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Poultry Culling
Michigan State University Extension Service
C.H. Burgess, E.C. Foreman, Poultry Husbandry
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POULTRY CULLING

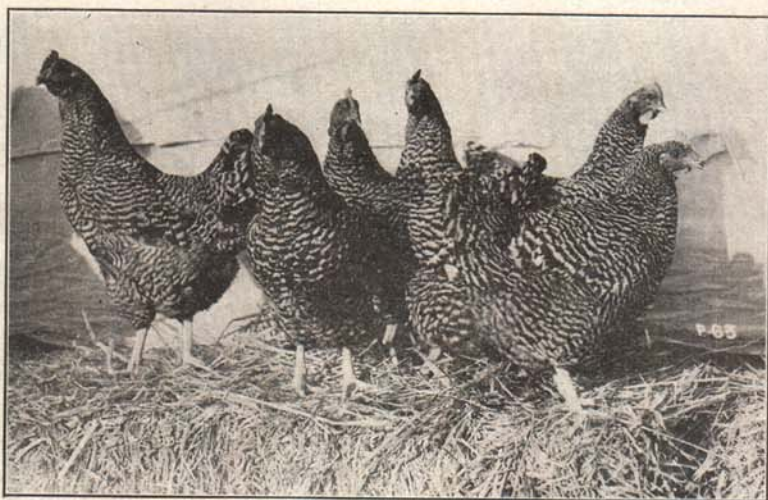
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BULLETIN No. 21

