

Technical and Bibliographic Notes / Notes techniques et bibliographiques

The Institute has attempted to obtain the best original copy available for filming. Features of this copy which may be bibliographically unique, which may alter any of the images in the reproduction, or which may significantly change the usual method of filming, are checked below.

L'institut a microfilmé le meilleur exemplaire qu'il lui a été possible de se procurer. Les détails de cet exemplaire qui sont peut-être uniques du point de vue bibliographique, qui peuvent modifier une image reproduite, ou qui peuvent exiger une modification dans la méthode normale de filmage sont indiqués ci-dessous.

Coloured covers/
Couverture de couleur

Coloured pages/
Pages de couleur

Covers damaged/
Couverture endommagée

Pages damaged/
Pages endommagées

Covers restored and/or laminated/
Couverture restaurée et/ou pelliculée

Pages restored and/or laminated/
Pages restaurées et/ou pelliculées

Cover title missing/
Le titre de couverture manque

Pages discoloured, stained or foxed/
Pages décolorées, tachetées ou piquées

Coloured maps/
Cartes géographiques en couleur

Pages detached/
Pages détachées

Coloured ink (i.e. other than blue or black)/
Encre de couleur (i.e. autre que bleue ou noire)

Showthrough/
Transparence

Coloured plates and/or illustrations/
Planches et/ou illustrations en couleur

Quality of print varies/
Qualité inégale de l'impression

Bound with other material/
Relié avec d'autres documents

Continuous pagination/
Pagination continue

Tight binding may cause shadows or distortion along interior margin/
La reliure serrée peut causer de l'ombre ou de la distorsion le long de la marge intérieure

Includes index(es)/
Comprend un (des) index

Blank leaves added during restoration may appear within the text. Whenever possible, these have been omitted from filming/
Il se peut que certaines pages blanches ajoutées lors d'une restauration apparaissent dans le texte, mais, lorsque cela était possible, ces pages n'ont pas été filmées.

Title on header taken from: /
Le titre de l'en-tête provient:

Title page of issue/
Page de titre de la livraison

Caption of issue/
Titre de départ de la livraison

Masthead/
Générique (périodiques) de la livraison

Additional comments: /
Commentaires supplémentaires:

This item is filmed at the reduction ratio checked below /
Ce document est filmé au taux de réduction indiqué ci-dessous.

10X	14X	18X	22X	26X	30X
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
12X	16X	20X	24X	28X	32X

THE CANADA FARMER

Vol. IV. No. 9.

TORONTO, CANADA, SEPTEMBER 15, 1872

NEW SERIES.

The Field.

Hints for September.

Clover Seed.

The clover crop will in all probability be a good one this year. The after growth has been particularly favored by genial showers and generally good growing weather.

But it must be remembered that the acreage is small, owing to the large amount of grass seed that failed last year. Therefore we think clover will be scarce.

Owing to light hay crops, many farmers are cutting their aftermath for fodder, this will still further reduce the clover seed crop of 1872.

We advise any who have a fair crop off clover to cut it this fall.

Of course a reaping machine with a self-rake is the most handy for securing clover for seed. Next comes any reaping machine. In default of one however, a platform made of sheet iron or of basswood, very light, affixed to the cutter-bar answers well. In this case it is necessary to have a man or boy following with a rake to rake the crops of the table into windrows.

Where there is a good growth of clover, we should advise great care being exercised in curing, as during the coming season the probabilities are, that even clover straw will be a valuable adjunct to the fodder barn.

But where the stalk is not worth securing for fodder, no fear need be entertained about wet, the seed will not suffer if it get wet and dry frequently, and indeed it will thresh all the better.

Great care must be exercised, however, to get it into the barn dry, for with stacking it is impossible to keep it dry without it is thatched or well covered with boards.

We next come to a short consideration of the fall sowing of

Winter Wheat.

Of course we believe in the drill; it de-

posits the seed more evenly and saves money in quantities per acre; but we think the shoulders of the drill need be very wide to bear all that is required of them.

We may rest assured that the use of the drill will make no difference, if the land be poorly prepared or the seed bad. Exercise great care that seed wheat be not musty.

On a nice mellow summer fallow, we think the way of sowing should be entirely governed by means at hand, for a good crop is certain under any circumstances. On lumpy land, by all means use the drill.

As a rule we believe in leaving a wheat field pretty cloddy, so that the fall benefit of the frost may be brought into play, in rendering the soil friable; but, where so left, we must make up our minds to harrow and roll thoroughly in the coming spring.

We should strongly advise, in Canada, getting all seed wheat in the ground by the 10th of September.

When sown early, it has a better chance of withstanding the severity of winter, while now-a-days, we need seldom fear so much snow as to smother it out.

If you furrow, don't make more furrows than can be helped, and make them shallow and very wide. Last year we made our water furrows narrow, and in consequence, the spring rains channelled them out, so that we could not cross with our reaper and had to cut an 18 acre field in no less than six parts, such work as this causing much loss of time may be prevented, or at any rate lessened, by forethought at seeding time.

Manure.

The best way of manuring fall wheat is with well rotted barnyard manure, drawn on and spread well and evenly upon the land, after the last ploughing, and thoroughly worked into the seed bed with harrow and cultivator.

Artificial Manures

Should be used at the following rates. Nitrate of soda or guano, 100 lbs. per acre. These manures are very expensive, and we can hardly make up our minds to advise our brethren to use them. There is however

one that is a good one in all cases, neither can the any case be called entirely thrown out.

Timothy &c.

Sown in the fall is safe to take well, and you are sure of a large sprinkling of timothy in your first cut for hay. The chief objections to sowing in the fall are that it occupies a portion of the seed bed at a time when the growing wheat crop demands much nourishment, and that, in peculiarly favorable seasons, there is much green grass in the butts of the wheat sheaves at harvest time.

Whether the latter is an objection we leave to the individual farmer. There is evidently on this point some difference of opinion; for a man in our own neighborhood was praising his wheat crop to us the other day in these terms, "I am going to have so many bushels of wheat and shall at the same time cut half a ton of timothy grass in the straw per acre."

We are great advocates of

Drawing out Manure

And top dressing our grass lands, either for another hay crop or for ploughing down for roots. In either case the gentle fall rains wash the manurial elements down to the thousand little rootlets of the clover, by which it is thoroughly absorbed, and thus not one particle is swept out of the reach of the succeeding crop.

We trust most farmers have arranged to have their corn and potato and indeed general root field upon what is now a clover sod; it has been fully demonstrated, that roots of all kinds do far better on a clover ley than on any other preparation.

Don't then wait too long before you

Plough down your clover ley,

But rather manage to put in the teams when the second crop is in full flower.

Fall Ploughing.

Keep enough hands to have the teams fully occupied at fall ploughing.

Spring in Canada is such thronging time,

that an immense saving is effected by having plenty of ante-work done in the fall; moreover by neglecting this important operation, we lose the chief benefit of our severe winters, the pulverizing and ameliorating effects of heavy frost.

Never harrow fall ploughing; the rougher you can leave it the better, never mind how lumpy it is, if fairly ploughed, the frost will pulverize the soil.

Trench up

For carrots in the same manner as you ridge up for turnips in the spring; land so worked will dry far sooner in the spring, and you will have less difficulty in effecting a deep cultivation, the great essential to a large crop of this long rooted esculent.

Our Ontario Agricultural Exhibitions.

Remember the three principal Exhibitions to be held in Ontario during the coming fall.

The Provincial at Hamilton, from 21st to 27th September. The Central at Guelph, from 1st to 4th October. The Western at London, from 5th to 11th October.

Hops in England.

The last reports from the Old Country are favorable.

The weather has been in the early part of August, most favorable to the vine, neither mould nor vermin has increased.

Picking will be very early. A general opinion is expressed that if the weather from now to picking time is at all favorable, a very good crop may be expected, and opinions from various parts, generally point to the hope of retrieval of the last disastrous crop year.

The following is the latest intelligence from one of the largest hop growing sections of Europe.

The intelligence received as to the hop grounds in Belgium, the North of France, and Lorraine is generally favorable. The crops had been delayed by excessive humidity, and they had also been invaded in some places by grubs, but they have developed themselves well under the influence of the higher temperature of the last few weeks. It is feared, however, that in some places the plants will not regain all their lost vigour. Hops of 1871 are scarce, and prices are well maintained.

Hops in Michigan.

A correspondent of the *Michigan Farmer*, writing from eastern Oakland, says that hops are just beginning to push out handsomely from the blow and looking very nice, and no signs of insect as yet, but those yards which were not properly tilled last year are not looking well at all so far as his observation extended; and when we take into considera-

tion, he adds, the number of yards that have been ploughed up two years ago, and the failure to cultivate those that were not ploughed up, it is safe to say that there will not be one hale in that section of Michigan to where there were fifteen or twenty, three or four years ago.

Hops.

The circular of Messrs. Green of Hubbardsville, New York, states that the hop-yards in central New York, are giving every indication that the crop will be superior in quality, no vermin or blight having made their appearance yet. In Wisconsin the crop is not reported as favorable, and the condition in some yards is good while in others the growth is inferior. In this state we have nothing to add to what we have said before. A letter from a hop-grower in Macomb County in another column gives some news of the crop in that section, which is one of the best in the State.

The reports from abroad are favorable for a good crop. The Kent and Sussex reports from England state that the hops are doing well in all the gardens, and that vermin are not worth mentioning. Some of the district reports in the English papers say the "hops are looking splendid." In fact we have never seen less complaints among the hop-growers of southeastern England.

Prices are well maintained. The best kinds in the London market are quoted at 12 guineas to 16 guineas per hundred weight. The more common kinds at from £8 to £10 10s.

In New York Wells quotes New York hops of 1871, from 25@45@65 cents, and foreign English and Bavarian of 60@75c. With the crop promising so well, we need not look for any advance in these rates, and growers who are first in the market are the only ones that can expect to realize them. Esmet Wells says in his circular:

"Early consignments of new hops will doubtless meet with quick sales at high prices; judging, however, from the present favorable prospects of the crop on the other side, opening prices here will not be likely to be maintained, particularly should we be favored with early arrivals from Germany, which is now quite probable. We fear our growers attach too little importance to the fact that England and Germany will this season have a large surplus to spare for export and that prices here must be governed accordingly. Our brewers have, by necessity, acquired the habit during the past season of using foreign hops, and they like them."

Save your Clover Seed.

We have been informed, says the *Franklin Patriot*, that one of the largest and most enterprising farmers of this country, last year, saved enough clover seed for his own sowing, sold enough to pay for all the dry goods

used in his family, and received \$25 cash in addition. This is the way in which he did it. He put a wire bottom in a trough in which he fed his stock—the wire being two or three inches above the close bottom of the trough. The stock in pulling the clover hay from the rack would scatter the seed almost pure through the wire into the receptacle below.

Wheat Sowing.

"A REGULAR AND EVEN PLANT OBTAINED."

Very few farmers, when sowing wheat, have carefully watched its germination, and the various degrees of strength, that each blade attains under different circumstances. I once took the pains most carefully to examine and note this peculiarity. I selected a small square of ground in a wheat field for the examination. I noticed that some grains of seed grew fast and vigorously, at first; whilst others were much less so, and others were poor doubled up spindling plants, all wrinkled and weak, and some of the seed never reached the surface at all. The experiment was further tested by drilling a small piece in the same field, as a comparison.

I became by this experiment, a firm convert to drilling wheat. When the same seed, sown in the same lands, was drilled, about two and a half inches deep, it almost all came up alike. There certainly were some spindling poor plants, but not nearly so many as when the seed was sown broadcast. I thus became convinced, that in broadcast sowing of wheat, nearly one half the seed was absolutely wasted and lost. At harvest following, the same careful supervision was exercised as to yield, and the same result arrived at with this addition "that where poor dwindling plants were first noticed, they remained throughout of the same quality; and at harvest produced poor small half productive heads, thus proving that one great part, in getting a good crop, other things being equal, lay in the depositing the seed at a proper depth, thus ensuring the rank growth and prosperity of the plant from its very commencement.

It seems that, if the first shoot be not strong and vigorous, one or two outside leaves alone are developed, and the growth of the heart either prevented altogether, or so delayed as never to reach that rank, curly appearance, spreading like a Poland fowl's top knot, in all directions; without this peculiar appearance, the wheat plant never attains its full strength, and free growth; it may live but that is all, and when spring comes, instead of a large tuft of leaves, root and heart, there is a miserable little root, with a small branch of leaves, and one poor little heart.

This may eventually stool out, and put forth more hearts, but always less strong, and fine, than those that were never stunted, and with these particular instances, the land

or manure had little to do with forming the difference as the plants stood side, by side, and the land was, in all cases, equally good.

Every farmer knows that wheat plants will not stool well, unless the land is good, and rich, and the season favorable; but in the cases above particularized, of course all were treated alike in that particular.

Many able Agricultural writers, have followed the same course, with pretty much the same results. Before I left England farmers often dibbled in their wheat, and thought that the saving of seed paid them for dibbling. But I was, and am still of the opinion, that the wheat plants were by this case, too thin, to afford any loss by winter killed, and also that individual plants did not so well resist the heaving by frost, as where a mass of roots were entangled, as in drilling; and again some wheat plants were killed, and taken by insects; and great gaps were left from this cause. But that does not go to disprove the present position "viz," that great care ought to be exercised in sowing wheat, at an exactly even depth according to soil, and season, whereby an exactly even plant will be obtained, and the chances of a crop much increased.

C.

How Swedish Turnips were introduced into Scotland.

Mr. Miller, of Dalswinton, near Dumfries, was an eminent Agriculturist. He had been a sailor in his youth, and unhappily, or perhaps happily, he had been wrecked on the coast of Spain, and ever afterwards entertained the belief that a ship had need of something additional to sails to keep her off a lee shore. He accordingly built a small craft, and fitted her up with paddles, which were worked by means of a windlass on board. His success was great; and he even ran a race with a revenue cutter, and won it too, on the strength of his paddles. Before, however, he entertained the necessity of steam as a motive power, which was suggested to him by his family's tutor, Mr. Taylor, and which ultimately resulted in the introduction of the steamboat, or steam navigation, he built another vessel (three masted), which he fitted with his paddles. The vessel was offered to the British Government, who refused it. He then offered it to Charles XIII, King of Sweden, who graciously accepted it. But he did more. He sent Mr. Miller an autograph letter, accompanied with a gold snuff-box set with diamonds. Within the box a piece of paper enclosed a few seeds. These Mr. Miller planted, and they brought forth the splendid Swedish turnips. He again and again sowed them, and hence came forth generally the Swedish turnips throughout Britain. In all such matters one cannot help being reminded of the saying—"From trifling causes what great events do spring?"—*Com.*

Destruction of Forests in India.

Some extraordinary disclosures are made by the Governor-General of India, in a document sent to the Council on the 1st of November, in relation to the necessity of prompt and vigorous measures for the preservation of the East India forests. Owing to the reckless destruction of the most important varieties of timber, particularly since the introduction of railroads into British India, the supply has actually run short. Of the result in the presidency of Bengal the Governor makes this astonishing statement: "Till now nothing has been done in the matter of forests, and a sufficient commentary on the results of this neglect will be found in the fact that it is still necessary to import railway sleepers from Norway, because the available supply of suitable timber from indigenous sources is too costly or too small. The Governor goes on to say that in Northwestern India "the difficulty of obtaining timber has been painfully felt for fifteen years or more. In the Punjab there is no timber of any appreciable value except on the slopes within the Himalaya. To save what is left of the forests, the Government has instituted vigorous measures forbidding the cutting of teak and certain other valuable timber for building dwellings or for any other purpose, except under certain specified and stringent regulations. Government plantations have also been established for the purpose of restoring those forests which have already been destroyed. This will be, even in India, a process requiring time. Nature will renew the forests to some extent by natural seedling; but this is a slow and uncertain process, owing to the fact that the worthless jungle that springs up chokes the chance saplings that may come struggling up through it.

To be told that the East Indies cannot supply timber enough for railroad purposes, but must import the desired commodity from Norway, seems as strange as it would to learn that in Greenland, owing to reckless extravagance on the part of the Esquimaux, the supply of ice had run short, and the Governor of Uppernavick had despatched a vessel to Holland to secure the necessary Summer supply. If in India, where forest trees grow in tropical luxuriance and profusion, the reckless destruction of the forests has caused the needed supply of timber to fail, what is the prospect for us here in the United States, where the destruction of our noble forests proceeds on a more gigantic scale than it does in India? Our locomotives nearly all of them burn wood, instead of coal. By and by they will have no wood to burn, and must use the coal.

The demand for railroad ties has denuded hundreds and hundreds of hillsides in the Eastern States, which were not long ago covered with a goodly crown of waving woods. The effect is to shrink up our streams and rivers, producing severe and injurious drouths in Summer, and exposing them to sudden and

destructive freshets at all seasons, especially in the Spring. In the vast pine forests of Michigan the army of wood-choppers has swept out of existence an area of woods which would cover Connecticut; and still the destruction, proceeds in response to the imperative demand for timber. Miles on miles of the noblest pines that ever grew have fallen already along the western shore of Lake Huron; miles on miles of such trees have fallen in the interior of the State. In Wisconsin and other States the work goes on. What is to be its effect on the American climate? It must produce drouths. Large areas of forests invite and bring abundant rains. Cut down the woods and the country becomes a parched and suffering land, like Palestine and Greece, and vast sections of Spain and Southern France to-day. In India drouths and famines are occurring. Like causes produce like results. Do not our increasing drouths in the United States indicate the danger to which we are exposed by this reckless destruction of our forests?—*Hartford Times.*

Beet Sugar in the United States.

