S F

487

P8

1909

Class SF 487

Book -P8

1909

DON'T KILL THE LAYING HEN

A BOOK DESCRIBING AND EXPLAINING THE POTTER SYSTEM OF
SELECTING LAYING AND NON-LAYING HENS, ALSO RECORD-
ING AND ILLUSTRATING HIS INVESTIGATIONS AND
DISCOVERIES CONCERNING THE DISEASES
OF THE EGG-PRODUCING ORGANS

James
BY
T. F. POTTER

THIRTEENTH EDITION

COPYRIGHT 1909
BY T. F. POTTER

PUBLISHED BY
AMERICAN POULTRY JOURNAL PUB. CO.
CHICAGO, ILLINOIS

623
36

SF487

P8

1909

Thos. H. Potter

191994

✓

TO WHOM IT MAY CONCERN

The original reading matter and illustrations in this book are fully covered by United States copyright, and the same has been registered in the United States copyright office, Washington, D. C. Anyone infringing this copyright is liable to prosecution to the full extent of the law covering this subject.

T. F. POTTER

CONTENTS

	Page
Preface	7
The Object of Secrecy.....	9
How the Egg Grows.....	11
How Nature Controls the Laying Organs.....	12
The Secret of the Potter System.....	15
How to Pick Out the Non-Laying Hen.....	18
How to Determine the First Stage of Egg Development....	22
To Know How Far the Hen is Toward the Laying Point....	25
How to Pick Out the Hen That is Laying.....	28
To Know the Hens That Are the Most Prolific Layers.....	28
To Know How and When to Cull the Non- and Poor Layers Out of the Flock.....	35
To Know the Ones to Sell and the Ones to Keep.....	42
Why Early Spring is the Best and Most Practical Time to Cull the Poor and Non-Layers Out of the Flock.....	43
How to Tell the Hen That Has Laid Out a Batch of Eggs, and Other Information Regarding Setting Hens.....	44
The Best Way to Break Up the Broody State.....	48

	Page
How Eggs Can Be Produced in Winter, and Some of Nature's Laws Regarding Egg Development Explained	51
How the Laying Organs Are Affected When the Hens Are Infested With Vermin.....	60
How to Avoid Wintering Hens That Are Likely to Be Poor Winter Layers	61
How Overfeeding Before Egg Development Starts May Reduce the Egg Production.....	64
The Laying Hen Should Be Educated—When, How and Where	68
How to Separate the Poor Layers From the Good Without Handling, Or How They Will Separate Themselves....	69
How to Buy Hens in the Fore Part of Winter, That Would Make Good Winter Layers, and Sell Them Again at a Good Profit in the Spring.....	73
How Roup and Similar Diseases Affect the Laying Organs of Hens; Also How the Laying Organs Become Disabled By Other Causes.....	74
Ten Ways to Suspect Hens That Are Not Laying.....	102
Three Ways to Prove Their Laying Condition.....	102

PREFACE

IN presenting this book, containing the results of many years of investigation among fowls, I have been greatly encouraged by many practical poultrymen who have led me to realize that my investigations were really revealing some new truths in reference to poultry culture. I must confess that when I first took up this work, there was no hint or suggestion that so many hens had defective egg-producing organs; and I believe this is the first book which has attempted to point out a way to detect and determine these defects.

My first booklet, entitled "Don't Kill the Laying Hen," was made short and concise, so it might be easily understood. Many important points were intentionally omitted pending further investigations, as I did not want to advance any theories until I had carefully tried them out myself. After two years of almost constant observation of my own flock, and after collecting the specimens which are shown herein, I feel sure that poultry keepers will not only gain some new points from this book, but will also see reasons for many actions in their hens which they have noticed, and hence will be ready to accept what I have to offer.

I do not pretend to give in this book a complete treatise on the care of fowls; but simply aim to give an account of my discoveries in regard to egg formation and development. There is yet much to learn about the hen and I hope that every purchaser of this book will join me in studying how to eliminate the non-laying hen, which will most certainly increase our poultry profits.

THE OBJECT OF SECRECY

LAWMAKERS believe it just and right to make laws that protect an invention, in order that the inventor could not be robbed by others that have expended neither time nor thought on the invention. Also, by not having protection the would-be inventor would have no incentive or courage to put forth his best thoughts and energy to perfect the invention that might prove to be of great value to the public and to himself. Therefore the patent laws were enacted.

Certain articles can only be protected by copyright. This is protection to a certain degree, and no further; as far as this law reaches it is very strong. Beyond this point the author is at the mercy of the imposing public.

In my case a portion of my time and best thoughts for the last twelve years have been spent in investigation along this line on the subject that is taken up in the booklet.

I fully believe the public is able and willing to pay for this valuable knowledge, and thus remunerate for time and thought spent.

HOW THE EGG GROWS

THE two organs that perform the most important part in producing the egg are the ovary and oviduct. The ovary is attached to the back bone, and is over the one joint in the back (or very close to the joint), which is about the center of the body. The oviduct starts from the ovary, laying in folds on the left side of the back bone, and extends to the point of egg delivery, and if the duct were unfolded it would be 18 or 24 inches long.

The ovary is the organ which forms the germ that eventually will be the full-grown egg. Its part of the work is to mature the yolk, and when it fully reaches this condition the outer covering of the yolk ruptures and allows it, with its more delicate inner covering, to drop out into the mouth of the oviduct. It then passes through the oviduct, and in the first 5 or 6 inches of its journey it receives its coating of albumin, or what is called the white of the egg. The albumin is brought in by circulation and stored in cells in the oviduct, and as the yolk passes through the albumin secreted is gathered by the yolk.

After this part of the work is finished the two substances have to be sacked and sealed. For the next 6 or

7 inches of its journey this sack is growing around it, and in the last few inches of its journey the shell is formed; then the egg is laid and the work is finished.

When the hen is laying regularly under natural conditions shortly after an egg has been laid another yolk is received into the oviduct and repeats the same process.

If the hen should be laying an egg every day it would make this journey every twenty-four hours. The ovary is the most important part of the organ, and governs the quantity of eggs laid; as the organ becomes impaired very easily and loses its full power to produce the germ that is to be developed into the full-grown egg, often the germ that has been produced becomes weakened and cannot develop and after a time withers and dies, thus causing a diseased condition. This partly explains why some hens produce two or three times as many eggs as others under the same care and feed.

When we consider that the egg contains two distinct parts and the delicate covering required to hold the substance, it must surely take a very complicated piece of machinery to produce it, and it is not to be wondered at that it is easily thrown out of working condition, to which reference is made further on.

HOW NATURE CONTROLS THE LAYING ORGANS.

In order to better understand why it is possible to separate the non-laying from the laying hen, it is quite necessary for one to become somewhat familiar with the

laying organs of the hen and how they are controlled by nature's laws.

The laying organs of the pullet grow as she matures, and when she has become full grown the laying organs are fully developed, but are in a dormant or dry state. They continue in this state until egg development takes place. Egg development might start as soon as the pullet reaches full maturity if conditions were right, but, if not, would continue in this dormant state until conditions were right to start egg development. This development is dependent upon favorable or unfavorable conditions. Egg development starts by a stimulated circulation, or what might be called a secondary circulation. This circulation progresses no faster than it can be spared from the body, and hence egg development may be fast or slow. This point will be more fully taken up under another head.

In order that the reader may better understand, it must be remembered that before any egg development takes place, or while the pullet's or hen's laying organs are in a dormant or dry state, the organs are very small and contracted, showing no signs of circulation. But when egg development begins numerous veins that have been lying dormant start to develop. At first they are so small that they cannot be seen with the naked eye, but enlarge and increase in activity as development increases, and the hen starts laying, provided conditions were not changed so as to retard or delay the development. However, it is the circulation that is bringing the entire laying organs into action or full working order.

While these organs are developing there is a corresponding relaxation and expansion of the organs, which continues during egg development. When the full developed point is reached the organs are many times larger than while in the dry state. Now some of the once tiny germs (no larger than a pin head) have developed to the full-grown yolk, ready to rupture and be taken into the oviduct, where it receives its coating of albumin, is sacked, sealed and coated with shell material, and delivered in a marketable condition.

When full egg development has been reached the time has not been spent in developing just the one yolk, but several have been started and are in different stages of growth. When the full developed stage is reached all functions that have anything to do with egg production are fully prepared to do the task appointed by nature.

Ligaments that were once contracted have now become relaxed; veins that were lying dormant have become expanded, and in proper condition to transmit the substances necessary to the growth of the egg.

The ovary sack that was very small and contracted in the dormant state has now, in the fully developed state, become greatly enlarged, or large enough to hold from six to ten various sized yolks. The intestines that occupied this space when the laying organs were dormant have had to take another position, allowing the full ovary sack to occupy its space. The yolk that is to take the journey through 20 inches or more of oviduct to complete the work must not be crowded, and the ligaments that

were holding the intestines well up have become relaxed and allow the intestines to take a low position, leaving room for the egg that is to pass through the duct. If the description given has been well understood it will be seen that conditions with the laying are much different from the non-laying hen, and by becoming familiar with these conditions the laying or non-laying hen can be known.

THE SECRET OF THE POTTER SYSTEM.

The information contained in this booklet is but the revelation of nature's own law relative to the egg-laying functions of the hen and is the result of careful investigation and many years of close study in this line.

Every hen has what are known as lay bones. These two small bones are connected to the under part of the frame of the back bone, and are joined nearly their entire length by ligaments and muscle tissues. In the ordinary hen they are about 2 inches long, and at the extreme end of the back bone they turn inwards, projecting about one-half or three-quarters of an inch, pointing towards each other. By referring to cut No. 1 the reader will readily see just where these bones are located, a little below and on either side of the egg vent the ends of the bones showing prominently under the skin. These bones are so fastened to the frame by tissues that they are slightly movable, and they are firmly attached farther back to the main frame of the back bone and the bone is

Fig. 1

Showing Full Dormant State.

Fig. 2

Showing Full Laying State.

A.—Abdomen Sack.

B.—Points of Lay Bones.

Fig. 3

Showing Laying Organs of Fig. 1—
Full Dormant State.

L.—Ovary.

Fig. 4

Showing Laying Organs of Fig. 2—
Full Laying State.

O.—Oviduct.

so jointed (see cut No. 3) that it can spread and give room as required for egg development, or as the eggs become larger and more numerous.

The secret of selecting laying hens is by the examination of these lay bones. It is upon their laxness or rigidity, their position, whether closed or open, that the laying condition of the hen can be determined, as is explained in detail in the following pages.

HOW TO PICK OUT THE NON-LAYING HEN.

The "Lay Bone" Test—Test No. 1.

In selecting the laying or non-laying hens from a flock it is, of course, necessary to make an examination of each hen, and the best time to do this is shortly after they have gone to roost. In order to make a thorough examination the most convenient method is to first grasp the hen by the legs with the right hand, thrust her head and neck under your left arm, pressing your arm towards the body so that her head may be held securely, allowing the body to lay somewhat on the arm. Then take hold of the legs with the left hand, and your right hand is entirely free to make the examination.

As was mentioned in a previous paragraph, the position and condition of the lay bones largely determine the laying or non-laying condition of the hen. The distance between the bones, whether they are lax or rigid, and the condition of ligament between the bones, whether it is in

a contracted or relaxed condition, will determine very closely the dry or developing conditions of the laying organs.

I shall suppose, now, that you thoroughly understand the dry or dormant state of the organs and the full laying or developing conditions, and you will be able to understand why these conditions that I explain further on are to be found in the hens as described.

Method of Measurement.

For ease and convenience of measuring the distance between the lay bones I have found nothing better than the fingers (your fingers you always have with you), and by following out my method of holding the hen this will be found the quickest and best way. The size of the fingers varies in different persons somewhat, and this must be considered. Further, the lay bones of hens that have laid one season are usually a little farther apart in the dry state than pullets' are before any egg development has taken place; also the distance apart varies a little in different breeds; but by following closely my directions in practice the unit of measurement will be found sufficiently exact to make the selections.

If you do not care to make a very thorough examination a fairly good test can be made as they sit on the roost, and if one is found that you are suspicious of it can be handled as has been described (Test No. 1). For example, if the lay bones are found in an almost closed position, as is shown in cut No. 5, allowing but the width

of one finger between them, if they are found to be quite rigid and do not yield readily when placing the points of thumb and finger between them gently trying to separate them, also if you find by pressing lightly in between the bones that the ligament is in a contracted state, the skin quite thick and hard above and below the ligament; also if the space between the hip bones, just above the point of delivery, is found to be very narrow and contracted, it will be safe to conclude that the hen's laying organs are in a dry and dormant state, as in cuts Nos. 3, 13 or 14.

Test No. 2, Or the Bowel Test.