EXTENSION SERIES

OCTOBER, 1919



LEADING PEN OF BARRED PLYMOUTH ROCKS
SEVENTH NATIONAL EGG-LAYING CONTEST,
MOUNTAIN GROVE, MISSOURI

Records: 268 238 226 226 212 141

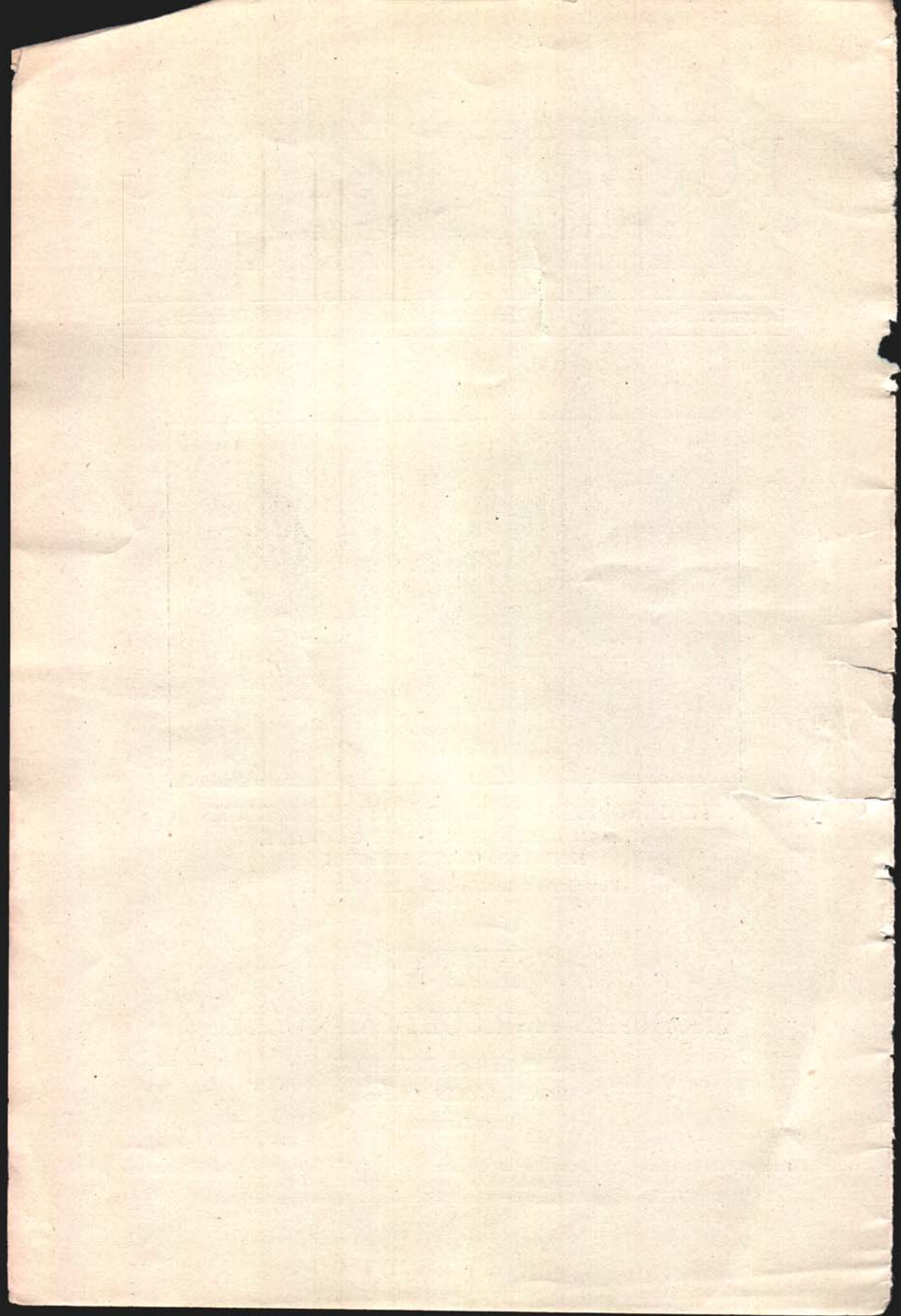
MICHIGAN AGRICULTURAL COLLEGE

EXTENSION DIVISION

R. J. BALDWIN, DIRECTOR

EAST LANSING

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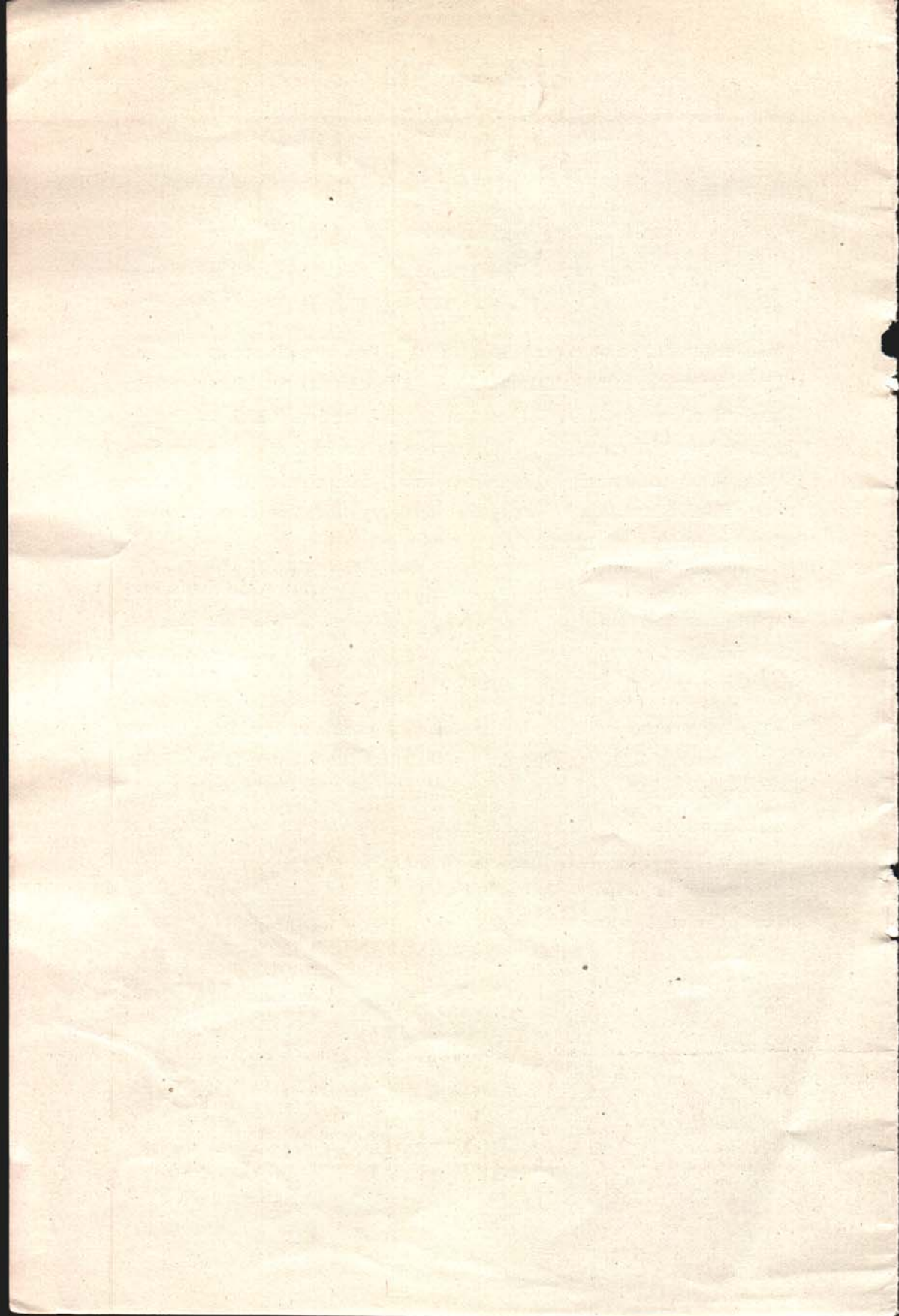