As our readers are aware, we have done our utmost to promote the establishment of this industry, and we may therefore, with all the more reason, rejoice at the encouraging statements of the Commissioner of Agriculture in regard to it. He regards the future of the industry as now mainly dependent upon the comparative profit of beet sugar and cane sugar manufacturing.

The introduction of this business into this country met with many obstacles, notwithstanding the remission of duties on importations of machinery intended for beet sugar making. Perhaps no branch of chemical manufacturing needs to be conducted with greater nicety; and as in the outset we are to depend on foreign skill—much of it hardly fit to be called skill—there were many failures, and success has come slowly,

The pioneer experiment at Chatsworth, Ill., failed disastrously; yet at Freeport, in the same State, the lessons of that failure are being turned to such good account that success is confidently anticipated. At Black Hawk, Wis., a co-operative beet sugar manufactory is pushed with great vigor, and gives large promise of good results. But the most decided success has been met with in California, where two companies are in full operation, the California Beet Sugar Company at Alvarado having produced over a million pounds of sugar in the second year of its operation. Success is also reported from the Sacramento Valley Beet Sugar Company. A third company is delayed from the difficulty of obtaining seed.

The percentage of sugar obtained from Silesian beets raised in California is quite extraordinary. The superintendent of the Sacramento Valley Beet Sugar Company, Mr. S. Khrenstein, states that an average

shows a yield of from 13 to 14 per cent, and exceptional instances occur in which 18 per cent is obtained, a much larger yield than ever was obtained in Europe.

It seems from these facts that the sugar producing region of the West is to be California, that land of wonderful resources and unprecedented development, though the beginnings are comparatively small, there is little doubt that they will prove the foundation of a gigantic interest. The struggles of the pioneers in this field have been severe, but those who have held out will be ultimately rewarded.—*Scientific Am.*

The Agricultural and Commercial Value of Artificial Manures.

Professor Voelcker lately delivered a lecture to the members of the Derbyshire Agricultural Society on the subject.

Dr. Hitchman introduced the lecturer, saying:—Like almost all men possessing great knowledge, Dr. Voelcker is most cautious in induction and modest in statement, and is ever ready to receive with courtesy and thankfulness any facts which may be communicated to him by practical and observant men. Facts from such a source are always most acceptable, provided they are facts, for it is a sad fact that there are many things alleged to be facts, and given in all good faith by the communicant as facts, which are nothing less than illusions, mistakes, part-truths, or entire blunders, and which, taking the place of facts, act as barriers to progress, prevent or retard discoveries, act, indeed, like sand-shoals in the ocean of truth, until their true nature has been revealed, and the alleged fact is found to be a phantom—what Lord Bacon would have named an idol, called into existence by false perception or erroneous induction. To observe accurately is a valuable quality, and one by the acquisition of which the most humble of us may contribute something to that great storehouse of knowledge from which things new and old are being daily called forth by scientific minds for the benefit and instruction of mankind. I have watched with interest and admiration the career of Dr. Voelcker for more than 20 years; and I confess that his industry, honesty, caution, practical sagacity, and inductive skill have excited my reverence and esteem. He has never been fond of indulging in "sensational" theories, has not emulated the brilliancy, the scientific romance, of some other great chemists, has never longed to "o'erstep the modesty of nature;" but with child-like docility he has sat at her feet, and with inexhaustible patience awaited her teachings, and then placed them in calm, clear language before his own auditors and readers; and if he had not dazzled us with the splendour of his genius, neither has he led us into quagmires by its delusive coruscations. I am, unfortunately, old enough to remember the hopes which were excited in

the minds of ardent agriculturists by the earlier writings of Laebling and his imitators. Enthusiasts began to think that agricultural chemistry was an Aladdin's lamp, to conjure up corn crops from a deal board; and even soberer men expected that any number of crops might be successfully raised from any plot of ground by substituting a few pounds of potash for the crops removed. Persons talked in such a manner of manuring a large field with a mere hatful of salts as to call forth the satirical remark that, when that took place, they might bring back the produce in the waistcoat pocket. Those days have passed; and practical chemists like Dr. Voelcker know that there is a wide difference between chemical compounds subjected to the influence of soils, of wind, of light, of moisture, cold and warmth, in variable and varying quantities, in the external air, and to the added influence of the special vital qualities of the growing plant, and the same compound obediently complying with the wishes of the chemist in the scales and retorts of his laboratory. Dr. Voelcker has conferred great benefits on the cultivators of arable soil, by his valuable analyses, by his description of fertilising earths, by his exposure of the frauds of dishonest manufacturers of cattle food and manures, and by the information he has imparted on the manures best adapted for special soils and seeds; and he has now, under the auspices of that wise friend of the farmer—the right hon. Lord Vernon—come among us, to tell us something of artificial manures and the agencies best adapted for the fertilisation and cultivation of our grass lands.

Dr. Voelcker said. The subject of artificial manures was of annually increasing importance, for where five or ten years ago men spent their tens of pounds in the purchase of artificial manures they now spend their hundreds, and those who spent their hundreds now spend their thousands. To see how important the question was becoming they need only look at the many manufacturing of artificial manures which were springing up everywhere, and at the keen competition which existed between rival dealers; indeed, the dealer in artificial manure had become one of the greatest bores in the market. They could not go into a market without being pestered by some agent for an artificial manure manufacturer, who praised his wares often to the detriment of those of his rivals. There were now makers who produced from 30,000 to 40,000 tons per annum; others 20,000 and 10,000, and some 1,000 or 500. Very large sums were invested in the manufacture, and it was unnecessary to say that large sums were paid annually for these manures by agriculturists who must, in the present day, if they would successfully cultivate their land, spend a good deal of money for the purchase of these manures: for the present state of agriculture necessitated the application to the soil of more fertilizing agents than could be conven-

iently obtained from farmyard manure. Seeing that so large an amount was spent on these manures, it was of the greatest importance to the farmer that he should lay out his money to the greatest advantage, and how could he do that unless he possessed some knowledge of the fertilising constituents which enter into the composition of the manures offered for sale? The time was long past when the fertilizing powers of certain materials were ascribed to a certain unknown force, and they now knew pretty well on what substance the value—both economical or money value, and the fertilizing or practical value—of the manures depended. It was not by any process of cooking or of turning over that they could obtain good manures; they could only secure them by incorporating the right materials. There was a time when a mistaken notion prevailed that farmyard manure should be turned three times, and that it got better every time. Now there was, as was generally the case, a little truth mixed up with the error involved in that idea. To turn manure helped to make it rotten, and rotten manure was better than fresh, bulk for bulk; but by its standing exposed it was apt to lose a great deal of its fertilizing properties, and the more economical plan was to cart the dung to the field as soon as possible, and then they avoided the risk of losing a portion of its valuable properties by evaporation or by drainage. They knew well that the value of animal manure depended very much upon what they put into the animal's belly, and that it would be very different if they used plenty of oilcake, or other rich food, than if they gave their stock an insufficient amount of poor food. So with artificial manures. Their value depended on the materials put into them. They might concoct a manure of the sewage matter of London, or Birmingham, or Derby, by sifting out its solid parts, but its fertilizing value would be very little, and it would largely consist of soil, clay, or sand, with some organic matter of no great value. They must not expect to get much fertilizing matter from town sewage, unless they incorporated with it a good deal of Peruvian guano, or good bone dust, or nitrate of soda. The fertilizing value of manures depend mainly on the nitrogenous matters, phosphates, and salts of potash they contained. Nitrogenous matter was derived from animals, and existed largely in blood, flesh, skin, hair, and other refuse animal matters. As a rule ammoniacal salts produced bulk, and phosphates produced quality, and his aim would be to get both.

(To be Continued)

Harvest wages in Scotland:

It appears that this harvest wages have ruled very high at Perth, Scotland.

Cutters were paid \$1 10 per day, with meal and milk—while binders received, one dollar per day with vituals found. But even at this high rate they are not as well off as in Canada, where all harvest hands have received \$1.25 with all board and lodging found.

When to Sell Farm Product.

That was a good point made by the American *Rural Home*, when he said that the editor who can give advice as to the exact time when it is best to sell farm products had best leave his pen and go into trade, as his knowledge would enable him to accumulate millions in the purchase of these farm products. In other words it is impossible for any man to predict with certainty future prices.

The safest rule for the farmer we believe to be to sell when his farm products are ready for market, especially if he need money with which to pay his debts or make purchases or improvements. Of two farmers, one following this plan, and the other invariably holding for higher prices, we believe the first will be the better off at the end of a score of years. He who sells early saves wastage, shrinkage, storage, risk of total loss from fire or other cause and has the use of his money at an earlier period.

There are cases when the prospect for an improvement in price is so good, that the risk in holding is but slight. But if any farmer feels himself obliged to act on one unchanging rule, we would advise him to make it a rule to sell as soon as the product can be got to market in good condition.

We recommend this extract to the serious consideration of our Canadian farmers

We know of many farmers who futilely endeavored to hold over grain and other produce at all times, and others who will not sell even when prices are fair, in the hope of a still further rise. We would seriously impress the rule as one of gold, to sell when prices are fairly remunerative.

Analyses of Fertilizers

The "Irish Farmers' Gazette" speaks of the increase of the number of analyses by eminent Chemists as exerting a most beneficial influence in protecting British farmers from imposition. Dr. Voelcker, in 1867, performed three hundred and forty-one analyses for members of the Royal Agricultural Society; in 1868, four hundred and thirty-two; in 1869, four hundred and sixty-five; in 1870, five hundred and eighty-two; in 1871, seven hundred and thirty; while other English Chemists are also largely engaged in the same work. Manures and cattle food are the subjects of these researchers. In Ireland, there is an "Anti-Adulteration Society," which takes great pains to analyze new patent fertilizers and protect the farming interest.

Cost of Fences.

How little is really known in this country in respect to agricultural economy is illustrated in the statement concerning fences. It is said that the improved lands in South Carolina are worth \$20,000,000, while the

fences that enclose them have actually cost \$16,000,000. The fences in New York have cost \$144,000,000; those of Ohio, \$115,000,000, and according to an estimate made by Nicholas Biddle thirty years ago, the fences of Pennsylvania had then cost \$11,000,000. The fences of the whole Union are estimated at \$1,300,000,000. The time may come—in the next century, it is suggested—when out sides of towns and cities a fence will almost be a curiosity. Hedges will take their place, and thereby accomplish an immense saving of money, while lending a rare and exquisite beauty to the rural landscape which it can never have under the present system.—*Ex.*

Hybrid Wheat.

We copy the following on the crossing of wheat from the pen of Mr. Charles Arnold, Paris, Ont., from the "Country Gentleman."

I would give it as my opinion, that fructification in wheat takes place in the closed flower, before the pistil is exposed to any pollen but that produced by its own stamens. Therefore, if crossed at all, it must be crossed by accident, or artificial means. I think such crosses are necessary after a long period of time, in order to the health, vigor, hardiness and productiveness of the plant. And after devoting much time to observing and experimenting in this matter, I am prepared to believe that grain of almost every conceivable size, shape, and color, can be produced by artificial crossings, and that, in the hands of skillful and persevering persons, vast good to the agriculturist must be the result.

That many of the varieties of fruit and grain produced by this method will be worthless there is no doubt, and ninety nine out of every hundred of them will be inferior to some old varieties, is quite probable. But it should be remembered that in many of the new kinds of grain the tendency is to improve for years to come, while in the old varieties it is reversed. And again, perfection in crossing plants must not be looked for in the first generation any more than in the first cross of animals. Much time, labor and expense will be required in crossing, re-crossing and selecting, before we arrive at perfection. And it seems to me that if a portion of the funds of the various agricultural societies were applied to this purpose instead of horse-racing, the world might be the better for it.

I am pleased to be able to inform you that Hon. FREDERICK WATTS, Commissioner of Agriculture at Washington, has wisely ordered a quantity of my first crossed wheat, to be distributed, I suppose, over your whole country, and I feel confident that vast good will result therefrom. That it will prove superior to all other wheat in all parts of the country, with such a great variety of soil and climate, is not to be expected, but if it should succeed in any one State better than any other variety of wheat, a benefit has

been conferred. As stated above, perfection can not be expected from the first cross, but as a proof of the benefits arising from crossing, re-crossing, and selecting, I enclose a statement of the fact, that from one bushel of seed sown with an ordinary seed drill upon ordinary soil and culture, I have sixty bushels of such grain as that now sent, while my next neighbors upon the same soil and with the same culture every way, will not, I am confident, realize from the old varieties of Diehl and Treadwell one-quarter of that quantity, and I very much question if sixty bushels of wheat from one of seed will be raised on this continent this year from any of the old varieties.

Now to prevent numerous letters of inquiry after this wheat, I beg to say that as this sixty bushels above alluded to is all that is in existence of this variety, it is not my intention to offer it for sale this fall.

English Farming.

Mr. Wall, in an address to the farmers of New Jersey, alluded to the very flourishing state of agriculture in England. He pointed out that in less than a century the production of wheat had risen from 16,000,000, to 100,000,000 of bushels. This enormous increase he attributes to the systematic attention to all the requirements of good farming; in the skill and exactness with which all the operations are performed; to their careful selections of the best varieties of seed, and to the extensive and prudent use of the barn-yard manure. Nothing is left to casualty or chance. No expectations are indulged in that the bounty of Providence, by an unusually favorable season, will atone for their shortcomings or neglect. He dilated upon the extraordinary liberality of English farmers, in restoring to the earth, by means of purchased manures, all those elements of fertility which are exhausted by cultivation. It is estimated by chemical analysis that wheat absorbs forty per cent. of nutriment contained in the soil. In 1837, the first year in which bones came into general use as a fertilizer, the foreign bones imported were valued at the custom house at 1,500,000 dollars, since which time it is estimated that the amount paid for imported bones alone, amounted to 150,000,000 dollars. Since 1841, upwards of 500,000 tons of guano have been used. Mr. Wall also believed that there was nothing more perfect of rural economy than the English farmers' rotation of root and grain crops. He considered that the care which had been bestowed on root cultivation had been the salvation of England.

How to make Land Lumpy.

About a dozen years ago, after twenty years' service in civil engineering, I turned farmer; that is to say I bought a farm adjoining the city for a home in which to edu-

cate my boys. The soil is a rich vegetable mould with a clay subsoil. Of course I took an agricultural paper, I bought a subsoil plow, and of course the cold clay got mixed up with the top soil, and of course my land was very soon lumpy, and of course the lumps grow coarser until the matter became serious and I sought my neighbors' advice.

"Why, man," said they, "you work your land too wet." In vain I asserted that I did not—that I was always behind them in putting in the plow. But my reasoning was unavailing—they had worked this soil for fifty years, and all knew that I worked my land too wet. So I followed their advice and kept off my land till the land became so dry and hard that it was almost impossible to plow it, and it broke up in lumps of enormous size. Three plow-beams were broken in a field where now a single pair of mules plow ten inches deep with ease.

These lumps in many instances had to be broken up with heavy sledges into smaller lumps, and then the most severe dragging and rolling only reduced them to a spherical form. The surface was covered with a mass of baked clay-balls, ranging in size from grape shot to twenty-four pounders—both being equally favorable to the germination of seeds and the growth of plants.

There may have been other fields like mine but seldom any so bad, for very few persons would have had the like perseverance in working land so dry.

After this experience I think myself qualified to instruct others how to make land lumpy; and if the reader still has any doubt on the subject, I will state more explicitly the principal requisites for entire success, on soils of clay or loam:—

1. Haul out your manure on to your fields in spring and fall when the ground is soft.
2. Let your cattle, colts especially, roam over your fields looking for something to eat.
3. Do not begin plowing till the surface of the ground is indurated by the sun and wind several inches deep.
4. Plow with a strong team, cut wide so as to turn well and deep, and bring up the "virgin soil" (yellow clay), to fertilize the exhausted soil at the surface.
5. Plow around the field so that the team may turn on the ploughed land.
6. And most essential—do not put on the drag till the sun and wind have dried the furrow slices sufficiently hard. Many persons, who are very successful lump-makers wait till the weeds start. One day at least is necessary, unless the winds are very strong and drying, in which case a few hours may give very good sized lumps. It takes about the same time as to dry bricks in a yard. Indeed the process and materials are quite similar, and brick should never be turned till they are hard enough to handle without breaking.
7. Drag your land thoroughly. All old farmers know how important this is. It is

a good plan to use a light drag and a young team with a boy to drive. They will go over more ground and pack it much harder. Be sure to cross-drag it, or many lumps half buried will remain beyond the action of the winds and never get properly indurated. Drag it repeatedly both ways. At every turn you will observe lumps becoming more numerous and more symmetrical in form. The more they are turned the faster they dry. The rough angles of the masses will be rubbed off as they were jostled about upon the same principles involved in pill-making. By the action of the wind and sun they soon become as hard as stones and are nearly as valuable upon the land. They are as good for a mulch or shade as sound stones, and they are equal obstacles to the growth of weeds. However, as a promoter of vegetable growth the stones are probably the most desirable. They are better conductors and reflectors of heat, and they do not like the lump, rob the soil by absorption of the dews and gentle rains which are so refreshing to plant-life. If we turn a stone we shall find the earth moist beneath it, while under a clay-ball it would be dry.

It is trust that the reader now sufficiently understands the process of lump-making to appreciate a system which I have adopted for making the land mellow and friable—which I intend to describe in another article.—*Greenwood Telegraph.*

Saving Corn Fodder.

