

UNIVERSITY OF IDAHO

EXTENSION DIVISION

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POULTRY HUSBANDRY IN IDAHO

BY PREN MOORE

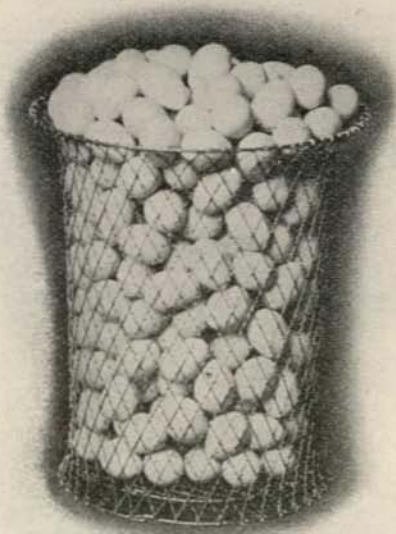
Poultry Husbandman

COOPERATIVE EXTENSION SERVICE IN AGRICULTURE AND HOME ECONOMICS OF THE STATE OF IDAHO UNIVERSITY OF IDAHO EXTENSION DIVISION AND U. S. DEPARTMENT OF AGRICULTURE COOPERATING

POULTRY SECTION

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32½ Pounds of Eggs
Laid by 3½lb. Hen



The little White Leghorn hen, whose picture is shown on the cover, laid the eggs pictured above, in the year from Nov. 1, 1917, to Nov. 1, 1918. She weighed three and a half pounds and the eggs weighed thirty-two and a half pounds—nine and two-sevenths times her own body weight. She was a University of Idaho hen, known as EO226. Mr. Moore tells about her in this bulletin. Her carcass, for meat, was worth 52 1-2 cents at the end of the year, but she had laid eggs worth \$10. Another hen of the same breed and in the same pen laid 12 1-2 cents' worth of eggs in the same year.

This story is told by Mr. Moore to emphasize the need of selecting egg-layers to make poultry-raising successful. Methods of such selection are described in this bulletin. Methods of feeding also are outlined in these pages. They may be studied further in a bulletin, "Feeding for Egg Production", written by Mr. Moore and issued by the University of Idaho Agricultural Experiment Station. It is obtainable also from the Extension Division.

POULTRY HUSBANDRY IN IDAHO

By **PREN MOORE**
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POUULTRY-RAISING is a profitable business for Idaho farmers, as a part of their diversified farming. With due attention to breeding, feeding, housing and care, it will yield handsome returns on the time and capital invested. Idaho produces probably not more than 40 per cent of the eggs and fowls consumed within the state, and there are not to exceed twelve states in the union that more than supply their own market. There is, therefore, plenty of opportunity for great increase of production. The Idaho climate is ideal for poultry raising, the soil conditions are good, the feed supply is of the best, and building material is abundant.

It is upon egg production that success of the industry mainly depends. Eggs represent about two-thirds of the value of the entire poultry production of the United States, and meat, representing the other one-third, includes ducks, geese, turkeys, and the hens which lay the eggs.

This bulletin is intended to help bring Idaho poultry up to a higher standard of quality and to improve methods of poultry management.

IDAHO CLIMATE AND SOIL FAVORABLE

Maximum egg production is not secured under conditions of either extreme of heat or cold. Idaho has a great variety of altitudes, causing a somewhat varied climate, but for the most part the winters are mild and the summers pleasant, providing an ideal climate for poultry.

Idaho soil also varies. In some sections the soil may be said to be rather too heavy, but the same may be said of the soils of the three principal Middle Western poultry producing states—Iowa, Illinois and Missouri. Many sections have an open, gravelly soil, which is ideal. This is particularly true of the great irrigated section of southern Idaho. A spot more nearly ideal for poultry could hardly be found. In northern Idaho there is also much land of practically the same character. Then too, there is the great wooded area, with its abundance of shade, and there is the great wheat-producing section, where as much feed goes to waste each year as would be necessary for the production of the poultry and eggs required to feed the entire state.

