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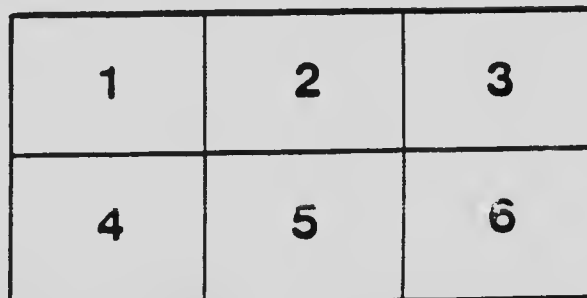
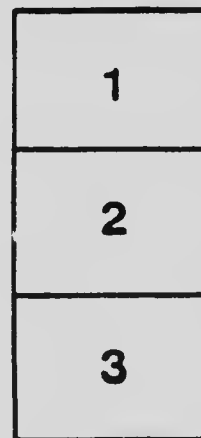
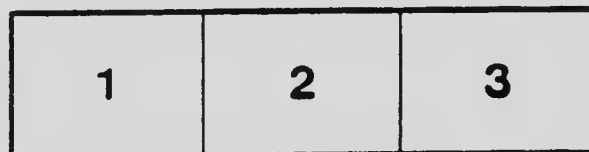
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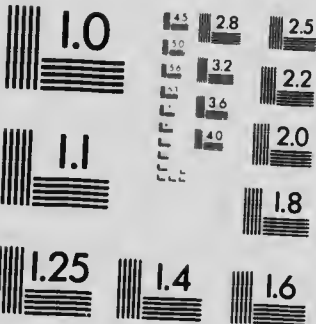
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PROVINCE OF BRITISH COLUMBIA

*Holmes B.*

DEPARTMENT OF AGRICULTURE  
(LIVE STOCK BRANCH)

