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F POCKET SERIES NO. 430
d by E. Haldeman-Julius

Country for Profit

R. A. Power

B. S. 'in Agriculture

HALDEMAN-JULIUS COMPANY
GIRARD, KANSAS

TEN CENT POCKET SERIES NO. 430

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POULTRY FOR PROFIT

CHAPTER I.

THE OUTLOOK

When a business reaches the billion dollar mark per year, it is generally looked into by thinking people who like to know the facts of the case, and who want to know just why the business has reached such large proportions. In this little booklet I will endeavor to explain not only why the poultry business has grown so rapidly, but will also reveal the most important secrets that have contributed largely to its rapid growth, so that whether the reader is a farmer, a town lot fancier, or a student of economics, he or she will gain much by the reading and the studying of the principles involved.

The high cost of living has forced many people to economize to the limit, and reduce the family budget to the minimum. People in the small towns and villages, especially, have sought various ways of increasing their earnings, and one of the most popular methods re-

sorted to has been to raise a few chickens, thus utilizing the table scraps, and odds and ends, so that there will be no waste. It has been proved beyond a shadow of a doubt that chickens can be raised profitably by the person living in town, as well as by the farmer with his vast acres, providing the townsman knows a few essential principles in regard to the proper handling of the birds.

Poultry products are becoming popular more than ever before. This is due in part to the increased price of beef and pork. Eggs are an established part of the nation's menu, while the meat of the chicken is now within the means of most American families. Since these facts are recognized, there has been a revolution in the poultry industry itself to cope with the increased demand for eggs, meat, and breeding stock.

Many city people have taken advantage of the opportunity of raising chickens, and many an old packing box, or piano box has been relieved of its original purpose of encasing furniture, or other articles, and has done its bit to act as part of a shelter for housing some back-yard lot of chickens. What has been done,

can be done, and inasmuch as the value of the egg, or the carcass of the bird still maintains its high standard on the market, it stands to reason that the poultry industry is still in its infancy. Much more will be done in the future than has been done in the past.

Consequently, there is still one industry that is not overcrowded, despite the great number who have taken it up, either as a vocation, or as an avocation. When it is considered that New York City alone cannot get enough eggs to supply the demand during the fall and winter months, and is willing to pay, and pay dearly for breakfast eggs, and that the vicinity of Pataluma, Cal., finds it profitable to ship its eggs across the continent to put them on the New York market, it can be seen quite clearly that there are excellent possibilities in poultry, even in just a small back yard flock.

The remainder of this booklet will be devoted to showing the ordinary layman, who has had no previous knowledge or experience, how he can take a small flock, or a large flock, and turn it into pleasure and profit. However, one word of caution is necessary. Let no one attempt to venture upon a poultry enterprise

on a big scale at first. History has shown countless failures in such attempts, and history has a way of repeating itself. It is always wiser to start moderately, and work into it gradually. This method always proves successful if common sense and moderation are exhibited.

CHAPTER II.

THE POULTRY BREEDS

Before attempting to discuss the methods of raising poultry it is deemed advisable to first take up a discussion of the different breeds and their characteristics. Outside of a few fancy breeds, that are raised more for curiosity or show purposes, we usually think of the breeds of poultry as three distinct classes.

The first of these three classes that we will take up for discussion is what is termed the egg breed. This breed is usually represented by such birds as the Leghorn, Ancona, Campine, Minorca, or the Houdan. Of these five breeds, the Leghorn and the Minorca are by far the most popular. There are different varieties of all these breeds, but the White Leghorn,

and the Black Minorca are much more popular in their respective breeds than are any other variety. The other breeds are found scattered here and there, but the Leghorn and Minorca are easily the leading egg breeds. Both of these breeds have many birds with yearly records of over 300 eggs per year. Next let us consider a few of the important characteristics of these egg breeds.

These breeds are small, light of weight, very active, and very hard to confine in a small inclosure. The average adult bird of these breeds weighs about four pounds. They are neat and attractive in appearance, have clean shanks, and have large head parts, which are much more susceptible to being frosted in cold weather, than the other breeds.

The egg production of the egg breed is of the best. As has been stated, there are a great number of birds in this class that have records of over 300 eggs per year. Their eggs are white shelled, of good size, and rather long. However the meat of these birds, especially when matured, is very tough, and the active disposition of the egg breeds do not allow them to put on surplus flesh as with the other

class of birds. Quick maturity is characteristic of the egg breeds, however, and because of this fact, they make excellent small broilers when but a few months old. But it is useless to put them on the market for meat when mature, as they will not fatten like the heavier breeds.

The disposition of these breeds, as has been said, is active, nervous, and hard to confine. Therefore, for the person with a small lot on which to raise chickens, it would be well to choose a heavier breed that stands confinement better than these breeds. These birds are active in the house in winter, or on the range in summer, and owing to their natural tendency to roam, they are always uneasy when confined to a small yard. They also have excellent powers of flight, and can usually fly over a fence unless the fence is about eight feet high.

The egg breed, owing to the activity so characteristic to such breeds, makes poor sitters and mothers. It is very seldom that a fowl of these breeds can content herself to set on a nest of eggs three weeks, which is the time required to hatch the eggs. Their eggs are usually hatched under a general purpose hen,

or with an incubator. They make poor mothers, because they usually like to roam too far to properly look after their young.

Another point in favor of the egg breeds, however, is their early maturity. Usually these birds will mature in close to four months. This allows them plenty of time to get into laying condition in the fall, before cold weather starts, and birds that can lay eggs during the months of November and December are certainly an asset, as eggs always bring the highest prices on the market during these two months.

These birds will live on less feed than any other class because of their small size, and their great foraging ability. However, these breeds are not as hardy as the heavier breeds, and will not stand the cold as well, because of their lack of feathers, and large combs and wattles. These large head parts are easily frost bitten in cold weather, and when this happens the birds generally stop laying until they have recovered from the setback. With these few words on the egg breed characteristics, let us next consider the general purpose breed.

When we speak of general purpose breeds, we usually mean one of four different breeds.

The Plymouth Rock, Rhode Island Red, Orpington, and the Wyandotte are the four leading breeds of this class. Then there are quite a few different varieties of each of these four breeds, such as the Barred Rock, the White Rock, the Buff Rock, etc. These breeds are very good both as egg birds, and for meat purposes, and find favor where ever they go. I will attempt to analyze their characteristics, bringing out their strong points and their weak points, as I have already done with the egg breeds.

These breeds have been developed for egg production, and as a result, have many birds in the 300 egg class, as well as the strictly egg breeds. If any are to be disposed of, they have the ability to put on flesh and to bring a good price on the market for meat. When one realizes that usually one half of a hatch of chickens are males, and the other half females, it can be easily seen that the general purpose bird has an advantage, in the sale of the male birds, and of the surplus females, as they can be fed fattening feeds, and a good profit made from this source.

The general purpose birds make excellent

mothers and sitters. They have a broody disposition, and will set on the nest the required three weeks to hatch the chickens. They will also take care of their young as a parent should. In fact, one of the criticisms of this class of birds is that they are too broody, and are a nuisance in this particular. They are far more quiet than the egg breeds, and stand confinement with no apparent discomforture. They make an ideal bird for the back lot.

These birds are fairly good foragers, but take a little more feed to maintain their upkeep than do the egg breeds. They have smaller head parts than the egg breeds, and a heavier coating of flesh and feathers thus enabling them to withstand cold weather much better than the egg breeds.

These breeds, in most cases, have yellow shanks, long well rounded bodies, and weigh about six pounds at maturity. They are not as nervous or as active as the egg breeds, but require a month or two longer to mature and to get into laying condition, than the egg breeds.

We will close this discussion on breed characteristics with a few words on the meat breeds.

There are four generally recognized meat breeds. These are the Brahams, Cochins, Langshans, and the Cornish Game, with their several varieties. The adult meat bird usually weighs about eight pounds, but the male birds weigh even more than this, sometimes reaching twelve pounds or more. These birds are rather awkward and clumsy, in fact, so much so that they make poor sitters, as their awkwardness often causes them to break the eggs in the nest. They have an abundance of feathers and meat on their body, which makes them easy to winter. Generally speaking, the heavier the bird, the poorer the laying ability, and this is true with the meat breeds. They do not lay a very large number of eggs during the year, being raised mostly for their flesh, which is unsurpassed for table purposes. As is the custom with heavy animals, the meat birds are lazy and sluggish, do not roam far for their food, and consume a comparatively large amount of grain for this reason. The meat breeds take a longer period of time to gain maturity than any other class, the average time being about eight months. As has been said, they are primarily a meat breed, and it is for

this purpose that they are mostly used. They do lay eggs, however, and about 100 eggs per year is a good average. They, like the general purpose breed, lay a brown shelled egg, while the egg breeds lay a white shelled egg, which brings a higher price on every market in the country but the Boston market. The brown shelled egg brings the higher price on the Boston market.

CHAPTER III.

GETTING A START

We have now discussed quite minutely the good and bad points of the three main classes of birds. Each class, and each breed has its merits and demerits. The one who wants to make a start in raising poultry should choose the breed that appeals to his likes the most, and the one that he can realize the most success with, under the conditions that he will have to raise them. There is no best breed, whether it is chickens, cows, or hogs. They all have their good points, and their weak ones. It is up to each individual to pick the breed that appeals to him the most.

Granted that you have pretty near decided the breed that you want to use, let us see how we can secure our first birds, if we have none as yet to start with. There are generally three different ways in which we can secure our foundation stock. The first way is by buying adult birds and mating them, and raising the resulting chicks. Another way is by purchasing hatching eggs, either from a neighbor or from a regular breeder or hatchery. The third way is by buying day-old chicks from the various hatcheries, and raising these to maturity. Let us consider each of these methods separately, and thereby inform ourselves on the advantages and disadvantages of each method.

