

dumped on the barn floor, and thrown into the cellar by hand or with a manure fork. In the case of turnips, hauling need not begin until the crop is all pulled, as a little frost does not hurt them, and the dirt comes off better with two or three days' exposure. Mangels or carrots should be taken in the same day as pulled, as even a little frost injures them.

THOS. BATY.

Westminster Tp., Middlesex Co.

N. B.—Perhaps I should have added that mangels are handled as turnips are, except that they are not plowed. Carrots are loosened by plowing (with the plow rigged as for turnips, except that an ordinary point is used) deep on the right-hand side of the row.

The Hoe and Grub Axe in the Turnip Field.

To the Editor FARMER'S ADVOCATE:

SIR,—Different modes are adopted in taking off the turnip crop in this locality. After trying many ways we feel satisfied, taking everything into consideration, that the hoe and grub axe are about as good tools as any. We cut the tops off with the hoe and then "grub" them out of the row with what we call the "grub hoe," which is nearly like a carpenter's adze. By reasonably careful work you will have two rows of roots lying in one row (minus tops and most of the roots) for gathering up. Like everything else, too great care cannot be exercised in getting them in the cellar in the best possible shape—the cleaner and drier the better. Many bushels of turnips are spoiled every year on account of the pieces of tops and earth adhering to the roots when they are put in, which loss might be averted by a little more care. I have seen men try to load turnips with the fork, which is a most excellent way for a lazy man to kill time. The best way is to bend your back and pick them up with your hands.

JOHN TAYLOR, JR.

Waterloo Co., Ont.

Comments on Turnip Field Methods.

In the many excellent letters from correspondents upon turnip harvesting, little has been said as to the best time of doing the work. We all like to get all the growth possible, and are sometimes tempted to delay commencing the harvesting until about Nov. 1st, in hopes that the good weather will continue for a week or two longer, but not infrequently we have cause to regret the delay by having to work in mud and slush, and then lose a lot of roots in the winter by heating, on account of their unclean condition. The writer has for a number of years commenced not later than October 20th, and consider it the wise plan, not only for the greater comfort in taking in the crop, but the clean condition in which they are housed or pitted.

In pitting, one correspondent recommends covering with some six inches of soil. We have pitted turnips for a great number of years and find that a heavy coating of straw, say six or eight inches under a light covering of soil, will keep out frost better than a heavy coating of earth. In such a case, four or five inches of soil at the base, graded to two or three on top, well packed down with the back of the shovel, will answer well. The top may be left open, simply covered with boards to keep out wet till cold weather comes, then it should be covered over, with tiles inserted through the straw every eight feet to allow ventilation. When very frosty weather comes, the north side should be given a coat of strawy manure to hold the snow, but at least every second tile should be left open. The pits should be visited occasionally through the winter to ascertain their condition.

Now, as to field work, we are surprised to find so many still clinging to the old-fashioned, expensive, and in some cases, slavish, ways of doing the work. Thos. Baty and J. D. T. seem to have by far the best implements and methods of doing the work. Horse labor must be used as much as possible in these days of cutting expenses. The plow we have used for years is similar to those described. There are, however, these differences: The share, an old steel one, has a knife welded to the wing, projecting out some seven or eight inches, having the outer end inclined forward, so that it will not slip around any of the roots. In the place of the moldboard we have two iron rods fastened at one end to the sole by means of a bolt running through eyes. These rods stand out (inclining back) a little farther than the moldboard did, and when the machine is running they turn the turnips over two rows into one, allowing the earth to fall back from where it was lifted. This implement has become the general turnip harvesting tool in one of the most extensive root-growing sections of Ontario, namely, the County of Ontario. The best tool for unloading from the wagon or throwing from the floor into cellar is a fork made on purpose, having seven strong tines two inches apart and fifteen inches long. The two outside tines are one and a half inches higher than the others as they approach the cross piece to which they are attached.

A report published in a Chicago paper states that Halseie Ruby, five years old, was smothered to death, and Lucia Ketcham, daughter of Attorney-General W. A. Ketcham, narrowly escaped death, in a cemented silo pit on Mr. Ketcham's farm, near Mapleton, Ind. It is said they were overcome by the carbonic acid gas generated by the heating ensilage in the silo, where they had gone down to play unknown to the farm hands.

