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## The Field.

### Hop-Growing on Wires.

The *Farmer* (English) gives the following description of the wiring method of hop-culture, which is now being adopted by some growers of this crop in Britain:—

"Hearing that Mr. Sheldrake, proprietor of the *Aldershot Admiralty Gazette*, had a good breadth of hops under the wiring method of culture, we applied to that gentleman for permission to inspect and report upon it. He very courteously rendered us every assistance, and we are thus enabled to give the following particulars:—

Farnham and Aldershot are contiguous, and form the great hop-growing districts for which these adjoining corners of Hants and Sarrey are famous. The soil is of a deep, tenacious, loamy character, and an enormous quantity of hops are grown in the district.

Pole growing is the universal method adopted there, Mr. Sheldrake being the only example of wire growing. A close inspection of the two methods has resulted in the formation of the opinion that the wire system of culture is by far the best.

In pole planting the hills (i.e., plants) are generally planted 6 ft. by 6 ft., which gives 1,210 plants to the acre, and on an average there are three poles, varying from 10 ft. to 12 ft. high, according to the adaptability of the ground to vigorous growth, and two vines trained to each pole, and if only two poles are used, three vines are invariably trained to each. Others plant 6½ ft. by 6½ ft., which gives 1050 hills per acre. So far as the crop in this district can be judged at present, the yield will be from 9 to 10 cwt. per acre.

On the wire system and planting purposely for it, as Mr. Sheldrake did last year, he recommends planting 8 feet by 4 feet, which gives the same number of hills per acre, but has the advantage of the saving of one-fourth in the expense of horizontal wires and posts, while this method of planting admits of cartage between the rows, for manure and tillage, as well as the accommodation of the pickers, and cartage to the kilns. This plantation of a year old will be wired next winter.

The plan of wiring is this. At each end of the rows are stout upright scaffold poles about 9 inches in diameter and about 12 ft. high, with a slanting support to keep each end pole upright and thoroughly firm, the slanting support resting on stone slabs set into the ground. In the rows, at intervals of 40 feet, are uprights with a cross piece at the top, as in a telegraph post, a single horizontal wire runs along the bottom, about 1 foot from the ground, and two horizontal wires run along the top, at each extremity of the cross piece, at a distance of about 36 inches apart. The wires, both at top and bottom, are strained tight, so that the whole structure is firm and durable. From each hill or plant, four vertical wires are fixed at the bottom, to each of which two vines are trained; and, of course, these vertical wires are fastened to the top horizontal wires at distances of 2½ feet to 3 feet each way.

One piece of wired hops consisting of rows each of 100 hills, each hill 6 feet apart in the rows, is just now a sight which, like William Paul's roses, should be seen once and dreamt of for ever. During our inspection, the afternoon's sun was full upon them, and the wire system of training presented an unbroken surface along the line, and we looked upon long wail-like masses of foliage, densely studded with golden-

tinted hops, with here and there branches which had caught an opposite wire, forming a festoon.

But how about picking? Well, this is a very easy matter, for light ladders are used, which rest against the horizontal wires, and a man easily pulls away the lateral branches, and throws them down to the pickers. The cost in picking is on the wire system a little in excess of the pole method of culture, inasmuch as three men are required for wires to two men on poles, in gathering and preparing hops for the pickers, but as this extra cost is only for a period of three weeks or so, the matter is of small moment compared with the advantages of the wire system.

First, as to the cost of the two methods. Under the pole system of culture, poles 14 feet high are delivered in the grounds at from 22s. to 25s. per 100, and taking the average of three poles per plant, the cost would run about £30 per acre. Then there is to be added the cost of labor in fixing, attention to, breakage of poles during the season, removal after, and pointing and pitching, as necessary, to say nothing of renewal of poles annually, and, greatest loss of all, the great check which the plant positively sustains in the premature pruning to within three feet of the ground, under the system of pole growing. Now this statement may appear problematical, and will be accepted as such by those who deliberately set their faces against the wire system of culture. But facts speak for themselves, and the proof is now to be found in Mr. Sheldrake's plantations.

Here, side by side, planted at the same time and undergoing precisely the same system of tillage, are those on poles and those on wires, and the difference in the estimated yield is—and, we think, a truthful one—of 15 cwt. to 18 cwt. per acre on the wires, as compared with 8 cwt. to 10 cwt. per acre on poles. Under this system there is uniformity of growth, a weak vine being the exception; for instead of cutting down in the growing season—for at the time of picking the hop plant has not finished growing—only the laterals are pulled away, and the sap action is not arrested and annihilated, as in the pole system of culture. An old hop grower the other day, on looking through Mr. Sheldrake's wires, observed, "Ha! I see it makes every hop a hop; and it does, for the system compels a free circulation of air and exposure to the light, and immunity from friction, giving size to the hops, as well as quality and color. The pole system will not assure this, for the vine is often blown close together, and the poles sometimes broken. Altogether the advantages of the wire system appear to be of so decided a character that we venture to affirm that only prejudice and the fear of first cost stands in the way of its adoption.

At present the wire system is a patent, registered by Mr. Farmer, of Kerby, near Worcester, and Mr. Sheldrake informs us that the cost of wiring an acre, planted 8 feet by 4 feet, with uprights, &c., complete, is about £75 per acre; but the first cost is the only one, as the wires last for a number of years, and there is a great saving of labor."

### Rotating Manures

When we speak of rotating crops, almost every one is familiar with it, either practically or theoretically, but when the subject of rotating manures comes up, it is natural to ask what benefit may result from doing so.

That much might be gained by studying this matter of manuring to suit the soil and crops I fully believe, but yet am not entirely given up to special manuring on account of the expense, when but a small area is cultivated. And this rotation of manures comes more

into use and is more profitable on well cultivated, heavily manured lands than on lands which are naturally poor or have been made so by a system of over cropping and impoverishment.

No one denies that stable manure is very valuable, and, either while hot or after having undergone fermentation, produces good crops of almost all kinds; yet a change of even this valuable fertilizer for some good commercial fertilizer, say for one or two years, will be productive of good results, after which the use of stable manure can be resumed. Now there are several reasons for this, one of which is, that stable manure supplies a variable, though large quantity of vegetable matter, and constant manuring with it so fills up the soil with vegetable matter as to supply more than the crops actually require, and the consequence is the full amount of good is not yearly obtained from the manure supplied each season. Of course this does not refer to land which is poor and needs food, as do many of our worn-out farms, for on such land manure may be yearly used, and large quantities too, with the full assurance that you are getting all the good from it that there is in it—that all its virtues are quickly and eagerly sucked up by the hungry soil and converted into vegetation.

Now, all will admit the efficacy of Peruvian guano, when obtained in its purity, comparatively speaking, yet if you have been using this manure on any crop for a couple of years, on the same piece of ground, substitute some other good fertilizer for at least one year, and you will gain by the change.

A circumstance occurred with me which may not come amiss to mention. Some time since I grew garden vegetables largely for market, and there was a certain piece of ground on which I grew my early turnips, they following some other very large crop, of course rotating the very early crop, and using guano to force them. It worked very well all along, but the third year I did not have quite enough of it to finish the piece, and so finished up with Bower's complete manure. The piece manured with the latter proved to be the best that year. I marked the result and just reversed the operation the following year, and there was very little difference, for the rest given the guano made its effect more apparent the following year, while the application of the complete manure brought the other part of the piece up, I soon after gave up raising vegetables in such quantities for the large markets, raising only enough to supply local markets, so did not have an opportunity to test the matter much further with vegetables.

A plot of ground which had been well cultivated and regularly manured with stable manure, was ploughed up and put down to wheat. Part of the piece was again manured with good stable manure, while another part was treated to a good application of a standard fertilizer to nearly the amount in money of the value of the stable manure. I watched the result carefully, and at harvest time the advantage was on the side of the stable manure.

I do not say that such would have been the result in every case, for many important points must be taken into consideration, and, as it would take considerable space to go into details at present, I will await the expression of opinions from other culturists. —*Cor. Ohio Farmer.*

ODESSA WHEAT IN WISCONSIN.—A correspondent of the *Western Rural* says that in Waupaca, Portage, and Washara counties, Wis., it is with very few exceptions a failure, and almost abandoned. Its faults are, it is the latest wheat, and suffers more from Chinch bugs than others.

### A Large Crop of Corn.

To show what has been done, and may be again perhaps, I refer to an old record. In 1820 my father prepared a field for corn, which had been in grass three years, and had been ploughed in the fall of 1819. It was manured in the spring and ploughed again. The corn—eight-rowed yellow—was planted in drills, or rather dibbled by hand, the rows three and a half feet apart, and the kernels—one in a place—eight inches apart. The corn was dropped in place by children, as I well remember, the place for each kernel being marked by a wheel run along the furrow, with projections on the rim. If a kernel failed to come up it was replaced. Of course the land was well tilled with plough and hoe; there were no cultivators in those days. A good many suckers came up, and they were pulled off twice, also by the children. This, my father afterwards judged, was not necessary. The stalks were cut above the ears, as the practice universally was in those days.

When the corn was ripe, two acres of the field were measured, which were oblong in shape, and four rows, lengthwise of the pieces—two each side of the middle—were husked, shelled and measured, which showed as near as possible the produce of the acres. It was not yet time to harvest the whole. The yield of one acre was ninety-nine bushels and four quarts, and of the other acre the yield was ninety-four bushels and six quarts. The measurement was by a competent surveyor, and all the figures verified in order to be reported to the old Duchess County Agricultural Society.

In 1822 my father prepared another field—six acres—by heavy manuring and once ploughing. The corn was planted in hills three and a half feet one way and two feet the other, with about three grains in a hill. The yield was not so completely measured as the other; only a small part of the field and crop were exactly measured. The showing of that measurement, and the final harvesting of the crop, was that the crop of the whole field was equal per acre to the best acre in 1820.

I hope it will not be suspected that the old farm is going down, because we do not get a hundred bushels of corn from an acre. We do not put all our manure on the best land now, and we raise good crops of corn and wheat where my father did not venture to sow wheat at all; and the product of grass is more than fourfold. And now I shall not be satisfied till I can do again what has been done. C. J.

### Hop Yards at Waterloo Village.

A correspondent of the *Guelph Mercury* gives the following account of Mr. George Moore's hop yards, which are located at Waterloo village, near Berlin, in the county of Waterloo:—

Your correspondent visited the above hop yards last week. Mr. Moore has 43 acres of land in three fields, some distance apart; 40 acres are under crop, and will yield over twelve tons of hops this season. In one field he has erected a fine brick building, containing three large dry kilns, 25 feet square, each one furnished with a stove capable of taking in five feet wood. These stoves are placed in the centre of the building on the earthen floor, with pipes equally distributed round the stove room, to convey the heat regularly to the hops in process of drying. The hops are laid on slats covered with canvas, about five feet higher than the furnace pipes. On these are laid the hops after picking, from 15 to 20 inches deep, and require from 12 to 18 hours to dry, when they are removed to the store room, with which two of the drying rooms are attached. This room is 30 by 40 feet. The other drying room is attached to a stove room, 30 by 30 feet, where the hops are allowed to remain two or three weeks before they are ready for being put in bales. The ground that below the store rooms is used for pressing the hops into bales of 200 lbs. Mr. Moore gives employment to a large number of hands, both men and women, during the spring and summer months. Early in the spring he employs from 30 to 40 men in grubbing and setting poles, for nearly six weeks, paying them \$1 12½ per day. When that part of the work is done, he then engages about 60 women and girls to train the plants, that is, to fasten the young shoots to the poles. When that is finished, he keeps about 30 of the women to hand hoe round the vines. These women receive 62½ cents per day. During the remainder of the season, until picking time, two teams are engaged ploughing and cultivating between the rows. Hop picking generally begins about the 25th of August, but this depends on the season. In picking, he employs from 300 to 400 hands, who have steady employment for two weeks. A good hand will pick

two boxes per day, each box making about 26 lbs. of dried hops. After picking, the hops are removed to the drying kilns, which are kept in operation night and day, when sufficient pickers can be obtained to keep them going. As Mr. Moore has had long experience in the business, and thoroughly understands the growing and saving of hops, he has a great number of local customers, thereby doing away with shipping to a foreign market altogether. The majority of hop growers have only one field or adjacent fields, when, if one is taken with blight, it is very apt to spread through the adjoining fields. Mr. Moore prefers 15 acre fields, situated some distance apart, for the reason that if one field should be destroyed by a storm or blight, the others might escape. Also one is more likely to have a variety of soil, so as to suit the different seasons.

### Value of Covered Manure.

At various times, says the *Philadelphia Press*, we have pointed out to our readers the profits resulting from covering manure, instead of allowing it to get soaked by the rains or dried by the sun, as is generally done. We have given this advice from what we have actually seen. When rough sheds have been built to cover the manure heap, the crops fertilized by this rule have been increased in productiveness sufficient to pay for the shed covering the first year. We had never seen any exact figures of the proportionate value of covered and uncovered manures that we remember until the following. They present the best statement possible, we think, of the advantages of the plan:

Four acres of good soil were measured; two of them were manured with ordinary barnyard manure, and two with an equal quantity of manure from the covered shed. The whole was planted with potatoes. The products of each acre were as follows:

Potatoes Treated with Barnyard Manure.	
One acre produced .....	272 bushels
One acre produced .....	292 bushels
Potatoes Manured from the Covered Shed.	
One acre produced .....	442 bushels
One acre produced .....	471 bushels

The next year the land was sown with wheat, when the crop was as follows:

Wheat on Land Treated with Barnyard Manure.	
One acre produced 41 bushels 10 pounds (of 61 pounds per bushel.)	
One acre produced 42 bushels 33 pounds (of 61 pounds per bushel.)	

Wheat on Land Manured from Covered Sheds.	
One acre produced 65 bushels 6 pounds (of 61 pounds per bushel.)	
One acre produced 53 bushels 47 pounds (of 61 pounds per bushel.)	

The straw also yielded one-third more upon the land fertilized with the manure from the covered stalls than upon that to which the ordinary manure was supplied. In view of these facts, we hope that our farmers will give this subject their full attention for their own benefit; and in making shelter or stalls for stock, it might be done with a view to the increase of manure under the cattle, as it is not removed before it is intended for use, if it is likely to remain there for months.

### Weeds on the Road Side.

There is a law in New York, we believe, that requires every roadmaster to see that the weeds along the roadside in the district over which he has jurisdiction are cut twice a year—that is, twice during the season of growth. In some road-districts and by some road-masters this duty is performed faithfully; but by the large majority no attention is paid to it.

Every good farmer is interested in the faithful enforcement of this law; because the roadsides are great weed-breeds and disseminators unless they are carefully kept clean in the manner described. The question of the tidy appearance of the roadsides is a secondary consideration. It is not probable that the law originated in the motive of tidiness, but as an economical measure—a means of protecting careful farmers from the carelessness or slovenliness of untidy neighbors. Attention is therefore called to the fact that every roadmaster's warrant does or should contain this as one of his specified duties; and that if he does not discharge it he should be complained of to the road commissioners of the town.—*N. Y. World.*

### English Soil.

It is a matter of general knowledge that tile underdraining is much more popular in England than with us. It is not only in the matter of expense, but in the absolute benefits derived from the practice that a great difference exists. The comparative cost of underdraining here is much greater in comparison with the cost of the land than in England, and this chiefly because the price of labor and tile is so much against us. But even with these, the actual results of underdraining are not generally as they are represented to be in the Old World. There is no difference certainly in a wet piece of ground. Where the water lies in winter, and has to trust to evaporation to dry away, or in a marsh wet at all times, here as there underdraining pays. But they have found, at least so we are told, that it pays to underdrain any and all their lands, and it certainly does not do so here. And this paying is not meant wholly in a money sense, but that the same good results represented to follow the underdraining of comparatively dry ground in England, has not been seen here. The question arises whether there is not something wholly different in the mechanical structure of English soil. In recent reports from that country we note that frequent reference is made to the summer cracking of the land, and spoken of as if it was a general thing after every dry time. Of course every kind of soil that has clay in it cracks to some extent, but imagine cracks so that "everywhere young birds and animals fall into them and are destroyed!" Some are so large, says an English paper, that huge walking canes have been lost down them! We do not think anywhere in America soil behaves like this, even in the driest times, and it would seem to indicate that there may be something in the nature of the English soil which accounts for the difference in underdraining results.—*N. Y. Times.*

### Drilling Wheat.

A singular discussion arose in the papers last fall as to whether there was really any advantage in the drill over broadcast sowing. It is strange to find such subjects come up. To experienced minds it is like arguing whether we had not better abolish reaping machines and return to the old cradle, if not indeed to the sickle at once. To us a more reasonable matter would be the width of the drills. We do not know of any extended and satisfactory experiments in the country, so as to test the matter beyond question. At any rate, what a foreigner would call very close sowing is the rule here. In England, however, where close calculation is much more the rule in farming among the more intelligent than with us, there is a growing feeling in favor of wide drills. Some set them as wide as ten inches, and the reports, especially this year, are generally in favor of the wide drills.

The great trouble with most of the experiments of this kind is, when made in experimental grounds, that they extend but over a single season, when it is only after trial through a series of years that a general rule can be formed. It makes a great difference, for instance, whether the experiments are made through a dry season or a moist one. In a dry season like the present, when there is a deficiency of moisture in the ground, a wide row will have the advantage over the narrow, as there would not be enough for all. In other seasons when there is more moisture, and enough for all, the result might favor closer rows. So also the nature of the soil might make much difference. A soil which does not dry out easily will permit of closer sowing. The one element of moisture for the growing crop alone makes a considerable element to be considered. Still an average of years would show what would be best on the whole, and we should like to see such figures.—*Germania Telegraph.*

### Road-Dust.

The *American Agriculturist* strongly advises farmers to make a business of gathering up road-dust for use as an absorbent and fertilizer. It says:—

"This is the most convenient absorbent the farmer can command, and a few barrels of it will save a large amount of ammonia in the manure, the privy, and the stable. Hens should have a large open box full of it under cover, where they may dust themselves at their pleasure. It is an excellent thing to have in the stable, and, when saturated with urine, makes a valuable fertilizer. The fineness of the dust, continually ground by the iron tires and horse-shoes, is one cause of its favorable action upon crops. That gathered from a clay soil is best—indeed, sand, whether from the road or elsewhere, is of but little use as a desiccator or absorbent."

### Experiments on Grass Manuring.

Liberal and judicious application of manure to grass lands is a regular part of the routine of farm work, as carried on by all really good farmers in Britain. Our Old Country exchanges testify that it was never practised with better effect than during the past season. Only where the grass was top-dressed was there anything like an ordinary crop. The use of artificial manures in almost every case was followed by a heavy cut of hay. The uniformity of this result is partly due, no doubt, to the stock and store of manurial matter in the soil, which the chemicals have the effect of bringing into active service. So marked a result might not follow in this country, owing to the parsimonious manner of manuring too commonly practised, but we are persuaded that the subject is worthy more careful attention than it usually gets. We therefore commend the following account of certain experiments in this line, for which we are indebted to the *North British Agriculturist*:-

Mr Charles D. Hunter, F.C.S., a Highland Society's essayist, contributed to an interesting work, entitled "Ten Years of Gentleman Farming," a valuable chapter on the value of certain manures for grass, and experiments on autumn versus spring manuring, tried on the Blennerhasset farm, Cumberland, for Mr. William Lawson, in the five years from 1868 to 1872.

The chapter in question has been published in pamphlet form, and deserves most careful perusal. Upwards of 150 experiments were made, extending over five years, and embracing questions as to description of manure, and time of application. The twelve different manures tested were nitrate of soda, sulphate of ammonia, Peruvian guano, sulphate of potash, dissolved bones, superphosphate, muriate of potash, farm-yard manure, bone dust, sulphate of magnesia, gypsum, and salt. The above is the order in which these manures were proved in the weight and value of the hay produced. Nitrate of soda used as a top-dressing for grass land gave the largest return. Contrary to the results of three out of six experiments reported by Dr. Voelcker, Mr. Hunter found that the application of 4 cwt. of nitrate of soda per acre was an improvement, but the reverse by the addition of superphosphate. The results of the elaborated and carefully-compiled experiments in Cumberland show that 4 cwt. of nitrate of soda if used alone, do better than a smaller quantity; but when other manures were added, the dose was too much for the land. The highest return was obtained from the application of from 1 to 2 cwt. of nitrate of soda, mixed with mineral manures containing superphosphate, potash, soda, and magnesia. We are not surprised at this for the experience of the practical Scotch agriculturist is in favor of a mixture, in preference to the use of a heavy supply of nitrate alone.

Sulphate of ammonia, applied like nitrate of soda, alone ranked second in produce, being very little behind. Under favorable conditions of weather, sulphate of ammonia produces a heavier crop than nitrate of soda; but the latter, though containing a smaller proportion of nitrogen, is more reliable in its effects. On clay soils sulphate of ammonia works better than nitrate of soda; and the conclusion drawn by Mr. Hunter was that, "except upon poor land, sulphate of ammonia acts better when used alone." Peruvian guano applied to the same extent per acre as the two nitrogenous manures already named gave lighter returns. It was tried along with minerals, but excepting in the case of bone-dust, no augmentation was of any advantage. While Peruvian guano operated fully as effectively alone as mixed, it depended more on the season than the manures with which it has been compared.

Sulphate of potash sown at the rate of 4 cwt. per acre turned out better than a similar dressing of muriate of potash. The yield of hay from the former exceeded that of the latter by 9½ stones per acre. Dissolved bones were not very fully experimented on, but the results so far showed the bones considerably inferior to mixed minerals. These experiments, confirms also, says our author, "on potatoes and turnips, went far to induce us to give up the use of bones on the farm; and looking at all the experiments, the evidence tends to show, that, being a favorite manure, bones command a higher price in the market than is warranted by their real manurial value." Keeping the lasting qualities of bones sufficiently in view, we are scarcely inclined to think that they command a higher price than their manurial value. It was ascertainable, fortunately for the value of the experiments, that dissolved bones were rendered much more effective by and of some such nitrogenous manure as Peruvian guano.

Many experiments were made to show the effects of other manures on the action of superphosphate. The results of these were that sulphate of ammonia increased the effect of superphosphate by 126 per cent.; muriate of potash by 34 per cent.; and common salt by 5 per cent.; while sulphate of magnesia decreased it by 4 per cent. "These facts," says Mr. Hunter, "if coursed by further experiments, would be of great practical value. But on a few experiments we must not build too much. As they stand, the facts tend to show that, on light land, superphosphate should be aided by nitrogenous manures, and generally, too, by potash." Many trials were made with muriate of potash, the general conclusions of which were that the presence of superphosphate increased the action of muriate of potash threefold, which was confirmatory of the results arrived at by Dr. Voelcker. Magnesia increased the produce from muriate and potash to a similar extent, while salt, on the other hand, materially decreased it. The deficiency in the return of hay from 4 cwt. of muriate of potash, mixed with a like quantity of salt, was equal to 67 per cent. as compared with the produce of muriate of potash alone. The Messrs. Lawes & Gilbert's experiments differ from the above results as to the action of magnesia and salt on potash manures; and Mr. Hunter says that confirmatory proof is therefore wanting on this point. Muriate of potash was not we are told, a profitable manure in any of the Blennerhasset grass experiments. But Dr. Voelcker's experiments with it showed much more satisfactory results.

The immediate value of farm-yard dung applied on grass, as might have been expected, was comparatively low. Its chief worth would lie in after value. Unless on clay soils, bone-dust was not ascertained to be of much value as a hay manure, though for permanent pasture it has long been popular. Superphosphate was found to decrease the yield from sulphate of magnesia, while muriate of potash and salt considerably increased it. The writer says:-"These interesting facts suggest that the action of sulphate of magnesia was due more to the sulphuric acid it contains than to the magnesia; for with superphosphate, which contains much sulphuric acid, it is useless, or worse than useless, whereas with the two muriates, or rather chlorides, it gives a very marked increase. At its best, however, it was unprofitable, and its action on superphosphate excludes it from use at any price. The kind used in these experiments was in crystals, and tolerably pure." We are further informed:-"Salt is of all the twelve manures the most fickle. Its only constant and reliable action seemed to be that of reducing the yield from muriate of potash. Out of twelve experiments nine showed a loss, and only three a gain from the use of salt."

