

### Ontario Agricultural and Experimental Union.

The sixteenth annual meeting of the Ontario Agricultural and Experimental Union was held at the Agricultural College, Guelph, on Tuesday, Dec. 18, 19. All the sessions were well attended by interested and intelligent audiences, made up of students, ex-students, experimenters and visiting farmers. The importance of the experimental work undertaken and carried out by this institution is yet far too little known and appreciated, though it has made a rapid growth.

The Hon. John Dryden, in referring to the work of the Union, said in substance that its object is nothing more or less than to seek the truth regarding the best methods of carrying on all branches of agriculture in every individual locality—an essential knowledge in order to succeed. Speaking generally, the best sorts and methods are fairly well known, but, owing to the wide variation in conditions and soils which exist within comparatively small areas, it is necessary that individuals carry on experiments on their own land. This, to many, will seem an undertaking too expensive and extravagant of time to be participated in, but just here is where the value of the "Union" comes in to help those seeking a system. To very many the system employed by the "Union" is known, and those not conversant with the same may learn all about it by writing Mr. C. A. Zavitz, O. A. C., for their plans, etc., which is the result of years of careful study and experience.

#### REPORT ON EXPERIMENTS.

The report of the Committee on Experiments in Agriculture embraced the findings from tests with fertilizers, rape, millet, lucerne, corn, spring wheat, barley, oats, peas, winter wheat and potatoes. We note a few points of special interest. It may be well just here to refer to the present extent of experimental work carried on over the Province. In 1886, one experiment was carried on by eight experimenters with 33 plots. In 1894, 14 different experiments were carried on by 507 experimenters on 2,520 plots, all of which carried on the work and submitted full reports according to the rules made for their guidance. The results of the grain experiments will be given in a later issue.

The experiments carried on with fertilizers over the Province show that a mixture of nitrate of soda, muriate of potash, and superphosphate, gave better results than any one alone. The result of its use on oats was to increase an acre's yield 11 bushels. This, however, is not the most important knowledge gained from testing the value of fertilizers. A complete fertilizer is a mixture of nitrogen, potash, and phosphoric acid; now, by testing the growth of a crop with each of the above manures, an indication is shown of the needs of the farm upon which the test is being conducted. It is not necessary in many cases to purchase artificial manures to make up the deficiency, as by growing clover or other leguminous crops, nitrogen can be furnished, and by spreading wood ashes, potash is supplied; therefore, the value of knowing our lands and their needs, lies in the fact that only certain manures need be used.

#### DAIRYING EXPERIMENTS.

Prof. Dean's experiments have been along the line of the composite test, the utility of which he has demonstrated, and paying for milk at cheese factories by test. Our readers are already familiar with the former. As to the latter, we give the sum and substance in an article elsewhere in this issue. Prof. Shuttleworth's analyses indicated that casein is an almost constant quantity in milk, and that the per cent. of fat varies.

#### ECONOMIC BOTANY AND ENTOMOLOGY.

Prof. J. H. Panton reported the work of the committee on the above subject. Circular letters were sent out over the Province, asking for lists of the most troublesome weeds, insects, and fungus pests. Replies received from twenty-seven counties mentioned such weeds as Canadian thistle, mustard, wild oats, etc., with which we are all familiar. Among the new weeds likely to be disastrous was mentioned perennial sow-thistle, which is rapidly gaining a foothold on many farms throughout the Province. It has been described in the FARMER'S ADVOCATE, together with mode of eradication, but a further description will not be out of place. It resembles in its early stages the dandelion before blossoming; it then grows upright from one to three feet, according to conditions. Its flowers, which resemble dandelion blossoms, appear in July and August, bearing enormous quantities of fine seed, which may be carried as common thistle seeds for long distances. It has a creeping root stalk which renders it extremely difficult to eradicate. The mode of destroying it is to grow a smothering crop, such as buckwheat, to be ploughed down, this followed the next season by a hoed crop, so as to prevent the green leaves from appearing above the surface of the ground. Rib grass, Russian thistle, spiny clover, water hemlock, bladder campion and penny cress, were mentioned, but the Professor does not fear these much when ordinary precaution is taken. These are all dangerous if neglected. The treatment of fungus and insect pests were the same as those given in our Fruit Growers' Association report in Dec. 15th issue.

