the fowl to eat large quantities of food, or some foods richer in mineral elements than grains must be provided. If the bone-making material is not abundant, the bones of the bird will be large, soft and weak, resulting in lameness or deformity; or the bird will make slow and unsatisfactory growth.

Experiments made at the New York Station show plainly the need of plenty of ash for growing fowls. These tests indicate that tiny chicks can make good use of such uncommon elements as sand and rock phosphate. Those elements, however, can be more easily obtained, in better combination and in more palatable form in materials already recommended by our most successful feeders—fine raw or cooked bone. Every grower of chicks should use constantly some animal meal, green vegetables, clover or alfalfa, and good, clean grit.

Weaklings should be removed from the flock whenever found. Very little is gained in trying to save them, for they seldom become vigorous. They are an easy prey for parasites and readily contract disease. Rigid selection for vigor should be practiced throughout the life of the chicks, so that no weak or undesirable specimens will find their way to the breeding-pen. Weak chicks grow into poor breeders.

Early roosting should be encouraged, along with plenty of exercise. Roosts should be placed not more than a foot above the floor when the chicks are about a month old. Early roosting will prevent crowding, overheating and smothering at night.

Cockerels should be separated from pullets about the time the cockerels begin nagging. This gives both lots more room and the cockerels may be fed more heavily. When possible, chicks should be grouped according to age. Above all, the coops and houses must be kept clean and well disinfected, for no chicks will thrive if tormented by vermin.

The British Empire Exhibition

The Experimental Farms Branch of the Dominion Department of Agriculture will be represented at the British Empire Exhibition by a model experimental farm surrounded by typical scenic work. The space occupied will be 40 by 60 feet. The model will be to scale, and complete as to buildings, fences, roads, shelter belts, rotation fields, experimental plots, live stock, and horticultural sections. A display will be made of sheaves of grain, storage crops, fruits, etc., originated, improved or introduced by the Branch. Transparencies, pictorial and otherwise, will give further information as to the services rendered, and a booklet will be distributed for the information of prospective settlers and others.

The exhibit to be made by the Dominion Live Stock Branch will occupy a space of 128 feet long by eight feet deep. Canadian bacon will be featured in an attractive manner in cooperation with the Canadian Packers, who will keep the exhibit supplied with this commodity.

The stocker and feeder business will be presented by means of scenes showing: (1) Cattle on Canadian summer pasture; (2) Cattle on the western range in winter, and (3) Canadian cattle after their transfer to British pastures.

Displays will be made of Canadian poultry, eggs and wool. Canadian egg standards will be depicted, as well as the Canadian system of recording the performance of poultry. The wool and textile exhibit will include an exhibit of wool from the Prince of Wales' ranch in the Province of Alberta. Numerous transparencies will illustrate Canadian farm scenes and typical specimens of live stock.

The Seed Branch of the Department of Agriculture has collected an exhibit of seed from commercial sources and plant breeders to exhibit at the British Empire Exhibition for the purpose of showing this branch of Canadian industry and stimulating trade in the export of hardy, northern-grown seed within the Empire and to Northern European countries.

There have been secured for this exhibit the prize winning samples from national and international seed shows, including the championship wheat, oats and peas at the Chicago International, which were all Can-

adian-grown exhibits. The plant breeders have supplied samples of elite stock seed representing the main kinds and varieties originated by them and those in process of improvement. From commercial sources, including the Canadian wholesale seed trade, larger exhibits have been secured showing high grades of cereal grains, alsike and other clovers, grasses, peas, beans and corn, representative of the qualities of this season's crop, and available for export in car lots.

Some 3,000 boxes of apples have been collected by the Fruit Branch to represent Canadian fruit at the exhibition. The display will be set up and maintained by the Exhibition Branch of the Department of Trade and Commerce.

Hatching With the Incubator.