A series of experiments were also instituted as to the best time of applying grass manures. The first table produced showed very little difference between the 24th February and the 5th May. The 22nd April indicates if anything the heaviest produce. A second table gives the results of sowings at intervals of seven weeks each, between 16th October 1871 and 2nd May 1872. Mineral and grass manures were separately tried. On the whole, the former gave the best return. The heaviest crops were from the December and March applications of the mineral manure. March was slightly highest, and the lightest were from the May, October, and January sowings. In the October and January dressings the grass manure was inferior to the mineral in results, but applied in May it was superior. "Early sowing of manures," says Mr. Hunter, "is advised by all the experiments. But it would be advisable to avoid sowing late in December or early in January; for though December did well, it was the earlier part of it; and January is so decidedly inferior to every neighboring plot, that it should be avoided." The following general conclusions have been drawn from the experiments:-"That nitrate of soda, used alone, gave the best return when applied at the rate of 4 cwt. per acre. That nitrate of soda should in general be used in conjunction with mineral manures; and then at the rate of 1 to 2 cwt. per acre. That sulphate of ammonia was less reliable than nitrate of soda. That Peruvian guano did best when used by itself. That when nitrate of soda gave 100 lbs. of hay, sulphate of ammonia gave 92, and Peruvian guano 74. That, used in conjunction with mineral manures, each lb. of nitrogen gave, from nitrate of soda, 37½ lbs. of hay; from sulphate of ammonia, 25 lbs.; and from Peruvian guano, 24 lbs. of hay. That the yield from superphosphate was more than doubled by the presence of sulphate of ammonia, and increased one-third by the presence of muriate of potash. That the yield from muriate of potash was increased threefold by the presence of superphosphate, and nearly twofold by the presence of sulphate of ammonia, and was decreased more than one-half by the presence of

common salt. That sulphate of potash proved superior to muriate of potash. That a good quality grass manure is 1½ cwt. of nitrate of soda, 1½ cwt. of muriate of potash, and 3 cwt. superphosphate or dissolved bone per acre. And that 4 cwt. of gypsum, if obtainable at 1s. per cwt., may with advantage be mixed with this compound. That in the experiments of 1872, mineral manures applied in autumn proved superior to nitrogenous manures applied either in autumn or spring. That possibly grass land might be efficiently manured by mineral manures alone."

### Muck for Grass Lands.

Under the heading, "Farmer Timothy Discounteth on muck," the *Maine Farmer* publishes a lively and suggestive communication from one of its correspondents, in which the beneficial effects of this fertilizer on grass, and the wisdom of making free use of it, are dwelt upon as follows:-

"The absence of rain for several weeks past has been favorable, the muck bed is dry, and while it is easier digging it now than it will be any time this fall, the muck is worth much more than when it is water-soaked and heavy. Fortunately I have a good deposit of muck on one corner of my farm, and I deem it the most valuable portion. The dry muck I use in various ways. Some is hauled at once in the barn yard and manure-shed, some used in the hog house, and some left in the heap until spring. This is composted with leached ashes, a small quantity of manure, and is used as a top-dressing on my mowing fields. I manage to have a compost heap cooking in the early spring and summer, to use upon my grass fields soon after haying. This I spread on broadcast as soon as I am through haying, or before the fall rains come, generally intending to have enough to go over from two to four acres each year. This makes the grass grow I tell you, and I can show you some fields on my farm where I have brought up the yield of hay from almost nothing to more than a ton to the acre, simply by the use of a top-dressing of composted muck; and I calculate land that cuts from a ton to a ton and a half of hay per acre is pretty good land. It's as much as I want to swing a scythe through, any way. Talk about two tons of hay to the acre, Mr. Editor; I don't believe it. If any man has ever grown it let him come out and tell us so. It's a big crop, sir, a big crop, and I am satisfied if I get half of it, and I wouldn't get that if it wasn't for muck! I don't suppose as a general thing the pieces the farmers write for your paper are read much, but I want to tell your lazy readers to go to dig a good muck. It will pay—as I have proved. Just dig muck; use it in a compost as top-dressing for your grass fields, feed the hay cut to cows, make butter at good prices, work easy, don't fret, and my word for it, you'll bless the day when you followed my advice to dig muck."

**HUNGARIAN GRASS**—Many make a mistake in seeding too soon; the crop will not stand cool nights, and if planted too soon the crop will be more or less injured by weeds, which seem to grow under all circumstances. It needs but seventy days of reasonably good weather to make a crop of hay from this grass, and it is best to so arrange the sowing as to bring the harvest at a leisure hour, and not just in oats harvest or immediately afterwards, when we are very apt to have bad weather. Put the ground in good order, but do not sow too soon—say about the last week in May or first in June. Here we usually plant corn during the first week in May, and I would rather not sow Hungarian grass for three weeks afterwards. The safest rule is three weeks after corn planting, and will apply to any latitude.—*Cor. Cornwall Gentleman.*

**FINE AND COARSE HAY**—Producers are sometimes puzzled to know why city buyers generally ask for coarse well-matured hay in preference to the more tender and in reality more nutritious kinds. The *Live Stock Journal* thus enlightens them: "City men feed hay for a different purpose than the farmer. The farmer feeds it for its nutriment and as a principal food, while the city man regards grass as the cheapest food and only gives sufficient hay to make bulk in the stomach and for the purpose of health. Coarse well-matured timothy serves the purpose better than the early-cut and fine grasses. They do not desire such hay as will tempt the horses to eat too much of it. Straw would answer this purpose if cut and mixed with the grain about as well. But farmers should be content with this practice of the city customer, for it enables them to send their poorest hay for the best price, and to retain the best quality for home consumption."

## Agricultural Implements.

### A New Agricultural Engine.

There are three requisites essential to a useful agricultural steam engine, viz.: 1st. That it be constructed of the very best material in order to ensure its durability when properly made. 2nd. That it can be used for portable as well as stationary purposes; and, 3rd, that it be as cheap as is consistent with its other good qualities. The second quality is one which is most rarely met with, and which has given rise to the greatest exercise of human ingenuity. Genius and invention, however, have at length triumphed. An engine is now manufactured in this country which will serve the double purpose admirably. It is mounted on a very strong waggon or truck; giving it ease in transportation, and at the same time great strength. It is simple, durable, efficient and economical. It may be worked either on top of, and fastened to the boiler, or it may be removed off the boiler altogether and placed alongside of it, when it works as a simple horizontal engine. In other respects it resembles an ordinary portable engine with jointed funnel. A great element of strength is that the cylinder-head, guide for cross-head, and the bearings for crank shafts, are all cast in one solid piece, so that it is utterly impossible for the important working parts ever to get out of line. The bed, too, is bolted to brackets on the boiler when used as portable, or to a foundation when used stationary. Another important advantage of the bed is that it receives all the oil and drippings from the moving parts, thus preventing the boiler from becoming covered with slag. All the exposed parts are belted and jacketed with sheet iron, so as to prevent the escape of heat by radiation. The cylinder is bolted only at one end to the bed, so as to allow it freedom of expansion. The crank shaft is double, and extends far enough to receive a pulley or fly-wheel at each end, which will revolve free of the boiler. The piston has a metallic packing, self-adjusting, which keeps it always a perfect fit whilst wearing. The boiler is constructed on the locomotive principle, allowing the greatest possible amount of heating surface.

### The Parvin Plough.

This steam plough was on exhibition at the Kansas State Fair, where a committee was appointed to give it a trial. That committee reported as follows:

We have examined and tested the parvin steam plough, by order of the state board, and find that it works very powerfully, pulling a gang of seven ploughs, and ploughing the hard grounds as deep as the beam would permit, and doing its work with apparent ease. We also ploughed with it in newly broken ground to satisfy ourselves that it could travel on soft as well as hard ground. It appeared to do its work easily, and the operator could start his furrows at the exact place desired without any apparent inconvenience; it could also be guided by him whenever desired, doing everything claimed by the inventor. And we therefore recommended it as worthy your honorable mention and diploma.

This is well, remarks the *Prairie Farmer*, but we should like to hear more of the actual field work of this plough. Having expected much of it, it is a little discouraging that seemingly so little has been accomplished in the way of introducing and running them. But knowing the difficulties, financial and otherwise, that such an undertaking meet, and that this one in particular has met, we are not by any means ready to believe that the parvin motor is a failure.

**TO THRESHERS.**—Those parties who are engaged in this calling, would do well to recollect that there is a penalty for not complying with the Act respecting the covering of couplings, etc. Any party can prosecute and receive one half the fine for so doing.

### Valuable Mechanical Receipts.

Pinchbeck consists of copper, 5 lbs., zinc, 1 lb.  
An imitation of silver is made of tin, 3 oz.; copper, 4 lbs.

Good Britannia metal consists of tin, 150 lbs.; copper, 3 lbs.; antimony, 10 lbs.

German silver of first quality, for casting, may be made of copper, 50 lbs.; zinc, 20 lbs.; nickel, beat pulverized, 25 lbs.

To anneal steel, make the steel red hot, then put it in a heap of dry sawdust till cold, when it will be found to be quite soft.

For best red brass, for fine castings, take copper, 24 lbs.; zinc, 5 lbs.; bismuth, 1 oz. Put in the bismuth last before pouring off.

For black flux, take nitre, 1 part; cream of tartar, 2 parts; mix and burn in small quantities in a red hot crucible; mix the product with finely powdered charcoal; keep in a dry corked bottle. This is used in smelting metallic ores.

To soften files, cover them with oil and hold them over the fire until the oil blazes; as soon as the flame runs all over the file, plunge it in the water; or put them in a moderately hot oven for half an hour, if large files; but, if small, the first plan is the best.

In metallurgy the following articles are used as fluxes: Crude tartar (if on a small scale, commercial cream of tartar), borax, nitre, sal ammoniac, common salt, limestone, glass and fluor spar. These articles being easy to fuse, are added to substances which are more refractory, to promote their fusion.

To extract rust from steel, immerse the article to be cleaned for a few minutes, until all dirt and rust is taken off, in a strong solution of cyanide of potassium, say about 12 oz., in a wine glass full of water; take out and clean it with a tooth brush, with some paste composed of cyanide of potassium, Castile soap, whiting and water. These last are mixed in a paste about the consistency of thick cream.

It is requisite that artists should have the linseed oil they use perfectly colorless, or otherwise it would spoil the more delicate tints. To purify it is extremely easy. Even putting a bottle of the oil in the sun for some days will accomplish the object; but, as this process is somewhat tedious, it is better to put in a two-ounce vial, three-quarters full of good common linseed oil, a piece of whiting as big as a nut, previously powdered, and shake them together and put the vial in an oven. In two days, and sometimes in a few hours, the whiting will have carried down to the bottom all color and impurity, and the refined oil floating at the top may be poured off for use.

Boiled linseed-oil will keep polished tools from rusting if it is allowed to dry on them. Common sperm oil will prevent from rusting for a short period. A coat of copal is frequently applied to polish tools exposed to the weather. Woolen materials are the best for wrappers for metals. Iron and steel goods of all descriptions are kept free from rust by the following: Dissolve half an ounce of camphor in one pound of hog's lard, take off the scum and mix as much black lead as will give the mixture an iron color. Iron and steel, and machinery of all kinds, rubbed over with this mixture and left with it on for twenty-four hours, and then rubbed with a linen cloth, will keep clean for months. If machinery is for exportation it should be kept thickly coated with this during the voyage.

Take pure copper, 100 parts; zinc, or preferably tin, 17 parts; magnesia, 6 parts; sal ammoniac, 3-6 parts; quick-lime, 1-3 parts; tartar of commerce, 9 parts. Copper is first melted, then the magnesia, sal ammoniac, lime, and tartar, are then added separately and by degrees, in the form of powder; the whole is now briskly stirred for about half an hour, so as to mix thoroughly, and the zinc is added in small grains, by throwing it on the surface, and stirring until it is entirely fused; the crucible is then covered, and the fusion maintained for about thirty-five minutes. The surface is then skimmed, and the alloy is ready for casting. It has a fine grain, is malleable, and takes a splendid polish. It does not corrode readily, and for many purposes is an excellent substitute for gold. When tarnished, its brilliancy can be restored by a little acidulated water.—*Western Manufacturer.*

**MCCALLUM'S POTATO DIGGER.**—The editor of the *Prairie Farmer* has seen McCallum's potato digger and picker tried, and pronounces it very successful. It worked at the rate of five acres per day, two horses and one man being employed. The potatoes were laid on the surface, and not one in a thousand was injured. The picking attachment, it was thought, would work well in sandy soils, or any soil free from hard lumps.

A GOOD LUBRICATOR for wooden axles is made of six parts of clean tallow and two parts of fine smooth plumbago. Another is made of five parts of tallow, five parts of soapstone, one part plumbago, and nine parts of resin-oil; the tallow and oil are heated and mixed, after which the soapstone and plumbago are added.

**HUSKING—SAVING THE HANDS.**—"Rural," writing for the *Chicago Tribune*, throws in these sensible remarks about protecting the hands while performing the universal farm work of this season of the year:

"It is a little curious to see how the boys fix up their hand-gear to protect their hands from the sharp husks. Two years ago I advised pine tar for a coating to the buckskin gloves and mittens, and some gave it a trial, and also used it on the Hall husking glove; but most people laughed at the idea, though it is found a great saving of the glove. This year the Hall husking glove is doubly armed with brass plates, and yet the application of tar to the leather will be found useful, as it closes down at once, and prevents the husk from cutting the leather. I mention this as this glove has come into general use. Some use buckskin mittens armed with a common steel husking-pin; and those need an application of tar daily. Have the tar warm, and apply a light coating,—not so that it will run off, or in any way besmear your clothing. The tar soon fills the pores of the skin, and makes it almost as hard as iron, and adds greatly to the wear.

**MANUAL LABOR VS. MACHINERY.**—A French author, M. Menier, says: "Homer shows us twelve slave women preparing meal with stone mills for the consumption of the heroes." Now, a woman working hard all day cannot make meal for more than twenty-five persons. Of course, then, in the heroic ages, there must have been absorbed an enormous amount of capital paid out for labor. To-day twenty millers in an ordinary establishment can produce by means of machinery flour enough for the daily consumption of 72,000 people, or each man can feed 3,600 men. In Homer's time it would have taken 144 millers. If all the machine-made cotton thread produced in England was turned out by hand, it would represent the individual labor of 91,000,000 of people. A smart woman can make eighty stitches a minute with her knitting-needle, while a machine is working 480,000 stitches. The machine then represents 6,000 work-women.

The *Banffshire Journal* gives a very good account of a reaping machine which has just been brought out by Mr. G. W. Murray of Banff. It was last week tried upon his farm at Colleenard. The peculiarity of this machine, says our contemporary, is that it is wholly hung upon a powerful spring, which softens the jerk as it passes through furrows and over rough surfaces, and thereby allows the whole thing to be made lighter, which lessens the draught considerably, and lowers the price, two very important points to the farmer. The machine worked very satisfactorily. All those who saw it declared that they had never seen a reaper before that they were so well pleased with. It is unfortunate that, through Mr. Murray's entries for the trial of reapers at the Banffshire Central Agricultural Society being too late, the public will not have an opportunity of seeing this machine at work at Haughs on Wednesday, as the local committee would not allow late entries to compete. If, however, the merits of the new machine are anything like its first appearance, it will soon be well known in the country.

**CUTTING CORN BY STEAM IN THE CASE OF GOWRIE.**—The following letter, which has been sent by Lord Kinnaird to Mr. Mechi, of Tiptree Hall, will interest our agricultural readers:—"Rosie Priory, Inchture, 15th Sept., 1874.—Dear Mr. Mechi,—I am sure that you will be glad to hear that I have had a most successful and satisfactory trial of reaping or cutting down a crop by steam power. I attached to my traction engine an enlarged reaping machine made after the pattern of the one for which I obtained the prize some years ago at the Highland Society's Show at Aberdeen. The ground was very soft, owing to the serious wet weather we have had more or less in this district since the beginning of harvest, and the crop was laid and levelled so that it could only be cut one way; but in ordinary dry harvest weather I have no doubt that an acre could be cut down and laid in swathes within half an hour. I confidently expect, however, to be able not only to cut, but by the aid of steam power to bind up the cut grain in sheaves, and thus gather in the crops, employing only some half dozen hands. The traction engine can carry to the stack yard from ten to twenty cart-loads at one trip, and is easily driven, as my grandson, a youth of fifteen, drove the engine part of the time, and thus may be said to be the first who ever cut down a crop by steam power.—Yours faithfully, KINNAIRD."



## Horticulture.

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### THE ORCHARD.

#### On The Cultivation of Orchards.

The following is an exceedingly instructive and useful article, written by Mr. Falkener, and published in the *Journal* of the Royal Agricultural Society:

There are three principal circumstances which appear to influence the growth of apple trees, and to determine their natural localities; namely, climate, soil, and aspect. Though apple trees will endure a winter of greater severity than is generally experienced in any part of the British Islands, yet to bring the fruit to maturity requires a warm summer, and, therefore, the southern and western counties are more favorable to orchards than those of the north and east; and accordingly, they are more generally cultivated in the former than in the latter, even where the soils are of a similar character. Great light has been lately thrown upon the adaptation of soils to particular plants; and it is now easy to account for the predilection, so to speak, of the apple tree for soils that abound in clays and marls. All deciduous trees require a considerable portion of potash for the elaboration of their juices in the leaves, and are prosperous or otherwise in proportion to the plentiful or scanty supply of that substance in the soil. Liebig has shewn that the acids generated in plants are always in union with alkaline or earthy bases, and cannot be produced without their presence.\* The most striking exemplification of this necessity is the vine, the leaves, tendrils, and unripe fruit of which are remarkable for their acidity. It has been proved that vineyards supplied with manure of a very forcing kind, but which contains no potash (horn-shavings, for instance), soon cease to be productive. Now the apple tree during its development produces a great quantity of acid; and therefore, in a corresponding degree, requires alkaline, and probably earthy bases also, as an indispensable condition to the existence of the fruit. Without such substances, therefore, in the soil, in adequate abundance, orchards cannot prosper; and it is morally certain that more accurate inquiry and observation will establish the fact that, all other things being equal, they are productive or otherwise in proportion to the quantity, up to a certain limit, of these substances in the soil. It is known that all clays contain potash, and that marl consists of clay and carbonate of lime, and also contains potash, besides sulphate and phosphate of lime. The presence of alkaline and earthy bases, particularly potash and lime, affords a satisfactory solution of the adaptation of marly soils to the production of apples, even without taking into account the part which phosphate and sulphate of lime play in their formation. These considerations are very interesting, as they are calculated to throw a valuable light upon an important branch of horticulture and rural economy, by pointing out the means of exercising an effectual influence upon soils in the production of apples, which are not naturally adapted to that purpose. Nor is the opinion above entertained mere speculation, for we have almost everywhere sufficient proof that soils not naturally adapted to the growth of apples are, by the application of manure, made to produce them in great plenty and perfection. It cannot be denied that the ammonia, and also the humus of the decaying dung, must have some influence on the growth of the tree in such soils, and also on the development of the fruit;† but it is, at the same time, most certain that these alone would be perfectly inefficient for the production of the fruit without the co-operation of those bases which the manure also supplies, and which are naturally deficient in such soils as we are now speaking of. The size, and perhaps the flavor, of the fruit may be somewhat affected by the organic part of the manure, but its very existence depends upon the presence in the soil of a sufficient quantity of those inorganic or mineral substances which are indispensable to the formation of the acids. If further proof be wanting to the effect of potash upon the productiveness of fruit-bearing trees, it is to be found in the benefit derived from manuring apple trees with leaves which contain it in considerable quantity. This effect is remarkably exemplified in the application of the cuttings of vines to their roots, by which

practice vineyards are kept in full bearing for any number of years, without any other manure, and of which Professor Liebig, in his admirable work on Agricultural Chemistry, has cited two remarkable instances. With these views, it is reasonable to refer the more general cultivation and prevalence of orchards in the districts above named than in any other, principally to the greater abundance of that mineral food so essential to fruit-bearing trees, producing a large quantity of acid. We shall have occasion to revert to this subject in treating of the manuring of orchards. With regard to aspect, districts are favorable to orchards which have more or less an undulating surface (and therefore present numerous localities, whose sheltered and at the same time sunny aspects are favorable to the setting and ripening of the fruit), and often acclivities which, though of excellent soil, are too steep either for cultivation or the pasture of heavy cattle. Very open or elevated and exposed situations, and the bottoms of deep sunk valleys, are almost equally unfavorable: the first, from the violence of the winds and low temperature, and the latter, from their liability to cold fogs and late frosts while the trees are in blossom, which often, in one fatal night, utterly destroy the hopes of the husbandman. In planting an orchard, therefore, the site should not be chosen "in lowly vale fast by a river's side," nor, on the contrary, at an elevation too much exposed, but on moderately sheltered southern slopes, and, when choice will further permit, inclining rather to the east than to the west: for, although a slope inclined to the south-west is warmer than one to the south-east, it generally retains the fogs longer, and therefore is more dangerous to the fruit in the spring of the year. A situation surrounded or closely hemmed in by woods or plantations, is almost equally as objectionable as a close watery bottom, as woods exhale a vast quantity of moisture from their leaves, and the fogs produced over them dissipate much more slowly than those over open ground.

#### Raising Plants.

Apple trees are generally purchased from nurserymen, or persons who make a particular business of raising them, and who sell them at prices varying from 2s. to 5s., according to size and quality. They may, however, be raised with great facility by any intelligent cultivator, and where orchards are much cultivated, considerable profit might be made by selling them to others. At all events, a few young trees should be always coming forward in the provident cultivator's garden, for the purpose of filling up vacancies occasioned by accident or decay. It is a prevailing opinion that the hardiest and best stocks are those which are raised from the seeds of the wild apple or crab; and Mr. Knight recommends that the pips should be taken from the fruit before it is pressed, but the pomace (that is, the pulp after it has been pressed) will generally contain a great number of entire seeds. This pomace, or that from the apple of healthy and vigorous trees, should be thickly laid and covered up in shallow trenches, about 18 inches apart so as to admit of the young plants being well hoed and hand-weeded in the following summer. Immediately after the fall of the leaf in the ensuing autumn, the strongest plants might be drawn, and planted 18 inches apart in rows of the same distance from each other. The land should have been previously trenched, manured, and cultivated for garden produce. The remainder should be similarly managed in the following year. During their future growth the ground should be kept perfectly clean by repeated hoeings, and the plants would be much benefited by a light forking between the rows. No knife should be allowed to approach them in this stage, unless it be to shorten a rampant-growing shoot which may be making too strong a diversion from the stem, and not even then if it be more than one foot from the ground, at least when it is intended to graft the stem; for every twig and leaf contributes to the growth of the root and stem, the only thing at present to be regarded. When the plants are more than half an inch in diameter, at a foot from the ground, or about two or three years old, the head should be removed, and the stock grafted about 10 inches from the surface; and at the same time every sprig and bud of the stock should be carefully taken off, in order that the sap may be more vigorously determined towards the graft. When the graft has grown about two feet in height, the plants should be removed or planted out in land similarly prepared, in rows 4 feet asunder, with an equal interval between each plant, where they are to remain until finally removed to the orchard. Before the plants are removed from the grafting-site, no side-shoots should be cut off, except those below the graft. On their removal to open rows, any overgrown branch may be shortened, and two or three of the lowest removed close to the stem. After this the stronger side-shoots only should be moderately

shortened, in order to encourage the upright growth, until a good head is formed about 6 or 7 feet from the ground. The side-shoots may then be removed close to the stem, in two successive years, while the head is left to its unrestricted growth. It is a very common and bad practice to cut off all the side-shoots early, leaving only two or three twigs at the top, by which means the plant is very much checked in its growth, and, instead of producing a firm and tapering stem, it becomes almost cylindrical and tortuous, instead of upright. Those who treat plants in this way are undoubtedly ignorant of the true nature of their growth, and the important office of leaves; and therefore, in attempting to assist nature in her operations, if such persons had equal facility of witnessing the growth of the roots, they would no doubt think it their duty to cut part of them away, with a view of promoting the growth of the stem—at least such a proceeding would be not less absurd. Every leaf is a feeder of the plant no less than every rootlet; and no interference with the progress of the plant should be allowed, except for the purpose of preventing any side-branch becoming a rival to the head. When, however, the plant has attained the required height of stem, and the head has pushed forward strong shoots above that height, the whole of those on the stem may be finally cut away as before directed, the stem having by this time gained sufficient substance and strength to preserve its erect position and to support the head. Apple trees are generally fit for planting out in the orchard at about seven years of age, at which time, if they have been well treated in the nursery, they will be about 1½ inch in diameter at the middle of the stem. The particular age, however, at which trees should be removed to their final destination, after they have formed a good head, is not very important, provided they do not very much exceed the above size; and the objection to a greater size is the difficulty of taking them up with a due proportion of roots, so as to prevent them receiving too great a check. It must be obvious from analogy that early transplanting is preferable to late, provided the trees be well and substantially fenced against injury from live stock of every kind—that is, with posts and rails, and with thorns immediately surrounding the body of the tree. The habit of keeping the trees in the nursery until they are what are called strong trees can have arisen only from the feeble fencing they too generally receive, by which the tree is often made the chief support of the protecting thorns or furze.

**KEEPING APPLES.**—A correspondent of the *Boston Cultivator* kept 1,200 barrels of apples, mostly Baldwins, in his cellar last winter, by daily expelling the stagnant air and replacing it with pure. He attributes the early decay of apples largely to a vegetable miasma in the air, which is communicated to it by vegetable evaporation under certain conditions. The effect of this miasma is first seen in minute specks on the apple.