So far as the writer's observation has extended, there has been very little progress in improvement in saving the blades and stalks of corn for forage purposes, in the last fifty years. Topping corn, and cutting it up near the ground to increase the fodder saved, are little practiced in the South, partly because farmers are not compelled, as at the North, to fatten cattle six months in a year; and partly because the corn plant is much larger in the South, and stock cannot eat the butts so well. Hence, it is only the leaves of large corn in the South that are pulled, and called "fodder" although where corn is small, farmers often cut the plants off near the ground, and cut the whole for forage.

When the seeds are in an immature or milky state, the leaves contain the most nutriment; but to pull them so early is to injure the yield of grain. It is not possible to have the maximum of plump seed and of nutritious blades upon one plant. As the seed becomes perfectly ripe, the leaf deteriorates rapidly in nutritive properties. Large corn growers who have no meadows, either pull off the upper leaves, or cut the stalk just above the ears, before the seed is ripe, to obtain good fodder. As one can gather corn hay much faster by topping corn than by pulling fodder, the former is the better practice. The stalk above the ear is not so large that cattle cannot eat it easily; and if cut at the right time, cured and

promptly housed, makes excellent forage. There is no other annual plant that yields so much horse and cow feed on rich land as corn. Millet, Hungarian grass, and oats come nearest to corn in the yield of hay. Corn beats them also in weight of nutritive seed. Raised for hay alone, it is not expensive, considering its value.—*Cor. of Prairie Farmer.*

FARM IMPLEMENTS—"DON'T MIND THEM."
—The *Christian Union*, tired of throwing away good, sober, serious advice, waxeth "scarcastikul," in this wise—viz:

"We have resolved, for the present at least, to change our tactics regarding the care of farm implements. Hitherto we have, in common with the agricultural papers in general, urged farmers to take great care of their tools and machines. We have even printed directions for oiling, and painting, and storing, and the like. Now, however, we have abandoned that line of policy. The dealers in and manufacturers of such implements must live, and as we have some friends and acquaintances among them, we are convinced that we have been too forgetful of their interests. An editor says that, during a ride of ninety miles which he took through an agricultural district, he counted the following household implements, namely: forty-four ploughs, twenty three harrows, seven mowers, one reaper with beater and platform last used, wagons too numerous to count, and, in one instance, a set of harness hanging on a fence. The ploughs were mostly standing in the furrow where they had been last used. Such a sight as that gladdens the heart of the itinerant manufacturer, and is an example which ought to be followed by every tiller of the soil who wants a new set of implements. Farmers, attention! Do not rub linseed oil on your fork and shovel and rake handles, do not paint your ploughs and mowers, do not use any rust preventive on the iron and steel parts, and, above all, leave everything out of doors. You really have no idea how quickly you will possess a new set of tools, provided you have a balance at the bank, if you abandon that most objectionable structure, the tool house. Only seven mowers and one reaper out in the air in a stretch of ninety miles! And only one set of harness! Well, we will hope for a better report from that section the next time our agricultural contemporary goes that way."

ARMY WORM—The Yolo, California, Mail, says: "We understand that the army worms have made their appearance in full force in several of the vineyards in this vicinity, and in one instance, have destroyed six acres of bearing vines. The proprietors of the vineyards attacked have succeeded, however, in heading off these destructive creatures by the application of running water through the vineyards. These worms have also made sad havoc with some of the alfalfa lots near town."

Stock Department.

National Swine Breeders' Convention.

REPORT OF COMMITTEE APPOINTED TO PREPARE WORK FOR THE ADJOURNED CONVENTION TO BE HELD AT INDIANAPOLIS, IND., NOV. 20, 1872.

The committee appointed by the National Swine Breeders' Convention, held at Cooper Union, May 14th, to name committees to prepare reports upon the history, characteristics, and a scale of points for the respective breeds of swine, and upon the question, "What constitutes thorough-bred swine?" also to name the time and place for holding the adjourned meeting of the Convention, respectfully report to the swine breeders of America:

1. The adjourned meeting will be held at Indianapolis, Ind., Wednesday, Nov. 20, 1872.

2. It will consist of one delegate, at large, from each State, and of one delegate from each State for each breed of swine raised therein.

3. These delegates shall be named by the State Swine Breeders' Associations where such organizations exist. Where they do not exist it is recommended that the Executive Committees of the respective State Agricultural Societies, or the State Boards of Agriculture, call Conventions of the Swine Breeders of their respective States at the time and place of the State Fairs, for the purpose of naming delegates to this Convention. In the absence of any such call the committee recommend that the exhibitors and breeders of swine at the State Fairs meet, name and accredit such delegates. In case any States neglect to do this, breeders from such States present at Indianapolis, will be recognized and received as delegates, so far as is necessary to secure just representation from each State.

4. The Committee think it proper to assert that the gentlemen named on the following committees are selected from lists of names furnished and recommended by prominent swine breeders in the different States and Canada, with a view to securing the most impartial representation upon said committees and the most carefully and intelligently prepared reports upon the respective breeds to be submitted to the convention for its action.

5. A circular letter was sent to the chairman of each of the committees named, asking whether he would accept the position and duty. Responses have not been received from all. Only two have declined, naming, however, men who would act in their respective places. These names have been substituted. The near approach of the Fairs renders it impracticable to delay this report longer in order to receive further responses. It is, therefore, recommended that the members of the respective committee places

themselves in communication with each other and act as they may mutually agree—or that each member prepare a written report prior to the convention, and mail it to ALEXANDER HERON, Secretary of the State Board of Agriculture of Indiana, at Indianapolis, Ind.

6. The committee respectfully urge upon the swine breeders of the country the importance to them of the work it is the object of this Convention to accomplish; and that since it is to be a delegated and, in a sense, a legislative body, their representatives should be their best posted, most intelligent and impartial breeders; that if the work projected is well done, it will inaugurate a new era in swine breeding, and help to protect both swine breeders and buyers of swine in their mutual relations.

7. The following are the Committees named to report upon "What constitutes thorough-bred swine," and upon the history, characteristics and a scale of points for the respective breeds:

On "What Constitutes Thorough-bred Swine?"—JOHN P. REYNOLDS, Chicago, Ill.; Fred. Wm. Stone, Guelph, Ontario; S. L. Goodale, Augusta, Me.

On Berkshires.—A. B. ALLEN, P. O. Box 376, N. Y. city; J. T. Hudson, Kansas City, Mo.; Daniel McMullan, Xenia, O.

On Improved Cheshires, or "Jefferson Co."—C. V. MAXON, Adams, N. Y.; J. H. Sandess, Sigourney, Iowa; J. J. De Forrest, Dunesburg, N. Y.

On Chester Whites.—THOMAS WOOD, Don Run, Pa.; Dr. Calvin Cutter, Warren, Mass.; W. W. Thrasher, Groves, Ind.

On Essex.—JOSEPH HARRIS, Rochester, N. Y.; Dr. A. C. Stephenson, Greencastle, Ind.; George Roach, Hamilton, Ontario.

On Neapolitan.—M. W. PHILIPS, Memphis, Tenn.; F. D. Curtis, Chariton, Saratoga Co., N. Y.; Mason C. Weld, Closter, N. J.

On Magic or Poland China.—JOHN M. MILLIKIN, Hamilton, Ohio; Rankin Baldridge, Hagerstown, Ind.; Shepard (of Shepard & Alexander), Charleston, Ill.

On New Jersey Reds.—DAVID M. BROWN, Windsor, N. J.; David Petit, Salem, N. J.; John C. Tatum, Woodbury, N. J.

On Suffolks and Other Small White English Breeds.—JOHN WENTWORTH, Chicago, Ill.; John Snell, Edmonton, Ont.; T. L. Harrison, Morely, N. Y.

On Yorkshire and Other Large White English Breeds.—O. P. COBB, Aurora, Ind.; James Broodie, Rural Hill, N. Y.; M. H. Cochrine, Compton, Quebec.

On Victorias.—CHARLES E. LELAND, Albany, N. Y.; W. S. King, Minneapolis, Minn.; Geo. S. Lounsbury, Aikin, S. C.

Any inquiries with reference to this Convention or the Committees may be addressed to the Secretary of the Committee, CHAS. D. BRADON, 5, Beekman St., New York City.

Committee. { HENRY STEWART,
M. C. WELD,
FRANK D. CURTIS.
L. A. CHASE.

Sales of Short-Horns.

Messrs. John Snell & Sons, Edmonton, Canada, have recently sold to R. H. Taylor, Brownsville, Tennessee the 4 months Berkshire bore Prince of the Blood, by imported Royal Briton, dam imported Exquisite 5th, price \$100. To the West Elgin, Ont., Agricultural Society, Ont., one bore pig, price \$50. To J. Siddell, Iona, Ont., one sow pig by imported Royal Briton, out of imported Windsor Queen. To Noah D. Bell, Boonville, Mo., one boar pig by Royal Briton, out of Queen of Diamonds, price \$75.

Mr. J. D. W. French, Cochichewick Farm, North Andover, Mass., has made the following sales of Ayrshire stock; Cow Madge 575 and bull Pablo 767 to Charles Perley, Bradford, Mass.; bull Wilfred 918 to Willard P. Philips, North Andover, Mass.; Frollic 24 1219, Enid 1136, and Lily McDonald (three heifers) to George H. Cotton, Belmont, Mass.; cow Cozie 1025, heifers Mabel 1505 and Linda 1480, to other parties.

The Sale of Short-horns by Mr. Cyrus Jones, Towanda, Ill., Aug. 1st, was well attended, and the bidding quite spirited. Col. J. W. Judy conducted the sale in his usual fair and square manner:

COWS AND HELPERS.

Red Dimple 8 years, W. Collard, Des Moines	
do.	\$250
Red Bird, 8 years, J. C. Layman, Leo Co., Ill.	525
Harmony Belle, 9 years, W. Collard	225
Trinket, 9 years, J. H. Height, Merced, Ill.	100
Dimple 2d, 10 years, C. Chandler, Macomb, Ill.	200
Dido, 5 years, James McKehan, Yates City, Ill.	230
Duchess of Clark, 8 years, Wm. Stewart, Taylor, Ill.	1000
Bracelet 2nd, 7 years, G. Sprague, Des Moines, Io.	400
Oneida, 6 years, L. Hickox, Springfield, Ill.	275
6th Belle Republic, 6 years, C. Chandler	180
Red Bird, 8 years, J. Bell, Atlanta, Ill.	205
Red Lady, 8 months, J. Bell	235
Portulacca, 7 years, R. Otley, Kewanee, Ill.	1150
Portulacca 2d, 2 years, G. Sprague	500
Attraction 4th and heifer calf, 4 years, W. H. Hansen, Franklin Grove, Ill.	795
Miss Lucy, 2 years, J. Rayburn, Bloomington, Ill.	1025
Ringlet, 6 years, C. Chandler	655
Vesta, 5 years, G. Sprague	225
Faith, 4 years, do	500
Flirt, 2 years, R. Otley	860
Lady Maudy, 6 years, O. Jackson, Ottawa, Ill.	400
Lady May, 10 months, W. Stewart	265
Beauty, 4 years, J. Bell	420
Beauty's Maid, 2 months, do	404
Portulacca 4th, 1 year, C. Chandler	409
Floretta 4th, 1 year, R. Otley	1010
Mollie's Maid, 2 years, W. Stewart	140
White Lady, 1 year, J. C. Ramsay, Orange, Ia.	210
Nellie May, 5 months, J. Orr, Wenona, Ill.	755
Dove 6th, 2 years, and her heifer calf, W. Stewart	215
Belle of the Grove, 23 months, Mr. Cusenberry, Atlanta, Ill.	600
Portulacca 3d, 20 months, G. Sprague	500
Floretta 3d, 4 years, Chas. Wood, St. Louis, Mo.	430
Miss Nellie, years, J. H. Spears, Tallula, Ill.	400
Miss Maggie, 2 years, R. Otley	100
Miss Grace, 3 months, J. H. Spears	503
Portulacca 5th, 20 months, R. Hall, Virginia, Ill.	290
Miss Sheridan, 5 months, J. Orr	

Alice Brown, 22 months.	W Stewart	705
Punch, red bull calf, 2 months.		110
Camco, 5 years (barren). C. Collard		165
Tulip 2d, 4 years, Mr. Cusenberry, Atlanta, Ill.		
BULLS.		
9th Duke of Thorndale 9 years, N Jones To-		405
wanda, Ill.		
General Sheridan 5701, 7 years, C. Branson, Ita-		260
via, Ill.		
Gold Dust 12,050, 21 months, Mr. Kitchen, Mt.		180
Pleasant, Iowa		
Burnside Wiley 7630, 3 years, S. Holderman,		460
Grundy Co., Ill.		
Stoner 11,036, 2 years, J. Bell.		170
Red Buckingham, 11 months, James Bishop,		235
Bloomington, Ill.		
Royal Duke 4th 9 months J. Rayburn		195
Star of Towanda 12991, J. J. Ham, Hudson,		205
Ill.		
Almas, 6 months, L. G. Fish, Franklin Grove,		200
Illinois		
Red Prince, 9 months, Mr. Felter, Towanda,		200
Illinois		
Duke of Belleville, 3 months, G. I. Burrus,		530
Greene Co., Ill.		
Star of the West, 1 year, Mr. Nichols, Illinois		200
Frosty, 7 months, Mr. Potts, Fairbury, Ill.		160
Red Oak, 2 years, B. Stretch, Towanda, Ill.		120

SUMMARY.

42 cows and 1 bull, average \$18.15	\$11,775
14 bulls and 1 bull calf, average \$21.94	3,542
53 head.	\$76.67 Total \$21,091

One grade bull calf sold for \$60. One 4 year old bull, owned by an outside party, sold to W. R. Duncan & J. Chorn of Towanda, for \$500

Berkshire swine sold at fair rates—one boar for \$33; four sows at \$28 each, one boar at \$36, one do, at \$20, one do, at \$14. Other sales not noted.

Short-Horn Sales in England.

A sale of 37 pure bred Short-horns took place lately at Weeting Hall, Brandon, Norfolk, at which, among others we note the following sales. A 4th Duke of Thorndale cow, by Sir Chas. Knightleys Cambine for \$340. The two Duchesses of Brailles, bred from pure Knightley cows by Bateshire sold for 200 guineas. One bull, a pure Bates named Lord Collingham, was reserve at 200 guineas.

The 31 head sold at an average of 40 guineas, and considering the condition of the stock only a short time recovered from the foot and mouth disease, and the time and character of the sale, the average was good.

We also hear of the sale of the herd of Mr. Tippler, at Roxwell, Chelmsford Essex, the average of 32 head being £35. 6s. 9d.

Also a sale of cattle and pigs belonging to the Rev. W. Holt Beever, of Pencraig Court, in which Short-horns, 36 cows, averaged, £52. 18s. bulls average £38.

Sale of the Middle Park Stud England

The break up of this gigantic and renowned breeding establishment, by far the most important, both as regards the quality and the number of the animals, may be regarded as the greatest event in the annals of the

turf. At a sale continuing through four consecutive days, and attended by a cosmopolitan crowd of ten thousand people, thirteen stallions, one hundred and ninety-seven brood mares, and one hundred and twenty-nine foals, a total of three hundred and thirty-nine head, all of the most valuable and successful strains of blood, were sold under the hammer—a persuasive one, to be sure, as it was wielded by Mr Tattersall—for the enormous sum of five hundred and twelve thousand five hundred and seventy-five dollars in gold!!!

The Stud Company saved Blair Athol at the cost of sixty thousand dollars; it rushed up the foreigners to thousands on the daughters of Newminster, and kept them at home, and it secured the queen of the Blenkiron stud, Seclusion, the daughter of Tadmor, for twelve thousand five hundred dollars, not in greasy greenbacks, but in gold. But for the Stud Company, the sale at Blenkiron would have proven a national loss to Great Britain.

Profits of Sheep Feeding.

I think we may estimate that for sheep weighing about one hundred pounds it takes about two pounds of hay per day, or its equivalent, to keep the sheep alive and healthy, without gaining anything in weight. Give them one pound of corn per day in addition, and a good sheep ought to gain two pounds per week live weight. The account with one hundred sheep would stand as follows:

Dec. 1st, 1871—	
100 sheep, 100 lbs. each, at \$3.50	\$350 00
10 tons clover hay, at \$18	180 00
150 bushels of corn, at 30c.	90 00
	\$620 00

March 10th, 1872—	
100 sheep, 120 lbs. each, at \$3.50	\$350 00
Manure from 10 tons clover hay, at \$9.54	95 40
5 tons corn, at \$6.65	33 25
	\$478 65

This shows a very fair profit. On farms where there is plenty of good wheat straw, the sheep can be wintered at less cost. The profit does not come from the increase of weight of sheep so much as from the increase in price, and provided the sheep are fat enough in the spring to bring the highest price, a few pounds less tall-w on each sheep will make little difference in the result—certainly nothing like as much difference as that between the cost of hay and straw. So far as the amount of nutrition is concerned, corn at fifty cents per bushel is far cheaper than hay at \$18 per ton. The most prevailing folly is in wintering sheep on straw alone. A little corn in addition to the straw, will keep the sheep in good health and vigor, and pay better than most agricultural operations with which I am acquainted.—J. S. Bowles, in American Agriculturist.

Standard of Ayrshire Cows.