When using an incubator for the first time, one is fortunate if a high percentage hatch is secured, as experience is needed to be able to follow even the clearest directions in work of this sort. Exhibition Circular No. 2 of the Experimental Farms, recommends a well ventilated cellar with a fairly even temperature, as a good location for the machine. In any case, fresh air is necessary, but draughts should be avoided. It is also important, if one has not a suitable cellar, that the machine should stand on a floor that does not vibrate when walked upon. To get satisfactory results it is necessary to have the conditions right in relation to heat, moisture, cooling, turning, and testing. The Circular to which reference is made, "Artificial Incubation," is obtainable from the Publications Branch, and deals with these points, and shows by illustrations and contrast pictures, suitable and unsuitable types of eggs for hatching. An essential point brought out is that the eggs for hatching should be secured from vigorous well bred stock. With such eggs a modern incubator should be depended upon, if properly handled, to yield a good proportion of chicks from the eggs entrusted to it.

The radical is usually the man who likes to blame somebody else for his own mistakes.

The Rainbow-Flowered Iris

The refined and delicate beauty of the modern Iris has been aptly compared to that of the sky and sea. It is well named the "rainbow flower," for its various hues, less substantial than the rose, for example, have the limpid quality of a perfect June day, and flush and fade like the rainbow itself.

To garden lovers this flower makes a strong appeal. To-day it is held in much higher esteem than was the case twenty-five or thirty years ago, due to no small degree to the introduction of varieties that are far more attractive than the old blue flag and other mediocre kinds in grandmother's garden.

It is just as easy to grow a good iris as an ordinary one, so we should harden our hearts and dismiss with a blessing some of the older varieties that have done good service in the past but are now far eclipsed.

The tall, bearded irises, to which this article refers, are among the most satisfactory of garden plants. First, the iris is a plant of unusual distinction both as regards flower and foliage. It flowers abundantly, and in all hues and tones of lavender, mauve and purple. Then there are white, cream, pale yellow, deep yellow, and combinations of these.

Second: The irises of this type are entirely hardy, need no winter protection, and increase rapidly. This iris is not exacting as to soil or location. It will thrive anywhere but in sour, wet, low-lying, shady spots. It responds best, however, on the upper level, where drainage is sharp, and on soil of light to medium texture. Where well grown, it is not likely to

be seriously affected either by disease or insects.

That these are strong qualifications, all will admit, and justify our advocating a more general use in garden planting.

The best time to plant the iris is either in the early spring or in the month of August. If it is simply a question of dividing old clumps, or if the source of supply of new plants is near at hand, planting may be undertaken at any time after the flowering season is over.

In planting, the rhizomes should be set near the surface. The fibrous roots attached to the rhizome should extend down into the soil on all sides. A good practice is to mound up the soil in the centre of the hole and set the rhizomes on this.

The iris may be given a place in any perennial border, whether long or short, wide or narrow. If the space will permit, it is a good plan to plant medium sized divisions of one variety two feet apart in groups of three to five plants. Repeated at regular intervals in a long border, the plants form accent points or centres of attraction because of their marked divergence from other types. A fine effect is often produced by planting with a background of flowering shrubs such as lilac and spirea. The well-known variety *poitida Dalmatica*, a clear lavender with flower stems four feet high, bearing from three to five gigantic flowers, combined with the wisteria vine or the apricot-flowered Oriental poppy, Mrs. Perry, will produce a color combination worth a long trip to see.—The Ontario Horticultural Association.

One Hour's Carelessness.

"I don't think much of these colony brooders," said Careless John, yawning wearily. "I tried them out last summer and it didn't seem to me that they saved any work to speak of. Just kept me running down to the cornfield seeing if things were all right. And, at the end of the season, I didn't have any more chickens that I had when I let the hens take care of 'em!"

The county representative had been trying to impress on John's mind the importance of brooders, and the profit in poultry. But John was not interested. First of all, he didn't like the bother of so many hens all summer with their broods of little chicks, and when the agent had suggested the use of the colony-house system, John said the colony house was a joke; he "knew all about them" because he had failed to make them go, and according to his logic, anything that wouldn't work itself into money for him, wasn't "worth its salt."

He yawned again and stretched his arms slowly. "Why, I had two of them colony houses last year, neighbor, and put them down in the corn-field, just as the Agricultural College fellow told me. Well, the chicks, 800 to each house, were four weeks old when I moved them down there, along about the first of May.

