

### Pointers for the Judging Competitions.

As has been the custom for the past few years at the three large fairs in Ontario, live-stock judging competitions will again be held this year. In these competitions, young men enter who have not had wide experience in the handling of all classes of stock, and some of them not even with one class, but nearly all have courage to try conclusions through all the classes. To engage intelligently and successfully in such a contest it is necessary for the competitors to have in mind the ideal type of animal form and characteristics of the particular breed being judged, for without an ideal to guide him no judge can place the animals properly in a class. In all the improved breeds of stock, the ideal type is an imaginary animal that fulfils, without any superfluity, the requirements and performs the functions of its class necessary to the object to be attained. For instance, an ideal heavy draft horse must first have weight to move a load, action to move it rapidly and without undue waste of power or loss, and quality of bone and relationship of parts to withstand the wear incident to its work.

General-purpose horses, dairy cattle, beef cattle, sheep and bacon hogs are the different classes that the competitors are to be asked to judge. With all these classes there is an ideal to which those who are responsible for the interests of the different breeds wish their stock to approach, and it is necessary for the competitor in the judging competition to have in mind a true conception of the type most desired in order that he may judge intelligently and successfully. Nor will a simple knowledge of the desired types be sufficient to make an expert judge, one needs to know what significance to attach to the many variations from the perfect form when met with in the ring. So while it cannot be expected that judges can be made by a course of reading, still a description of the ideal types of the animals to be judged in the stock-judging competitions will be of assistance to the novice.

General-purpose Horses.—At the three large exhibitions where judging competitions are to be held, the general-purpose horse is not of uniform type, due to the idiosyncrasies of the managements of the different fairs. At Toronto, the general-purpose horse is understood to be a horse that is exhibited by a person engaged in agricultural pursuits, suitable either for the wagon, carriage, buggy, saddle or plow. Docked horses not eligible. Mares or geldings, four years old and upwards, shall not exceed 1,350 lbs. in weight; three years old, 1,200 lbs.; and two years old, 1,000 lbs.; while at the other fairs more emphasis is placed upon the ability of a horse to perform the heavy farm work, and less upon his suitability for the buggy, saddle or carriage. The encouragement of these different models or types is unfortunate, for where there is no unanimity of opinion as to what constitutes a general-purpose horse there must necessarily be dissatisfaction with the final result of the competition. Naturally, we would expect the person who finally awards the prizes to the judging competitors to accept as the standard the description given by the authorities of the fair at which the contest is held. This being the case, the ideal general-purpose horse at Toronto will be a big, strong, clean-limbed road or carriage horse, while at Ottawa and London his type will approach nearer the small-sized drafter, the latter being well qualified to perform farm work and do a little on the road, but utterly unfit for the saddle, as is required of a general-purpose horse by the Toronto Fair authorities.

Beef Cattle.—While in the different breeds of beef cattle there are many minor differences encouraged by the preferences of those who have in hand the work of improving them, still the first requisite of an animal belonging to the beef breeds is the ability to lay on a large amount of the highest-priced cuts of meat. In short, "the ideal of the beef breeds is the block type," and at the large fat-stock shows, where specimens of the different breeds are in open competition, about the only difference between the several individuals is in color, markings, or the breed characteristics noticeable in the head. Evidently, there is the same effort on the part of all beef-breeders to produce an animal short in the legs, heavy in the quarters, well covered over the loin and back, smooth on the shoulders, deep and full in the girth, broad in the chest, and with the characteristics of the breed to which it belongs well defined in head and face. Such is the type desired, but one must be careful to estimate wisely the relative value of the different parts. Many beef cattle carry plenty of thick padding under the skin, while the quality of this fleshing may not be all that could be desired, and such an animal would be beaten by one having less flesh, but of a better quality; that is, having just the right resilience and texture, neither harsh and coarse, nor too soft and flabby. If it were not for the necessity of attaching particular importance to the quality of the flesh on a beef animal, judging would simply be a mechanical process of weighing and measuring. The type of beef cattle, therefore, to encourage in the judging-ring is one that carries a large amount of flesh of good quality,