The following are the points which the Royal Agricultural Association of Ayrshire has established as the standard of Ayrshire

cows: "Head short; forehead wide; nose fine between the muzzle and the eye; muzzle moderately large; eyes full and lively; horns widely set on, inclining upwards, and curving slightly inwards; neck long and straight from the head to the top of the shoulders, free from loose skin in the under side, fine at its junction with the head, and the muscles symmetrically enlarging towards the shoulders; shoulders thin at the top; brisket light; the whole forequarter thin in front, and gradually increasing in depth and width backwards; back short and straight; spine well defined, especially at the shoulders; short ribs arched; the body deep at the flanks, and the milk veins well developed; pelvis long, broad, and straight; high bones, wide apart, and not much overlaid with fat; thighs deep and broad; tail long and slender, and set on a level with the back; udder capacious, and extending well forward; hinder part broad and firmly attached to the body; the sole or under surface nearly level; the teats from two to two and a half inches in length, equal in thickness; and hanging perpendicularly; their distance apart at the sides should be equal to about one-third the length of the vessel, and across to about one-half of the breadth; legs short, the bones fine, and the joints firm; skin soft and elastic, and covered with soft, close and woolly hair; the colors preferred are brown, or brown and white, the colors being distinctly defined; weight of animal, when fattened, about forty imperial stones (560 lbs.), sinking the offal."

The Difference between Grades and Crosses.

We have seen in several semi-agricultural papers a disposition to confuse the two terms "grade" and "cross." These two, however, should by no means be indiscriminately adopted in many various classes of cattle.

A "cross" is indeed in one sense a thorough bred, for sire and dam are in this case both thoroughbred, for instance the calf of a thoroughbred short-horn, by a thoroughbred Ayrshire is a "cross bred" animal, and en passant we may say by no means a bad cross either.

While the calf of the native cow with a thoroughbred sire is strictly a grade approaching according to the number of crossings, it taking three to make a thoroughbred entitled so to be registered in the "herd book."

Can Short-Horns be Improved?

As readily as any other highly improved breed of animals. The nearer a breed has approached perfection (if there is any such state) the more difficult it will be to advance it. But we hold that this is not the case with Short-Horns, notwithstanding that this seems to be the prevailing opinion. It has been held by high authority that the ancient Short-Horns were superior to any of the present day.

We think the following axioms correct. If these cattle are not susceptible of improvement, then the breed is perfect. And that perfection implies perfect uniformity. That this breed is not perfectly uniform does not admit of a doubt. If not uniform, then they are not perfect, and are susceptible of improvement just as any other imperfect breed of animals are.

That they are no better now than they were a century ago is no proof that they are not susceptible of improvement. The proper inference is, that breeders have failed to adopt such a course as would accomplish it. And there are reasons palpable enough why breeders have thus failed. The great merit and the deserved popularity of the breed, commencing with the Collings, has been the prime cause. The great demand for them has been the cause of throwing upon the country all the bull calves, good and bad, as breeders, consequently many bad bulls have been used to the great damage of the breed as a whole. The high price paid for these cattle has turned all the breeders into speculators, and consequently few have sought and practiced the art of breeding. And the true test of value, which is the shambles, has been neglected. The price now is too frequently made the test of merit. Under such influences, Short-Horns are in great danger of deterioration. And the evil is sought to be remedied by increasing the prices—making new importations and the adoption of some new family. This can afford but little and uncertain relief.

The breeder must understand first what he wants. He must know what constitutes a first-rate Short-Horn. Then the great principle is, that like begets like. Then he must select the best, and none but the best as breeders. There is no herd of cattle, or even a family, but there are better and worse cattle in it. The best should be retained and bred, and in the course of thirty years' breeding, this will be a better herd than at the commencement. That these cattle are susceptible of improvement, there can be no doubt. We think this is demonstrated in the fact of the great variety of grades and qualities that are found to exist. There can scarcely two animals be found of like quality in all their points. One will be better in a certain point than the other, and worse in another; and an inferior animal may be better in a point or two than the most superior. There is a certainty that improvements may be made.

Gentlemen, I have finished my remarks upon the points of Short-Horns. Permit me, before retiring, to congratulate you on the prospects that lie before you. You have in charge the most noble race of cattle in the world. That you will properly care for them and perpetuate them, I have no doubt. Conventions of breeders must result in clearing out all charlatans, who, if tolerated, would bring about a state of things which must result in a deterioration of this race of cattle. Our

breeding must be conducted on correct principles if we would succeed in improving, or even in maintaining the present standard of Short-Horns. No false pretenses can accomplish good. Our talks here will result in the exposure of error and the establishment of the true principles of breeding. You today stand in the front rank of the great cattle interest of your country. Upon you depends the improvement of its vast herds. Fifty per cent, in size, may be added by the substitution of Short-Horns, and probably fifty per cent. in value of meat. It is, moreover, not only incumbent on you to change all the vast herds of cattle in the country, but it is your duty to fill with Short-Horns the limitless grass plains that lie between this and the Pacific, and our northern and southern boundaries.—*Country Gentleman.*

The Principles of Breeding Domestic Animals.

MR. T. F. JANIESON, Lecturer on Agriculture in the University of Aberdeen, delivered the first lecture of the season on Friday last, 'On the Principles of Breeding Domestic Animals' The subject is of so much importance to our agricultural readers that we give the lecture in full.

Of all the various departments of husbandry, the rearing of live stock is perhaps the most interesting in which the farmer can engage, and also the one that holds out the highest prospect of reward to those who can prosecute it with ability and success. More especially is it so in our country, which has outstripped all others in this pursuit, and has become famous over the whole world for the excellence of its various breeds of cattle, sheep, and horses; so much so that men come from all parts of the earth to purchase that blood which they can nowhere else find in the same degree of perfection, and which improves every other with which it is mingled.

GREAT DIFFERENCE BETWEEN GOOD AND BAD BEASTS.

Every one must have remarked the immense difference that often exists between animals in regard to the progress they make upon the same sort of food. You may have two cattle of the same age and tied up together in the same stall, getting food and treatment precisely the same in every way, yet the one will remain obstinately lean while the other will get as round and fat as an alderman. Two cows may be feeding in the same pasture; the one gives abundance of milk, the other almost none. Here, then, it is evident there is a great waste of food in the one case compared with the other. Both may consume the very same quantity, but they differ greatly in the way they dispose of it. The object the farmer has in view is to convert the vegetable produce of his farm into beef and mutton, and what he wants is an animal that will do so to the greatest advantage.

Mr. M'Combie tells us that there is a kind of cattle in the northern parts of Scotland which he calls 'Highland Hummies,' a race of starved vermin which he considers the worst of all breeds. No kind of food will move them much. The choicest specimens are distinguished by a brown ridge along the back. They can, he says, be made older, but they defy even his own well-known skill to make them much bigger or fatter. Food, as he rightly tells us, is entirely thrown away on such animals. On the other hand, he points out that beasts of the right sort grow and feed rapidly, there is no difficulty in making them fat; the difficulty rather would be in making them lean when once in good condition. Evidently, then, it must be very unprofitable for a nation, as well as unsatisfactory to the individual farmer, to have a race of cattle like these Highland hummies, which Mr. M'Combie abhors, and, fortunately, there is no difficulty in obtaining plenty of the opposite kind.

Again, differences equally striking may be seen in regard to dairy produce. Some animals appear to be nothing less than machines for turning grass into milk. A good dairy cow will give 500 gallons of milk in the course of a year, yielding 150 lbs. of butter, but some will give much more than this, and some much less. Some cows when at their best will give as much as 7 or 8 gallons a day for a time, others only 2 or 3. Now, if we want dairy produce, it is of the utmost importance to select animals having this natural adaptation for the purpose, and it is generally found that these qualities will be inherited to a considerable degree by their offspring. The art of the breeder consists in developing the type of animal suited for the purposes for which it is to be kept. The dairyman wants a beast that will give a maximum of good milk; the cattle-feeder one that will grow and feed rapidly, and experience shows that these desirable qualifications can be perpetuated, and that races can be formed which will continue to manifest the same properties. Whether it is possible to unite these two advantages in the same race, is a subject which I will not at present stop to discuss, but it is manifest that it would be a very desirable object to attain. A breed that would combine in the same animal the property of giving an abundant supply of good milk, and of producing offspring that would either grow and feed rapidly if put to fatten, or be good for the dairy if kept for milk, this would be a combination of the greatest excellence. Opinions differ as to the possibility of uniting these two qualities in a high degree of perfection, and, at all events, it is certain that it is very difficult to succeed in it.

PRICE AND THE HEREFORDS.

John Price, the great breeder of Hereford cattle, tells us that, in commencing to form a herd which should possess the form and qualities he thought most desirable, he, after

much search, fixed upon the animals belonging to Mr. Tomkins of Wellington Court, near Hereford, from whom he purchased a considerable number of cows and heifers, and three bulls. These cattle were of smaller size than other herds he saw in Herefordshire, but had more of the good properties of the model he had in view than any others he could meet with. He at first attempted to improve this breed of Tomkins by crossing them with larger cattle, apparently with the view of increasing their size; but the result was so unfavorable, that he put away all these crosses, and returned to the pure Tomkins. This Mr. Tomkins, we learn, began breeding his stock so long ago as 1769, commencing with two dairy cows which his father-in-law had purchased, and which he observed had an extraordinary tendency to thrive and grow fat. The one with most white he called *Pigeon*, and the other, of a rich red, with a spotted face, he called *Mottle*; and from these he reared his two lines, the *Mottle* tribe and the *Pigeon* or *Silver* tribe. We see, therefore, that Price built on Tomkins' foundation, and Tomkins himself started with animals of unusually fine quality, no doubt themselves descended from a good sort.

HAVING GOT THE BEST SORT, STICK TO IT.

Having got the best sort, it is of the greatest importance to stick to it. We see that Price tried to improve Tomkins' choice Herefords by crossing them with a larger race but found he was wrong, and had to retrace his steps; and Thomas Bates, the celebrated breeder of short-horns, tells us that he never used any bull that had not the Duchess blood, without immediately perceiving the error, excepting *Belvidere*, and he was come of a long race of well-descended short-horns, whose blood traced back to Colling's Favorite. The late Richard Booth, of Warlaby, was also most averse to the introduction of any new blood into his herd. It is only by continual propagation from the same sort that fixity of character can be got, and every mixture of fresh or foreign blood introduces unlooked for elements of confusion. Mr. Tomkins told Price that he had bred the whole of his fine stock of Herefords from two heifers and a bull selected by himself early in life without any cross of blood; and Mr. Price himself, whose stock was celebrated for their excellence, says that he had continued to keep the blood of these cattle unadulterated for forty years, so that for eighty years in succession he and Tomkins had kept them pure and unmixed with any other stock.

ATTEMPTS AT CROSSING.

Breeders have often been struck with the character of the Scotch West Highland cattle, and many seem to have thought advantage might be derived from an intermixture with their blood. John Price, of Hereford notoriety, seems to have taken them as his model. 'Among cattle,' he says, 'the

Highland Scot approached more nearly than any other animal to the standard of form which I considered the true one. This decided me in adopting them as my model. I was desirous of possessing a breed of cattle on a somewhat larger scale than the Scotch Kyloes, yet having the same symmetrical loggy forms, with similar coat and texture of flesh.' Long ago, Mr. Charge had heard Bakewell say that, from the West Highland heifer, he thought the best breed of cattle might be produced.

Charles Colling likewise made some experiments in this direction; and so impressed was Thomas Bates with the capabilities of this breed, and the possibility of developing something more excellent than had yet been seen by uniting them with the short-horn, that he persevered in the attempt for nearly thirty years, having at one time nearly 100 breeding cows of the cross between the Highland heifer and the Messrs. Collings' short-horn bulls, and sparing no pains to procure the finest cattle from the West Highlands that could be got. In the end, however, he gave it up entirely, finding apparently that the short-horn breed was not improved in this way. Robert Colling, the brother of Charles, and only second to him as a breeder, also experimented with the West Highlanders, and frequently tried the cross between the improved short-horn bulls and the best Kyloe cows he could procure. The produce made very fat, but he eventually gave up the attempt, finding the pure short-horns to be better. Mr. Charge seems also to have tried it, and several gentlemen in Aberdeenshire and Banffshire. There is no doubt that the short-horn improves the Highlander, as it does all other breeds; but the Highlander gives no good to the short-horn. Mr. John Wright, a well-known judge of cattle, and a contemporary of the Collings, says: 'Improvements have often been anxiously sought for by crossing with other breeds, and many valuable specimens have been exhibited; but it may be asked, What breed is there that can improve the short-horn? I have seen many extraordinary animals from the cross with the West Highland Scot, but we do not find their offspring uniformly improving by each succeeding cross; there is great uncertainty in their progeny. The polled or Galloway Scot progresses with less variation in the produce, and continues to improve by subsequent crosses, but neither of them gives anything to the short-horn, though the short-horn adds much to them.'

REVERSION CAUSED BY CROSSING—DARWIN'S EXPERIMENTS.

As Mr. Wright tells us, it answers very well to cross the polled Galloway or Aberdeenshire with the short-horn bull, and by continuing to cross the progeny, always taking care to use a pure short-horn sire, no bad result will follow, for in this way, in the course of a few generations, you approximate very near to the pure short-horn. And, in

fact, it is just in this way that the present race of Aberdeenshire cattle have, in a great measure originated; but this is a different thing from attempting to form a new breed which should possess characters intermediate between the two. The experiments of Mr. Darwin throw a curious light upon this subject. He has shown that if we take two races which breed perfectly true to their kind, and unite them together, we often get features in the progeny entirely different from those of either of the parent stocks, and he has further shown that these new features are, in some cases at least, a reversion (or *crui-back*, as some of our cattle-breeders would say) to an older type from which both the varieties have been derived. The crossing, in other words, has often the effect of causing the reappearance of long lost characters that existed in the original stock from which both the breeds have descended. For example, in the case of domestic pigeons, which are believed by naturalists to have been all derived from the common rock dove, Darwin found that when he mated together individuals of two distinct races, which always breed true to their kind when kept pure, the produce of the cross sometimes showed a plumage quite unlike that of either of the two races, and approximated in colour to that of the wild rock dove, the source from which both races are supposed to have been derived. A similar remarkable result was obtained with domestic poultry. He crossed individuals of the black Spanish breed with the white silk hen—the one black as coal, the other white as snow; and from the union of these, he got a bird with much red in its plumage, and coloured almost exactly like the wild Indian fowl, the *Gallus Bankiva*, which is believed to be the original parent stock of all our various breeds. Mr. Darwin adduces many other facts of a similar nature, all going to show that crossing gives a remarkable impulse to this tendency to reversion, so that if we breed from mongrels, we may expect to find some very unexpected results turn up in the progeny. It is no doubt the experience of something of this sort that causes many breeders to be so shy of introducing new blood into their herds.

The subject of reversion is a very curious one. It may be occasionally remarked that a child will resemble its grandfather or grand mother, or even some remote ancestor, much more strongly than its own immediate parents. This is what is termed an instance of reversion. But the observations of Mr. Darwin show that this property may be occasionally developed to a most unlooked for degree, and that features will now and then re-appear of some far off progenitor, separated by hundreds,—aye thousands of generations, and that crossing of distinct races has somehow or other a remarkable tendency to bring out such results. But, although crossing has this effect, it must not be supposed that it always does so, or even that the instances will be numerous.

Neither is reversion confined to crosses, for instances will show themselves even in the purest breeds. For example, the occurrence of small horns which often happens in polled breeds of cattle and sheep, may be looked upon as cases of reversion. Darwin says there is reason to believe that sheep, in their early domesticated condition, were brown or dingy black, and several ancient writers describe the Spanish sheep as being black, red, or tawny, and he attributes to reversion the occurrence of black and dark-coloured lambs which are sometimes dropped by Southdowns and other pure-bred sheep. Even the Leicester, which have been very carefully bred since the time of Bakewell, now and then throw grey-faced, black-spotted, or even wholly black lambs. The frequent occurrence of white animals in the short-horn breed of cattle, notwithstanding the general dislike to this colour, may be explained on the doctrine of reversion. It is well known that white cattle were at one time very common in England, and there is reason to think that some of the original wild breeds were white. It has also been observed that in various pure breeds of the domestic pigeon, blue-birds having the characteristic marks of the wild rock dove will occasionally appear. There is no doubt however, that such cases are comparatively rare, and the general experience of breeders shows that any remarkable divergence from the established type of a particular race is unusual in well-bred animals.

FOOD FOR BREEDING SOWS.—A correspondent of the Michigan Farmer writes: Fed my breeding sows most of the time on turnips the sweet Russia, or Jenny Linds as they are called here. This was their food during the latter part of the winter, and until grass grew, when they entered into the clover. They eat them readily, and thrive on them. I consider corn very injurious to breeding sows, especially to the finer breeds. Potatoes and slops from the house are also good. I consider sugar beets very valuable for feeding breeding sows and store hogs, and I shall raise an acre for that purpose.

Origin of Chester White Pigs.

The republication of A. B. Allen's article on China and Berkshire pigs, prompts me to give my views of the origin of the Chester Whites. About 20 years ago a statement was published in the Farm Journal to the effect that Capt. James Jeffries, who traded between Liverpool, Eng., and Wilmington, Del., and whose home was on a farm in Chester County, Pa., introduced two pigs from Bedfordshire, Eng., and that from these the Chester Whites are descended. I always doubted this theory of their origin, for the reason that I pretty well remember the development of the breed, and I never heard of the Bedfordshire pigs until the author of the article above alluded to bought,

I think, Capt. Jeffries's farm, and taking his statement about it, gave the world the above history of their origin, as the Captain gave it to him.