SECRETS OF MARKETING

Many of the heavier poultry-producing sections of Idaho are somewhat remote from the larger centers of consumption. In such sections marketing is more or less a problem. Farmers can meet this problem, however, by being very particular about the condition of the flesh of fowls, or the quality of eggs they place on the market. What striking results may be obtained by this care for quality is shown by the fact that, during the winter of 1917, California eggs sold in New York City at higher prices than the common lot of eggs produced in the state of New York, on the same market. Any farmer who is producing a case of eggs per week can, with proper care, market them successfully, even tho it may be necessary for him to ship several hundred miles.

Eggs must be strictly fresh and clean, uniform in size and shape, and, to demand the highest prices, uniform in color.

Eggs start incubation at about 70 degrees Fahrenheit. They should not be kept where temperatures are likely to go above 60.

Eggs are as susceptible to odors as milk. They should not be kept in a pantry or any other place where foods are kept. Egg shells are very porous and easily penetrated by odors. Decomposition results.

Spots that appear in eggs, when placed before the light, are the results of poor storage.

Eggs, to keep best, should be infertile. An infertile egg will keep for days, and sometimes weeks, under conditions that would spoil a fertile egg in a very few hours.

Fowls intended for market should be put in good flesh before selling. They should not be taken to market in the condition they may happen to be in at the time it appears advisable to dispose of them. Local consumption may not be great, but if the quality is good enough and the production great enough, the market will soon come. It may be necessary to ship some distance, but any farmer can prepare his fowls and ship them to the points where needed.

By recognizing that the carcass of the fowl is, in reality, a by-product of the poultry industry, farmers would be able to solve the market problem, to a great extent, if they would practice rigid selection and consume the unprofitable fowls in the home. This practice would release more beef and pork for remote and more congested centers.

FOWLS, TURKEYS, GEESE AND DUCKS

"Poultry" is a broad term, covering all classes of domestic birds, and "fowl" is a term commonly used to designate the common hen. Local conditions will determine which should be grown. The fact that eggs constitute about two-thirds of the value of the poultry production of the country seems to indicate that, under average conditions, fowls are the most profitable. They easily stand first in popular esteem. A combination of fowls, turkeys and geese may be advisable on many farms, or it may be desirable even to add ducks.

Geese can be grown almost entirely on pasture. They require little else

when there is plenty of green, succulent grass. The irrigated sections are ideal for them.

Ducks are most profitably grown on marshy land, as they glean much of their living from the animal life in water. Lands bordering the numerous Idaho lakes are good places for ducks. There are also the marsh and swamp lands in Northern Idaho.

Southern Idaho is rapidly becoming famous as a turkey producing section, having unlimited range, and an abundance of grasshoppers. The spring season is dry and favorable to easy hatching and starting of the young. Wet, cold, backward springs render turkey growing difficult. There is every reason for believing that the section including central and southern Idaho will be, if it is not already, one of the greatest turkey-growing districts of America.

BREED SELECTION

Selection of breed **must** be decided by the person interested. It usually is safe to select any breed that is popular in the community. In raising unpopular breeds one is likely to have difficulty in securing breeding stock. Bronze turkeys, Toulouse geese, Pekin and Runner ducks are the more popular of these classes of poultry. As to fowls, it is not the breed, so much as the hen within the breed, that counts. This is because two hens of the same breed may vary greatly in egg-producing qualities. Hen Number EO226, of the University of Idaho flock, for instance, laid ten dollars' worth of eggs in twelve months during the year of 1917 and 1918. She was a White Leghorn, weighing three and a half pounds. On November first, 1918, the time when her year was up, hens were selling in Moscow at 15 cents per pound, which would make the carcass of this little Leghorn hen worth only $52\frac{1}{2}$ cents— $\$9.47\frac{1}{2}$ less than her year's production. The University fed another hen, EO178, that laid only $12\frac{1}{2}$ cents' worth of eggs in the same period. These hens were of the same breed and were in the same pen.

PRINCIPLES OF BREEDING

"Poultry breeding" is a term covering the various practices of mating and selection, looking to the improvement of the stock. The common practice is simply to secure males enough to mate all the hens on the place, regardless of fitness as breeders. This is not breeding. If fowls are to render the greatest possible service, they must be bred for a purpose.