To have further proof of the hen's condition a second test may be applied by opening the hand and reaching up from the lower part of the abdomen with the fingers on the right side and the thumb on the left side. By sliding the hand up, allowing the ends of the thumb and fingers to follow along the lower edges of the frame of the back bone, or between the breast bone and the frame of the back. Now, when your finger ends and thumb are about one-third the distance up the body, or in the soft and boneless part of the body, your thumb and finger ends are very close to each side of the ovary and egg sack. However, if the laying organs are in the dormant state, as the lay bones have indicated, the point in question will be found, by gently closing the hand, to be quite empty. Now close the hand gently and draw it back to the lower point of the abdomen, still closing the fingers and thumb, and you will find that you have nothing between them

Fig. 5

Showing the Back-bone, With the Projecting Lay-Bones Nearly Closed.
This is the Position of the Bones in the Non-Laying Hen.

but an empty abdomen sack, which indicates that the laying organs are in the dormant state, and thus gives us further proof of the hen's condition.

The hollowness, emptiness and gauntness on each side of the egg sack (see cut No. 1) shows that it is empty, and the empty abdomen shows that the intestines are well up in the back, as is their natural position when the laying organs are in a dry or dormant state. This empty abdomen sack, as I see fit to call it, is there to receive the intestines when the hen is full of eggs or in laying condition. I do not mean to say that a hen in this condition will never lay again, but it does show that the laying organs are in an inactive state. All hens get in this condition in the molting season, or when she has laid out her batch of eggs and been allowed to sit on the nest for six or eight days, which time it takes for the laying organs to go back to the full dry or dormant state, and when in this condition a hen could not be expected to begin laying again for three or four weeks, which point is more fully explained on page 44.

HOW TO DETERMINE THE FIRST STAGES OF EGG DEVELOPMENT.

Test No. 1.

If upon examination the lay bones are found somewhat more than a finger's width apart, and by placing the thumb and finger between them and gently trying to separate them they seem to show a little laxity, and also by

pressing the finger lightly down between them you find the ligament to be somewhat more lax than in the entirely dry state, and the skin above the ligament seems to be thinner and softer, also the skin above the point of delivery, and surrounding this part, is found to be more lax than in the full dry state, it is quite safe to conclude that egg development has started and circulation in the organs has taken place. The ligaments having relaxed somewhat and the cartilage softened between the joints, allow bones to spread and give a little. This first stage of egg development (See cut No. 6) is not very easily determined, as circulation is too slight to give very much outward sign, but as the development advances signs that have been described will be more prominent and readily detected. If undecided, allow a week to pass and then make another examination, and if egg development has started the signs will be more prominent and a better decision can be made.

It might be stated at this point that the circulation that develops the egg is not a positive or continuous one. It might be called a secondary circulation, and if the body fell short of substance, or had no surplus to spare for egg development the flow would be retarded until the body again had an excess. Thus it can be understood that egg development can make a start and be checked or retarded at almost any point; so it may be understood that if no advancement is being made more time must be given for development.

Fig. 6

Showing the Ovary and Oviduct in a Stage of Development, in Healthy State.

TO KNOW HOW FAR THE HEN IS TOWARD THE LAYING POINT.

The "Bowel" Test, Or Test No. 2.

If in making an examination the lay bones are wide enough apart to admit two fingers, as shown in cut No. 8, the ligament that was in a very contracted state when the hen's laying organs were in a dry, dormant condition has now become softer and more lax, also the skin above the ligaments has become thinner, and the contracted state is found farther down than in the full dry state. Also by keeping the points of the fingers close together, placing them just above the point of delivery, it is found to be quite soft and lax, and hip bones farther apart, you may conclude egg development is well advanced and reached about the stage shown in cut No. 7, and the largest ovaries might be about the size of hazelnuts or a little larger. These are conditions that will be found as hens start laying in the first part of the laying season.

To further prove the stage of development you can now make test No. 2, or the bowel test, as was described on page 20. If in making the examination it is found that at the point, as shown by end of thumb and first finger (See cut No. 2), each side of the ovary or egg sack is much fuller and filling up, and the abdomen sack is filling also, it is safe to conclude that the hen is well advanced toward the laying point, and the egg sack is filled with yolks of various sizes. (See cut No. 7.)

Fig. 7

Showing a Well Advanced Laying Organ, in Healthy State.

L.—Ovary.

O.—Oviduct.

Fig. 8

Showing the Lay Bones Open the Width of Two Fingers. The Eggs in a Hen in This Condition Will Have Grown to About the Size Shown in Fig. 7.

HOW TO PICK OUT THE HEN THAT IS LAYING.

If in examining her the lay bones are found wide enough apart to admit about three fingers, as shown in cuts Nos. 2 and 10, and are quite lax so they can be opened or closed easily by pressing them gently; the ligament that was contracted when the laying organs were in the dormant state has now become relaxed and but little trace is found of it, then it is safe to conclude that the hen is in full and strong laying condition. (See cuts. Nos. 2, 4 and 9). Of course, she might have just laid out a batch of eggs and the bones still be in this condition; but to prove it you will apply test No. 2. By finding the condition of the egg and abdomen sack, as was described under the head of "How to Pick Out the Non-Laying Hen," and if the points in question are well filled and rounded out (See cut No. 2) the hen without doubt is in full laying condition. The eggs will be in all stages of development, similar as shown in cuts Nos. 4 and 9.

TO KNOW THE HENS THAT ARE THE MOST PROLIFIC LAYERS.

To most poultrymen it would seem quite impossible to pick from a flock of hens the most prolific layers without the use of the trap nest, but in this article I propose to give the results of a careful and extended investigation which I have made of this subject, and it may not prove so difficult, after all.

I will now assume the reader has become familiar with some of the laws that control the laying organs, and, with the help of the cuts showing the various conditions of these organs, I think it will be plainly seen that the hen laying the most prolifically can be known. First, it is apparent that a hen laying six eggs a week must have nearly twice as many eggs under development that the hen would have that was only laying three eggs. Admitting this to be true, the greater number would require a larger egg sack to contain them and the larger egg sack would require a larger amount of room in the hen's body than a smaller one, and consequently the hen having the larger egg sack would be more distended at the points opposite to or on either side of the egg sack, and by making an examination as has been explained, also comparisons (See cut No. 2) a difference in distended sides can be readily noted. By further reasoning, the hen producing the larger number of eggs must necessarily consume more food and thus have a larger crop at roosting time, and this I call the crop test. And it follows that the intestines handling the larger amount of food would also be more distended. On examination of the abdomen sack (See cut No. 2) at the same time will show the sides opposite the egg sack are quite full and well distended. It has been explained that the hen having the laying organs in a dry or dormant state, has the intestines occupying the space well up in the back, or the space the laying organs occupy when they are in a full laying condition, and also that as they develop into a

Fig. 9

Showing Organs in Full Laying Condition—Organs in Healthy State

Fig. 10

Showing the Lay Bones Open the Width of Three Fingers. The Hen Is in Full Laying Condition, as Shown in Cut on Other Page. Irregular Lines Show Joints in Backbone.

laying state the intestines take a low position and fill the abdomen sack that has been relaxing (See cut No. 2, showing full abdomen sack), thus allowing room for the egg that has to pass through the ovary duct to be completed. The space between the lay bones, and their laxness, must not be overlooked in making an examination to determine whether the hen is laying prolifically or not; if the hen is laying nearly every day the lay bones will be found to be further apart and more lax than the hen that is laying less frequently.

There will be very few exceptions to this rule unless the hen should be an old one, as a certain percentage of hens that have laid more than one season become somewhat bone-bound, and cannot respond to these laws of nature, and would be laying more often than the distance between the lay bones would indicate. However, the hens in the first laying season can be relied upon with but very few exceptions. It is safe to conclude that the hen is laying nearly every day when the lay bones are fully opened to the width of three fingers and when gently pressing down between the bones the ligaments and skin are found quite soft and relaxed; also that the bones can be opened and closed easily. A hen that is laying every day has a very strong circulation through the laying organs. And let it be understood that as circulation increases the relaxed condition increases, and consequently all parts that have anything to do with the laying organs will become more relaxed and distended. I have given three tests that prove the laying conditions of a hen, and I shall

call them "Lay Bone Test No. 1," "Bowel Test No. 2" and "Crop Test No. 3."

Another test that I have not mentioned before is made by placing the fingers astride the back part of the breast bone and drawing them back to the very back point, and if it is found that the abdomen drops down considerably lower than the point of the breast bone it is additional proof that the ovary sack is well filled with yolks and the intestines hang down to make further room for egg formation. This condition must not be confused with the over-fat condition, which will be explained and illustrated later. This test may be used in connection with the regular abdomen test. In making them it will be found in nearly every case that the three tests will agree and one will prove the other. For example, if the lay bones are well open the abdomen sack will be found to be well filled and the sides of the hen's body at points on each side of ovary sack, as shown in cut No. 2, will be well distended; also if the hen has had access to all the feed her appetite called for the crop would be filled in accordance to the other conditions. I wish to emphasize the fact that a hen that is producing an egg nearly every day has to consume a large amount of food, and the appetite and instinct of the fowl provides or sees to it that the crop is well supplied with food just before roosting time to supply the mill that is to grind the material to produce eggs, and to one wishing to select the best layers out of a flock the crop test is a very important and true guide, of which I shall have more to say under another head; the other

tests are very reliable and practical. A very enthusiastic and successful poultryman told me that one of his hens laid fifty-six eggs in fifty-six days, and the fifty-seventh day no egg was laid. But during the time these eggs were laid the hen's lay bones were open to the extent of four fingers. The over-fat hen in tests Nos. 1 and 2 may show a misleading condition, and the crop test will prove to be the most reliable guide.

Some allowance must be made for the size of the hen in considering the distance between the lay bones. The back or frame of the small breed is much narrower, and consequently the bones are closer together when the laying organs are in a dry state, and in the laying state do not open so wide as the larger framed hen.

To anyone having a large number of hens running together it may seem a task to go over the whole flock and make an examination of each hen. To these I suggest that they separate the poor layers from the good by following out the plans as described under the head "How to Separate Poor Layers From the Good Without Handling Them," and then a test can be made of those that have been separated, and if there has been a mistake made it will be discovered by making an examination.

TO KNOW HOW AND WHEN TO CULL THE NON- AND POOR LAYERS OUT OF THE FLOCK.

There are several important facts to be considered under this head which might be called the most important part of the entire subject. There are complicated conditions to be understood, as well as simpler parts of the subject that have been explained under other heads and may be repeated here to make you more thoroughly familiar with and to better understand the conditions.

To know when to start culling: I could answer this with very few words and just say, "Cull always and every time a poor or non-laying hen appears in the flock," because there would not have to be a very large flock in order to find hens now and then that have wholly or partially lost their power of egg production from various causes and at all seasons of the year. Undoubtedly the larger number of disorders would start during the winter season and as they developed it would show later on; so I repeat, "cull always," but particularly during the laying season.

We will suppose that there has not been any culling, or very little. A start must be made, and, not knowing what time of the year it will take place, and as conditions vary according to seasons, these changed and varied conditions will have to be considered and the reader informed in order to carry out the culling in a proper manner. We will suppose that you start culling about the first part of the year, and the flock consists of old hens and pullets. Age

and care would to a great extent govern their conditions at this time of the year. If no extra care has been given to the flock, and the pullets late hatched, it would be safe to presume that the majority of the flock's laying organs would still be in the dormant state; or, the majority of them might be in various developing stages; or it might be that most of the flock had developed into full laying conditions; then culling could be made with a larger degree of safety. If there were hens in the flock that had previously taken on a diseased or weakened condition of the laying organs the hen could easily be detected, as those having the diseased conditions would be the last to start development, provided equal care of the birds had been given and they were of the same age. It can be seen and understood that if the majority of the flock had come into the laying state the others, having had the same care, must have some disorder: therefore it may be seen that culling can start under such conditions, with few mistakes. On the other hand, if culling was undertaken a month earlier the majority of the flock might be in the dormant state, which would make the task more difficult. As moulting season comes on the organs go into the dormant state and would at this time be in the same condition as the hen with diseased or weakened laying organs. No satisfactory culling could be done under these conditions, only to know that the first hens starting development must have good, strong laying organs: but as the season advances and the hens start egg development and the majority reach the good laying point the culling can

be made more easily at this point or season of the year and be more liable to find the hens that have their laying organs out of order. This one point can be depended upon: if there are hens in the flock that have organs out of condition they will be the last ones to start egg development, as has been stated before, and consequently can be easily known by their undeveloped state. As such hens will start egg development a little later on in the season, after becoming fairly advanced, they are not so easily detected; so it can be seen that starting about the middle of January and continuing up to the middle of March all hens having good laying organs would be fully developed and laying. On the contrary, hens having organs in a diseased or weakened state would be later in starting development, and the worst of the flock would be the last to start. Consequently, this season would be the best to start culling. I will now suppose you have not done any until the laying season had become well advanced, and which I consider the best time, but if you delay you are going to have some complicated conditions to contend with, because hens that have diseased and weakened conditions of the laying organs will later have advanced to some stage of egg development; if there is any life in the laying organs at all it will start egg development during the spring months, which is the most natural laying season, and may develop to the full laying point, while others in a more diseased state, which cannot reach that point, may still show a well advanced stage of development. If the season has well advanced there will be some of the hens

that have laid out a batch, some have become broody and some did not show a broody condition at the end of the batch, but still the condition would change as the hen laid out the batch and she showed a poor state of laying condition, compared with the hen that was rather a poor layer or the one that was diseased or weakened. It can easily be seen that these advanced stages which appear during the summer months complicate the culling, and a follow-up system has to be adopted to make the culling at this time of the year a success. Under these conditions a separate department should be made to put such hens in as show a poor laying state. Then, in a week or so, a second culling can be made, and hens that were put in this department showing a low state of laying condition, but having really just finished laying a batch of eggs and were taking a short rest, would prove their condition in a short time by developing up to the good laying point again; then they can be placed back in the regular laying flock.

