

Soils and Crops

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

SOME COMMON CHICK DISEASES—THEIR PREVENTION AND CONTROL

Chick mortality is something which will always have to be contended with, and no matter what steps are taken there will still be a certain death rate, as in all other classes of animals. What this can be reduced to, cannot be predicted at the present time. It is safe to say, however, that should effective attention be given to some causes, which are easily remedied, there naturally will be a reduction in the number of deaths.

Normal chick mortality.—This varies greatly according to the conditions of flock management. Where the young are reared under comparatively normal conditions, where the flock is small, the range liberal though protected, the food and attention as well as the sanitary and hygienic conditions being all that can be desired, the loss usually is reduced to a minimum. On the other hand when part or all of these conditions are interfered with the death rate frequently increases to an alarming extent.

In many instances the chick's life has been settled before the egg leaves the oviduct; for example, the hatchability varies greatly between eggs handled and incubated in precisely the same manner. Chick diseases with their resulting mortality are due to predisposing and exciting causes.

Predispositions.—Predisposition to disease is generally passed over far too lightly and it is regretted that such is the case. If one wishes to see just the part it plays take two hatches of chicks, the one where the percentage hatched has been low and with low vitality, while the other bunch is just the opposite—strong, sturdy and active. As a usual thing it is no matter of conjecture as to which will be the harder to raise, and which will be the more subject to disease.

We should differentiate between a prenatal predisposition, and a tendency to contract disease as a result of environment. It is commonly said that a sick hen will not lay. This is probably true, but a hen low in vitality will lay, and the chicks hatched from her eggs will inherit constitutional weakness. Consider such gross defects as watery whites and chalky shells which probably appear in varying degrees, frequently to pass undetected. Both of these substances must furnish nourishment to the developing embryo. It cannot build up a normal body from materials which may be lacking in essential substances. Then again there are the unseen components of the egg, such as the newer known vitamins. If a hen has laid heavily for some time, the food supply being deficient in some of these essential substances, and her body supply has been called upon until no longer an available supply exists there, it will naturally follow that the egg must be lacking in these materials. If vitamins are essential to the health and development of a growing chick they must be considered during the twenty days which it spends in the shell. The presence or absence of vitamins in cows' milk has been found to be dependent upon the animal's food. A food supply, though otherwise abundant, but deficient or lacking in vitamins results in a milk product correspondingly deficient. Possibly the same can be said of the hen's egg, with regard to these elusive though essential substances.

HORSE

As the spring planting season is short, farm operations must be rushed. This entails long hours, and with modern machinery it also means heavy work for farm horses. Horses working in harrows, discs and manure spreaders are pulling heavy loads, and in many cases they are pulling them over broken ground. Because the work is hard and the hours are long the horses must be in good physical condition. This is only good physical condition. This is only good physical condition. This is only good physical condition.

If they have been fed a liberal grain allowance they will be fat and soft, and should get regular exercise to harden their muscles. If they have been carried through the winter mainly on roughage, with very little grain, they should be given regular exercise and the grain ration should be increased to one pound per hundred pounds of live weight. The hay fed before and during the busy season should be either high grade timothy or a mixture of bright clean timothy and clover. The grain fed while the horse is being fitted may consist wholly of oats; or a mixture of three parts of oats to one part of bran may be fed. Bran is too laxative for horses at heavy work, and no more than one part of bran to five or six parts of oats should be fed.

Environmental Predisposition to Disease.—The normal animal body under natural conditions is not a very suitable medium for the growth and development of pathogenic organisms. When this does take place the parasites are almost invariably assisted by other agents. If a "slums" condition is created there must follow a harvest of chick fatalities as a penalty, just as there is a high infant mortality under similar conditions.

It may not be apparent to many just what constitutes chick slums, nor how near they have permitted conditions to approach this undesirable state. As contributing factors we have crowding, fouled soil, contaminated utensils, bad ventilation, insanitary quarters, insufficient or variable heat supply and unsuitable food.

Of crowding little need be said as it must be apparent to all that the larger the number the greater becomes the hazard from disease. Close cohabitation favors the quick spread of infection and increased virulence of disease.

The soil can, and frequently does, become the source from which many chick epizootics have their serious beginning. Certain protozoa, capable of setting up disease in the alimentary tract, are able to live in the soil. When the soil becomes polluted with feces these lower forms of life become greatly increased in number. This favors a return of the parasites to the hosts' gut in large numbers, resulting in the loss of much life.