I distinctly remember that about 40 years ago, which was some years before the pigs of Chester and Delaware Counties were called Chester Whites, my father and some of his neighbors had the Chinese pigs, or, as they were then sometimes called the No-boned pigs. The description given of them by Mr. Allen is perfect, except that ours were all white. Their characteristics may be understood by the following incident, of which I was an eye-witness. On hog-butchering day, which is, or used to be, a great event on a farm, and the boys were allowed to stay at home from school, the neighbours were invited to assist, and smart active fellows were in demand to catch and hold the hogs while one skilled in the business, 'stuck' the poor victim with a long knife that reached the arch of the main artery. The pigs of Delaware County at that day were generally large, coarse animals, that yielded a good weight of pork, but required an immense amount of grain to make them fit for butchering. On such a day, after the pen of pigs had about all of them yielded to fate, two men were sent to the orchard with a wheelbarrow to bring in a full bred China pig that had fattened on apples and grass alone. The little fellow weighed less than 200 lbs., and was so fat and round, and his legs were so short, that when he was 'stuck' an operation to which he could offer very little resistance, he rolled to the foot of the hill, a distance of about 70 yards. My father was very fond of all kinds of domesticated stock, and was considered a successful grazer and breeder, and his efforts to improve the large and coarse breed of hogs by crossing with the China pigs are within my own recollection. What his neighbors were doing in the same direction at the same time, I was too young to know, but I do know that my father was noted for having about the best pigs in his county. So long as he lived, which was to 1845, he had the best pigs that I saw any where—better than the Berkshires that were first imported about that time. The Pigs of Chester and Delaware Counties were gradually improved from about 1830 to the time when they attracted public attention and received the name of Chester Whites, which was after the introduction and rejection of Berkshires and some other breeds, all of which were found to be inferior to our own stock.

During all this period of gradual improvement, I never heard the name of Bedfordshire or any other name that might express the English pigs imported by Capt. Jeffries, and I know that the China pigs were one of the elements of the improvement, and have no reason to doubt that they were the only foreign element. I never heard when they came to us, and who brought them, nor do I know to what extent they were distributed

as pure breeds among the farmers of Chester and Delaware Counties. Of course, every body who bred pigs, took some care to select the best to breed from, and these 'best' were a cross with the large and coarse native hog with the small and fine China hog. Breeders aimed to get the large size of the one combined with the fine quality of the other, and they appear to have hit the mark aimed at. The great demand for them, and the ease with which frauds could be perpetrated, have flooded the country with spurious animals under that name, but it is worthy of note that here no other breed of pigs has ever maintained a reputation two years after it was first puffed into popular notice. An impartial trial always reinstates the home breed, no matter at what mortification and loss to the experimenter with foreign breeds. (ELLWOOD HARVEY, of Chester, Delaware, Co., Pa., in *Country Gentleman*.)

Clover for Hogs.

An Ohio hog raiser advocates the system of pasturing on clover during the summer. He presents, as the advantage of this plan, the statement that an acre of ground in clover will pasture five hogs four months, and it will take the corn from half an acre to feed them the same time. The cultivation of the corn he counts equal to the rest of the other half acre. He further claims that hogs pastured on clover are in far better condition than if fed on corn, as they are better framed, healthier, and eat better, and also states that the land is enriched by the clover pasturing.

Importing Stock.

Mr. George Isaacs of Haldimand Plains has just returned from a visit to Scotland, and has brought out with him two fine young horses, six excellent short-horn heifers and a bull of the same breed, and also four splendid sheep. Mr. Isaacs deserves great credit for importing superior stock upon several occasions, and we trust that while they will be a benefit to the country, they will also be profitable to himself. Mr. Isaacs has our best wishes for his success in the matter.

Selecting Rams.

The first and most important qualification of a stock ram is constitution. No matter how perfect he may be in every other particular, if he is defective in this one point he is worthless. His stock will be feeble, short-lived, poor breeders, and always ailing. Constitution is to be determined by the full, robust, physical development, the deep, full chest, giving ample room for the vital organs; a uniform development of all the parts, giving a look of strength and vigor, and by family antecedents. The ram should not only be all right himself but he should

come from healthy, vigorous families on both sides, else he may have lurking in his system the germs of weakness and disease to be developed in his stock.

In choosing a stock ram, size is important. A large, roomy sheep makes a better breeder and nurse, carries a heavier fleece and makes more mutton. The fleece should be, in our opinion, free from yolk; and the less oil the better. Staple, long; quality of wool, good medium—neither very fine nor very coarse.

It does not pay for the wool grower to give much attention to the fancy points. These should be left to the breeder who expects to realize fancy prices.—*Vermont Record and Farmer.*

Training Steers.

Steers I handle and yoke up the first winter before they are a year old, and during the following summer, to accustom them to the yoke, and to walk side by side evenly together. The second winter I put them to a light sled, and put a small rope around the high one's horn, not to guide them by, but to secure them from running away from me by some sudden fright or some other cause. I then, with a light short whip, proceed to teach them to draw, to go forward, to stop, to haw and to gee. I use few words with them, and few motions of the whip, not trying to teach them too many things at once. When they are a little older, I teach them to back by choosing a piece of descending ground for that purpose, with the empty sled or cart for a load. I never try to plough without a driver till the steers are four years old.—*Cor. Country Gentleman.*

Gestation of Cows.

The period of gestation in cows being a subject that has from time to time attracted considerable attention, we publish the following by J. H. Pickrell, given in the *National Live Stock Journal*:

In forty-five Short-horn cows and heifers, producing fifty-four bull and fifty-two heifer calves, of which accurate time, in days, has been kept—no reference having been made to calves that were "slipped"—the average time that bull calves were carried was 283½ days, heifers 281½ days; the average time of the whole one hundred and six, being a fraction over 282½ days.

The greatest variation was in the time of carrying heifer calves; the shortest period being 258 days, and the longest 299 days, making a variation of forty-one days. The shortest period of bulls was 270 days, the longest 295 days, being a variation of twenty-five days. But six calves were dropped at 280 days the time usually counted as the average time—of which, four were bulls, and two heifers. Only three were dropped at 282 days—the average time of the herd, two heifers and one bull.

The age of the cow seems to make no difference in the time of gestation. The shortest period was in a cow three years old, with her second calf; the longest, in a cow carrying her fourth calf—both heifers, as before observed. The shortest period of carrying a bull was in a cow carrying her second calf, and the longest was with the second calf. The greatest variation in one cow, was in a cow carrying a bull 288 days, and a heifer 262 days, the difference being twenty-six days, carried a bull 276 days—her longest period—a variation of eighteen days. The 258 days' heifer was of the average size when she came, and is now three years old. The 299-days' heifer was also about the average size.

The Cattle Plague in England.

It would appear that the Cattle Plague coming into England from Russia is now causing much alarm. The following extract from "Bell's Weekly Messenger," will give some idea of the rigorous means that are adopted to prevent the importation to England of affected animals:—

On the 16th of July 56 head of cattle were purchased in Russia for shipment to Hull. Two days after the Privy Council issued an order respecting cattle affected with cattle plague. On the cattle arriving at Hull they were inspected by the meat inspector, who found that two of them were suffering from rinderpest. Communication was at once opened with the Privy Council Office, and two officers went down. On their examining the cattle they found that 20 were affected with the disease. An order was, therefore, procured, and the whole consignment of 56 were slaughtered, the carcasses being put in a light er whi h was on Saturday night taken out to sea and sunk. The *Scotsman* of Monday says:—"The Russian cattle which were affected with rinderpest and thrown overboard in the Firth of the Forth are being washed ashore on the Haddington coast, and a correspondent who came up the firth yesterday reports that they can be seen floating about. As may naturally be expected, the circumstance is causing considerable comment and some alarm among the inhabitants where they are washed up. It is not known what means, if any, were taken to prevent the animals from rising to the surface and floating about, but it is hoped that a more effectual plan of sinking will be adopted in future, should, unhappily, a similar necessity arise. In the meantime, Mr. List, chief constable has given instructions to all the police along the coast to bury the carcasses as soon as they are discovered ashore. We understand that the healthy carcasses having been thrown into the sea by the orders of the Privy Council, contrary to the first instructions issued, the owners claim compensation, which will amount to between £400 and £500. Ten of the cattle were suffering from rinderpest, but the others, it is said, were in good condition. It had been intend-

ed to ship another cargo of cattle from Cronstadt to Leith, but as soon as it was known that the importation of Russian cattle into Great Britain was forbidden, a telegram countermanding their embarkation was dispatched."

A very serious outbreak of cattle plague has occurred at West Hartlepool. On Monday afternoon some 26 head of German cattle were landed by the steamship Gipsy Queen, from Hamburg, and as in the opinion of Mr. Henry Peele, the local veterinary inspector, one beast was seriously affected with the disease, and eight others were slightly suffering from it, he ordered them to be isolated from the remainder, which he had previously found to be healthy, in consequence of which several of them had been sold and slaughtered, but none had been removed from the slaughter-houses. To put his suspicions to the test as to whether the diseased beasts were really afflicted with the cattle plague, Mr. Peele telegraphed on Tuesday to Mr. Wilkinson, the veterinary inspector at Newcastle, and to Mr. Peele, of Durham, to come over for a consultation. They arrived on Tuesday evening, the former being accompanied by Professor Simonds, who happened to be at Newcastle investigating a similar outbreak among foreign cattle landed at that port; but in the meantime the beast first attacked had become rapidly worse, the other eight being proportionately so. Upon a careful examination, the Professor and his colleagues were convinced that the surmises of Mr. Peele had been correct; and as both the healthy and diseased cattle had been intermixed, both on the voyage and since, they resolved to request the magistrates, as the local authority, to order the destruction of the entire consignment, both alive and dead. Accordingly the magistrates sat specially on Wednesday morning to hear the statements of the professional gentlemen, and at once acceded to the application; but, as in the recent case at Leith, the diseased cattle disposed of at sea had all since been washed ashore, and it was resolved to drench the carcasses with carbolic acid and bury them in quick lime, permission to do which was promptly granted by Mr. Bland, the local manager of the North-Eastern Railway Company.

Whipping Horses.

There are persons who think that the spirit and temper of a horse must be broken to make him valuable. Professor Wagner, in his work on the "Education of horses," says:—"I would caution those who train or use horses against exciting the ill-will of the animal. Many think they are doing finely, and are proud of their success in horse training, by means of severe whipping, or otherwise rousing and stimulating the passions, and then, from necessity, crush the will through which the resistance is prompted. No mistake can be greater than this; and there is nothing which so fully exhibits

the ability, judgement and skill of the real horseman as the care and tact displayed in winning, instead of repelling the action of mind. Although it may be necessary to use the whip sometimes. It should always be applied judiciously, and great care should be taken not to rouse the passions or excite the will to obstinacy.

"The legitimate and proper use of the whip is calculated to act upon the sense of fear almost entirely. The affections and better nature must be appealed to in training the horse as well as in training a child. A reproof given may be intended for the good of the child, but if the passions are excited, the effect is depraving and injurious. This is a vital principle, and can be disregarded in the management of sensitive, courageous horses only at the eminent risk of spoiling them. I have known many horses of naturally gentle character to be spoiled by being whipped once, and one horse was made vicious by being struck with a whip, once while standing in his stall.

"I have referred to these instances to show the danger of rough treatment, and the effect that may be easily produced by ill-usage, especially with fine blood horses, and those of a nervous temperament. Many other cases might be cited, as such are by no means uncommon. Sensitive horses should never be left after they have been excited by whip or other means until calmed down by rubbing or patting the head and neck, and given apples, sugar, or something of which the animal is fond. Remember the whip must be used with great care, or it is liable to do mischief, and may cause irreparable injury."

Notes on the Herefords.

In connection with the recent shows, the Stonebrook House herd of Herefords, reviewed in our columns a few weeks ago, now again claims notice richly earned. At Cardiff Mr. Fenn, exhibited rather largely, with success in each entry. The first prized bull in the head or full aged class was Bachelor, the joint property of Mr. Fenn, and Mr. Harding, of Bicton. Cop Hall, by Severus 2nd, and King Severus, by the same sire, were respectively first and commended among the bulls calves. Duchess of Bedford 6th, (close upon calving—has since given birth to a bull by Sir John 2nd) received a high commendation and the reserve number. Lady of the Teme was third among the yearling; and Queen of the Teme had the reserve and a high commendation in the heifer calf class. At Gloucester on Wednesday last Bachelor gained the first prize and silver cup value 25/ as the best Hereford in the Yard; Lady of the Teme, first prize; Queen of the Teme also first in her class, beating the one that was first before her at the Royal show; and Cop Hall, took a second prize. The Shropshire flock of Mr. Fenn, was honourably represen-

ted, his shearing ram taking the first prize. These animals were all he entered for Gloucester, and all, as we have seen, took places on the prize-list, one being second and the rest at the head of their several classes, and one the best in any class of his breed. Queen and Lady of the Teme, are both by the favourite old sire Severus 2nd, two of whose bull calves Mr. Fenn, has lately sold to go into Ireland. He has now half-a-dozen newly calved bulls by the same sire, and one by Sir John 2nd.

At Cardiff the second prize bull in the class headed by Bachelor was Bachelor's son - Provost, bred and exhibited by Mr. Turner of the Leen; and a daughter of Bachelor was the first prize heifer calf, Mr. Turner's Ruby; another daughter, Plum, from the same herd, second in the two-year-old class. The first time Bachelor came under our notice was in the first year of his service at The Leen. He was bred by Mr. S. Robinson, of The Moor, Kingston, and is a son of Mr. Tudge's Douglas, from a dam by the celebrated Sir Thomas, the sire of Battenhall and a host of other winners.

Agricultural Shows and the Telegraph.

The idea of extending the wires to the show-yards of the different agricultural societies may be said to be almost entirely a novel one, for it is only within the past year or so that the practice has been adopted to any extent. The business has developed, however, in a manner which could scarcely have been anticipated by the most sanguine; for we learn that at the meeting of the Royal Agricultural Society at Cardiff, just concluded, no fewer than 3400 messages were forwarded and received, of the value of more than £180. Of the messages forwarded, upwards of 60 containing more than 15,000 words, were on behalf of the press; while the messages received, for delivery within the show yard, exceeded 1200 in number. Compared with last year's telegraph business at Wolverhampton, when the show was attended by 12,000 more persons than at Cardiff, the business is very nearly three times as great, notwithstanding that the wires were on the spot in both cases.—*Scotsman*.

The Coming Provincial Exhibition.

We observe that the arrangements for stock, &c., at the coming Exhibition in Hamilton are well under way. Indeed the shedding is completed, while we have much pleasure in noting that about 9 acres more land has been added; purchased we understand by the city of Hamilton, to the show grounds and have been securely enclosed by a solid high board fence.

The fitting up of the interior of the Exhibition building, and the stalling and dividing of the sheds, are progressing rapidly, and everything will be snug and trim long before it is time to bring in articles.

Veterinary Department.

Ailment to a Calf.

To the Editor.

DEAR SIR,—I should like you to give me some information as to the ailment of my cattle:—

I will explain the ailment as it has been so far.—My calf, after sucking its mother for about four months, was first seen to be lame in the hunder parts. I examined it and found the foot slightly swelled,—next day I found it quite sore between the claws of the foot at the edge of the hair—it was running with blood and watery matter &c.

I am, Sir, yours,

JAMES PARKER.

Rose Bank, Guelph.

ANSWER BY VETERINARY EDITOR.—It is hard to say what the true nature of the disease attacking the feet of your calf may be, as a diseased condition of the foot may proceed from different causes.

You must endeavor to allay the irritation by cleansing the parts well with tepid water and dressing with carbolic lotion, in the proportion of one part of carbolic acid to twenty parts of water. A pledget of tow should be saturated with the lotion and carefully applied.

Diphtheria in Horses.

To the Editor.

DEAR SIR,—I have been an observer of the treatment of a horse owned by Mr. McN., of Euphemia; the horse has a good appetite,—his neck was swelled badly. He was taken to a man who said it was Diphtheria, then in a day or two that it was the Distemper, and who gave him some black powders. A Mr. E. was then called to see the horse; he told them to bathe him with warm water and salt for a day or two, which they accordingly did; then they treated him with turnip poultices; then Mr. N. cut the sore open; from which came only blood, but so copiously that it had to be sewed up; then Mr. P., having seen the horse, ordered him to be bathed with saltpetre and vinegar, which was accordingly done. In about five days Mr. C. came to see the animal, he first put his finger into the wound when the matter came in a stream; he then gave Mr. N. some white powders, which he said was poison, to wash the sore for two or three days, and ordered them to treat him with turnip poultices. Mr. N. soon called on Mr. C to get him to bleed his other horse; he made two holes in her neck but no blood came, and he said that no one can bleed her.

Now Sir, can you, or some of your readers, tell me if they were right in such treatment of the first horse, or if the other can be bled.

A SUBSCRIBER, Bothwell.

We have often alluded to the manner in which many horses are maltreated by people exceedingly fond of prescribing

for ailments about the nature of which they are entirely ignorant, and also from the owners of horses taking the opinion of every Tom, Dick, or Harry. If Mr. N. had placed his horse under the charge of a competent practitioner he should certainly have carried out his instructions. As far as we can judge of the case it was one of irregular strangles, and the abscess that formed on the neck required to be poulticed, and after due time should have been opened and the matter allowed to escape. The patient should also have been well fed, and given plenty of fresh air.

We cannot recommend bloodletting except in some urgent cases, and we think it very lucky for Mr. N. that the operator failed to carry out his instructions.

We would also kindly advise Mr. N. to use a little more rational judgment in the treatment of the dumb animals placed under his care.

Intestinal Obstruction.

To the Editor.

SIR,—A singular case of intestinal obstruction came under my observation a few days ago.

This most peculiar case was that of a year old filly, the property of Mr. Robert Creighton, of Oneida Co., Haldimand, Ont. I was called in on the morning of the 19th instant, no symptoms of any thing wrong having appeared on the previous night, and she was parently in the full enjoyment of health. That morning she was observed to be struggling and knocking herself about, the symptoms resembling those of colic.

