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THE FARMER'S ADVOCATE.

leaves Professor Hutt free to devote more time to landscape-gardening and civic-improvement work. During the summer, he has attended about torty meetings in different parts of the Province, and kept in touch with Horticultural societies. Frequent calls, also, have been made for assistance in improving public grounds. As a channel for interesting rural Ontario in home beautification, public-school inspectors have been asked for names of teachers who would be likely to take an active part in furnishing model school-grounds which would serve as object lessons.

Valuable work in connection with fruit and vegetables has been done by J. W. Crow, B. S. who has been given charge of this end of horticultural work. The broken-down orchard on Macdonald School grounds has been made to produce a large crop of apples (90 per cent. free from scab or worm) by judicious pruning and thorough spraying three times with Bordeaux mixture. Applications were made when leaf-buds were opening, just before the blossoms opened, and again just when the blossoms had fallen. For the last two sprayings, 2 pounds arsenate of lead were added for every 50 gallons of the Bordeaux mixture. Work done with oyster-shell scale showed that thorough application of lime-sulphur (20 pounds lime, 18 pounds sulphur, 50 gallons of water), applied last spring just before growth started, had practically cleaned the trees. An effort to ascertain the practicability of thinning apples on the tree had fine promise, but the arrival of some apple-loving students whose tendencies seemed to run towards inferior grades, resulted in the stripping of some of the unthinned trees that were in the test. The result of the thinning was the production of larger fruit of higher quality. In strawberries, 4,000 plants are being used for breeding work, in an effort to ascertain the true All runners have been kept value of selection. off, and the individuality of the plants preserved. Next spring and summer the best of these will be The plot will be kept for at least two selected. years. Selection and breeding also has been done with corn, peas and beans. The most noticeable feature of the work is found in corn, where Golden Bantam, that two years ago had one stalk out of 100 bearing two ears, now has 10 out of 100.

Working in conjunction with A. McMeans, the vegetable expert, Mr. Crow has investigated or experimented with phases of the canning industry. Fancy lots of fruit in glass jars have been put up. This year's heavy crop of tomatoes from the variety test plots has been turned into 800 gallons of cauned goods. By using only fully ripe and solid tomatoes, it was found possible to average six gallon cans from one bushel. After paying 25 cents a bushel for the raw product, and man labor at \$1.50 a day, the total cost reached the limit of 16 cents per can. A new variety called Wealthy proved to be the most productive variety in the test plots, and also one of the most desirable for canning purposes. It comes in about the same season as Earliana, and is large and smooth. Reports from other parts of the Province indicate that it does not yield so heavily on

light soils. In the Poultry Department, Prof. Graham promises to have something new and definite regarding incubation that will insure even greater success. In the new building, now in course of erection, investigations and tests will be made with a view to having artificial incubation as much similar as possible in every respect to na-The incubation of eggs will be studied tural. from the physical, the chemical and the bacterio-Among poultry-housing logical standpoints. practices, this winter's operations will find a pen into which a load of fresh horse manure will be dumped once a week. Another flock will be kept into a portable colony house, with city or townlot back-yard conditions, where scraps from the kitchen form an important part of the diet. This season's operations have revealed the true benefits from selection. Excellent returns have been derived from a pen of Barred Plymouth Rocks selected for egg-production. In the chemistry laboratories, Professors Harcourt and Gamble, and H. Fulmer, B. S. A., have numerous lines of work in hand. Perhaps chief of all is the comparative testing of wheat and flour. Milling and baking tests of the seventy-odd varieties of wheat grown on the experimental plots are being made. In addition, tests of the new crop of Western Canada form an important part of the work. The milling companies, in blending the grades, wish to have a sample nearly similar to that of previous years. They may send two for comparison, or one to be compared with the standards kept in the College laboratory. results given show gluten content, absorption of water, yield of bread, color, texture and general appearance. For thorough work with samples of wheat sent, small quantities are ground in a miniature mill, and a loaf of bread made

tests from the chemical standpoint will be made Comparisons are being made between the digestibility of corn, peas and oats, and the by products from these grain foods. Last year's work showed many of the samples of frozen wheat to be much superior to by-products sold at higher Stock foods, too, are being tested, in order to protect the farmer and to aid the legislative committee of the Experimental Union in making suggestions for new legislation. Among the problems in connection with dairying that are being considered, are the losses in making overripe milk into cheese, and the reasons why differences in acidity are required in different parts of the Province to get the desired results.