**A CALIFORNIA ORCHARD.**—A Mr. Briggs, of Yuba City, California, has a solid block of fruit trees, covering 210 acres. The soil is a light, sandy loam, and is constantly cultivated with ploughs through the whole season. It contains 8,000 peach trees of sixteen varieties, (4,000 being of one variety, the Red May;) 3,000 apricot trees of twelve varieties; 4,000 cherry trees of twelve varieties; 7,000 plum-trees of fifteen sorts; 2,000 apple trees of only eight varieties; 1,000 pear trees, mostly Bartlett's; 1,500 "cherry-plum" trees and 150 June plum trees. There are also 1,500 walnut trees, of three sorts. The cost of the land was about \$17,000; total cost for orchards, land and all, is less than \$30,000, and the estimated value is \$50,000.

**CURIOSITIES OF GRAFTING.**—We can graft the apricot on the plum, and the peach on the apricot, and the almond on the peach, thus producing a tree with plum roots and almond leaves. The wood of the stem will consist of four distinct varieties, though formed from one continuous layer. Below the almond wood and bark we shall have perfect peach wood and bark, then perfect apricot wood and bark, and at the bottom perfect plum wood and bark. In this curious instance we see the intimate correspondence between the bark and the leaf, for if we should remove the almond branches, we might cause the several sorts of wood to develop buds and leafy twigs each of its own kind. Each section of the compound stem has its seat of life in the cambium layer, and the cambium of each reproduces cells of its own species out of a common nutrient fluid.—*Cultivator*.

\* Chemistry of Agriculture and Physiology, p. 92.

† It is not probable that trees with large systems of leaves can be much indebted to the soil for those organic substances which the atmosphere so abundantly supplies.

THE FRUIT GARDEN.

Arrangement of Fruit for Dessert.

Fruit arrangement should be treated under the two headings of Arrangement on the Table, and Arrangement in the Dishes. And first, as to the

Arrangement on the Table.

If I could only hope that people would follow my advice, it would save my writing more than the notorious monosyllable, which contained *Punch's* advice to persons about to marry—"Don't." I am adverse to fruit being put on the dinner table at all, believing that the better plan is to hand it round, as dishes of all other kinds of eatables are served. But if flowers are scarce, and there is nothing suitable which is available for the decoration of a dining table except fruit, then, and then only, would I excuse the presence of fruit on the table, and even then there are certain fruits which I would not allow in the room (much less on the table), until the time came for offering them to the diners—to wit, strawberries, pines, melons, and all other odoriferous fruits. No doubt there are many besides myself whose nasal organs have been annoyed at dinner by the smell of hyacinths, tuberoses, narcissus, and other flowers. It should therefore be the rule to exclude from a dining room all odors which may cause annoyance, or prevent any guest from the full enjoyment of the meal to which he has been invited. But I go much farther, and assert that, not only should you avoid everything likely to cause discomfort, but you should endeavor in all your arrangements to give the greatest possible pleasure to the eye as well as to the palate. Now it is quite impossible that fruit which has been exposed for a couple of hours to the heat of lamps or gas, to the steam of soups, joints, and made dishes, and to the breath of diners and attendants, can be so pleasant and enjoyable as fruit brought in from a cool room and served at once; besides which there is the possibility, in the country, of its having been gathered since you began your soup, and of being, therefore, really fresh. It is a common saying that "appearances should be kept up;" and I know of nothing to which it is more truly applicable than to fruit, which, to be tempting, should be made to look fresh, even if it be not so.

Arrangement in the Dish.

Strawberries, raspberries, and cherries, should never be arranged with the stalks turned inwards. The most enjoyable way of eating all kinds of fruit, is to pluck it and eat it on the spot. Apart from its freshness when thus partaken of, there is the great pleasure of knowing that no other fingers touched it. When it cannot be eaten under these conditions, it should be borne in mind that the fruit should always be made to look as fresh as possible, by dishing it up as late as possible, with the freshest of foliage, and it should seem as if it had not been fingered—at least the eatable part of it—by any one. People may laugh at the extent to which fancy will carry some folks; but I have yet to learn that any harmless fancy is to be sneered at, or disregarded, because it does not happen to be everybody's fancy. With many people the eye and the nose are quite as important media of conveying pleasure at a dinner as the mouth; and by them the greatest enjoyment is found at those entertainments where there is enough, both in variety and in quantity, to excite and interest the organs of sight, smell, and taste, but not enough to fatigue any of these senses. Cherries, raspberries and strawberries should be laid as they are gathered, in the dishes in which they are to be served, and should never be touched again until they are eaten. Where this is not practicable, they should be removed from the basket in which they have been gathered to the dessert dish, one by one, the stock only being handled; on no account is the fruit to be touched. I do not mean to say that I admire cherry stalks, or consider them ornamental, yet I would much rather put up with the appearance of the stalks, than partake of a dish of fingered cherries. But with strawberries the case is different; they have a persistent green calyx which, when seen as the fruits lie on their side, has a pretty effect, and sets off the berries to advantage. Miss Hassard has a great horror of oranges, because they do not associate well with other fruits. No doubt their intense color is very "killing;" and, if they are used as a side dish, there is nothing that will balance the opposite side of the table, except another dish of the same, and then "the remedy is worse than the complaint." My objection to oranges has reference to the nose more than the eye. I can always manage to tone their color down with foliage, or to give them a central place on the table where they do not clash with other fruits; but, unless they have been very carefully handled, their odor is very objectionable.

There is a wide field open for the exercise of taste in the choice of foliage for dressing dishes of fruit, and I trust that some one will favor your readers with further remarks on this subject.—*H. T. P. in the Garden.*

Keeping Back the Buds.

In some regions a good deal of trouble is experienced in keeping back the buds. They often make growth in the fall, thus adding to the chances of winter-killing. In the spring also they are forced into premature growth, and thus the tree becomes barren. Dr. David Stewart, in letters to the Central Delaware Fruit Growers' Association on a system of peach culture, treats on buds as follows:—

In the fall remove the earth with a spade from around the trees, but do not expose the roots, and cut a drain from the basin thus formed around each tree into the dead furrow beyond. This basin is filled up in the spring and the mulch applied, which tends to further retard the flow of saps as the season advances.

The bud on the peach tree is an excrescence, put forth to anticipate the season, and is not necessary, and does not exist in the longer season of its native country, Persia. But here the germ is projected beyond the bark, and enclosed in its wrappings of vegetable tissue in order the more speedily to respond to the advance of the season.

The less the projection, and the thicker the tissue envelopes, the less the danger from late frosts and climate irregularities. It can hardly be said that when the temperature is below zero any bud is safe; but even then, the possibility of maintaining a higher temperature of the germ, under the protection of the bud, depends on its size and thickness, and thus upon the vigor of the tree in its efforts to mature, even during winter months. In proportion as a tree is vigorous it, like an animal, has a higher temperature than the air in winter; but when weak from insufficient nutrition it has less ability to resist cold, and not only the germ in the bud, but the whole fruit spur is frequently destroyed.

A small deficiency in the element of nutrition will turn the scale precisely as the death of a dozen old persons in an hospital is determined by a few degrees reduction of temperature in the night, while fifty in the same ward survive, being more vigorous.

It has been demonstrated by the successful fruiting of an orchard during the past seven years without a single failure, that the foregoing system offers every inducement of certainty of crop to those who choose to adopt it.

This system is based more upon the peculiar physiology of the peach in our climate, than on any specific to insure the fruit, and depends for its success upon the application of proper nutritious elements, and the judicious use of the knife, mulch and plough. *Western Rural.*

Fruit Butter.

The *American Grocer*, in answer to an inquiry on this subject, gives the following account of the manufacture of fruit butter by a firm in New York. Many of our readers are familiar with the process of making mentioned at the end of the *Grocer* article.

In general, only dried fruit is used from which to make the butter. They can, and sometimes do, use the green fruit, but it is not so practicable in the cities. The principal kinds made are from apples, peaches and quinces. Recently they have commenced making pear butter also. It is not easy to get dried quinces in the market, consequently during the seasons when they are ripe the green fruit is used and its manufacturer pushed, and a large quantity also put up in hermetically sealed cans for use later in the year. We saw several hundred cans that would hold two or three hundred pounds each awaiting the incoming fruit. Sometimes, too, it pays to use the canned quinces, of which this concern has consumed this year a large quantity. Apple and peach butter, however, are the kinds mostly made. Almost any reasonable amount of these kinds of goods can be found at all seasons, and consequently the manufacture can continue all the year round. As a matter of fact, however, there is generally very little to do in July and August, the dull months. We were told that the southern dried fruit was better suited for the purpose than that of the north and west.

The dried fruit is first carefully washed and sorted, and picked over and soaked, so as to get everything out that ought not to be in. It is then put into large copper kettles holding about fifteen hundred pounds,

which are surrounded by steam jackets, and in which is a stirrer run by machinery. Then a sufficient quantity of sugar is put in, and enough water to answer the purpose, and the batch is cooked and constantly stirred until it is done, which takes about four hours. One kettle can thus make about four batches running full time, and the three large kettles used by this firm can turn out, when fully at work, at least eighteen thousand pounds of fruit butter a day—about ninety tons. After it is sufficiently cooked, which the experienced manufacturer can very accurately judge, it is forced through a peculiarly constructed sieve, which revolves under a row of pestles, by which process any cores or lumps are prevented from going into it. It is then passed down into another department, where it is put into pails ready for shipment. These pails are of different sizes, holding respectively 5 lbs., 16 lbs., and 35 lbs. The goods will keep excellently well under all favorable circumstances, and will bear shipment to all parts of the country. It might not be best to have it on hand in a southern latitude in the middle of the summer. We do not know any article that promises to be more popular and useful than this. It mingles the *utile dulci* to perfection, and no well regulated grocer's establishment should be without it. It is cheap enough to sell readily and give a good margin for profit. It is only about nine years ago that this article was first introduced into the market at Philadelphia, and only two years since its manufacture was begun here. The wholesale trade generally handle these goods.

Fruit butter may be made in the country very easily and cheaply. The same purpose that sugar subserves in the manufactories here may be accomplished there by the use of cider. When apples are ripe, make say three barrels of cider. Then pare and core four bushels of apples. Then boil down the three barrels of cider to one and a half, and set it convenient to the copper kettle, in which place the four bushels of apples. Pour on to the apples from the cider enough to answer the purpose, and fire up. As the cider boils away, add more and more, until it is all used up and the contents of the kettle are brought down to a proper consistency, of which one must be judge. A little practice will make one perfect in this process. This is for apples. It will apply equally well to any other kind of fruit from which it is practicable to obtain the juice as one would from apples.

THEY HAVE fifty cocoa-nut trees growing in one of the public parks of San Francisco. What don't they grow out in California?

SOIL FOR FRUITS.—The *Gardener's Monthly* gives briefly the following rules for selecting the best soils for the different fruits: "A light dryish soil for the peach; a strong loamy soil for the pear; nearly the same for the plum; a heavy loam for the apple—if on limestone all the better; and for the cherry a soil similar to that of the peach."

PINE APPLES from the Azores are now on sale in London, on costermongers' barrows. As they are sent in flower-pots, with protecting wooden cages, to preserve the fruit intact, they attract considerable attention in the street, and appear to find a ready sale. They are many degrees better in quality than the cheap West Indian pines, and very many degrees handsomer.

REJECT LATE VARIETIES OF GRAPE.—Vineyardists, who have exceptionally favorable locations, may continue to plant late ripening varieties of grapes, as Isabella Catawba, Iona, and Diana, but the ordinary farmer, or owner of a small place, will do well to reject all varieties that do not ripen fully in September in ordinary seasons. We had an unusually warm September this year, yet a killing frost to-night (Oct. 5th) would leave us with many unripe Concord, and but few of the other kinds named above fully ripe. Among the varieties ripening with or before the Concord, we would name:—Hartford Creveling, Delaware, Israella, Salem, and Wilder.

FALL BLOSSOMS.—Mr. E. Serry states that he has a crab-apple tree, which after bearing the usual crop, has essayed to put forth blossoms again. We believe, however, that they have only made their appearance on one or two branches, but if the weather was sufficiently propitious, there is no knowing to what extent this ambitious tree would go.—*Colonial Farmer.*

[There is nothing remarkable in the above. Four years ago (October of 1870, if we recollect aright,) we were shown by a friend in Waterloo county a crab-apple tree which was rapidly perfecting its second crop of fruit for the season. The apples were nearly all of full size, and a fortnight of warm weather would have undoubtedly ripened the crop.—Ed. C. F.]

## THE VEGETABLE GARDEN.

## Importance of Irrigation.

Dry seasons like the present force upon us the consideration as to the necessity of an unstinted water supply. I am aware that, in some cases, the kitchen garden is placed in the only situation possible; yet in many more instances there is not a thought directed to what would render it of redoubled value—that is, if a head of water was available so as to enable its being irrigated at pleasure. This would necessarily involve the garden being lower than some of the surrounding ground; but it does not follow that it should be in an objectionably low situation, and consequently in a position most likely to suffer from spring frosts—although it often happens that in the anxiety to get the kitchen garden as far as possible out of sight, a low-lying piece of ground is selected. The amount of produce it is possible to get from a limited space, where water in abundance can be had, so as to run it on in the quantities required, is only just beginning to dawn upon us, through the results of sewage and summer irrigated farms, which go clearly to prove that a piece of land, under almost any kind of crop, that is supplied with water to the full extent of its requirements, will produce something like double the weight of crop that can be obtained in the ordinary way—to say nothing about the quality. Half the vegetables produced in this and similar seasons will bear no comparison with such as are grown under conditions of sufficient moisture, either naturally or artificially obtained. In some parts of the country this summer, except in individually favored spots, to produce one-half the usual vegetables has been a simple impossibility; and such as have been forthcoming have scarcely been fit to eat. After the few first weeks peas were flavorless, and as hard as bullets, literally roasted in the shells before they were fully grown. Broad beans were the same. Turnips were either non-existent, or tough and uncuttable; cauliflowers small and unkindly, hard when cooked, and devoid of flavor; summer lettuce, after the first crop, bolted before half grown; beet and carrots about half their usual size; and so on to the end of the list. The meagre supply in the markets from those who grow for sale, and who generally manage to find the most suitable land for the purpose, is sufficient proof of the impossibility of producing vegetables in the wanted quantities in such seasons. But it is not alone the culinary vegetable department that would be benefited by a water supply, but fruits as well. The finest strawberries it is possible to grow, both in size and quality, can be produced, in the driest seasons, on land that can be flooded betwixt the rows. Apples, in most places, are a third under their usual size, through drought at the roots. Pears, in almost every garden, could be seen with their leaves flagging, and the fruit correspondingly small and gritty; plums are in a similar plight where the crop was at all heavy. On walls the different fruits have been, in many places, even in a worse condition. So far as this question concerns market gardeners, the majority are no doubt unable to do anything; or even if a head of water existed that might be brought upon a given piece of ground, the chances are ten to one that to get at it land belonging to some other individual or holding would have to be traversed, which would render the thing impossible. Not so in many gentlemen's gardens; in great numbers, from the position in which they are placed, water might be obtained in unlimited quantities, and at a cost in conveying insignificant compared with the advantages accruing. This is so patent to any one who has had an opportunity of proving the advantages it affords, that the reason there has been so little done in this matter through the country can only be accounted for by the fact that gardeners are only too often obliged to confine their wants within very narrow limits; so much so, that the results of their labors are rendered half nugatory by a spirit as short sighted as it is penny wise. In the choice of a site for new gardens, especially such as are important, this water supply should be made a matter of the first consideration. I do not advocate the costly system of laying a network of underground perforated pipes through the area to be watered. This is extravagant, unnecessary, and in a few years becomes useless, from the pipes corroding away. All that is required is, first, to see that the drainage is ample, so that there may be no spots where the water can accumulate and become stagnant in the sub-soil; to properly dispose the surface so that the water can be got to flow where required; and then simply to convey it in pipes to the highest points, from whence it can be turned on as wanted, with the assistance of short hose pipes.—T. BAINES, in *Field*.

## Edible Rhubarb or Pie-Plant.

The cultivation of this plant for the making of sauce, or as filling for puddings and pies, in early spring before the advent of green fruits, has assumed a magnitude that places it in the front rank of vegetables. Rhubarb, like asparagus, lettuce, radish, etc., is used universally by all classes when cultivated in the open air, and also as a delicacy when forced out of its natural season.

Long before the cultivation of the two edible species, *Rheum raphaniticum* and *R. undulatum*, for their leaves, rhubarb had been known and appreciated for the medicinal qualities of its roots, which are more or less purgative, or rather alterative, according to the variety. The best for this purpose comes from China, but is more generally known as Turkey rhubarb, from the fact that it was formerly imported into that country and thence distributed.

The various species are thus classified:—The Palmated or Chinese rhubarb; the Compact or Tartarian; the Undulated or Wave-leaved; the Ribes or Currant variety of Mount Libanus; the European; and the Rhapontic or common edible variety. It is with the edible variety that we now have to deal.

The variety generally cultivated by market gardeners is Myatt's Victoria, principally soon account of its large yield, the good color of its footstalks, deep red at the base, and finely spotted red color to the nerves of the leaf. It has, however, a thick skin, is quite acid, inclining to acidity, and is not to be recommended if rhubarb is grown solely for family use; but its large size and productiveness, and the ease with which it may be forced, makes it a favorite with market gardeners.

Myatt's Linnaeus we consider the best variety for family and amateur culture. It is productive, high flavored, having but little acidity and almost no acidity; its skin is so thin that it may be used without peeling; it stews to a uniform pulp and remains crisp and tender until late in the season and through the autumn.

Rhubarb is one of the plants that we should always advise planting, if possible, in the fall. It requires a deep, rich, rather moist but not wet soil, for on the rapidity of growth depends the size of the footstalk and tenderness of the fibre. The Linnaeus may be set single eyes with a liberal portion of the root attached, three feet apart, the eye just below the surface of the soil, in October. The more deeply the ground is worked and the more liberal the application of fine manure, even to thirty cords per acre, the more profitable will be the culture. If Victoria is to be grown, we should advise planting three by four feet apart. Indeed, this plant, like asparagus and other gross-feeding plants, will give returns in proportion to the room it has, but where the soil is highly enriched, then the closer it is planted without actual crowding, the better and more tender will be the stalks.

The soil having been prepared in the best manner, and the plants properly set, the rows being perfectly straight, it is better, for the first winter, to cover the whole surface of the bed with at least four inches of fresh horse manure and litter, just as it comes from the stable. In the spring, before the crowns start this may be raked off and the rows kept clean during the season. If the growth be satisfactory, a few stalks may be taken, which should always be done by breaking them from their connection by a dexterous upward and side pull, easily learned by practice. If the growth, from drouth or other cause, be not satisfactory the first season, delay the pulling until the second season. Thereafter it can be pulled until the fourth or fifth season, when the roots should be again separated and a new plantation made.

Each season, before the advent of cold weather, the crowns of the plants should be protected with one or two liberal shovels of rotten manure, which early in the spring should be lightly dug in around the plants. This, with the keeping of the soil clear of weeds, will furnish a full supply with the best quality of stalks for family use. The size of the plantation should be determined by the size of the family, a dozen plants being ample for an ordinary sized one.

In all new countries, especially, one of the first things planted in the garden should be rhubarb, since it will give a supply that will take the place of the acid fruits so indispensable to health.—*Western Rural*.

**MAMMOTH RADISHES.**—On Saturday there was an exhibition at Maroon's seed store a radish, grown from seed obtained at the store last spring, which turned the scale at six pounds. It was grown by Mr. Tizzard, Ramosa Road, who has a number of others of the same sort, one of them weighing fourteen pounds! They are called the California radish, are oblong in shape, and of a white color, and the flavor is very mild and pleasant. The inside of the vegetable is not solid, but rather resembles that of a pumpkin.—*Guelp Mercury*.

## Andersonian Mummy Pea.

The *London Graphic* says:—About three years ago Gen. Anderson visited Guernsey, and lived at Old Government House Hotel. During his stay he presented Mr. John Gardner, the proprietor of the hotel, with three peas from a number which he had collected in Egypt, supposed to be from 2,000 to 3,000 years old. The following year Mr. Gardner had them sown, and was successful in raising two plants out of three peas, and the year after was still more fortunate. This year he had a large patch of these peas, some of which were seven feet high, the stem being of an unusually large size, with flower of a beautiful pink and white color. The stalk of this Egyptian pea is peculiar. Near the ground it is attenuated, but at the summit it is several sizes thicker, so that it appears a necessity to support it, and the more so as the pods are also clustered together at the head of the plant, instead of being, like the ordinary peas, distributed along the stalks. An area sown with this Egyptian pea would have a singularly fine effect when flowering. The editor of the *Guernsey Comet*, from whom we have borrowed the foregoing details, indulges a hope that the progeny of these mummy peas, taken from an embalmed corpse in the land of Memnon, may prove of such a delicious flavor as to supplant our marrowfat and other green peas, but Mr. Barron, the chief gardener at the Horticultural Society's grounds at Chiswick, says that though the Egyptian pea is edible it is not pleasant in flavor. It resembles grey field peas, a species which is most palatable when fried with butter and pepper, a custom still prevailing in the north of England on the fourth Sunday in Lent, commonly called "Casting Sunday." Mr. Gardner informs us that this Egyptian pea undoubtedly belongs to the same family as the ordinary garden pea, but it possesses characteristics distinct from any variety that he has ever met with, such as the tapering of the stem, and the carrying of the blossom in a circle at the top. The color also is very distinct. There is no resemblance whatever in habit to the ordinary pea.

**REMARKABLE RESULT OF MUSHROOM GROWTH.**—An English paper says: "A tradesman residing in the centre of the High street, the busiest street in the city of Worcester, observed the other morning that a square stone on the pavement adjoining his cellar grating had been lifted out of its place; and as a neighbor had not long before been robbed by thieves entering his premises by raising a stone of the pavement, he became somewhat alarmed, and sent for the police. After an examination, the stone, which weighed over eighty pounds, was raised, and it was then discovered, not that a thief, but three mushrooms had caused the displacement. The mushrooms were fine specimens, six inches in diameter, and with unusually thick stems."

**VEGETABLES AND SALADS IN THE PARIS MARKET GARDENS.**—The ground cultivated by market gardeners in and around Paris, amounts in all to more than 3,000 acres, and the business gives employment to 9,000 persons and 1,700 horses, these being used for pumping water as well as for transport. It is said that 360,000 glazed frames, and more than 2,000,000 cloches are employed in the production of vegetables alone. The annual amount expended for manure is said to be £72,400, and the total receipts from the sale of vegetables and other productions of the market gardens to exceed half a million sterling, which after all does not seem a large sum, as the consumption of Paris includes a very considerable proportion of expensive early vegetables. This sum does not, however, represent the entire consumption of Paris, as large quantities of potatoes, asparagus, and other vegetables are sent to the capital from all parts of the country.

**MANAGEMENT OF CELERY.**—The time to take up celery is just before hard frosts. Dig a trench about the width of a shade and a few inches deeper than the height of the celery. The place selected must be high ground, where no water will be at the bottom, and where surface-water will not drain into the trench. Take up the celery on a dry day, and as fast as dug place it erect in the trench, with any dirt that may happen to adhere to the roots. Set the stalks close together, and close to the sides of the trench, but not pressing them in. After the trench is filled, place pieces of board or scantling across it at intervals of five or six feet. On these place short boards, five or six feet long, covering the entire trench. Then cover the boards with a good body of straw or leaves, with boards or earth on top to keep it from blowing away. The work is then completed. When celery is needed take up a length of short boards, and remove enough celery to the cellar to last a few days, and place it in the coolest part, covered with earth. Replace the boards and covering as before.—*Vick's Floral Guide*.



## THE FLOWER GARDEN.

### Bulbs and Tubers.

By P. E. Sucke, Ottawa.

Perhaps there are no handsomer flowers on the face of the earth, none so delicate in their coloring, or so graceful in their growth, as the Lily tribe—"Behold the lilies of the field." It appears strange that so little attention has been paid to this class of plants in Canada, so especially as they adapted to our northern climate, the majority of them being perfectly hardy, remaining in the open ground during our severest winters all over the Dominion without sustaining any damage from frost, the only exceptions being the Gladiolus, Vallota, and Dahlias, &c. Many of the bulb and tuber-rooted plants are natives of the Levant, Persia, Syria, and Mexico, but nearly all countries produce their quota to the gorgeous flowering bulbs, some being natives of England, China, Japan, California, and Canada; they may be had in bloom from the earliest spring before even the snow leaves the more sheltered nooks, until autumn's chilly blast warns us that winter is at hand. Amongst the former are the Crocus, Snowdrop, and Bulbocodium; the latter comprise some of the Japan varieties. A succession of bloom may, by careful selection, be maintained throughout the summer season. One of the advantages of this class of plants is that they remain in the ground, and do not require sowing every year like the annuals, and therefore give but little trouble in their cultivation. It is believed were the bulbs and tubers of these flowers more accessible to the masses, that is to say, less expensive than they are at present, they would become far more popular. When we see Dahlias quoted at \$2 50 to \$3 00 per dozen and Lilies ranging from 25c. to \$1 00 per bulb, Gladiolus 30c. each or 75c. per dozen, Peonies 50c. to 75c. each, it cannot be wondered they are so seldom met with in our gardens. Seedsmen complain they are not sought after, and it would be very surprising if they were.