I found her down and very restless,—pulse 85. Administered linseed oil, tinct. opii., and sp. eth. nit. I also gave repeated injections of warm water during the forenoon. The pulse becoming full and oppressed, I took about three quarts of blood from the jugular vein, and ordered hot fomentations to the abdomen. About two o'clock, p. m., the ears and legs became cold; respiration short and quick, and it became evident that the case would terminate fatally. She continued to strain to the last, and so much so that the rectum was protruded about six inches. About five o'clock, p. m., she died.

On opening the abdomen a peculiar knot was revealed in the last division of the small intestines, (the ilium), causing complete obstruction. The intestines behind the knot were quite empty, while those anterior to it were distended almost to bursting. The portion of bowel within the knot was filled with bloody serum and gas.

Of course it is needless for me to say any thing about the contingency which may have caused this derangement in the relative position of the parts, and I leave my professional brethren to draw their own conclusions as to the symptoms and treatment of such cases.

I am, &c.,

J. GARDINER, V. S

Caledonia, 22nd June, 1872.

The Dairy.

American vs. English Cheese.

In the report of the Department of Agriculture at Washington for February, we find the following relating to product, favorite cows, and the growing importance of American cheese in Scotland.

In the six principal dairy counties of Scotland it is estimated that the milk of rather more than 100,000 cows is utilized for the purpose of making cheese. The product is 18,000 tons annually; worth at the average price of last year, about \$5,000,000. The Ayrshire cows, that are eminent for their milking qualities, even when fed on poor pastures, form the favorite breed. The cheese is made for about 190 days in the summer period of the year. After that the milk is made into butter; or, if near a railroad station, sent into town for sale. The American cheese factory system is generally being adopted. The consumption of cheese is rapidly increasing and is appreciated by the laboring classes, entering largely into their daily diet. The reports of the American dairymen's associations are reprinted in England. Many of the old English brands of cheese are passed by and declined on coming into competition with American importations.

A Pound of Milk.

Referring to the custom now practiced of weighing milk, the *Country Gentleman* says A correspondent who criticises the very excellent custom which has become almost or quite universal at butter and cheese factories, and is rapidly spreading elsewhere, of reckoning milk by the pound instead of by the gallon, is not aware of the origin of the custom, and is in error in basing his criticism upon the supposed fact that everybody "knows what is a quart of milk."—There are several standards as regards measure of capacity, especially the wine gallon of 231 cubic inches, and the beer gallon of 282 cubic inches. One of these is sometimes used and sometimes the other. In the early history of the factories, farmers were often induced to give beer gallons instead of wine gallons, because they wished the price per gallon to be nominally as large as possible; and the system of buying and selling by measure rapidly came into disfavor. A pound is standard weight and has the same meaning wherever the English language is spoken. The bulk of a given quantity of milk, moreover, will vary with its temperature, and we have had occasional doubts whether the froth were not sometimes "counted in," when the number of quarts yielded is measured warm from the cow, for the information of the public. As to the comparison of weights and measures, it is common to regard a pint as a pound, but a careful correspondent of the *Country Gen-*

tleman lately stated, as the result of numerous trials, that a quart of milk will average 2 1-5 pounds in weight, and when thoroughly cold, that he had found a quart of milk to weigh nearly 2 1-4 (2.23) pounds.

How Easily Butter is Spoiled.

A farmer's wife writes to an exchange: "Of all the products of the farm, the butter is the most liable to be tainted by noxious vapors floating in the atmosphere. Our people had lain some veal in the cellar, from which a little blood flowed out and was neglected until it had commenced to smell. The result was that a jar of butter which I was then packing smelled and tasted like spoiled beer. Another lady reader observed that there was a pond of filthy, stagnant water a few hundred feet from their house from which an offensive effluvia would be borne on the breeze directly to the milk-room, when the wind was in a certain direction, the result of which was that the cream and butter would taste like the disagreeable odor coming from the pond. As soon as the pond was drained, we had no more damaged butter."

Churning.

In the *Milch Zeitung*, published at Dantzig, Germany, the following conclusions are arrived at from experiments made by Mr. Peterson to determine the causes affecting the yield of butter, viz :

The churning of whole milk is, as a rule, little known. It is, however, often resorted to in Holstein, where cheese is not made.—The general mode of procedure is self-evident; instead of being skimmed, when it is ripe enough, the whole of the milk is worked in the churn.

All the experiments I have made to determine which method yields the most butter have been in favor of churning the whole milk, when other circumstances have been equalled. To obtain the greatest amount of butter, in churning cream, it is necessary,

1st. To be in a position to control the temperature at all times of the year.

2d. To be able always to perform the skimming at the right time.

3rd. Such a daily supply of milk as will yield enough cream to allow it to be churned before its yield of butter is damaged by standing too long.

These conditions cannot be complied with in all dairies, and the less so the smaller establishment. The greater number of dairies depend on three or four cows, and the yield of butter is often considerably lessened by the cream standing too long, owing to the quantity not being sufficient to churn. In churning whole milk I always proceed as follows:—The evening milk of one day and the morning milk of the next are churned together. The former is placed in a tub directly after milking, and the latter added to

it the next morning. In summer the milk is allowed to stand, at most, two feet high in the tub; in the winter about 2 1-2 feet. In very hot weather the morning milk is cooled down to 16° to 20° F. before it is added to the evening milk. Under these circumstances the milk is nearly always ripe for churning when the evening milk has stood 36 and the morning 24 hours. The temperature of the milk when being churned should be from 1-2° to 1° R. warmer than when the cream is churned. The churning itself should be hurried as little as possible, since the butter globules being more widely separated in milk than cream, rather more time is needed for them to collect.

In churning whole milk there is an increase in labor, owing to the necessity for more frequent churnings, but this is far outweighed by the other advantages resulting from it.

Winter Dairy.

Fresh butter of prime quality, made through the months of December, January, February and March, will always command a price high enough above the summer-made article to pay for the extra cost of the food required. By having the cows bring forth their young in November, the calves can be raised by hand better than in summer, because the milk will not go sour, and the cows will continue to give a large flow when grass comes, right on to August. The food best adapted for forcing milk and giving the butter a delicious flavor has been repeatedly tried; consequently there is no mistake, no supposition, and no over-estimate.

The hay should be made from grass cut early in June, and the grass should be from seeds sown when it was laid down, somewhere about the following proportions:—Ryegrass 1 peck, white clover 6 lbs., red do. 4 lbs., timothy 2 quarts. Other kinds can be substituted according to the land, and a greater variety introduced, for the thicker the herbage is, the finer and more tender the stems, which causes the cattle to relish it better, and a nice sweet fibery forkful of hay must not only be more nourishing to an animal, but will certainly produce more and sweeter milk than the same quantity of coarser, dead, brown-looking stuff, such as is cut in July and August, when it is nearly or quite ripe, and be preferable, too, to any very large rough hay, even should it be mowed in good season.

The best roots are carrots and mangolds, and if meal is given, a few turnips can be mixed without imparting any unpleasant flavor. The meal will be better, if corn and grain are ground together, and if good fresh bran is mixed with the meal, it will be a still greater improvement.

The following was the way in which a winter dairy of cows was managed and fed with very satisfactory results:—In November and December the cows were turned out during the day on grass which had been growing from the preceding July and Aug-

ust, in small fields, which they grazed in succession. They had then put ready for them every day about half a bushel of sliced roots, being about equal proportions of carrots, mangold wurzel and turnips, with two quarts of meal on the roots, which was the allowance for each cow. They then had hay for the night—just as much as they could eat up clean. In the morning each cow received her half bushel of roots and the meal similar to the evening feed. Thus they prospered till the snow interfered, when they had hay just the same for the night, but first in the morning they had corn stalks, which had been put in a tight box, and about a quart of meal per cow mixed up, and boiling water poured on, and the chaff, which was cut fine, soaked and steamed from night till morning, when it was given to them. After they were milked, they received cut roots, as previously described, and ranged about the yard till noon, when they came into the stable again, and had a feed of hay chaff, and also a feed of roots, going into the yard, if not very cold, till evening, when they were fed the same as in the morning, corn-stalk chaff having been steamed all day for them. Every fair day all winter, when they could get at the ground they went into one or the other of the fields according to the wind, and which lay the best sheltered, and when out in the field the noon feeding was omitted, without any diminution of the milk, though there was a slight depreciation in the quality, but which was very trifling; however, while they could go out, they ate so much of the grass that less hay was used in the night.

The quantity of butter made from these cows varied very much, because they differed so in the quality. Their milk, every now and then, was kept separate and set in pans; when skimmed, some cows' milk of equal measure produced double the cream others did—and this is a point demanding much more attention than it generally receives, for a cow giving very rich milk will influence her offspring in this respect, and any dairyman who not only looks into these distinctions in his cows, but investigates the milking qualities of the dam of a bull before purchasing him, may soon have all his cows good for quantity and quality, for the cows above alluded to were treated alike, and yet there were some making as little as 7 lbs per week, while others produced upwards of 12 lbs.

Before I came to this country, I kept a lactometer, which, having many glass tubes, was very convenient to prove the milk of different cows. By and having charge of a large herd the calves were all reared with a view to their milking qualities, and in three generations the same number of cows made more than double the quantity their predecessors did. Those cows, or at least the portion of them used for the dairy in the winter, had several acres of cabbages grown for them, and when grain was cheap, I had barley boiled for them, which swells and jel-

lies similar to flaxseed, and is one of the best feeds in every respect I ever gave to milch cattle at that time. Barley, weighing 52 lbs per bushel, would sell under a dollar, and as it increases in bulk three-fold by being boiled, and prevents cabbage or roots giving an unpleasant taste to the butter, it is excellent for that purpose.

Previous to the war, while in the South, I had cows lying out all winter, which I gave boiled corn to with satisfactory results. Morning and evening, at milking time, they had a bundle of fodder and a gallon of boiled corn each, and they increased their milk twofold and the butter nearly threefold, making five pounds of butter each per week, which was considered great for the diminutive grades which prevailed in that locality, especially as the family was very large, and new milk and cream was used freely, which made a difference of a third, so that it was equal to seven and a half pounds per week each cow.

If cows have meal, roots, and hay, or cornstalks instead of hay, they will do well without a change from that food, because there is sufficient variety to make them healthy. It requires care in changing the feed of milch cows, for if the milk is checked by doing so, they will not thoroughly get over it, for it is the same as if checked by bad milking; either failing to drain the last half-pint, or going two hours beyond the usual time, will soon ruin any cow.

Some people say if roots are given after milking the fact of their being eaten then will prevent the butter tasting. What can that have to do with it? The flavor is not conveyed instantaneously; the turnips, &c., have to be digested first—therefore the way to allay this evil is to give an antidote in the shape of good meal, &c. Where they are given in a preponderating proportion to other food, the only remedy I know of is to scald the milk, which is always done in Devonshire, England.—*Cor. Albany Cultivator.*

Our Exports of Dairy Produce.

The increase which has taken place in our exports of dairy produce during the last few years has been marked and striking. In no other department of agriculture has there been such a rapid expansion—a fact for which we are largely indebted to the numerous cheese factories, and the result flowing therefrom, which have been established in almost every part of the country. Up to as late a period as 1864-5, we were large importers of cheese. In 1861 we imported 2,165,000 lbs, and in the year 1864-5, just alluded to, our importations were 2,530,950 lbs. The great change which has since taken place will at once be seen by placing side by side our exports and imports of cheese during the last two years:

YEAR.	IMPORTS.	EXPORTS.
1869-70	59,491 lbs.	3,827,784 lbs.
1870-71	68,475 lbs.	8,271,439 lb

These figures indicate a complete revolution in this branch of our trade, and we are

happy to perceive that, in the kindred article of butter, there has been a large increase in the amount of our shipments to other countries. Our importations of butter may be said to be nil, for they have dwindled down to from ten thousand to six thousand pounds annually, a quantity so trifling as not to be worth consideration. In order to show the rapid increase in our production of butter, we append the following statement of our exports for several years prior to confederation:

1860 we exported.....	5,512,500 lbs.
1861 "	7,275,427 "
1862 "	8,905,578 "
1863 "	7,053,898 "
1864 (½ yr) "	1,030,655 "
1864-5 "	6,941,063 "

The progress which we have made will be appreciated when we state that our exports in 1869-70 amounted to no less than 12,259,887 lbs, and for the last year for which we have the returns (1870-71 to 15,439,266 lbs.

The number of cheese factories in Ontario is about seventy, and their production of cheese close upon five and a half millions of pounds. Quebec has also a considerable number of factories, more particularly in the Eastern Townships, and they are steadily on the increase. Although gratified by recent progress, there is no good reason why the annual value and quantity of our dairy products should not be still more largely expanded. It is one of the best paying branches of farming when properly managed, whilst it tends to check that unwise system of our cropping which has been so general and so disastrous to Ontario farmers. With proper encouragement the Dominion may easily double its present exports, both of cheese and butter, before the close of the present decade.—*Monetary Times.*

How to Make a Cheap Cellar-bottom.

In sections of the country where there is an abundance of cobble-stones, collect a few loads of them about four or five inches in diameter, grade the bottom of the cellar, lay the cobbles in rows, and ram them down one-third their thickness into the ground, so that they will not rock or be sunk below the line of the rows by any heavy superincumbent pressure, such as the weight of a hoghead of molasses or tierce of vinegar. The bottom of the cellar should be graded so that the outside will be at least two inches lower than the middle. A mistake sometimes occurs by grading the cellar-bottom in such a manner that the centre will be two or three inches lower than the outside. When this is the case, should water enter from the outside, it will flow directly towards the middle. A straightened board should be placed frequently on each row of stones as they are being rammed, so that the upper sides may be in a line with each other. After the stones are laid and well rammed down, place a few

boards on the pavement to walk on; then make a grouting of clear sand and water lime, or Rosendale cement, and pour it on the stones until all the interstices are filled. As soon as the grouting has set, spread a layer of good cement mortar one inch thick over the top of the pavement, and trowel the surface off smoothly. In order to spread the mortar true and even on the surface, lay an inch board one foot from the wall on the surface of the pavement, stand on the board, and fill the space with mortar even with the top of the board; after which move the board one foot, fill the space with mortar and trowel it off smoothly. Such a floor will cost less than a board floor, and will endure as long as the superstructure is kept in repair.

A floor made in the foregoing manner on the ground in the basement of a barn, a pigery, or a stable, would be rat-proof, and would be found cheaper and more serviceable than a plank floor. The work should be done in the former part of the growing season, so that the cement may have sufficient time to become dry and hard before cold weather.—*Industrial Monthly.*

Good Butter.

If you fail to sell your butter at the highest market price, you may be certain that it is not of the best quality and that the fault is all in the making. There are a few simple rules, which, if followed strictly, will insure good butter and top prices—the first, and most important of which, is, perfect cleanliness in every stage of the process of making. Without this, all other conditions will be fulfilled in vain.

1. Your milk pails, pans, cream pot and churn, must be washed perfectly clean every time they are emptied, and then thoroughly rinsed in boiling hot water, wiped with a clean towel and dried in the sun and fresh air.

2. Before milking, brush the cow's bag before you set the pail under, and get off the loose fine hairs, which will otherwise fall into the milk; and if the teats or bag are dirty, wash them clean with cold water.

3. Set your milk in a cool, airy place, where it will be secure from smoke, soot, ashes, dust and flies, and take off the cream before it turns to clabber. To get all the cream before the milk turns it is an excellent plan to set the pails into kettles over the fire with a little water in them, and heat the milk nearly to the boiling point, and stir it before straining. By this means you will get all the cream in twelve hours, perfectly sweet and free from lumps of clabber.

4. Every time you add fresh cream to the churning, stir the whole well together, and keep the cream excluded from all manner of dirt and foul or hot air.

5. When churned, work the butter milk thoroughly out of it. To do this, some work it in cold water, believing that it requires less manipulation to accomplish it, and re-

sults in less injury to the grain of the butter, which is injured by excessive working; but if water is used care must be taken to work that out, or it will be as bad as the butter milk in its effect upon the butter. Pure rock salt, if ground fine is as much better for butter as it is for pork in the coarse state. Salt freely, but not excessively. Butter that is too fresh is insipid, however perfect it may be in other respects.

6. Pack closely in perfectly tight, clean crocks or tubs, scalding them thoroughly just before they are brought into use, and keep the butter covered with a strong brine of rock salt.

These rules faithfully followed will cause your butter to be sought after at the highest prices. But if, on the contrary, you wash your milk things in tepid, greasy dish water, wipe them with a greasy dish cloth, and set them for use without scalding—if you let all the hairs and dirt go in that will in milking, strain through something that has holes as large as your finger, set your milk where your bacon should be, and where it will catch all manner of dirt, and let it stand till it will stand alone before taking off the cream—you need not wonder that nobody wants to buy your butter.—*Wis. Farmer.*

Milk Statistics.

Sixteen quarts of pure milk are required to make one pound of butter, and ten quarts to make one pound of cheese. When butter is forty cents a pound and cheese eleven cents, one pound of butter equals in value sixteen quarts of milk and returns two and one-half cents per quart to the dairyman. But one pound of cheese from ten quarts of milk only gives him one and one-eleventh cents per quart for the milk.—*Ohio Farmer.*

Alderney Cows as Butter Makers.