Utensils which are left with particles of food attached for anything like protracted periods are excellent places for the colonization of bacteria. While these in every instance may not be pathogenic organisms they frequently are capable of causing digestive disorders resulting in diarrhoea of a fatal nature.

Ventilation must be maintained without producing draughts. The quarters must not be so close, however, that on opening a chicken door is noticeable, nor must there be sufficient opening to cause the temperature to fall during the colder hours of night. Chills have a most disastrous effect on young chick life. If the chicks appear listless when let out of doors in the morning but soon regain their normal activity when in the open, consider the ventilation inadequate. If this continues the chicks' health will soon suffer.

Chick dietetics has received considerable attention, and the branch of suitable feeds and methods of feeding are almost legion. When chick mortality increases a finger of doubt is almost invariably pointed at the food. When standard feeds are used, and methods followed which have stood the test of time, they should be questioned only after all other predisposing causes of disease have been placed beyond doubt.

The actual cause of chick disease whether it be protozoa or bacterial organisms is of far less concern than the conditions which permit the spread and multiplication of the parasites to the extent of causing disease. Little hope of treating the subjects should be entertained, but rather every effort should be given to prevention. Time and money expended in sanitation and hygiene are good investments that will pay well. The foregoing attended to, unless the chicks are subnormal when hatched, the mortality should be maintained at a minimum.

during the busy season except on Saturday night when a bran mash is advisable. Sometimes a horse does not seem to be digesting his food properly, in which case the teeth should be examined and any that are long and ragged floated smooth. Indeed it is a good practice to go over all the horse's teeth each spring before starting to prepare the animal for spring work. By properly fitting his horses for spring work the farmer will avoid sore shoulders, his horses will finish the season in good condition and they will render much more efficient service than if they had begun the spring work without being properly fitted for it.

Corn as a Feeding Stuff.

Corn, says a Dominion Agricultural Bulletin on Commercial Feeding Stuffs, is probably the most palatable and highly relished of all the grains used in feeding live stock. While rich in starch and oil, it is lacking in protein and mineral matter, and is, therefore, more suitable for fattening stock than for cows producing milk or in calf or for young and growing stock. Indeed for all classes of live stock it must be supplemented with feeds rich in protein and ash constituents, if satisfactory results are to be obtained. It is particularly relished by poultry, but must be sparingly fed to layers or they will become non-productive through over-fatness. In fattening poultry also its excessive use tends to the development of fat rather than the production of a properly fleshed fowl.

Opals are so soft when first taken from the ground that they may be pulled apart with the fingers.



A Canadian at Harvard.

Clarence M. Warner, formerly of Nanapan, Ontario, is another Canadian who occupies an important post in the United States, as curator of the Canadian section of Harvard University library. Through his keen interest in Canadian history he has secured enormous and valuable collections of records relating to Canadian affairs.

The Food of Pigeons.

Practically all cereals constitute a good feed for domestic pigeons, says a bulletin on pigeons, just issued by the Poultry Division of the Dominion Experimental Farms. The best are peas, wheat, barley, and buckwheat, which should be fed mixed and whole, as they are more palatable to the pigeons. Care must be taken, in order to avoid bowel and digestive trouble, not to feed green or absolutely new and unseasoned grain. All grain should be fed in hoppers, so as to keep it clean and wholesome, and the hoppers should be so constructed that the birds may not be able to turn around on the open front.

As to the value of the various grains that may be fed, the bulletin says: Barley in limited quantities is a good summer feed; cracked corn is a good feed when used in limited quantities, but care should be taken, owing to its fattening propensity, not to use it too freely, especially with birds in confinement; wheat is one of the best grains, but the use of immature or new wheat should be avoided; pigeon breeders look on peas as essential and they generally form from 25 to 50 per cent. of the ration; clipped oats or, better still, groats, are recommended during the laying season; rye is not a satisfactory feed; hemp is heating, but can be given occasionally in small quantities to add

Planting of Fruits, Vegetables and Flowers

So much of the success in the growing of fruits, vegetables and flowers depends upon the quick establishment of the plants in the soil, and the time when the plants are put in the ground, and the care in planting should be impressed on everyone.

Fruit trees, fruit bushes, and strawberry plants all do best when planted as soon as the soil is dry enough to work in the spring. This means early spring before growth has begun. The later the planting is left the less the chances of success. Too much cannot be said about the importance of preventing the drying out of roots before planting. Sometimes plants arrive with the roots rather dry, and if there is delay in planting they may be very dry, if not actually dead, before the tree or plant is set out. In the case of the trees and bushes, they may leaf out after planting, but the roots being dead, the leaves soon wither and the plant dies.