John Dougal, of Montreal, is the pioneer in Canada of bulb culture, and the only man at present who grows them on a large scale. His Tulips are unrivalled for beauty on this continent, and his prices are moderate, but it is believed even they could be reduced by cultivating on a suitable soil, where land and labor could be had at cheaper rates.

Holland is the nursery of the world for Tulips, Hyacinths, &c., and it is found they succeed best in the alluvial deposits which were formed by the sea in years gone by. In Canada such places as Walpole Island, or the deep low mucky soils made by the silting up of streams, in which a mixture of sand is perceptible, would be found best suited, but almost all varieties will succeed in a sandy loam, especially those of the Lily and Peony species. The modes of propagating are as follows: Lilies—white (*L. candidum*), a native of the Levant, has a very scaly bulb, and may be propagated by separating these scales from the bulb and putting them into a box with some dry sand, and keeping them free from frost during the winter in a dry cool cellar. In the spring tiny bulbs will be formed at the base of the scales. These should be planted out in a rich deep seed bed, and towards autumn they will throw up leaves, and two or three years afterwards will make flowering bulbs. All the Japan Lilies may be increased in the same way or by offset bulbs. Most of the large bulbs will, the first season, make two flowering plants for next year, and each of these will again subdivide; there will also be many small bulbs which, after growing a year or two, will flower. The natural multiplication is very rapid, but when the scale process is adopted as well, it will be easily understood that their production is one "of the fastest things on record."

New varieties are obtained from seed which ripens towards the end of summer. These should be sown in seed pans in light sandy loam as soon as the seed is

ripe, and exposed to the morning sun until October; then exposed to the full sun all day, keeping free from frost all the while, the plants will begin to appear about April, when the morning sun only should visit them as at first. In June the leaves will die off, and a little fresh soil should be sifted over them; the second winter they should be treated as the first; and the following summer they may be planted in the open ground, and remain for three years, when they will begin to bloom; this will be five years from seed. Those that flower will be full grown bulbs, and should be taken up; the rest may remain until they flower also. Sometimes the first or even the second year's blossoms will not show the full perfection of the flower, so that bulbs should not be rejected as valueless until they have had a third trial. The raising of all the bulbs from seed, although very interesting is exceedingly tedious, and requires much skill in watching, watering and treatment, making it almost a study in itself, too difficult for an amateur; requiring also the assistance of a conservatory. Nearly all the bulbs are propagated as above when new varieties are required.

Amongst the bulbs which will not stand our winter frosts, but which are nevertheless fully as beautiful as any that do are the Dahlias, Gladiolus, and Vallota (*amaryllis*). The two former should be taken up before severe frost, and kept in some dry cool place during winter. The latter—of which almost every species may be considered a select flower—is a native of the Cape of Good Hope, China, and South America, and is propagated by the numerous offset bulbs, which should be secured when the plants are taken up in autumn, when they should be potted, and kept in a greenhouse or dry cellar free from frost. The flower stalk of the Vallota is from one foot to eighteen inches high; it produces its bright scarlet lily-like flowers during the month of August. The Dahlia is a tuber-rooted plant, and multiplies itself in a somewhat similar way to the potato, only that the whole tuber must be planted; care must be taken to select those that have buds on them, otherwise they will produce roots but no leaves. The Dahlia is a native of Mexico, where it grows wild. The Gladiolus multiplies itself like the potato-onion.

The Snowdrop is probably the humblest of all the bulbs, and singly makes a very poor show, but in clumps or masses its flaky white blossoms are seen to the best advantage.

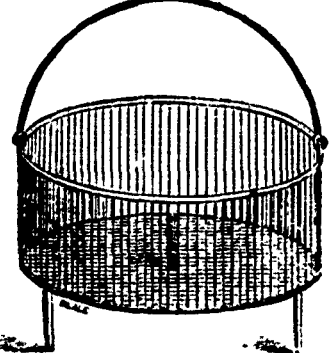
The Bulbocodium is one of the early flowering bulbs, similar to the Crocus, and its blossoms may be seen coming through the ground before the last snow has passed away; it looks best in masses; the flowers are irregular in shape, with a tendency to be double; the color is violet; the leaves are produced after the flowers have faded.

Before closing—although there are many interesting plants for which there is no room for description in the present limited space—it would not do to pass over entirely the Peonies, of which there are about forty varieties. They throw out tubers like the Dahlia, and are propagated by dividing the roots, and for new varieties by seeds; these should be sown in autumn. So soon as ripe (September) they will show themselves the following spring, and should remain in the seed-bed for two years; they may then be planted out six inches apart and five inches deep, and will generally bloom the fourth or fifth year after sowing the seed. All the varieties do well either in sun or shade, thus making valuable plants for shrubby borders or under trees. They are of every shade, from white to deep crimson, the pale pink and flesh-colored being the most exquisite; some are sweet-scented, and rival the Rose in perfection of bloom.

The Narcissus tribe is divided into Daffodils, Narcissus, Jonquils, and Polyanthus. They are natives of the south of Europe, and are propagated, like the Tulip, by offset bulbs. As a rule all bulbs should stand for three years without being disturbed.

### A Good Fumigator.

Most of the patent and other fumigators purchased by horticulturists seem to share one common fate. After the first few trials they are generally consigned to a dusty shelf in the tool-house or potting-shed, and we gladly use an old cinder-riddle, or even a perforated flower-pot instead. I look on a complicated fumigator as perfectly useless where large houses have to be smoked in as short a time as possible. They may amuse an amateur, but professional gardeners in general despise them; an old riddle answers much better, but the accompanying figure will give an excellent idea of a fumigator not often met with, although one of the very best contrivances extant. It is made of wrought iron, and of any size, from one to three feet in diameter. When the tobacco, or better still, tobacco-rag, is once lighted it burns quite freely without any blowing, and gives off a dense volume of smoke in a remarkably short time. It is easily set at work by placing a few glowing embers from the stock-hole fire on the bottom and sprinkling damp tobacco or "rag" over them; when fairly alight the tines may be cooled by spreading a damp sheet of either coarse tiffany or hexagon netting over the handle, letting it fall loosely around the sides. This last precaution is worth adopting in the case of ferns, when throwing up their young fronds, or for *Oxalis-glossums* and *Mastivalias*, both being injured by hot smoke. A word on "tobacco-rag" may not be out of place. This material is produced in considerable quantities by the tobacco manufacturers of Manchester, Liverpool, and other large towns, and is both cheaper and better than any other material used for fumigating, if we



A Good and Simple Fumigator.

except the pure bonded tobacco used at Kew and other Government places. Tobacco papers are as a rule bad, as they burn too quickly and scorch everything near them. The tenderest exotics will bear the densest cloud of tobacco smoke imaginable, providing it is cool. It is the heat from combustion, not the narcotic, that injures them, causing the leaves to curl like paper, owing to excessive evaporation. Tobacco water is well known to be a fertilizer, and plants look fresher and greener after fumigation, if the smoke has not been too hot. We have had practical experience of the above, as a simple and effective fumigator, and can thoroughly recommend it.—*The Gardener*.

Mrs. JANE AINSLIE, the originator of the "Flower Mission" in Glasgow, died recently in Edinburgh. She made thousands of sick children happy with her gifts, which she distributed up to the last hours of her life.

A GENTLEMAN who lately visited Cape Breton went to see a tree at Magarac, which has attained some notoriety on account of its great size, and is probably the largest known specimen in the province. Its circumference, six feet from the ground, is 24 ft. 4 in. At a height of about 20 feet it has three branches of six to nine feet circumference each. The branches overhang an area of about 60 feet diameter.

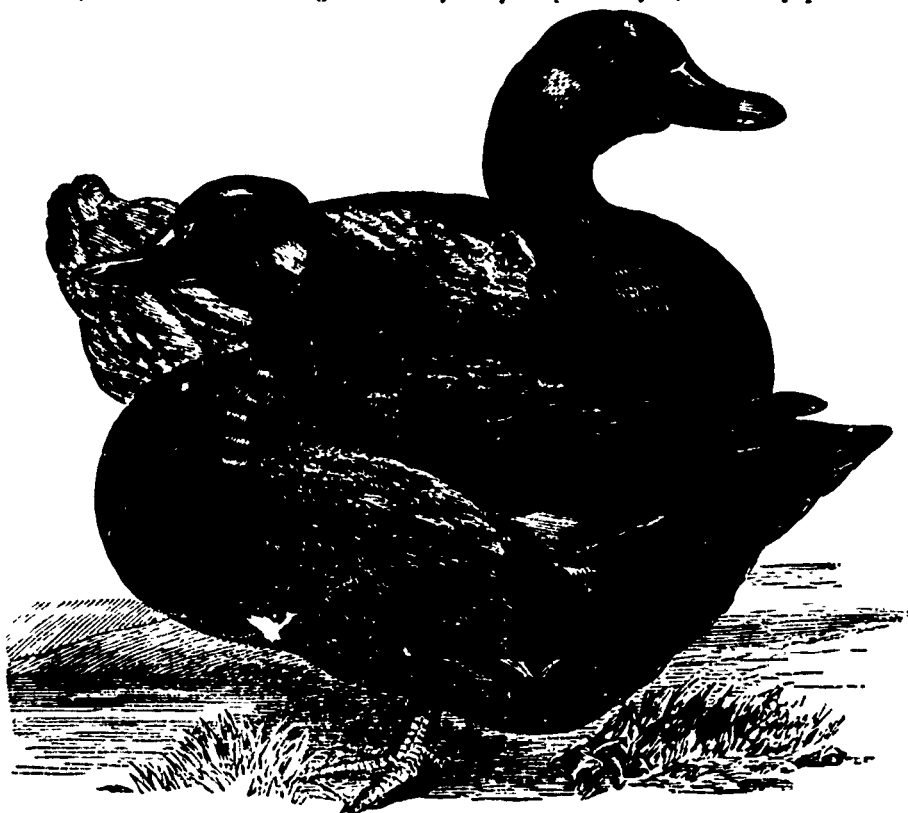
Among the most attractive plants in the gardens of the Royal Horticultural Society at South Kensington, are the hydrangeas, which are now in full flower. They succeed well planted out in the shrubby borders, and flower profusely every autumn. In some parts of England and Ireland, near the coast, the hydrangea is one of the finest of all summer and autumn flowering shrubs, often forming specimens 30 or 40 feet in circumference and 6 or 8 feet in height. In many of the southern counties the hydrangea also grows well, planted in clumps or masses on the margin of walks and shrubby borders, and if cut down during exceptionally severe winters, it rarely fails to push up from the root the following spring.—*Gardens (Eng.)*

## Poultry Yard.

### The Cayuga Duck.

The Cayuga Duck is said to have originated on the shores of Lake Cayuga in the United States. Bewent writes—"Tradition says that they are descended from a sort of wild ducks that stop in Cayuga Lake and Seneca River, on their passage north and south, fall and spring." But of this we entertain some doubt, it being much more likely they are the offspring of a cross between a black duck and the wild mallard, and this view would seem to be confirmed by the description given of these birds. "The black Cayuga duck," he says, "in perfection is black with a white collar on the neck, or white flecks on the neck and breast, rarely black without white; and as the white seems inclined to increase, we usually select them nearly or quite black for breeding. The duck has a faint green tint on the head, neck and wings. The drakes usually show more white markings than ducks,

and gives the following description, which we take from Wright's Book of Poultry: "Cayugas are a breed of ducks that have lately come before the notice of the public, and they appear well worthy of a few remarks in these pages. Lake Cayuga, in the United States of America, is given as their habitat, and they are said to abound there in great numbers. In color they are nearly similar to the East Indians; their plumage being of a bright metallic black, with lustrous green reflections on head, neck and wings. The bill is blue-black, and has a very black splash in the middle of it; legs a smoky orange or brown. Their shape is different from the East Indians, and more like the Aylesburys; they have very lengthy necks, and a straight, long head and beak. Their size is quite equal to the Plover or Aylesbury, and they can with little trouble be made to weigh upwards of twenty pounds the pair. The flesh has a rich game flavor, and when hung a short time in the winter, they far surpass the wild duck. For the farmer they will be a very useful as well as ornamental breed, being hardy, and maturing at an early age. They are prolific layers, and of very quiet habits. It



and the green tint on the head and neck is more strongly marked;" and in the Practical Poultry Keeper the author says: "The plumage is black approaching to brown, with a white collar or neck, which, with careful breeding, might be soon made into a well defined ring." It will be seen then that the ring or white collar has evidently been derived from the wild duck or mallard, and therefore the result of a cross at some distant day. It has however long been prized as a native duck both in Canada and the United States, and is entitled to be classed as a separate breed. The American Standard of Excellence requires them to be pure black without ring, yet admits, with objection, a few splashes of white in the breast, because as yet breeders have not been able to produce the pure black except in few cases, and then only at the expense of size. There is no doubt, however, but by careful breeding this will eventually be accomplished. At present it is usual for them to moult some white feathers on the breast and at base of the bill the second year, and in this there is a striking resemblance to the Black East Indian Ducks.

Mr. J. K. Fowler, a celebrated English breeder of ducks, procured from the United States a trio of those

should be stated that, like other breeds of black fowls—Creve Coeurs, Spanish, and East Indian Ducks—the Cayugas show sometimes white feathers on the breast and elsewhere, which, however, does not point to any impurity of blood; and though suggestions have been made that they are merely a cross-breed, I see no sound reason to doubt that they are a distinct variety; for I am told by a well known fancier, who imported some two years ago, that though two of his old birds since moulting now display traces of white feathers round the eyes, beneath the bill, and a few on the breast, still the birds hatched last season and those reared from them this year show not a single fault, but bid fair to outrival their parents in beauty and size." To which Mr. Wright adds: "It will be seen that Mr. Fowler places the Cayugas very high among the useful breeds of ducks, and we believe he would be found to be correct in this. The flesh is certainly equal to that of any, and we consider superior to all, except the Black East Indian; while the breed seems to fatten and make its growth—weight for weight—on less food than either the Rouen or Aylesbury. The plumage also can never look dirty, which will be of an advantage in many localities."

In the authority just quoted a Mr. Feeley tries to show that a similar breed of black ducks were common in Lancashire, England, some twenty years ago, and that they were of different colors, black, blue, and dun; and on this he endeavors to base an argument that the breed came originally from England, which we confess sounds to us a little John Bullish. We give his own words: "I recollect asking a gentleman who had spent many years in America trapping and shooting, about the Cayugas, and he appeared to know them well. He too said they were so similar; appearance to the English black duck that it was hard to tell the difference. He seemed to think the breed had at some time been taken from England, and that the difference in flavor might easily be accounted for by the change of climate, but especially by the difference of food and water plants. He particularly mentioned some duck celebrated in America for its exquisite flavor, this being attributed to its feeding on the wild celery; and I understood him to say that if they were confined for some time before being killed, and had plenty of celery chopped fine in their food, they took just the same flavor. But whether the Cayugas were taken from England or not, if they prove as good as the old Lancashire Black Duck, they will be very valuable."

It is suggested that a cross between the Cayuga and Black East Indian would probably produce a much improved bird in color, although at the expense of size, which could soon be recovered again. Of course the white feathers, which so trouble breeders in both varieties, would have to be bred out as soon as possible.

### Poultry for Farmers' Tables.

Farmers do not use enough poultry on their tables. It is too much the case that the staple is pork the year round. It would be well if poultry was substituted in great part. In proportion to the nutriment they afford, fowls furnish cheaper diet than swine. If as much pains were bestowed in nursing and feeding fowls as hogs, there would be a largely increased production of the former, and a very appetizing, nutritious diet might be afforded to the farmer's family. Poultry furnishes food suited to the demands of the hard-working laborer in the field, and it is equally adapted to the women and children. It is a crying shame that in so many farmers' families, even "well-to-do" people, the growing children have so little set before them that is not too gross and coarse for their needs. The farmer and his sons frequently feel above any such pother as attending to chickens, though it is not considered beneath their dignity to take care of a litter of pigs. Yet the fowls that are despised as "small potatoes," may bring in more money, in proportion to the outlay, than the pigs. Indeed, from careful experiments, we are satisfied that if attention and a fair degree of skill are used, a lot of poultry may be marketed with double the profit that would be deprived from raising the same value of pork. Fowls digest grain more thoroughly than swine do; no portion capable of being assimilated is wasted. If it will pay to produce poultry for the market, it will pay the farmer to raise it for use upon his own table.—*Live Stock Journal*.

HELPING TO HATCH.—"Can you render the chick advantageous assistance during its hatching?" Yes, most assuredly. The eggs of some varieties, particularly the Asiatic, are sometimes exceedingly thick-shelled, the shell "pips"—and here the little bird breathes his last if help is not given; the fine membrane becomes glued to him and contracts, and it, with his downy covering, becomes, as it were, a coat of mail, to crush out its life. Notice, and if the hatching is slow, have an eye to your nest until the business is through with; for sometimes it appears as if epidemic. Many chicks go by the board in this way; help should be rendered; so take a small-sized bodkin, and carefully thrusting its point a short distance under the membrane and shell, gently tear the first, and crack the latter as you proceed around the circumference of the egg. If the shell is very dry, drop a few drops of tepid water at the point of pressure. Having taken off the top of the shell, drop about ten drops of warm water around the body of the chick, and put the egg, as it now stands, under the hen, the open side uppermost; behind or under the fluff is the best situation. This done, the chick is nine times out of ten safe, and will hatch vigorously. I have had wonderful experience in this line.—*Poultry Bulletin*.

Correspondence.

Incubators.

"A Correspondent" wishes to know if incubators are much in use, and where one can be purchased, &c. The ordinary method of finding hens which are ready to sit at the early season of the year is to have tally match marks at our fall show, and the number of highly priced eggs lost in this way to hatching purposes, it is not to be wondered at that the inventor of such machines as to inventing machines by which he might hatch those eggs and transmit the result to his correspondents. Extracts which have occasionally appeared in our columns show that the system has been successfully carried out both in China, Japan and Egypt for centuries past, and that the same, and it may be argued that in Europe and America, with all our resources of science and mechanical skill, similar attempts have not been made upon a larger scale and with a greater measure of success than that which has hitherto prevailed in the parameters of such machines.

The history of incubators invented by fanciers of modern life have not on the whole been very successful, although an isolated good result has in many cases been obtained. As early as 1777, M. Bonnamy commenced his attempts in this direction, and constructed an "Escalatoire," in which many chickens were hatched, and sold in the Paris market. More recently Beaumont also obtained fair results in hatching artificially, but the method adopted by him was by surrounding wine casks, in which eggs were placed, with fermenting dairy run over as often as the heat decreased. It is well known that in the earlier stages of incubation, in whatever position the egg be placed, the yolk floats with the germ uppermost, and this probably to bring it more under the influence of the warmth of the hen's breast. Cantelo appears to have considered this, and was the first to invent a machine for artificial hatching in which the heat should be applied from above in imitation of the hen, although it does not appear from recent experiments that this is absolutely necessary. Cantelo's apparatus was however too elaborate and expensive to come into general use, and the same may be said of another invention by M. Minasi, which latter, to a limited extent, is still used in England. Both these incubators, however, produced fair results. In the machines just enumerated one radical defect was palpable—the want of a self-regulating valve, by which the temperature could be self-regulated; and for this we are indebted, to some extent at least, to M. Vallois, Poultry Superintendent of the Paris Jardin des Plantes, who in 1845 constructed an incubator, moderately successful in hatching the eggs of hens, partridges, pheasants and even reptiles, subsequently improved by the addition of this valve. The valve was by no means perfect in its action, but the idea was of great value, and has since been adopted in all the best incubators of the present day.

Still more modern inventors have been careful to avoid as far as possible the defects and incorporate the improvements of those already referred to, and in this respect Mr. Beasley in England was particularly successful. Very fair hatching results were occasionally obtained; but at present we have the authority of an English poultry writer in saying it is used chiefly, even by Mr. Beasley himself, in hatching out finally chicks which are nearly done, and thus save them from being crushed by the hens, which is well worth the attention of any fancier who may lose chickens from such a cause. M. F. Schuler invented an incubator, circular in plan and very compact, which in spite of many imperfections in detail, is in general arrangements well worthy of study. Col. Stuart Wortley, in 1877, constructed an incubator in many respects different from those of previous inventors. A

sketch from drawings by himself was published at the time in the English *Field* newspaper. Other incubators have been made in England, and are in use there but all are more or less defective in arrangements. So much for English and European incubators.

Messrs. Jacob Graves & Co., of Boston, U.S., have constructed an incubator which is as near perfection as anything in this line can well be, and is only an improvement on plans of those already referred to especially that of a Mr. Halsted, to which we shall presently refer. The Messrs. Graves offer their incubator for sale. Mr. Halsted's incubator is the only other that we know of made in the United States, and we are not aware of it being offered for sale. By practical experiments this gentleman has proved the utility and worth of his machine in hatching artificially. In Canada we are not aware of any attempt having been made in constructing a machine of this kind.

In conclusion, it may not be out of place to tell our correspondent that to be successful in the use of an incubator requires great practical experience. Success can only be obtained by observing many minute precautions which are too frequently overlooked by most at the commencement. But that success may be achieved there is no doubt, yet it can only be enjoyed as the reward of a care and attention which, perhaps, can be bestowed upon the matter by comparatively few.

Wintering Dahlia Roots.

(To the Editor of the CANADA FARMER.)

SIR—Would you kindly instruct me through the CANADA FARMER as to the best method of preserving Dahlia roots through the winter. I have tried herring them in various ways but have never succeeded very well. A few plain directions would greatly oblige.—I am, &c., JAMES.

[Dahlia roots, whilst yet in the ground, are not unfrequently injured by the first sharp frost of the season; to avoid which, it has become customary of late to cover them, close to the stock, with a five or six inch layer of fresh soil or the finer well-sifted products of the chip-yard. Thus treated, they may remain a week or two longer in the ground with safety than otherwise. When ready for lifting, select a fine day if possible; be careful not to bruise the roots in the raising; remove with the hand all adhering soil, and place in the shade for a short time to dry. The tops may now be cut off, leaving three or four inches of the stalk, to which attach the labels. There appears to be a diversity of opinion as regards the proper method of storing, some persons favoring the dry sand system, others advocating the simple "shelving" of the roots, &c. If the sand is thoroughly dry, and the roots in proper condition when first stored away, we have little fear for the result. An English writer of some repute, speaking upon this subject, says—"I have tried several ways of storing Dahlias, both in the cellar and out of it, and prefer to pack them in boxes in the cellar, covering both tubers and stalks with sand thoroughly dried either under the hot-bed ash or in the kitchen oven. If one has only a few roots, sufficient sand can be dried in pans in the oven; but several bushels of them would require a large quantity, which is not always at hand. I have sometimes had them heap neatly when taken directly from the garden to the top of the potato bin, if rats and mice did not discover them, and then dry as usual quite well in strong paper bags hung near the centre of a dry cellar, and also in a cool upper room where there is no danger from frost. Several times during the winter all the roots not packed in sand are examined, and if the least mould appears it is removed, and they are well dried near the fire before they are again returned to their winter quarters.—Ed. C. F.]

Length of a Doubletree in Ploughing.

(To the Editor of the CANADA FARMER.)

SIR—A friend of mine and myself have recently had an argument about the proper length of a doubletree in ploughing; he maintaining that it should be 3 feet 9 inches long, and I holding that one about 2 feet 10 inches or 3 feet in length would be nearer the mark. I consider that in the latter case the draught would come more evenly upon the horses, the plough would run more easily and steadily, and the ploughman could do better work than if a 3 feet 9 inch doubletree was used. To counteract the side draft occasioned by the use of the long doubletree, some who consider themselves ploughmen keep the high horse "boxed" out. I have heard such persons abusing from morning till night, Law! hawah!—leaving the plough at the same time over to the left and claiming that as the proper position in which to hold the implement. It is easy to imagine what sort of an inclination the whiffletrees assume under such circumstances. Now I consider that with the use of a set such as I call m., of a length which would bring the draught in a line with, instead of at any angle to, the direction of the horse,—the latter would be kept parallel to each other, and better work could be done with a considerably less waste of power. One objection he makes is that the shorter appliance would be harder on the team because "a long lever has more power than a short one;"—which I grant, if the ends of the lever are of unequal length; and again, that "it would tend to make the horse calk themselves in turning,"—whereas I think it would have exactly the opposite effect. We have decided to leave the matter to you, and in answer through the columns of your valuable paper I add very much obliged.—I am, &c., H. DOLZAN. Gwillimbury, Oct. 22nd, 1874.

