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I have fed both long enough to know, as in this country we only need to feed turkeys heavily about two months, and unless hogs are fed grain or shorts, even on good pasture, they will not grow much during the summer. J. E. M. Lanark Co., Ont.

#### Suitable Breeds and How to Select Them.

BY J. W. CLARK, BRANT CO., ONT.

Since there is a constant and increasing demand for table poultry in the English market, and the raising of poultry for export in Canada has developed into a prominent industry, and one which has the most of us think—come to stay, it will be well for us to watch closely and see that the exacting tastes of the picky chicken-consumers in England are not hampered with too many vexatious variations.

They want birds that come up to their standard of perfection—something that suits their eye—a heavy, compact body, with white flesh and white legs and skin. It is to our advantage to raise poultry that possess certain good qualities. It is to our advantage to get a breed that will stand forcing, and one that will thrive well under even unfavorable climatic conditions, such as we frequently get. We want a chicken that will make a rapid growth on comparatively inexpensive food, and reach an early maturity.

Egg-laying machines, such as we have in the Leghorns, Andalusians, and Minorcas, will not suit this purpose. Those breeds may be all right in their place, but their place is not in a feeding crate. I have fed some of that type and believe that I have pumped into them many dollars' worth of feed from which I got no profit.

We hear a great deal about the Buff Orpington breed now. I have only a few of them yet, but I am very much pleased with those which I have, and have ordered a number from England. We cannot speak too highly of the Barred Rock. They are a breed with which all are acquainted, a breed that excels in the production of winter eggs. If we take a flock of one hundred well-bred Barred Rocks we are fairly certain of getting eighty or ninety good birds for feeding. Perhaps the one objection to that breed is their tendency towards yellow legs and skin. But this can be overcome to a certain extent by systematically weeding out our breeding stock which show this tendency—breeding only from white-skinned and white-legged birds—and also by feeding a ration that will make white flesh.

The Wyandottes are also a very good breed. I have no doubt that the fanciers of this particular breed could tell you of many points where they excel the Barred Rocks. From the experience that



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I have had with them I am not prepared to say that they fit my needs quite as well. Nevertheless, they are a very excellent fowl, and for crossing with an Indian Game cock are perhaps as good as the best.

The same principles that should be observed in selecting breeding cattle of the beef breeds should be observed in selecting a cockerel and hens to raise table fowls. It is a block of meat of the best quality that is wanted. It will be found quite as difficult to make a good carcass of chicken out of an egg-laying machine (or special egg-laying breed) as to make an ideal carcass of beef with a Jersey steer.

I believe it is wise and essential to the highest degree of success to raise your chicks from hens that are pure-bred, or nearly so, and from a pure-bred cock. If your breeding hens have a strain of Leghorn in them your chickens will not likely be so uniform. There is more apt to be a larger percentage of culls. There will be some that show the back breeding. But I believe that we get stronger chicks by crossing a pure-bred male of one breed with hens of another breed.

An ideal bird for the export trade might be described as having a short neck, with a wide head, bright eyes, and a short, heavy bill. The legs should be short, squarely set, and well apart. The back should be wide and strong. The breast should only be of moderate depth—having plenty of room for a large quantity of meat. The skin, flesh and legs should have a healthy, white appearance.

#### GARDEN AND ORCHARD.

##### Some Insect Pests.

The day has come when it is necessary for every horticulturist to know something of entomology if he would successfully combat the various insect pests that prey upon orchard and garden crops. Among biting insects none have probably been more destructive to orchards throughout this country in recent years than the codling moth, bud-moth, plum curculio and American tent caterpillar. By this time the latter will have done its work and entered the pupa state in some secluded spot, from whence it may be expected to emerge a full-fledged imago during the first two weeks in July.