for this trait in a breeding animal indicates its ability to impart a valuable requisite to its offspring intended for the block, and has well-developed respiratory and digestive organs, as indicated by the development of the chest and wide spring of ribs, well let down. In the beef breeds, as well as in other classes of stock, there should be a certain amount of agility and sprightliness, together with an appearance characteristic of the sex to which the individual belongs, the bulls having a bold but mild masculine expression, and the female a gentle but strong matronly appearance. Nor should all those qualities associated with an easy-feeding propensity be forgotten, such as soft, mellow skin, fine, silky hair, mild eye, short, broad head, large mouth, etc. These are the points to be encouraged. Those to be eliminated are legginess, narrow body, hard, dry skin, narrow chest, coarseness, undue fineness, delicate constitution, lack of breed characteristics, restless disposition, etc.

(To be continued next week.)

## FARM.

### Shallow Cultivation in Summer.

#### RESTORING SOIL FERTILITY—DESTROYING WEEDS

In the older Provinces of Canada the majority of the farms have been decreasing in soil fertility year by year. Many of the pioneer farmers assumed that the richness of the virgin soil was practically inexhaustible, a mistake that is all too frequently repeated by the settlers on our new lands at the present day. With the deep, rich vegetable mould of the virgin soil, and looking to the present rather than to the future, it seemed profitable to the early settlers to exhaust the available fertility of the upper layer, and then bring to the surface by deep plowing a lower layer to suffer the same treatment. In this way the vegetable matter or humus has been largely exhausted, and the soil has lost its fine texture and mellowness, its capacity for absorbing and retaining [water, its permeability to roots, its capacity for absorbing and retaining heat, all of which are regarded by scientists as more important than the actual chemical composition of the soil.

RESTORING FERTILITY.—The problem to-day is how to restore the fertility of the soil and at the same time make a living off the land. What system of cultivation will enable us to obtain a soil with a fair amount of vegetable matter to the depth of at least a few inches? The Ontario and Dominion Experimental Farms seem to have solved the problem by adopting shallow cultivation and a systematic rotation of crops in which clover occupies a prominent place. Under this method, as outlined by Prof. Reynolds, the land is plowed only once in three or four years, all the rest of the cultivation being done with harrows, cultivators and other implements which cut, crush, pulverize and loosen, but do not invert the soil.

THE LAND IN SUMMER AND FALL.—To show clearly the method of summer cultivation, let us suppose that the second year's crop has been taken off a clover field. The sod is plowed about August, as early as possible, in order to take advantage of the summer's heat to decompose the roots. Then it is harrowed to loosen the surface and prevent the escape of moisture, which is also required in decomposition. After that it is cultivated frequently, without tearing up the sod, the objects being to destroy the weeds that may be growing, and to enable the sod to rot by keeping in the moisture. As the manure is plowed in with the sod, it will be well decomposed before winter, thus ensuring a good supply of humus for the next crop. The last thing in the fall the land should be ribbed up in the same manner as for turnip drills. This is best done with a double mouldboard plow. This ribbing prevents leaching away of the plant food, most of which is heaped into the drills; exposes a greater surface to the pulverizing action of frost, and allows a more rapid drying in the spring, and, consequently, earlier working and seeding.

Probably the next crop will be ensilage corn or roots. In the spring the ridges are smoothed down and a good seed-bed formed without using the plow. After the crop is sown, surface cultivation is continued to kill the weeds and conserve the moisture. In the fall the ground is again ribbed up for winter. The following year a spring grain crop may be sown and the land seeded down, completing the rotation.

WHEN WEEDS ARE TROUBLESOME.—Surface cultivation affords the best means of destroying weeds. There are, of course, various ways of eradicating troublesome weeds, depending largely upon the sort of crops grown and the nature of the weeds themselves. One method is to prevent the seed from maturing, by growing a hoed crop or an early maturing crop, such as clover. With a late maturing crop, which allows the weed seeds to ripen, it is advisable to adopt surface cultivation after harvest, so as to encourage these seeds to germinate the same season, when the young plants can be destroyed. Under such circumstances it is a too common practice to bury the seeds by deep plowing, leaving them in a condition to come to the surface and germinate in some future crop. In which, very likely, it will be impossible to destroy them.

