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HEN-HOUSE LIGHTS HELP POULTRY PROFITS.

During the last few years the subject of artificial illumination for poultry flocks has been a topic of keen discussion. When the idea first became popular it was supposed that by some psychological process the hen was made believe that she was going through two days instead of one and naturally the old erroneous adage, "An egg a day" would mean two eggs a day. The process is purely a physiological one, however, and not one of psychology at all.

At present we can find records at most college plants and experiment stations which all point in the same direction—more winter eggs.

The underlying principle of artificial illumination is a problem in feeding. It is said that the crop of a hen will contain only enough feed to keep the digestive tract busy for a period of four or five hours. In other words, in the short winter days a hen goes to roost about 4.30 or 5.00 p.m. We have always attempted to send her to bed with a full crop, but now we see that this supply is going to be well on its way before midnight. Then where is the heat and energy to come from for body maintenance? We know that an animal body makes demands on the food and stored materials first for body maintenance. In other words, heat must be supplied. Broken-down tissue must be replaced, energy must be supplied and the natural secretion must be kept up. These functions we find take from three-fourths to four-fifths of all the feed consumed. The excess, if any, will be used for production, or in the case of a hen, for reproduction. We find that in the short winter days the hen has a small amount of excess food to be used for production, due to the short feeding hours and the long hours of inactivity.

The economics of artificial lighting reveals an increase in winter production which means an increase in eggs when the price is high. While a slight increase can be expected in early production this is not great enough to add materially to the profits. We really take the heavy spring laying and distribute it over the winter months while prices are better.

Electric, gasoline and kerosene lights are used, but the most economical and successful is electric current. We find many people using gasoline lights and having excellent results. They are not quite as satisfactory, however, for a large plant, due to the labor in tending the lights. Kerosene barn lanterns do not give very satisfactory results. Automatic devices can readily be arranged for electric lights, thus reducing materially the labor. Where electric current is available two forty or fifty W. T. lights will light a pen 18x20 quite nicely. These lights should be arranged at a point slightly forward of the middle of the house and spaced about evenly from the ends. This reduces the shadows to a minimum. A single light tends to produce more shadows. The lights may be fastened to a rafter or joist. It is not necessary to drop the light closer than six or six and one-half feet from the floor. A reflector will aid materially in lighting up the floor area. One gasoline lantern will illuminate a pen 18x20 quite efficiently.

Since lighting is essentially a feeding practice it will be seen that it must be very regular and never failing. This has led to the use of several automatic devices being invented, to turn the lights on and off. This is practical only where electric lights are available. Many large plants use a time switch. This is an instrument designed to turn the lights on and off automatically. While the original cost is rather high it is doubtless a good investment on a large plant where many birds are being kept. We have, however, many simple home-made devices which rank with equal satisfaction and at a much less cost. These usually consist of alarm clock attachments. Possibly the simplest is an ordinary tumble switch set out from the wall. The alarm clock is then placed so the winding stem in turning throws the switch over. I have seen several modifications of this same idea but they are all relatively simple, inexpensive and reliable. Any one who has a mechanical turn of mind and a genius for invention can easily fix up a home-made device at a very small cost.

EARLY BREAKFAST OR LATE SUPPER.

Poultrymen are employing several systems of illumination which might be summarized as follows:

1. Morning light.
2. Evening light.
3. Combination of morning and evening light.
4. Night lunch method.

These possibly explain themselves. Where morning light is used the lights are turned on about 4.00 a.m. and off at daylight. This system has an advantage where electric lights are used. No dimming device is required as is necessary with evening lights. Feed and water can be put in the pens the night before and the attendant gets away from late hours at work. This system has a strong appeal to the hired man whose interests in the evenings are not in the chicken coop.

The evening light is often used where gasoline lanterns are used. The lights are put in at dusk and allowed to stay on until 8.30 or 9.00 p.m. A dimming device is necessary with this system in order to get the birds to roost. With lanterns this is accomplished by gradually turning down the light.

A combination system is commonly used by farmers who make a practice of turning the lights on in the morning when going to do their chores, and again in the evening.

The night lunch system consists of allowing the birds to go to roost as usual and putting the lights on about 8.00 o'clock for an hour while the birds are given a feed of scratch feed. This system is most economical on fuel, the lights being on but for a short time.

It is considered that a fourteen-hour day is possibly the correct length of lighting. We would not recommend using lights in excess of that amount.

FEEDING BIRDS UNDER LIGHTS.