INTRODUCTION

Under present economic conditions it is of first importance in the flock of poultry on the average farm to remove all hens not reaching a certain standard of production. The cost of egg production, which is already high, is greatly increased by the presence in the flock of a few non-producing hens consuming high priced feeds. The elimination of these non-profitable hens can be done with accuracy when the characteristics of egg producers are known.

These characteristics which are illustrated and described in the following pages are presented to the poultry raisers of the State after observations made on many thousands of hens and démonstrations conducted on a large number of farm flocks.

The suggestions are made in the following pamphlet to aid the farmer in producing a better paying flock of hens on the average farm. It, in no way, is intended to discuss the standard of types of fowls bred by exhibition breeders. Before the greatest good can come to the farmer and the breeder of standard quality of fowls the farmer on the one hand must realize the importance of pure bred stock and the breeder of exhibition fowls on the other must breed fowls with high producing power. The flock of tomorrow must be uniform in shape and color and possess a high producing power.



EGG TYPE CHARACTERISTICS.

Many conceptions of the meaning of "egg types" are found among poultry raisers. Some firmly believe that a high producing hen must carry her tail squirrel fashion, citing as evidence the little hen that laid "every day" in the coal bin. Others it may be have limited their observations to the size of the comb, the length of the back or the wedge-shaped body. A hen may possess all of these factors and yet be a poor layer. The error in these cases is due to observation being limited over a small number of hens over a short length of time.

An analagous comparison of types of cattle and poultry may give a substantial reason for suspicion that "egg types" may exist. The classification commonly referred to in cattle is dairy, beef and dual purpose. The contrast between the dairy and beef types is obvious. Each has been developed along entirely different lines for widely different purposes. The dual purpose animal is supposed to embody the blended characteristics of the beef and dairy types, giving an increase in milk production over the typical beef and carrying more flesh than the dairy cow. In these cases breeding for production has altered the type of the individual. In the study of "egg types" a similar correlation is found between individual characteristics and capacity for production.

The characteristics to be observed in the individual will be taken up in the following order:

- | | |
|-----------------------|----------------------|
| 1. The head. | 4. Time of moulting. |
| 2. Egg sack. | 5. Pigmentation. |
| 3. Body conformation. | 6. Rate of maturity. |

THE HEAD.

