most desirable size. Very large teats are nearly always on flabby, narrow, deep-hanging bags, which are detested by experienced dairymen. Such vessels are never seen on Ayrshire cows; they are always neat and trim. It is a mistake to suppose, as some do, that large teats are an indication of great productiveness. Large teats are readily injured, and in keeping them clean there is much trouble.

The ordinary life of man is too short for individuals to be experimenting with many different breeds of dairy cattle; hence, methinks, parties engaging in the dairy business should be guided largely by the experience of others.

Timely Notes for July—No. 2.

THE PATRONS' CANDIDATES.

Having attended one of the Patrons' of Industry conventions to nominate candidates for the Dominion House, I was grieved and surprised to hear so many delegates expressing doubts and fears, desiring to delay the choice of a candidate, postponement—anything, apparently, but the object they were sent there to advocate. Several of these timorous speakers were personally known to me, and were considered regular fire-eaters in their own lodges. If they were not prepared to stand by their colors they should have stayed at home, and not stultify themselves and their cause by their weak-kneed support. We did not want them there to throw cold water on the convention, and to tell us of all the lions in the path before us. However, three strong men have been nominated in Postlethwaite, Braithwaite and Fisher, and the Patrons of their respective constituencies will be false to themselves, their vows and their country, if they allow any Grit or Tory nominee to secure a single one of their votes. What is the use of meeting solemnly together in your lodges, passing strong resolutions condemning the present state of affairs, and then meekly going to the polls on election day and voting for its continuance? Is this the *Patronism* you are so fond of parading at home? Is it *Patriotic?* Is it *manly?*

"Let us then be up and doing,
With a heart on triumph set,
Still achieving, still pursuing,
Learn to labor, and to wait."

THE SUMMER-FALLOW.

It is now considered an established fact that to ensure a crop of wheat in almost any season a well-ploughed summer-fallow is the safest plan. The middle of June to the middle of July, according to the season, state of the weeds, etc., is the best time to plough, putting on all the available manure, and dragging the weeds into the furrow with a chain. Harrow well after each day's ploughing, and then keep the harrow going at short intervals until about the middle of August, when sow very thinly some clean wheat, oats or rape seed. Turn the farm stock on the land after the prairie grass is spoilt by frost, and you will have a firm, mellow, rich and clean seed bed for next year's wheat crop.

GENERAL.

It is a healthy sign when we find so many articles in the press, agricultural and otherwise, on rearing stock from a producer's and breeder's standpoint. We have had articles *ad nauseam* from pork packers, bankers, grain dealers, etc., advocating their own pet theory or particular brand of goods. How would they like us to tell them they should, for instance, only enforce four per cent. interest on their loans, that being the amount they are willing to allow depositors in their banks; when you want to borrow from them it is fifteen per cent.

Can any one tell why bran is as dear this year, with wheat 45 cents, as it was when wheat was 65 cents.

Barley is 50 cents a bushel now—was slow sale at 20 cents five months ago—a large margin for someone.

Wheat is almost stationary; oats rise and fall a cent or two every week, never getting beyond 34c.

Pigs are so cheap and hard to sell that the profit is "less than oil" for the grower, while bacon, etc., remain about the same price they were when pigs were seven or eight cents. Who gets the profit? The farmer, of course! INVICTA.

Feeding Fat Into Milk.

Hoard's Dairyman of June 22nd records the facts of an interesting experiment, conducted in Schoharie County, N. Y. Four cows were treated to find out whether fat fed influenced the fat of milk. Before the experiment commenced, cow No. 1 weighed 1,189 pounds, and made fourteen pounds of butter per week. Cow No. 2 weighed 1,130 pounds, and made twelve pounds of butter in a week. Cow No. 3 weighed 1,168 pounds, and gave eight and a-half pounds in seven days. No. 4 weighed 1,000 pounds, and gave thirteen pounds one ounce butter in seven days. On an average 23 pounds of milk were required to make one pound of butter. The previous feeding was, per day, 40 pounds ensilage and twelve pounds of a mixture of wheat bran, cotton-seed meal and corn meal. The skim milk was also fed back to the cows. When the experiment began one-quarter of a pound of tallow was shaved and mixed with the ration twice a day, increased to two pounds per day in two weeks. The following is the result:—Cow No. 1 made 20 pounds of butter in seven days; cows No. 2 gave 17½ pounds; No. 3, 16 pounds 14 ounces; and No. 4, 17 pounds and 1 ounce in seven days. Just 18¼ pounds of milk was necessary to produce one pound of butter. The quality was so near like that made before the experiment, that no difference could be detected by customers who regularly received the butter.