Birds under lights must be fed more than they otherwise would and must be kept constantly busy. The birds are in heavier production and are exposed to just as much severe weather. The grain ration should be increased. Fourteen pounds of grain per day to each 100 hens would not be too much This should be given in four feeds. The common practice where morning lights are being used is to feed the night before for morning. Grain is fed again at 8.00 o'clock, right after dinner, and again before the birds go to roost. The last feeding should be the heaviest, with a liberal feeding in the morning. If the birds do not consume large amounts of grain they are sure to lose in weight and go to pieces in the spring. A dry mash is kept before the birds at all times. It is advisable to increase the corn content ten per cent. to aid in maintaining body weight. The common practice where evening lunch is being used is to feed three times a day on grain. In the morning about three pounds; at noon about two pounds, and at dusk about three pounds per hundred birds. Then when the lights are turned on a feeding of about six pounds.

In additoin to the above methods, care must be taken to keep a supply of clean water before the birds at all times. This is sometimes difficult in mornings when the water freezes over night. If there is snow on the ground dump the water in the evening and fill the dishes with snow. This will give very good results until water can be supplied a little later in the morning. Do not neglect the green feed and oyster shell.

LIGHTS IN SPRING.

Many persons using lights have had an unhappy ending to a productive winter by turning the lights off too suddenly in the spring. Any sudden change must be avoided and we usually take from two to three weeks to complete the change, cutting them down gradually a few minutes each day. This should be done about April 15. We plan on having the lights off by May 1. The early and late feeding must be continued even after the lights are turned off.

Distributing Liquid Manure.

A prosperous farmer who owned two hundred acres of valuable land also maintained a large herd of dairy cattle. The barns were carefully cared far, and all refuse was collected in a manure pit.

One end of the pit contained a sump in which the liquids ran. Since this liquid represented the most valuable part of the manure it was hauled out onto the fields as fast as it accumulated.

But so much time was consumed when disposing of it in the usual manner that a more economical means was sought. The farm owner had a two-ton truck, which was a sort of a general-purpose conveyance. It was decided to equip this with a tank and, by means of the exhaust gases from the engine, spray the liquids over the fields.

The tank held three hundred gallons. A faucet six-eighths of an inch in diameter was attached to the outlet. The exhaust pipe was continued back of the muffler, and it terminated just beneath the rear end of the tank.

Fifty cents paid for a heavy galvanized iron dustpan of suitable type. This was soldered on the pipe and the seam also soldered, so that the exhaust would emerge and spread fanwise across the upper side of the dustpan.

A short piece of hose was attached to the faucet and brought to within two inches of this outlet. After reaching the field, the driver set the faucet to discharge the proper quantity, then went on over the field, the exhaust throwing the liquid over an area from six to fifteen feet wide, depending upon the rate of discharge.

The great problem is to learn how to gain wealth honestly and efficiently and to distribute it justly while, at the same time, we continue to live together as neighbors.

Storehouse or Junk Heap.

A farmer friend of mine broke a piece of harness the other day. He was in a hurry to get started, but the harness had to be fixed. After a half hour's hunt he found his punch.

Then more time was lost in locating the rivets and riveting machine. Then came a hunt for a suitable piece of leather. Every odd corner turned up its piece of leather, but they were neither the right size nor shape to use. Another hour was lost, then the farmer used a piece of rope and started out.

I could not help but compare this man to another farmer of my acquaintance. If he had broken the same piece of harness it would have taken him just long enough to look into a certain cupboard in the wagon house to know whether or not he had the leather. If he had found the leather, the rivets, punch and riveting machine were in their places on a shelf in front of his bench, and the only lost time would have been the minutes actually consumed by the labor itself.

One man had just as much stuff as the other. The former keeps a junk pile, the latter a storehouse. His lumber supply is neatly piled—oak planks for floors, wagon tongues, and so on, are in one pile, fence boards in another. His tools are neatly arranged in racks in front of his work bench. Nails, screws, bolts and staples are sorted and in boxes upon their proper shelves. Each piece of machinery has its kit of tools which are never found outside of the tool box.

There is only one difference between these two men. One takes a few minutes after each job to put things back where they belong. The other would rather spend an hour hunting for things before he begins work—at least that's the impression you get. One knows where to lay his hand on what he has in store. If he does not find it he knows he does not possess it. The other hunts around a while; then, not finding it, he thinks that perhaps he has it, but still he is not sure, so he buys new.—W. F. Messenger.

How I Feed Plants.