In selecting adult birds for breeding purposes, and thus relying on these birds to produce the hatching eggs, a few points are necessary to bear in mind, if one wants the best results. As these birds are to be the foundation of your future flock, don't buy them too hastily, and also do not try to buy the cheapest birds that you can find on the market, as you usually get just what you pay for. Therefore, the first thing to do is to look through poultry papers, farm weeklies, etc., or to inquire locally

from some neighboring breeder, and find out just what it will cost you for adult females. Having the desired breed in mind, it would be advisable to post yourself on the qualifications, and the disqualifications of this particular breed. Standard weight for the breed is an important consideration in this connection. If the standard weight for an adult female is five pounds, try to get females that weigh around six pounds. These qualifications can be found for every breed in the American Standard of Perfection, a book published by the American Poultry Association, and found in most libraries. Another very important factor is the health of the birds. No birds should be used for breeding purposes that have ever had any of the common poultry diseases, such as roup, chicken pox, etc., as their resulting chicks will also have a tendency toward this disease. Select nothing but healthy, vigorous birds, of standard weight and color, free from disease, of good body conformation, and not less than one year old. When pullets, or birds of less than a year old, are used for breeding, the result is a small egg, which hatches out a small, under-sized chick.

If you can get in touch with your State College of Agriculture, they can usually inform you of some reliable breeder who can furnish you with the kind of birds you want. In selecting the cockerels, or male birds, one very good way is to buy them from an unrelated flock, and buy some that are especially strong where the females are weak. For instance, if the females that you have purchased are a little light in color, it would be advisable to secure males that are a little darker in color than the standard calls for. It is never advisable to mate more than ten females with one male, because if more are mated, the fertility of the eggs will suffer. Many successful breeders even use two male birds with a pen of ten females, alternating one male in the breeding pen every other day. Thus the fertility of the hatching egg is doubly assured.

A cheaper method of securing the foundation stock is in buying the hatching eggs, but not quite as satisfactory as the first method. These eggs are usually sold by the sitting, amounting to fifteen eggs, or by the hundred. When buying by the sitting, one buys from a regular breeder, and pays anywhere from \$1.50 up to

as high as \$50 per sitting. It is not advisable for the beginner to pay either of these extremes, but to plan to buy eggs not over \$5 per setting. Then as you progress in the business, you can purchase males to mate with your females to gradually improve your flock. This method necessitates the use of an incubator, unless you can arrange with some friend who will loan you the use of his incubator. Of course, if you already have some mature birds, even of a different breed, you can set these eggs under these birds, when they become broody in the spring, and secure even a larger hatch than you can from the use of an incubator. Generally, a mature bird can set on about fifteen eggs, and hatch every fertile egg in the sitting. A more detailed discussion on incubation will be given in the next chapter.

The third way that one can secure a start in the poultry business, is by buying day-old chicks. This is an industry that has grown by leaps and bounds in the last few years. The price generally charged for these day-old chicks is twice as much as is charged for the hatching eggs. A fair price for 100 day-old chicks is from \$15 to \$20. Of course, the quality of these

chicks is inferior to the higher priced sittings of eggs, but if one is not so particular as to type and show purposes, this method is very satisfactory. The day-old chick business is founded upon the principle that it is not advisable to feed the chick for the first forty-eight hours of its life, because just before the chick emerges from the shell, it absorbs the remainder of the yolk of the egg, and it is exceedingly dangerous to feed the chick any food during that period, as the chick will be sure to experience digestive troubles, if any thing besides water and grit is given to the chicks for the first two days. Therefore, these chicks are placed in a well ventilated box and sent by parcel post often as far as a thousand miles, with no loss in mortality. For one that has no incubator or mature hens, this offers a very satisfactory method of starting out in the chicken business. There are commercial hatcheries all over the country that make a business of purchasing hatching eggs from raisers of purebred poultry, and hatching these eggs in mammoth incubators, selling the chicks as soon as hatched, in the manner described.

Thus, the one interested in getting a start

in poultry has an option on either of these three ways. The local circumstances of the purchaser will largely determine which method will be the best. But which ever method is used, let me caution you that too much care can not be given in finding a source that is perfectly honorable in their business dealings, as there has been in the past a considerable amount of unfair dealing on the part of some dealers in the poultry business, but I am glad to say that these people are fast being weeded out, and the tendency is now for honest, upright dealings in all three branches of the industry, as the dishonest people have found that their methods forced them out of the business. Not everybody will be independent of the incubator, however, so we will next discuss something in regard to the commercial incubator, also including and comparing the natural incubation of the egg.

CHAPTER IV.

INCUBATION

In order to get a better idea of artificial incubation, let us first examine a few facts concerning the way in which the hen hatches her

eggs in the natural process. The fertile egg is hatched when the egg is subjected to a heat over 100 degrees, F., for a period of about twenty-one days. The mother hen, by setting on the eggs for this period, will bring off her hatch on the twenty-first day, if she has been given ordinary care. Let us see what are the principles involved in this natural incubation, that we may the better understand the artificial method of incubation.

When the hen first becomes broody, and wants to sit, she might try to "steal her nest." This is another way of saying that she will try to locate some secluded spot, and after she has succeeded in laying a dozen or fifteen eggs, she will then spend nearly her entire time on the nest, until she proudly marches back to her old haunts with a small clutch of chickens.

It is a natural instinct of most hens to become broody in the spring of the year, to reproduce their kind. A constant desire to sit on the nest is a sure sign of broodiness. When one has the eggs to put under the hen to hatch, it is best first to try to secure a general purpose bird for this method, as they have been found the best, for reasons previously stated.

Now let us prepare a nest for the bird, so that she will have a good opportunity to do her best work. We can either partition off a part of the chicken house, or we can fix up a nest in another building entirely, such as a garage, barn, or any other building that we may have on the premises. Next let us take some soil, and make a round nest, over a foot in diameter, and four or five inches deep. Then we will dig out the center of the nest, so as to make it hollow in the middle, leaving at least two inches depth in the center. Then we will cover this earth with a few inches of cut straw, shavings, or leaves, and press this covering down to conform to the shape of the soil foundation. We can now place our eggs for hatching in the nest, and put the bird on them. However, best results will be obtained if we wait until towards evening before we place the bird on the nest, as she will be more contented then. Take the bird that you have chosen and place her gently upon the nest of eggs. If she is at all broody, she will be quite contented when she feels the eggs underneath her, and settle down to business at once. The hen should spend practically all of the next three

weeks upon the nest, the only time that she should be allowed to leave being the short time that she takes food and water twice a day. Having a quiet place, and giving her nourishment twice a day, she will be quite contented. The hen does not need any special ration during this time, other than one that is fairly heating. Corn is excellent during this period, supplemented with a few other grains, such as oats, wheat, etc. A sufficient amount of fresh water should be available, together with some kind of green food, if possible, such as cabbage or mangoes. The hatch will not be endangered by the hen leaving the nest to eat. In fact, it is beneficial to the eggs to be temporarily cooled, at least once a day, while the hen is off the nest for a while.

The hen has a habit of turning the eggs under her every day, not only removing their position from the center to the outside, and vica versa, but also turning them over, so that perhaps the part of the egg that was in contact with the nest one day, will be in contact with the hen's body the next day. Or, in other words, she turns it half way around. These are all peculiarities that we have to imitate in

artificial incubation, if we would be successful. Now that we have seen the process of the natural method of incubation, let us see how the ingenuity of man has successfully imitated the mother hen, and made possible the hatching of a far greater number of chicks than the hen can naturally hatch.

In the first place, there are a great many incubators on the market, some being made to sell, and others being made to use. How shall we determine the make to buy? That is not the easiest question in the world, if one has had no previous experience with incubators. Do not necessarily buy the incubator that is advertised the most. Sometimes incubator companies have to advertise extensively to do a sufficient volume of business. The safest way to choose an incubator, if you really intend to purchase one, is to get the advice of some one who is using one, and has had success with the machine that he has used. Some of the cheaper makes have the trouble of too varying a temperature, especially during the night. If one has to arise five or six times a night for three weeks to regulate the lamp to maintain a constant temperature, then the incubator

is more bother than it is worth. Therefore, find out the makes of incubators that are giving satisfaction in your own community, if you are intending to purchase one, and then send for one of a similar make. However, if you have not enough eggs to warrant purchasing one, then try to arrange with someone to loan you one, or to put your eggs in with some of theirs, so as to eliminate this expense.

There are in general two types of incubators, the hot water and the hot air, the latter being quite the more popular of the two. There are several different sizes of incubators, ranging from a fifty egg capacity up to a thousand egg capacity machine. An incubator with a hundred egg capacity is usually sufficiently large enough for the small poultry keeper. By running three or four hatches during the same season, a good number of chicks can be hatched.

There are a few requirements that must be fulfilled to realize the best results from an incubator. First and foremost, always follow the instructions that come with the incubator. The manufacturers of the incubator know more about their incubator than you do. Another thing that should be borne in mind is that you

must not expect every egg that is placed in the incubator to produce a chick. A very good hatch is about 75 per cent. Of course, this varies considerably, ranging all the way from nothing to as high as sometimes 100 per cent. Usually one can reasonably expect as high as a 60 per cent hatch, at least, and very often it goes considerably higher, according to the conditions under which it is run.

Moisture is a prime essential for the proper running of an incubator, and this should be provided for. If possible, arrange to run the incubator in a cellar, or some damp place. This can be aided, by springling water on the floor, etc. Care must be exercised in running the incubator that fire is guarded against, and some insurance companies make special provisions in their policies for such occasions, and make a slightly higher charge for their policies, because of the danger.