BREEDING AND SELECTION OF  
COMMERCIAL POULTRY

3 BULLETIN No. 74

By H. E. UPTON

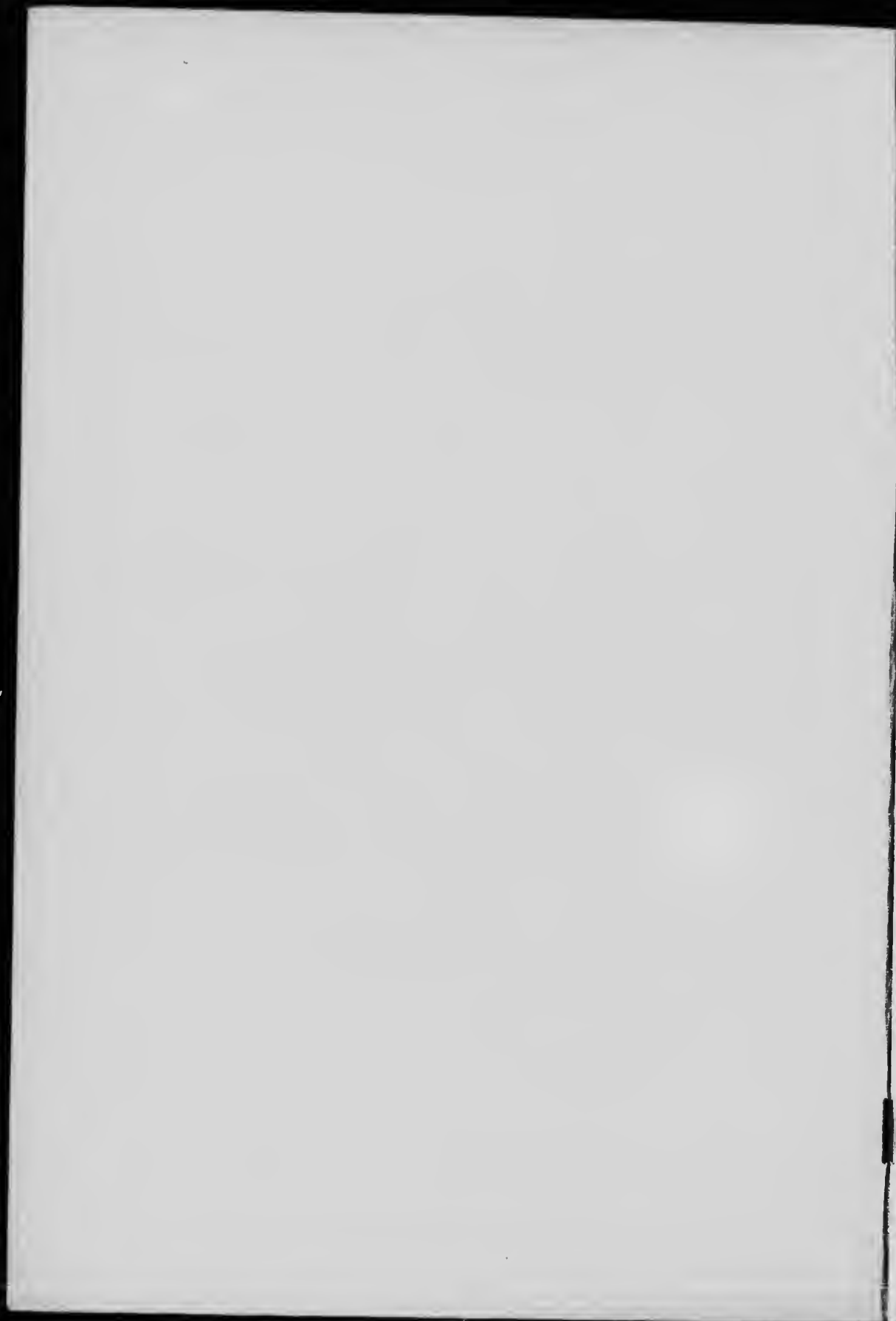


THE GOVERNMENT OF  
THE PROVINCE OF BRITISH COLUMBIA

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1917.



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OLIVE STOCK BRANCH

BREEDING AND SELECTION OF  
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*By* H. E. UPTON



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DEPARTMENT OF AGRICULTURE,

VICTORIA, B.C., February 15th, 1917.

*To His Honour FRANK STILLMAN BARNARD,  
Lieutenant-Governor of the Province of British Columbia.*

MAY IT PLEASE YOUR HONOUR:

I have the honour to submit herewith for your consideration Bulletin No. 74, "Breeding and Selection of Commercial Poultry," prepared by H. E. Upton, Provincial Poultry Instructor, under the direction of Wm. E. Scott, Deputy Minister of Agriculture.

I have the honour to be,

Sir,

Your obedient servant,

JOHN OLIVER,

*Minister of Agriculture.*

DEPARTMENT OF AGRICULTURE.

VICTORIA, B.C., February 15th, 1917.

*Hon. John Oliver,*

*Minister of Agriculture, Victoria, B.C.*

Sir,—I have the honour to submit herewith for your approval Bulletin No. 74, entitled "Breeding and Selection of Commercial Poultry," which has been prepared by H. E. Upton, Provincial Poultry Instructor, of the Live Stock Branch of the Department of Agriculture.

I have the honour to be,

Sir,

Your obedient servant,

WM. E. SCOTT,

*Deputy Minister of Agriculture.*

# PROVINCE OF BRITISH COLUMBIA.

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*Veterinary Inspector.*

WM. J. BONAVIA,  
*Secretary to the Department.*

\* Granted leave of absence for overseas service.



A typical flock of British Columbian commercial poultry.

# BREEDING AND SELECTION OF COMMERCIAL POULTRY.

By H. E. UPTON, PROVINCIAL POULTRY INSTRUCTOR.



HERE is probably nothing in the poultry world to-day receiving so much attention as commercial or utility poultry. Infallible systems for selection are advertised in many forms and ways, yet the hen goes on about her work, and many are still guessing. The majority will agree that some of the systems are good as far as they go. Much has been, and can still be, written on this important phase of the poultry business. The fact still remains, that if a hen has not the breeding ability, constitution, capacity, quality, and bone which are essential, she can neither be a good producer nor reproducer. The fowl that is lacking or poorly developed in any one of these points, irrespective of any of the others, cannot respond profitably nor economically to the food and care given her.

This bulletin is written to give information on the selection and building up or keeping up the strong breeding characteristics of the stock without sacrificing egg production. It is not supposed to be information on how to pick out the best layer or to tell how many eggs a hen can or will lay in a year. Our endeavour is to assist one and all to build up a good laying strain of birds. And, further, after one has achieved this result, this bulletin, we trust, will prove useful in assisting the breeder to keep up the size and vigour without any sacrifice.

One must be able to reasonably presume that an extra good laying pullet will pass on this characteristic to her progeny if she is to be of any value. To do this properly the ancestry of the strain and individuals must be known.