Another point should be understood. At this season of the year hens that have become broody and allowed to set on th nest for several days, during which the ovaries are drying up, are usually shut up in some old box or coop, without exercise and perhaps insufficient food to help nature to complete what has already been started, and later returned to the regular flock in this low state of laying condition, would be culled out from the flock as non- or poor laying hens. Under such conditions it can be seen that the only way to determine these cases is

to give the hen time to see if she will develop into good laying condition, so that the follow-up system is the only practical way. But this trouble could be avoided if the hen had been properly handled. When the setting spell comes on proper handling keeps the laying organs from going back into the dormant state. It would only be a few days when a new batch of eggs would start to develop, the normal appetite come back, with a well-filled crop, and she would be passed as all right.

The over-fat hen must be looked after, a few important points being understood. Here I must say that if the third (or "Crop") test was not understood, or could not be brought into use, the over-fat hens with diseased or weakened laying organs would be a hard proposition on our hands, but the crop reveals the hen's condition. When hens become over-fat, at least during the laying season, it is a sure sign that the hen's laying organs are somewhat out of order and excess of substance that should have been used up in the egg development was turned into fat. Such hens may be found in various conditions, as some may have life enough in their organs to produce one or two eggs a week and others almost reach the laying point but not the full state, and perhaps hold a few undeveloped eggs in a comatose state for weeks and sometimes for months (See cuts Nos. 16 and 28) and not be able to reach the full laying state, perhaps some found in only a partial stage of egg development, but no further advancement could be made. With these existing conditions, an excess of fat accumulated around the intes-

tines, a very thick layer around the gizzard and abdomen sack, all tending to distend the body and produce a deceiving condition.

The "Lay Bone" and "Bowel" tests would show the hen to be well extended, indicating a fairly good laying condition, and in such cases if such hens were killed and examined would be found to be filled with yolks under different stages of development and could not have laid them. Such conditions are deceiving to even an expert and lead to suspicion, and the hen put under the follow-up system for a while decides the matter.

As was stated in the beginning of this article, culling shou'd be done continuously, and a sharp lookout kept for hens that show signs of being poor or non-layers. The best time to go over the flock and make examinations and do the culling is in the evening after the hens have gone to roost and become well settled. If dark enough to require a lartern all the better, as they will not get stirred up so easily. To make the culling successful a systematic plan of feeding should be looked after or adopted. As has been stated, the crop test is a very important one, and in order to use it to the best advantage the feeding of the fowls just before culling must be looked after. Let this fact be well understood: a hen consumes food largely in proportion to the number of eggs that she lays. By this reasoning it can be readily understood why the crop test plays an important part. With these explanations we see why systematic feeding at all times, and certainly before culling the flock, should

be considered and carried out. Regular feeding should be the rule, and no sudden change of feed made, and the last feed at night sufficient to entirely satisfy the appetite.

Another point should be noted, i. e., it often happens that hens are fed too little variety and have lost their appetite for what they have been receiving and go to roost with small crops rather than eat the same feed or the feed they have become tired of. They may be hankering for green feed, or some change, and if this is the case the crop test would not work out so well nor would the hens show good laying conditions, nor could the culling be performed successfully. But with these points all adjusted, if one has become familiar with the several conditions that are to guide them in making decisions as to the ones to be culled from the flock, he can proceed quite rapidly.

It is not necessary to take each hen from the roost to make the examination, but only such ones that are found to be in a doubtful condition, and those can be taken from the roost and handled as described in the forepart. A very good idea of their condition can be had by first grappling the hen's crop with the hand that is most convenient and using the other to take the other conditions. In making the abdomen test the hen is liable to struggle to be released and distend her sides in the struggle. In order to get the natural condition the hen must be in a normal state. It is not necessary to squeeze hard to get the conditions, only gently closing the hand.

The hens which do not pass inspection and the doubtful ones should be placed in the quarters prepared for them, to be kept for a week or two and be followed up by other examinations to see if conditions have changed. If a separate department has not been provided for them the next best thing is to mark them either by leg band or some other method, and a record made of their conditions, allowing the hen further time to show signs of development. If only a small number of hens are kept it will not be so difficult to keep track of the hens that might prove to be poor or non-layers, but if the flock is very large it is much the best to have a separate department and put the doubtful ones in. If possible this department should be planned or constructed so that the hens put in it can have equal opportunities for exercise, range, and as good care in general as the rest of the flock. We shall have to suppose that a certain number has been culled out and placed in the department. If so, then how

TO KNOW THE ONES TO SELL AND THE ONES TO KEEP

Will be the next point to consider. If a number of hens placed in this department have proven to be in a laying state, allow a week or ten days to pass and then make another culling to see if some of them have developed up into a better laying condition, and if such are found they should be placed back with the general laying flock and dispose of the culls as seems fit. In culling the general flock you may select some that will lay, and, as before

stated, get some eggs from those you have culled, but do not think that you will not succeed in selecting out the poor or non-layers, a little experience will do wonders.

WHY EARLY SPRING IS THE BEST AND MOST PRACTICAL TIME TO CULL THE POOR AND NON-LAYERS OUT OF THE FLOCK

As spring is the most natural time of the year for hens to lay, and as the first batch of the season is much the largest, and as they lay much more prolifically at this time, consequently those that are laying good show a very strong laying condition, making a greater contrast between the good and the non- or poor layers, which makes it much easier for the unexperienced to make the selections and avoiding the complicated conditions to contend with later on in the season that have been fully described. Poultry raisers should not allow this season of the year to pass without making a thorough examination of the flock, and dispose of all over-fat and undeveloped hens, at least when the majority of the flock have come into good laying condition.

Where the flock is large, culling can be made with little trouble if a little tact is used, by hapenning in the roosting quarters just as the last hens are leaving the roost, catch them and make an examination, and you will be convinced that you are getting the non-layers. This will be found to be a good trick, and an important one to know, and if the plan is followed up the poor and non-layers can all be kept out of the flock.

HOW TO TELL THE HEN THAT HAS LAID OUT A BATCH OF EGGS, AND OTHER INFORMA TION REGARDING SETTING HENS.

It was mentioned under another heading that as the eggs developed the intestines changed their position, taking a place further back and down, and remain so as long as the egg sack remains full, but as it becomes empty the intestines return to their almost normal position again, which I will now endeavor to illustrate.

In order to get a practical experience regarding the conditions stated above select from your flock a laying and a non-laying hen and make a careful examination of each and the contrast will be easily seen. In learning how to select the hen which has laid out a batch of eggs I must first call your attention to the conditions of the broody hen.

You must remember a hen does not always become broody after laying a batch of eggs. But for experiment, take a hen that has laid out a batch of eggs and become broody and make an examination as soon as she shows the first signs of wanting to set. She will be found to have a somewhat empty abdomen and sides, but will not be as empty as a perfectly dry hen. Likewise the hen which has laid a batch will have the same appearance, or nearly so.

Again, the lay bones might be two or more fingers apart, providing the examination was made the same day

or soon after the last egg of the batch was laid. If the hen had been laying heavily the lay bones would be found nearly three fingers apart, but if she had been laying slowly near the end of the batch the bones would not be as open. If the examination was made very soon after the last egg was laid it can be seen that by not understanding this condition one could easily be deceived in the laying or non-laying hen. For instance, if a hen's lay bones were found to be well open she would be pronounced a hen in full laying condition, according to our first test, and if she were killed and examined and no eggs were found the law or rule might be pronounced unreliable.

In order to become more familiar with this law allow this same hen to set and make an examination of the lay bones every day for a week and note the contraction taking place, which is in proportion as circulation is drawn back into the system, and in six or eight days the contraction will be back to the same condition as the hen or pullet was before egg development took place. This is because the ovaries have reached the full dormant state.

As circulation comes back and egg development starts again the lay bones relax according to the amount of circulation the organs are receiving. At this point valuable information can be gained by the illustration made upon the setting hen. If the setting hen or the hen that has laid out a batch of eggs and has become broody is allowed to set on the nest for six or eight days with no intention of her being provided with a setting of eggs to hatch a

Fig. 11

Showing Laying Organs of Hen That Had Just Laid the Last Egg of the Batch in Healthy State.

brood of chicks her time has been very unprofitably spent, because by allowing her to set for this length of time her laying organs have gone back into the full dormant state (See cuts Nos. 3, 13 or 14), and this means that hundreds of small and large veins do not have any circulation passing through them, and all ligaments and tissues have become contracted that were in a fully developed condition when the hen laid out her batch and became broody. (See cut No. 11, showing organ shortly after last egg of batch was laid.) If the hen had not been allowed to set, but had been handled in a proper manner, the circulation through the laying organs would start and develop another batch of eggs. (See cut No. 7) showing stage of development reached in five days from the time the last eggs of the previous batch was laid, by the hen being properly handled when the last egg was laid and broody spell came on. Full laying stage reached in ten days. (See cut No. 9.) And often in eight or nine days the hen would be in full laying condition again. The hen that has been allowed to set for seven or eight days would, as formerly stated, be in an entirely dry state, and with the setting spell so firmly established several days would be required to overcome this condition. And after it had been broken up the laying organs, having to start afresh and be developed over again, would take from three to four weeks under ordinary conditions to reach full laying development. Thus it can be seen that it is no small loss to allow the hen that becomes broody to set for a number of days and no effort made to break the broody state. I

have been in farmers' poultry houses in the summer and have seen three to five hens trying to set on one nest, and no doubt some had been setting for two weeks, and no one giving thought or attention to the condition the organs of the hens were getting into and the amount lost by the inattention. As some hens lay a small number of eggs in a batch, and as a broody state comes on after each batch, if the hen is not looked after she would lay but a few eggs in a season.

THE BEST WAY TO BREAK UP THE BROODY STATE.

We have seen that by allowing a hen that has become broody to remain on the nest for several days before being taken from it to break the state is, from the standpoint of egg production, a serious loss to the poultryman. But this loss would not occur so often if the natural laws were better understood. The point now is to know the best and quickest way to break the broody hen and start egg development.

I have stated that egg development is started by a stimulated circulation, and it will continue to develop if the conditions are kept the same, consequently care should be exercised to produce and sustain this condition.

Most poultry raisers know that the sooner the broody hen is taken from the nest the quicker the broody state is broken, and the sooner the hen will resume laying. However, I believe they have not realized the importance of

this point, and I am sure it should be better understood. There are various methods of breaking this state, but I shall give the one that, from practical experience and observation, I have demonstrated to be the best. The main point desired is to bring the hen into a laying condition as soon as possible. Have a pen 6 or 8 feet square, or larger space if it can be spared, and the floor space should be covered with about 6 inches of straw or dry chaff, and keep an extra cockerel to supply this pen with, which should be a good, energetic bird. As soon as a hen is found to remain on the nest at night she should be taken off, given a good feed by herself and put in this pen with the cockerel. All the grain fed in this pen should be well covered with litter so as to give her as much exercise as possible. Exercise and activity stimulate circulation and keep the laying organs from lapsing into the dormant state, as would be natural for them to do when they become broody. The exercise the hen will get by scratching for food and otherwise will renew the circulation and start another batch of eggs very soon.