W. A. CLEMONS.

### A Waterworks System Wanted.

For the man who will devise and exploit a thoroughly efficient and easily workable system of waterworks and sewage disposal for the farms there is a fortune awaiting. This is one of the most crying needs of the farm home, and in the interests of health and human life some system of sanitary disposal of sewage is demanded. On numerous farms such provision is already made, but the vast majority of country people know nothing of the workings of sanitary sewage systems. Open discussion would do much toward familiarizing people with principles and practices of water supply and sewage disposal, and to this end we would ask any one who has had a practical experience with a system suitable for ordinary farm purposes to give others the benefit of their knowledge through the columns of the "Farmer's Advocate."

## DAIRY.

### How Dairy Cows Differ.

The United States Department of Agriculture recently issued a very striking bulletin, bearing the suggestive title, "Profitable and Unprofitable Cows," which is applicable to every country in which dairying is largely carried on, as its contents are of such a general nature that dairy farmers all over the world will find in it much material for thought. The bulletin commences with the following quotation: "Good judges believe that in the entire country one-third of the cows kept for their milk do not pay for their cost of keeping, and nearly a third more fail to yield annual profit." This rather startling statement was made in the Yearbook of the Department about five years ago by one competent to speak upon the question. This is usually due to lack of exact information as to the quantity and quality of milk produced by individual cows, and the approximate cost of production. The work of a number of the experiment stations in studying the cows kept by their farmer constituents has brought out wide variations in the productiveness and profitability of the cows in their herds.

The Connecticut Station has tested the cows of 32 different herds in the State of Connecticut. It reports: Many of the individual cows in the test were not returning the cost of the feed. The average yield of milk ranged from 13.2 to 23.4 pounds per day, while the average yield of butter ranged from 0.7 pounds to 1.33 pounds per day. This means that the herd giving the largest flow of milk was producing 80 per cent. more than the one giving the smallest flow, while the herd producing the most butter was giving 90 per cent. more than the one giving the smallest yield of butter. One of the first things our dairymen need to do is to make a closer study of the individual animals of their herds, and to reject the unprofitable ones.

The Wisconsin Station made a series of tests of the herds of six patrons furnishing milk to the dairy school creamery. The individual cows of four herds were tested through one entire period of lactation. At farm "A" the annual yield of milk ranged from 3,792 to 6,203 pounds, and of butter-fat from 147 to 296 pounds. At farm "B" the milk yield ranged from 5,193 to 7,887 pounds, and the butter-fat from 245 to 312 pounds. At farm "C" the milk yield ranged from 4,411 to 8,132 pounds, and the butter-fat from 222 to 386 pounds. At farm "D" the range of milk was from 4,847 to 6,570 pounds, and the butter-fat from 223 to 300 pounds. At farm "A" there were three cows which did not produce milk enough to pay for their feed. The entire herd of twelve cows gave a profit of only \$75; \$50 of this amount was from three of the cows, while the combined profit from the other nine was only \$25. The twelve cows on farm "C" earned a total profit of \$288, instead of \$75 as on farm "A," but even on this farm there was considerable difference in the cows. The value of the product from the poorest cow was \$37.96, and from the best cow was \$60.72. The best cow gave a profit of about \$31, while the poorest gave a profit of only \$8.

The New Jersey Station has conducted a dairy experiment on practical lines, using a herd of grade cows. With milk at \$1 per hundred, the best cow gave a profit of \$49.72, while the poorest cow gave a profit of only 13 cents. With butter at 20 cents a pound, the best cow paid for her feed and \$46.64 additional, while the poorest gave only \$5.84 in addition to the cost of the feed.

The bulletin then goes on to state that the facts brought out by this study strongly emphasize the correctness of the claim that but little profit is derived from a cow that does not produce 5,000 pounds of milk per year, particularly if the milk is sold at the low price of one cent per pound, and indicates that there is but little profit derived from a cow that does not produce 200 pounds of butter per year. No stronger argument is needed in favor of the necessity of testing animals and thus learning their exact value, and of the selection of dairy cows, than is afforded by the above records.

The average cost of keeping a cow a year has been variously estimated by experiment stations in different localities at from \$30 to \$45. As the New Jersey Station has pointed out, that nearly the same capital and practically the same amount of labor are required,