Another essential condition for a successful hatch with the incubator is proper ventilation. Most machines are provided with something for the admission of fresh air. It is also necessary that the room containing the incubator be aired frequently to admit fresh air, but not in

such a manner that the eggs will become chilled, or that too much air will be admitted so as to carry off the moisture. Most incubators carry proper directions so as to provide against this danger.

The third condition necessary for proper running of the incubator is the maintenance of a constant temperature. It is usually advisable to have the temperature about 102 degrees F. the first week, 103 degrees the second week, and 104 degrees the third week. Any serious deviation from 103 degrees will result in a poor hatch.

Now, then we will conclude this chapter with a few pointers on running the incubator during the hatching period. It is always well to run the incubator a day or two empty, so as to get the idea of how to best maintain the required temperature. Clean the lamp thoroughly before running, and then during the hatch, always tend to the lamp after the eggs have been turned, and never before, because if the hands are smeared with kerosene, some of this is bound to be left on the shells, which will result in a poor hatch. Do not allow the lamp

to be in a draft, and clean the wick every day, so as to prevent the lamp from smoking.

After the first few days, the eggs should be turned at least once a day, and even better, twice a day. This is to imitate the mother hen, who does this on the nest. If the eggs are not turned, then the embryo of the chick will adhere to the shell of the egg, and either die, or be crippled beyond hope.

We must imitate the mother hen again in the artificial incubation of chicks, in regard to cooling. We saw in the previous chapter, how the hen leaves her nest occasionally to take food and water, with no ill effects on the hatch. Likewise we must cool the eggs in the incubator. This can usually best be accomplished while turning the eggs. Five or ten minutes a day are usually sufficient for the proper cooling, unless it is near the end of the hatch, when twenty or thirty minutes can be used for this purpose with safety.

On the seventh and the fourteenth day, it is a good plan to test the eggs in the incubator, so that the infertile eggs may be removed. This is done by a process known as candling. Hold each egg up in front of a light and note

the appearance of the interior of the egg. This can be done by making a hole in a box, that will fit over a light or lamp, and then holding the eggs up to the light, showing through the hole, which should be in line with the flame. If the egg appears clear, free from any dark spots, then the egg can be taken out of the incubator, as it is not fertile, and will not hatch. However, if the egg shows a dark spot, about the size of a bean, and you can detect small blood vessels running from it, then you may be assured that the egg is coming along in good shape, and will hatch out in due time.

With these points well in mind, one will have little difficulty in properly running an incubator, providing he has a reliable machine to begin with. Of the matters considered in this chapter, probably the most important factor of all is the constant maintenance of a uniform temperature. Now, then, let us consider that the chicks are pipping the shells and are ready to start out in life. We will therefore consider the care of the chicks in the next chapter, until they are able to care for themselves.

CHAPTER V.

BROODING

Whether we hatched the eggs by means of an incubator, or bought the day-old chicks, if we have no mother hen to care for the chicks after they are hatched, we must take care of them ourselves. This is called the brooding period. Unless the hatch is quite late, which, by the way, is not desirable, we will have to arrange to supply some cheap, simple form of artificial heat, to prevent the young chickens from getting chilled. This is accomplished in several different ways, but we will only discuss the more common ways here.

There are several different makes of ready-made brooders on the market, but one can in a few hours spare time, construct a brooder that will answer the purpose. The chief part of the brooder is the source of heat. Usually these heaters can be bought for a few dollars, and placed in a good box supplied with a little litter on the bottom.

A common arrangement with brooder equip-

ments is to have two compartments, one where a hover is placed, and the rest of the brooder constituting a run for the chicks. The two compartments are usually partitioned off from each other, allowing just enough room at the bottom of the partition to allow the chicks to pass from one compartment to the other. In the hover compartment is placed the heater, and a metal canopy, so that the heat will be held down close to the floor, where the chicks are located. At first, the chicks should be confined to this hover entirely, because they are liable to get lost if they wander away from the hover, and consequently die from chilling. The temperature of the hover compartment during the first week should be about 96 degrees F., and each succeeding week it should be lowered by at least two degrees. This can be done by controlling the lamp, or what ever heater is used, or by gradually raising or lowering the canopy over the chicks. This method gradually toughens the chicks up, so that they can soon be let out doors. After the first week or so, they should be encouraged to get out into the other compartment for exercise, as this will aid in making them hardy. After the first few

weeks of the life of the chicks are past, they will need less care and attention. These first few weeks are the critical weeks of the bird's life. After the chicks get accustomed to the temperature out in the run of the brooder, it is advisable to cut a small hole at the run end of the brooder box, so that on pleasant days they can run outside on the ground around the brooder. In this case, however, they must not be allowed to run very far at first, and only for a short while until they gradually become accustomed to the practice.

Another important consideration in raising the young chick to maturity is the matter of food. Probably no other thing is responsible for such a high mortality in young chicks, as is improper feeding. We have learned in a previous chapter that it is exceedingly dangerous to feed the chick anything in the line of food for the first two days of its life. Many people are afraid the chicks will die if not fed immediately after hatching, and hasten to feed the chick all that it will eat. Unless the chick is endowed with a wonderful digestive system, it will succumb to this over-feeding through digestive disorders. It is permissible to put

a little grit before the chick at this time, because the chick has no teeth, and never will have, so they eat the grit, and this grit passes down to the gizzard, which grinds the food in place of grinding with the teeth, as with other animals. Fresh water is also good for the chick during this period, as the water quenches their thirst, and makes them livelier. Towards the end of the second day, it is well to feed the chick a little sour skim milk, or buttermilk. Sour milk is superior to the sweet milk for two reasons. First, the sour skim milk has bacteria that aid in digestion, and secondly, it will be found that it will be hard to keep the milk sweet all the time, and by feeding sweet milk part of the time, and then letting it become sour, digestive troubles are liable to develop. Hence, by having it sour all the time, no danger from this source will be experienced.

Now, we are ready to consider what kind of grain we shall feed the chick. On the third day we can start to feed a little grain. What is known as pinhead oatmeal is very good to start the young chick out on. Some feed hard boiled eggs and dried bread for the first feeding with good results. It is important to note

that only enough of this first solid food should be fed that they can clean up in a short time. Keep them hungry, and remember that it is much safer to under feed than to over feed.

For the next week, or so, a scratch ration, composed of cracked corn, pinhead oatmeal, cracked wheat, together with a little grit, and finely ground oyster shells can be fed. This can be fed in the litter, so that the chicks have to exercise to get it. In fact, that is just what we mean by a scratching ration; one composed of whole or cracked grains, mixed in with the litter, so that the chicks will have to scratch for their feed, and thereby obtain the exercise necessary to their health. If a little green feed of any kind can be added, so much the better. Green grass is excellent to throw into the chicks.

After two weeks or more of this kind of feed, it is well to supplement this ration with a dry mash. A dry mash is a feed composed of ground feeds, that require no work on the part of the bird to grind. Feeds like wheat bran, ground oats, corn meal, etc., are good examples of such feeds. Wheat bran is especially well liked by these young birds, and it is recom-

mended that they be allowed to have this as a large part of their dry mash. This feed should not be fed in the litter, as the cracked grains, but placed in some such container as a pan, or better still, in a regular feed hopper. It can readily be seen that if this finely ground grain was scattered in the litter, it would be largely lost and wasted. Also, if put in a pan, the pan must be low enough to be accessible to the birds, and covered over in such a manner that the chicks will not get in and walk around in it. A homemade hopper can be easily built, so that the chicks can just get their heads in, and no more. Do not forget that the sour skim milk or buttermilk must be fed all this time. In fact, this part of the feed should be fed right through the bird's life, as it supplies the animal protein, which is so necessary to the proper development of the bird's growth.

Now, then, just a few more words in closing this chapter on brooding. We should aim to toughen the birds up as quickly as possible, so that when they are about two months old, no artificial heat will be necessary, and if the birds are of a late hatch, this can be accomplished much sooner. Encourage them to get

out of doors as quickly as possible, and to get green feed.

A very serious cause of death among young chickens is from disease. White diarrhoea is probably one of the most common of these diseases, and unfortunately, one of the most fatal. If the droppings are of a white, watery nature, with an offensive odor, you may well believe that this disease is present, and the thing to do is to get the birds thus affected out of the way at once, and disinfect with some good disinfectant. However, if the precautions are taken that are set forth in this booklet, no danger of this dreaded disease can be anticipated.

Now that we have got the chicks along through the brooding period, let us next consider just how we shall raise these chicks to maturity, so as to get them ready to lay eggs, or to make a good meat carcass.

CHAPTER VI.

REARING CHICKS TO MATURITY.

One of the chief things to remember in raising young chicks to maturity is that we must keep them growing at all times. A check in

their growth will retard their growth severely, and this must be avoided by the one that wants his chicks to get into winter laying condition before the cold weather comes. We will now consider a few important factors that are necessary to bring our chicks along to rapid growth.

Of course, where free, unrestricted range is possible, the chicks will progress faster than when cooped up in a small yard. If no free range is possible, it will be found advantageous to at least let the chicks run about the yard of the lot. In this manner, they can pick up considerable food in the shape of worms, insects, etc., that will furnish valuable growing food for them. Let me repeat again the necessity of having milk in some form as a constituent of the chicks' food. Any food that comes from an animal, whether it be milk or a part of the animal itself, is highly essential to the growth of the chick. Such foods contain an element known as vitamines, which scientists have recently discovered contribute greatly to the growth and upkeep of a growing animal. Vitamines are also found to some extent in green feeds, such as carrots, cabbages, mangoes, etc. Even well cured alfalfa hay contains this im-

portant element. It is quite obvious, therefore, that if the chicks are out roaming around the yard or range, they not only secure the exercise that is necessary for their proper development, but they also pick up insects, as has been mentioned, and considerable green feed, such as grass, weeds, and various other odds and ends.