The hen should be well fed, but not overfed at this time, and the full feed should be in the evening. It is quite essential that the hen should be fed as soon as taken from the nest, as she may have been on the nest most of the day and had but a small amount of food, and if so this would help nature to further dry up the organs; but if well fed the same night it will tend to give plenty of egg producing material and check the drying up. The exercise the hen will get the next day by working for

her food starts the new batch developing, renews the appetite, and in a day or two she can be returned to the regular flock with no desire to return to the nest. But if allowed to remain on the nest for two or three days the state is much harder to break up, as by this time the hen would have largely lost the good appetite she had while laying and does not regain it as easily as she would in the first stage of the broody spell, consequently she will not do much scratching and the organs will continue toward the dormant or dry state and a much longer time is required before the hen will come to the laying point again. If the hen was taken from the nest as soon as the spell came on and handled as directed it will start her laying several days sooner than any other way.

A hen allowed to stay on the nest three or four days before being put in the pen is liable to continue her drying up state until she reaches her full dry state. If that condition should be reached you could not expect the hen to resume laying again before three or four weeks. To illustrate the beneficial effect of exercise an experiment was made by making a pen 6x6 feet, the floor covered with 6 inches of chaff, a nest with setting of eggs in it was placed in one corner and the hen allowed to set. The feed was well mixed in the chaff so that she had to scratch for every grain of food.

The hen hatched a full brood of chickens, and the second day after hatching she started to lay, and while mothering the chickens laid thirty-two eggs. This is, of

course, a rare case, but is proof that exercise will bring about egg development

HOW EGGS CAN BE PRODUCED IN WINTER AND SOME OF NATURE'S LAWS REGARDING EGG DEVELOPMENT EXPLAINED.

It is known that some poultry raisers are successful in procuring winter eggs and others fail. Investigation shows that care plays an important part, hence there is no question but that by knowing the necessary conditions and supplying them winter egg production will be greatly increased.

It is not my intention to give a full course of study on this subject, but rather mention only a few important suggestions, indicating how eggs are developed. Under other heads I have only given hints on some points of egg development. Some of these points I have tried to make as plain as possible, and I believe the reader has become familiar with the reason why the laying organs go into the dry or dormant state, or develop into the laying state.

But there are other laws controlling egg development. In winter egg development is unnatural, as is shown by the fact that no wild birds build their nests or lay eggs at this time, hence we say that this season is the unnatural time. On the other hand, spring is the natural time; it is when the days are warm and balmy and the

temperature more equal than birds and animals in their natural state choose to reproduce.

When we plan to produce eggs in winter we meddle with natural laws and often get our hen into trouble which cannot be mended. When the laying organs take on a dormant state it is for a purpose, and a natural time should elapse before they should be asked to produce again. But in our animal keeping we cannot always wait upon nature, and I have sought to find how to encourage nature in doing this task which everyone will recognize will add much in increasing our poultry profits.

My first plan was to study carefully the conditions favorable to egg development and then seek how to reproduce these conditions, and I believe I have found the most important of these conditions.

It should be remembered that egg development starts from a stimulated or more active circulation through the body, and that circulation is developed by activity or by the hen having to scratch or hunt for food. I have proved, to my own satisfaction at least, that egg development follows a stimulated circulation as surely as night follows day. The circulation of the body is first and the circulation of the egg producing organs being secondary develops only after the first is properly supplied. The secondary circulation depends for its nourishment upon the body, or the first circulation.

We will suppose that egg development started during a warm spell in winter, and under these conditions would continue as long as the warm spell lasted and food condi-

tions were right, but if a cold spell came on then more nourishment would be required to supply heat for the body and the second circulation would suffer. On the other hand, if the body was protected from the cold the extra circulation would not have been required, and, consequently, egg production would not have been retarded.

Those who have followed animal nature know that when an animal is in perfect health it does not take much to disturb this condition, and therefore it will be readily understood that every time egg development is disturbed or retarded the chances for recovery or change to the desired condition will be slower, as it is unnatural to thus play with nature.

If egg development was only in its first stages and a long cold spell came on the nourishment from the food would tend to produce heat in the body first, and by thus robbing the egg producing organs they would return to the dormant state. This retarding or going backwards would weaken the egg ovaries and it would be harder to start egg development. If egg development had started and for any reason be drawn back more than once or twice the most developed germs would most likely wither and die. (See cut No. 12 and Nos. 6 and 7.) Note carefully the healthy and unhealthy developing state, cuts Nos. 6 and 7 showing the healthy and cut No. 12 the unhealthy state, as well as blasted eggs and dead germs which were undoubtedly caused by the circulation being withdrawn from them. This state causes a disordered condition of the organs, and egg development would not

Fig. 12

Showing Developing Organs With Ovary in a Disordered State.

D.—Dead Eggs.

L.—Live Eggs.

O.—Oviduct.

Fig. 13

Showing Laying Organs in Full Dormant State, Showing a Few Dead Egg Germs—First Stages of Disorder.

D.—Dead Eggs.

L.—Live Eggs.

O.—Oviduct.

be likely to start again until very late next spring, and even then the process would be very slow and the hen would be unprofitable.

Of course these conditions show considerable variation from a slight disorder to the organ that is almost completely destroyed. See cut No. 13, showing the organ in full dormant state, with only a small per cent of dead egg germs.

If egg development should be quite well advanced before the retarding takes place the entire circulation would not be so apt to be withdrawn, and unless the weather conditions were unusually severe they would only retard development and hold in preserve until more favorable conditions that would start egg development again. Of course, if the unfavorable conditions were to continue too long the egg producing organs of the fowl would be impaired and diseased. Cut No. 16 shows dead eggs on ovary of hen which had passed through a severe case of roup.

If the retarded state was caused by only a slight change in the weather and the suggestions for promoting activity were not followed the probabilities are that the hen would tend to take on fat instead of egg development getting a start. Hence we see that under these conditions more care would be necessary to make the hen exercise in order to get eggs.

Thus it will be seen that if egg development has started in the winter season care should be taken that the conditions are not disturbed or the poultryman will be the loser

One or two other points should be carefully kept in mind. In giving the first feed in the morning care should be exercised that the quantity is not too great so that the hens will not get all they wish and go into some corner where they think it is warmer and huddle together, and sit there suffering with the cold. Egg development cannot take place under these conditions; in fact, this method will do just the opposite, and the hen will either take on fat to protect the body or egg development will be retarded.

The same result would take place if hens were allowed to roost in cold quarters or allowed to sit or be housed in damp houses or if allowed to walk around on frost or snow; chilling their feet is sure to retard egg development. It has been found that hens will lay well in winter in houses that were quite open, or open-front houses, if the roosting places were comfortable. Of course to get the best results under these conditions the hens must be hardened by having to work for their feed, also, the house being very open, they become hardened earlier in the season and more gradual; and they must have the proper kind of food, and be, generally speaking, well cared for.

To put the winter egg proposition in a nut shell is to say: Furnish good ventilation, well protected roosting quarters, plenty of litter in the scratching room to keep the hens busy during the day working for their feed, exercising care so that the hen will be protected from unfavorable changes of weather, and, in addition, feed with

a well balanced ration, including meat and some kind of green food. The most common mistake made in winter feeding is that too much feed is given to them at one time, which, being picked up readily, soon satisfies their appetites and they have no desire to do more scratching, which is the very thing that tends to start and sustain egg development. The last feed at night should be sufficient to entirely satisfy their appetites, and an examination of their crops should be made from time to time to see if they are well filled at roosting time; if not, they may be craving for green feed or some change that they are not getting, or may not have had a sufficient quantity of feed, as hens will not lay in winter on short rations.

In order to help the poultry raiser to more fully realize the importance of providing plenty of litter in the scratching sheds and quarters to keep the hens busy working for their feed the larger part of the day I will cite an instance where a farmer and poultry raiser by a mere accident made a very interesting experiment in the way of proving what scratching for feed will do in producing the much-sought-after winter eggs. Two hens of the flock in the latter part of the season stole their nests in some shady spot, laid a batch of eggs, set and brought into the yard two nice little broods of chicks. As the weather was beginning to be quite cold it was thought best to house the hens and broods in quite a good sized empty wood house that had quite a deep litter of chips and bark over the entire floor space. A quantity of wheat was well

scattered over the partially rotten chips and bark. Hens and broods thrived under the care. Nothing was thought of the care the broods were getting until one day a few weeks after the hens had been placed in the quarters eggs were found in an old stove that sat in one corner of the building and had been provided with nesting material for hens to lay in the past season. However, these two hens produced eight and ten eggs a week all through the first part of winter, while seventy or eighty hens in the general flock did not produce an egg. The feed of the general flock was shelled corn and oats that was dealt out to them in a body in front of their roosting quarters, as is the usual way that farmers feed their flock. Now, the lesson learned is a valuable one. The secret of these hens producing the amount of eggs they did at the time of year was in the amount of scratching they were forced to do to find the feed for themselves and their thriving broods.

It can be seen that the hens had an extra amount of work to do, which took them the larger part of the day to accomplish; as the floor space was large it required an extra amount of litter to be removed to procure the amount of feed required, so had no time for sitting around and getting chilled and cold, as did the outside hens. I have stated that a stimulated circulation would start egg development and the same condition would sustain it. This lesson should be all that is required to impress upon the mind of the poultry raiser that is wondering how winter eggs can be had to pay feed bills and extra change for profit.

HOW THE LAYING ORGANS ARE AFFECTED WHEN THE HENS ARE INFESTED WITH VERMIN.

There is no doubt that vermin on poultry cause more loss in the poultry industry than all other causes combined and that no one has heretofore fully computed this loss.

In this chapter I hope to give you some idea of how this pest affects the laying organs.

We have seen that the laying organs are very sensitive to surrounding conditions, and it follows that a hen infested with lice will surely be retarded, as a hen in this condition cannot be comfortable and the loss of blood will seriously diminish her vitality. If the hen was in laying condition when she became infested she would probably lay out her batch of eggs, but it would require a much longer time and the number be much less; and no new batch would start until the vermin were destroyed.

One summer I dissected six hens out of a flock of twenty-five that had been allowed to roost in quarters that were alive with mites, and from which flock no egg had been received for nearly two months. In these six hens all the laying organs were in a dormant state. The remaining hens were put in clean quarters, well fed, and in from eighteen to twenty days all but two were laying. These two hens were dissected and were found to be barren. This is only a sample case and is no doubt a parallel of thousands of cases among our flocks of poultry.

With these remarks it will not take much figuring to estimate the losses from these sources and therefore all can see the importance of keeping this pest down.

HOW TO AVOID WINTERING HENS THAT ARE LIKELY TO BE POOR WINTER LAYERS.

No doubt the most puzzling question that confronts all poultrymen is, Which hens shall I keep? Some have become disgusted with hens in their second season and do not keep them over; keeping only pullets for winter egg production.

I believe this is a wise decision, especially if there have been enough pullets raised for this purpose. But, manage as we will, there are times when we have to depend upon yearling hens for our winter eggs, so I will try to give you some pointers on how to pick the best winter layers.

I have stated elsewhere that hens having weak laying organs would be the last hens to start laying in either winter or spring, and the last of all the worst of all. Likewise these hens would be the first to stop laying in the summer or early fall.

Supposing the flock are all about the same age. If they are old hens they might not start to moult until late in the fall if their laying organs are in good working order; if not, they would moult much earlier, and in neither case would make good winter layers; the late moulting hen would linger all through the winter before getting all of her new feathers. These, of course, would not be profitable winter layers. Hens that were only one year old would shed their feathers much earlier and have their full new coat before the cold weather came. These hens, if their feed and surrounding conditions were right, would.

after a rest of one or two months, start egg development, provided the ovaries were not impaired from any cause. I have shown how to determine when egg development has started, and hens which have made a good start in fall or early winter would be those which had good, strong laying organs. With proper care such hens should lay all winter.

As the poor layers stop first, by a little care and watching they can be selected from the flock and disposed of, if desired, and especially all over-fat hens. I have noticed also that some hens during moult seem to take on what I call a law-state-dormant. Such hens are usually found with their lay bones much closer together than the hens which take on a good, healthy dormant state. (See cut No. 3, showing strong dormant state; cut No. 14 showing low dormant state.) It seems that the more dormant the hen becomes the more contraction there is, unless the hen should be over-fat, and it follows that such hens are slower in starting than the ones which have their lay bones more open.

Another point I have noticed: the very hens which seem to start the moult the earliest and get over it the quickest are most likely to be the poorest layers in the flock, as if the hen were not laying she would have a surplus of nourishment which could go to produce feathers. On the other hand, a good laying hen's surplus substance is mostly taken up in the production of eggs, thus holding back the moulting. This would be a very reliable sign, but with this exception. Some hens when they have laid out

a batch of eggs always want to set, and if allowed to set for a few days when the season is well advanced and then are broken up the organs are quite likely to take on the full dormant state, and the hen may start shedding her feathers instead of starting egg development. Such a hen would get her new feathers very rapidly and after she had regained her normal state of strength and vigor would start egg development and no doubt make a good winter layer.