When received, trees, bushes, and strawberry plants should be opened up, and if the roots are at all dry they should be well soaked with water before being planted in until they can be planted. Strawberry plants are very subject to heating, and if left in the bundle for a few days the roots are likely to die from this cause. They should be taken out of the package and heeled in well, spreading out the plants and roots so that the moist soil can be brought in close contact with them. When trees, bushes or strawberry plants are taken to the field to plant the roots should be exposed to the sun as little as possible and should be planted as promptly as possible so as to prevent the roots from becoming dry. One of the most important items in planting is to make the soil firm about the roots as, if it is not made firm, moisture will not reach the roots promptly and continuously, and even though the plant may be in good condition when set out, it may die because the soil about the roots becomes too dry after planting. Proper depth of planting is important. Trees and bushes should be planted from two to three inches deeper than they were before. This provides for a slight heaving which may occur the first winter after planting. Strawberry plants, however, should be planted as near as possible at the depth they were before. If planted too deeply they do not do well, and if planted too shallow they are likely to die. By reducing the top of the tree and bushes from one-third to a half, by pruning immediately after planting, success will be much surer than if the whole top is left on in the disturbance in transplanting many roots are destroyed, and the top must be reduced to offset this loss.

In the planting of vegetables the same care is necessary in preventing the roots from becoming dry and in making the soil firm about the roots as, if it is not made firm, moisture will not reach the roots promptly and continuously, and even though the plant may be in good condition when set out, it may die because the soil about the roots becomes too dry after planting. Proper depth of planting is important. Trees and bushes should be planted from two to three inches deeper than they were before. This provides for a slight heaving which may occur the first winter after planting. Strawberry plants, however, should be planted as near as possible at the depth they were before. If planted too deeply they do not do well, and if planted too shallow they are likely to die. By reducing the top of the tree and bushes from one-third to a half, by pruning immediately after planting, success will be much surer than if the whole top is left on in the disturbance in transplanting many roots are destroyed, and the top must be reduced to offset this loss.

variety to the ration, and is looked on with favor for use during the mating season. A continual supply of pure drinking water should be kept before the birds and in the lofts of pigeons bred in captivity, hoppers containing rock salt, fine gravel, crushed oyster shells, charcoal, and pulverized mortar, in separate compartments, should be constantly replenished.

Must Go All the Way.

The Good Book tells us that, if we transgress the law in part, we are guilty of all. This advice can be carried over into the farming business to the advantage of the man who tills the land.

In growing crops there are limiting factors. Good seeds are necessary, but good seeds alone will not give a maximum crop. Plenty of available plant food is necessary, but an abundance of pre-digested plant food alone will not give a maximum crop. A fine, well-compact seedbed is necessary, but such a seed-bed alone will not give a bumper crop. And so on with all the various factors required for the bringing to maturity of a crop that is worth while.

Now, the point is this: Unless we are willing and able to go the whole distance and provide all the factors required in the growing of a maximum crop, or in the developing and fitting of stock, then it is better that we go to work on the road, accept the management of some bank, or run on the free-for-all ticket at the next election.

HOGS

One pretty good rule is that 100 pounds of skim-milk are worth one-half the price of a bushel of corn for feeding hogs.

Another rule, a little more reliable, is this: When fed alone, the value of 100 pounds of skim-milk equals the market price of live hogs, in cents per pound, multiplied by five. If fed in combination with corn or barley, it is worth the price multiplied by six instead of five.

The following example shows how the second rule works: If hogs are worth eight cents a pound, 100 pounds of skim-milk will be worth for feeding eight times five, or forty cents, if fed alone. If fed with corn or barley, as it usually is, it would be worth forty-eight cents. A limited amount of skim-milk for feeding small pigs or brood sows is worth much more to the hundred pounds. The larger the percentage of milk in the ration, the total feed, and the older the hogs, the less the milk is worth. The above rule is for pork production in general.



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Putting Away Hams for the Summer.

I have had quite a number of years' experience in putting up hams for the summer. As I have never lost a ham or had one bothered by the insects, I gladly give to others the simple process I have used.

When the hams are removed from the salt they are smoked for several days. Then I carry them to the kitchen. I make a thick flour paste by dissolving the flour in cold water and pouring into the mixture boiling water until it has come to a starchy thickness. I stir cayenne pepper into this until it has a reddish cast. About two tablespoonsful to a gallon of paste will be right.