#### OBSERVATION AND EXPERIENCE WITH TRAVELLING DAIRY.

F. J. Sleightholm, B. S. A., who has had charge of the Travelling Dairy during the last season, stated that in sections where the Travelling Dairy had gone through in a previous season that much better work is being done on the dairy farms, and that where his visit was the first of the kind there is great room for improvement in the matter of cleanliness, skimming, etc. For instance, some are using what they call shallow pans, but are in reality about six inches deep. When skim milk from such setting as that has been tested there was found almost half the fat of new milk—a very great loss. In other instances, deep pail setting was carried on without ice, which also gave imperfect skimming. He found some sections where the butter was worked by squeezing it through the fingers. Much turnip-flavored cream and butter was found. A good deal of middling butter was found, which never can find a first-class market.

#### CLOVER CULTURE.

The "Union" should be congratulated upon securing the services of no less important a man than Mr. T. B. Terry, Hudson, Ohio, who is well and widely known. We may say just here that Mr. Terry carries on a three-course rotation, namely, clover, potatoes or strawberries, and fall wheat. The clover is sown on the wheat about the end of February, when freezing and thawing goes on alternately, thus covering the seed without the use of the harrow. The first autumn the mower is run over the clover and stubble, which is allowed to lie as a mulch for winter protection. No stock is allowed on the clover, as tramping at any time is injurious to the plants and to the soil. The following summer a splendid clover crop is taken off in the shape of hay. Mr. Terry claims that the use of a barometer is necessary in farming operations, especially in haying. Clover is usually cut in the afternoon, when the weather is known to be settled. The machine used cuts behind the horses, the clover being left standing, so that tedding is unnecessary. Next day, with good drying weather, it is raked into windrows, following the course of the mower, so that the rake will leave the clover butts up and heads underneath. The next day, after dew is all gone, the windrows are turned completely over on dry ground, where they are allowed to remain a couple of hours before being drawn to a mow, where it is put in without tramping the first day: neither is the horse-fork allowed to dump into the mow direct, or musty hay will result at the point of landing. Mr. Terry has fed his farm teams on pure clover hay, without a bite of grain, for thirteen years, and they are always in splendid condition and perfectly healthy.

#### CLOVER AS MANURE.

Mr. Terry claims, from experience, that poor land can be brought up to a very high state of fertility by growing clover as above described. After the hay crop has been removed, the aftermath of about one and a-half tons per acre is allowed to remain, to be ploughed under the following spring, for potatoes or strawberries. In order to illustrate the manurial argument for clover, Mr. Terry mentioned the fact that he grew fifty bushels of fall wheat per acre last season, on land that some thirty years ago would not produce more than eight bushels per acre, with no other manure than clover, while his neighbor, a first-class farmer, who gave his field a heavy coat of farmyard manure, obtained forty-two bushels per acre. These were the two best fields of wheat in that part of Ohio.

Clover is able to extract nitrogen from the atmosphere, by reason of its root tubercles, and other fertilizing elements from the subsoil by means of its deep running roots. In order that clover or any other deep-feeding plant grow to a maximum crop, the land must be well drained, naturally or artificially.

#### STRAWBERRY CULTURE.

Mr. Terry grows strawberries that readily sell for 15 to 20 cents per quart while ordinary strawberries bring 6 cents on the market. He realizes thoroughly that competition in ordinary branches of agriculture is always keen, but there is always lots of room and demand for first-class produce. The plan followed by Mr. Terry is to plough down a well-covered clover sod in the spring, and plant good, thrifty plants that have never born fruit, in rows 4 feet apart and 2 feet apart in the row. The ground is cultivated with a fine-toothed implement every few days for a couple of months. Up till this time all blossoms and runners are kept clipped off. Runners are then allowed to follow out in shape much like a wagon wheel; that is, the old plant representing the hub, while the runners represent spokes. Cultivation continues till autumn, when the plants are thinned out to 7 inches apart. After the ground freezes firmly, a heavy mulch of straw is put on and left till spring, when it is all raked off, except what the plants can readily grow through. That raked off is tramped down in the patch, which keeps down all weed growth, and retains sufficient moisture so that a full crop is insured, whether rain comes or not. The mulch also has the effect of keeping the berries free from sand—an important consideration in producing high-priced fruit. After the berries have been picked, the patch is all torn up and worked down very fine, then it is seeded with clover, which yields a crop of hay the following year; then it will be ready for strawberries the next season. The speaker stated that the berry season can be lengthened quite one week by applying a