It is well to mark the first hens which come out with a new coat and, after they have had a little time to recuperate, see if there are any signs of egg development. For the last two falls I have observed this in my flock, and those which got their new coat first I found upon examination that the ovaries were in a disordered state. I also believe that the hens which start to shed early are the last to start laying in the spring, although I do not claim that this is an infallible sign, as my observations have not been extensive enough along this line to know just how far it can be relied upon.

HOW OVERFEEDING BEFORE EGG DEVELOPMENT STARTS MAY REDUCE THE EGG PRODUCTION.

I shall suppose that it is well understood that after the season's laying is completed and the moulting season comes on the laying organs go into the dry state and remain thus for from one to three months, according to cir-

cumstances. Good laying hens will often lay until the moulting has well advanced, and then as a larger number of pin feathers start, requiring all the surplus nourishment, the egg development ceases. Quick moulting reduces the system very rapidly, and the laying organs take on a very low state. Hence when the moult is over the recuperation is correspondingly slow. Under these circumstances more than ordinary care would be necessary to start egg development. As this period is the most critical time poultry raisers should be careful not to overfeed. It is a mistake to think that by feeding we can force this process faster than nature intended. Over-feeding at the time will tend to produce fat, as when the feathers are fully grown and the hen not producing eggs to take up the surplus substances, consequently is liable to become over-fat. Much better results will be obtained with "more work and less feed" methods. This is especially true with year-old hens, as they take on fat very readily at this time, and it is at the expense of egg development, as it is more natural to put on fat at this time of the year.

On the other hand, if the hen is made to exercise to get her food she would reach the laying point much quicker and after the laying period had arrived she could stand more feed, as more substance would be required to produce eggs. As egg production grows the tendency to produce fat would be less. I do not mean to say that the hen at this period must be starved, but rather they should be made to work hard for what they get.

See cut No. 15, showing dormant organs in the fat hen as well as in the lighter hen.

The hen shown in Cut No. 14 was killed while in the moulting stage; specimen shown in cut No. 15 was killed a month or two after the new coat of feathers were fully grown. The organ was found to be in a very low dormant state, while the body contained a superfluous amount of fat. We will suppose No. 14 to be the same hen in the latter part of the moulting stage and the body in rather a run down state, as is usual in the moulting stage; also the laying organs in a low dormant state. After the coat of feathers were fully grown and the body had got back to its normal state of health and weight, egg development could or would have taken place if the hen had been forced to do lots of scratching for the feed she got, but as she could get the feed by little scratching the higher state of circulation was not reached and consequently the surplus substance was deposited in fat. If egg development could not start or did not start when the hen reached a normal state of condition the chances would be very much lessened to start egg development after the hen had taken on a superfluous amount of fat. If egg development did take place later in the season or nearer the natural season for laying the development would be very slow, and when the full laying stage was reached the hen would produce but very few eggs. The laying condition of such hens can be better known by the crop test that has been previously explained, or test No. 3, than they could by tests Nos. 1 and 2. Do not take

Fig. 14

L-D Shows Ovary in Low Dormant State.
O.—Dormant Oviduct.

Fig. 15

L-D Shows Ovary in Low Dormant State.
F.—Superfluous Fat.

it that over-feeding is the cause of all over-fat hens, as where there are only a small portion of the flock over-fat it is a sure proof that some disorder of the laying organs has taken place, as will be illustrated and explained under another head.

THE LAYING HEN SHOULD BE EDUCATED—WHEN, HOW AND WHERE?

Chicks only two or three days old show very prominently one of their instincts by scratching or trying to, even though they should be on a smooth board with nothing but feed on it. By our present day methods when we supply everything they need for nourishment in troughs so they can get it without effort, this instinct is, in a certain sense, undeveloped. Fowls brought up under such methods, without exercise, will not be so hardy and will not have the scratching instinct fully developed, which experience has shown is a very important essential for egg development.

There is no question but that exercise helps to start egg production, and if we would produce an egg-laying strain we must develop the chicks by a method which will exercise this instinct as well as all others.

Therefore to produce eggs the method to follow is to start early in the fall and feed the hens and pullets in a good, deep litter, or, rather, start in with a shallow litter and increase the amount and thereby educate them to work for their food. Such treatment will make the fowls

hardier, and when cold weather comes on they will be better able to resist it and will make better and earlier layers.

HOW TO SEPARATE POOR LAYERS FROM THE GOOD WITHOUT HANDLING, OR HOW THEY WILL SEPARATE THEMSELVES.

Where a large number of hens are kept it may require more time to make an examination of each hen than some of our poultrymen can spare, and they would allow the unprofitable one to remain in the flock.

To those wishing to dispose of the poor or non-layers I offer the following suggestions, which I feel sure can be easily followed and which will prove satisfactory.

Let me first make a little explanation. A hen that is laying nearly every day will be in a prime condition and a high state of health, consequently has a strong circulation, quick action, good appetite, good digestion, etc. All her instincts are in full development, and the nourishment necessary to produce an egg almost every day gives her a great appetite; hence she is ever on the alert for food and always very active. The poor or non-layer is the exact opposite in her actions.

All that is necessary to make this plan a success is a little interest, close observation and some tact. It should be understood that the majority of the flock must be in a laying condition when the separation is to be made.

First Plan—The following plan is the best for winter or

cold weather, but will work any time of the year, though not so positive. In order to carry it out successfully it will be necessary to have a scratching shed attached to the roosting quarters. A liberal amount of litter should be kept in this shed and all the grain should be fed in this litter. As soon as the hens learn to scratch for their food you can make the test. The early morning is the best time, just as the fowls are leaving the roost. They should have had a good feed the night before, and after they have gone to roost some feed should be placed in the litter as usual.

The attendant should place himself where the fowls cannot see him, as he might disturb them from their natural movements. Now watch closely the fowls, and those which are the first to leave the roost will be the best layers, the next best will follow and the poorest ones will come off last. If you are keeping poultry for profit close the entrance of the scratching shed to these laggards. There may not be many, but there will surely be some. If you could watch these last ones you will see that they did not leave the roost for some time, and even when they did they would not be in a hurry and would not seem to be hungry. You will not make any mistake if you coop these laggards up and send them to market, as they will in all probability be in fine condition for the block, providing roup or disease has not broken out among them.

The above plan works best in a healthy flock, and it is supposed that these are hens which have laid at least one season. The only contingency would be to watch for

sickness, as roup or other diseases might be responsible for such logish actions.

Or, if this plan takes more time than can be spared, a few of the non-layers could be caught by themselves by making an effort to get into the roosting quarters just as the last of the hens were leaving the roost. Simply close these laggards in, and upon making an examination and applying the test the poor layers can be selected. It may take a few days to determine these correctly, but it can surely be done by this method.

Second Plan—Throw the feed outside the roosting quarters the first thing in the morning. After this is done drive the hens out, step out of sight for a short time and watch proceedings for a few minutes, and you will find that the non-layers, because of their poor appetite, have picked up a few grains and gone back to their roosting or lounging quarters. Shut them in and you will find upon applying the test that you have trapped the non-layers. The examination may show that some which had started egg development had returned, but will be good proof that such hens are making very slow progress in egg development, and if it is desired to dispose of some of the flock such hens would very likely not prove to be good layers and could be disposed of.

Third Plan.—The following plan is very satisfactory during the spring and summer months. The best time to carry it out is in the morning, when a slow, drizzling rain is falling. The fowls should have been kept in their quarters and been given some feed, after which let them

out. The hens which are laying will not miss the opportunity and will readily venture out for the earthworms to satisfy their hunger for meat food. The non-layers and those in which the egg development is progressing slowly will remain indoors and may thus be locked up and separated. If the door had been left open so they could go out as they leave the roost and they had had time to satisfy their appetite and had gone in again to dry their feathers, a close observation will show that some of them have very wet feathers and others have feathers not so wet. The former are the best layers and the latter not so good, as their appetite was not so keen and they did not stay out long. Some will not be wet at all, and these will be found to be the barren ones or non-layers. It is seldom that such will venture out in any storm for food unless they had been for some time without it.

In all of these tests the hens should be disturbed as little as possible. I feel sure that these methods will be found effective and that any poultryman will find that the time and effort is well worth the trouble. Keep your flock free from the drones and your profit will be larger. If anyone is in doubt about these methods they can keep the suspicious ones by themselves for a short time and try them again, apply the tests and thereby learn to separate the layers from the non-layers accurately and quickly.

HOW TO BUY HENS IN THE FORE PART OF WINTER THAT WOULD MAKE GOOD WINTER LAYERS AND SELL THEM AGAIN AT A GOOD PROFIT IN THE SPRING.

A valuable feature of the Potter system of selecting hens, and one from which the practical poultry raiser can make a good profit, is that of buying hens in the late fall or early winter that are put on the market and then culling out the layers and non-layers. At this time of the year poultry raisers generally and a good many farmers make it a point to get rid of their surplus stock. Anyone not knowing the system will, of course, crate up and send away a certain number of his flock. Many of the hens may be well developed or in full laying condition, and anyone buying up these birds and applying the system has opportunity for making good money. With but few exceptions in the month of December the market price for poultry is at the lowest point of the year, and after the first of the year the price is steadily going up and in early spring or late winter the price has nearly doubled. Buy them in at the lowest figure and at the time of year that hens have their new coat of feathers fully grown, having been grown at the expense of the other fellow, or the man that sold them. The hens are either ready to put on flesh or develop a new crop of eggs. A portion of them may be well developed, and some very close to the laying point. If he had known their true con-

dition he would no sooner dispose of them at the market price than he would of a cow that was just ready to come in fresh at the market price of a dry cow. However, if one is equipped to handle the fowls and follows out the directions that have been given and will no foolishly buy fowls showing the signs of disease, or heavy hens, he can make a good profit on his investment. It is not often that commission men will allow the hens to be sorted, but an examination could be made, and if a good per cent of them seem to be in a well advanced state of egg development the coop or lot could be bought and those showing a well developed stage sorted out and the others either sold or fed for market later on.

HOW ROUP AND SIMILAR DISEASES AFFECT THE LAYING ORGANS OF HENS; ALSO HOW THE LAYING ORGANS BECOME DISABLED BY OTHER CAUSES.

Illustrated with Original Photographs.

Roup is the most common disease of poultry and is very contagious. If it gets a start in a flock it soon spreads, and the whole flock will be more or less affected. It is a winter disease. Damp and unprotected quarters are all that is necessary to give the disease a start.

When the disease is allowed to linger in the flock it becomes more severe; also some hens have it harder than others. If hens take it either in a developing or full laying condition it not only checks egg growth, but is also very weakening to the laying organs and quite often they are entirely destroyed from the effect of the disease. In others it may only throw them into a more or less disordered state; it depends largely on the state of the organs and the severity of the case. If the organs were in a full dormant state the disease would not disable them, at least to any great extent, but if they have taken on a developing stage or reached the full laying point, and the disease lingers too long, the laying organs will start to dry up and become dormant, and this means that the live circulation that was passing through them will all be absorbed back into the system. Eggs that were too far advanced cannot go back and take on the dormant state, and will thus have to wither and die.

Cut No. 16 shows the laying organs of a hen that had a severe case of roup in the winter while in full laying condition. (See cut No. 9, showing a healthy, full laying state, as the hen shown in cut No. 16 was, when taken with the disease.) As she had a severe attack of roup, which lingered too long, the circulation was entirely drawn away from the eggs and organs. The eggs had to wither and die, and the organ take on the full dormant condition. After a while the hen recovered and in late spring started to develop a new batch of eggs. Now, by observing cut No. 16 a cluster of six or seven dead eggs can be seen marked D;

Fig. 16

Showing Organs in a Disordered State.

Fig. 17

Showing Ovary With a Large Number of Dead Eggs, in an
Extreme Disordered State.

also under the cluster a few live eggs can be seen marked L, which are the eggs that started to develop in late spring. The organs being in a very much disordered state the eggs developed slowly and did not reach a laying point until the latter part of August, and then three very small eggs were laid in two weeks; then the hen was killed and found as shown.

This hen was kept under the trap nest with others in the flock. She would often be found in the nest, but never leave an egg to be kept record of. During this time the hen showed by tests Nos. 1 and 2 to be in a fairly good laying condition, and comb a good red color. Whenever the crop test, or test No. 3, was made it was always found wanting, not more than half the amount in it at roosting time that a fairly good laying hen should have.

With the crop test the hen could have easily been detected. If this hen had been examined in the early part of the laying season by tests Nos. 1 and 2 they would have shown that she was not in a developing stage, or, if she had made a start, the development would have been slow in comparison to a hen with organs in a healthy state, and she would therefore have been mistrusted and culled from the flock. If this hen had not been killed no doubt in a short time the live eggs that are seen would have started to wither and die and the organ take on the dormant state and would have looked similar to cut No. 17, but with a less number of dead eggs.