Egg type in poultry is more reliably indicated by the head than any other single part of the body. The head reveals health, constitutional vigor, age, refinement, coarseness, and masculinity.



Fig. 2. Lady Activity, 263 egg record in 365 days. Note the keen, refined, intelligent expression in this heavy producer—large, bright eye; narrow skull; clean cut face, possessing femininity and vitality. This hen was selected by refinement of the head as the record hen in the College flock in 1916 just as she began to lay.



Fig. 3. Miss I. W. W. A lazy disposition. A coarse head is characteristic of unprofitable layers. Older hens taking on fat will also show this coarse, broad skull, wrinkled face, china eye and dull inactive expression.



Fig. 4. Miss Chuckle Head is a zero producer. Note the masculinity expressed in this individual by long wattles gouty face and coarse comb. This is a typical head of a hen that has developed permanent atrophy of the ovary. She never has nor never will produce an egg. This type is not common.



Fig. 5. This head shows extreme refinement. Care and judgment must be exercised or refinement of the head will lead to selection of individuals that are not sufficiently robust to stand up under the continuous strain of heavy egg production. Small heads and extreme fineness of features generally indicate a propensity for broodiness.



Fig. 6. Crow Head. Note the long, straight, narrow beak and sunken eye. This is an undesirable type readily developing colds and disease and is constitutionally a poor producer.

THE EGG SACK.

QUALITY AND CAPACITY TESTS.

The refinement expressed in the head is always very closely associated with quality of egg sack. These two factors combined are a safe guidance in selecting and grading the laying hens.

In determining the capacity or quality of the egg sack a correct and uniform method of handling must be observed. Unless the hen is properly balanced, incorrect conclusions may be drawn due to the cramped position in which the hen is held. Fig. 7 shows how to properly handle and balance the hen.

Clasp the hen firmly in the right hand, balancing and supporting her weight by the fingers, with the thumb grasping the left thigh, at the same time the fleshy part of the thumb pressing gently against the lower flight feathers. Held in this way, the hen makes no effort to escape. By using the left hand measurements are easily obtained, both for quality and capacity of egg sack. (Fig. 8.)

The right leg of the hen should be free, otherwise a cramped condition of the egg sack results, diminishing capacity measurements and inflating the egg sack.

When a hen is in a dormant condition the capacity becomes very much contracted, whereas, when the hen is approaching a laying condition, the intestines increase in size, due to a stretching of the walls to take care of the increase of intestinal material, due to greater consumption of



Fig. 7. Holding the hen to determine the capacity or quality of egg sack.



Fig. 8. Making measurements for quality and capacity of egg sack.

food. Simultaneously the ovaries and oviduct increase in size and weight.

The capacity measurement of the egg sack fluctuates, according to the condition of the ovary or the rate of ovulation. They indicate only the immediate rate of production. A good layer must have a large capacity but all hens with a large capacity are not good layers.



Fig. 9. The accompanying illustration shows the contracted egg sack characteristic of a dormant ovary or temporary atrophy of the ovary. A tough dry leathery egg sack combined with small capacity was found in this unprofitable hen.

Systems of culling now in use should be supplemented with the quality egg sack test. The degree of quality is determined by the flexibility of the egg sack. By applying a little pressure, it should yield so that the fingers would press in a short distance above the keel and below the pelvic bones.

The egg sack should be full and mellow having a moist, life-like feeling and readily contractible when slight pressure is applied. (Caution must be observed when handling hens where oats are the chief diet. A misinterpretation of quality may easily be made, due to the hollow feeling present.)