[There is no standard rule for the length of doubletrees; much depends on the size of the team, the nature of the work to be performed, &c. In ploughing, and indeed in all cases of tractional labor, the power is most effective when applied directly, that is, with an little inclination as possible from the point of resistance; hence, horses coupled in front by an ordinary sized neck-yoke and attached behind to an extraordinary long doubletree must travel sideways more or less, a position in which no animal can exert all his strength to the greatest advantage. It is true that the clevis may be so adjusted as to counteract in a measure the tendency of a plough thus drawn "out of true" to diverge from the straight forward cut, but if the implement is properly made, we have little confidence in the good sense of the man who habitually uses the clevis for any such purpose. The latter is intended to regulate the width of the furrow slice, not to overcome the natural tendency of the plough to follow in the direction in which it is used. A well balanced plough in favorable soil requires little or no guidance at the hands of the ploughman. We think our correspondent's figures and theory are quite correct.—Ed. C. F.]

Swamp Muck.

(To the Editor of the CANADA FARMER.)

SIR—Having been engaged for several days in hauling swamp muck upon a piece of upland which required manuring, I would like to know if such a plan is likely to be attended with success. I am aware that when mixed with barn-yard and other manure, swamp muck is very good, but having never heard of its being used alone, I would like to have your opinion or that of some of your correspondents upon the subject.—I am, &c., A CURIOUS SCIENTIST.

[Ordinary swamp muck is largely composed of decayed vegetable matter, and in its dry and pulverized state it is almost identical with the leaf mould so highly prized by horticulturists. Its absorbing qualities, when dry, are very great, hence its value in the manure heap; whilst its direct fertilizing action, even when used alone and in its natural state, has, by repeated experiments, been placed beyond all doubt. One of the finest crops of wheat and the best crop of corn we ever witnessed was the result of exactly such an application as that described by our correspondent, and we have no hesitation whatever in advising such of the readers of the CANADA FARMER as have this really valuable article on their farms to "go and do likewise."—Ed. C. F.]

Heeling-In for Winter.

(To the Editor of the CANADA FARMER.)

SIR:—Please inform me through the medium of the CANADA FARMER what the proper course is to pursue with respect to trees purchased this fall for spring transplantation. I recently purchased a number of choice apple and cherry seedlings, which I immediately heeled-in according to instructions given by the vendor; but knowing by past experience the value of the advice given in your columns, I have decided to remain uneasy until I hear from you upon the subject.—I am, &c.,

A BEGINNER IN FRUIT CULTURE.

[Select a sheltered spot in the orchard or garden, and with a plough or spade make an ordinary trench or furrow shaped like the letter V. Prune and otherwise trim the roots as may be necessary—this should in all cases be left to the nurseryman—and then set the plant in the trench with its stem leaning against one of the sides, and the roots butting against the other; this inclination will bring the branches of the tree near the ground, thus ensuring protection against high winds, &c. Now, cover the roots, and as much of the stem as practicable, with earth to the depth of several inches, being careful to work the soil well in among the former, to avoid openings and consequent injury by frost. If desirable the stem may be still further protected by a covering of cedar branches, or the boughs of any of our numerous variety of evergreens. Some persons use straw for this purpose, to the infinite satisfaction of rats and mice, which are never slow to avail themselves of the board and lodging so kindly placed at their disposal.]

Setting Out Cuttings.

(To the Editor of the CANADA FARMER)

SIR:—In your "Seasonable Notes" which appeared a short time since in the CANADA FARMER, you spoke of setting out cuttings, but left us very much in the dark as to how the thing ought to be done. I have a small plot of ground very suitable, I think, for currant bushes, and I would feel much obliged by your giving such directions for setting out the cuttings as you may deem necessary.—I am, &c.,

C. H.

[The process is an exceedingly simple one. Select a healthy-looking cutting of say twelve or fourteen inches in length, or a shorter one if necessary, and insert in the ground to a depth of five or six inches, pressing the soil firmly about the plant. Should the weather continue very dry, and there is any danger of the soil shrinking away from about the plant, water freely, and mulch with leaves or straw until winter fairly sets in. Ninety-nine out of every hundred cuttings treated in this manner will thrive, and bear the second season after planting. If, it is desirable to train to tree form, that is, to have the bush head from a single stem, rub off, before planting, all the eyes on that portion of the cutting which is to go into the ground. Our correspondent will gain nothing by setting out cuttings now; far better prepare the ground this fall and plant in the spring.]

**YORKSHIRE CATTLE FEEDER**—An "Illinois correspondent" may rest assured that this article is in all respects exactly what Mr. Miller represents it. Large quantities of it are consumed by our leading Canadian breeders and stock dealers, and we have yet to hear of a single instance in which it has failed to realize the expectations of those who have given it a fair trial.

W. H. T. asks whether plums that have been "drenched with a solution of Paris green, for the destruction of the curculio, are fit for family use."—[It depends a good deal on the proportion of Paris green used in the application, and the effectiveness of the washing by rains or otherwise received by the fruit subsequently. At all events, we should very much prefer personally fruit that has never been in contact with the poison.]

THE CANADA FARMER

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The Canada Farmer.

TORONTO, CANADA, NOVEMBER 2, 1874.

English Short-horn Sales.

The extraordinary average prices realized at the short-horn sales recently held in England, continues to be the leading topic of the agricultural press on both sides the Atlantic. There is little to wonder at in this, for so long as the question of "cheap meat" and plenty of it remains unsolved in the practical experience of the teeming and struggling masses of the Old World, just so long must the subjects of improved stock and stock-breeding, with the questions that naturally arise from and are identified with them, continue to monopolise that share of public attention which their importance demands. We are not of those who see in the present fabulous prices of Short-horns a recurrence of the "tulip" mania of a by-gone age. That the opportunity afforded for mere speculative dabbling will, to a limited extent, be taken advantage of by some who, excepting so far as it affects their pockets, have "neither part nor lot in the matter," we are quite prepared to admit; but that a mere spirit of speculation, in the ordinary acceptance of that term, is what actuates the leading agricultural capitalists of both hemispheres,—thus to pick up "at any cost" those choice animals which go to give character and substance to their herds,—we cannot for a moment believe. Dropping this phase of the subject for the present, let us examine for a little some of the figures recently realised, comparing them with the prices of only a few years since, and notice what the ratio of advancement has been. At Underly the other day, "Duchess Gwynne," the first animal offered, made, at twelve years old, \$2,257, having eight years previously been sold at Brampton for \$325, and two years subsequently to Mr. Foster for \$945. At the same sale "Cherry Queen," the highest priced cow at \$6,405, was purchased at auction several years since for \$173. At the Holker sale of the same week, "Musical," sold to Sir Wilfred Lawson for \$1,590, was purchased just one year previously for \$372; while the "Roses of Raby," now the Duke's favorite tribe, are from a cow sold as a heifer, in 1862, for \$399. "Oxford 14th" was once priced at \$105, while at Mr. Bate's sale in 1850, ten Oxforths reached an average of less than \$300, the same class of animals that are now taken readily at

thousands. The contrast between the average of the recent Gaddesby sale, and those of former years is even more marked still, as will be observed from the following summaries:

1871		
48 females	.....A	\$0 \$452.00..... Total \$23,130
8 bulls	.....	311.00..... " 2,468
56 head	....General Average	\$457.57.....Total \$25,624

1873.		
23 females	.....Average	\$1,676.00.....Total \$14,963
7 bulls	.....	930.00..... " 6,673
35 head	....General Average	\$1,472.00.....Total \$51,451

1874.		
19 females	.....Average	\$2,821.19.....Total \$53,612.50
8 bulls	.....	571.43..... " 2,971.50
27 head	....General Average	\$2,055.33.....Total \$56,574.00

From the figures above given, and an abundance of similar data having reference to sales on our own side of the Atlantic, which might be adduced, it is very evident that if the market value of an article affords anything like a correct criterion of its real worth, the Short-horn race is destined to supply the "missing link" in the solution of the important question already referred to; and not until our anticipations in this respect are shown to have been a good deal worse founded than we at present feel disposed to admit they are, can we consistently deny prices, no matter how fabulously high or "fancy" they may appear to be.

Water Appliances for Barns, &c.

Next to good soil, the main desideratum in purchasing a farm is the water supply—water not merely for the dwelling, but for the stables, the hog pens and sheep pens. A good never-failing spring on the farm is thus justly considered one of its finest advantages. But all farms are not similarly furnished in this respect; and in many of those that are, the stream may be very inconveniently situated—as, for instance, when it runs along at one side of the place whilst the buildings are at the opposite. However desirable it is to have buildings erected near the water supply, it frequently happens that the site is not at all suitable, and the consequence is that horses, cattle, &c. have to be driven twice or three times daily a distance of mayhap a mile or over to quench their thirst—a performance which, our readers will admit, is anything but pleasant, especially during the cold winter season. Of course there may be an excellent well at the dwelling house, round by the back kitchen or thereabouts, but every one who has tried it, more particularly the ladies of the household, whose ambition it is to have things look tidy and clean, knows the baneful, filthy effects of having cattle and hogs roam about the doors.

Now, as a rule, barns and out-buildings are seldom located at a great distance from the dwelling house. What think our farmer-readers to whose places the above remarks apply, of having the well-water of their dwellings conveyed by subterranean pipes to the barn, and there supplied by means of a simple feeding pump to troughs, &c., for the use of their stock? The cost would be trifling when wooden piping could be used, and the result, we feel satisfied, would prove eminently successful. "The proof of the pudding, however, is in the eating of it." Practical experience only can demonstrate definitely the truth of this as of all other speculative matters. We will therefore give here the experience of a very prominent and successful farmer who now occupies the position of chairman of the New York Farmers' Club, as related by himself before the club at a recent meeting. He spoke as follows:

"As you are always interested in new devices and labor-saving appliances that are valuable to the farmer, allow me to relate to you how I manage to get living water in the feeding-room of my barn without a well or pipes from a distant spring: The well at the dwelling house is located about 110 feet from the stable. It occurred to me that a tube could be extended from the bottom of the well, which is about 18 feet deep, to a pump in the feeding-room of



the stable by which the water could be drawn from the pump-spout directly into a pail or tub. As the water of this well will dissolve lead pipe slowly, and will easily corrode iron pipe, it was decided to use wooden tubing. But where to find it no one could tell. Within a few years past more than half a dozen patents have been obtained on new processes for making tubing of wood. But not one of the inventors has succeeded in inducing a manufacturer to make a supply for the market. After writing scores of letters to postmasters and machinists in various parts of the country, it was at last ascertained that a firm in Elmira, N. Y., were making wooden gas-pipe (not patented) simply by boring a smooth hole through pine scantling. A supply of this wooden gas-pipe was ordered. The pieces are about eight feet long and four inches square, with a smooth one-and-a-half inch hole lengthways through the centre. A round tenon on one end of each piece is made to fit a smooth socket, gas tight, in one end of another. A ditch about two and a half feet deep was dug from the well to the stable, beneath the foundation wall and floor to the feeding apartment; then a valve was made to fit the lower end of the tube at the bottom of the well, so that the water could not run back into the well. The pipe was laid, and a common five-dollar cistern pump was placed at the end of the tube in the feeding-room. The pump was then put in motion, but not one drop of water could be drawn. Then a few pailsful of water were poured into the pump, until the tube was full. But the water would disappear half as fast as one could pour it in. Then we all took shovels and dug down to the joints; but every one was air-tight. After a few minutes a large crack was found in one piece, where the air would rush in as fast as one could pump it out, and where the water would escape. Two pieces of band-iron were then put around the tube, and the crack was drawn up tightly with screw-bolts. After this the pump drew a large and full stream, with satisfactory facility, and has operated beautifully ever since. A vast amount of hard labor is thus saved. If a barn were 300 or 400 feet from a well, water could be drawn through such tubes without any difficulty, if there were no leaks."

#### The Prize System at Exhibitions.

The idea of abolishing money awards at our exhibitions, reference to which was made in a recent issue of the CANADA FARMER, is beginning to engage considerable attention, and is being freely discussed by agricultural and other papers both here and in the United States. A correspondent of the *London Advertiser*, in the course of a communication to that journal on the subject, remarks as follows:—

"While it is true that it is often very difficult to decide as to the merits of articles exhibited, it is notorious that at every fair prizes are awarded to inferior articles in one or more classes by judges either interested in the articles themselves or in those exhibiting them. The result has been that a great many have ceased to exhibit at all; and in a few classes, in which competitors were few, so that it was possible for them to meet and cause their voices to be heard, prizes have, at their request, been discontinued. I believe that before long this matter will force itself upon the attention of the directors of our exhibitions, and that they will realize that it is not the few who crave for a few dollars in prize money that make the display necessary to the success of the exhibition, but the many who exhibit because they want to advertise or sell their stock or goods, and are willing to bear some little expense. When, therefore, the new system is introduced, as I believe it will be, I venture to predict that a host of new exhibitors will introduce themselves at our fairs and make themselves an hundredfold more successful."

A New York correspondent of the *German Town Telegraph* ventilates his opinion of the matter in the following curt terms:

"I have been on committees and an exhibitor for premiums, and I know that principle or right has less influence than favor, or what I call 'trucking,' by at least ninety-seven out of one hundred judges. The whole thing has disgusted me, and for some years I have dropped out, and never expect to go back."

**ABANDONMENT OF HOMESTEAD CLAIMS.**—Many homestead settlers on the public lands in western Kansas are unwisely leaving their farms and allowing their claims to go by default. The reason is, discouragement growing out of the results of poor and unintelligent farming. Many of them make it a secondary business, giving their chief attention to hunting buffaloes.

#### The Grand Trunk Crop Report.

In another column we publish a somewhat extended report of the state of the crops in those sections of country through which the Grand Trunk Railway passes. It will be observed that along that portion of the Buffalo and Lake Huron branch, extending from Goderich to Brantford, the fall wheat has been injured by winter-killing, but it is estimated that it will reach an average of about 20 bushels per acre. The data for spring wheat is not so satisfactory, the quantities given being variously estimated at from 10 to 25 bushels per acre. Peas is estimated at from 25 to 30 bushels, in one or two instances a little higher. Oats at about 50 bushels. Barley, 25 to 40 bushels. Between Brantford and Dunnville fall wheat is indifferent, but all kinds of spring crops are well spoken of.

From Sarnia eastward the crops of nearly every description are reported good until we approach the end of the line in this direction, when the effects of winter-killing, drought, &c., become apparent.

West of Toronto and between Toronto and Kingston fall wheat is light, but spring crops generally are favorably reported of. East of Kingston but little fall wheat was sown, and that was considerably winter-killed. From Prescott eastward fall wheat appears to have done well, and spring crops are, with few exceptions, above an average.

#### The Prairie Hen in Great Britain.

The increasing scarcity of feathered game, especially grouse, from disease and other causes, in Great Britain, has led some of the more ardent of her sporting sons to practically test the possibility of rearing our American prairie hen on the heathery wastes of "Auld Scotia." The recent arrival of a cargo of these birds is commented upon by an English contemporary, as follows:—

For many years our naturalists have been assiduously endeavoring to introduce fish and birds of native breed into our colonies, and with some considerable measure of success. They have been trying also to bring fish of an edible character into our rivers with not quite so beneficial an effect. Grouse this year have been extremely scarce, and in course of time it seems not improbable, that unlike men's thoughts, instead of "widening by the process of the suns, they will relegate into moonshine. Fearing such result, some of our sportsmen have resolved to introduce into this country the prairie hen of America, a bird coming over to our poultryers in advance of our grouse. We have plenty of room for these birds, which we have little doubt will speedily become acclimatized, and judging from their wild and wayward habits at home, they will do no injury to our indigenous wild fowl. We hope sportsmen will be able to give a good account of them next year; but if not judicious and tender in their killing, "Love's labor will be lost."

#### Crops in Europe.

The cable report gives a synopsis of the review of the crop prospects by the *London Mark Lane Express*, which says:

"The recent rains have materially benefited the root crops. There has, however, been too much rain for late potatoes, which have shown the commencement of disease, and this will cause a greater demand upon the lower descriptions of wheat and prevent their further depreciation. The grass has the verdure of spring, which will help growers to carry their stock through the winter, notwithstanding the deficiency of hay and straw crops. The wheat trade shows neither encouraging nor discouraging features. Prices in France are a shilling per quarter lower, but elsewhere on the Continent they are unchanged, except at Odessa, where prices are firmer, in the hope that the fine quality of the wheat crop will eventually secure better prices."

Mr. James Caird, one of the leading agricultural authorities, in a communication to the *London Times*, estimates the wheat crop in the British Isles at 3,000,000 qrs., or 24,000,000 bu. more than the deficient crop of 1873. He estimates that with an acreage of 3,632,063 acres and a yield of 30 bu. per

acre, deducting seed, will give 13,000,000 qrs. of wheat available for consumption, and with 22,000,000 qrs. annual requirements for consumption of the Kingdom, there will be required 9,000,000 qrs. or 72,000,000 bu. of foreign wheat from Sept. 1, 1874, to Aug. 31, 1875.

Mr. James Sanderson, another eminent English authority, estimates the wheat crop of 1874 in the British Isles available for consumption at 12,800,000.

In Germany wheat yields well, rye not so good, but spring grain is short of an average.

In the south of Russia wheat supplies, at latest mail advices, were not large, though daily increasing. The quality of the new wheat crop is fine.

In France the wheat crop is believed to be above an average, but the maize crop is short and high prices are expected.

In Italy the maize crop is also short, and there are orders here for Trieste.

#### Dominion Ploughing Match.

The ploughing match for the district comprising the counties of Hastings, Prince Edward, Lennox and Addington, Durham, Northumberland, Peterboro', Victoria, York, Ontario, Peel and Cardwell, took place on the 22nd ult., on the farm of Messrs. H. & R. Beith, about four miles from Bowmanville. The farm is beautifully situated in one of the finest agricultural districts of Canada. The weather was delightful, a real Indian summer day. A very large number of leading farmers from different parts of the country were present, and took a deep interest in the match. The managing committee, judges, competitors, and a large number of others, were sumptuously entertained at the residence of the Messrs. Beith, who received the hearty thanks of the managers for their hospitality. The judges were John Pratt, West Northumberland; J. Aylesworth, Donald Fraser, A. & H. Carscallen, Lennox and Addington; John Wetheridge, Darlington; and Samuel Currie, Bowmanville. The following is the prize list:—First class—1st, George Telfer, Scarborough; 2nd, Wm. G. Lake, Whitby; 3rd, Wm. Milligan, Markham. Second class—1st, James Rennie, Darlington; 2nd, Wm. Foley, do.; 3rd, Alex. Wight, do.; 4th, Geo. Minty, West Whitby. Third class—1st, William Shaw, Darlington; 2nd, E. Hill, do.; 3rd, Walter Foley, do.; 4th, John Haines, do. Fourth class—1st, John Allen, Clark; 2nd, Robert Beith, Whitby; 3rd, Jas. Ormiston, Darlington; 4th, Henry Bowler, Clark. Double-furrow plough, James Leask, Darlington.

#### Decline of Western State Fairs.

The *Chicago Tribune* says: "The state fairs in the west have been everywhere this year a failure as compared with the successes of former years. The same story comes from Iowa, Wisconsin, and Minnesota. The interest of the public in these exhibitions has very perceptibly fallen away. The attendance has been, in all instances, comparatively small. An agricultural fair, as a rule, has come to be but another name for a horse race. The result is that all the state fairs, with the exception perhaps of that of Iowa, have this year been money losing enterprises. But it is not only pecuniarily that they have been failures. They have been failures as exhibitions. There was at no one of them very much worth seeing. About the only good feature of our own state fair was the show of live stock. In Iowa the affair was a success only as an exhibition of hogs. The exhibition of farm products was not anywhere creditable. There were not more than a dozen entries of farm products on the books at some of the fairs. The amount of competition evinced among producers and manufacturers was at a minimum. One instance will suffice for illustration: In Illinois, where there are about 200 cheese factories, but one manufacturer of the article was represented at the state fair. The fair were remarkable by the absence of sheep. It is said that the dogs are to blame for this. Persons who have been engaged in sheep-raising on a large scale have been compelled to send them to Colorado, in order to save them from the ravages made by the dogs among their flocks. One gentleman, with a flock of 10,000 sheep, was compelled to send them to that state, because occasionally the dogs would break

into the fold, and in a single night destroy as many as 500 sheep. The decline of the interest of the public in agricultural fairs is due to various causes. In the first place the county and district fairs, which have been so successful as a rule, engross a great deal of the interest of the public. Then the expositions in large cities like Chicago, which are becoming so deservedly popular, tend to supplant the state fairs. Of course the hard times have something to do with the financial failure of these institutions. But this of itself does not account for the growing apathy of the country regarding them. Present indications go to show that their usefulness is ended in the present shape. We understand that the managers of the Illinois State Fair are undecided whether another shall be held—another evidence that the state fair is to be a thing of the past."

### Nova Scotia Provincial Exhibition.

The show recently held at Halifax, under the auspices of the Nova Scotia Agricultural Association, appears to have been in every respect a decided success. The exhibition was opened by His Honor the Lieut.-Governor, who had also with him on the platform His Excellency Gen. O'Grady Hailey, His Honor Lieut.-Governor Tilly, Sir William Young, and a number of other distinguished gentlemen. Governor Archibald in his opening address complimented the committee in charge on the success which had crowned their efforts; spoke eloquently of agriculture as a profession, and of the numerous resources and advantages of the Province. We regret very much that we cannot give more than a mere outline of the various departments of the exhibition. The display of fruit, especially by exhibitors from Kings and Anapolis counties, was magnificent. Apples and Pears were exceptionally fine. Plums were not so numerous, but the samples shown were good. The display of vegetables, especially Potatoes, was highly creditable. Plants and flowers were in endless variety and very choice. The show of stock was admittedly the largest and finest ever made in the Province—indeed in no department of the exhibition were the evidences of improvement so strikingly apparent. The number of visitors during the four show days exceeded seventeen thousand—a large number indeed for such a limited population—and over \$5,000 was awarded for prizes. We heartily congratulate our sister province on the success of the show, and trust that each succeeding exhibition will furnish still better and more unmistakable evidences of the agricultural capabilities of Nova Scotia.

### Crops in the United States.

The Department of Agriculture Report, for September, estimates the average corn crop throughout the country, at 63; the maximum, 109, was in South Carolina; the minimum, 37, in Nebraska. None of the large corn-producing states reach an average, while several of them show a falling off, even as compared with last year. The states that are average, or above, are Rhode Island, Connecticut, South Carolina, Georgia, Florida, California and Oregon. All the states north of the Ohio River exhibit a depressed condition of the crop, whilst west of the Mississippi there will not be more than one-seventh of an average yield.

The average condition of the wheat crop is 94, or two per cent. less than last year. Delaware is full average, and all the other New England and Middle States are slightly above average. West of the Mississippi the states are all average, except Missouri. The South Atlantic states are all below average, except Alabama, which reaches 101; Arkansas averages 120.

In oats, the New England states reach an average, and all the other states fall short, reducing the average for the whole country to 86.

The average of rye is 92, barley 92, potatoes 83. Buckwheat is below average in all states except Vermont, Massachusetts and Connecticut. Tobacco

will not be more than half a crop. Cotton will fall very much short of an average. Hay is short except in New England and middle states—Virginia, North Carolina, Oregon and California. Rhode Island, Connecticut and New Jersey report a good apple crop. Peaches are more than average in Ohio, Michigan and Connecticut. In grapes Ohio stands 108, and Connecticut 119.

**PROVINCIAL EXHIBITION AT OTTAWA.**—The claims of the capital to its quota of exhibition visitations are too just to be ignored, and it is with unfeigned pleasure we accept the dictum of the Board of Agriculture, which fixes the next Provincial Fair at the City of Ottawa. We understand that the local authorities have guaranteed ample accommodation, and manifest a laudable desire to heartily co-operate with the Board in the endeavor to make the Exhibition of 1875 one of the most successful that has hitherto taken place in Canada.

**ENTERPRISING.**—The Massey Manufacturing Company of Newcastle, Ontario, recently shipped a carload of machinery for England, to be speedily followed up, we understand, by farther consignments to that country and Germany; and Mr. Watson, of the Ayr Agricultural Works, has just filled an order from a gentleman in Port Natal, Africa, for one of his celebrated "Victor" chopping mills. The latter gentleman, as most of our readers are no doubt aware, has also of late been shipping implements to Australia and New Zealand. Such enterprise reflects great credit alike on the parties more directly interested and the country at large.