The Corn Crop Observed.

To keep harping on year after year upon one string appears to us to grow monotonous, but the ADVOCATE will still have to repeat many times what it has so frequently said regarding the proper thickness to sow corn for fodder before all its readers will have learned the lesson. The truth of what we have so often advocated, viz., to sow fodder corn thin in the ground, was never more clearly proven than this very autumn, especially in the eastern half of Ontario, where very little rain fell during the summer months. Where it was sown in drills three feet or more apart, and thin in the drills, the crop, if of good variety and given moderate cultivation, is from eight to twelve or more feet high and well eared, while thickly-sown fields in the same neighborhood range from two to six feet, and bear very little grain. The one has bulk of rich feeding value, while the other has little fodder, and that of poor, starvation quality, white and watery.

The truth of this is self-evident through the sense of sight, while the reason of it is almost as clear to one who thinks it over just a little. In the first place, the thin corn is cultivated, which prevents the soil drying out; then there are much fewer plants to take up the moisture and throw it off into the air, as all growing plants are known to do. It is indeed surprising that so many men who cannot afford to grow poor crops of any kind persist in the old wasteful method—wasteful of seed and wasteful of crop. The Hon. John Dryden informed us, during the course of a conversation a few days ago, that he has grown it thinly for years and knows it to be the only wise way, while we noticed this fall in his own neighborhood many fields of thickly-growing, short, poor corn. It is only wise to grow the best, especially when it can be done as cheaply as what results in poor returns.

Economy in Rape Growing.

We learned while in conversation with several sheep exhibitors at the Toronto Industrial that rape is largely depended upon for sheep fodder, as well as some of the clovers, for late summer and fall feeding. One breeder (Mr. Hammer, of Mount Vernon, Ont.) spoke of having ten acres, sown among oats, ready to turn into about the middle of September. It was sown like clover seed and came along slowly until the oat crop was harvested, when the rape rushed ahead until it was some twenty or more inches high early in September. If one would just realize what ten acres of such feed means in the fall months, and then remember how easily and cheaply it can be obtained, no further persuasion will be necessary to induce one to grow that much or more every year. Its value for sheep feeding is of great importance, while for young cattle or dry cows it is even better than corn, because it has not to be fed out to them, and labor saved is money made. Of course there are only certain fields upon which it can be sown, as a seeded field would not do, neither would one requiring a lot of fall cultivation; but where corn or roots are to be grown the following season, or in other cases that will occur to one, there is no reason why a good acreage cannot be made to yield two valuable crops in one season.

Rape growing is objected to by some on the ground that it is hard on land; but the fact is, some 90 per cent. of the fertility taken to grow the rape is returned to the soil in the manure when it is pastured off. The other 10 per cent., more or less, goes into meat, wool, and animal structure, which is of much more value than it would be left in the land for a later crop. We would say, "think on these things," and if they appear reasonable, act upon them in time to receive the benefit in the autumn of 1897.

DAIRY.

A Canadian Dairyman in New Zealand.

Mr. Jas. B. McEwan, at one time engaged as a young maker in the Ballantyne cheese factories, and subsequently on the staff of Dominion Dairy Commissioner Robertson, has, as our readers are aware, been of late looking after the work of dairy instruction in New Zealand. From the proceedings of a dairy conference there we notice with pleasure that he has been doing good service, and a resolution was unanimously adopted asking the Government that he be commissioned to go to England to examine the condition of New Zealand dairy produce on arrival, and to investigate and report on its handling and distribution in Britain. The mover stated that Mr. McEwan had given such satisfaction in New Zealand that every factoryman and every farmer would have confidence in him. He was also accorded a hearty resolution of thanks for his past work in the Island. We gather from the report that when his proposed mission to England is completed he will return to New Zealand to push on the work of an experimental dairy station and school under Government auspices. Resolutions were passed in the direction of securing cheaper ocean freights, and the cold storage plans now being worked out for next season in Canada were cited as a good model for New Zealand.

Spurious "Butter" Making.