We copied on a former occasion, from the *Practical Farmer*, an account of the experience of a Chester County, Penn., farmer in bringing up the production of butter by liberal feeding. The following is a further extract from the same writer, and gives his views on the subject at our head:

My cows are principally pure and grade Alderneys, with a few good grade or common cows. I have never kept any but a pure Jersey bull. In another year I do not expect to have any but pure blood and grade Alderneys, as, from actual trial and experience, let what will be said to the contrary by others, I am well satisfied the Alderney and its crosses are the most profitable stock for the butter dairy. Of this I can satisfy any unprejudiced, intelligent person familiar with cows. Of course I do not by this pretend to say that the fact of a cow being an Alderney in all cases makes her better than a cow of any other breed; but I do say that they are, as a breed, better than any other breed known for butter purposes. I have

known and have seen many great butter cows, of Durhams, Devons, &c., that have made 15 to 16 pounds per week. These cows were large animals, requiring the best of food, and that in large supply; whilst the Alderney, far less in size, and consuming far less of food, will make the same quantity of butter per week, and continue to do so for a longer period. The Durhams and Devons, as a rule, only yield well for a short time, during the most favorable period of their milking; whilst the Alderney (I speak only of the Jersey, not the coarser Guernsey) will keep her yield well up during the whole season; and if extra care and pains are not taken, she will not dry off before she calves again, which is not to be desired, and in injurious to both cow and calf.

The heifer "Linda," on account of whose product of butter, after having her second calf, you published in your valuable paper last summer, is a good specimen of the grade Alderney cow. This heifer is very small, being the smallest cow in my dairy. Her mother I bought, when a two-year old, for \$20. She was in appearance a part Devon, and "Linda," her first calf, was by "Lord Derby," a fine pure Jersey bull. The dam, after calving, did not prove to be of any account. I kept her until after she had a second calf, which was a bull, and she was still a poor cow, only yielding, under the most favorable circumstances, 5½ pounds of butter. I then sold her to the butcher, not considering her worth keeping; but her heifer "Linda," with her first calf, made 8½ pounds when but two years old; and when three years old, after her second calf, made 18 pounds 2 ounces, as per statement published. She has now had her third calf (unfortunately another bull), and is milking extraordinarily well; but she cannot be kept in condition—the richness of her milk keeps her poor. Her first calf was a heifer, which is now coming two years old. She is three-fourths blood Alderney. Her sire was a pure Alderney bull, "Taylor," which you purchased of me for Thos. T. Tasker, Sr., who now owns him. He is the sire of many of the finest milking heifers I know, several of which I possess. This heifer is much like her dam, very promising, and perhaps may equal her.

Now the cow "Linda" is but a half-blood Alderney, and shows her Alderney or sire's blood very plainly in appearance. Her dam was good for nothing as a butter cow; but she, the calf of a poor cow, is unsurpassed, taking size into consideration. She must have gotten her butter qualities from her Alderney sire, certainly not from her grade dam.

I have never raised a heifer having any Alderney cross of blood in her which has not proved a success. I have them from half-bloods up to fifteen sixteenths. I have sold my surplus of them to my neighbors, who like them so well they want more, and I have pure blood bulls, and hereafter expect to raise their heifer calves.

I have now, by an additional purchase, increased my farm to 186 acres, and therefore expect to keep more stock, which I have coming on, having this last season raised all my heifer calves, both pure and part blood Alderney, which as a rule is the only way to obtain good ones, "home raised," and should be practiced by all good farmers. To raise a heifer calf is not much trouble or expense on a butter dairy farm, as skim milk is plenty. Our method is—after 4 days take it from the mother; then for the first month give it either all pure milk as it comes from the mother, or mix with a part of skimmed milk, and at the end of that time give it twice a day as much skimmed milk as it will drink, with a little dry meal to lick. Continue this as long as you see proper, the longer the better, say 6 or 9 months. The skim milk costs nothing and has the greatest effect on the calf. Many think that by skimming milk you take from it all of its fattening qualities, which is a great mistake, as can be seen by its effect on the pigs, who get nothing else on a farm where there is a butter dairy. These fatten and grow, and make the finest roasting pork.

Fattening Cows while in Milk.

Often have I heard it said, and I think several times seen it in print, that milch cows while in milk, will not fatten. My experience does not justify any such opinion. I have no big milkers, but very good for country-raised stock. Without buying any fine blooded stock, I have been trying to improve the common stock of the country, and have succeeded very well; am now milking three cows—one had a calf in January, one in February and one in March—getting every day without feeding at all, from five to six gallons, besides giving the calves enough to keep them in fine condition—the most promising I ever had. My rule is, when the calf first comes, to give the cow one quart of dry corn meal every day for three or four weeks, winter or summer—if it is winter, of course other food—but the meal always by itself dry, I have thought that frequently when a cow fails in milk, which is very often the case, giving them a quart of dry meal every day for a week or ten days, will restore them to their usual quantity. I have about twenty heads of cattle, all in fine condition. My milch cows are splendid doers. It seems to me that in the last eight weeks they have grown or increased in size at least one-fourth. Our range outside is splendid—indeed, we have no use for pasture or feeding, for at least seven months of the year.—*Our Southern Cultivator.*

The Secret of Good Butter.

Every one knows how superior is the reputation of Philadelphia butter, and many have been the attempts to account for it.

Perhaps the most popular notion was that it was due to the prevalence of the "sweet vernal grass" in our pastures and hay-fields—the grass which often gives so peculiar a fragrance to meadow hay. But it needed very little reasoning to demolish such a theory as this. This grass is one of the poorest for hay or pasture purposes, and scarcely exists, except on cold clay lands, in partially shady places near groves or low woods. Yet while this grass is the exception, indeed the very rare exception, in low pastures, or in the hay fed to our cows, good butter is the liberal rule in all our markets.

It has long been the opinion of our best agricultural generalizers of facts that we owe much more of the sweetness of our butter to the abundance of springs and spring-houses in our State, than to anything peculiar which grows in our pastures. Milk has a particular affinity for any odours in the atmosphere, and water has some, hence whatever impurities may get into the atmosphere of the spring-house is drawn out by running water, and the very best security is provided against their being absorbed by the cream.

We notice this now through observing an inquiry whether the light of a kerosene lamp in a dairy could possibly affect the quality of the butter; we should answer most decidedly in the affirmative. All odours of every description should be carefully avoided, if the very best brand is desired.

There is one little incident in this reputation of Philadelphia butter which must never be forgotten. The followers of Penn made up a large class of our original farming population. With these people cleanliness was especially one of the virtues. It was not a mere sentiment that it was "next to godliness," but an every-day testimony in all they did. Aided in these cleanly practices by their numerous springs and spring-houses, we have little doubt we owe to them as much as to any other circumstances the eminent character which Philadelphia butter enjoys; and we believe that if other quarters would give especial attention to these little niceties, as good butter might be had in any part of the Union as here.—*Germantown Telegraph.*

How to acquire a Dairy of Good Cows.

The following article is from a practical farmer in the Live Stock Journal, and holds sound views:

"There can be no greater mistake committed by dairymen than the indiscriminate slaughter annually, of Dairy calves, and the constant importation of cows from Canada and the West Indies."

First select from some of the best known and most approved breeds of milkers. If you can not do this, then save a male from the best cow you have, or if your neighbor has a better cow, then get one from his herd. Having done this, then save and raise all the heifer calves from your best cows and con-

tinue this process. As fast as these become cows, dispose of the older and poorer ones of your herd, by fattening them for market.

The dairy will in this way become replenished with a choice lot of young and healthy native cows which are decidedly the best. First, you can rear them to your liking; by kind and gentle treatment they become docile and tractable, easily handled and kind to the milker, free from bad habits of jumping or kicking, which they will hardly ever have unless they are taught by a mean and unkind temper, in the person who has the first management of young cows. Then again, you can rear your cows to be orderly and always in the lot where you put them. They are more hardy, will stand the winters better, and as you have raised them you know the requirements of their natures. Some are more tender than others, require a little more care, or different feeding at different seasons of the year, and you are prepared to act according to the requirements of the case.

Then, by raising his own cows, the farmer stands credited by the value of the cows, which will prove quite as remunerative, in point of dollars and cents, as to look for the whole income from the amount of surplus butter and cheese sold. Judging from the later tendency of prices on the last commodity, it could be made more profitable to raise and sell a few choice young native cows than to pursue the opposite course of buying Canada and Western cows. In so doing you often run great risk of getting animals gargety, foot rotten and diseased in many other ways, which often infect the balance of the then healthy cows that you have on hand.

You also bring unruly cows to your farm, which teach the others their bad habits by letting the whole herd into your meadows and grain fields.

What is true of ourselves is in many cases true of other people. If we have any cows to sell, they are commonly and almost invariably our poorer ones. So most of the cows found at the cattle yards are the diseased, the unruly, the hard milkers, those that leak their milk, the kickers, and bad to milk generally. More than all this, they are abominably poor cows, and as they were not worth keeping, so they have been sold, and can be bought in the open market by any one who is verdant enough to want them, or from necessity is compelled to purchase cows. This may not apply in all cases, for there are almost always exceptions to the general rule, but there can be but little doubt that the above is true in a majority of cases, as the bitter experience of many who read this can testify.

There is but one safe course in the matter and that is to adopt measures for raising a choice dairy of young cows.

Bad luck is simply a man with his hands in his pockets and pipe in his mouth, looking on to see how it will come out. Good luck is a man of pluck, with his sleeves rolled up, and working to make it come out right.

Apiary.

Bees and Honey in France.

Honey and wax are harvested twice a year in France. The earlier occurs according to location, from the latter part of May to the middle of July. This is called the summer harvest, and is usually better both in quantity and quality than the fall harvest. The honey is finer, better flavored, more aromatic and more easily drained from the wax. It is a pure nectar, collected from a great variety of flowers, and is little contaminated with pollen, particularly if gathered in supers.

At the beginning of July the honey harvest is usually at an end in Gatinais, while it is then just beginning in Picardy and at Troyes. In some of the southern departments the harvest commences a few weeks earlier than in the northern.

In the departments of Eure and Loire, they general estimate that the product of a good stock of bees is five per cent on the capital invested. The yield of honey and wax in the four departments, Gironde, Landes, Lot et Garonne, and Dordogne amounted to about two millions of pounds in the year 1866. In 1867, the summer harvest of honey in Gatinais, amounted 900,000 lbs., which was regarded as a fair average yield.

The fall harvest begins about the 15th of September, and continues till the end of December, according to the greater or less abundance of the yield, and the state of the weather.

At the summer harvest only a portion of the honey and wax is taken, a sufficient supply being always left in the hives to ensure the safety of the colonies in the event of an unfavorable season or a deficiency of pasturage. The largest portion of the honey harvested in the fall, is derived from buckwheat, heather and late blossoming plants; and is much inferior to the summer honey in quality and flavor. It is also darker in color, and very soon crystallizes. It does not drain so readily from the wax, commonly requiring heat and pressure to effect a separation, thus deteriorating the product.

The honey is stored in large vessels or barrels, and care is always taken that the place where it is deposited is dry and warm. Watery honey deposited in a damp place soon spoils, and even the best honey will in time be injured, if exposed to dampness.

Let the harvest be good or bad, the beekeepers always keep honey enough on hand to carry their bees safely through the longest winter.

Bee-hunting in Australia.

The wild bee of Australia differs little in size or appearance from our common house fly, and is stingless. Most of the trees in that country are hollow, and it is in the cav-

ities of the branches that the bees deposit their honey, at a considerable distance from the ground. It is of an aromatic taste, and chiefly gathered from the leaves and blossoms of the different trees that clothe the whole country, from the summits of the mountains to the sea-shore, with the exception of occasional plains, which are of rare occurrence. By the Aborigines of Australia this honey is regarded as a great luxury, and it is very interesting to note with what sagacity they contrive to indulge their taste for it—searching it out with infallible eyesight, and with amazing delicacy of touch. Their method of finding these natural hives, which are not numerous, is curious, not only from the fact that the most minute observation and the most delicate manipulations must have been required to enable the inventor of it to succeed, but also because it displays a knowledge of the natural history of the insect, such as I can venture to say a large portion of the civilized world does not possess.

From the absence in many parts of the bush of Australia of flowers, the little native bee may be seen busily working on the bark of the trees, and unlike the bee of this country, which is ever on the move from flower to flower, it seems to be unconscious of danger. This may arise from the vastness of the solitude in Australia, which are seldom or ever disturbed, except by a passing tribe, or by its own wild denizens, which are far from numerous. The bee is therefore easily approached and the bright, clear atmosphere of the climate is peculiarly favorable to the pursuit.

A party of two or three natives, armed with a tomahawk, sally forth into the bush, having previously provided themselves with the soft white down from the breast of some bird, which is very light in texture, and at the same time very bluffly. With that wonderful quickness of sight which practice has rendered perfect, they descry the little brownish, leaden colored insect on the bark, and rolling up an end of the down feather to the finest possible point between their fingers, they dip it in the gummy substance, which a peculiar sort of herb exudes when the stem is broken, they cautiously approach the bee, and with great delicacy of touch, place the gummed point under the hind legs of the bee. It at once adheres. Then comes the result for which all this preparation had been made. The bee feeling the additional weight, fancies he has done his task and is laden with honey, and flies off from the tree on his homeward journey, at not a great distance from the ground. The small white feather is now all that can be discerned, and the hunt at once commences. Ruining on afoot amid broken branches and stony ground, requires, one would think, the aid of one's eyesight; but with the native Australians it is not so. Without for a moment taking their eyes off the object, they follow it, sometimes the distance of half a

mile, and rarely, if ever, fail in marking the very branch where they saw the little bit of white down disappear at the entrance of the hive. Here there is a halt, the prize is found, and they sit down to regain their breath, before ascending the tree, and to light a pipe, which old and young, men, women, and children, are extremely partial.

When the rest and smoke are over, with one arm around the tree, and the tomahawk in the other, the blackman notches in the bark, and placing the big toe in the notches of this hastily constructed stair, ascends till he comes to where the branches commence. Then putting the handle of the tomahawk between his teeth, he climbs with the ease and agility of a monkey, till he reaches the branch where he last saw the white down disappear. He then carefully sounds the branches with the back of his tomahawk, till the dull sound as distinct from the hollow sound, tells him where the hive is. A hole is then cut, and he puts his hand in and takes the honey out. If alone, the savage eats of the honey till he can eat no more and leaves the rest. But if others are with him, he cuts a square piece of bark, and after having his part of the hive as a reward for his exertion, brings down a mass of honey and comb mixed up together, which though not inviting, is greedily devoured by his partners below.

Bees in Pella, Iowa.

Many a heartache have we had since we last addressed you, in consequence of losing so many of our bees.

We had heard and read of bee cholera, but hoped we never should see its effects; but vain was our hope, for it made its appearance among our bees in the latter part of last winter, and many stocks were dead before we were aware of its presence. We removed the living stocks to their summer stands, cleaned them out, and fed sugar syrup, but many stocks died after been taken from the cellar.

When the disease disappeared, we had only thirteen (13) hives with bees in them; some had enough bees to cover five (5) frames of comb, and others had not more than sufficient to cover three frames, we had but four (4) stocks that did not show signs of the disease.

At this writing (July 8th) we have nineteen full stocks, and fourteen (14) nuclei of three (3) frames each, and two (2) glass nuclei of one frame each. Our bees have no comb to build this season, as there was good comb and plenty of honey left in the hives by the bees that died.

We are now raising queens from those imported last fall. Owen & Ladd, Brentwood, Tenn., are sadly mistaken when they suppose the foreign queen raisers thought they were sending queens to Miss Morgan over here in America, as we signed our name with Mrs. prefixed, when we ordered our queens, so you see there was no particular charm in the

prefix. But it may be that they are partial to the weaker sex, to test this matter we advise importers to use the names of their better half when ordering foreign queens. Ours came all in good order, and not one died during the winter, only where the bees died with cholera, and no one could expect a queen to live when her colony were all dead. — *American Bee Journal*.

Mortality amongst Bees.

(To the Editor.)

SIR:—In the CANADA FARMER of the 15th June, I notice an article entitled "What is the cause of the great mortality among bees?" Now, sir, as I have during the past winter and Spring lost eighty-six hives out of eighty-seven, I am interested in this question, and I am glad that you do not like many other bee keepers, jump at a hasty conclusion on the matter, and assert that so-and-so is a fact without first gathering all the information you can. In the locality where I reside, I find that whole apiaries died under precisely the same varied circumstances. For instance: I wintered my bees in the same place (and a good one it was, too,) that I had wintered them for years previous, without losing any and under the same management, lost, as above stated, eighty-six out of eighty-seven. With some hives, honey was scarce, while others had from twenty to forty pounds, but all had to die alike and I was left with only one poor hive in the spring, in which to interest myself—quite a change from previous years, when I had bees by the million and honey to sell by the ton. My neighbour, Mr. B., put forty hives into winter quarters in good condition, and by March 15, 1872, had not a hive left. Mr. P., who is a very careful man, put away thirty-eight hives, and loses all but four, and, sir, I could enumerate instances of this kind by the dozen, and we are all in about the same fix as yourself, in so far as relates to knowing the real cause of this great mortality. I do not think that last spring there were more than four out of every hundred hives that survived; and now, while I write, the buckwheat fields are a sheet of white blossoms, and scarcely a bee left to visit them and collect the sweets that are going to waste.

J. E. SOLOMON

Brighton, August 12, 1872.

[We have also received a letter from Thos. C. Hill, Esq., Attorney, Sydney, Cape Breton, who was the first I believe, to introduce bees into that Island. He writes that he lost his entire stock, and could not understand why they died, as they had plenty of honey, and were wintered the same as in years before. It would be well for bee-keepers to make a note, the coming winter, of the condition their bees are in when put into winter quarters, and if possible discover the cause of the mortality should it occur again].

Poultry Yard.

Breeding and Feeding Turkeys.