**GOOD SALES.**—On Thursday last Mr. Henlock Young, of Guelph Township, sold one of his prize fat steers to Mr. Dean, of New Brunswick, at nine cents per lb., live weight. When weighed he turned the scale at 2,800 lbs., thus making the price received for him \$252. We congratulate Mr. Young on his great success as a stock breeder, and also Mr. Dean in procuring such a fine animal. Mr. Dean has also purchased a very fine heifer from Mr. Richardson, of Elora, which weighed 1700 pounds, at 7½ cents per lb., and a yoke of oxen from Mr. A. Weir, Puslinch, for \$200. All of the above animals are intended for the St. John's market, where Mr. Dean resides. So says the *Mercury*.

A CORRESPONDENT of *Bell's Messenger* gives the following sketch of a Victoria farm: "About nine miles from Melbourne, the country, without altering its forest character, being still timbered with heavy gum, undergoes a decided change in the quality of the soil. Here is situated Prospect Hill Farm, in the occupation of Mr. John Cooper. This property, containing 1600 acres, occupies both sides of the road, extending from the Plenty on the one side to the Darcabin Creek on the other. The farm takes its name from a conical hill occupied by the homestead, and commanding a splendid view of Melbourne, Mount Macedon, the Plenty ranges, and the Dandenong ranges on the south, west, north and east respectively, together with the intervening country. This farm, being on the edge of the good land of the Plenty district, is mixed in quality, some portions being first-class, the remainder partaking to some extent of the nature of the inferior land adjoining. About 250 acres are cleared and in cultivation; the remainder uncleared and used for grazing; the rental paid being at the rate of 10s per acre for the former, and 5s 6d for the latter. The first two years out of the four that Mr. Cooper has been in occupation he stocked with dairy and cattle, as did also his predecessor, but two years since he substituted sheep, the change so far being entirely in favor of the latter. What is called the good land of the Plenty district consists of a rich adhesive black loam, resting upon clay, and stony in places, with basalt, of which there are numerous quarries in the locality. About a fifth of Prospect Hill Farm is of this sort, the remainder being of a light sandy nature, bearing natural grass, and on this 3000 Leicester cross-breeds have been kept during the last year. Although the sheep, the proprietor states, have improved the natural pasture since their introduction, and are continuing to improve it by thickening the sward, still it is not sufficiently good to warrant the keeping of so large a number. How this is managed is explained by the system adopted in feeding the sheep. From immediately after harvest the cultivated land is available for sheep."

IT TAKES 374,000 cars and 15,000 locomotive engines to do the railroad traffic of Canada and the United States.

THE RESULTS of a horse race at Dayton, Ohio, in one day recently were \$2,000, whilst the four weeks of the Cincinnati Exposition realized only \$69,000. How is this?

THE *London (Eng.) Agricultural Gazette* of Sept. 26, says: "What has yielded so abundantly everywhere this year that it is now one of the cheapest foods in market—cheaper, probably, than oats or barley, and cheaper than Indian corn or oil cake?"

**PROVINCIAL PLOUGHING MATCH.**—A ploughing match, under the auspices of the Agricultural and Arts Association of Ontario, is to be held on the farm of R. Grant, Esq., adjoining the eastern limit of the City of Hamilton, on Wednesday first (4th inst.) The match is open to all ploughmen in the Province. Over \$25 will be offered, besides special prizes for jointer ploughs. W. M. Calder, Hamilton, is secretary.

**HARVEST SERVICES.** The plentiful harvest has been celebrated in London churches as well as in the country, and it was the subject of special solemnities on Sunday at St. Paul's Cathedral. The pulpit, lectern, railings, and choir were decorated with autumnal fruits, flowers, and grain, and a large cross of evergreens, and white and yellow dahlias, pendent from the first chantry in the choir, was especially remarkable. There was large congregations in the morning, afternoon, and evening.

THE *Leavenworth (Kan.) Times*, is authority for this:—"Quite a novel little episode was witnessed a few days ago near an emigrant station at Manhattan. Three children surrounded a cow, which had been driven behind the wagon from the frontier, and each making a selection of a teat, proceeded by suction to extract nutritious nourishment therefrom, which, upon inquiry, proved their only means of subsistence, as the family, consisting of a man, wife and three children, were found to be destitute of food. Some humane gentlemen procured a large quantity of bread at a baker's shop, and sent them on their way rejoicing."

**MOSQUITOES IN ENGLAND.**—Americans visiting England have hitherto been delighted to escape from the attentions of that pestilent bug, the mosquito. Of late years, however, the mosquito has been found in London, in increasing numbers, and the mosquito is one of the sensations with which the papers fill up during the "silly season"—that is, while Parliament is not sitting. It is noticeable that the mosquitoes are generally found near the places where American tourists most do congregate. Probably the blood-suckers are carried over in their trunks, and then multiply to some extent. The English climate is not warm enough to develop the insect in all its "cussedness," a fact for which the natives cannot be sufficiently grateful.

**WEIGHT AND MEASURE.**—The *American Agriculturist* says. Now that the season for selling and buying has arrived, we would impress upon our readers the necessity for accurately weighing and measuring everything they sell. There is too much guess-work done. Buyers are handling produce every day of the year, and they weigh and measure all they handle. They are well posted. Farmers are not. When they come to estimate the farmers are beat. "It is naught, it is naught," saith the buyer. And farmers are too easily persuaded by his pertinacity. Besides, farmers want the money and do not like to lose a sale. So they give way. There is no settler of disputes so stubborn as a good platform scale. A Fairbanks' scale will save many words, and much time and loss. Every barn should be provided with one, and nothing should be taken out for sale until it is weighed and plainly marked with its weight.

**FARMING IN EGYPT.**—The *Mark Lane Express* says: There are about 5,450,000 feddans, or acres, of land under cultivation in Egypt, and a feddan that in 1865 was worth £50 might have been purchased since for about £5. The whole of the population is available for agricultural purposes. Were Europeans, who could have redress against direct oppression, to purchase land and cultivate it scientifically, considerable profits might be made. They would have many annoyances to contend against, but none that an energetic Englishman, with the support he would be entitled to claim, would not be able by tact, firmness and patience to overcome. Such is the wonderful fertility of the soil, when fairly treated according to the normal succession of crops and the perfection of the irrigation system when not arbitrarily interfered with for the enriching of certain ground, that a good crop of grass and grain of all kinds can always be expected.

## Agricultural Intelligence.

### The Harvest of 1874.

The following is a condensed report of the state of the crops in the various sections of country through which the Grand Trunk Railway passes:—

#### BUFFALO AND GODERICH DISTRICT.

##### Goderich.

Fall wheat, average about 15 bushels to the acre; spring, 25 do; oats, 40 do; peas, 50 do; barley, 40 do; sample of all good, and well stored, hay over an average; flax not much sown in this district, potatoes, turnips and other roots will be an average.

##### Seaford.

Fall wheat per acre, average 20 bushels; spring wheat, 25 do; peas, good crop, 30 do; barley, 25 do; oats, very good, 40 do; hay, good average crop; roots, not as good as usual. So far the crops have been safely harvested, and the sample good, barley particularly good.

##### Mitchell.

Fall wheat is a little under the average, both in breadth and yield, owing to the severe frosts of last winter; what is left is an excellent sample, and will yield 25 bushels to the acre; spring wheat is a full average crop; a large quantity sown will yield 20 bushels per acre; oats, largely sown, and an abundant crop, yielding 40 bushels per acre; barley, not extensively grown here, but a very good crop; average, about 25 bushels; peas, largely sown and very good; will yield about 25 bushels; flax, largely cultivated and an excellent crop; hay will average 1½ tons per acre; roots, largely cultivated, and will be a fair average crop. Farmers say that they have not had so good a harvest for many years.

##### Stratford.

Average yield of every description of grain; hay and roots have not been exceeded in the county of Perth. Oats 50 bushels to the acre; spring wheat, 18 to 25 do; peas, 25 to 28 do; barley, not so much sown but quality better, 20 bushels to the acre; fall wheat not so good as usual, 20 do; roots and hay abundant; flax is a good crop.

##### Bright.

Fall wheat will average 20 bushels per acre; spring wheat will average 25 bushels per acre; barley, oats and peas will average 40 bushels per acre; flax is a good crop, and considerable breadth sown; hay is a good average crop; the crops have all been saved in good condition; roots—potatoes, where attended to, yield abundantly; turnips and mangold wurzel promise an abundant yield; field carrots are raised in large quantities, and will be a good crop.

##### Paris.

Fall wheat will average 20 bushels per acre, and of good quality; spring wheat, but little sown, good quality, average about 15 bushels; barley, peas, and oats, the principal grains sown here, are all very good, both in quantity and yield; barley will average 30 bushels, peas 30 bushels, and oats 45 bushels per acre; potatoes, poor quality, and far below the average on account of rain; turnips and carrots, also below the average.

##### Caledonia.

Fall wheat, the staple production in this vicinity, was hardly winter-killed; on an average, taking into consideration the breadth sown, there will not be more than a third yield; hay, an average crop; other spring crops of grain in general, good; potatoes, where the bugs were kept off, are good—otherwise, totally destroyed by their ravages; apples and fruits, generally good; taken on the whole, the season's crop will be a fair one.

##### Dunnville.

Crops are in general better than last year, and will average as follows: Wheat, per acre, 25 bushels; oats, 30 bushels; peas, 25 bushels; corn, per acre, 30 bushels; barley, 25 bushels; root crops are also in general a fair average.

##### Cuffate.

The crops in the vicinity of Buffalo are very meagre, and entirely insufficient for home consumption, as the amount of grain received at Buffalo from points in Canada and the Western States clearly indicate.

#### WESTERN DISTRICT.

##### Detroit.

Wheat: In quantity, the yield is from one-third to one-half above the average; in quality, it is excellent, and far in excess of last year. Corn: in quantity,

it is only an average crop; in quality, however, is above the average. Oats: in quantity, this crop is above the average yield; in quality, however, is much poorer than usual. Barley: this crop is good both in quantity and quality. Potatoes: this crop is good both in quantity and quality, more especially with the earlier varieties; the yield, however, is not likely to prove sufficient, owing to the short crop in other states, and the consequent drain on this market. This will probably cause another large import trade from Canada. Apples: in quantity, the apple crop is a good average, but the quality falls somewhat below.

##### Mt. Clemens.

Fall wheat, a good crop, will average 25 bushels per acre; spring wheat very light crop, will average 10 to 12 bushels per acre; oats, a large crop, will average 75 bushels per acre; corn, a fair crop; no barley or flax sown; fruit of all kinds, good; potatoes, good, will average 200 bushels, and turnips will average 300 to 400 per acre; hay, fine crop.

##### Ridgeway.

Fall wheat, yield less than average, about 12 bushels per acre, large area sown, but much winter-killed, spring wheat, little sown and crop light; oats, yield 20 bushels per acre, large area sown; barley, below average, about 18 bushels per acre; corn, light, not much sown; roots of all kinds, full average crop; hay, very light.

##### Cambria.

Fall wheat, 25 bushels per acre; spring, 20 do. do; barley, 30 to 40 do. do; oats, 40 do. do; potatoes, pretty fair crop; timothy and clover, very short; corn, good yield; apples and peaches, medium. Crops upon the whole a failure. The excessive drought which set in so early and lasted throughout the whole season materially affected the entire crop throughout this section.

##### Park Hill.

Spring wheat, below average, yield about 15 or 16 bushels to acre; fall wheat, fair average, yield about 25 bushels per acre; peas, good crop, average about 40 bushels per acre; barley, fair crop, average about 35 bushels per acre; oats, good crop, average 50 bushels per acre; potatoes, average crop about 65 to 70 bushels per acre; hay, below average crop; other roots, average; no flax grown here; hops, good quality, but very little grown.

##### Lucan.

Fall wheat, very much winter-killed in exposed places, supposed to average about 14 bushels per acre, samples variable; spring wheat, a fair crop, yield about 16 or 17 bushels per acre. Fife is a very good sample, but the club variety is damaged by the midge; barley, good, will average from 35 to 40 bushels per acre, sample plump and bright; peas, an average crop, yield 30 to 40 bushels per acre, sample variable and injured by bugs; oats will yield from 40 to 50 bushels per acre, sample bright and plump, potatoes will average full crop, though small.

##### Thorndale.

The following is an average of the crops in the vicinity of Thorndale.—Fall wheat, per acre, 20 bushels; spring do, 15 bushels; peas, 30 bushels; oats, 30 bushels; barley, from 30 to 35 bushels; potatoes, 100 to 150 bushels; hay, per acre, 1½ tons; root crop, not much cultivated; apples and plums, very small.

##### Guelph.

The harvest in the neighborhood of Guelph is as nearly as possible as follows: Fall wheat, 13 bushels per acre, very much winter-killed in many places; spring wheat, 20 bushels per acre, very good; potatoes, 30 bushels per acre, very good; oats, 50 bushels per acre, good, but not much grown here; peas, 25 bushels per acre, very good; potatoes, very light crop; hay, 1 ton, moderate. Root crops: turnips, not large, and only very ordinary crop.

##### Acton West.

Fall wheat, 20 bushels per acre, winter-killed; spring wheat, 15 bushels per acre, late dry spring; peas, 25 bushels per acre, late dry spring; oats, 35 bushels per acre, late dry spring; barley, 30 bushels per acre, late dry spring; turnips, 300 bushels per acre, drought during August; potatoes, 175 bushels per acre, drought during August; hops, splendid crop, very little being rusted.

##### Naval.

We are certainly blessed (in this vicinity) this harvest with extra good crops, with the exception of fall wheat, which is rather poor. Farmers, however, have no reason to complain, as they have abundance of everything.

##### Weston.

Fall and spring wheat a good average, and quality good; oats, barley and peas rather above the average, better than for some years; potatoes, turnips, carrots, hay and fruit below the average; no flax sown.

#### CENTRAL DISTRICT.

##### Toronto.

Fall wheat, average breadth sown, but a great deal winter-killed, quality fair, average yield about 15 bushels per acre; spring wheat, large breadth sown, abundant crop and good quality, average yield about 25 bushels per acre; barley, average breadth sown, abundant crop and good quality, average yield about 30 bushels per acre; peas, good crop, average yield about 30 bushels per acre; oats, large breadth sown, abundant crop, yield from 45 to 50 bushels per acre; potatoes and other roots, fair average crop; hay, crop below average, but better than last year.

##### Port Union.

Spring wheat will yield from 25 to 30 bushels per acre; barley, oats and peas, a good crop; hay, good and well saved; root crops not as good as expected, owing to dry season.

##### Whitby.

Fall wheat, very little grown, less than average crop, say 15 to 18 bushels per acre; spring wheat, good crop, full average quantity sown, from 23 to 25 bushels to the acre; barley, over an average quantity sown, from 35 to 40 bushels to the acre, and very fine color; peas, average quantity sown, full average crop, about 25 bushels to the acre; oats, average quantity sown, crop heavy, from 51 to 55 bushels to the acre; rye, little or none grown; hay, a large crop, and well saved; roots—potatoes, mangold wurzel, turnips, &c., every indication of a good crop.

##### Newcastle.

Crops very good; fall wheat, an average crop; spring wheat, 25 bushels per acre; barley, 35 bushels; oats, large crop; hay, large crop; root crop suffering for want of rain. Potato bug has done a great deal of damage to the potatoes. Apples, poor crop.

##### Port Hope.

Fall wheat, slightly below an average quantity sown, and both quantity and quality is one-third below last year; spring wheat, rather more than an average sown—the weevil has taken one-third of the early Fife, which the late Fife and Club escaped, and is good—average 14 bushels to the acre; barley, about an average breadth sown, and will yield 30 bushels to the acre, of an unusually fine quality, being both bright and heavy; peas, at least one-sixth more than usual sown, and will give more than an average yield; oats, crop very heavy, and is expected to average 40 bushels to the acre; root crops are suffering from the drought, though they promise a fair yield; hay was a good crop and saved in excellent order; one-third less clover seed than last year; fruits, scarce.

##### Brighton.

Fall wheat is not quite an average crop, but quality good; spring wheat about the average, and a fair quality; barley, oats and peas more than an average yield, and the quality very fair; root crops promise an abundant yield.

##### Shannonville.

Fall wheat, small breadth sown—good growth—average crop—good quality—average yield, about 15 bushels per acre; spring wheat, large breadth sown, growth badly injured by weevil; yield, about 10 bushels to the acre, average quality, crop, one-third below average; barley, large breadth sown, heavy growth, yield, about 30 bushels to the acre, excellent quality, crop, one-third above average; oats, large quantity sown, good growth, yield about 40 bushels to the acre, quality good, the crop about one-half above an average; peas, average quantity sown, good growth, yield, about 25 bushels to the acre, quality, good, the crop a full average; rye, small quantity sown, good growth, light yield, about 15 bushels to the acre, crop one-fourth below an average, quality, small and good; buckwheat, small quantity sown, not yet harvested, promises to be an average crop, yield, say 20 bushels to the acre; hay, light growth, about one-third below an average crop, quality good, and in good condition, yield, about 1½ tons to the acre; roots, average quantity planted, good growth, not yet gathered, promises to be a full average crop; potatoes, partially injured by the Colorado bug.

##### Ernestown.

Fall wheat and rye, not much sown; spring wheat, an average crop, 15 to 18 bushels to the acre; peas, a splendid crop, about 25 bushels to the acre; oats, good average crop; barley, an abundant crop, 25 to 30 bushels to the acre, quality unusually good; buckwheat, an average yield; potatoes, plentiful and good; other roots an average crop; corn, about an average crop; fruit, not abundant.

##### Kingston.

There is not a great deal of fall grain sown in this district, but what was sown was very much injured by frost, consequently fall wheat and rye were rather a light crop; spring wheat, a good deal sown, and a

very fine yield; oats, an excellent crop, being over the average, and good in quantity and quality; barley, a very fine crop; peas, over an average yield; hay, very good average crop; potatoes, good in quantity and quality; other root crops not cultivated here to any extent. The farmers in this locality are all well satisfied, and state that they have not had such a crop for several years.

#### Gananoque.

Fall wheat, very little sown; spring wheat, good crop, average 12 to 15 bushels to the acre; barley, good, will average 25 bushels to the acre; rye, not much sown, and light crop; oats, good, about 25 bushels to the acre; peas, good, about 20 bushels to the acre; corn, not much planted, and rather poor crop, owing to cold weather; no flax sown; hay is a splendid crop, and there is an abundance of straw; potatoes, good crop; other roots only middling.

#### Lyn.

Fall wheat, where not winter-killed, a fair crop; spring wheat, a full average crop; barley, oats, peas, abundant crops, and above the average; potatoes, abundant and above the average; hay, very heavy crop, above the average; grain and hay all saved in excellent order.

#### Maitland.

Barley, over an average; other spring grains and hay will average; no fall grain sown; hops will average; roots, fair, with the exception of late planted potatoes which, owing to dry weather, will be under an average crop; fruit, a fair crop.

#### Edwardsburg.

Spring wheat, good quality, average 15 to 20 bushels per acre; oats average 35 to 49 bushels per acre; peas, 20 to 25 bushels per acre; barley, 30 to 35 bushels per acre; hay, good, 1½ to 2 tons per acre; potatoes, over an average crop; roots, plentiful crop throughout.

#### Morrisburg.

Fall wheat, very little sown; spring wheat, good average crop; barley, above an average, very bright and well filled; corn and roots, a fair crop, mostly raised for home consumption; hay, a good average and well saved.

#### Dickinson's Landing.

Fall wheat and barley, very little sown here; spring wheat, a good average crop; oats and other coarse grains above the average; hay, an abundant crop, and potatoes an average crop; other roots very little grown.

#### Summerstown.

Fall wheat, a fair crop; spring wheat, a good appearance; oats, peas, and barley fair crops; corn has a good appearance; potatoes, a good crop; hay, over an average; roots, good.

#### River Beaudette.

Wheat, average 14 to 15 bushels per acre; fall, good, but little grown; rye wheat, 18 to 20 per acre; oats, good, and of great quantity, some yield 30 to 35 per acre; barley, 35 to 40 per acre; peas, passable, say 20 to 25; buckwheat, slightly frost bitten, but will average 15 to 20 per acre; corn, good; flax, not grown; hay, splendid yield, at least two and a half tons per acre; roots in general, excellent; potatoes, 200 bushels or more per acre; other roots equally good.

### EASTERN DISTRICT.

#### Montreal.

Wheat, 28 bushels per acre; barley, 35 bushels; peas, 26 bushels; oats, 36 bushels; potatoes, good, 200 bushels per acre; other root crops good; hay, good crop; fruit, scarce.

#### St. Hubert.

Hay, very good; oats, very good; wheat, good; peas, bad; buckwheat, good; root crops promise to be good.

#### Belœil.

Spring wheat, an average crop; oats, barley, peas, and buckwheat, very good crop; hay, very good, over an average crop, and secured in splendid condition; potatoes, good; other root crops, very good.

#### Soixante.

Hay on an average about 2½ tons per acre and of good quality; spring wheat 21 bushels per acre; oats 20 do do; peas 15 do do; barley 25 do do; buckwheat 20 do do; potatoes 50 do do.

#### St. Rosalie.

Crops good in general in this district.

#### Upton.

Wheat, oats and barley saved in excellent condition; the yield is hardly equal to that of last year owing to heavy rains and late spring. Buckwheat,

light crop owing to the early frosts in August; peas, potatoes and roots are generally a good crop, better than last year; flax good, but very little sown; hay is generally good and well saved; fruit good, but very limited.

#### Danby.

Spring wheat, good, average, 20 bushels per acre; oats, good, average, 35 bushels per acre; barley, good, average crop; buckwheat, average crop; peas, average crop; corn, very little raised this year; potatoes, good, about 200 bushels per acre; turnips, none; hay, good, about 1 ton per acre.

#### Lisgar.

The return of crops in this locality is very encouraging to the farmers, being on the whole above the average. Hay in some places light, but generally good; oats, very good grain, light straw; wheat, good; corn, failure; barley, none sown; buckwheat, good, where not killed by frosts; potatoes, very good in quality, but not numerous. Everything, with exception of corn, an average crop.

#### Brampton.

Hay, an average crop and saved in good order; oats, a good crop, averaging from 35 to 40 bushels per acre; buckwheat, a poor crop and badly damaged by frost on new land; potatoes, not an average crop, but are a very good quality; no other root crops grown; no flax grown.

#### Lennoxville.

Hay and oats, very good; spring wheat and peas, not much sown, but good; potatoes—crop good, but in some places rusted; other root crops, good; corn and buckwheat, light.

#### Compton.

Hay, which is the principal crop, very good; many have cut two tons to the acre; grain of all kinds late, a large proportion not yet harvested, but weather favorable; only coarse grains raised here to any extent; potatoes and other roots, sound and plentiful; hops, very light; no fruit of any consequence produced.

#### Norton Mills.

Hay, very good crop, and twenty-five per cent. more on the same area than last year; oats are very good, more than an average; barley, a good crop; potatoes promise to be very good.

#### North Stratford.

Hay, 1½ tons per acre, saved in good condition; oats, 40 bushels per acre, good quality; wheat, 20 bushels per acre, quality good, raised to a very limited extent; rye, 15 bushels per acre; beans, 13 bushels per acre, good quality; potatoes, 250 bushels per acre, free from rot; vegetables, raised only for home consumption; hops, average 750 pounds per acre; flax, not raised; fruit, a failure.

#### Stratford Hollow.

Hay crop above the average; oats, good crop; Indian wheat, fair, little cultivated; corn, light crop; potatoes, good yield; wheat, barley and rye, very little cultivated in this vicinity.

#### Stark, W. S.

Wheat, a fair yield; oats, a good crop; Indian wheat, more than average yield; potatoes, good yield, extra quality; hay more than average yield.

#### Berlin Falls.

As this is not an agricultural district, there are but few kinds of agricultural products to report. The potato crop is better than usual, and the two starch factories in this vicinity are doing a good business manufacturing them into starch. There is scarcely any wheat raised; more than the usual yield of oats; and the hay crop is fair, and all harvested in good condition. Of barley, Indian wheat, flax and corn there is but little grown here, and what there is, has produced the usual yield.

#### Shelburne.

Owing to the severity of last winter, grass or hay crop is light; not more than two-thirds the usual quantity; wheat, not grown to a great extent, but those who do grow it get a fair yield; rye and barley, not grown; oats sown early, heavy, with large yield; Indian corn, almost a failure; hops, fair yield and good quality; potatoes, light, the rust having blighted them before ripening; flax, not grown; root crops, abundant; fruit, very light and of inferior quality.

#### Bethel.

Apples, not an average crop. Beans light. Wheat, oats, rye, barley, good, not much breadth sown; hops, heavy crop, quality good and well secured; hay, heavy crop, and good quality, well secured; potatoes, indication of more than average crop.

#### Bryant's Pond.

Hay is about an average crop. Grain of all kinds very large growth. Many fields of oats have become lodged by overgrowth, and have been cut for fodder.