## ANCESTRY IS FIRST NECESSITY.

Biological influences and differences play a great part in breeding, yet they are not mentioned in many instances. Because a strain or individual proves good in the first generation is not good enough. It must prove good in its progeny as well. The only way this can come about is by understanding how to breed properly. This can neither be done by measurements or mathematical calculations, nor without knowing the ancestral blood lines.

Ancestry is the first thing or foundation from which to breed. One must know in mating up his stock what blood lines are being used. The breeder can then go to work with the printed score and select his stock for commercial purposes, providing he carefully reads the detailed matter relating to the score-card.

We have endeavoured, in getting up this score-card, to benefit by the experience of others in their score-card work, and using our experience with it in an endeavour to give the public of our best.

To try and make all points plain we will discuss each point in detail.

Firstly: What is a utility male? A utility male bird is one that is true to type, which is so constituted as to be capable of begetting utility females and males, and also capable of producing marketable flesh in profitable quantity; whose exact conformity to exhibition standard points is of secondary consideration, where such appears to conflict with what we understand as egg-producing requirements at the present time.

Secondly: What is a utility female? A utility female bird is one which is true to type, which is so constituted as to be capable of producing, firstly, marketable eggs; secondly, marketable flesh, both in profitable quantity; whose exact conformity to exhibition standard points is of secondary consideration, when such appears to conflict with what are understood to be egg-producing requirements at the present time.

NOTE.—(a.) "True to type" means that the bird not only in appearance belongs to a recognized breed, but that it is capable of reproducing its own kind.

(b.) "So constituted, etc." means that the bird has vigour and that its body formation is in accord with utility type.

(c.) "Exact conformity to exhibition standard points being of secondary consideration" does not mean that exhibition standard is not to be considered, but that utility type is to be considered first.

(d.) As in many breeds birds of exhibition standard type may be utility birds, so utility birds may accord with exhibition standard.

### SCORE-CARD FOR GENERAL-PURPOSE AND UTILITY OR COMMERCIAL FOWLS.

#### SCALE OF POINTS.

Description.	The Score.	Your Score.
(A.) General appearance, 30 points.		
I. Weight—		
Heavy-weights, males, 7-8½ lb.		
"                  females, 5½-7 lb.		
Light-weights, males, 4-6 lb.		
"                  females, 3½-5½ lb.		
Score according to age .....	3	
II. Form: Long, moderately deep, broad, low-set, rectangular, well balanced	6	
III. Quality: Bone, moderately fine and clean; feathers soft, medium in quantity; skin fine; scales fine	8	
IV. Condition: Face and head appurtenances bright red; eye bright; feathers glossy; legs, skin, and beak, bright yellow or white; a uniformity and mellowness of fleshing throughout	7	
V. Style: Active and vigorous, but not restless; showing strong character	6	
(B.) Head and neck, 20 points.		
I. Comb: Medium size, evenly serrated, fine in texture; free from thumb-marks, etc.; well attached	3	
II. Beak: Short, stout, broad at base, well curved .....	5	
III. Face: Short, full, with a clean-cut appearance; distance between eye and beak well filled in; head broad at crown	4	
IV. Eye: Clear and full, bright red or bay in colour .....	3	
V. Wattles and lobes: Medium size, fine in texture, smooth .....	1	
VI. Neck: Moderate in length, well arched with full flowing hackle (in male)	4	
(C.) Body, 40 points.		
I. Shoulders: Broad and rather flat on top .....	5	
II. Back: Broad, width well carried back; good length, with a gentle concave sweep to the tail	8	
III. Breast: Deep, wide, full and round; fleshing abundant and extending right to point of keel	12	
IV. Keel: Long, straight, well covered with flesh for entire length	12	
V. Tail: Well spread and full; no pinched effect; sickles long....	3	
(D.) Legs and feet, 10 points.		
I. Thighs: Medium length, plump, well muscled; set well up on the body	5	
II. Legs: Straight, short, wide apart, strong in bone; bright yellow or pure white in colour preferable	4	
III. Toes: Medium in length, straight; claws strong .....	1	
	100	

NOTE.—In judging, pure-breeds should always be given preference.  
*Disqualifications.*—Pronounced crooked breast-bones, keel-bones, back, tail, toes, beak, diseases in any form, slip wing, or any deformity.  
*Serious Defects.*—Badly infested with parasites. Ingrowing feathers. Decidedly dirty, dull plumage.

**(A.) GENERAL APPEARANCE.**

When one considers the individual fowl as it stands and compares it in weight, form, quality, condition, and style with the ideal, we term the same judging the general appearance.