If a fair sized lot or range is to be had, then it will be found a great aid to make a little house for the chicks to live in during the nights on the range, although care must be exercised that they be protected from enemies, such as rats, crows, skunks, weasels, owls, etc. Such a house need not be expensive at all if it be made out of an old packing box that will protect the chicks from rain and enemies.

Another quite essential feature for the promotion of the maximum growth of the chicks during the warm summer months is the provision for shade. If there are some trees about the yard or range, this will answer the purpose satisfactorily, but if there are no trees where the chicks roam, then some artificial shade is advised. Some people plant corn for this purpose, allowing the chicks to range

among the corn plants when the corn has grown sufficiently high. The chicks will not harm the corn, so two ends can be accomplished by this means. Others provide this shade by gathering old brush together and making an artificial shade in this manner. During the hot days of summer, the chicks will suffer from the heat to a marked degree if exposed to the hot rays of the sun. An ideal method used on many farms is to place the chicks in the orchard, where there is an orchard, and let the chicks roam in the shade of the orchard trees.

Where birds are necessarily confined to a small yard, one method that has been worked out satisfactorily, is to fence the yard off into two or more divisions, and to plow up the land. Then various crops can be sown at different intervals, so that when one range, or division, is consumed by the chicks, they can be turned into another division where the forage crop is up and ready to be consumed. As soon as the chicks are turned out of the first lot, this lot can be immediately plowed up again, and some more seeds planted, so that this range will be ready for the chicks when the second lot furnishes no more nourishment for them. It might

be added here that many town flocks of full grown birds are maintained, by this very system, and it has worked out very nicely. Such grains as buckwheat, rye, oats, peas, and soy beans are all excellent crops to sow in this manner, using oats and peas for the first crop, because they mature quicker than the other crops mentioned.

If the chicks have access to a fair amount of range they will not need a great deal of grain as a ration. However, it is always advisable to feed some grains to keep the birds continually growing as fast as possible. It has been proved conclusively that the first gains made by the growing chicks are the cheapest, in regard to the cost of feed, so let us keep this in mind during the time when we have them on range. To accomplish this end, it is well to have a dry mash of the kind of grains that are fairly rich in the substance called protein always available in the hopper. The reason for this need of protein feed is simply that the growing bird uses this element largely in the growth of its body. Protein goes to make up the bony framework of the body, and the muscles, tendons, etc. Therefore, feeds

containing protein, or a fair amount of it at least, should be ground up, and kept before the birds. Oats, bran, or middlings, wheat and barley, are all fairly rich in protein, and some of these feeds, in a finely ground condition, should be included. It is also well to add some corn meal, although this feed is not high in protein, it supplies a great amount of energy for the bird to move around with. As soon as the birds are old enough commence to feed cracked grains. As has been said in a previous chapter, the bird has no teeth, so must rely upon grit to grind this feed in the gizzard.

Therefore, unless the birds have a wide range, this grit must be artificially supplied. Then the birds can help themselves to their needs, and suffer no digestive troubles. Fresh water must be before the birds at all times, and if no natural source is available, such as a running stream or brook, then fresh water must be placed in some sanitary container out in the yard or range.

From four to six months from the time the chick is hatched, it should be ready to start laying eggs. The chick first has to get its growth and maturity, and then there is an apparent

resting period for a few weeks, to allow the organs of the bird to get ready for egg production. We will next consider how we shall feed these birds, granting that we now have them ready to produce the eggs.

CHAPTER VII.

FEEDING FOR EGG PRODUCTION

As has been said in an earlier chapter, to get the maximum egg production, three things are essential. They are: good foundation stock, proper housing, and proper feeding. We may have the best chicken house in the world, and the highest priced stock obtainable, but if we do not feed our birds the right kind of food, all our other efforts are in vain. Let us consider first a few facts concerning the composition of the egg, and then we will be able to understand more intelligently why we should feed the laying bird these certain feeds.

About 14 per cent of the composition of the egg is protein, 10 per cent fat, and the remainder, except the shell, is water. Now it must be remembered that the ordinary protein supply of most food materials is relatively low.

Corn contains about 7 per cent digestible protein, oats and barley about 9 per cent, and bran about 12 per cent. The roughages are considerably lower, while green feeds carry about one or two per cent protein. From this we can get an idea about the necessity of watching the feeding to the extent that this valuable constituent is sufficiently supplied. Furthermore, the hen that is producing these eggs needs a fair amount of this protein for further growth and body upkeep. Another point worth remembering is the fact that the bird, or any other animal, through natural instinct, always sees to it that the first requirement, that of bodily growth and upkeep are maintained first with the food they are given, so that to get the most from the birds, let us not hold them down to just a maintenance ration, but give them enough in addition so that they can not only maintain their body requirements properly, but also have enough food material to yield a product.

The ration for the laying hen should consist of the two forms of grain; first, the whole or cracked grains that comprise the scratch ration, and which should always be thrown in the

fitter, so that they will have to exercise to get it, and second, the dry mash, or a mixture of various grains that are ground up and fed in hoppers. As has been stated before, this grinding of the feed is simply to make it easily digestible. Furthermore, such finely ground grains usually contain a higher percentage of protein than the other grains. By this is meant that feeds like bran, oilmeal, etc., are quite a bit higher in protein than are grains like corn, wheat, barley, etc.

The next important feed requirement for the laying hen should be a mineral feed of some kind. With many farm and city flocks this important consideration is entirely ignored. Many times the reason for poor egg production rests solely in the lack of proper mineral foods. When it is considered that about 12 per cent of the entire egg is composed of shell material, it can readily be seen that the feeding of this material is important, and worthy of attention. We can give the laying bird all the rich feeds that we can buy, but if we withhold from her the material that goes to form the shell, then the bird will be unable to lay her eggs because she has no shell to cover the egg. There are

different sources of mineral food, but all authorities are agreed that oyster shells form the most economical source of shell material. These oyster shells can be bought at grocery stores, or poultry supply houses. This material should be placed in a box or, better still, a hopper, where it will be accessible to the birds at all times. Clam shells, lime rock grit, and dry bone in small sizes are other sources of mineral matter, and possibly even better results can be obtained by adding a small quantity of these other feeds to the oyster shells, but plan to have oyster shells as the basis of the mineral supply. Charcoal is sometimes fed to chickens with good results. Some birds eat this, while others will not. It is claimed that charcoal aids in regulating the digestive system of the fowl. One can try this out to satisfy his own ideas in this regard.

Animal feed is the next class of feeds that we will consider in the feeding of our laying flock. It is the testimony of poultrymen that when they hang up a fresh piece of meat in the poultry house, such as a part of a calf, an old horse, rabbit, or any other such carcass, the birds always respond with a much higher yield

in egg production. This simply reinforces the statement made in a previous chapter, that animal protein of some kind is needed by the birds if they are to do their best. If meat is supplied, care must be exercised that it does not spoil before it is consumed. It is better to put in small pieces at a time, so that the birds will eat it up quickly. If this meat can be run through a grinder of some kind, it will be eaten much more readily than if it has to be torn to pieces by the birds. Milk of some kind is also an animal protein, as has been repeated here several times. Meat meal or tankage contains a high percentage of protein, and as this is an animal product, it is an economical feed.

Water is our last class of feeds for the laying hen. This can be supplied in two ways. The first way is from the water direct, placed in some kind of a pan that is covered so that the birds can not soil the water, by perching on the edge of the pan, etc. Fresh water should be before the birds at all times, as we have just learned a few pages back that about 65 per cent of the egg is composed of water. Besides this, the birds need water for their body

requirements. In the winter when the birds spend practically all of their time in the poultry house, and can not have the opportunity of picking up grass, and other green feeds, we can supply water to them in the form of some kind of green feeds, such as sprouted oats, cabbages, mangoes, or any other vegetables to be had. All these feeds are to be recommended highly, as they not only are composed largely of water, but add bulk to the ration, and aid in keeping the bird laxative. Sprouted oats can be raised in shallow pans, and given to the birds in small quantities at a time. It is usually advisable to have several pans of sprouting oats say, for instance, one for every day in the week, so that a fresh supply can be given to the birds every morning. Nearly every supply house has patent oat sprouters to sell at reasonable prices. Cabbages and mangoes are also fed extensively to the laying birds during the winter months, but provision must be made before hand to raise them in the summer, and to properly store them in the fall, so that they will be fresh when taken out of storage for feeding. One very good way to do this is to pile

them together in a basement and cover them with sand.

Let us next consider a few practical grain rations, that have been tried out by successful poultry men. : These rations are always classified as scratch rations and dry mash rations. One very good ration is as follows: Scratch Feed, 3 parts cracked corn, 1 part wheat, 1 part oats, 1 part barley. Dry mash, $1\frac{1}{2}$ part bran, $1\frac{1}{2}$ part middlings, 1 part corn meal, 1 part meat scraps or tankage. Another very good practical ration is composed as follows: Scratch feed, 3 parts corn, 1 part oats, and 1 part barley. Dry mash, one part each of bran, middlings, ground corn, ground oats and meat scraps. These feeds should always be measured by weight, and not by bulk.

Now, then, just a few words in regard to the feeding of these grains. Always send the birds to roost with full crops. This is especially important during cold weather. It is much better if they be allowed to fill up on scratch grain rather than dry mash. The scratch ration is more bulky than the mash feed, and helps in keeping the bird warm. In fact, many successful poultry men close the

hopper of their dry mash ration during the afternoon, and thus make the birds take the scratch feed in the litter, thereby encouraging the birds to obtain exercise, also.