Corn is late and a small crop is expected. Potatoes an average crop. Hops good; more than an average yield. Apples below an average crop.

#### South Paris.

Oats, a good crop, but none to ship; corn, good, but none to ship; potatoes, good, probably ten thousand bushels to ship; apples, a fair crop, some to ship; root crops, good, but none to ship; hay, more than an average crop, not much to ship.

#### Mechanics' Falls.

The crops in this vicinity are—Hay, good; grain, fair; wheat, none raised; root crops, about an average in quality and yield; fruit, good. There is a large amount of sweet corn raised in this vicinity for packing, which is also very good.

#### New Gloucester.

Hay, an average crop and in good condition; rye and oats, very good; potatoes, middling crop; apples, about an average crop; root crops, only for family use; flax, none sown.

#### North Yarmouth.

No wheat raised here; coarse grains and root crops good quality, but light yield; hay good, but light yield.

#### Cumberland.

Hay is the principal crop, and that is about two-thirds of what it was last year; winter wheat, there is none raised; spring wheat, there is a fair crop, not much sown; barley and oats, good; potatoes, rather a light crop; fruit, an average crop.

#### Portland.

Hay, very good crop, and heavier than last year; potatoes, a very plentiful crop and in very good condition; apples, a fair crop and better than last year, but not equivalent to previous years; corn, but little raised, and backward, owing to cold weather; oats, about one-third better than last year; wheat, very little raised in this neighborhood. The stock of flour in Portland, 35,000 barrels; stock of corn, 40,000 bushels.

### RICHMOND AND RIVIERE DU LOUP DISTRICT.

#### Richmond.

Oats, fair crop, will yield 30 lbs. per bushel, and about 25 bushels per acre; buckwheat, good crop, 50 lbs. per bushel, and 22 bushels per acre; spring wheat, good crop, 50 lbs. per bushel, and 18 to 20 bushels per acre; corn, good crop, 56 lbs. per bushel, and 35 bushels per acre; potatoes, good crop, 50 lbs. per bushel, and 40 to 50 bushels per acre; hay, average crop, well saved; turnips and other root crops promising well, all required for home consumption.

#### Warwick.

Fall wheat, none sown; spring wheat, good appearance, but not much sown; oats, heavy and large yield; buckwheat, a total failure from frost; potatoes promise well and are extensively cultivated; tobacco, cultivated on small scale; carrots and turnips, fair crop; other root crops only cultivated to a limited extent, but good yield; flax-seed and grass raised in small quantities, moderate yield; hay, in middling quantity, but good, and secured in splendid condition.

#### Stanford.

The crops in this vicinity are very good, but will not average last year's crops. Hay light, all saved in good order; fall wheat, none sown here; spring wheat and oats, in good quantity; straw, short and light, will not average previous years' yield; coarse grains and root crops good, but very little cultivated here.

#### Somerset.

Very little grain sown, comparatively, this year on account of the late spring, but the quality is good; oats, most extensively sown, is considered a good crop, and will average 18 to 20 bushels to the acre; no wheat of any extent here; barley, buckwheat and other grain, a fair crop; hay, plentiful, and saved in fine condition; potatoes, turnips, &c., look very well, and promise an average crop.

#### Black River.

Spring wheat, above an average crop, rather more than usual breadth sown, generally saved in first-rate order. Fall wheat, not cultivated; oats and peas, an average yield; buckwheat, damaged by the frost, a very light crop; potatoes are small, will be a poor crop; hay in small quantity, but saved in first-rate order.

#### Chaudiere.

Wheat, not a great quantity, but very good; rye, very good and over the average; peas, very good; oats, very poor in quantity and quality, owing to the late spring; hay, very good; potatoes, a poor crop; vegetables, not in great quantity; fruits are very scarce.



## Point Levis.

The crops are expected to prove a fair average for this section; hay, oats, and potatoes are the staple productions; hay produced about a ton and a half to the acre; oats yield splendidly where proper attention has been given to tillage, but there are so many instances of want of cultivation that it reduces the average to a very poor one, not more than 15 to 20 bushels to the acre being the result. of potatoes, a larger space has been planted, and the quality is good, but owing to the dry weather, the produce will be smaller than hoped for: the yield of potatoes and turnips will be about 200 to 250 bushels to the acre; fall wheat, none; spring wheat, 15 bushels, and barley 20 bushels, to the acre; carrots and beets, only grown for household use.

## St Valliere

Hay crops have been but the half of last year; the appearance of potatoes and every kind of roots is very poor and small, but flax and grain of every kind have a good prospect, and will yield about the same as last year.

## St Pierre.

Hay, not so abundant as last year; wheat, barley, oats and peas promise an excellent yield; potatoes look well, and yield expected to be up to the average; flax, good, but not very much cultivated.

## St Jean Port Joli

The hay crop is well housed, but the crop is 25 per cent. less than last year; spring wheat is good, will be average crop; barley, light crop; oats, not average crop; peas are a fair crop; potatoes, small but sound; flax, there is not much raised in this vicinity, but what there is is a very good crop; root crops are all looking well, but small quantities raised.

## St Ann.

Spring wheat will be a good crop, smaller breadth sown than usual; barley very good, more sown than usual; rye, very good, small breadth sown; oats are a poor crop, smaller breadth than usual sown; potatoes so far are a poor crop; hay was about one-third less than an average crop.

## Riviere du Loup

Hay crop in this vicinity is one-third less than last year; no fall wheat sown; spring wheat, barley and oats are of a superior quality, and of an average yield; peas, and all other root crops look promising; potatoes will not be as plentiful as last year, for want of rain.

## MONTREAL AND PROVINCE LINE DISTRICT

## Lachine.

Hops, wheat, barley, oats and buckwheat, all over an average crop; peas are also a very good crop; hay, a very heavy crop and well saved; potatoes, turnips, carrots, and the root crops in general very good, and give good satisfaction to the farmers.

## Caughnawaga.

Hay is a very heavy crop; wheat, barley and oats are above an average; peas not quite an average; straw, long and rank, and yield of grain not quite up to what was expected; buckwheat, heavy and greater breadth sown than last year, owing to the lateness of the spring; all crops up to the present secured in good condition; Indian corn, good appearance; potatoes, good crop, if not injured by disease; fruits in general below an average.

## Johnson's.

Fall wheat, none sown; spring wheat, average 12 bushels per acre; barley, not enough sown to form an estimate; oats, fair crop, 15 bushels per acre; peas, heavy crop, not so good yield of grain, will average 10 bushels per acre; buckwheat, slightly injured by frost, will yield average about 12 bushels per acre; Indian corn, fine crop, 30 bushels per acre; hay, a good crop, high land will average 1½ tons per acre, low lands, 2 tons per acre.

## Hemmingford.

The crops in this vicinity are about an average. The hay crop is double that of last year; wheat, oats and buckwheat, very good; potatoes are a very fair average.

## MONTREAL AND CHAMPLAIN DISTRICT.

## Brossseau's.

Hay and oats, very good; peas, middling; wheat, an average crop; buckwheat, not good; potatoes an average crop; corn, good; barley, an average crop.

## St. John's.

The staple crop of the counties of St. John and Iberville is hay, which is largely exported to the United States. The hay crop this year is one of the largest ever raised in the above counties, averaging 200 bundles to the acre; wheat is not much sown, but what there is is good; barley, about one-third

more than last year, quality good; oats is a very good crop, at least one-third more than last year; buckwheat is over the average, and quality very fine, potatoes are very good, a full average crop; all other crops are good, and fully up to the average.

## Stottsville.

The crops in this locality are good; spring wheat, a good crop; fall wheat, none sown; oats, excellent, hay, a good crop, and saved in good condition; root crops are looking well, and promise a good crop.

## Rouse's Point.

Hay, an average, oats, about two-thirds the usual crop, not much sown; barley, not much sown this year; peas, light, only for home use; potatoes, a good crop, beans, none sown here; wheat, only for home consumption. The farmers are making a speciality in raising hay in this part of the country for the eastern market.

## Stock Sales.

We clip the following items from the *North British Agriculturist*—

The sale of Ayrshires by Mr. J. R. Stuyvesant, Poughkeepsie, Oct. 7th, was thinly attended, and the weather was unfavorable. Twenty-seven lots in all, including five young calves, were knocked down for about \$2,000. The highest price of the day was \$160 paid by J. B. Edgar, Rahway, N.J., for the cow Katydid, stated to have made 10 lbs. of butter per week. R. W. Leonard, New-Castle, N. Y., paid \$130 for Jean 4th, \$125 for Buttercup, and \$115 for Jennie Morton.

The great sale of Mr. Green's Herefords, elicited an attendance of no less than 3,000 at Gwernaffel, Sept. 24th. Upwards of 120 head were offered and sold, and the average was the highest ever obtained at a sale of Herefords. Prices ranged mostly from 30 to 60 guineas—the highest price being 130 guineas in a single instance, while 18 head were sold at from 60 to 80 gs., and 23 head for less than 30 gs.

Mr. Quartley, "the most celebrated breeder of Devons," as the *Mark Lane Express* justly styles him, sold the famous herd of Molland Farm a few weeks since, at public sale; and the fact, which 25 years ago would have been widely known and advertised, passed by almost unnoticed. The cattle, "full of the best blood, made merely market prices; heifers and cows of high degree reached, for twenty-nine in number, to an average of barely 20 guineas, and nothing over 30 guineas."

Mr. Marjoribanks, formerly quite prominent as an English breeder of Short-horns, has turned his attention of late years to Alderneys in their stead, and held a public sale of the latter breed at Bushey, Sept. 25th. Forty-one cows and heifers averaged a little over 34 gs. each, and four bulls 27 gs. These prices, we infer, were considerably below the expectations entertained, but it is said that the cattle were coarse, an effort having been made to breed a herd to carry more beef, and all of one color, instead of expressly for milkers. We believe that this was considered the most prominent herd of Alderneys in England.

AN ORIGINAL METHOD.—The Mennonite settlers in Manitoba do some queer things. One of them the other day, we are informed by the *Winnipeg Free Press*, purchased in the neighborhood of the city, a bull, a cow and a calf. He tied the tail of the bull to the horns of the cow, and the tail of the latter to the neck of the calf, then tying a rope to the horns of the bull, he fell in front and commenced to tow. The scene was intensely ludicrous to spectators, but the proprietor of the cattle seemed to think it was all correct.

A NEW FLOUR.—A new flour is making its appearance in eastern markets, made away in the interior of Minnesota by what is styled the "new process for purifying middlings," a process thus far kept secret. This flour is heavily bodied, and of such consistency that when thrown into the air it does not fly off in particles, but descends into the hand in a mass. It requires one-third more water in mixing than in ordinary flour, and in kneading it into dough more labor is required. The bread, it is claimed, will remain fresh for a long time. The yield to the bushel of grain is not known. It is claimed that by the "new purifying process" it has been found in Minnesota that spring wheat can be made into the highest priced flour, and that the same can be done with the other kinds of wheat. There are now about twenty mills in Minnesota in which the new machinery has been introduced.

WHERE TO GO when short of money—go to work.

LAND in Ireland is reported as rapidly advancing in value under the new Land Act.

CHEESE to the amount of seventeen million pounds was shipped from Montreal in 1873. The amount so shipped in 1872 was under thirteen millions.

HIGH PRICED DEVONS—Wm. Mattoon, of Springfield, Mass., has recently sold a yearling Devon bull and two Devon heifers for \$1,000.

A CAT SHOW has just been held at the Crystal Palace, England. There were 287 entries, the total number of cats being 350. The heaviest cat exhibited weighed fifteen and three-fourth pounds.

IT IS AFFIRMED that sixty-three per cent. of all the persons who applied for assistance at the various benevolent institutions in Boston last year were impostors, while many were swindlers and professional burglars.

GOOD SHORT-HORN COW.—The first prize milch cow at the late Ohio State Fair was a five years old Short-horn, which gave 406 lbs. of milk in seven days on grass alone; the milk making 14 lbs. 13 oz. of butter.

AUCTION SALE OF THOROUGH-BRED STOCK.—The sale of thorough-bred stock, the property of Mr. R. Miller, Peckering, and Mr. Geo. Thompson, Mayfield, Whitley, took place on Thursday, the 15th ult., on the Whitley Fair Grounds. Good prices were realized.

IN SWITZERLAND, of the entire population of 2,400,000, only 500,000 have no landed possessions. About one person in twenty lives by alms, while in England there is one to every eight, and in France one to every nine.

THE FIFTH CINCINNATI EXPOSITION closed Saturday night after twenty-eight days exhibition, 554,000 persons having visited it. The receipts were \$69,000, exclusive of receipts from the sales of privileges, which amounted to several thousand more.

In a single county in Vermont there are ninety-five farms vacant, and one hundred and thirty-six abandoned farm-houses. Lack of railroad facilities is the cause assigned for the wholesale exodus of farmers.

AT THE ILLINOIS STATE FAIR a fleece of wool, from the flock of Mrs. K. Blacore, Centreville, Cal., weighing 5½ lbs., was exhibited. Its age is not stated, but a committee was appointed to find out how much wool there was in it, less the grease.

LARGE YIELD OF MILK.—A grade Durham cow, six years old, owned by E. P. French, of Bedford, New Hampshire, is said to have given 2494 quarts of milk of good quality in 100 days, ending August 25. Two other cows in the same town are said to have averaged 22 quarts each per day for three months.

THE LATE INTERNATIONAL EXHIBITION AT BREMEN.—This was a financial success, as after paying every expense there was a balance of 20,000 marks left in the hands of the committee, which will probably be presented to the committee of Burger Park, where the exhibition was held.

FRANCE consumes annually 43,000,000 pounds of smoking tobacco, 8,000,000 pounds of cigars—say \$50,000,000 in number; 17,000,000 pounds of snuff; 1,500,000 pounds of chewing tobacco, and 1,000,000 pounds of roll tobacco, which is either smoked, chewed, or snuffed.

THE BENGAL CHAMBER OF COMMERCE remark, in their last report, that the growth of the tea industry of India has been almost unexampled in the history of its trade. The value of tea exported from Calcutta has increased from \$1,150,000 in 1863-64 to \$8,500,000 in 1873-74. The economic effects of the industry have not yet, however, been fully examined.

PRICE OF STRAW IN SCOTLAND.—Straw will be very scarce during the coming winter and spring over the most of Scotland. Prices have already risen considerably, and it is supposed the maximum figure of the year has not yet been reached. For good oat straw 9d. per stone is being already paid in different parts of the country. At Aberdeen last week, Mr. Duncan, cattle salesman, offered 8½d. per stone for a large quantity of straw. His offer was refused.

WITH A LAUDABLE EFFORT at self-help, the little Island of St. Helena has lately got up a horticultural exhibition "under distinguished patronage," which is reported to have proved a decided success. Vegetables and all sorts of garden produce, the inevitable yams included, were shown in abundance; the fruit, fresh and preserved, is stated to have been very good; bee-keeping and the poultry-yard were also represented, although the latter is admitted to have been the weak point of the show.

## Breeder and Grazier.

### The High Price of Meat.

There can be doubt that the continued high price of meat, both at home and abroad, is beginning to attract considerable attention, and the fact offers an extra inducement to our farmers to raise better stock and more of it. These high prices are caused of course by an increasing demand. The population of all our principal cities has been very largely augmented within the past few years, and not only of the cities, but suburban towns and villages as well. The last census showed that we had then to feed a population throughout the Dominion of about a million more than we had ten years before. Similar remarks apply to Britain and other European countries which have now, do what they will, to import large herds annually to supply their home consumption. It is in view of this fact that a Canadian Company has recently been organized in Sherbrook, Quebec, for the sole purpose of purchasing and slaughtering Canadian cattle, and shipping the prime joints to England. That company, it is expected, will employ over two hundred hands, and slaughter four hundred animals every week.

Since Confederation too, our animal exports have more than doubled, as may be seen from the following:—

Year.	Value of Exports.
1868.....	\$ 6,893,167
1869.....	8,769,407
1870.....	12,138,161
1871.....	12,582,925
1872.....	12,416,613
1873.....	14,243,017

From this it may be pretty safely averred that at no distant period the value of our stock exports will be considered of greater importance than that of the exports of grain and other produce of the farm.

In 1873 alone this Dominion exported 25,637 head of cattle, 5,335 hogs, and 315,832 sheep; whilst the imports during the same time were 2,757 head of cattle, 6,000 hogs, and only 5,770 sheep—showing thus a money-value difference in favor of our exports of \$1,504,858, and this not taking into account at all horses or poultry, which again show a difference in our favor of \$944,614. With a continuation of such a traffic—and it not only continues but increases as we observe from year to year—meat must still rise in price. It therefore behoves our agriculturists to turn their attention more rigidly than ever to stock farming. Many portions of Canada are admirably adapted for it, and with good stock, well tended and provided, we see nothing to hinder our farmers to enrich themselves and benefit meat-hungry humanity at one and the same time.

### Productiveness of Corn for Fodder.

The severe drought of the past season will have a tendency to induce farmers, and especially such of them as are to any extent cattle breeders, to cast about them for something more reliable than the grass which "springeth up" only to "wither in an hour."

We have frequently recommended, in these pages, the use of corn for fodder, giving at the same time ample directions as to its culture and manner of curing; and it is gratifying to know that all those who have practically tested the matter are, so far as we are able to learn, abundantly satisfied with the result. It is from a full conviction of the importance of the subject, that we thus give "line upon line," and although the article which we are about to quote may in some respects be considered somewhat out of season, the facts given are well worthy of being stored away for future reference. The writer, a correspondent of the *Farmer's Union*, says:

Few wide-awake, practical farmers at this day

doubt the value, for all kinds of stock, of corn, sowed or planted, for feed; but few, I think, are aware of its great productiveness. For several years I have weighed the crop from small areas and with almost identically the same results. I will state, in short, the conditions and the result of one year's experimenting.

One-third acre was planted in drills, about two feet nine inches apart; one bushel of seed used, a large kind of dent, scattered a little and covered with the hoe. Planted it the first week of June, on good land in fair condition for a corn crop. It was somewhat weedy, but weeds were kept down by cultivating three times, when the luxuriant growth so shaded the ground that no weeds could grow. In fact, corn planted and cultivated in this way, is a sure exterminator of any weed, however pertinacious or pig-headed. Even witch grass had to wilt, as I found years ago in the east. In August the growth was heavy, but by no means extraordinary. I have, in other years, raised a heavier burden. After reaching its full growth, but while yet green, I cut and bound in bundles the product on exactly one-half a square rod in two different places of the tract, and immediately weighed each lot. The green weight in one case was 189½ pounds, or almost exactly at the rate of thirty tons to the acre. Weighed each lot two or three times a week for three weeks. The first three or four days it lost nearly one-half its weight. The last week showed very little loss; two last weighings none at all, though fine weather. The first lot showed at last weighing seventy-six and one-fourth pounds. The second lot weighed seventy-four and three-fourth pounds. Total loss of weight was three-fifths of the green weight, the dried product being two-fifths of the weight when green. Yield per acre, twelve tons of the dried crop. I have in other years found the per cent. of the weight of the dried product to the green, to be uniformly almost exactly forty per cent.

Its value for feeding purposes has been variously estimated; but every practical stock man knows, who has tried it when well grown and cured, that horses, cattle, sheep and hogs all love it and thrive upon it. East and west its use is rapidly increasing year by year by the best dairymen and stock feeders. I believe from experience of years, that its feeding value in winter, when grown as above described and well cured, is equal to the best hay, ton for ton, and far superior to the wild hay a large proportion of the animals of the west have set before them. Its very great value as green feed in summer and autumn is now so generally admitted that most enterprising farmers have a patch of it. But if the product of one acre of corn fodder is equal to six acres in heavy grass; or if one hundred tons of good corn fodder can be grown on eight and one-third acres, and equal in value to one hundred tons of hay grown on fifty acres, is it not an object for farmers to know it? Or if six times the stock, making six times the manure, can be provided with winter food from the same farm by raising fodder corn rather than hay, is there not money in it? Roots are the great stay and dependence of the English for the growth and fattening of stock. Must not our great stay and dependence be corn fodder and corn.

### Care of Team Horses.

The following good advice to teamsters has been published in the form of a poster, and sent out by the Massachusetts Society for the Prevention of Cruelty to Animals. It is signed by Daniel H. Blanchard, and endorsed by several veterinary surgeons, agents of railway and express companies, and by Charles A. Currier, special agent of the society:

Potatoes or carrots may be given once or twice a week, to good advantage.

See that your horse is kept clean, warm, and comfortable, with plenty of bedding.

A piece of rock salt should always be left in the manger.

See that his harness is kept soft and clean, particularly the inside of the collar, which ought always to be smooth, as the perspiration, when dry, causes irritation, and is liable to produce galls on the shoulder.

The collar should fit closely, with space enough at the bottom to admit a man's hand. If too large it has the bad effect of drawing the shoulders together.

On no consideration should a team, or any work horse, be compelled to wear a martingale, as it draws the head down, and prevents him from getting into an easy and natural position.

The check rein may be used, but only tight enough to keep the head in a natural position, and it should never be wound around the hames.

See that the hames are buckled tight enough at the top to bring the draught-line near the centre of the collar. If too low, it not only interferes with the action of the shoulder, but gives the collar an uneven bearing.

Caution should be taken that the girth is not buckled too tight, particularly on the strong teams, for when the traces are straitened, it has the tendency to draw the girth against the belly, and distress the horse.

See that the horse is kept well shod, with a good stiff shoe, always calked at the toe and heel on hind foot, as it is there where all the propelling power comes from when heavily loaded.

Keep the feet good and strong by not allowing them to be cut away too much by the blacksmith.

The best of judgment should be used in loading, taking into consideration the condition of the street and the distance to be travelled.

Never overload, for by so doing you only distress, strain, and discourage your horse, and do him more injury than you can possibly gain by carrying the extra load.

When your load is hard to pull, stop often, and give your horse a chance to breathe.

No good driver will ever resort to the cruel practice of whipping or beating his horse. A light whip may be carried, but there is seldom use for it. Much more can be accomplished by kind treatment and good judgment.

Remember the horse is a very intelligent, proud, sensitive, noble animal, the most useful known to man, and is deserving of the greatest kindness.

### A Model American Merino.

At a meeting of the South-Eastern Wisconsin Sheep Breeders' and Wool Growers' Association, the secretary, George Lawrence, jr., of Waukesha, presented the following as his idea of a model or standard of perfection of an American merino:

No. 1. Carcass.—Unquestionably the first point to be regarded, because on the proper constitution or proper structure and connections of its parts depend the health, vigor, and hardiness of the animal. Plump, good size for the variety; the body should be round and deep, not over long, and both the head and neck short and thick. The back should be straight and broad; bosom and buttock full; legs not over long, well apart, straight, and strong, with heavy forearms.

No. 2. Folds.—Good, heavy neck folds, particularly on the ram; a short fold or two back of the elbow, and some small ones round the roots of the tail and on the breech, the latter running in the direction of lines drawn from the tail to the stifle; and a good deep flank.

No. 3. Fleece.—The body and limbs should be densely covered with wool of as uniform a length as attainable; the wool should stand at right angles to the surface; except on the inside of legs it should present a dense, smooth, even surface, externally dropping apart nowhere. Density and heaviness the leading considerations.

No. 4. Evenness of fleece.—Evenness of quality in every part of the fleece, so far as this can be attained, is one of the first points of a well-bred sheep. Fur is objectionable, and is the indication of bad blood, or a defective course of breeding.

No. 5. Fineness and softness of fibre.—Wool should be of equal diameter from the root to the point of the fibre. Wool is said to be sound when it is strong and elastic.

No. 6. Style of fleece includes the combination of useful and showy properties, which gives value to choicest wool, viz: fineness of color, lustre, uniformity and beauty of curving, and that particular mode of opening on the body which indicates pliancy and softness.

No. 7. Yolk.—A liberal quantity of yolk in its most fluid form, and a moderate quantity of external gum; but neither in excess, to spoil the value of fleece.

No. 8. Head.—The head should not be over long, with a good foretop, descending in a curve on the nose a little below the eyes, circling around the eyes a sufficient distance, so as not to obstruct the eyes; should be of good length and dense, and the wool standing at right angles with the forehead. The ears should be small, coated with thick, soft, mossy hair about half way to the roots, so as to give a feeling of thickness and softness, and the remainder of the outer surface should be covered with wool.

No. 9. Legs.—Should be well covered to the hock with wool of even quality, good length, and standing at right angles with surface. The armpit and scrotum are necessarily bare, but these cavities should be as small as the freedom of movement will permit.

No. 10. Belly.—Densely, well-covered belly, with wool of equal length, and equally as good in quality as any part of the fleece.