Plants grown in pots thrive much better for me if given some feeding. Plants that are kept in pots year after year, like ferns and begonias, will require constant feeding, as well as repotting now and then. It is better to keep up liberal feeding than to repot often. Repotting will always check the plant some, provided it has not become so crowded for root room that it is already checked. I have known ferns to be kept growing well, with very little soil left in the pans, just by feeding regularly and well.

I never feed a weak plant or a sick one. A plant should be healthy and growing normally if feeding will benefit it, and a weak plant is likely to be killed outright by even a light dose of plant food. Neither do I feed plants when the soil is dry. The strength of the solution should be weak at first and gradually increased, while an application once in two weeks at first may be increased to weekly, and with heavy feeders even to twice a week.

For mixing into the soil, bone meal is a safe fertilizer. Most of the prepared plant foods have it as a base. Nitrate of soda and ammonia are good nitrogen carriers, and will make the foliage luxuriant and a deeper color. Too much nitrogen is likely to give foliage at the expense of flowers, and to dull the colors of some of the foliage plants. Bone meal is rich in phosphorus, and has some nitrogen. —A. H.

English farmers learned during the war that sulphate of ammonia, of which the country had been exporting thousands of tons, was good for increasing crop production. Now they are using 230 per cent. more of this product than before the great conflict.

I find a six-inch rule the handiest thing in sewing, to turn hems, to measure widths in seams.—M. R. M.

Do you want something with a kick in it? Try milk.

Market-Type Demand in Hogs is Clearly Known

Overseas Trade Will Not Wait for Breeders' Experiments.

A professor at one of the Canadian agricultural colleges recently remarked: "What I should like to know is why June grass, the most perfect feed we know, in a dairy cow is converted into rich milk and in a beef steer into prime beef."

This pertinent question is evidence of the newer spirit and trend everywhere visible in livestock work. It is true that all foods and feeds when consumed take on the character of things very dissimilar—meat and hair and horn and tissue—within the body of the self-same animal. The technical explanation of this is a matter for scientists. But the result is something which interests intelligent livestock men in what is confessedly the most practical way—through their pockets.

Is not the broad reason for the differing uses of the same feeding material by different animals due to what is becoming better known as "type"? In hogs the effect is very plainly exemplified. In a wide sense general hog feed fed to a "select" type tends to become muscular tissue of lean with inter-larded fat, or streaked bacon. Fed to a heavy Duroc-Jersey or Poland-China the same feed becomes fat, lard and grease. True, an excess of fat-forming foods would tend to make a bacon hog fat, but in the main, if care is taken in this regard, "type" is the first requisite in the production of a market class.

Type is not breed, though it is hard to know where type hardens into breed and where breed blends with type. After all, both are the result of fixed characteristics: breed definitely separated after selective crossings and carried on from generation to generation and type perhaps the same thing within breeds but not yet clear in the line though in the process of becoming clear.

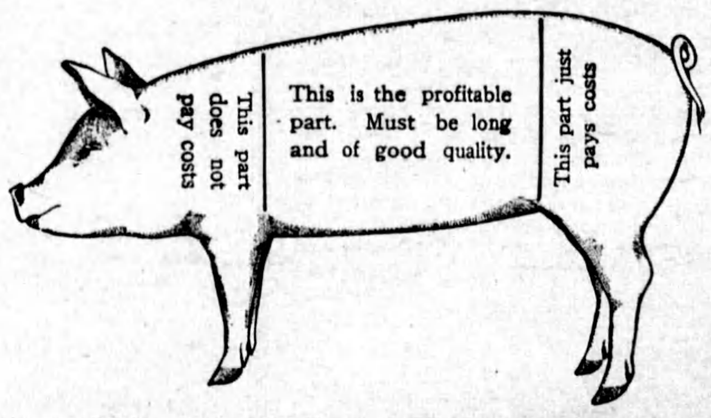
In the bacon hog we know that the characteristics or the marks of a type to suit Canada's best market—and it must be clearly understood that other types are as important for other markets—are the long body, with an inborn capacity to form lean, tender flesh quickly. In addition the "type" must be ready to take a "finish" as near to 200 lbs. as can be. What should be kept in mind is that types for markets must conform to consumers' taste and national likes or dislikes. For instance, a well known writer states that in England the types of the Yorkshire and the Berkshire have been quite reversed within the last 50 years. He says: "The large Yorkshire pig furnishes a striking instance of this transformation. In times gone by (never, it is hoped, to return) the typical pig of the breed was considered to be one short in the snout, enormously heavy in the jowls and thick in the shoulder, with back wide and fat, legs long, bone round and coarse and a carcass of immense weight, mainly comprising lard, hide and bone. At the present time the large Yorkshire is an animal of a totally different character . . . well formed, compact, fine in bone, deep in carcass and carrying much lean meat . . . in infinitely better demand at much higher prices." Would that not be better expressed by saying that the market type of the Yorkshire breed was altered to suit consuming taste?