I dip each joint of meat into boiling water for an instant to destroy any insect eggs that may have become attached to it. Then I rub paste over the ham until it is thoroughly covered, after which I wrap it in light brown wrapping paper, taking care to see that the paper adheres to and covers every part of the ham. Thus all flies are excluded from coming in contact with the meat.

As soon as the paper on the ham is thoroughly dried, I place each ham in a canvas sack, tie it tightly, and hang it in the smokehouse to remain until ready for use.—W. D. N.

To Control Striped Beetle.

Here is my recipe for taking care of the striped vine bug, the squash bug and the onion maggot. I save all fine ashes and soot from the stove and pipe during the winter, keeping them dry. Then I take a syrupy ball, put a stout ball on same and punch about two holes in the centre of the bottom of the ball with a twenty-penny spike. I have used this dope for twenty-five years and never lost by it. I have raised onions on the same ground for four years, and the fourth crop was the best.—N. M. Croun.

Recipe for soap: Dissolve one can of lye in two and one-half pints of rain-water and let stand an hour or till blood-warm, then pour five and one-half pints melted lard into the lye and water, stirring all the time while pouring and till it looks smooth and well dissolved, then set away till entirely cold. Cover well cooling.

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THE BROAD OUTLOOK

Bumping over the rails the other day in a day-coach, I was impressed by the beauty of the landscape. No particular work was rushing for the moment and there was time to look up and away and let the impressions sink in. Compared with the things near at hand, how much more wonderful the world seemed. To let the vision roam over the landscape as far as the eye could see, and drink in the fullness thereof; it was like looking at pictures through a stereoscope, the whole universe was enlarged.

It came to me how prone we are to fix our vision on the things that are close at hand, how the impressions of the eye are reflected upon the soul of us and upon the mind. Our mental attitude toward the world and our love for the earth on which we live are apt to be in direct proportion to the physical view we take of it.

We wander over our little forties, or eighties, or quarter sections, going about our work, with our attention always fixed at our feet. We see the snags that bother the plow, the buck-horn in the clover and the thistles that make us say "words." It is well that we should see these things, of course, for we cannot remove them by overlooking them and trying to deceive ourselves into thinking they are not there. But the point we should not overlook is this, that we should not tie ourselves down to a weed, a snag or the little everyday difficulties of the farm. By so doing, our intellects become dulled, our souls dwarfed and our view of things in general badly warped.

The beauties of our neighbors' fields, the woods across the section, or the hills on the horizon are ours to enjoy whether we own the deeds to the land or not. The birds in the hedgerows sing for us, the flowers along the borders bloom for us, the aroma of the meadows reaches out to us, and they are as free as the air we breathe; if we can lift up our heads, open up our eyes, our hearts and our souls and comprehend them. No greater satisfactions are there in life.

His Business Founded on Pansies.

When our son was a lad of ten years, I suggested to my husband and the idea of raising pansy plants to sell to people living in the nearby town.

We had moved from the city a few years before to a little country place and because of John's impaired health we took up gardening as an occupation and as a means of making a living. We worked at this for several years with increasing success but I wanted also some way for Son to make a little money for his "very own," so that he might learn the value of money and how best to use it for necessity and pleasure.

When I suggested going into partnership with him and growing flower plants for the boy to sell on shares, my husband laughed and said that every one could raise their own flower plants. But just the same he promptly set about making boxes and putting up shelves in the kitchen windows for our experiment.

The first year we sold twelve dollars' worth of the plants. This encouraged us and we increased our stock and more than doubled our sales the second year.

Twelve years have passed. The boy is a young man and a full partner in the business with two greenhouses to manage and a continued growing demand for the products.

Verily, we should not despise the day of small beginnings. In the most wonderful and extensive structure there must be the laying of the first stone.

Hang Your Hat and Coat Here.

The ornamented top of a headboard to a black walnut bedstead was used in this way. Strong hooks were screwed to the piece of wood at a suitable distance. A large screw was inserted at the top of each end. Then hang the rack to strong screws in the wall. Being fastened to the wall in this way the rack can be easily removed when papering is to be done. This unique rack is fitted into the space behind the outside door that opens into the room.



Coming Soon. Hubby—"Who's that you're dicker-ing with at the door?" Wife—"Come here, dear. It's the coal peddler. Let's try to buy at least one lump, please."

Pay as you go; if you can't pay, don't go. Try this plan a year and see if it does not produce greater comfort of mind than the opposite one of running in debt. Think of this when the agent wants to sell you a new silver you don't need.