very heavy mulch, and allowing it to remain longer in the spring, thus keeping in the frost and holding back vegetation for a longer time.

#### POTATO CULTURE.

Potato growing being one of Mr. Terry's money-making crops, he is able to speak with authority regarding the best methods of treatment. The land is prepared as above stated by ploughing under a heavy aftermath of clover in the spring. The seed is cut to one eye if good, and planted 4 inches deep, every 12 to 15 inches, in rows 32 inches apart. A fine-toothed cultivator is used every few days in order to hold moisture and check weed growth. Mr. Terry is careful to run the cultivator through the patch as soon after a rain as the land is dry enough to work. This process is continued until the plants are a third grown. They are then cultivated shallowly between the rows until the tops are nearly full grown. Hilling up is never practiced, as flat cultivation is considered preferable. When the crop is ready to dig, an elevating machine is used, drawn by four horses. This machine, with one man to drive, does as much as 15 men by the old method. Every second row is dug, and the potatoes are left clean and bare in a narrow row all ready to pick up. Mr. Terry has found it advantageous to have bushel boxes made by the hundred to be used in picking the potato crop into. They are spread over the field so close together that when one is full it is left and another taken up. The plan is for two men to take a row each, picking into the same box which is shoved along the undug row, between them. When a load of full boxes is ready, they are drawn to the barn on a wagon and dumped on a cement floor, where they can be readily shoveled up. They are then sorted by means of a grading screen and placed in a cool cellar until cool weather arrives, when they are pitted, being covered with two coats of straw and two of earth alternately, where they keep perfectly till spring if desired. Seed potatoes are selected in the field and kept from sprouting till planting time. When potatoes are stored in the cellar they can safely be piled four feet thick without fear of loss, except there are some rotten ones, when greater precaution will have to be taken.

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#### Threshing Corn.

BY A. E.

The first point is to have the corn well dried; if put in mow of barn till threshed it will require to be set on end as in the field, or it will heat quickly. It will do as well in small stacks. The separator requires all the teeth out of concaves, excepting one single row, and a piece of sheet iron at the end of the screens to keep the cobs from mixing with the corn. The rate of speed should be about half as fast as for threshing wheat. If the machine is fixed this way it will thresh from forty to sixty bushels an hour. The corn will heat in two to four days, and should therefore be turned completely, or, better, be put through a fanning-mill. It may heat again, and requires to be watched, for if neglected will get mouldy and bitter. It is not advisable to thresh much unless you have room on a floor to spread it about a foot deep. The advantages of threshing corn are, that it is husked and shelled for three cents a bushel, the stock will eat the stalks better, and being broken, what is not eaten is not such a nuisance among the manure. The disadvantages are that the corn and stalks are apt to spoil some. However, if the stalks are no more than two feet deep, with oat or wheat straw between, they will keep if not too damp.

The annual report of the harbor master of the port of Montreal for the year of 1894, shows that among the exports were:—Grain, 8,746,485 bushels, a decrease of 12,977,900 bushels; butter, 36,600 packages, a decrease of 34,083 packages; hay, 22,212 tons, a decrease of 45,653 tons. Lumber showed an increase of 49,158,629 feet; flour an increase of 361,664 barrels; cheese an increase of 59,484 boxes. Cattle, 87,604 head, an increase of 4,000 head; sheep, 130,663, an increase of 127,014; horses, 5,579, an increase of 3,927. Apples, an increase of 211,570 barrels.