A remarkable thing is that the live eggs as seen in cut No. 16 could be under development for three or four

months and be kept in a state of preservation, neither dying or reaching the laying point. It shows the workings of nature, and proves how long hens can hold eggs in a developing state and not be able to reach the laying point and also look as though they were laying hens.

I have given quite a full explanation of this specimen in order that the reader may know how such conditions are brought about. This is only one out of a very large variety of disordered conditions that exist and could be shown. Other specimens that are shown I could not give space for a full description of, but they will give a fairly good idea of the variety of diseases that the laying organs of hens are subject to.

Roup breaking out among the laying hens is one of the greatest causes of disorders. The next cause is due to forcing hens to lay or trying to get them to lay in winter, which is entirely unnatural and out of season. The warm spells and good feed starts egg development, cold and sudden changes check development, and, as has been stated, throws the organs out of their natural conditions and the consequence is that it has and does produce a large per cent of non- and poor laying hens. With such a variety of causes it is no wonder that there are such a large per cent of unprofitable hens kept by poultry raisers who are not able to learn their condition and cull them from the flock.

Cut No. 17 shows a large number of dead eggs hanging to the ovary. When the hen was killed there were three or four live eggs trying to develop and in different

Fig. 18

Showing Oviduct Entirely Filled With Dead Yolks.

Fig. 19

Showing Oviduct Containing Six or Eight Dead Yolks.

stages of development. In handling the specimen the live eggs were broken off and are not shown. However, the condition is remarkable. The body was filled with dead eggs and a few live ones still trying to grow, showing and proving that the organ will try to produce as long as there is a particle of life left in it. It is like the tree that has only one partially live limb on it, as it will throw out leaves in spring and try to fruit or make growth, only soon to wither and die. The specimen is shown to give an idea of an extreme condition. Similar conditions exist and are developing in nearly all seasons of the year in numerous numbers and in all stages of severity, from only a very few small dead egg germs that are found on the ovary when the organ is in a full dormant state. Notice cut No. 13, showing small dead germs, which indicates only a slight disorder, but this may be only the start of a much greater disorder, as shown in cut No. 17, and by reason of the diseased state or disordered condition the eggs wither and die at their different stages of development. Live germs would continue to start to make a growth and fail to reach maturity as did the previous ones, and the chances for an ova to reach a full developed stage become less and less until the organ reaches the condition as shown. The real condition of the organ cannot be told before the hen is killed and examined, but that she is not producing eggs can be known in ways that I have described.

'Cut No. 18 shows the oviduct filled with dead yolks of a hen, in her first laying year, that I culled out of

my flock in the latter part of the laying season. The oviduct, as has been stated, is from 18 to 24 inches long when unfolded and stretched out. In the specimen shown the entire length of the duct is filled with dead and dried up yolks, no doubt to the number of two or three dozen, or perhaps more. However, it seems quite improbable that such a condition could exist and quite surprising to know that a hen could live with such conditions and still look as though she might be laying. I find similar conditions quite frequently, but this is the extreme.

Cut No. 19 shows a similar state, the oviduct containing only six or eight dead yolks, marked D. In the center of the lower cluster will be seen a darker looking substance; it is one of the dead yolks taken out of the duct and placed so that it would show; just below the ovary is another one that was taken out, marked D, showing darker than the main body of the ovary. In this specimen, as well as the previous one shown, the oviduct was entirely dead as far as its producing power is concerned, while the ovary has but little life left, or a few partially live germs. Had the hen not been killed those germs that still had some life left in them would, when the most favorable laying season came, take on some development, but would soon wither and die, one after the other, until there was no life left. Such or similar conditions can be known by the undeveloped state of the hen, either in early spring or any time when hens should be laying, by applying tests which have been given.

The condition as shown in Figure 18 proves that one

Fig. 20

Showing Fully Developed Egg in a Dormant Oviduct
(An Egg-Bound Hen).

part of the laying organ can be in a healthy state and continue to do its part of the work by developing the full-grown yolks and passing them one by one to the oviduct for it to complete the work or do its part; but that part of the organ being disabled could not do its part more than to receive the yolks and continue to receive them until it was filled, when the manufacture of yolks had to cease and the entire organ take on the dormant state. If only one yolk should enter the duct and the organ not be able to complete the work it would end all future egg production.

There is no sure way of knowing the real cause of the first start of such a disorder; inflammation may have set in from some cause, cutting off circulation from that part of the organs. However, whatsoever caused it, the condition exists in a greater or less degree, and they never get better, but constantly grow worse. This specimen, before it was detected and killed, looked to be in a fairly good and healthy condition, and would have been taken by any poultry raiser to be a laying hen, but on making an examination this unnatural state was easily noticeable by the enlarged and hard condition that existed; also the tests would show the hen was not laying. The only thing to do is to become familiar with such hens as contain these unnatural conditions and cull them from the flock.

Specimen No. 20 shows the laying organs of an egg-bound hen. The oviduct contains a fully developed egg, but the organs are in a full dormant condition. There are several conditions that may exist that keep a hen from

Fig. 21

Showing the Organs of a Hen That Was Supposed to Have Laid Two Seasons, but Undoubtedly Had Never Laid an Egg.

delivering an egg. It may be caused from over laxness of the oviduct, allowing the weight of the egg to misplace it, and another cause is an over-contracted state. Specimens 18 and 19 might be called another condition of egg-bound hens. However, specimen No. 20 has a fully developed egg, bound in the oviduct. A plausible reason for this is that the entire organ was not in a healthy condition when the hen was laying, and consequently she laid infrequently. Another reason is it is usual and quite natural for hens to lay slower at the latter end of the batch, and the slower they lay the less circulation passes through the organs, hence the contracted state follows. As the last egg of the batch developed very slowly the contraction became too pronounced and the egg could not be delivered. The contraction continued until the organ reached the full dormant condition with the egg still in the duct. Judging from the unusual number of dead egg germs or ovas on the organ, it is safe to conclude that the hen carried the egg in this condition an entire season, and might have carried it a full year. The condition of the organ shows that the ovary had just enough life left in it to develop the egg germ, but no further development could take place and the organ continued to throw out the ovas until the superfluous number was reached, which must have taken the entire laying season. This hen could have easily been discovered by my tests by her contracted and dormant condition, and yet her general appearance did not indicate that anything was wrong.

Specimen No. 21 shows the organ of a hen that was

Fig. 22

Showing a Mass of Dead Egg, in All Shapes and Sizes,
Hanging to the Ovary.

Fig. 23

Showing a Mass of Dead Egg, in All Shapes and Sizes.
Hanging to the Ovary.

supposed to have laid two seasons, but undoubtedly the hen had never laid an egg, as the organ was unnaturally grown from the first. The two marks on the right, marked L, pointing to two small ovas apparently seem to have come out from the back bone, and just under these two ovas is a lump of substance marked D that hung down, which was meant to be the ovary, but containing no germ life and entirely unnatural, and could never have developed an egg. Mark O shows the dormant oviduct. F shows large accumulations of fat that would not have accumulated if the hen could have developed and laid. This hen always appeared to be in the pink of condition, but was easily detected by the use of my system. This shows and gives further proof that over-fat hens should be suspected and looked after.

Specimens Nos. 22 and 23 show a mass of dead eggs hanging to the ovary, in all shapes and sizes. The hens containing them were selected from a flock of seven hens that had laid one season, but undoubtedly they had a disordered or weakened condition to start with and constantly grew worse. No definite cause of this condition can be given, as no disease had attacked the flock as far as known. The disorder may have started during the winter before or when the first batch of eggs started to develop, and a sudden change of weather came on and very suddenly checked all egg growth. Circulation was drawn back into the system, leaving a few withered and dead eggs on the organ. See cut 12, showing disorder and small dead egg on the organ and Nos. 22 and 23 may

have had a similar appearance at one time earlier in the state of the disorder. However, as I have stated before, a large variety of disorders exist, from a small disorder to an extreme condition where the organs are entirely destroyed. These hens were easily discovered, as the tests showed them to be only in a slight developing stage in early spring when all the others had developed to the laying state. As previously stated, early spring or the latter part of winter is the best part of the season to make the examination.

Specimen No. 24 shows the organs of a pullet culled out of my flock early in the spring. The organ was trying to develop, but making very slow progress, according to the tests, and also the pullet gave various other signs that egg development was not properly taking place. She never did much scratching for feed, and was often found sitting on the roost when others were out looking for feed. Any poultry raiser would have judged the pullet to be in fine laying condition from all outward appearance, line D showing dead eggs and line L pointing to live egg. The yolk was nearly full grown, which might in time have reached full development and been laid, but would have been very small, and because of the weak condition of the organ further egg development would have been doubtful.

Specimen No. 25 shows laying organs of another hen taken out of the flock a little later in the season. It will be noticed that this organ has one live egg on left side marked L; all others shown are dead yolks that were well advanced before they withered and died. The large

Fig. 24

Showing the Organs of a Pullet Which Were Not Properly Developing.

Fig. 25

Showing the Organs of a Hen Which, by Outward Appearance, Would Have Been Judged a Good Layer, but Was Not Laying.

Fig. 26
Showing a Fully Developed Organ.

and light colored dead egg marked D very likely died first by taking on some unnatural growth, as it was deformed and oversized, and from the disordered condition other eggs trying to develop were affected from the unnatural condition, and not making further development had to wither and die, thus leaving no chance for the hen to produce any eggs. O shows oviduct trying to develop. This young hen was detected by tests given in the preceding chapters, but by outward appearance would have been taken for a good laying hen, proving that looks are deceiving.

Specimen No. 26 shows a fully developed organ. On left side of organ can be seen a large and deformed dead yolk marked D. Other eggs above and to the right marked L, are in different stages of development, but were apparently in a healthy state when the hen was killed, which was done the next morning after she had become broody and had sat on the nest all night. She was killed to ascertain if any disorder was the cause of some hens laying small batches and becoming broody at short intervals. By turning to cut No. 11, which shows a perfectly healthy and natural state of an organ that has just delivered the last egg of the batch and the hen had become broody, it can be seen by these comparisons that specimen No. 26 was not able to fully develop and lay out the full batch of eggs or the last four or five that had started to develop.

A reasonable explanation is that the organ had taken on a diseased or weakened condition in the winter from some cause, and as the disorder grew worse and when the latter

Fig. 27
Showing Diseased Organs.

end of this batch was reached the eggs ceased to develop and the broody condition came on. If the hen had not been killed and had been allowed to set, the live eggs seen would soon have withered and died; or even if the spell had been broken in the usual way they undoubtedly would have withered and died. Thus another cause of the accumulation of dead eggs has been discovered. Also when hens have a disordered organ when the moulting season comes on and the last batch of the season is being laid, their condition being weakened and the growth of feathers drawing on the system for substance, helps to check egg growth, and consequently the last eggs of the batch cannot complete the development and they have to wither and die, leaving the organs in much worse condition than before.

This explanation will help poultry raisers to understand why hens that have laid one or more seasons do not prove to be as good layers as the younger hens or pullets. It also helps the poultry raiser to more fully realize the importance of knowing how to detect hens having some disordered condition of the egg organs so as to be able to cull them from the flock.

Specimen No. 27 was killed under the same condition as hen shown in No. 26. Notice the two live eggs shown marked L and the two eggs above marked L D. It can be seen that these two eggs are rough and full of blisters, caused by some disorder or disease of the organ, and were dying when the hen was killed. F shows heavy layers of fat, proving that the hen had not been laying

Fig. 28

Showing Organs of a Hen That Had Never Laid an Egg.

prolifically, and the substance that would have gone into eggs was deposited in fat. This gives further proof that over-fat hens and hens that want to set often may be expected to have disabled organs and should be examined and discarded. During the last season I killed and dissected a large number of hens that became broody often and found a large per cent of these hens with organs in various conditions. I found several that had a partially developed yolk ruptured and the substance leaking out and running around the others that were in a healthy state. No doubt hens having organs in this condition could not produce any more eggs.

Specimen No. 28 shows the organs of a hen that was killed the last of August and was about a year and a half old and had never laid an egg. She was kept under trap nest system for two or three months and would often be found trapped in the nest, but never leaving an egg. The hen was shipped to me about the middle of July and kept where she had a favorable chance to lay if she could. During this whole time the hen showed by test Nos. 1 and 2 to be in a fairly good laying state, as she had become very fat. This fat and the egg developing condition made the tests very deceiving, but whenever the crop test was made it gave full proof that she was not laying, as the small amount of feed that her crop would contain at roosting time was not a sufficient amount for any hen to be able to produce eggs. I believe this explanation will be valuable to the reader in many ways.