The hen is a machine, whose purpose is to consume feed in great quantities and convert it into eggs. Some hens have a natural, inherited tendency to use their energy in the production of eggs, while others grow muscle and fat. There may be hens in any flock that lay well, and there may be those individuals in many flocks of very uncertain breeding, with phenomenal egg records.

Breeding by selection for improvement in egg production involves the mating together of fowls that have good egg records. It is useless to mate fowls that are not good layers. When the entire flock is used as breeders the most of the

eggs taken for hatching are likely to be obtained from the low-producing hens, since the best hens, having laid all winter, may have a tendency to go broody in the spring just when eggs are wanted for setting and when the light producer does her laying. Use of the trap-nest, to find the high producing hens, is not necessary. They may be selected with a fair degree of certainty by the system described elsewhere in this bulletin.

No fowl that has shown signs of physical weakness should be used as a breeder. Poor qualities are intensified by breeding. Fowls that are low in vitality never lay many eggs, so it is safest to dispose of them as soon as they are noticed.

Pullets should not be used as breeders when it is possible to avoid using them so. Hens do their heaviest laying in their pullet year, using their energy in the production of many eggs rather than in transmitting vitality. Pullets lay smaller eggs than do hens, and small eggs produce small chicks, and small chicks grow into small hens, which, in turn, lay small eggs. It is, therefore, much better to use hens in their second and third laying years as breeders.

COMMUNITY BREEDING

The breeding pen, then, should consist of the mature hens, showing high egg production and good vigor, and a male of good vigor, bred from high producing stock, and, if possible, of the same blood line as the hens. This can best be accomplished by community breeding.

Two breeds are enough for any community. For ease and convenience in breeding, it might be appropriate to suggest Single Comb White Leghorns as the light breed and some one of the heavy or dual-purpose breeds for the other. No person should keep more than one breed. It is important that the blood line be kept intact when breeding for egg production. Where community breeding is practiced, this can be accomplished easily without its ever being necessary to mate fowls that are closely related. Breeding stock then can be easily obtained and the community soon becomes known as a place where the best of these breeds can be found.

FEEDING

A hen that has been bred for egg production must then be fed for egg production. Under farm practice, summer feeding need cause little concern. The hen can pick up much of her living, and, ordinarily, it is the kind of feed suitable for egg production. The addition of a small quantity of coarse grain may be necessary, and probably some shell and grit. It is always advisable to keep some mash where the hens may have access to it.

Fowls are more or less confined during winter months. They are driven in by the severe weather and for this period, if eggs are expected, it is necessary to provide, artificially, as nearly summer conditions as possible. Give the hens a balanced ration, including plenty of good, green, succulent food, and plenty of grit, shell and bone. Alfalfa leaves, lawn clippings, cabbage, mangel-wurzels and clover leaves are good green foods for poultry.

Just what constitutes a well balanced ration is less well known for laying hens than for other domestic animals. It is essential, however, that the ration should consist of a proper proportion of grains to ground feed. The grains should be of the greatest variety possible and fed at the rate of about eight quarts per day per one hundred hens in deep litter of clean straw. More than this should not be fed and it may be safe to reduce the grain ration below this amount if the mash is correct.

The mash should be fed dry in open feed hoppers and kept before the fowls at all times. It should contain a variety of feeds, such as bran, finely ground corn, and oats. It should also contain about 28 per cent of good quality beef scrap or fish meal. Feeding as suggested is all that is necessary to insure the fowls' getting a properly balanced ration. When sour milk or butter-milk is obtainable, it may be added to the ration with splendid results. There is no animal on the farm that is capable of turning surplus milk into money as is the hen. When hens have all the milk they will drink, the beef scrap may be reduced by half, and, with a liberal allowance of peas and plenty of sour milk, the beef scrap may be reduced even more.

A SUGGESTED RATION

A suggested ration with the use of peas is as follows:

<i>Grain or Scratch Food</i>	<i>Mash</i>
10 parts corn	4 parts bran
10 parts peas (slightly cracked)	2 parts corn meal
10 parts wheat screenings	6 parts pea meal
2 parts oats	4 parts oat meal
2 parts barley	4 parts barley meal
	2 parts beef scrap

This mash is fed dry in open hoppers.