The eggs of the codling moth hatch in about a week after being deposited on the calyx end of the blossom, and the tiny worm at once begins to burrow through the apple to the core. In three or four weeks from hatching the larvæ attain full growth, let themselves down to the trunk of the tree by a thread, and immediately begin to spin their cocoon. The insect remains in this condition about two weeks, when the moth escapes. Considering the time of blossoming, it is readily seen that at present the moth is in the larval state in the young fruit. During the last of July it will be full-fledged and on the wing ready to produce eggs for a second brood. Hence the need of continual spraying with arsenical poisoning.

Although the bud-moth is not so well known throughout the fruit sections as the insect just described, it is, nevertheless, responsible for considerable damage. And there is little doubt but that it is increasing very rapidly, especially in certain northern districts of Ontario. The adult moth is an ashy gray color, about three-quarters of an inch across the wings. In Canada there is but a single brood in a season. The eggs are laid in June and July. According to Slingerland, these hatch in from seven to ten days. The larvæ feed upon the foliage for about six weeks, when they become about half-grown. They then form a small silken case, well concealed in the crevices of the twigs, where they remain until the following spring. As the buds are swelling, and even after they have burst, the larvæ, which are about one-quarter inch in length and dark in color, again appear. They feed upon the young buds and even the foliage, incurring widespread destruction. The young growing leaves are drawn together by silken threads, and within this retreat the larva pupates, emerging as a mature moth about seven or eight weeks from its first appearance in the spring. To kill this insect spraying should, of course, be done when the buds are opening. One or two applications before the blossoms appear are usually effective.

To the plum-grower there is no greater enemy than the plum curculio. It is a small grayish or black beetle about one-fifth of an inch long. About the time the trees are in blossom the insects begin to move. The female lays her eggs on the young plum shortly after it is formed. A small crescent-shaped slit in the fruit will reveal the presence of the egg at this time of year. Within this mark the tiny morsel is placed. In warm weather it hatches in about four days, and the young larvæ immediately begin to feed on the green flesh of the fruit. At the same time it bores its way to the center, where in from three to five weeks it becomes a yellowish-white grub about two-fifths of an inch long. Infected fruit usually falls to the ground, and in it the larva



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remains until full-grown. It then passes into the ground, changes to a pupa, and in about six weeks comes out as a mature beetle. There is only one brood in a season. A very effectual method of dealing with this pest is to jar the trees and collect the beetles in a blanket, which should be spread underneath. This work should begin when the trees are in blossom and continue morning and evening for three or four weeks if the insects be numerous. All fallen fruit should be collected and destroyed. Two or three sprayings of Paris green, one teaspoonful with two gallons of water, will destroy most of the beetles and incur much less work than the former method.

##### Green Crops in Orchards.

Investigation conducted at Cornell University Experiment Station show the need of some system of fertilizing the orchard lands to make the trees produce large, handsome commercial fruits. Some growers have reached the conclusion that green manure is more economical and as satisfactory as expensive fertilizers and barnyard manures, but we apprehend that is a point not easily settled. The different clover and grass crops raised in an orchard should be for the double purpose of protecting the tree roots in winter and for fertilizing the soil by turning under early in spring. In the experiments made at the above station it was found that of the various crops sown in mid-summer, after the sod of the winter crop had been plowed under and allowed to decompose, the alfalfa gave to the soil by the following spring 136 pounds of nitrogen to the acre, mammoth red clover 130 pounds, crimson clover 104 pounds, and common red clover 87 pounds. Similarly the hairy vetch and soy bean were planted, and on one acre the former from the heaviest yield produced 256 pounds of nitrogen, and the cow pea 52 pounds, both within three months after planting. According to these returns it was estimated that the hairy vetch added to the orchard soil in the form of nitrogen, phosphoric acid and potash about \$58 worth of material to each acre. Added to this fertilizing value of the green crops there is the advantage obtained of protecting the trees in winter. Another point is the good obtained in the use of these plants by preserving the moisture in the soil in hot weather, and in inducing the roots of the trees to penetrate far down into the subsoil. Deep-rooted trees are the sturdiest and best producers.



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To receive B. S. A. degree on passing supplemental examination in bacteriology.