Since the exposure by the FARMER'S ADVOCATE of an alleged "butter product" process whereby two or three times as much butter could be made from the same quantity of milk as by the orthodox plan, little has been heard of these humbugs in Canada. Though threatened with legal proceedings and other dire consequences, we were not deterred from fearlessly saying what we thought of such schemes in order that dairymen might be protected. Swindlers have found better scope for their efforts with "Black Pepsin," *et al.*, in some parts of the United States than in the Dominion. Agents have been busy through parts of New York State trying to introduce a liquid substance, resembling vinegar with a wintergreen flavor, called "Chase's Butter Increaser," for putting in the cream before churning, regarding which Geo. W. Cavanaugh, Assistant Chemist at the Cornell (N. Y.) Experiment Station, has issued a timely bulletin. It (the "Increaser") was guaranteed to double the butter yield from a given quantity of cream. It was 25 per cent. solution of acetic acid and a little salicylic acid. A second and still more fraudulent article is called "Gilt Edge Butter Compound," guaranteed to make two pounds of butter from one pound of butter and a quart of sweet milk. It is a mixture of about equal parts of alum and soda, with a little pink coloring matter, and was sold at \$1 per ounce package. Both act in a somewhat similar way by curdling the casein and incorporating part of it along with a considerable amount of water. Either might produce a quantity of stuff that would perhaps resemble, though it could only be a poor imitation of, genuine butter. The process would be essentially fraudulent. Give all such substances a wide berth.

A Lesson from the Drought.

Though not to the same extent as in 1895, still some portions of Canada this season suffered from drought, which has always a direct and serious effect upon milk production. A recent bulletin prepared by Dr. Van Slyke, of the Geneva, N. Y., Experiment Station, deals with this important topic. It presents the results of a study of the milk production of fifty herds of cows, whose milk was sent to a cheese factory during the season of 1895, from the first of May to the first of November, to determine the changes in the composition of milk as affecting the yield of butter and cheese—especially the latter—as well as to ascertain the variations in the actual production from these herds during this period of time, when the cows received only such food as the pastures afforded. Stated in general terms, the results are the following:—

Variation of Fat in Milk.—It was found that the amount of fat in 100 pounds of milk was about the same in June as in May, and then increased during the rest of the season.

Variation of Casein in Milk.—The casein was less in June than in May, and still less in July, after which there was a more or less rapid increase from month to month.

Variation in Relation of Casein to Fat.—During June, July and August there was less casein for each pound of fat in milk than during each month preceding. After August the proportion of casein relative to fat increased.

Variation in Cheese Produced.—In June and July less cheese was made from 100 pounds of milk than in each preceding month; after July the amount increased from month to month.

Variation in Relation of Fat to Cheese Yield.—The amount of cheese made for one pound of fat was less in June than in May, and continued to decrease during July and August, after which there was an increase.

TABLE SHOWING VARIATION OF FAT, CASEIN, CHEESE, ETC.

MONTH.	Pounds of Fat in 100 lbs. of Milk.	Pounds of Casein in 100 lbs. of Milk.	Pounds of Casein for 1 lb. of Fat in Milk.	Pounds of Cheese made from 100 lbs. of Milk.	Pounds of Cheese made for 1 lb. of Fat in Milk.
May.....	3.58	2.40	0.67	9.94	2.78
June.....	3.59	2.33	0.65	9.77	2.72
July.....	3.71	2.20	0.59	9.58	2.58
August.....	4.04	2.26	0.56	10.10	2.50
September.....	3.97	2.47	0.62	10.54	2.65
October.....	4.20	2.69	0.64	11.35	2.70

Cause and Bearing of Variations in Yield and Composition of Milk.—The decreased yield and cheese-producing power of the milk in July and August were mainly due to insufficient nutrition caused by the drying up of the pastures. Had the cows been properly supplied with abundance of nutritious, succulent food, it is estimated that the yield of milk and cheese would have been increased to the extent of five dollars a cow on an average.

The most significant fact presented in this bulletin is that the cheese yield in August from these fifty herds was about forty per cent. less than that in June, a fact due almost entirely to the lack of sufficient food, a condition which almost any farmer who provides soiling crops for his cows would have escaped. In order to show that such a decrease may be avoided, Dr. Van Slyke compares the production of these fifty herds with the produc-