Feed all the milk as a drink that the hens will consume. Where peas are not obtainable, the ration may remain the same, except that the peas are omitted and three extra parts of beef scrap are used. If the milk is not obtainable, the mash should be 28 per cent beef scrap.

HOUSING

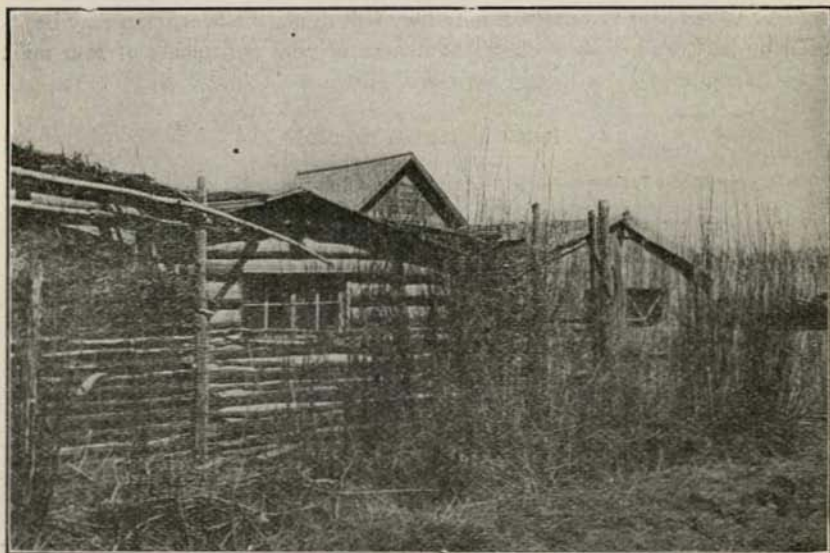
That hens may respond to good breeding and correct feeding, they must be properly housed. A hen bred for the purpose of consuming great quantities of feed and converting it into a finished product, is of a highly nervous temperament. The ordinary mongrel may roost out all winter, and be perfectly healthy, but the same treatment would kill a well bred fowl in a few days.

The essential requirements of a properly constructed poultry house are: that it be tight on three sides, usually east, north and west; that ample ventilation be provided; that it be well lighted; and that it be dry. It should have a floor and should have a droppings board with perches above the droppings

board, placed at the rear of the house. Houses should be low, and economy in construction should be practiced.

Poultry houses should be tight on three sides so that the fowls will be well protected from the elements. Fowls should never be exposed to draft. Drafts cause colds and colds soon run into roup. The ventilation should all come from the opening in the front of the house. The wind may then strike the opening with much force, but the current is broken and the fresh air filters gently thru the roosting quarters.

The openings should be so arranged as to admit the maximum of sunlight. Poultry houses should face the south whenever possible, so that the sunlight and ventilation may be provided for thru the same opening. In some climates, open fronts may be satisfactory; in others, curtain fronts may be suitable; while yet others may require some glass. No more glass should be used than is necessary,



TYPICAL EXAMPLE OF POOR HOUSING

Darkness and Poor Ventilation of Such Poultry Houses are Conditions Conducive to Tuberculosis and Other Diseases

as glass is a conductor of heat and cold. Sunlight aids in keeping the house dry.

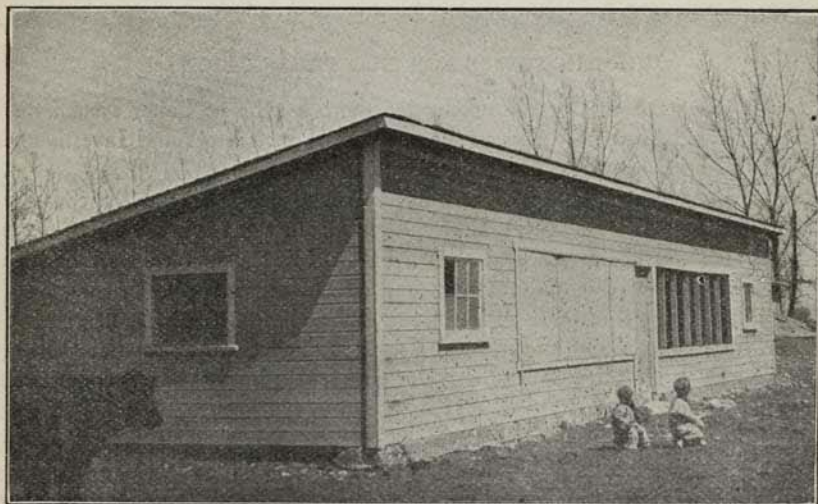
It is highly essential that poultry houses be dry. Moisture accumulates readily in houses that are not properly ventilated. Fowls suffer much more from cold in close, damp houses than they do in open, dry houses. Hens with frozen combs do not lay.

