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# FARM AND DAIRY



We Welcome Practical Progressive Ideas

## & RURAL HOME

The Recognized Exponent of Dairying in Canada

Trade increases the wealth and glory of a country; but its real strength and stamina are to be looked for among the cultivators of the land.—Lord Chatham

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# Selection and Breeding of Chickens

Prof. W. R. Graham, O.A.C., Guelph

THE first question the prospective poultryman usually asks himself is,—what breed is best suited to my purpose? At present in Canada dual purpose poultry is the best paying for the general farmer, and the selection of the strain within the breed is of more importance than the choice of breed.

In the selection of birds for breeding purposes the most important consideration is constitution. We must have birds of sufficient strength to eat large amounts of food under somewhat adverse conditions, to produce large quantities of eggs and to raise a goodly number of offspring.

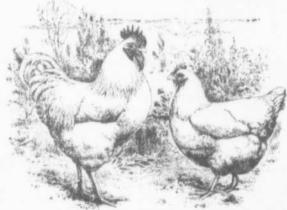
### CONFORMATION AND CONSTITUTION

It is rather difficult to describe or to say that there is any exact conformation that accompanies strong constitution. The head is the most important point. It should be broad and strong with a bright red comb, and bright, active eye. High layers have a nervous eye. The legs should be straight and not bend too close together. Long head, neck and legs are pretty certain indications of poor constitution. A good male bird will show considerable independence. He need not necessarily be a pugnacious character, but at the same time he is a chap that won't run.

The ability of a bird to put on flesh, particularly on the breast, is a hereditary characteristic. It depends on the amount of musculing carried on and the shape of the breast, or keel bone. The musculing on the breast bone is a trait that is transmitted. If a bird is deficient in musculing it's a pretty hard proposition to put that musculing with feeding. The best birds have long breast bones and not too deep. By long we mean a bone that extends well behind. In mature birds a long keel bone prevents what is termed breaking down behind.

Quality in chickens is denoted by smooth, oily, leg scales. The old country breeds excel in this respect.

Hens can be divided according to laying power, into three classes,—those that lay no eggs



Typical White Plymouth Rocks

Of medium size, hardy and good for both broilers and egg production, the Rocks, of which the White Plymouth Rock is but one variety, are the most popular of breeds for the farmer. They are an "all round" bird.

in winter, those that lay from one to 30, and those that lay from 30 to 40. Some have said that if a hen lays a lot of eggs in winter she will not lay so many in the spring as a hen that laid only a few during the winter. I have found that the hen that lays in winter will lay as many eggs in the spring as the hen that did not.

### IS BIG PRODUCING POWER HEREDITARY?

The question arises, will these heavy layers produce pullets of similar character? Until about 15 months ago it was thought that egg production was hereditary from a female to her offspring. It is now doubted if production or fecundity is hereditary.

It has now been pretty clearly shown that pullets inherit their egg producing powers from the male. Some males will produce good pullets from all classes of hens. Such birds are of great value. From outward appearances they are rather difficult to detect but are usually of a pugnacious character, develop early sexually and mature early.

No particular shape seems to accompany high egg production. Heavy layers nearly always have

tight plumage. Extremely loose feathered birds are invariably poor layers. From my observations good layers seem to be late moulters.

A good layer is a hard worker. I venture that if one went into a hen house and picked out all the hens that got up early and went to bed late, one would have 70 per cent. of the good layers. It keeps a hen busy to get enough of the proper food necessary for high egg production, and she is obliged to work long hours.

### BIG LAYERS NOT FAT

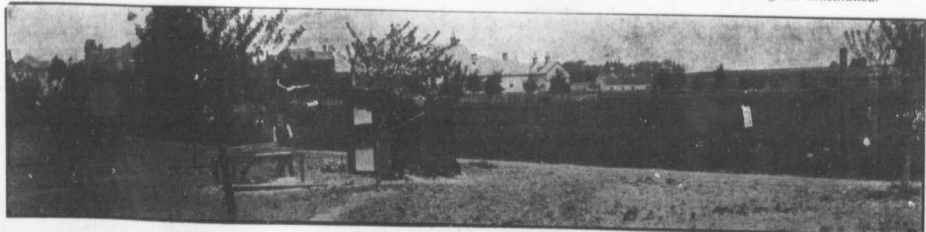
The amount of fat which a hen carries is a good indication, too, of her laying abilities. She can't lay eggs and keep fat at the same time. It is a mistake, however, to starve the hens in order to keep the fat off them. If a flock is well fed during the winter, by February or March the fat birds will be found to have been the poor layers. That's the time to get rid of them—they'll never make layers anyway. The others will have made proper use of their feed.

If the hen were a mere machine that needed only proper feeding to assure good results, then the increasing of egg production would be a simple matter. In the ovaries of a hen there can be seen with the naked eye, 1,500 to 3,000 ovules. I have never yet known a hen, however, to develop into eggs anything near the number of ovules in her ovaries.

### RENEWING THE FLOCK A PROBLEM

A most troublesome problem in poultry raising is to renew the flock at low cost. It takes too many eggs to produce a full grown pullet. This is most particularly true in large poultry farms. All the way from one to 12 eggs must be set to get one pullet. When a hen produces a large number of eggs, the eggs do not have a great hatchability. The eggs may be fertile, but a fertile egg is not necessarily a hatchable one.

The hatching power of eggs is now conceded to be hereditary. The eggs from some hens are always hard to hatch. Such hens are usually birds of poor constitution. Thus we see the great need of breeding for constitution.



Prof. W. R. Graham Rotates His Chicken Houses

Both the Professor and one of his colony houses may here be seen in the orchard at the O. A. C. with the college buildings in the background. In an adjoining article, a report of Prof. Graham's address at the recent Guelph Winter Fair, several very important phases of poultry culture are discussed.