**I. WEIGHT.**

Weight is given first consideration on the score-card. Too heavy birds are usually lazy or less active and show a decided tendency to utilize their food for forming flesh. Birds below weight seldom reproduce as prolific progeny as they are themselves. Decidedly underweight males are poor breeders, whilst decidedly underweight females are not persistent layers.

Whilst much time has been spent in breeding heavy and light birds, we have come to the conclusion that best results will be obtained along commercial lines by using birds coming nearly within the weights mentioned in this score-card at breeding-time.



A type of underweight male.

**II. FORM.**

A great deal of controversy still takes place relating to the different types to be used in breeding. We have come to the conclusion that, allowing for the breed and time of season handled, breeding stock should have a form balanced in all sections.

One desires a form somewhat rectangular in appearance. This form will be seen at its best when a female is in full lay or when a male is in his strongest breeding period. The female will at this time have a large spread between the two pelvic bones and a good depth between the two pelvic bones and the keel. The oviduct at this time is enlarged to its full working capacity. The development of the reproductive organs and softening of the membranes causes the sternum and keel to drop. The two wings of bone on either side of the body paralleling the backbone and the hinged ribs allow of this action. The same action takes place in male and female. This action is more marked in the female naturally, owing to the development and laying of the egg. The pelvic bones open at this season as well, due to the same cause in both male and female. The hen laying small eggs does

not need as wide a passage as one laying a large egg. The distance between the two pelvic bones and also the distance between the pelvis and the keel will be governed by this factor.



A.



B.

Note the well-balanced form of A as compared with the badly balanced form of B, which also shows a badly cut-up breast.

Therefore, unless the hen is in full lay or the male at its highest breeding point, the distance between these bones is never at its greatest, for the opening and closing-up of these bones depends on the development of the reproductive system. Hence, the longer, wider, deeper, and broader the body, the greater the development of the oviduct or reproductive system. The number of eggs, however, such a bird will lay depends on the fowls' breeding and the size of eggs.

### III. QUALITY.

Probably the most important point, all other things being equal, in breeding stock to keep up egg production is quality.

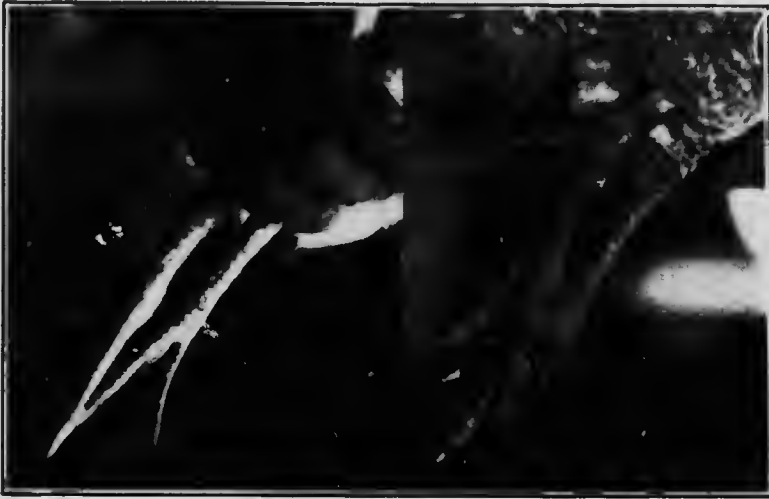
Quality denotes all the good characteristics of both dairy cows as well as egg-laying hens.

If a fowl is not of good quality, she will be a poor layer. If a male of good quality and good breeding were mated to poor-quality, coarse females, the results would invariably be noticed in the majority of the first progeny of the mating.

Quality is indicated by the evenness and silky texture of the scales on the leg; by the fairly compact glossy plumage; the fine silky texture of the comb, wattles, and lobes; and, further, the freedom from gristle or cartilage attachment to the straight pelvic bone. The pelvic bone itself should not be small. Pullets are, of course, smaller-boned than hens. One usually finds a very thin bone on the leg of the bird that has a needle-pointed pelvic bone. We advise one to breed from birds with pelvic bones comparative in size with the bone on the leg, but clean and free of gristle or cartilage when the bird is laying. Fat will be found on the pelvic bones of old hens, especially if they are in fine condition before they come into laying. From experiences of many others besides the writer, we can definitely state that cartilage and gristle are the things to beware of in breeding, but that neither the stoutness or strength of bone as shown by the width nor the fat attachment to the



bone are to be considered detrimental characteristics in breeding for egg production. A heavy laying bird is never fat once she is in full lay. No doubt the needle-pointed pelvic-bone bird will lay good if given good attention and the season is not too cold, but the danger-sign should be out when one starts breeding from her.