Good board floors, well up off the ground, aid in keeping houses dry. Cement floors are very good also, if they are well water-proofed. Litter is much more easily kept clean on floors than dirt. On dirt surfaces, the litter

becomes soiled, moist and heavy, and the hens do not work so well in it. A good floor in a poultry house is a profitable investment.

No poultry house is complete without a good droppings board. Droppings should not be allowed to accumulate on the floor, as the house soon becomes filthy, and there is a disinclination to keep the house clean. With the perches about eight inches above the droppings board, the fowls are given added protection from the elements. The droppings board should be about 30 inches above the floor. The droppings then can be easily scraped into a box. The board should be in the rear of the house, farthest from the ventilation opening.

Houses should be built as low as is convenient for the attendant. All additional space is not only expensive and unnecessary for the fowl, but is injurious. If houses were built to suit the convenience of fowls alone, they need not be more than two feet high. All additional space is simply that much space to



A GOOD TYPE OF FARM POULTRY HOUSE

be kept warm. The highest point in any poultry house need not be higher than nine feet. The University of Idaho recommends the Woods type, or half monitor house. The highest point in this house need not exceed eight feet and they run down as low as four feet at the lowest point. The combination, or two-thirds span house, is also recommended as a very desirable type. The highest point in this house should not exceed nine feet. Shed roofs are splendid also, and are ideal for Idaho conditions. The front should be seven and a half feet high and the rear five feet high. These heights are intended for houses up to eighteen feet deep from front to rear.

Economy in construction should be practiced, in order that the investment per fowl may be kept as low as possible. Houses need not be elaborate to be serviceable.

RECORDS SHOULD BE KEPT

Record-keeping is important, so that the farmer may know just how profitable his flock is. Taking into account the eggs and fowls consumed in the home, it is a surprise on the average farm to see how much the poultry income amounts to.

Fowls pick up much waste of which no record can be kept. All of it is profit. The cost of feeds that are actually fed can be recorded in a separate account. An accurate account of all items of expense should be kept and an accurate account of all items of income, including a credit for eggs and fowls consumed in the house at the market price at the time they are used.

An invoice of the flock on November first of each year should be taken. In invoicing it is a good plan to use a standard price for the live fowls on the farm—say, one dollar per head. If a balance of accounts shows that the fowls are not paying, the cause can be found and corrected.

JUDGING FOWLS FOR EGG PRODUCTION

For judging fowls for egg production there can be no better system than the one adopted by the "American Association of Instructors and Investigators in Poultry Husbandry," which is as follows:

"In order to lay well a bird must have a sound body. As a first consideration a bird must be **VIGOROUS AND HEALTHY** if it is to be able to lay well. Vigor and health are shown by a bright, clear eye, a well set body, a comparatively active disposition and a good circulation.

"Further, the bird must be free from **PHYSICAL DEFECTS**, such as crooked beak, excessively long toe nails, eyelids that overhang so that the bird cannot see well, scaly leg or anything else that would keep the bird from seeing or getting an abundance of food.

LOSS OF FAT DUE TO LAYING

"Color of Pigmentation Changes. (These should be observed by daylight.) A laying fowl uses up the surplus fat in the body; especially it removes the fat from the skin. In yellow-skinned breeds this loss of fat can readily be seen by the loss of the yellow color. The different parts of the body become white, according to the amount of fat stored in the body and the amount of circulation of blood thru that part. The changes occur in the following order:

"The **VENT** changes very quickly with egg production so that a white or pink vent on a yellow-skinned bird generally means that the bird is laying, while a yellow vent means a bird is not laying. It should be recognized that all yellow color changes are dependent on the feed, coarseness of skin and size of bird. A heavy bird fed on an abundance of green feed or other material that will color the fat deep yellow will not bleach out nearly as quickly as a smaller, paler yellow bird.