First Prize Essay on "Noxious Weeds, and How to Destroy Them."

[Prize of $25.00 awarded by the Government of Manitoba.]

WON BY EDMOND DRURY, OF RAPID CITY, MAN.

The farmers of Manitoba, as a whole, have not as yet been much troubled by noxious weeds, but as settlement and cultivation increases, the weed pest will increase in proportion. In the older settlements in the eastern part of the Province the weed question has become so serious that unless prompt measures are taken to curtail the evil it is doubtful whether grain crops can be grown in many districts. The rich soil of our prairies, so admirably adapted to the operation of the agriculturist, is equally favorable for a rank weed growth. Opinions differ as to what constitutes a noxious weed. Theoretically, a weed is simply a plant out of its place. Any plant, under certain conditions, is liable to assume the proportions of a weed, but for practical purposes a line must be drawn between those which can easily be kept in check, and those which cannot. A noxious weed may be defined as one incapable of being turned to account, or which cannot be easily eradicated from land on which it has become established. Scarcely any of Manitoba's indigenous plants come under this definition. The danger to agriculture lies in those that have been, or may be, imported from outside sources. It is needless to dwell on the harm done by weeds on cultivated land, by choking and robbing the profitable crop of that plant food which should go to nourish it, as it is presumed every farmer is acquainted with that. Weeds sometimes, when allowed to multiply unchecked, have rendered cultivation impossible, as what is known as the Russian thistle is reported to have done in some parts in Russia, and some places in Dakota; and there is a great loss every year in Canada from the Canadian thistle and other weeds, besides the extra labor entailed keeping them under. Before any weed can be mastered its habits must be first studied, for a method successful in one instance might encourage a weed of a different nature. Annuals complete their growth, ripen seed, and then die, all in one season. The majority of plants belong to this class; they produce abundance of seed, which is their only means of propagation, so the main thing is to prevent seed ripening. Biennials take two seasons to complete their growth, and ripen seed the second season. There are also some kinds propagated by suckers and offsets from the roots, and become perennial. Perennials may take either one, two or more years to perfect seed in the first instance, but, unlike the previous classes, live for a number of years, often maturing seed each season. They are generally propagated by the roots or underground stems, which produce fresh plants at each joint. These are the most troublesome to get rid of, as the root, as well as the seeds, must be prevented from forming. Annuals can be overcome by giving surface cultivation to sprout the seed, and then killing the successive crops of weeds as they appear; when all the seed in that layer of soil has grown, a crop can be raised, afterwards plowed deeper, and the next layer cleaned by the same means, and so on till the seed is worked out of the land.

Biennials are generally easier vanquished; a simple ploughing before they bloom is often all that is required.

These perennials propagated by the roots are killed by preventing leaves from forming during the growing season. This is accomplished by persistent surface cultivation, followed either by a second ploughing, or a crop grown for fodder; in the latter case the land should be ploughed after harvest and seeded next spring.

In writing on Manitoba weeds, there is one which comes to mind as the worst at present here, viz.:—

FRENCH WEED.

"*Thlaspi Arvense*"—"Stinking Weed," "Mithridate Mustard," "Laviolette" of the Red River Valley; "Pennycress" of Britain—is annual or biennial, according to circumstances. Plants that grow too late to mature before winter will bloom and ripen seed the following spring. It is about one foot in height, though sometimes more, bright, green leaves, oblong in shape, toothed at the edges, surface smooth, very small white flowers, seed pods round and flat, from a quarter to half an inch in diameter, including the broad margin of wing which surrounds the seed sac, with the exception of a portion of top. The pods when ripe are light yellow in color; they produce an enormous quantity of seed, which is very minute. Besides being one of the farmer's worst enemies, it is detrimental to the grazier and dairyman, for the plant has a disagreeable smell and flavor, which is detected in the beef and milk of cattle pastured where it is abundant—even spoiling the milk for the making of first-class butter, though it is affirmed that cattle kept from access to it for a few weeks before slaughtering are free from the taint. In the case of isolated specimens, they should be pulled and burnt if there is the slightest sign of seed in the pods, for, in common with others of the Cress and Mustard family, it will mature seed sufficiently to grow under the most unfavorable conditions. On the first appearance of the pest, if the field is too extensive, or the weeds too numerous for hand pulling, it will be cheapest in the end to summer-fallow, or if the seed is near maturity, mow and burn, or, if possible, burn without mowing. Should the seed drop, *do not plow*, but harrow lightly as soon as possible to make them germinate, then when the young plants appear harrow again to kill them. If there is no further appearance by the middle of next May, oats or barley could be sown, but if weeds still appear in the spring, give more surface cultivation, then summer-fallow. Should the land be full of seed before remedial measures are taken, nothing but a persistent course of cultivation will eradicate it, and then not for a few years will all be destroyed. The seed is so small that, unless near the surface, it will not grow, and it will germinate after being buried for several years. On foul land the best start is to cultivate early in the fall with disk harrow or cultivator, then, before winter, harrow to kill those sprouted. Give another harrowing in the spring, then summer-fallow, not going very deep, then harrow as often as wanted to kill and start the weeds next spring; drill in the grain, and if weeds appear with it, which is improbable if the previous treatment has been thorough, a light harrowing will finish them and not harm the grain. After the crop is harvested the land should be again ploughed and worked in preparation for oats or barley, to be sown the next spring. If the land is strong and otherwise clean the grain might be drilled in without ploughing, but whichever plan is tried, a harrowing after the grain is up will be a benefit. The following year should be a summer-fallow, ploughing deeper than before so as to clean another layer, and so on till the land is clean, which will be in longer or shorter time, according to the judgment used in the process, together with the care taken to prevent contamination from other places, and hand pulling any stray plants seen. A well-known member of the same family is