"They got along fine for a few days, and then a cold night came along, just as sudden as lightning. The next morning when I went down there, I found that all the chicks had crowded into one of the colony-house brooders. I thought a weasel had been busy when I first went in.

"There was a big pile of dead chicks. A lot were standin' around humped up and wet as the dickens. I reckon they just sweat themselves to death that night. Anyhow, there were only about 150 chicks left out of the 800. So, you can't talk colony houses to me, neighbor!"

The county representative tried to explain to John that the trouble was not due to the colony houses, but to the fact that the chicks had all stampeded into one house and smothered themselves to death later in the night. Six hundred chicks will generate a tremendous amount of heat when crowded into one little colony house.

Had Careless John taken the trouble to move his colony houses some distance apart, he would not have lost his chicks. It is in sense for all to crowd into the smaller of two brooders, if two are placed close together. Fowls do not roost by themselves, unless separated and trained to do so. They all flock together in the smaller brooder, every time. If Careless John had gone down to the corn-field that cold May night, he would have saved his flock even then, but John wanted to sit down that evening and enjoy himself. His hour's rest cost him a season's profits.

Some Recommended Roses.

There are wide differences with regard to the susceptibility to disease between the various modern roses. Bulletin 85 of the Experimental Farms, entitled "Hardy Roses," names twenty varieties of hybrid teas that are regarded as fairly resistant to black spot and mildew. Five of these are Avoca, red; Dean Hole, pink; Etolie de France, red; Mrs. Harold Brocklebank, cream; Lady Ursula, pink. In the climbing varieties American Pillar is resistant, and Excelsa might take the place of the old Crimson Rambler which is a susceptible variety. Good pinks are Dorothy Perkins and Tausendschon.

The difference between men and motors is that usually motors knock when they go uphill while men generally knock when they are going down hill.

Depth to Plant Potatoes.

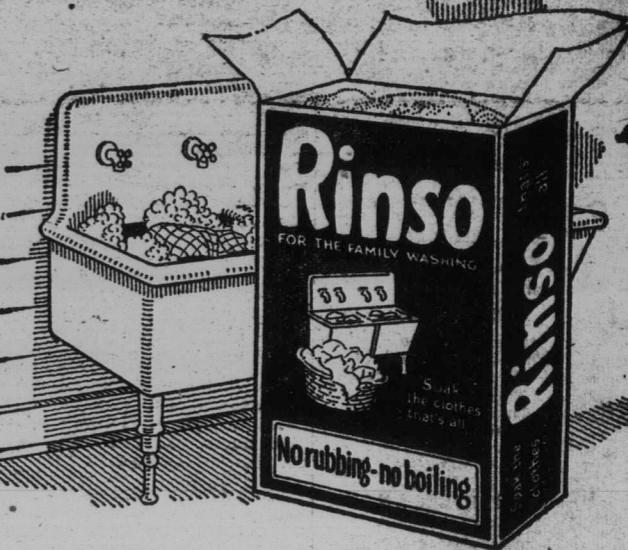
The depth at which potato sets are planted has a marked influence on the yield. Shallow planting has been found by test at the Experimental Farms, Ottawa, to give much better results than deep planting. In loose, sandy soil at Ottawa, the most economical depth has been shown to be from four to five inches. At this depth the seed is not disturbed at harrowing the crop soon after planting, to destroy weeds and conserve moisture. On very light soils liable to dry out a little deeper planting is better.

For the early crop, shallow planting has an advantage, because the warm surface soil is favorable to quick growth. Seed planted only one inch deep gave best results, but is not to be recommended for field culture.

An experiment was conducted for seven years in planting potatoes at different depths in rows two and a half feet apart, the sets being placed twelve inches apart in the row. The sets had at least three eyes each. The soil was sandy, and level cultivation was used in the experiment. When the sets were planted less than four inches deep, nearly all of the crop was found between that depth and the surface of the soil. The best results were obtained with planting one inch deep and the poorest at eight inches. The yields were as follows: one inch, 466 bushels to the acre; two inches, 381; three inches, 405; four inches, 394; five inches, 387; six inches, 377; seven inches, 307; eight inches, 284. The shallow planted seed was given slightly more covering.