Quality of egg sack is revealed if a perpendicular line is drawn in Fig. 9 and Fig. 10 from the keel to the pelvic bones. Note the fat inflated egg sack in Fig. 10 and the contracted condition present in Fig. 9. The best dairy breeders in the country acknowledge that the cow with the finest handling qualities of the udder is the most persistent milker and the hardest to dry up. Likewise the hen with the most quality of egg sack is the most persistent producer and will seldom or never go broody. The hens carrying a surplus of fat may be highly productive for a short time but their production is usually limited to the spring cycle. Big records can only be realized by heavy and persistent production.



Fig. 10. Note the inflated egg sack.

Capacity determines the number of eggs produced in each cycle but quality determines the persistence of rhythm or the number of months that the hen will be productive. Both are necessary characteristics of a heavy layer.

The study of quality of egg sack enables one to detect hens that are persistent "nesters." Hens of this type always show a wide capacity indicative of a laying condition but due to internal disturbances the eggs are either reabsorbed into the tissues of or deposited in the body cavity.



Fig. 11. Heavy producer. Record 254 eggs per year.



Fig. 12. A freak specimen. Note the presence of secondary male sexual characteristics. Large, straight comb, long wattles and ear lobes, development of spurs and increased length of main tail feathers.



Fig. 13. Incomplete Hermaphroditism. This hen has acquired the voice and actions of the male, crowing frequently. The egg sack region is very similar to conditions found in male birds. Small capacity with coarse, tough skin.

BODY CONFORMATION AND TYPE.

Some high producers in Seventh Annual Egg Laying Contest, Mountain Grove, Missouri.

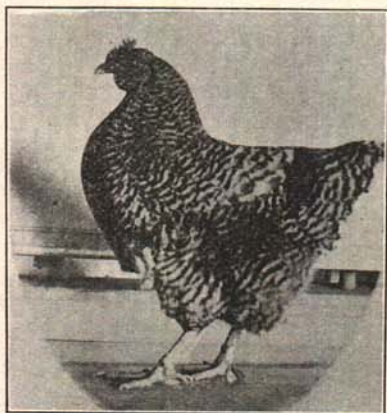


Fig. 14. Leading winter layer. Winter of 1917 and 1918.

Nov.	25 eggs
Dec.	26 eggs
Jan.	29 eggs
Feb.	25 eggs

Total105 eggs
226 Yearly Production.



Fig. 15. Highest Barred Rock hen in Competition and tied with winner of the contest.

268 eggs 10½ months.



Fig. 16. Record 226 eggs.



Fig. 17. Record 238 eggs.

Many poultrymen attack the egg type controversy from the angle of body conformation. A single glance at the accompanying photographs of 200 egg hens will convince you that all heavy layers have not long backs or high tails. They have, however, several characteristics in common. They were all selected before a single egg was laid, on the basis of refinement of head and early maturity.

In selection for early maturity the tendency is to alter the type slightly with a decrease in body weight. Heavy layers are usually very compact and tight feathered, with oblique shaped backs, shallow breasts and deep abdomens.

DISPOSITION.

Heavy layers most generally are of a nervous disposition, alert and active. They practice eternal vigilance from daylight until dusk, for tempting morsels of food and are always first to greet the attendant with the feed pail. The opposite characteristics are true of a poor layer, usually wild, flighty and equipped with good wings. Instead of a singing, talkative disposition that characterizes the heavy layer when handled she persists in flapping and squawking for her freedom.

THE MOULTING TEST.

A study of individual egg records reveals the fact that the rate and persistence of production are the limiting factors in securing high yearly records. The hens that can delay moulting until the latter part of October and November invariably produce the highest records and moreover are productive when a day's work means six or seven cents. Hens moulting during July and August in general are incapable of either big egg yields or large profits. The normal moulting period varies from six to twelve weeks, depending largely on the type of layer and season of year, usually occurring during months of July, August, September, October or November.

TWO DISTINCT MOULTING TYPES.

It is characteristic of hens that moult early during July and August to kill time. Their production is limited to the spring months only, when eggs are relatively cheap. They generally indulge in a prolonged moult and never give a thought to egg production until the following spring. Occasionally an early moulter will lay a few eggs during the

winter, but they are not a desirable type of consistent producer, often developing a hackle moult during the winter months.