"The **EYERINGS**, that is, the inner edges of the eyelids, bleach out a trifle slower than the vent. The earlobes on Leghorns and Anconas bleach out

a little slower than the eyering, so that a bleached earlobe means a little longer or greater production than a bleached vent or eyelid.

"The color goes out of the **BEAK** beginning at the base and gradually disappears until it finally leaves the front part of the upper beak. The lower beak bleaches faster than the upper, but may be used where the upper is obscured by horn or black. On the average-colored, yellow-skinned bird, a bleached beak means heavy production for at least the past four to six weeks.

"The **SHANKS** are the slowest to bleach out and hence indicate a much longer period of production than the other parts. The yellow goes out from the scales on the front of the shanks first and finally from the scales on the rear. The scales on the heel or rear hock joint are the index as to the natural depth of yellow color of the bird. A bleached-out shank usually indicates fairly heavy production for at least fifteen to twenty weeks.



A CULLING DEMONSTRATION; LEARNING TO PICK EGG-LAYERS

"The yellow color comes back into the vent, eyering, earlobe, beak and shanks, in the same order that it went out, only the color returns much quicker than it goes out. A vacation or rest period can sometimes be determined by the tip of the beak being bleached and the base being yellow.

BODY CHANGES DUE TO LAYING

"A laying hen has a large, moist **VENT** showing a dilated condition and looseness as compared with the hard, puckered vent of a non-laying hen.

"The whole **ABDOMEN** is dilated as well as the vent so that the pelvic arches are widespread and the keel is forced down, away from the pelvic arches

so as to give large capacity. The more eggs a bird is going to lay the following week the greater will be the size of the abdomen. The actual size of the abdomen is, of course, influenced by the size of eggs laid and by the size of the bird.

"Heavy production is shown by the quality of the SKIN and the thickness and stiffness of the PELVIC ARCHES. Fat goes out from the skin and body with production so that the heavy producers have a soft, velvety skin that is not underlaid by layers of hard fat. The abdomen in particular is soft and pliable. The STERNAL PROCESSES are very prominent and are generally bent outward. The thicker and blunter the pelvic arches and the greater the amount of hard fat in the abdomen, the less the production or the longer time since production.

"One of the finer indications, but yet one of the most valuable in picking the high layer, is the fineness of the HEAD and the closeness and dryness of FEATHERING. The head of a high layer is fine. The wattles and earlobes fit close to the beak and are not loose and flabby. The face is clean-cut. The eye is full, round and prominent, especially when seen from the front. The high layer is thinner; that is, the feathers lie closer to the body and after heavy production the oil does not keep the plumage relatively sleek and glossy, but the plumage becomes worn and threadbare.

CHANGES IN SECONDARY CHARACTER

"COMB, WATTLES AND EARLOBES enlarge or contract, depending on the ovary. If the comb, wattles and earlobes are large, full and smooth, or hard and waxy, the bird is laying heavily. If the comb is limp the bird is only laying slightly, but is not laying at all when the comb is dried down, especially at molting time. If the comb is warm it is an indication that the bird is coming back into production.

MOLTING

"When a bird stops laying in the summer she usually starts molting. The later a hen lays in the summer or the longer the period over which she lays, the greater will be her production, so that the high producer is the late layer and hence the late molter. The length of time that a hen has been molting or has stopped laying can be determined by the molting of the primary feathers. It takes about six weeks to completely renew the primary feathers next to the axial feathers and an additional two weeks for each subsequent outer primary to be renewed.

TEMPERAMENT AND ACTIVITY

"A good layer is more active and nervous and yet more easily handled than a poor layer. A high layer shows more friendliness and yet elusiveness than a poor bird. A low producer is shy and stays on the edge of the flock and will squawk when caught.

"While the characters discussed have dealt specifically with the current

year's production, it should be borne in mind that a high producer one year is, generally speaking, a high producer in all other years."

DISEASES AND THEIR TREATMENT

In any flock of poultry, regardless of the size, an outbreak of disease always is possible. Bad environment frequently is the cause. Diseases may break out in well managed flocks with no apparent cause, but usually where the environment is favorable, and good, wholesome food is provided, there is small danger.