Sprouting Oats in the Runs.

This spring and summer, trials will be made in sprouting oats in the runs so that there may be a constant supply of green food available. For this purpose frames are made out of 2x4-inch scantling, and over the top one inch wire netting is tacked, which prevents the fowls from grazing the oats too closely and also from scratching out the roots. These frames are made of a length convenient to be handled. The ground is first dug up and manured, and the oats planted. From time to time the frames can be removed to new sections of the runs, and a new supply grown while the hens are finishing up the roots of the old one.



Soaking takes the place of rubbing—

JUST by soaking the clothes in the suds of this new soap, dirt is gently loosened and dissolved.

Even the dirt that is ground in at neckbands and cuff-edges yields to a light rubbing with dry Rinso. Not a thread is weakened. The mild Rinso suds work thoroughly through and through the clothes without injury to a single fabric.

Rinso is made by the makers of Lux. For the family wash it is as wonderful as Lux is for fine things.

All grocers and department stores sell Rinso.

LEVER BROTHERS LIMITED, TORONTO

How Cracked Eggs May Be Hatched.

I often send away for fine eggs for hatching, paying a good price for them. In spite of the fact that they are carefully packed, when they reach me some of them will be cracked. For a time my loss in this way was heavy, until I decided upon this plan to save them:

I examine each cracked egg carefully to see whether the skin under the shell is broken. If it is, the egg is worthless, but if the skin is unbroken I cover the crack with a thin coating of glue, and allow it to dry before placing the egg in the incubator. I find that an egg treated in this way will hatch as well as one not cracked. I have hatched eggs having spider-web cracks as large as a quarter-inch in several instances when the shell was slightly dented in by the crack—by treating them with glue beforehand. For a number of years I have not lost a fertile egg on account of a crack, unless the skin under it was broken, or the crack covered more than half the egg.—M. J. Atkinson.

Hot-Water Bath.

Hot water is a good medicine for sick cabbages as determined by college pathologists, who have discovered a new cure for black leg, an infectious disease which has caused a loss of thousands of dollars to cabbage producers. The corrosive sublimate treatment which has been used for black rot and recommended for black leg is not altogether satisfactory, so the experts say. Now they have found that seed immersed for thirty minutes in water kept at 122 degrees is free from both

infections, but the hot water also reduces the germination. Plump and healthy seed stand the treatment much better than poor seed and there is no doubt that the advantages gained in freeing the seed from the disease overbalances the reduced germination.

HOGS

We are just glad that hogs like water—fresh, clean, pure water—in abundance. If they did not like water, they might then be demanding a substitute that is more costly to provide. The good hog man sees that every hog on his premises has every ounce of this liquid elixir of life that is needed. He does not stint where the cost is so little and the results are so certain.

The pig drinks more pounds than he eats. Piggies' all important body when very young may carry as high as 80 per cent. of water, and from this down to as low as 35 per cent. when he is well fitted for the shambles. See, therefore, that he has plenty of plenty of liquid refreshments that are not too cold in winter, nor too hot in summer.

Raw linseed oil, applied once or twice daily, removes warts or corns in a few days. With it we removed warts from a cow's teats, a patch of warts from a cow's nose, warts from our hands, a corn from the end of my finger, and those terribly painful "soft" corns between toes. It is good for chapped hands and burns. To prevent staining clothing, wrap parts to which it is applied.—L. L. L.

Legume hay, tankage, or dairy products fed to the sow will make the pig crop strong and increase the percentage of those maturing.

When you want Syrup, always specify the



"Benson's Golden"
Equal to the best Cane.

"Crown Brand" "Lily White"
The Standard Corn Syrup. A White Syrup like Honey.

"Lassies"
Equal to the best Molasses.

Manufactured by
THE CANADA STARCH CO., LIMITED, MONTREAL.