In Figure 28, L points to eggs that were found when

Fig. 29

Showing Dead Organ of a Hen That Was Supposed to Have
Laid Two Seasons.

killed. D points to what apparently was a dead ovary; no more germs could be found on the organ, only those which are shown, two of them having developed to nearly full size. O points to oviduct, which was found to be in an unnatural condition.

Specimen No. 29 shows a dead organ of a hen that was culled out of a flock, marks showing dead eggs and dead oviduct. This was a hen that was supposed to have laid two or three seasons and may have laid the first season. She was discovered by the tests, which indicated her non-laying condition.

TEN WAYS TO SUSPECT HENS THAT ARE NOT LAYING

THREE WAYS TO PROVE THEIR LAYING CONDITION

1. The non-laying hen is the lazy hen.
2. She is usually the last to leave the roost in the morning.
3. She is always found in dry quarters on a rainy day.
4. She has a poor appetite, and is the first to leave the morning feed.
5. She seeks the shady spot in summer, and seldom leaves it.
6. She usually has an abundance of fat.
7. The comb may be off color, but this is not a safe sign.
8. Suspect the hen that is narrow behind.
9. She usually is the first to go to roost. The exception is the hen who has harvested a good crop of feed.
10. The first to leave when the last feed of the day is given. Scatter feed in a long, narrow row to make this observation.

The successful poultryman will be as sharp as a detective and always on the lookout for suspects. When caught he will apply tests Nos. 1, 2 and 3, and hens failing to pass should be decapitated.

A HISTORY
OF
EIGHT NON-LAYING
BOBTAILED HENS
AND
ONE THAT WAS NOT BOBBED
INCLUDING VALUABLE
SCIENTIFIC FACTS REGARDING MOULTING

A SUPPLEMENT TO
"Don't Kill The Laying Hen"

BY
THOS. F. POTTER

COPYRIGHT APPLIED FOR

CONTENTS

	Page
Introduction to Supplement	3
Illustration Showing Laying Organs of a Hen in Perfect Condition	4
The Story of One Hen that was Not "Bobbed".....	5
The Story of the First Four Non-Laying Bobtailed Hens...	7
The Other Four Non-Laying Bobtails	13
How Hens Having Red Combs are Deceiving	17
Forced Moulting Bad Business	22
How the Laying Season can be Extended and Many More Eggs Obtained, or Why Hens Having Good Laying Organs Stop Laying Early in the Season	24
Why the Flock Should be Properly Cared for in Order to Make a Correct Selection of the Poor and Non-Layers..	25
A Good Way to Mark Suspects	28
Proof that No Mistake Has Been Made in the Selection of a Non-Layer, even though Found to Have a Few Live Yolks on the Ovary	29

INTRODUCTION TO SUPPLEMENT.

Having talked with many poultry raisers who have purchased my book, "*Don't Kill the Laying Hen*," and by asking questions and having had many questions asked, I have concluded that some have not quite grasped the full meaning of my explanations, and believe this is due largely because they have not given it the careful study it deserves.

It could hardly be expected that one who had not given the subject any previous study could grasp it all at one reading. Some have said that they have read the book through four times and gained much each time.

In this supplement there are some points explained that are mentioned in the book, but they are explained in quite a different manner. I herein endeavor to illustrate how I apply my system to my own flock of poultry and hope it will help the reader to become more familiar with the subject. I feel sure that the history of the eight bobtails and other information that is given here will be of great interest and value to poultry raisers.

The illustrations on pages 8, 14, 16, 18, 20 and 26, in this supplement are from actual photographs of the laying organs taken from the bobtailed hens.

The illustration on page 4 is from an actual photograph of the laying organ of a hen (not one of the "bobtails") in perfect condition.

THOS. F. POTTER.

This illustration shows a laying organ of a hen (not one of the "bobtails") in perfect condition, with the last five eggs of a batch not yet fully developed. Oviduct (O) cut open shows fully developed egg. (C) shows ova-sacs in a state of absorption.

A HISTORY OF EIGHT NON-LAYING "BOBBED" TAILED HENS AND ONE THAT WAS NOT "BOBBED," INCLUDING VALUABLE SCIENTIFIC FACTS REGARDING MOULTING.

I take it for granted that the reader has carefully read my book, "*Dont Kill the Laying Hen*," and become familiar with the laws of nature that control the laying organs, if not, another reading should be made and the knowledge gained put into practice, which practice will give a very much better understanding of the laws.

THE STORY OF THE ONE HEN THAT WAS NOT "BOBBED"

In taking up this subject, let me first explain about one hen that was not "bobbed."

Some five years ago I had a hen that revealed to me two very important laws of nature that proved to be the two missing links that were necessary to make up an almost perfect system of selecting non-laying hens.

About the middle of August in that year my attention was attracted to one of the hens in the flock because of the complete shedding of feathers and the growth of new ones, which caused surprise because the others did not show any signs of shedding so early. My first thought was that this hen would be ready to start laying early in the fall and would make a good winter layer. Weeks passed, and as no signs of development were apparent,

my curiosity became aroused and I watched her closer and began to think there must be something wrong with her laying organs. Not having had any previous experience of the kind or given the subject any particular study, I concluded that there was something to be learned and a reason for the hen shedding so early. As time passed, I fully concluded that her organs had no life in them. However, after I had given the time necessary for development, and there was no opportunity to learn more while she was alive, I concluded to kill her and see if I had drawn correct conclusions. Close examination of the organs showed them to be very defective, black and yellow dead ova germs and the organ in a dry state, very small and contracted; and as the dormant ovas in a healthy state are clear and light in color, it was plain that the organ never could have developed another egg. This led to two important conclusions:

1. That a hen having a dead or defective laying organ, did not use up her energy in the production of eggs, and not having anything to hold back the moulting that draws upon her system, it follows that as a natural sequence moulting took place earlier than it otherwise would have done.

2. That a non-laying hen did not consume much feed. Previous to this I had not given any thought to the feed question in any way, especially as to the difference in the amount consumed by a laying or a non-laying hen; but this opened up a new field for study and investigation which I have recorded in the last edition of my book.

While I was quite certain as to the correctness of these two theories, I decided to take it up the next season as it was then too late to carry on any further experiments.

For the following two years I kept over two or three non-laying hens in order to further prove these facts. Invariably the non-layers shed far in advance of the rest of the flock. Other points had been closely watched, such as following up the crop test, etc.

During these two years of experiments, I learned many important facts. Then the last revised edition of the book was printed, being three years ago, and the experiments that have been carried on since that time will be told in the story of the

FIRST FOUR NON-LAYING BOBTAILED HENS.

The following year, 1909, I had thirty-five hens that had laid one season. No culling had been made during the winter as it is not the time to do it, though if the major part of the hens have started to lay late in the winter, some culling could be done.

In the early spring, the majority of the hens had begun to lay. Some time passed between examinations of the flocks as to their laying conditions.

One morning as we were having a warm rain, and in taking out some extra feed, I noticed four hens in the shed, while all the others were out, soaking wet, pulling out fat angle worms and hunting for more with great in-

Fig. 30
Showing several dead eggs just above two live
eggs, marked L.

terest. These four hens were unconcerned about the favorable opportunity for securing worms.

The contrast was so marked as to demand investigation. I closed the door on the four hens and went to the house after the shears, caught them and made an examination, found that in the way of egg development there was "nothing doing," and no feed in their crops. It was decided very quickly that their tail feathers should be cut close—"bobbed."

After this "bloodless surgical operation," they were allowed their liberty. With their tails "bobbed" they could be seen and all their acts and habits easily watched, at the same time making it convenient to pick them out for examination.

These hens were allowed to remain in the flock nearly all summer and were very instructive and interesting in proving the theory that the non-layer ate very little food and will be so to you, if you will do the same thing, so as to become personally familiar with these facts.

I have often asked visiting friends and neighbors if they could see any difference between the actions of the bob tails and the others. Invariably the answer was "No." Then giving them a demonstration by scattering some feed, again calling attention to the bobtails and asking if any difference could be distinguished. The only difference was that they made no effort to get feed and did not seem to care about anything to eat. By driving them out in an attempt to force them to eat resulted in a very evident lack of appetite; they leisurely picked up a few pieces of

grain and then left while the balance of the flock continued to eat until their crops were well filled to supply the necessary food for egg production.

Generally, at roosting time, I found one or two on the roost, invariably the bobtails were on the roost first. Waiting until dark and desiring to make further tests, after the hens were all settled down, I made an examination, comparing the condition of the bobtails with the others, and found the crops of the bobtails contained but little feed while the crops of the majority of the others were well filled, and still others that were not laying so heavy more or less filled.

As the laying season advanced, they were found by tests 1 and 2, as given in the book, "*Don't Kill the Laying Hen*," to be in fairly good laying condition, bones spread, intestines down, indicating a developed laying condition, but the abdomen having in most cases an abnormal amount of fat stored in it between and around the points of the lay bones. This condition alone would be deceiving, but when the crop test was applied—very little food was found in them. This again proved their unproductive condition.

Now, to complete the story of the four bobtails, they were all killed and dissected during the latter part of August and their organs found in different states of disorder, some having a few yolks hanging to the ovary surrounded with more or less dead ones. (See Fig. 30.)

A very important point to know is that these four bobtailed non-laying hens were the first hens to shed their feathers and come out with a new coat.

These experiments were very satisfactory to me and gave additional proof that I had formed the right ideas. However, the season passed and the flock had been culled down to twenty-two hens; several of them laid right up to the first week in December and a few laid up till the second week in December before moulting.

These long laying season hens moulted so rapidly, were quite bare of feathers, and the weather being quite cold, I put them in warmer quarters to keep them comfortable so that the new coat of feathers would grow rapidly. In less than seven weeks these late moulters were laying again, keeping it up until the following December.

Shortly after the four bobtails were killed, others started to moult and completed the process far in advance of the strong laying hens. Some of these I killed, dissected, and found their organs in a low, dormant condition, more or less defective, many of the small ovaries being yellow and some black, proving them to have been in a weak laying condition, hence ceasing to lay early in the season, proving that the demand for substance to produce the new crop of feathers overcome the weak laying requirements.

This experiment convinced me that hens having defective or weak laying organs would follow the non-layers in the shedding of their feathers, which would be a very good guide to determine the hens having weak organs and short season layers. Such hens would not be profitable to winter over for another year's laying.

I was convinced long before this experience that the

hens that did not start to lay until late in the season, or the last ones to start in the spring (if they were of equal ages), would be the first to stop laying for the season, and, of course, would not be profitable to winter over. This fact, with the time when a hen starts laying, and when she stops, makes it an easy matter to select poor layers.

The first hens that start laying in the spring or winter and continue laying late in the season must have very strong and healthy laying organs; and of course would be the proper ones to keep over for another season's laying.

As a rule, most poultry raisers are largely guided by the hens' ages in making their selections. I have proven among my own flock that some old hens will lay more eggs in a season than some young hens. These are facts and will have to be admitted. They prove that it is folly to dispose of hens just because they have laid one or two seasons and keep younger hens that would, or could, not produce half as many eggs as the older, strong producing hens.

This is a large subject and too long to take more space at this point, but with the explanations that have been made, there should not be much trouble in making selections of the proper hens to keep over for another year's laying as well as the proper ones to dispose of.

THE OTHER FOUR NON-LAYING BOBTAILS

The following year, after the first four bobtails had been disposed of, I wintered over 22 hens left out of the flock of 35 wintered over the previous year. A portion of these hens started to lay in January and all but four of the others started laying a little later. The four gave no signs of egg development. They were followed up for a few weeks with occasional examinations to see if any signs of egg growth were taking place, and as these signs did not develop, I soon concluded that they had defective laying organs and their tails were bobbed also.

I saw that I had another opportunity to further prove that the non-laying and weakly laying hen would be the first to shed their feathers and come out with their new coat. This moulting question had become very interesting, and as I had the opportunity to carry out another experiment along the same line, I concluded to allow the four bobtails to remain in the flock during the laying season. After a time, all four of the bobtails showed signs of egg development, the same as the other four bobtails did, their combs being red, intestines dropping down, filling up the abdomen pocket, the lay-bones spreading. I had been looking for these conditions to take place, as I have stated in the book that nearly every hen, sooner or later, would take on some stage of laying condition, even though the laying organs were so defective that it would be impossible for them to develop a perfect egg. (See Figs. 31 and 32.) *This is why hens are so deceiving to the poultryman

Fig. 31

Showing very unnatural growth of the ovary. Many ovas trying to grow out in a solid body.

who has not become familiar with these laws and conditions that take place and it also makes it somewhat complicated to the beginner or to the one just starting to learn the system of selecting such hens and keeping them out of the flock. These hens naturally become very heavy and fat. This is very good proof of their laying organs' condition, although some hens will lay quite well for a while when they are over fat. These hens with the defective organs that only take on what seem to be a laying condition, can be detected even though they have developed into a laying state. It would be quite a difficult matter were it not for the crop test, as this is the most reliable in such cases and especially in the laying season or in warm weather. I might say here that such hens will often continue in this, what seems to be a laying condition, for several months and not be able to produce an egg, others may be able to produce a small number in accordance with the defective ness of the organ. These hens that are not able to produce any eggs, but which show nearly all the signs of laying, are only very slowly developing some yolks on the ovary; and after a time they start to die, perhaps being as long dying as they were in developing. (See Figs. 30 and 31.) These show some of the described conditions. See also illustrations shown and explanations in the book. It will be seen that this year's experience further proved my theories.