It is well known that on this continent there are two well marked varieties in some breeds of swine of which Berkshires are the outstanding example, one definitely lard type and the other approximating the bacon type. It will, of course, be possible to keep on selective mating within these breeds so as to produce a clear line, for that is the way in which in the past breeds have been evolved. But it is a long and costly process so far as Canada is concerned. Our market is clearly set for one type. We must get that type on our farms by the shortest possible method.

One thing is sure; the overseas bacon market will not stand still for us the long years necessary to building up new types from lard hogs. In other words, if Canadian farmers in large numbers do not "get after" this valuable overseas market in bacon by the shortest possible route and furnish it with that which it demands some other farmers will. That has been the secret of Danish success.

Why bother with what will not pay? Let us in Canada feed our hog feeds to types that we know will suit our trade and yield, year in year out, the margin over cost that the world calls profit.

The "Why" in Export Bacon Hogs



A "Wiltshire side" of bacon as exported is sold in one piece, shoulder, middle and ham. The diagram tells why Canadian hogs should be long-bodied. The best weight "Wiltshire side" is about 60 lbs.; this can be cut from a 200-lb. hog of "select" quality.

Home Education

"The Child's First School is the Family"—Froebel."

Correcting Faults—By Edith Lochridge Reid.

Many a well-meaning mother is laboring under a false idea of what really constitutes a training in right habits and proper attitudes in her child. Often she thinks she is correcting a fault when in reality she is only nagging at the child, or at best shooting very wildly around the mark.

Here is Edward. He is careless with his napkin. "I've been trying for six months to get him to fold it and put it in the ring," his mother observed, as we were clearing the table; "but he does it only about one time in ten." Now Edward's mother was actually sincere in her remark. Imagine! By her own admission she had struggled six months on the one little point of discipline. At the next meal I watched Edward. It was noon and before he was quite through his lunch his boy chum rang the doorbell and Edward dropped everything and dashed to school, of course, without folding his napkin. At dinner that night, we were going for a ride and everyone hurried, Edward included, and no one paid any attention whether he folded his napkin or not. Without elaborating any further, you mothers get the point. It would have taken perhaps a week of time and patience to sit right there at the table and keep an active boy right there also until he had learned to fold his napkin automatically. Anything worth while takes time, but very few points in children's discipline require six months if properly handled. If we make a child do a thing himself one time in ten, and then do it for him the other nine times, it is absolutely energy wasted all around, just like sewing the new patch on the old garment which is too thin and worn to hold the stitches.

Training children is like a business proposition: we get just what we go after. If we invest patience, time and thought in the task of correcting a child's habits the results are inevitably successful. It isn't always easy, nothing worth while is; but a week spent in correcting a fault takes less attention and energy that nagging for months with no definite object achieved after all.

Another point is very important in correcting faults. Be very sure the fault is a real one, that it bears directly on character training. If it is not one on which you are willing to expend time and patience to correct, then why mention it at all? But if a habit is really annoying and one that will prove embarrassing to the child and his friends through his life, then attack it at once and definitely and finally uproot it. Concentrate on that one thing until you and the child have conquered it, and never again will you have that particular trial to meet.

THE CHILDREN'S HOUR

HIDE-AND-GO-SEEK WRITING.

Little folks love jokes just as much as do grown-ups, and they are always anxious to turn the tables on their playmates, and even big folks.

Here is a little surprise trick that you can fool your little friends with, and perhaps papa and mamma.

Let us call it hide-and-go-seek writing. First, squeeze the juice of a lemon in a thoroughly clean ink bottle, being sure that every trace of ink has been removed. With a new steel pen point write with this fluid on ordinary writing paper.

The writing will be invisible and you will have to be careful to have plenty of the fluid on your pen. After this is thoroughly dry, press it firmly with a hot iron and you will be surprised to see the writing plainly.

It would be fun to write several lines on a sheet of paper and when daddy comes home from work to-night, to ask him what is on the sheet. When he tells you he can see nothing, pass the hot iron over the paper and surprise him by letting him read it.

Try this, too, when your little friends come to visit you in the afternoon to play games. With the lemon ink write the names of half of those present on a slip of paper and pass them to those whose names you did not write. When they press these slips with a hot iron, they will learn who their opposite player will be in the next game.

WHY ROLLY RABBIT LIVES ALONE.