We will close this chapter with a brief discussion on a recent development in the system of feeding birds. This is in regard to the introduction of artificial light. This practice has successfully passed beyond the "fad" stage and is now being used by successful poultry men all over the country. By supplying this extra light, the working day is thereby lengthened to the extent that the light is prolonged, and consequently, gives the bird a day similar to a summer day in length. The birds, by having this extra period of light, work just that much longer, and as a result, they are able to make more eggs. Everywhere this system has been given a trial, it has been found a paying proposition. One very common method in supplying this light is by connecting the alarm clock to the electric lighting system and setting the alarm at a period around four or five o'clock in the morning. This throws on the light in the chicken house, and then when the owner arises in the morning, he can go out and turn out the

lights if it is light enough to do so by that time.

Thus we have considered the main points in feeding for egg production. While we have some of these important feeding principles still fresh in our mind, let us in the next chapter consider feeding birds for their flesh, because one very important part of the poultry business lies in the feeding of birds for meat. In the ordinary flock of birds, there are always some that we want to dispose of, such as the male birds and the culls of the females. If we know how to fatten these, we will be that much better off financially.

CHAPTER VIII.

FEEDING FOR MEAT PRODUCTION

The primary object in feeding birds for the market is to get them well covered with flesh, so that they will be plump all over. It is the difference in the weight of the bony skeleton and the weight of the well filled out carcass that determines the amount of edible meat on the bird. Hence our object in this process is to put on as much surplus flesh as we can.

Usually there are three classes of birds that are put on the market for meat purposes. They are roasters, broilers, and old hens. Roasting chickens are very common on the market, and the object is large size with a tender carcass. These can be either pullets or cockerels, or capons. They are often put on the market during the late fall or early winter, and bring the highest prices at that time.

Broilers are birds about three or four months old, forced along to a rapid growth, but still possessing tender flesh. This offers an excellent way of disposing of the male birds, since usually the sex of the young birds can be distinguished at about two months of age.

Old hens constitute the third division of the meat classes placed upon the market, and are generally composed of those birds that are through laying, or the ones that have been found to be unprofitable. Their meat is usually much tougher than the first two mentioned classes, and consequently used in city restaurants for meat pies, etc.

In fattening birds for the market, a somewhat different procedure is followed than in feeding for egg production. We found that in

feeding for egg production we encouraged the birds in every way possible to take all the exercise that they could get. We do just the opposite in putting flesh on the birds. We restrict their exercise as much as possible, and pen them up in small quarters so that their feed largely goes to nothing but putting flesh on their bodies. It can easily be seen that when birds are roaming around, exercising more or less all day long, that there is little chance for them to get very fat.

Now as to the nature of the feed for fattening these birds. We will still need some protein feeds, but not as much as in the case of feeding for eggs. However, we will need feeds which are quite rich in carbohydrates and fat. These are easily obtained and are relatively cheap. Corn is an excellent ration for this purpose.

Since the birds are confined to small pens, and exercise restricted, it becomes evident that digestion becomes an important factor here. Therefore, it is advisable to have plenty of grit before the birds at all times, so that their food will be properly ground.

We must not get the idea, just because we

are feeding for flesh, that the birds should be stuffed to their limit with feed. To do so, would be to have a lot of the birds off feed, and consequently we would be worse off than not to feed them enough. It is best to plan to feed them about three times a day, and to feed them all that they will clean up in a certain length of time, as from twenty minutes to half an hour. Some are successful in feeding only twice a day, instead of three times a day.

Corn is usually the basis of fattening rations and should always have a prominent place in the ration. Here again, milk in some form is excellent to supply some of the protein that is needed. Corn must be supplemented by other grains, such as oats, barley or middlings, provided they are in a finely ground condition. Some feeders follow the plan of feeding part of these grains in the form of a wet mash, using the skim milk to moisten the mash, but when this is done, care must be exercised in seeing that the mash is cleaned up at every feeding, otherwise the trough will become mouldy, with bad results to the birds.

There has come into use within recent years

a method of fattening birds by what is known as crate fattening. This is practiced considerably by some of the big packing companies. The birds are bought up from the surrounding territory and brought into the central fattening station. They are then placed in small pens, or batteries, as they are called, and fed a ration composed largely of skim milk and corn meal, with a few other feeds added, such as red dog flour, bran, etc. This is mixed into a thin, pasty feed, and fed the birds from a trough running along in front of the pens. They are fed this way for a period of two weeks or more, and are then taken out, dressed, and sold to the big city markets as milk fed chickens, and always bring several cents a pound more on the market than other poultry, because of the tenderness of the flesh. In this process, even greater care must be exercised in watching the feeding of the birds, and only feed that they will clean up in about fifteen or twenty minutes.

Crate feeding has appealed to many town lot poultry men, who have bought up culls of the neighboring territory, put them in small crates or pens, and fed them this milk feed for a

few weeks and then marketed them, securing the top prices on the market.

We have now discussed the most important items connected with the feeding of the birds for various purposes. Let us now examine the living quarters of the birds, and see if we can improve the housing conditions in which the birds live during the winter months.

CHAPTER IX.

COMMON FAULTS OF POULTRY HOUSES

If you were to take a trip through the surrounding country, with the intention of inspecting the living quarters of farm poultry, in general, you would discover some of the most wretched houses imaginable. All of our intelligent feeding would be of little use if we penned our chickens up in a coop with little sunlight, poor ventilation, cold, damp floors, drafty sides, and foul, damp air. It doesn't cost any more to build a poultry house with correct principles involved, than it does to build one that lacks these essential features. The birds care very little about the appearance of the house. They want fresh dry air, free-

dom from drafts, a warm floor, and plenty of sunshine.

One of the most common faults with most poultry houses is the matter of ventilation. When poultry raising was first looked upon as a promising business, many men erected houses containing a large proportion of glass. It was thought that the sunshine was the only necessary feature for the birds, under winter conditions, and they made their chicken houses veritable hot houses. But the results were not as had been anticipated. It was found that while the houses were fairly warm in the day time, they cooled off considerable at night, and poor results were obtained from this wide range between the day temperature and the night temperature. Then another step was taken by these pioneers. They decided to heat their houses artificially. But even this system did not bring forth the big yield of eggs that had been hoped for. In all this expensive procedure, a very important element had been overlooked, and that was the matter of fresh air.

About twenty years ago, there was devised a poultry house that was a radical departure

from this previous type of house. It was called the open front house, and gave surprisingly good results, where all previous types had failed, as regards egg production. This house was constructed briefly as follows: It was of the shed roof type; that is, had just one slant in the roof, the highest pitch being in front, and the lowest pitch in the rear. It had plenty of window light in the front side, about half of the south side, or front, being devoted to windows. The rest of the front was left open, save for a thin muslin curtain to cover the open space during bad weather. These curtains were tacked to wooden frames, and swung on hinges, so that they could be swung in to cover the open space at will. The most remarkable thing about the system was that the hens began to lay eggs, when proper feeding was obtained. Later, this led to the conclusion, now generally accepted, that the birds can stand considerable cold, providing it is not a damp cold, and that the temperature of the house is considerably more uniform between night and day than was the case with the glass house.

As a result many poultrymen who are mak-

ing money with poultry use some such system as the open front house with various changes. They have found that fresh air is an absolute requirement to get the best results. But this matter brought out a few more interesting facts. It was found that dampness was a big drawback to egg production in cold weather. If the damp foul air, breathed out by the chickens, could not escape from the poultry building, the chickens did not have the health and vigor that they did in well ventilated houses. Consequently, the curtain helped considerably in allowing the fresh air to come in, and for the foul air to go out. The damp air, being heavily laden with moisture, settled to the bottom of the house, where the birds scratch, and unless the curtains extend fairly well down near the bottom of the house, the damp air has not a very good chance to escape, and consequently, there will be more or less moisture even with this type of house, if the damp air has no chance to escape.

Another common fault with a great many poultry buildings is that they are drafty. The walls should all be air tight, except the south wall, or front, as has been mentioned. If

there is a draft in the house the birds will contract a cold, and will take a prolonged vacation from their job of laying eggs. It is not uncommon to find a crack in the wall, just behind the perches of the house, and when we consider that in such houses the birds stay all night in a direct draft, it is little wonder that they appear so unhealthy.

There are a few other common faults that we will consider before bringing this chapter to a close. It is often found that there are too many birds cramped into a small house. It is a good plan to allow at least four square feet of floor space for each bird that you winter. For instance, if we were planning on having one hundred birds this winter, we could have a house built twenty-five feet long, and sixteen feet deep. Multiplying these two figures, gives us four hundred square feet. Dividing this product by four, gives us allowance for one hundred birds. Then, lastly, the floor, itself. Too often the floor is cold. If a cement floor, we should cover it with about six or eight inches of good, clean, dry litter. Even if made of wood, a good substantial litter should be maintained. The best litter is probably of

straw, but peat moss is fast gaining favor at present, where straw is not obtainable. With these few objections to guard against, let us next discuss just how we shall go about constructing a poultry house that will overcome the faults mentioned.

CHAPTER X.

HOUSING POULTRY FOR PROFIT.

In discussing plans for a modern poultry house, let it be mentioned at the outset that this does not necessarily mean that our modern house will be expensive, any more than the one that is built on old ideas. In fact, many of the older houses were much more expensive than the modern houses of today. As long as the poultry building includes the necessary principles for the birds' well-being, and this can be accomplished with little added expense, that is all that is necessary.