A. B.  
Note the fine quality as shown by the scales on the legs. The fine evenly laid scales of A do not stand up away from the leg as do the coarse scales shown in B.

#### IV. CONDITION.

The condition of health of a bird must be given due consideration when breeding. If fowls are not thrifty, it follows that they must be unhealthy. Health is shown by the gloss on a bird's plumage, a bright-coloured eye, with a bright-red face, comb, and wattles on all breeds in which these characteristics are naturally present. Further, one wishes to see a good uniform fleshing throughout on the bird, espe-



A. B.  
Compare the good-sized, straight, clean pelvic bone of A with the curved, thin, needle-pointed bone of B. The pelvic bone of A denotes a strong-boned fowl, while the bones of B indicate the exact opposite.

cially when the breeding season is about to begin, showing that either female or male has reserve strength to guarantee good reproductive capacity.

#### V. STYLE.

By style, we mean a bird that is always working to find something to eat. Such a female is always a good layer, and a male of this kind is always attentive and capable of good reproduction. An active bird is not one, however, that is so nervous



Note the stylish, active appearance shown by all these four birds, indicating profitable producers.



Compare this dull, sleepy appearing bird, having neither style nor activity, with those shown in preceding illustration. This bird indicates everything along the lines of unprofitable production.

as to be flying from place to place on the least provocation. This latter habit would undoubtedly cause a drop in egg production.

#### (B.) HEAD AND NECK.

In the writer's estimation the head is as important a factor, if not the next important, in breeding commercial birds as any other point. If a fowl has not a good head showing constitutional vigour, with a broad deep crown and a bright active appearing eye, she or he cannot reproduce properly.

The neck should be in proportion to the body.



A

B.

Compare the bright, active, strong-appearing, well-proportioned head shown in A with the shallow, narrow head, with the sunken face and falling eyelid, as shown in B.

## I. COMB.

The fowl's comb should be representative of the breed type, whether rose, single, or pea, and of medium size, well attached to the head. The comb should be of fine texture, indicating good quality.

## II. BEAK.

We desire a strong hawk-shaped beak. A fine beak is undesirable, owing to small bone. A snaky, long, or crow-shaped beak is undesirable, usually going along with or indicating poor constitution.

## III. FACE AND HEAD.

The face of a fowl is supposed to be short and full. The length of head should compare favourably with the length of body.



The type of head which is desired by all.

The distance between the eye and the beak should be well filled in. The sunken face indicates poor constitution and birds out of condition.



A.

B.

Compare the wide skull of A, shown by the width across the crown of the head from eye to eye, indicating constitutional vigour, with the decided narrowness of B.

The head should be broad at the crown, with a good depth from the top of the head to the top of the eye, and a good depth from the lower lid to the base of the lower mandible, indicating a good skull having good brain capacity; i.e., good constitution. The lid should hold closely up around the eye.



Both these heads are indicative of weak constitutions. These pictures were taken from mature seven-month-old pullets.

#### IV. WATTLES AND LOBES.

The wattles and lobes should be representative of the breed, of medium size and of good texture or smoothness, indicating quality.

#### V. EYE.

The eye should be representative in colour of the breed. A bright active appearing red eye always goes along with strong constitution. (See cut XVI.)

#### VI. NECK.

The neck should be well set upon the bird, neither too long nor too short.

#### (C.) BODY.

The body is the manufacturing plant of the hen, where all the food is turned into its proper channels. If a fowl has all other parts perfect but a poor cut-up body, it can never be made a highly profitable bird and should never be bred from.

Good depth must be perceptible in strong-breeding males and females.  
To judge the depth of body we place one hand on the backbone and the other on the keel.



This shows an exceptionally well balanced body.

**I. SHOULDERS.**

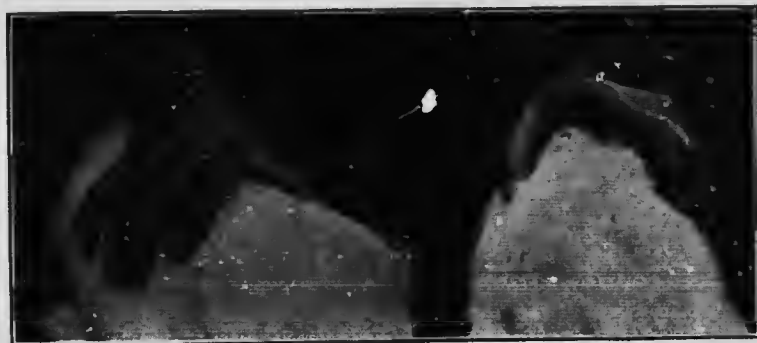
The shoulders should be broad and rather flat on top, showing good breathing or lung and heart capacity. To judge this we place our hand over the back just below the cape.