Fig. 32
Showing organs destroyed by inflammation,
very much enlarged and caked,
completely disabled.

HOW HENS HAVING RED COMBS ARE DECEIVING

Often such hens have redder combs than the hens that are doing the laying, and one that was not posted along this line would think them to be the best layers in the flock. The explanation for it is that all hens just previous to their starting to lay have very red combs and continue to have for some time, but after a while the color will fade somewhat as the laying organs are taking on all the nourishment that can be spared to develop eggs. Also, a large amount of feed is required and the digestion of which uses up energy, all of which has its effect. On the other hand, the hen that has organs so defective that they are only able to reach a developing condition, in several weeks or a few months developing only a few yolks, does not need so much feed or energy to digest it and consequently as long as such conditions last there is nothing to prevent that hen from having a red comb. All animal kind look well previous to delivering their young. But as the mother is called upon to supply food for the young, a large part of her energy is turned toward supplying it and the system shows the loss plainly.

I think by this explanation and demonstration the poultry raiser can easily see why the hen that can only take on the egg-developing state, can have as red a comb as the hen that is doing the laying, and also why the non-layers at this time can be so deceiving.

Now, to go back to the second four bobtails. Their condition and crops were often examined and their crops were

Fig. 33

Showing dead organs, oviduct filled with mangled and dead yolks, Ovary showing a few live ova germs among a mass of dead ovas or yolks.

found to contain but a small amount of feed at roosting time. Some times there would be more in the crops than at other times. It must be understood that this was during the warm weather, and in cold weather a non-laying hen will consume much more feed than she will in the summer. As cold weather approaches, the crop would, ordinarily, contain more than in summer time.

If I had not understood the law that largely controls the amount of feed consumed, or the crop test, it would have been a hard matter for me to have selected out these non-layers after this state of development took place. The crop test reveals their laying condition, if it is understood and followed up. For further explanations on this subject, see pages 40 and 41 in the book.

All four of these hens had shed their feathers and the new coat quite complete when they were killed and dissected, which was during the latter part of August, which was not the case with the other hens in the flock. A portion of their bodies showing the laying organs are shown in Figs. 32 to 35. Study and compare these illustrations. This is an interesting condition, and the comparison between them and their actions and appearance while still in the flock is both instructive and interesting, although the defective organs, as shown, are difficult to describe. This is an additional proof that hens with weak or defective laying organs shed their feathers earlier than hens with strong laying organs with but few exceptions, and, as a rule, can be relied upon.

In carrying out this quite extensive test, I find the ex-

Fig. 34

Dead organs showing a very peculiar and unnatural growth
of an ova.

ceptions to be with hens that have laid out a batch of eggs and have become broody and allowed to sit on the nest until the laying organ had reached a full dormant state, and then removed from the nest and well fed. Under this condition the hen that had a perfectly sound organ is liable to start shedding quite rapidly and before a new batch of eggs could start development the moulting would be so far advanced that it would require all the substance keeping the laying organ in a dormant state; but when the new coat of feathers is fully grown and she has recuperated, egg development could take place and the hen make a good winter layer.

I have also found that when a hen has been thrown into a poor state of health, from any cause, and the laying organ having taken on a defective state that might or would cause more or less pain, the hen would be among the last to moult.

When it is about time for the hens to start moulting, it will be noticed that some of the hens in the flock had started to moult and new feathers making their appearance. In some cases the hen may have laid out a batch of eggs, and while the new batch is getting started she has a chance to recuperate, and the moulting takes advantage and starts. One would suppose that the hen that had started to moult would continue until the work was complete, but the laying organs being the stronger says "no," there are more eggs to be produced and moulting has to wait, these hens going for weeks without shedding feathers or many new ones coming in. This is quite good

proof that such hens have good laying organs, so strong that they control the situation and take all the nourishment for the development of the eggs.

Again, it sometimes happens that about the time the moulting might be expected to start, the majority of the flock start in and go clear through the moult without any cessation. This may be accounted for through two causes, one that the flock may have been kept in quarters that have been infested by vermin and unsanitary, causing the majority of the flock to stop laying, the organs becoming dormant and dry. Then renovating the house and admitting more fresh air would start the moulting and get so far along with it that there is no chance for egg development to take place. In another flock the moulting may have been started on the general flock by food that was more laxative than they had been in the habit of having.

I give these exceptions that might take place, and be misleading in making selections of non and poor layers, especially for the poultrymen who are guided in their selections largely by the earliness of the hens moulting. It can be seen that all of the surrounding conditions must be considered one cannot altogether rely on one thing.

FORCED MOULTING BAD BUSINESS.

Some few years ago, an extensive poultry raiser advocated forcing hens to moult in advance of the regular laying season while eggs were cheap, and by doing so it was

thought that eggs could be had when they were high. It appeared to be a good idea and a good many poultry raisers became interested in it. To what extent it was practised I am unable to say. However, the plan was entirely against nature and could not help but be the cause of many hens losing their power to produce eggs. The plan was to starve or feed very lightly for a time and then feed strong again. This causing the hens to shed their feathers and bring out the new coats in advance of the regular season and they were supposed to be ready to start early laying.

Let us consider the results of this kind of treatment. We will suppose that the larger percent of the flock were laying or were just starting a new batch and were suddenly deprived of their feed and the ovaries were loaded with ovas or yolks in all stages of development; the question is "What is to become of those ovas or yolks if the hen is not supplied with feed and cannot carry out the work undertaken? There is only one result. Sooner or later they would have to wither and die, the body might hold them in preservation for some time. The length of time would vary with the amount of feed she was given. If the hen had just laid out a batch of eggs, the organ would take on the full dormant state and no harm would be done.

But, I do not think the plan has been very extensively adopted or ever will be, for poultrymen would soon find that their hens would not lay well thereafter and very likely would not try it the second time.

HOW THE LAYING SEASON CAN BE EXTENDED AND MANY MORE EGGS OBTAINED, OR WHY HENS HAVING STRONG ORGANS STOP LAYING EARLY IN THE SEASON.

As spring is the natural time for hens to lay and late summer or early fall the natural time for them to stop, it can be seen that in the fall every discomfort the hen has to stand, tends to interfere with the natural egg production. Consequently the hen should be given feed and every comfort that is possible, as this will tend to greatly lengthen the laying season. Hens lay their eggs in batches and when a batch is laid out the hen may either become broody and the laying organs go into the dormant state, or they start and develop another batch of eggs.

The question is, What is desired? If it is more eggs, we work to that end.

It is quite a critical period when a batch of eggs have been laid out, for a change has to be made, the organ must either start and develop another batch of eggs and continue the work or become dormant. When the batch of eggs are developing, there is something to be accomplished, and it is perfectly natural for the organ to continue in the work of development. However, it is an easy matter for it to dry up at this point and will do it if conditions are not most favorable. Any thing that tends to reduce the hen's vitality, hinders production, and particularly so at such times. On the contrary anything that tends to strengthen the vitality, will help the organ to

develop another batch of eggs. We now have the two conditions. One to be worked for and the other to be avoided. To produce more eggs, the hen must have an abundance of fresh air, it will stimulate the appetite and thus build up the system. Lots of scratching material for the feed to be thrown into to make them work, creating and stimulating circulation which will start egg development. On the other hand the lack of fresh air causing loss of appetite with unsanitary quarters and vermin, no necessity to work to get food will stop egg development and cause the organ to become dormant, possibly in a diseased condition and no more eggs for the season.

WHY THE FLOCK SHOULD BE PROPERLY CARED FOR IN ORDER TO MAKE A CORRECT SELEC- TION OF THE POOR AND NON-LAYERS.

I am some times asked to select the non and poor layers out of a flock. Only a few hens are necessary to show that the flock has not been well cared for and no one would be able to make a proper selection. The hens in a full dormant state could be easily known or the hen that had made some egg development, but the hen that has lost the power of egg production, and the hen that has organs so defective that only a few eggs could be produced in a season could not be selected under such conditions. I have stated in the book that the flock must be properly cared

Fig. 35

Showing a mass of dead yolks hanging to ovary, two live ovas shown in center, marked L.

for in order to make these selections, but some have the idea that if they gave them good care a few days previous to making the selections that it could be correctly done. That will not do and I think I can make explanations so that anyone can see why the flock must be well cared for at least for several weeks previous to the time of making the selection. If a flock of hens have not been well fed the flock is of course in poor condition and egg development could not take place, or if in some cases it should start it would not be a normal or natural development.

Egg development will only take place when a hen is in a thriving condition. There is no very marked difference between a hen that had a defective organ in a dormant state and the hen with an organ in a healthy dormant condition as long as they were both poor in flesh. The body demands all the nourishment until well built up, which takes several weeks and then egg development can be expected. Then the one having good organs would start egg development. This would continue the demand for feed and the crop test would prove the condition. While the hen with the dead or defective organ would not start egg development and would lose her appetite then the contrast is easily noted.

When culling is to be done any time during the laying season this good care must be taken into consideration. If vermin and unsanitary quarters are allowed or overcrowded houses the hens with good laying organs will soon lose their appetites, consequently egg development stops and conditions change.

It often happens that a flock of hens are carelessly fed, having all the shelled corn and other grain they can eat without working for it, consequently their entire time spent in idleness and this in the time of year that their laying organs are in the dormant state as is the case during or after the latter part of the moult. Under such conditions after the new coat is fully developed and the organ in a dormant state, the hens will become fat very rapidly: the entire flock soon becoming over fat. It is supposed that such hens have laid one or more seasons. Egg development would begin slowly and the flock at no time would be in a normal condition, this again makes the culling more difficult.

These explanations with what has been given in the book regarding this question will make the conditions better understood which are necessary for a successful and proper culling from the flock the non and weak layers.

A GOOD WAY TO MARK SUSPECTS

When a hen is found to be in a backward or poor egg developing state it is sometimes necessary or safer to give more time to see if a better development can or will take place so as to better determine the condition of the hen's laying organs.

In order to save the time and trouble necessary to go over the whole flock the second time I have found no bet-

ter way to mark the "suspects" than to cut one-half of the tail feathers far enough down to be readily seen.

If a majority of the flock are laying a week or two is usually sufficient time to give these "suspects" to develop into normal laying condition. At the end of this time the "suspects" only can be examined and if found to be in an undeveloped or non-laying condition the remainder of the tail can be clipped off, thus indicating that the hen has been entirely condemned as a proper hen to keep for laying purposes.

PROOF THAT NO MISTAKE HAS BEEN MADE IN
THE SELECTION OF A NON-LAYER, EVEN
THOUGH FOUND TO HAVE A FEW
LIVE YOLKS ON THE OVARY

I believe that I should not close my book until I have made further explanations on this important subject.

I have explained that there would be but a small per cent of non-laying hens with more or less defective laying organs that would not at some time during the laying season take on conditions of egg development and still not be able to produce a single egg, while others less defective could develop a few eggs and lay them at some time during the laying season, but these yolks might be carried for weeks and even months in a semi-dormant

state, the laying organs being too weak to develop them. So, do not be alarmed if, in killing a hen you have selected as a non-layer, you should find a few yolks; that is no indication that she would be a profitable hen to keep.

Later on in the season these yolks that have developed will die and the watery substance be absorbed back into the system and a dead substance remain hanging to the ovary in a preserved state and no doubt could be kept in this condition for years if the hen was allowed to live.

With this point understood, it can be readily seen that it would not be an uncommon thing in the laying season and under favorable conditions, to select a non-laying hen by the tests given and, after being killed, to find live eggs or yolks upon the laying organ. But, as stated, this does not prove that she is a laying hen. She might be seen to go on the nest every day for weeks and still not lay an egg during the whole season; she is simply carrying out her nature or desire to lay, but the condition of her laying organs prevent anything more than a partial development of the eggs. All these conditions are very deceiving. She is quite likely to have a red comb until the eggs have died, when the comb will fade.

DON'T KILL THE LAYING HEN

LIBRARY OF CONGRESS

0 002 850 978 9