In commenting upon the common faults of most poultry houses in the previous chapter, we found that they generally lack one, or all of such items as ventilation, dryness, sunlight, adequate floor space, protection from rats,

protection from extremes of temperature, and simplicity of design. In arranging for a better house for our birds, let us plan to keep these factors in mind, so as to get the most from our birds.

Whether we are to build a new poultry house, or to remodel an old one, we can design it so that all of these factors will be in evidence. If we have an old poultry house, or if we can buy cheaply an old poultry coop, that has fairly good lumber in it, we can probably do the remodeling somewhat cheaper than if we have to buy all new lumber. If we do purchase all new lumber, it is not advisable to get cheap lumber, but buy the first grade, because it is necessary that the walls of the house be air tight, and this is seldom possible with cheap lumber.

We will first consider briefly the possibilities of remodeling an old poultry house. Probably the first thing that we will do is to cut some openings in the front of the house for windows and curtains. From one-half to two-thirds of the front should be devoted to window lights. The remainder should be left for the muslin curtains to allow for fresh air to enter,

and for foul air to pass out. These should not be cut up too high, but start at least a foot below the roof, and have the window lights extend at least half way down the front of the house. The curtains should extend quite a bit further down to the bottom of the house, to allow the foul air sufficient opportunity to escape.

We should next examine the other walls and roof to make sure that they are not drafty, nor leak water. Usually these walls can be patched up with other boards, or heavy roofing paper, so that no draft is possible. In northern climates, where weather below zero is common, best results will be obtained by having two thicknesses of walls, to protect against cold nights. Roofing paper is excellent to put between the two walls, or even on the outside to aid in this matter. If the roof leaks, it might be advisable to re-shingle part of it, and here again roofing paper helps in making it weather tight.

We must next examine the floor. If a wooden floor, then it is advisable to raise the house up from the ground about six inches, supporting it with posts. Some people follow

the plan of placing old tin pans or plates upside down at the top of these posts and then setting the house on, thereby eliminating the danger of rats, as the rats cannot climb over the tin pans. If the house is to be a permanent structure it will be found best to lay a concrete floor, as this floor will last for all time, and will not need repairing. Such a floor is rat proof, but must be covered with a good litter.

If a new house is to be constructed, then it will be best to follow the principles laid down for a remodeled house to the extent of the open front, weather tight walls and roof, good floor, and dry living conditions. Wood is the most popular material that is used in building chicken houses. Generally, 2 by 4s placed about two feet apart are used for studding. Matched lumber or rough lumber aided by battens or roofing paper compose the walls, this making them free from drafts. The matched lumber is generally placed on the studding horizontally. The lumber should be dry and free from knot holes, and well nailed together.

For the roof, shingles can be used, or some of the prepared roofing paper on the market

now has given good results. For quite flat roofs, two or three ply roofing paper is preferred to the shingles.

We will now discuss the common types of poultry houses. The most popular type and the cheapest, is the shed roof house. This house is usually about eight feet high in front, slanting gradually to the rear to a height of about five feet. It just has one slant, and, as has been said, is cheaper to build than other types of houses. It is also much easier to keep warm in the winter, because of the low roof, which means less space has to be heated by the birds. Instead of curtain front houses in such a type of poultry house, many poultry men are using bafflers to let in the air. These bafflers are similar to a blind used to shade living houses in some parts of the country. They are composed of slats less than an inch apart, and placed in a slanting position, rather than vertical or horizontal.

The gable roof house is another popular type. This differs from the shed roof type of house in that its roof comes to a peak, with two pitches, such as most modern bungalow dwelling houses have. This system leaves

a larger space at the top of the house, and is not as warm as the shed roof type. It also costs more to build. However, it possesses the advantage of allowing a straw loft to be placed at the top of the house, which is an excellent way to get rid of excess moisture, when it can be expelled no other way. The straw has the power to absorb the excess moisture during the winter, but should be removed in the spring, as it furnishes an excellent hiding place for mites, an insect that we will discuss more thoroughly in a later chapter.

The half monitor type is not so popular as the two types already named, and costs considerably more than either of the two previous types discussed. This type of house has an arrangement similar to two shed roof houses, facing each other, the rear house being somewhat higher than the front house. Of course, such houses have their advantages, but for the one who would start with moderation in the poultry business, the shed roof, or the gable roof type will be far more attractive. We have discussed the types of houses in this chapter. The fixtures, or chicken furniture, has so far been omitted. Let us go inside of our modern

chicken house now, and see what is needed in the line of equipment to complete our efficient egg production.

CHAPTER XI.

INTERIOR FIXTURES FOR THE LAYING HOUSES

There are certain devices that save a great deal of labor for the poultry man, and also give the birds a more contented atmosphere. We will start in with the floor. I want to repeat here, briefly, what has already been said in regard to the litter on the floor of the house. Birds with cold feet cannot be healthy. If the floor is covered with a six-inch litter of straw, or shavings, the floor will be warm, and they can be given a scratching ration that will make them exercise for their food. By all means do not fail to have a good litter of some kind on the floor during the late fall and winter months.

The birds are rather peculiar creatures, when it comes to retiring for the night. They do not seek a place to lay down, but they look for something that will resemble a limb of a tree, where they can perch during the night. Man

has therefore supplied something along this line, by erecting round poles, made of wood, so that the birds will have a convenient place to rest for the night. A few precautions must be guarded against here, however, as very few poultry men have given their birds suitable perches yet. The perches should be round, about two inches in diameter, and erected on the same level with each other. Too many perches are arranged in a ladder formation, having the rear perch the highest, and the front perch the lowest. When the birds get ready to go to roost, there is always an argument as to which bird will have the rear roost, as they all want the highest place to roost, or perch. If the perches are all on the same level, then there is no preference, and things are more peaceful at roosting time. We should plan on allowing about ten inches per bird for perching room. Plan to have a distance of about fourteen inches between each perch, or pole. Arrange these perches at the rear of the house, running parallel with the rear wall.

All modern poultry men have what is known as a dropping board under the perches, so that

the droppings will not fall in the scratching litter and soil this part of the scratching area. These dropping boards are usually placed about six inches under the perches, and extend as far forward as the perches do. This makes the job of cleaning the poultry house quite a simple operation. It is advisable to sprinkle some sand over the dropping boards to absorb the moisture and bad odor.

We have to give the birds a comfortable, well secluded place to lay their eggs. This is sometimes done by placing the nests, or the part facing the front wall, covered over with a board, that can be raised by means of a hinge, when collecting the eggs. The hen can be made to enter the nest from the rear, and if conditions are so that the nest is darkened, then the hen will prefer this place to any other place in the house. Nests can also be placed along the front wall, underneath the windows, or on either side of the house. However, up to the present time, below the dropping boards seems to be the most popular place for the nests with most poultry men.

Every poultry house should have a dust box. This is a box partially filled with dust or fine

soil, and placed in the front part of the house, so that it will be in the sunlight. The birds appreciate such a device, and will use it generously, as this aids them in fighting off insects that prey upon them.

Suitable containers for food and water should be provided, and kept clean. The drinking fountains are of various designs, and one can buy these very cheaply. They are usually jars or cans inverted, so that the water will come out in a small opening at the bottom, just large enough for the bird to stick its head in. The food containers, for the dry mash are generally of the hopper kind, having a box-like container with a trough at the bottom, so that the food falls down into the small trough by gravity as the birds consume it. Thus, in a good sized hopper, a week's ration of mash can be put in the hopper without further attention.

CHAPTER XII.

LICE AND MITES

While we have interior fixtures of the poultry house fresh in mind let us turn our attention briefly to the study of parasites that live on the

hen, and that are detrimental to her progress. There are quite a few various insects that depend upon the hen for their existence, but for our purposes we can consider them in a general class of lice and mites, as the treatment for each class is practically the same.

Let us first consider the case of lice. These insects live upon the body of the hen, eating the flesh, and dead skin as it peels off. They never leave the hen, and if conditions are favorable, will lay their eggs on her body, thus multiplying rapidly if precautions are not taken to look after this matter. It is always well to treat a setting hen for lice before she is placed on the nest, and then once or twice after she has started her job, because these lice will very readily transfer from the mother hen to the young chicks, as soon as hatched, and a great many chicks die every year from these lice. It is a splendid idea to grease all baby chicks, especially those hatched by natural incubation, with blue ointment, around the head parts, and wings. The hens can also be greased in a similar manner over the whole body.

Here is where the dust box that we discussed briefly in the previous chapter comes in, as the

birds, wallowing in the box of dust, smother the lice, by shaking the dust into the pores of the bird's body. A rather recent method of combating lice on birds is now fast gaining favor. This is the Sodium Floride treatment. This is best used only on a mild day, however, as the birds are quite wet after their treatment under this method. The treatment is usually given as follows: Take an ordinary wash tub, and fill nearly full with not too cold water. For every gallon of water in the tub, add one ounce of sodium floride, obtainable at any drug store. Dip the hen in this solution, tail first, being sure to have a firm grasp on her so she will not splash the water over. Dip her in this manner about three times, so that the solution comes up in under the feathers. This method has been found to be very effective. In extreme cases, where the lice are very bad, another similar treatment can be given each bird about a month later. Other good materials to apply to the bird's body, besides those already mentioned, are sweet oil, vaseline, and lard.

Now we come to another pest that is a little harder to get rid of than the body lice. The

mites, which are so bothersome to most poultry, have the peculiar habit of staying on the birds only during the night, creeping down at daylight to some crack or crevice to hide until darkness again forces the birds to go to roost. These mites are even more destructive in their work than are the body lice. They are generally found in any crack or crevice about the perches. Here they can obscure themselves, and be very close to their prey when ready to begin their work at night. While the lice are eating insects, the mites are sucking insects, and suck the blood of the birds during the night. When the mite is hungry, he is of a yellowish color. When filled up, however, with a good meal of blood, he is red. The mite is very small, and is similar in construction to a spider.