"This is surely a fine evening," said Bruin. "The cool air makes my bee stings feel much better. Those horrid bees! I'm afraid I shall run every time a see one now."

"Oh, they won't bother you unless you molest them," replied Rolly Rabbit. "But when you do trouble them, they are saucy fellows."

Rolly had just brought a chair out on the porch alongside Bruin's. He had finished up the supper work and was ready to enjoy the evening with his guest and newly made friend.

"You have a very pretty place here for your house," said Bruin, "and such near neighbors."

"They are old settlers around here. Sammy Squirrel lives over there," said Rolly Rabbit, pointing to the north. "He is a good fellow and makes a fine neighbor. "Over there, pointing to the east, "is Willy Woodchuck's house; and just beyond there is where Charlie Chipmunk lives."

"What a fine lot of neighbors," he said.

"Yes, but it doesn't seem like home any more," said Rolly with a sigh.

"You look so sad, kind friend. May I ask why?" questioned Bruin.

"I do not like to bother others with my misfortunes, but seeing that you ask me, I will tell you," said Rolly Rabbit. "Perhaps you have noticed that I live alone here."

"Yes,' said Bruin, "and ever since I came I have wondered why."

"This is the reason," exclaimed Rolly. "It happened just about this time last year. Mrs. Rolly Rabbit and I were out after some early dewberries. We went to the patch where we had always picked them. Finding none, we wandered far away to the edge of the Big Woods. We were both very careful, for we had heard of some of our neighbors who had gone out there and never came back. Just when we were both real busy picking berries, I looked up and saw—"

Here big tears began to roll down Rolly Rabbit's cheeks. Bruin felt very sorry for him.

But Rolly went on, "I saw a big man with one of those horrid bang-bang things pointing right at my wife. I was faint and hollered 'run.' Just then there was a terrible 'bang.' I ran as fast as I could and hid in some bushes. In a few minutes I peeked out. What I saw I shall never forget! The big man was going away with Mrs. Rolly Rabbit's hind foot hanging out of his big pocket. That was the last I saw of her."

I Fooled Dad.

My dad doesn't believe in bothering with accounts, but he comes to me time and again and asks how we are coming with this cattle deal and that crop. I'm for accounts, and exacting ones, all the time.

Because we keep accounts we know the cheaper method of fattening our cattle. We know the cost of hired labor at harvest of each crop. We don't need to gamble and wait for high markets, for we sell when our cost figures are covered by a fair margin of profit in the market.

We've learned what crops in different fields pay more mor the fertilizing costs, and why. Labor and time expended are all figured out. Not a sale or purchase is made but is entered in the right departmental column.

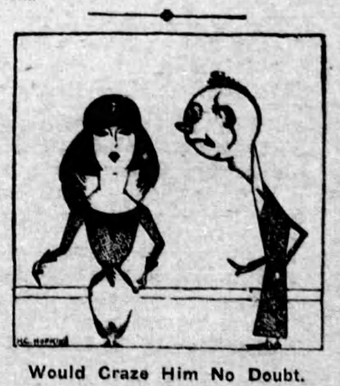
My account of Mother's chick incubation and final sale was proof that when she thought she was making big profit she was barely covering costs. Accounts showed that her vegetable city sales were bringing her big profit. She added acres on both sides of her vegetables patches and made lettuce her star seller and profit winner.

I've proved to Father that one big truck of high horsepower did more service and cost less in upkeep than the two small trucks we had the year previous, figuring cost, repair, and gasoline.

All these little accounts mean more intelligent farming, with a complete knowledge of all branches of farm cost. The savings made have paid for my typewriter, book supplies, and many farm improvements, and have made farming 100 per cent. more interesting to me.—I. S.

Sods for the Pigs.

Before it freezes up store a wagon load or two of good, tough, green sods away in the barn cellar, pit or shed. Such will be very useful to toss into the pig pens now and again during the winter months. The pigs need mineral matter and this is an easy, cheap and efficient way to give it to them.



Would Craze Him No Doubt.

Wifie (in humor for fun)—"How do you like my new Egyptian vase effect dress? Of course, it's guaranteed not to crack nor craze."

Hubby—"Won't crack nor craze, eh? It'll craze me to pay for it, I don't doubt."

Democracy loses much through its apathy toward experts.

Co-operatives can weather the storms when founded on the rock of fidelity, but not on the sands of distrust.

Whatever progress is made in our rural program will come largely as the result of education and organization.

There are said to be 3,424 spoken languages and dialects in the world, of which America has 1,624, Asia 937, Europe 587, and Africa 276.