Showing how to judge the depth of body.

**II. BACK.**

The back of a fowl should be broad, judged by the breadth across the shoulders, and this breadth must be carried well back to the tail with no quick falling in appearance.



A.

B.

A shows exceptional breadth across the shoulders, while B shows the extreme opposite, being decidedly narrow.

## III. BREAST.

The breast and breast-bone or sternum (which is a different bone than the keel) should be straight, wide, deep, full, and fairly round. One can get a good idea in judging this section by placing their fingers in between and around the clavicles or wish-bone. There should be no cut-up appearance to the breast. The fleshing should be fairly abundant (depending on the time of year handled) and of good quality. The flesh should neither be too firm nor too flabby.



Notice the very short back and cut-up appearance of body.



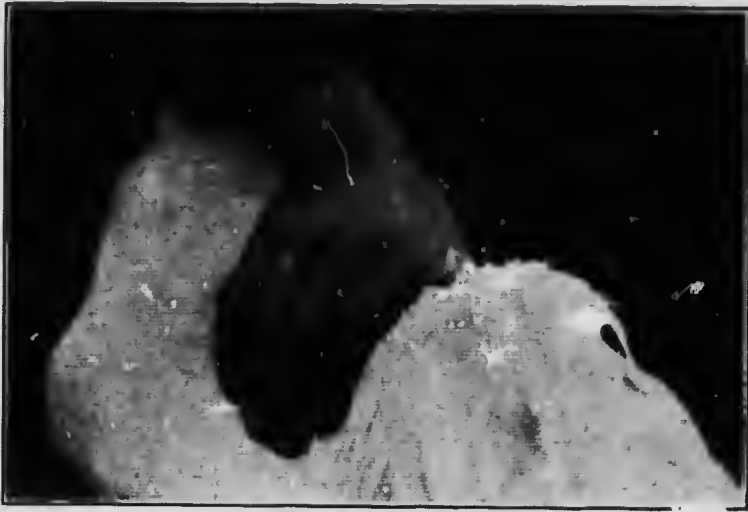
A fowl with a fine full breast.

## IV. KEEL.

The keel-bone or the lowest lengthwise bone or member in the frame make-up of a fowl should be long and straight, well covered with medium texture and abundant fleshing, depending, of course, on the time of year handled.

## V. TAIL.

The tail should be well spread, indicating a good long, broad back and deep body. This is judged by placing the hand across the back at the juncture of the back and tail, as seen in cut 18.



Showing well-spread tail, indicating long, wide, broad back.

It is also shown by the spread across the rear of body and depth from tail to underline of the body, as shown in cut 19.



Showing good straight legs set well apart, as well as good spread and depth at rear of body.



**(D.) LEGS AND FEET.**

The legs and feet of a bird should be of strong bone and good quality to allow of good exercise, with scales evenly placed upon the leg, indicating good quality. The bone must be strong, but not coarse. The nearer to the kid-glove finish, we can find by rubbing the thumb and forefinger up and down the leg, the better the quality of the bone. Strength of bone, however, must always be present in the fowl one wishes to breed from.

**I. THIGHS.**

A thigh of medium length that is plump and well muscled is required on a fowl that will take plenty of exercise, which is essential to their good health and condition.

**II. LEGS.**

The legs should be straight and medium to short in length. They should be well set apart, indicating a wide and deep body. The legs should be of the representative breed colour.



Selection should begin from the time the chicks are hatched.

**III. TOES.**

The toes should be medium in length and strong, showing good scratching ability, with claws that are well worn, proving that the fowls are taking plenty of exercise to keep them in good health and condition.

**DISQUALIFICATIONS.**

Disqualifications are really indications in commercial fowls of birds that should not be bred from. Decidedly crooked breast-bones and keel-bones are generally inherited characteristics, and one should always endeavour to keep such out of their flocks.

The other disqualifications mentioned when found on a bird would certainly prove detrimental to males or females for breeding purposes.

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