If a flock of chickens are believed to be suffering from mites, and there are very few, by the way, that are not troubled with these pests, then it would be advisable first, to white-wash the poultry house thoroughly, not only the roosting quarters, but the walls and other fixtures inside the house. Kerosene is quite frequently used to spray the nests with, but has

not the lasting power that some of the coal tar products possess. Recently, wood preservatives have been used for the purposes of ridding the poultry house of mites, and very good results have been obtained from this method.

CHAPTER XIII.

POULTRY DISEASES

It is not to be supposed that poultry, living under the artificial conditions that man has ordained for them, can be entirely free from diseases. In fact, very few poultry men can say that they have not had some kind of disease affect their flock. Most diseases are contagious, so it is important to be on the watch for any symptoms of anything out of the ordinary. Sanitation plays a very important part in keeping the flock free from diseases, and clean methods should always prevail. Do not allow the house to become filthy and foul smelling. It is always a good precaution to disinfect the poultry premises at least once a year with a good whitewash or some strong disinfectant. This is about the same as taking out a life insurance policy for the flock.

Dampness is probably about the most common cause for diseases. Disease germs always multiply more rapidly in damp, dark quarters. Therefore the advice given in an early chapter about keeping the poultry house light and well ventilated, will bear repetition. If one is accustomed to watching his birds as to their physical condition, he will be able to notice the symptoms of any on-coming disease in time to isolate the bird thus affected, before the disease has a chance to spread, if it is a contagious disease. By watching a bird thus isolated, and also looking very carefully for any further symptoms in the flock, one can do considerable in checking the disease. The old adage, "An ounce of prevention is worth a pound of cure," certainly is true in this case.

Indigestion is a very common ailment with poultry, especially with those birds that are fed heavy for egg production. Usually a little laxative material placed in the drinking water, and making more of their ration a scratching ration, in order to induce exercise, is probably as simple and effective a treatment as can be given.

Roup, chicken pox, and canker are also very

common poultry diseases. These three diseases are all supposed to be due to a small organism which multiply very rapidly, and acts mostly on the skin of the bird. These diseases are not similar in appearance, however, despite the fact that their source is the same.

Roup attacks the mucous membrane lining of the nose, and eye. These parts become red and inflamed, and infected with a pus formation. This disease is spread largely through the drinking water, and is prevalent in the spring when it is damp. Keep the birds healthy and vigorous, provide proper ventilation, and have things as dry as possible, and little should be feared from this source.

Chicken pox makes its appearance on the comb and wattles, and also on the face of the bird, by small pockets on these parts. The remedy is the same in this case as has been stated for roup, except that if only a few birds have contracted the disease, each bird can be taken in hand and given individual treatment, by removing the crust over the sores, and applying a good disinfectant.

Canker manifests itself by pale yellow spots on the inside of the mouth. This is best

treated, as soon as discovered, by scraping off this light yellow material, and applying a good disinfectant.

All of these last three named diseases are caused by the same conditions, and by avoiding these conditions very little trouble will be experienced in this malady. Birds that have had any of the above mentioned diseases should never be used for breeding purposes, as their offspring will have a predisposition to the same ailment.

Sometimes the perches are placed too high in the chicken house, and the birds have to jump too far to reach the floor. When this happens, a hard lump often forms on the sole of the foot. This is sometimes called bumble foot, and is usually evident in the chicken's walk. Nothing but cutting out the hard part, and washing the sore with a good disinfectant can remedy this condition.

While frosted combs could not be called a contagious disease, we will discuss this matter briefly, before closing this chapter. In severe weather, when the temperature is below zero, and there is considerable dampness in the poultry house, frozen combs are quite frequent.

This is especially true of the lighter birds, which possess larger head parts than do the heavier breeds. When a bird has its comb or wattles frozen, it will stop laying for a considerable period of time, usually a month at least. If birds are found on a cold winter morning with frozen combs, they should be treated with snow or cold water, to take out the frost, and then treated daily with vaseline until cured. It is well to provide a pole up near the roof of the poultry house, upon which a curtain, made of burlap or some old cloth, is arranged so that on cold winter nights this curtain can be lowered directly in front of the front perch. This will tend to protect the birds from the excessive cold, by conserving the heat given off by their bodies during the night.

CHAPTER XIV.

CULL THE FLOCK

When the poultry industry was being established upon a business foundation, many of the leading breeders devised the idea of measuring the egg capacity of their birds by actually counting the eggs laid by their best birds. This

practice is still followed by many poultry breeders, but is a job that consumes considerable time, and it can be seen that only those who are constantly with the flock could be able to do this. But within the last few years, there has been developed a system whereby one can tell by the external appearance of the bird just about what her ability as an egg producer will be in one year. A Mr. Hogan was the first man to notice these characteristics and his method has been so far perfected that most poultry keepers are quite familiar with it, and thereby saved the bother of trap-nesting.

This culling process, as it is called, is best accomplished during the months of August and September. By picking up each female in the flock at this time, except of course the spring pullets, one can find out which birds are still laying, and which ones have already quit. It has been in the past too much the custom of farmers to go out into their poultry flock in the fall of the year, and pick out the birds that had not yet started to moult, and whose appearance was ragged and rather uncomely. These birds would be picked out by the farmer, or in many cases his wife, and sent to market

as meat birds, and they would keep the birds who had already moulted, and whose feathers were in splendid color at that time. However, in the light of recent facts brought out by this culling process, we now know that these rather ragged, unsightly birds were our best layers, and should have been kept because they had been working continuously, not taking the time off to quit laying and look pretty, as had their more lazy companions. There are still a great number of people that cling to the old method, but the light is dawning, and it will probably be but a short while before practically everyone interested in poultry will know of this culling method, and who can in a brief examination of a bird tell quite readily whether she should be kept or sold.

We will now discuss the various methods by which a bird can be judged as to her egg laying ability. No one sign can be relied upon, but the different signs taken together should form the final judgment. One can usually tell something about the bird by her general habits. The good layer is a busy hen. She is happy, singing, and not as afraid of the attendant as is the loafer. As this hen usually

eats more than the non-layer, she is usually found busily scratching in the litter for the food material with which she makes her eggs. The good layer is always the first off the roost in the morning, and the last one to go to roost at night. Watch out for the timid, crafty hen that stays on the outskirts of the flock. She is lazy, inactive, and the quicker she is sent to the butcher, the better. Another very good aid in forming judgment as to the ability of the birds, is to go around the roosts at night, after the birds have all gone to roost. Feel of their crops. The good layer that has been working hard to get together food material for her eggs will have a full crop, while her lazy companions, that are not so interested in producing eggs, will have a fairly empty crop at this time. Little items such as I have mentioned here will tell considerable about the ability of the birds. It is a fact that there are any number of birds in America that lay only a few dozen eggs per year, but are kept the year round, because the owner has had no way of knowing the producers from the non-producers.

As has been already brought out, the heavy

layers molt late. Often they continue laying up until October and November. If you have hens nearly naked of feathers in October or November, just rest assured that these are your most profitable birds, and that they did not quit laying to put on a pretty coat of feathers in the middle of the summer. You should mark these birds in some manner, so that you can use them as breeders for the coming winter, because, if they are mated with a cockerel, that is the son of a good layer, your strain will be greatly improved, because these birds will transmit their laying ability to their offspring.

A good laying hen will have a long, broad, and deep, rectangular body, with top and bottom lines parallel. This large sized body is essential to the hen, so that she will have sufficient room to digest enough food to make her eggs. A broad back is also necessary for proper room for the reproductive organs that make the egg. The head of the good layer is always of a healthy appearance. The good layer has a short stubby beak, or bill, and gracefully curved, as compared to the long shapeless bill of the loafer. The eyes are

prominent, and stick out similar to a shoe button, rather than sunken in. The combs and wattles are red, and not pale, as in the non-layer.

The good layer will not have the bright colored yellow, after she has been laying for a short while, that the loafer will have. This is because she uses this yellow pigment in making the yolk of her eggs, so that as her laying period proceeds, she becomes more and more faded in her bill, eye lids, ear lobes, and shanks. Consequently, if some of your birds have a faded appearance, don't condemn them, they are the hardest workers in your flock. Furthermore, the hen with worn toe-nails is one that should be kept, because this shows us quite clearly that she uses them considerably in scratching for her feed.

Now let us examine the anatomy of the hen a little more closely so that we can get some more evidence for or against the hen in question. One of the most common ways, nowadays, in picking out the laying hen is to examine what is known as the pelvic bones. These are found on either side of the vent, towards the rear of the body. They are gen-

erally called the lay bones by most poultry men. They both mean the same. Now these bones tell a vivid story. These bones are usually measured by the fingers, or as to how many fingers can be inserted between the two bones. A poor layer will have a thick, grizzly covering of meat over the lay, or pelvic bones, and just about the width of one finger can be inserted between them. This shows us quickly that she is not a layer. Then, lets compare this poor layer to the good layer. Here we find something different. There is just a slight covering over the pelvic bones. The meat is thin and spare. If we feel of the bones, we find them quite thin and pliable. We next try to insert as many fingers between the two bones as possible. We will find that we can insert at least two fingers, and probably three, if our fingers are not too wide. The heavier the hen is laying, the wider the distance between the bones.