### Short-horn Blood in America.

Just before the sales of Messrs. Coffin, Parks and King, last spring, one or more of the English agricultural journals, in noticing the catalogues of the herds to be offered, plainly intimated that English buyers might be in better business than purchasing Short-horns in the United States. The home supply was ample—their readers were informed—and the result of these distant purchases would be, at best, but problematical. In response (says the *Country Gentleman*, from which we quote), we took occasion to express the belief that the Short-horns thus far carried to England from this country had invariably brought a very large profit to their buyers, and that the English bidding at New York Mills was due "almost as much to the success of previous importations from America, as to the demand for Duchesne blood." If such was not the case, we asked for a correction—which has never come.

In lieu of a reply in words, however, we have the response afforded by Mr. Cheney's recent sale—"the first occasion," says the *London Field*, "on which the offspring of the recent re-importation of fashionable Short-horn blood from beyond the Atlantic constituted the main feature of the day." Of 27 lots, the sires of 24 and the dams of 11 were bred in America; general result, an average, throughout, nearly £50 higher on each animal than had ever been reached before in Great Britain—even at the very extraordinary sales of the preceding fortnight!

### Bearing Reins.

Some people have an idea that it is more difficult to drive horses without bearing reins and sharp curbs, especially in crowded streets, than which nothing can be more mistaken. I will state my own experience. I have never allowed bearing reins to be used on my horses either in town or country. My present London coachman, who had been always used to drive with tight bearing reins, thought at first he might have some difficulty in driving without them and with plain easy bits, but he soon found the horses are much easier to guide and can be pulled up quicker. Their attention is fixed on their work, and not distracted by pain and the terror of the whip.

One of my horses I bought nearly five years ago, for a mere trifle, with the character of being a roarer, jibber, and rearer. The coachman told me I should never be able to drive him. The roaring soon ceased after the bearing rein was taken away, and by altering the harness so as to make it easy, he soon became a perfect animal, and I would not take any money for him. I now drive with him a young horse who has only been a few times in harness, but by not having had his mouth and temper spoiled by curbs, sharp bits, and bad driving, he is perfectly tractable, and they both obey the slightest touch of the reins. I am constantly receiving letters from people who have left off the barbarous, senseless method of driving, with the same satisfactory result, many in high rank among the number. The custom is rooted in the hard rock of fashion and ignorance, but when understood, it must give way to public opinion, good sense and humanity. Let it be done speedily.—*Cor. Daily News.*

### Berkshire Swine.

M. H. Cryer, of Massillon, Ohio, a successful swine breeder, says: Black swine are the native swine of the south of England, and whatever breeds they may be crossed with, the pure bred Berkshire hog of the present time is infinitely superior to any other black breed. Pure Berkshire hogs should be a jet black in color, with a thick set coat of fine black hair, but choose one with coarse hair rather than one that is short of hair. White is allowable on tips of ears, feet and legs, face, nose and tail, but not too much white, as they are always a black breed, and plenty of hair denotes a good constitution. Choose a Berkshire with short prick ears (some famous ones have slouch ears) and as short a face as possible, with broad back, carrying its width back well over the hams (it is much easier to breed them broad over the shoulders than hams) and by all means they should be deep in heart place (from top of back just behind the shoulder) level and smooth all over; in fact, as near a hewn block as can be.

**SHORT-HORN BREEDERS' ASSOCIATION**—The next meeting of the American Association of Short-horn Breeders will take place at Springfield, Ill., Dec. 2, 1874. B. H. Campbell, Batavia, Ill., is secretary of the association.

### Marketing Cattle.

There has one time or another been a great deal of both humane and common sense, and sound business principle violated in the treatment of cattle, from the time they leave the country to be sent to market until they are disposed of. Sometimes they have been treated to an excessively large feed of corn, so as to heat them up and make them drink water excessively, thus giving the seller good weights when the animals are sold. Sometimes they have been well salted for the purpose of stimulating the drinking process. Sometimes cattle have arrived at our yards after a good long run on the cars, and have been ordered off from water and kept on dry hay, and sometimes corn, until Monday morning, when they are expected to drink an amount of water that will weigh at least 50 or 60 pounds per head against the buyer. Quite a number of cattle, one time or another, that have been thus treated, have died in the yards, or before they reach the eastern market after being shipped from here. All abuses of this kind need reformation, for the very good reason that it is both inhuman and impolitic to treat dumb animals in this way. Honesty is the best policy; every good cattle buyer knows at a glance just the condition that cattle are in for weighing, and he will always make his price accordingly—so that in nine cases out of ten, while the owner of cattle treated in the manner referred to may congratulate himself on having gained 50 to 60 pounds per head in the weight of his lot, the buyer has really taken the difference off in the price he has given, just as he ought to do in every case of the kind.

Cattle should always be fed regularly and fairly from the time they leave the country until they are slaughtered for consumption. Humane principles require this policy on the part of the owners, and it is requisite for keeping the meat of animals in perfect health and in its normal juicy condition for human food.—*Drovers' Journal, Chicago.*

**ABANDONMENT OF SHEEP-RAISING IN THE SOUTH.**—At various points in the south our correspondents speak of the destruction of sheep by that chronic nuisance, worthless dogs, as increasing to such an extent that sheep-raising has been measurably abandoned. Our correspondent in Elizabeth City, Va., especially deplors this destruction, as that section of the country can hardly be excelled either in the weight of fleeces or quality of mutton produced.—*Agricultural Report.*

**THE Journal of Commerce** gives the following simple receipt for the prevention of flies on horses:—Take two or three small handfuls of walnut leaves, upon which pour two or three quarts of cold water; let it infuse one night, and the next morning pour the whole into a tea-kettle, and let it boil for a quarter of an hour. When cold it will be fit for use. No more is required than to moisten a sponge, and before the horse goes out of the stable let those parts which are most irritable be smeared over with the liquid merely: between and upon the ears, the neck, the flanks, etc.

**A PROSPECTUS** has been issued of the Live Cattle Importation Company (Limited), with a capital of £200,000, in 40,000 shares of £5 each, to import cattle and other live stock from America and elsewhere. The difficulty of transport has been met, it is said, by the system of tween-deck fittings, introduced and patented by Mr. F. H. Relph, which are represented to be at once simple and inexpensive, and can be made available for any class of vessel at short notice. An unlimited supply of animals, we are told, can be obtained on the coast of Texas, at from 50s to 60s per head, and the cattle, it is calculated, will find a ready market here at £16 and upwards. It is proposed to purchase, charter, or build two or more steamers especially adapted for the ocean cattle trade.

**DO ANIMALS COUNT?**—It argues higher power, than some people give them credit for if they do and as a question of fact a correspondent of the *Advance* offers this testimony: "A gentleman of New Orleans says the mules on a certain street railway are changed on the fifth round, and seem to recognize the fact by a whinny on approaching the terminus at the last round. An acquaintance of mine in Pennsylvania, who manufactures flour in large quantities, and drew it from the mill to the railroad station with the same team and same wagon, always loading the same number of barrels, found that his horses counted as accurately as his men; they would start off upon the instant that the last barrel of the load had settled itself into its place, and never before, and no attempts to cheat them by stopping one or two short of the number and waiting, or leaving the wagon, would ever succeed."

**PEDIGREE OF ENGLISH SHORT-HORN BULLS TO WHICH AMERICAN SHORT-HORNS TRACE.**—This volume, prepared by Mr. Lewis F. Allen, editor of the American Short-horn Herd-Book, contains the names and pedigrees of all the bulls (6,699 in number) recorded in the first four volumes of Coats's English Short-horn Herd-Book, together with some thousands of such other bull pedigrees, selected from the succeeding volumes, as will enable American breeders to trace the genealogy of their cattle back to the fountain head. The work also contains a supplement, in which are transcribed the pedigrees of American numbers of Canadian bulls occurring with Canadian numbers only, in Vols. IX., X., XI. and XII of the American Herd-Book. The value of such a compendium is inestimable, and a copy of the work should speedily find its way into the hands of every Short-horn breeder in the country.

**KEEPING BELLS ON SHEEP.**—Dogs that are disposed to kill sheep know better. Hence any unusual noise, like the ringing of a bell, whenever they are about to attack the sheep frighten them so that they abandon their bloodthirsty project. R. W. Mathewson, of Connecticut, writes to the *Country Gentleman* as follows:—"The effect of the bells in preventing damage to sheep by dogs has been well proved in this vicinity the past season. Of fourteen flocks without bells but one escaped; in five flocks with bells on each sheep no damage was done. M. D. Fowler, of Middlefield, had a flock partially belled, and lost but one sheep, which strayed into another lot, was without a bell, and was killed. Mr. A. E. Coe bought a flock and put it in a lot adjoining the former, and soon found two dogs at work at the forty-fifth sheep. The dogs belonged within a quarter of a mile, and passed Mr. Fowler's sheep in getting into Mr. Coe's flock. Dogs after getting the taste of blood of unbelled sheep may attack sheep with bells on; yet I believe if all the sheep were belled, trouble from dogs would be very rare."

## Veterinary Department.

### Flatulent Colic in Horses.

During the fall months horses are often affected with flatulent colic, which proceeds from derangement of the digestive organs. A very common cause is giving new oats in rather large quantities, and putting the horse to hard or rapid work immediately after feeding. It is also readily produced by feeding largely after a long journey when the system is somewhat weakened. Exposure to a cold draught when the animal is in an overheated condition may also bring about an attack. The symptoms of this complaint are well marked, and the disease in the early stage can be easily distinguished from an attack of inflammation of the bowels.

The horse begins to show his uneasiness by pawing with his fore feet, and turning his head towards his sides; the abdomen and flanks appear distended, which shows the true nature of the complaint. As the pain increases the horse throws himself down and rolls violently, and in some cases will endeavor to lay upon his back for a short time; he will again get upon his feet, but still show a great degree of restlessness; the pulse is but little affected, but the breathing is increased, owing to the distended condition of the stomach and bowels interfering with the action of the diaphragm. If relief cannot be afforded the pain increases and the symptoms become still more violent; the belly becomes fearfully distended, and death may result from rupture of the bowels, or during the extreme paroxysms the diaphragm may give way, or asphyxia may be produced.

Flatulent colic is best treated by giving a good stimulant and anodyne, as sulphuric ether, one to two ounces, laudanum one ounce, to be given in a pint of cold water; the body should be kept warm and the abdomen well rubbed. Injections of soap and water should also be given every half hour. In

severe or prolonged attacks, the above remedies may be advantageously combined with a pint of raw linseed oil in place of water. Blood-letting is often resorted to, and although occasionally beneficial in cases of inflammation of the bowels, in flatulent colic it is highly objectionable, and many a valuable animal is lost through this mode of treatment.

Many other remedies may be used, such as chloroform, sweet spirits of nitre, and the preparations of ammonia, but we have just recommended those that are easily obtained and have proved highly efficacious.

### Mange in Horses.

This disease is produced by an insect, *Acarus equi*, of the same family as the itch insect in man. Mange is highly contagious. Every other animal in the stable should be removed and closely watched. The slightest contact, or the use of the same cloths, brushes or curry-combs will carry the disease. This *acarus*, when viewed under a microscope, has eight legs, curling cup-form, which enables it to adhere. They burrow under the epidermis or scarf-skin. The cure is seldom effected without recourse to medicine. The horse must be fed with cooling food, bran mashes, and sound hay and oats.

If the animal is in good flesh, give twelve ounces of Epsom or Glauber salts, dissolved in a pint and a half of warm water to be given when cool. Then take of powdered mandrake, sulphur, cream of tartar and saffras, each two ounces; rub them thoroughly together; divide into twelve parts, and give one night and morning in the feed.

Wash the animal thoroughly with strong soap suds; or, better, with a suds made of chrysolite soap; then sponge the surface with lime water and, when dry, anoint by means of a sponge, with the following:

Four ounces of pyroligneous acid; three ounces of linseed or lard oil; one ounce spirits of turpentine; and one ounce flowers of sulphur. Put all into a bottle and shake thoroughly before using, rubbing it in thoroughly. Apply once a day, for three days; then wash as before directed, and again apply, and so until a cure is effected, keeping the animal warmly clothed all the while.

Every portion of the stable, manger, rack, etc., must be washed with strong soap suds in which an ounce of carbolic acid crystals to each gallon has been dissolved; after which every portion should be washed with a lime wash in which carbolic crystals, in the proportion of one in a hundred, have been dissolved. All the clothing, curry-combs, etc., must be thoroughly cleaned in boiling soap suds, in which an ounce of carbolic acid to each gallon has been dissolved. The harness, halters, etc., must be taken apart and washed with the same preparation as hot as the hand can bear, and thereafter thoroughly fumigated by hanging in a close place, over the fumes of burning sulphur.

It would be well to keep, for a considerable time, a mixture of half a pound of sulphur in a pint of oil of tar, and rub thoroughly in any parts that may be suspected, washing it off every third or fourth day with warm soap suds.

Horses affected will give this itch to cattle, and dogs will give it to horses. Therefore, we have been thus explicit in directions for cure; for once in the stable, it will never be eradicated without the most thorough means to this end.—*Western Rural*.

### Will Blood-Letting Again Become Popular?

Sir James Paget, at the Norwich meeting of the British Medical Association, gave an account of his early experience of blood-letting; and he related how he was wont to bleed a score of people on a market day for various aches and pains, for imaginary evils, for securing better health; and he further declared that he did not know that any bad effects resulted from the practice. Dr. B. W. Richardson, following up the subject, has since presented various communications to the *Medical Times and Gazette*, and cites interesting cases illustrating the power of blood-letting to overcome apparently fatal congestion and save life in various desperate cases. From the spasm and unconsciousness of sunstroke occurring in the reaping field Dr. Richardson records the case of a man promptly brought round by the drawing of a quart of blood. A woman stunned by a fall was similarly restored. Very striking are the Doctor's observations on blood-letting in antagonising insensibility, caused by lightning shocks. Sheep subjected to the full force of the great induction coil at the Polytechnic are instantaneously struck down motionless and unconscious. Indeed, unless some means of

resuscitation are promptly had recourse to, life speedily is gone. But when the unconscious experimentally lightning-stricken sheep are assigned to the butcher to be made the best of, the blood at first trickles away very slowly from the opened vessels. By and by the current runs more freely, and soon consciousness and abundant evidences of vitality appear. Hence it is fairly inferred that bleeding is the fitting remedy in all animals for lightning shocks. Another typical case: A gentleman suffering from influenza was exposed to cold, and extreme pneumonic congestion followed; breathing was labored, difficult and occasionally convulsive, the face bronzed, the pulse hard, the mind wavering. Free bleeding at once immediately brought the patient out of danger. A young strong man suffering from inflammation of the lungs, brought on by sitting for hours in wet clothes, was similarly relieved. Dr. Richardson recounts several cases of severe pleuritic pain effectually and permanently put to flight by venesection. Coma and pleuritic cases are also reported cured by the same potent old remedy.

In veterinary practice, blood-letting, once much too generally and rashly used, has, we suspect, been also unreasonably superseded. So seriously has fashion tabooed the lancet that few legitimate practitioners now think of using it. And yet there are certain cases in which it is more prompt and certain than any other remedy. In many bad cases of laminitis, an early abstraction of blood saves much pain and risk of chronic mischief. The same may be said of the more acute cases of weed or lymphangitis, when the pulse is fierce and strong, the temperature high, the groin so intensely tender that the poor brute limps as if with a broken leg. For such cases Professor Dick was apt to order the fleams and the blood cure; half a gallon of blood drawn from the jugular vein twenty years ago never seemed to do harm; prompt relief certainly rapidly followed, and permanent thickening of the limb probably was prevented partially or even entirely. Acute congestion of the lungs, brought on in strong young horses by sudden exposure to cold, or even by over-exertion, often yields to a moderate bleeding. In these and other such cases immediate effects are secured—such as can severally be attained by any medicals. In the case of so potent a remedy, the practitioner, however, requires to exert great discrimination.—*N. B. Agriculturist*.

"ARGUMENTUM AD HOMINEM!"—*Horse-Dealer*—"I know you don't like his 'ead, and I allow he ain't got a purty 'ead; but ler'—now look at Gladstone, the cleverest man in all England!—and look at 'is 'ead!"

THE TEXAS CATTLE FEVER is said to have made its appearance among stock at Springfield, Mass. A drove of Texas cattle caused a fever of excitement in the streets of New York City on Oct. 4. Ten bullocks were killed by the police before the fever abated, and sundry citizens and citizenesses were tossed about and injured.

ITCHING TAIL.—A "Blenheim subscriber" states that a colt belonging to him has contracted a habit of rubbing his tail against the sides of the stall to such an extent, that the appendage is almost entirely denuded of hair.—(If the itching arises from a mere affection of the skin, as is most likely the case, an application of kerosene, injected through the nozzle of an oil-can, will allay all irritation, and ultimately effect a cure. The application need only be used in one or two places, as, being of a spreading nature, it will speedily extend over all the parts affected.)

EFFECTS OF STARVATION.—In parts of Belgium (as in places nearer home) small farmers, when pinched for food, condemn their stock to a dietary during the winter season composed almost exclusively of straw. It is not surprising then to learn that the animals soon become feeble, experience a difficulty in raising themselves up, and finally the absolute inability to do so. At this stage the tail becomes flabby and nearly lifeless; some neighbor or quack arrives, pronounces the animal affected with the "wolf," and, to cure it, makes a longitudinal incision at the end of the tail, and extracts triumphantly some fibrous filaments. The real malady is an empty stomach, and not the spinal marrow softening at the end of the tail, which will soon extend to other parts of the body and destroy life. It is stimulating and nourishing food the beast only stands in need of. In the same districts, when cattle lose their appetite, the same quacks attribute the matter to loosened teeth—the incisors are naturally always more or less loose in their sockets—and proceed to cruelly hammer down the teeth as if they were nails; another horrible "cure" is to cut the little fringes that protect the openings of the salivary ducts, to induce appetite.

## The Apiary.

### House Early.

Our experience inclines us to advise all bee-keepers who practise in-door wintering, to put stocks into winter quarters early. Especially is it the part of wisdom to house them, when we are threatened by one of those unusually cold snaps to which we are liable in the month of November. We have repeatedly witnessed the destructive effects of a thorough chilling of a stock of bees by premature cold. When once a colony is thus chilled, it seems to feel the bad consequences all winter, and will come out weak and struggling next spring if it manages to survive so long.

Early housing is essential to the preservation of feeble colonies. A comparatively moderate amount of cold will prove fatal to them. We have often been surprised to find such stocks left stiff and stark by a short visitation of by no means severe weather late in the fall. It is best not to have your stocks feeble. Wise policy would dictate uniting two or more such stocks. But it is not always possible to avoid having weak stocks, and when you cannot help having them, the next thing to do is to take all possible care of them.

On the whole, we are convinced that bees will stand a little longer confinement in winter quarters far better than they will exposure to cold.

### The Bee Season in North Britain.

Mr. G. Campbell, New Pitalip, North Aberdeenshire, writes an interesting account of the bee season in the northern part of Aberdeenshire, to the *Bangor Journal*. He concludes, as will be seen from his communication, that the results on the whole are good; the end of August being nominally the conclusion of the honey harvest. He is in favor of the Alpine bees when sufficient space is allotted to them.

The season just closed has been to the bee-keepers remarkable for its variety, but, as the results will shew, has been good as a whole. May was cold and dry, with high winds; and June continued the same up to the 20th, when it may be said the bee season began. Favorable weather then set in, and honey was so abundant that hives then at the point of starvation were heavy by the 1st of July. Swarming commenced with the hives that had been regularly fed, as soon as the weather set in fine, but those that were left entirely to their own resources did not swarm till the first and second weeks of July, which may be said to have been the principal swarming weeks this year. The swarms progressed rapidly all the month of July, but the first of August brought wet weather, which continued for some time, and the white clover went clean off. From the first to the 17th of August, the hives lost weight rapidly, some of the stronger ones about 2 lb. a day. On the 18th they began to make weight again from the heather, and continued to increase till about the first of September, when the bee season terminated. The hives are heavier than last year by an average of about 20 lbs. I sold the queens of all my top swarms after they had been about a fortnight hived, except one of the 15th June, so that by stopping their breeding in the early part of the season, they were short of workers when the heather came in. I therefore send the weight of the hives of my neighbor, Mr. Duffus, as they have been entirely left to themselves. He kept four hives as stocks last year. All came through the winter well, save a little damage two of them sustained by being blown over in spring. However, he had eight swarms from the four. On 1st September the top swarms were weighed, and the result was 95 lb. each for the two highest, 104 lb. for another, while the heaviest one was 128 lb. Mr. Cardno has one swarm, which weighed 109 lb. the same day. The four swarms I had from one hive were likewise weighed. The top swarm was 126 lb.; second, 71 lb.; third, 47 lb.; and fourth, 36 lb. The parent hive weighed 93 lb.; being the same weight it was last year. After another year's experience, I am still of opinion that the Alpine bees are superior to the common variety, if they have plenty of hive accommodation; but if kept in small hives, they use all their combs for breeding, and have no room to store honey.



PASSENGERS WANTED:—A wagon will start for New York city in about two weeks. Five passengers will be accommodated at \$25 each. — Cincinnati paper, 1874.

"Yes, Job suffered some," said an Illinois deacon, "but he never knew what it was to have his team run away and kill his wife right in the busy season, when hired girls want three dollars a week."

THE LITERARY TALENT of the country, says the Buffalo Express, is wrestling with the problem, "What is the plural of Daddy Longlegs? Is it Daddies Longlegs, or Daddy Longlegles?"

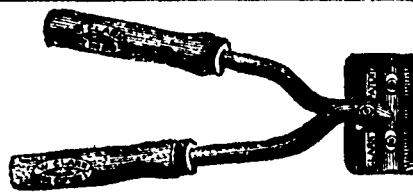
A PEACH STEALER.—A Worcester boy was engaged in nocturnal peach-stealing a short time ago, and was observed by the owner of the fruit, who, unnoticed, by the young robber, placed a large stuffed dog at the foot of the tree, and retired to watch the result of his strategy. The boy, descending, observed the dog, and then the fun commenced. He whistled, coaxed, threatened, unavailingly,—the animal never moved. And finally the youth, accepting the inevitable, settled down to passing the night in the tree. After some hours had passed wearily enough to the lad, morning dawned, and the proprietor of the tree, coming from the house, asked him how he came to be in the tree. To which the boy answered that he took to it to save himself from the dog, who had chased him for a long distance.

SOME LADIES in Texas were desirous of doing honor to the editor of the local journal, so they presented their hero with an embroidered shirt, which contained a splendid history of Texas, and also pictures of the fruits and cereals of the State, worked all over in red worsted. Now this particular editor had never worn a shirt, and supposed the brilliant specimen to be a banner for an approaching procession. In his speech of thanks he puzzled the lady donors by declaring that he would "fling it out for ever to the breezes of heaven, that they might kiss its folds, and till his hand palsied it should never be trailed in the dust." The ladies blushed, and regretted having made it too long. Being informed of the purpose of the gift, the editor wore it over his coat, to the edification of the boys of the town, who followed him in regiments, studying the history of Texas "behind his back." [It is quite evident from this that the "coming man," so long expected, has come at last.]

HIGHLANDERS have the habit, when talking their English, such as it is, of interjecting the personal pronoun "he" where not required, such as "The king he has come," instead of "The king has come." Often, in consequence, a sentence or expression is rendered sufficiently ludicrous, as the sequel will show. A gentleman says he has had the pleasure of listening to a clever man, the Rev. M. —, let his locality be a secret, and recently he began his discourse thus: "My friends, you will find the subject of discourse this afternoon in the first epistle general of the Apostle Peter, chapter 5th and verse 8th, in the words, 'The devil he goeth about as a roaring lion, seeking whom he may devour.' Now, my friends, we will divide the subject of our text into four heads. Firstly, we shall endeavor to ascertain 'Who the devil he was?' Secondly, we shall inquire into his geographical position—namely, 'Where the devil he was going?' Thirdly, and this is of a personal character—'Who the devil he was seeking?' And fourthly and lastly, we shall endeavor to solve a question which has never been solved yet—'What the devil he was roaring about?'"

A MAGIC MODE OF PREPARING SKELTON LEAVES. Get six ounces of washing soda, and dissolve it in two quarts of boiling water. Slack three ounces of quick-lime, and then pour this also into the boiling water. Let all boil together for fifteen minutes, then remove it from the fire; let it settle, and pour off the clear fluid. Pour this into a second clean vessel, and set it on the fire again. When it boils put in the leaves; let them boil for one hour; then take up one and throw it into a basin of cold water—rain water is best. If the epidermis comes off freely by rubbing the leaf between the finger and thumb, under the water, then all the leaves may be removed from the solution. When they have all been carefully freed from the epidermis, put them in a mixture of chloride of lime and water; about a wine-glass of chloride to a quart of water. Some leaves will take only ten minutes to bleach, others an hour or more. Let them be watched, therefore, for they may burn into shreds if steeped too long. When pure white, throw them carefully into a basin of cold water; from that float them out on slips of paper. When almost dry, put them in a book, to become quite dry and stiff; then they are complete.

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