The late moulting hen is a very desirable type, often beginning to lay again within six or seven weeks of the last egg produced previous to the moult. All of the feathers seem to drop at the same time, leaving the hen naked excepting for the bountiful crop of pin feathers displayed. These, however, grow very quickly. This type of moulter usually continues laying until the last feather drops.

Farmers, unknowingly, have persisted in marketing large numbers of these good hens, thinking they were sickly scrubs that never would make winter layers, the early moulting hens in full millinery display being retained as prospective layers.



Fig. 18. The late moulter. This illustration is of a 242 egg hen, that delayed moulting until the middle of November.

PIGMENTATION TEST.

This test is especially applicable during the summer months of June, July and August and can be readily applied by the novice, as an aid in culling out the unprofitable hens of the Rock, Red, Wyandotte and Leghorn or all yellow leg breeds.

Pullets just maturing or coming into a laying condition and older hens that are not laboring under the strain of heavy egg production usually carry a surplus of fat in the body which is manifested externally by a yellow pigment technically known as Xanthophyl, which gives the coloring to the shanks, beak, earlobe, face and vent. Only hens that are not developing yolks are able to make these fatty deposits beneath the skin.

otherwise an apparent drain is continually made upon the reserve fat stored in the body.

The order of bleaching follows directly in order of rate of blood circulation as follows: vent, face, eye ring, ear lobe, beak, and shanks. Heavy breeds, due to their size and coarseness, carry larger quantities of fat and the physical drain of egg production does not change the pigment so early as in the case of the lighter breeds such as Leghorns. In regaining the pigment, which occurs in broody hens, or natural "slackers," during the early summer, the same order as previously mentioned is followed. These should be culled and consigned to the butcher.

Some exceptions should be noted. While all hens displaying yellow legs that have not recently been broody are unprofitable, on the other hand all pale legged hens are not profitable. Hens lacking in constitutional vigor and the occasional hens that are unthrifty or suffering from internal disturbances will show pale colored legs. These, however, are easily detected by brightness of the head and quality of the egg sack.

CHICK SELECTION.

Early maturity is correlated with heavy egg production. The pullet that feathers earliest over the back has in nearly every case made the highest yearly records. Early feathering over the back is an indication of both early maturity and constitutional vigor. Chicks always feather in the following definite order: wings, tail, neck, breast, fluff and back. The heavy breeds should be completely feathered at seven weeks of age, the Leghorns or lighter breeds a week earlier. This test applies



Fig. 19. Well-feathered at seven weeks of age.



Fig. 20. Poorly-feathered at seven weeks of age.

especially to the heavier breeds. Leghorns are essentially an egg type breed and usually are very prompt in regard to early feathering. The two Barred Rock pullets photographed had identical conditions of feeding, housing, care, and are the same age, yet, at seven weeks of age a vast difference can be noted in their development. Preferences should always be given to close, tight feathering along with early feathering.



Fig. 21. Hatched March 1—laid July 7, 1918. This Barred Rock pullet was the earliest to feather in the College flock and commenced to lay when but four months and seven days old. She has continued to be a good producer throughout the fall and winter and is still laying.



Figs. 22 and 23. An undesirable type, lacking in vitality as shown by the twisted feathers and slow development.

COCKEREL SELECTION.

In cockerel selection early feathering and early crowing are desirable characteristics. The precocious cockerel that never develops a large strong frame should be discarded. Aim to select breeding cockerels that embody both early maturity and size. The vitality of the flock must be maintained or improved by the selection of sturdy, vigorous cockerels.