Now, while we have the bird, let us look a little further into this bird's conformation. The keel bone, or rear end of the breast bone, can be used as one unit, and the lay bones as the other unit of measure. See how many

fingers you can get between the lay bones and the keel bone. Even for a small breed you should easily get in the width of three fingers, and for a larger breed you should get in the width of four fingers. This measures the hen's capacity for feed.

This distance between the lay bones and the keel bone is called the abdomen. We can tell considerable about the hen by the texture of the abdomen skin. If the skin is tough, and meaty, we can say right away that she is not a good hen, but if the skin is tender, pliable, and soft, then we can feel assured that she must be kept in the flock.

These are the principal features in selecting the laying hen. If one can get these principles in mind, and go out into his flock and separate the hens into two flocks, and keep these two flocks apart for a while, he would discover some interesting things. For instance, cull out the poor hens and put them in one pen. Possibly you will have the largest pen, when you have finished, composed of the poor layers. Keep the good hens in another pen separated from the poor ones. Keep feeding the same feeds as you had been doing

before you separated the flock into two pens. Now, for a few weeks, compare the daily egg record of the two flocks. You will find that there is about as much difference as between night and day. Now, to bring the lesson home a little more forceful, just figure out what it costs you per day to keep these star boarders, and see if you think culling is a paying proposition. Most every agricultural college has a bulletin printed on culling giving essentially the same information as I have given, but they usually have quite a few illustrations that will make the procedure a little more clearer than I have done.

CHAPTER XV.

PRESERVING EGGS FOR WINTER

It was deemed advisable to add a few words in this little booklet in regard to collecting eggs when they are cheap, and storing them away for the part of the year when eggs are high priced. During the months of March, April, May, and June eggs are the cheapest on the market, due to the fact that the birds are all laying during these few months, and conse-

quently, the supply far exceeds the average demand. If we pay fifteen cents for a dozen of eggs in April, or May, and then in December we pay sixty cents or more for the same product, then it can easily be seen that it is a paying proposition to store some of these cheap spring eggs for winter use. We will now take up the method of storing these spring eggs for our December breakfast.

To make this process about 100 per cent efficient, it is best to candle the eggs first, before storing them away. This process of candling has been explained in a previous chapter. If the air cell, at the blunt end of the egg is small, then we may be sure that the egg is of recent origin. If the contents look clear, and the yolk is not loose, inside the shell, then we need have no fears as to the edibility of the egg. One very good way, for one not accustomed to candling, is to examine a few in front of the light, and then break a few in a dish, so as to get the proper relation fixed in mind. If we can secure eggs that are infertile, we will not have to throw out hardly any eggs in this process.

In preparing to preserve our eggs for winter,

there are several methods used by people who follow this practice. Some just pack the eggs in sawdust in a box or barrel, but this method is not always reliable. There are two standard ways of preserving these eggs. One is in using waterglass, and the other is the use of lime water solution. Both methods are reliable, but the first named method seems to be the more popular of the two. In either case, earthen crocks or wooden pails are the best containers. Neither of these solutions affects them. A three gallon container is large enough to preserve ten dozen eggs. For this sized container, about six quarts of the solution will be necessary.

We will discuss the waterglass method first. Procure the amount of waterglass that you will need for this year at a drug store. Use this at the rate of one pint of waterglass to nine pints of water. Before mixing the two liquids, boil the water, and let it cool. Then mix the two liquids, in the proportion stated, and place in container. Then add the eggs, (about ten dozen to this mixture), and store in a cool place. Be sure that there is about two or three

inches of the solution above the eggs, and add a little water occasionally to replace the water lost by evaporation.

The lime solution is mixed a little differently. Slack about two pounds of quick lime in a small quantity of hot water. After this has slacked, add it to about two gallons of water, and then add one pound of salt. Stir this in a thorough manner, and then allow the mixture to settle. There will then be found a sediment in the bottom of the solution. Pour off the clear liquid, and use this as the preservative material. Then keep the same as directions given for the waterglass preparation. In this manner, one can have table eggs the year round at a reasonable price.

CHAPTER XVI.

SELLING THE PRODUCT

We have discussed the main points to be considered in raising various poultry products in this little booklet. However, much of our success in the poultry business will depend on our ability to obtain the top-prices for our products after we have raised them. In fact, this

is the cry all over the country now among the farming population. The various agricultural agencies that have heretofore spent considerable time and effort in teaching the farmer to raise a large quantity of good products, have apparently accomplished this result, and now these same agencies are trying to organize the the farmers into selling their products so that they can receive a higher price for them.

The farmer usually has no time to devote to the special marketing of his crop, as he is too busy raising farm products, so attempts at co-operative marketing have been made. There have been many failures in this method in the past, but now the farmer realizes that this system is really his only salvation, and he is receiving the idea of co-operation in a better mood than he did in the past. However, for the one living in town, with but a small flock of birds, more time can usually be devoted to this end of the business, with splendid returns. Many town lot poultry keepers can sell all the eggs that they can get just around to their neighbors, who are usually glad to pay a little more than the market price for the assurance that

the eggs are strictly fresh. However, if one has a fairly good yield of winter eggs, and is not content to sell the eggs to his neighbors at around market price. there are other methods that can bring much higher returns.

Some poultry raisers get in touch with local or neighboring hotels and restaurants, and agree to let these parties have their entire output of eggs at a certain margin above market price. For instance, it is a common method to make an agreement with such parties to sell them their eggs at ten cents above market prices. If the market quotations for fresh eggs were thirty-two cents for a certain day, the hotel keeper would pay forty-two cents, if the eggs were delivered on this day. Usually, the restaurant or hotel is glad to pay this premium over the market price, because he takes quite a chance with store eggs, in that some of them are often stale, and this is a matter that reflects against his business. Also, if such an agreement can be made, the hotel or restaurant man can advertise the fact that he serves nothing but fresh eggs, which is good business for him.

When one is getting a big yield daily, he can usually plan to sell his eggs by the case to city commission men, who will always pay a good premium over local markets. If one has not enough eggs to sell a case once or twice weekly in such a manner, this difficulty is often overcome by combining with neighbors who are willing to take the proper care in producing clean, fresh eggs for market. However, such neighbors must be in sympathy with what is expected for fresh eggs, and who have the courage to refrain from putting in eggs that are not clean and fresh. If one case is sent in to these commission men and the quality of the eggs is not of first class, quite a dockage will be deducted from the check, and your reputation will thereby suffer. Never wash eggs that are soiled, but use them in your own kitchen, as the washing will remove the natural bloom, or fine powder that is found on the untouched egg. One can secure clean eggs by keeping the bedding in the nests clean.

There is always a splendid opportunity to sell hatching eggs in the spring of the year, if one has had the foresight to get started in pure-

bred poultry. There is always a large demand for hatching eggs and most hatcheries can not fill their orders. For the one engaged in the poultry business, even on a small scale, this offers a splendid opportunity, especially when eggs are selling cheap on the market, as they do in the spring of the year, to divide the mature birds up into small pens of about ten females to one good male bird, and sell these eggs at anywhere from \$1.50 a setting to as much as you can get. The higher the quality of the stock, the more money one can demand for such hatching eggs.

Then there is another good source of revenue from selling adult birds for breeding purposes. If your flock is composed of good individuals, you should experience little difficulty in selling your surplus birds from \$5 up. A little well planned advertising is often a good thing to do, to let people know what you have got for sale. Often an advertisement in the local paper, or a rural weekly will bring in many inquiries in regard to the birds or eggs that you have to sell.

Probably a cheaper way of advertising, if you

really have good birds, is to show a pen, consisting of four females and one male, at some of the neighboring poultry shows. If you can succeed in winning a premium, this will be a splendid factor in your efforts in selling breeding stock. It is usually permissible to place a little card on the outside of your pen at the poultry show, giving your name and address, and stating that you have breeding stock for sale, or that you are now taking orders for hatching eggs in the spring.

CHAPTER XVII.

IN CONCLUSION

I have tried to explain in this little booklet that there is a splendid opportunity for one to engage in the poultry industry, whether it be on a large scale or a small scale. There is considerable pleasure as well as profit in this work, for the one that is posted on a few of the essential principles, as has been laid down in this short treatise. It will probably be well to repeat a few facts that should be remembered first, however, before closing.

Do not expect to make a great amount of

money from your poultry the first year. Getting started right in the poultry business will cost something, so for the first year, if you just break even you will do well. Plan to learn as you go along. Every poultry raiser should take at least one poultry journal, to keep posted on the latest facts concerning the business. These journals always carry a great amount of advertising matter in regard to stock for breeding and in regard to poultry house equipment, etc. Many useful ideas can be secured from pretty near every issue of a standard paper.

Get acquainted with the other poultry people in your own locality. This is especially true in regard to those who have the same breed that you have. If your locality boasts of a poultry association, become a member of this association. You can then get much valuable information in regard to your business.

Get in touch with your state agricultural college, and especially with the poultry department. Write to them and ask them to send you all the bulletins that they have published on poultry, and tell them to place you on their

mailing list, so that any future bulletins that they may publish will be sent you free of charge. Then the U. S. Dept. of Agriculture has many excellent bulletins on different branches of the poultry industry that are worth sending for. It is located at Washington, D. C. Another splendid thing, if you can succeed in interesting others in your community, would be to send to the Motion Picture Lab., U. S. Dept. of Agriculture, Wash., D. C., and have them send you their film on culling, entitled, "Select the Laying Hen." It certainly brings out in a splendid manner, just how to cull your flock. Most any moving picture house would be glad to run this reel free of charge. The only expense of securing this film is the transportation charges from Washington, D. C., to your home town.

With these parting words on the betterment of your flock, remember that poultry work has its ups and downs, like any other business. However, for one willing to inform himself on the business, a very pleasurable and profitable experience may be anticipated.

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