"WILD MUSTARD."

"*Sinapis Arvensis*"—The "Charlock" of England. It is an annual growing from one to four feet in height, according to soil and situation, and sometimes very branching; the stalks are hairy until near maturity. It has a profusion of yellow flowers similar to those of turnip, and others of the "*Crucifaræ*." The seed pods are long and contain a number of seeds each. The whole plant bears a striking resemblance to the cultivated variety. In common with all the members of the Mustard and Cress family, the skin of the seed contains an oil which prevents decay for a long time, and will remain in the ground for years till the conditions are favorable, when it will grow with unabated vigor. It takes longer to mature than French Weed, but will ripen if pulled up after the seed is fully formed. Within the last few years it has gained ground in many parts of the Province, being brought in with grain and grass seed. The writer had a little experience in 1890 with mustard that came from Minnesota in oats. They were cleaned before offered for sale, and not suspecting or thinking of strange weeds, were not fanned a second time (a very foolish thing to begin with, for if looked for, it is easy to discover the seed among oats); however, the crop was nicely sprinkled with the bright yellow flowers. The field was taken strip by strip, and the mustard hand pulled three times, so that none was allowed to seed. The next year it was summer-fallowed with previous treatment like that for French weed; a few plants appeared after ploughing, no doubt from seed buried too deeply the year before; they were allowed to remain till the harrow would not pull them out, and preparations were made to plough again, when the cattle found the spot, and they cleared every leaf. Some maintain the seed is injurious to them. That may be, but the plant appears not; it was eaten greedily as turnips, and no ill effect seen. Since then not a plant has been found on the place. As this is a plant readily distinguished when growing, it can be hand pulled on its first appearance. When in the land a similar process to that described for French weed will exterminate it in time. The greatest danger of its appearance is among millet, Hungarian grass, rape, turnips, or other similar seeds from which mustard seed is hardly distinguishable.

CANADA THISTLE.

"*Cirsium Arvense*" is not indigenous to America, but was so called from its first appearance in America being in Eastern Canada, likely imported from Europe, where it is the common corn thistle of Britain and France. It is not to be confused with *Clanceolatus*, the native American thistle usually found growing on the edges of the fields or anywhere imperfectly cultivated, a coarse-looking plant, comparatively harmless. The Canada thistle is propagated by seed, which the wind scatters far and near, assisted by the downy covering, and by the perennial root stalks, which give the most trouble, as there is a latent bud at every joint of the stalks which spread horizontally, sometimes to a distance of seven or eight feet from the parent root. The seed is not so tenacious of life as those of the annuals, and beyond that dropped the previous season will give little trouble. In land infested a good plan is to cultivate the surface in the fall or early spring to start the seeds, then when coming into bloom run the mower over the field before ploughing, so that every leaf will be perfectly covered. The ploughing should not be deep, as the horizontal roots must not be turned up, the main upright root only being cut. Harrow and roll at once. Some advise sowing a fodder crop now, but it is best to leave the land clear, so that any plants appearing could be killed at once by the disk harrow [ED.—A disk harrow is a poor tool for this purpose; a stiff-legged, broad-toothed cultivator would be better.], for it is imperative that leaves be kept from forming any time during the balance of the