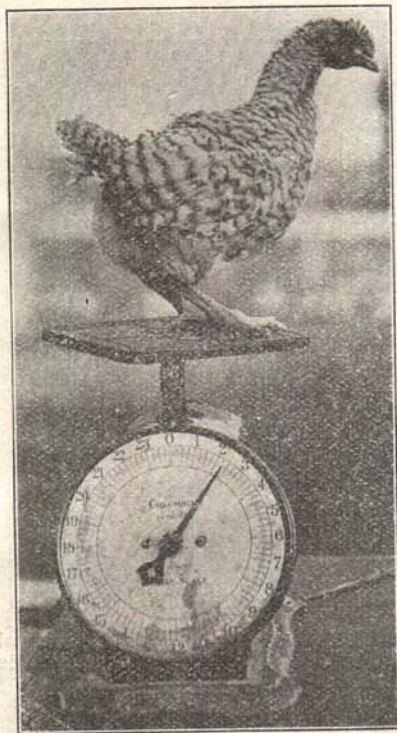


Fig. 24. Desirable type. Crowing at eight weeks of age.

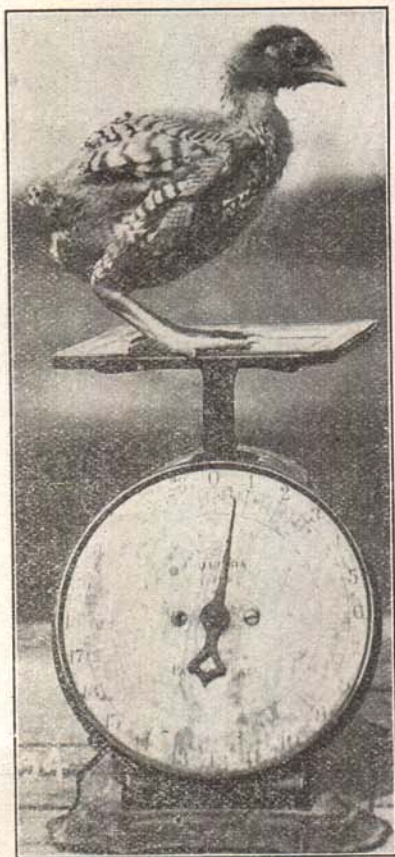


Fig. 25. Undesirable type. Crowing at five months of age.

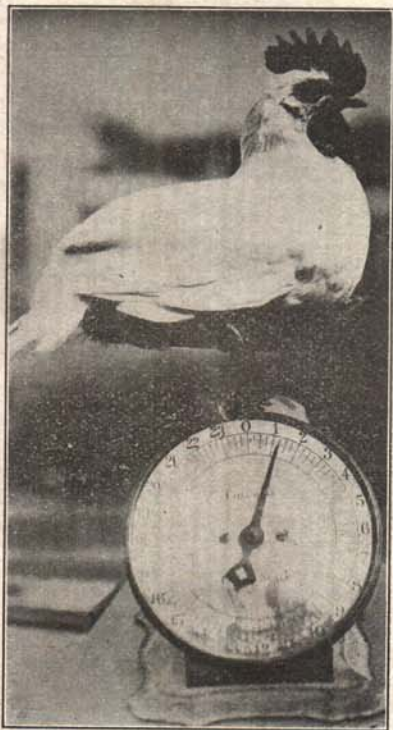


Fig. 26. Early maturity in Leghorns.
Crowing at six weeks of age.

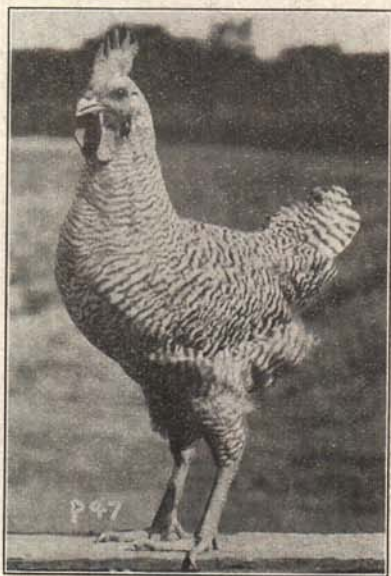


Fig. 27. A good one. Note the natural
rounding out of this cockerel while
growing. Age 12 weeks.