Perhaps no feature of College work has been more popular than the assistance offered in drainage surveys by the Department of Physics, of which Prof. W. H. Day is the head. Not more than half the applications of the past season could be attended to. Gradually the work is being tarned over to the agricultural representatives in the High Schools. The manufacture of cement tile, also, proved interesting. It has been learned that, after paying for cement and other materials in small lots, the cement tile can be supplied at lower cost than clay tile.

And so the work goes on. There always is something new to be done, and always something more to be learned about the old. President Creelman and his staff are engaged in a great work. In order to make the institution of greatest value to the farmer, there must be co-operation on the part of everyone interested in agriculture. Questions and suggestions are the best stimulus to even greater effort.

Ten questions were promptly deposited in the waste-paper basket last week because unaccompanied by a subscriber's name and address, or otherwise not conforming to our rules. For these, see the standing announcement on second page of reading matter each issue.

HORSES.

MORE IMPORTANT THAN WEIGHT.

When the question is asked as to how much a draft animal weighs, the thought immediately strikes us as to how much the enquirer really knows about a horse. Although an animal were the heaviest one in the world, he might be useless for any commercial purpose-except for the owner to feed at big expense, so as to be able to go around and tell the public how much he weighed. The main essential points in any draft animal are constitution, ambition, courage, conformation; good, close, true action, flexing every joint in motion, and, above all, wearing qualities, which go along with hard, flat bones, good joints, and a foundation of strong, sloping pasterns, set on good open, deep, large feet. In action, all his movements should be in perfect unison with every part of his body.-[John A. Turner.

EDUCATED BY BUYERS.

" My experience as a horse-flesher," says E. Thorndyke, of Durham Co., Ont., " is simply this: I buy all my horses on the theory that the day you buy is the day you sell; that is, if you buy a first-class horse to put flesh on, you have a first-class horse when done, or you should haveif you do not overdo him with strong food. farmed 100 acres, mostly all plowable land, on which I was forced to keep four horses. One pair was not sufficient to do my work, and two teams on one hundred acres had some idle days, and, therefore, increased in flesh, which seems to be the tendency in a good, sound, useful worker, best suited to my needs-say from twelve to thirteen hundred pounds in weight. Free-action horses of this weight can be hooked and driven to town and home, and then put on the plow, binder or manure wagon. It does not require very much feed to make them in high condition, or to hold them in salable shape until such times as a buyer comes along with a price sufficiently high to make it pay.

"One of the drawbacks in fleshing horses is that you start one to be finished March 1, but a buyer comes along and makes a bid, but his figures are too low to leave enough to pay for feed and to replace the horse. The result is you hold on. April comes, and a buyer bids you all you asked, but you need him badly for a few weeks, and horses are busy, so you decide you cannot spare him, and probably take less money later on in the season, when you can replace him in a few days.

"Suppose you buy a rough-coated fellow. buyer comes along and says he would give lots of money for him only for his rough coat. You lose \$20.00 on him, and take that as an eye-opener, and will not get caught that way again. The same is true where horses' feet are too small, or where the bone is not sufficient for the body; also for those with poor sight, and a great many In fact, I got my experience from other defects. the men I sold to. They have to sell again, and, therefore, must buy right in order to be able to sell, and a buyer who comes to your locality regularly gets to know you are in the business, and will give you a pointer as to buying in future. Soon your eye becomes trained in regard to qual-You must know what such a ity and prices. horse would sell for if fleshed. You must get your profits or you will soon go out of the busi-Frequently the experimenting stage does not ness. last long.

"A four-year-old off suits me the best. You feed and work him for a year, and resell at five years, at which age he comes into salable condition, both as regards coat and appearance in general.

"As to feeding, I use hay and oats mostly, feeding light at the start and up to such time as the blood becomes right and the horse has a good covering of flesh. Then I increase the grain ration, and as flesh increases there seems to be more heat within, and a strong, well-proportioned

from the flour. That chicken vitality is dependent on lime, seems to be shown by a study of the chemical changes durto be shown by a study of the carbon dioxide given

ing incubation. The amount of carbon dioxide given off by individual eggs has been ascertained, and results indicate that the vitality depends on the amount of lime in the newly-hatched bird. Further



Marion Cassius, imp. (10032).

Hackney stallfon; dark bay; foaled 1902. Imported and owned by T. H. Hassard, Markham, Ont. Winner at Canadian National Horse Show, Toronto, April, 1908, of first in class for best Hackney stallion shown in harness, to suitable vehicle; also first for stallion in harness, 15 hands and over, with conformation best calculated to improve the type of heavy-harness horses.