Ordinarily, it does not pay to treat fowls that are diseased. In the first place, no fowls should be used for breeding purposes that have ever shown any signs of disease, no matter how slight. Fowls that are diseased are not productive. The value of the individual fowl and its product is not sufficient to justify a very great expenditure of time or medicines. If the disease is infectious, or highly contagious, it never should be treated. The danger of keeping a diseased fowl is too great. The better practice under ordinary conditions, would be to kill the diseased fowl as soon as noticed and destroy the carcass by burning it.

Prevention is better than cure. Ordinary preventive measures consist in keeping houses and yards or runs scrupulously clean, giving only clean feed and drinking water in feed hoppers and clean drinking vessels. The straw in the houses should be kept fresh and clean. Finally, the flock should be protected from outside contagion. Breeding stock or any fowls brought in from the outside should be isolated for several days to see if any diseases develop.

LICE AND MITES

Lice and mites are the greatest causes of diseases among poultry. Lice live continuously on the fowls; mites stay on them at night and go off during the day. Licene and similar remedies are splendid for lice and may be obtained thru the local druggist or the poultry supply houses. These ointments should be applied two or three times each year.

Mites can be kept out of the roosting quarters by painting the perches, droppings board, and the walls of the roosting chamber, up as high as the fowls can touch, with a mixture of equal parts of kerosene and Zenoleum, Kreso, or some other of the coal tar preparations that are found on the market. This should be done several times in the summer. If mites are kept down during the summer, they will not bother in winter. In the first warm days of spring, the mites begin to require attention. The house should be thoroly sprayed inside at least once a year. A good spray to use is "Carbola."

TUBERCULOSIS

Tuberculosis is common among the fowls of Idaho, and is very destructive. The symptoms are lameness and "going light." Tubercular lameness is often mistaken for rheumatism. When lameness becomes common in a flock, the lame fowls should be diagnosed for tuberculosis. Fowls with tuberculosis will

continue to eat almost to the last, but they gradually grow thinner until there appears to be no flesh on the breastbone. The breastbone becomes very sharp and appears, from the feeling, to be very dry. On opening a fowl that is far advanced in the disease, one will find yellow, cheesy spots on the liver and on the intestines or lungs. In many cases, the spots are found on all the internal organs, but they are most commonly found on the liver. On the intestines, the tubercles may grow in clusters. The lungs of fowls are rarely affected by tuberculosis.

The only treatment for tuberculosis in fowls is to dispose of the entire flock. They need not be a total loss, as they may be sold to the butcher, subject to inspection, the same as other farm animals. It is not safe to attempt to keep any of the fowls from a tubercular flock, as the disease is likely to break out again at any time. The houses should be thoroly disinfected, the yards and runs cultivated and, if possible, some crop should be grown on the land. All treatment should be very thoro and no fowls should be kept on the land for at least one year. Great care should be exercised when re-stocking, that breeding stock is not secured from tubercular flocks.

BLACK HEAD

Black head is a disease of the intestines and liver, which is most common to turkeys. In some sections it has made turkey-growing almost impossible. The cause is not definitely known. The symptoms are most frequently seen in young turkeys from two weeks to four months old, but old turkeys may be affected. The affected birds appear less lively and are inclined to lag behind, or entirely separate themselves from the flock. Diarrhoea is a constant symptom. A loss of appetite, dullness, and drooping of the wings and tail are very noticeable. There is a rapid loss of weight. The disease progresses slowly, but the affected birds usually die.

As yet, there has been no treatment found that has given entirely satisfactory results. A woman at Caldwell, Idaho, has found the following treatment, however, to be effective. To each sick turkey she gave a one-tenth grain calomel tablet in a teaspoonful of castor oil. She kept them far out on the farm away from the farm yards. She states that she had a number of sick turkeys when she began the treatment and that she never lost a bird so treated.

Turkeys always should be encouraged to rove. Sick birds may at times be cured by removing them to fresh land.

Farmers' Bulletin No. 957, entitled, "Important Poultry Diseases," is a good treatise on the poultry diseases that are most likely to affect farm flocks. This bulletin may be obtained by writing to the Agricultural Extension Division, Boise, Idaho.