The turkey does not attain its maturity until the third year, and the largest, strongest chicks can only be secured from mature parents. So common is the practice of selling off everything at a year old or less, that it is almost impossible to get stock two and three years old. In purchasing breeders, it is the best economy to buy the heaviest birds, even at fancy prices. A ten months' cock weighing thirty pounds is cheaper at fifty dollars, than a twenty pound bird at five. Young hens weighing sixteen to eighteen pounds are cheaper at twenty dollars, than twelve pound birds at five. Large well formed birds of perfect plumage will leave their mark upon their progeny. They will not only be more comely to look at, but they will bring much more satisfactory prices, whether we sell them to the butcher or to the breeder. Under the stimulus given to poultry raising by the numerous poultry societies and journals started in all parts of this country and Canada, there is likely to be a lively demand for extra breeding stock of all the finer varieties for some years to come. The breeder who goes in for the very best stock, taking premium birds when he can get them, and selling nothing from his yards but prime birds, will be likely to make the most money.

FEEDING.

The practice of most farmers who raise turkeys is not to feed at all after the young birds are six or eight weeks old. They are driven off to the pasture or woods, early in the morning, and can get their living where they can find it. Their chief food is grasshoppers and other insects, and they do the pastures and meadows a great service in keeping under these destructive creatures. This may be well enough where insects and such are plenty.—But upon many farms the range of woodland is exceedingly limited, and the growth of the birds will not be satisfactory without feed from the corn crib. They should come to the roost every night with full crops, and if, on examination, this is not found to be the case, they should be regularly fed once a day at least. There is no danger of fattening a young turkey on a good range in the first six months. With first-class stock, full feed will make a difference of four or five pounds in the weight of the birds at Thanksgiving. Turkeys like a variety of food, though they do very well upon corn, which they never refuse while in health.

They are very fond of a mash of boiled potatoes and Indian meal, and thrive admirably upon it.—Whatever the provender, it should be fed regularly, and the birds be kept thriving from the shell to the butcher's block.—*Poultry World*.

Poultry on the Farm.

The ordinary farmer has this advantage over the professional poultry keeper—his fowls cost him little in the way of food, and almost nothing for care. He usually labors under the disadvantage of not giving his fowls enough care, and managing some things about them with a great disregard for true economy. His fowls, during much of the year at least, live on food that would otherwise been wasted, or on that the eating of which is a positive advantage to the owner. This makes the eggs and poultry obtained almost a matter of net gain. But because the fowls cost little, furnishes no good reason for keeping those that are useless—and such are kept on many farms. In many cases, the stock is never reduced by sale—only by deaths from old age, disease or accident, and by killing a good share of the young for home use.

We imagine that quite a number of our readers, if they would take the trouble to look at their stock of poultry, would find one to half a dozen cocks which had better be disposed of, on account of old age, quarrelsome disposition, or because they are in every way inferior fowls, simply left over, having accidentally escaped killing when young; and also a goodly number of venerable hens, or those hobbling on frozen feet, etc. To keep such fowls over the winter will cost something, and all this cost will be a loss for, even if they do not die, such fowls are almost useless. It will be much better to dispose of them now, sending those fit for eating to market or to the home table, and killing and burying the others.

Many farmers would do well to thus reduce their stock one half. Better care of the remainder might follow with advantage in many cases. It possibly will be neither advisable or necessary to build a poultry house, but some comfortable place could be provided, where the fowls may be protected from storms and cold winds, by day as well as night. Every consideration of economy will dictate good feeding during winter, so as to prevent the fowls becoming poor. Fowls with insufficient food, or exposed to severe storms, will not lay well, while it is equally true, that very many persons do get a goodly number of eggs during the winter months, by giving good food and comfortable quarters to young, healthy hens.

We certainly would not advise farmers to purchase large numbers of fancy poultry; but on many farms, the old stock has run down by long interbreeding, poor care, and no selection. In such cases, a change is certainly desirable, and this would be had by obtaining a good cock, either from a neighbor's yard or from some fancier. For ourselves, we should decidedly prefer to have fowls of some established breed, and would not feel satisfied with a stock widely varying in size, color and form. But whatever class is kept, some care in selection will be necessary to keep them from degenerating.—*Western Farmer.*

Game Fowls Classified.

Game fowls are the highest in blood, the noblest, the most beautiful, the most prolific, the hardest, healthiest, and best table fowls of all poultry.

Number of sorts classed by the colours of the young chickens :

1. Whites.	5. Black-breasted Piles.	10. Brown Reds.
2. Piles.	6. Red-breasted Ginger Reds.	11. Dark Greys.
3. Blue Duns.	7. Duckwings.	12. Dark Breasted.
4. Red Duns.	8. Yellow Bunchens.	13. Blacks.
	9. Mealy Greys.	

Uncommon-coloured sorts, not much known—1, Red Furnaces; 2, Cuckoos; 3, Spangles, 4, Polecats.

The original wild coloured sorts are these three—1, black-breasted Reds, Partridge hens, fawn breasts; 2, brown-breasted Reds, dark-brown (not black) hens; 3, Red-breasted Ginger Reds, yellow legs, light partridge hens.

All the other sorts and colours were originally bred from these three colours, the dark chickens from the Brown Reds, or Dark Reds, and all the others from the Black-breasted Reds, and the Ginger Reds.

White legs are probably the result of long domestication; all other colours of legs are found wild.

The most common and popular sorts at exhibitions—1, Black-breasted Reds, dark red eyes, willow-legs, silver-grey hens, Partridge hens; 2, Brown Reds, dark eyes, dark legs, cork brown hens; 3, Duckwings, dark red eyes, willow-legs; 4, Piles, bright red eyes, white legs, nails and beaks; 5, Blacks, black eyes, black legs, entire black colour.

The Brown Reds—(1), and Black-breasted Reds (5) are the cup birds, and the other three sorts have taken a few cups, and no other colour any cups at all. There are seventeen distinct varieties of Game Fowls, and twenty seven sub-varieties, or forty-four in all, out of which fourteen are of the Black-breasted Red colour, alone, sorts with helmeted cocks included.

The best sorts to keep are these on the whole :

For high courage and spirit in fighting—1, Dark-Greys, black eyes and legs, (hardest sort of all); 2, Brown Reds, (cocks red, brown-breasted only); 3, Red Cheshire Piles (bright red eyes, white legs).

For beauty of colour and markings:—1, Black-breasted Reds, willow legs, Partridge hens; 2, Silver Duckwing Greys, willow legs, silver-grey hens.

For good laying qualities (white legs best for table):—1, Black-breasted Reds, willow-legs, Partridge hens; 2, Red Cheshire Piles, bright red eyes, white legs.

Yellow and blue-legged hens lay the best as a rule; Brown Reds are first for shape and carriage; Black-breasted Reds for superiority of colour.

The colour of the eyes is the best criterion of the difference in the blood in all Game Fowls, as "black eyes" show the dark blood (white eggs); "red eyes" the red blood (reddest birds), pinkish eggs; "yellow, or daw-eyes, the yellow strains (yellowish eggs), these being in general inferior birds to the others. "Bay eyes," and light-brown eyes result from crossing.

Game fowls are the best layers of all poultry, with these few exceptions, which do not lay quite so well:—1, Dark Greys and Dark Breasted, worst layers; 2, Brown Reds, next worst layers in general; 3, Duckwings, when with willow or white legs; 4, Mealy Greys, not a common colour at all. Dark Greys are, however, the only really bad layers of them. Grey-coloured and dark-combed, and dark-faced hens are the worst layers in all poultry.

In the Black-breasted Reds, the clear hackled cocks breed the wheaten-coloured or cinnamon hens, and the striped hackled cocks breed the striped-hackled hens. The true Ginger hens (not cinnamons), breed the Red-breasted Ginger cocks. The strains with red eyes and black eyes are the best birds.

The only sorts now much used for cock-fighting are:—1, Brown-breasted Reds (most common with cock-fighters); 2, Grey-breasted Dark Greys, (hardest and strongest of all); 3, Black-breasted Reds, white legs, dark-red eyes, with the light wheaten-coloured or cinnamon Buff hens. These are the three hardest and strongest sorts of all.

The three quickest fighting sorts are:—1, Red Cheshire Piles, bright-red eyes, white legs; 2, Red-breasted Ginger Red, bright red eyes, yellow legs; 3, Whites, bright red eyes, white legs (like the Piles).

Other favorite sorts of the older cock-fighters are:—1, Red-breasted Ginger Reds, dark red eyes, white legs; 2, Black-breasted Reds (dark), carp-brown legs, and dark red eyes, fawn-breasted dark brown hens; 3, Red Duns, dark red eyes, white legs (north country).

Willow-legged Duckwings stand the next in courage. Willow-legged Black-breasted Reds are too soft a bird; and Blacks both too slow and too soft to be good. Blue Duns fight worst of all, being soft and weak; all yellow or daw-eyed birds are, with a few exceptions, wanting in spirit and courage. Dark Greys and Brown Reds are the best birds of all.—*Cor Collage Gardener.*

DUCKS IN THE VINEYARD.—It is said in the *Grape Culturist* that a large vineyardist in Illinois keeps not less than one hundred ducks constantly among his vines; he says it is wonderful with what diligence they will dart after all kinds of bugs, thrips, flies and small snails, and he considers them among the best of insect exterminators. Everybody knows that nothing will exterminate insects in a garden so well as a few coops of little chickens.

Weather-wise Animals.

An indefatigable meteorologist has gathered some curious observations on certain animals, who, by some peculiar sensibility to electrical or other atmospheric influence, often indicate changes of the weather by their peculiar motions and habits, thus :

ANTS.—An universal bustle and activity observed in ant-hills may be generally regarded as a sign of rain; the ants frequently appear all in motion together, and carry their eggs about from place to place. This is remarked by Virgil, Pliny, and others.

BATS flitting about late in the evening, in spring and autumn, foretell a fine day on the morrow, as do some insects. On the contrary, when bats return soon to their hiding-places, and send forth loud cries, bad weather may be expected.

BETTERFLIES flying about late in the evening often foretell a fine day on the morrow.

BUTTERFLIES, when they appear early, are some times forerunners of fine weather.

MUSICAL SPIDERS also foretell fine weather when they are common in the evening.

CATS, when they "wash their faces," or when they seem sleepy and dull, foretell rain.

CHEEKERS, when they pick up small stones and pebbles, and are more noisy than usual, afford a sign of rain; as do fowls rubbing in the dust, and clapping their wings; but this applies to several kind of fowls, as well as to the gallinaceous kinds. Cocks, when they crow at unwonted hours, often foretell rain; when they crow all day, in the summer particularly, a change to rain frequently follows.

DUCKS—The loud and clamorous quacking of ducks, geese, and other water-fowls, is a sign of rain; as also when they wash themselves, and flutter about in the water more than usual. Virgil has well described all these habits or aquatic birds.

DOLPHINS, as well as **PORPOISES**, when they come about a ship, and sport and gambol on the surface of the water, betoken a storm.

DOGS, before rain, grow sleepy and dull, lie drowsily before the fire, and are not easily aroused. They also often eat grass, which indicates, that their stomachs, like ours, are apt to be disturbed before change of weather. It is also said to be a sign of change of weather when dogs howl and bark much in the night. Dogs also dig in the earth with their feet before rain, and often make deep holes in the ground.

FISHES, when they bite more readily, and gambol near the surface of streams or pools foreshow rain.

FLIES, and various sorts of insects, become more troublesome, and sting and bite more than usual, before as well as in the intervals of rainy weather, particularly in autumn.

FROGS, by their clamorous croaking, indicate rainy weather; as does their coming about in great numbers in the evening; this last sign applies more obviously to toads.

GEESE washing, or taking wing with a clamorous noise, and flying to the water, portend rain.

GRATS afford several indications. When they fly in a vortex in the beams of the setting sun, they forebode fair weather. When they frisk about more widely in the open air at eventide, they foreshow heat; and when they assemble under trees, and bite more than usual, they indicate rain. *Ec.*

GREAT ESTATE SALES IN THE NORTH OF ENGLAND.—Two of the Greenwich Hospital estates (Spindleston and Whittonstall) have been sold by auction at Newcastle. These estates, formerly in the possession of the Earl of Derwentwater, together contain about 5690 acres, and realized £196,000. The Spindleston estate was first offered, and after some competition was knocked down for £116,000 to Major Browne, of Acklington, the Master of the Hounds. The Whittonstall estate was then offered, and one of the wealthy coal-owners of the North, Mr. Laycock, of Gosforth, became the purchaser at £80,000, with the timber in addition, which is estimated at another £25,000 to £30,000.

Late Rose Potatoes.

Messrs. Bruce & Co, Seedsmen of Hamilton, inform us that this variety of which they have growing about an acre and a half are looking very well.

If they bear out the character hitherto claimed of more prolific bearing than the Early Rose, we think that they will have a very heavy run in Canada for some years to come.

When we consider how rapidly new kinds of potatoes deteriorate under continued cultivation, gentlemen who are constantly engaged in experimenting on new varieties are deserving of special credit, and should receive every encouragement.

The Canada Farmer.

TORONTO, CANADA, SEP. 15, 1872.

We must again request our Correspondents to write *only upon one side* of the paper when sending manuscript, to the office of "THE CANADA FARMER."

To "Farmers' Clubs."

We shall be glad at all times to hear from the Secretaries, and our columns are ever open to reports of debates held at the several Farmers' Clubs about the Dominion.

Believing, as we do, that the establishment of farmers clubs, throughout the country, has done and is now working wonders in the elevation of the tone of Canadian farming; we are willing at all times to give the free use of our columns to practical discussions that may from time to time take place among practical farmers.

To Secretaries of Agricultural Societies.

We shall be happy to accord space in our columns for reports of Agricultural Shows held during the coming fall, but must request, that, as we have already much matter in hand, such reports be *condensed* as much as possible.

Give us the success of the show as compared with former years, the chief prize takers, and any points of special interest connected with the exhibition.

The Coming Provincial Exhibition.

The Joint Local Provincial Exhibition Committees have held several meetings lately in the city of Hamilton, to take into consideration the proportionate sums to be granted by the city and by the county of Wentworth severally.

These seem to have been lengthy and sharp discussions upon the proportionate sums that each should guarantee.

It was first proposed that the county pay one third of the whole grant if such do not exceed \$8200. Tenders having been called for it was found that the lowest came to \$3,000.

The city contended that they had been to great expense in the original purchase of the grounds and buildings, and had lately added at her own cost, seven acres to the Fair grounds.

They, the city, wished the county to take the same proportion as they did last year namely 2-5ths of the whole cost, while the county members would only agree to vote the lump sum of \$1,200. Thus it now stands and final arrangement await the decision of the Agricultural and Arts Council.

We must say that whereas these local committees used to meet in March or April, we think it is very unwise that final considerations should now be put off so late as the middle of July.

The Coming Fall Fairs.

The time is now almost at hand when our periodical Fairs take place.

We wish to draw the attention of our readers to the fact, that it has been by good free and lively competition alone, that our products and manufacturers have gone on from year to year increasing in value.

It is the clear duty of every farmer to exhibit something.

It is a very small-minded excuse for not showing to say, "Oh, I shan't get a prize."

If individual farmers would only contrast the class of stock before the days of regular fairs with that now to be formed in the country, would watch how, step by step, Agricultural machinery has, under the influences of public competition, gradually improved each year; they must, without doubt, trace all these benefits to the medium of the public exhibitions.

Farmers should not attend Fairs with the one view in end to obtain a premium. Let each individual who has the interest of a constantly improving Agricultural state of the country, truly at heart, contribute his mite to swell the exhibition list, so shall we have a large variety to look at when we attend, and shall see in a few short hours more of the points that go to make up good stock, shall be able more thoroughly to compare farm machinery, than we could do in a year, under any other circumstances than those of a public exhibition.

Where so many good things are gathered, together it is not for the public to condemn such as fail to obtain the prize. Let us remember that far more sales are made, outside the prize takers than amongst them.

While the farmer can gather so much information for himself at these annual shows; he owes it to the Province, to his township and to his county, to use all his endeavors, and by the presence of himself and his family, to help to build up these institutions.

We trust that no farmer will neglect, if he can possibly compass the time and expense, to attend the Provincial Exhibition in Hamilton, from the 23rd to the 27th September, inclusive.

Hamilton has hitherto always held a successful Fair, and there every indication leads us to believe that the coming fall exhibition will be one of unusual interest.

Provincial Ploughing Matches.

The Agricultural and Arts Association, determined to hold two grand Provincial Ploughing Matches this season, at a date subsequent to that of the Provincial Exhibition and offer \$400 in prizes at each match. One of these matches is to be held within 20 miles of Belleville and Kingston, and the other near London. Tenders are asked for 30 acres of land for each match, and implement manufacturers are invited to offer supplementary special prizes. There can be little doubt that these matches will excite a great deal of interest among the farming community.

Probable Wheat Prices.

The English papers of the 15th of last month state that some of the wheat that is early is expected to be ready "in three weeks or a month for the sickle." "If," says the *Mark Lane Express*, "we get over the pinch for present supplies up to harvest, we shall do well, and there is every prospect that lower rates will set in for the new crop." The Baltic has been swept clear of all the finer kinds of wheat and the late shipments of wheat from the Black Sea are described as any thing but choice, so that it is expected that the British nation will have to feed on flour that has lost some of its natural sweetness as well as color, or else pay a higher relative rate for

the finest of wheat. The crops are generally looked upon as liable to ripen late. In most of the European markets there has been a slight decline owing generally to the favorable promise of the in-coming crops. At Dantzic on the Baltic the crops give every satisfaction, and there had been a decline of 3 cents per bushel on the finer wheat.

At Hamburg the weather had been splendid and there had been a decline of 6 cents per bushel. The wheat never looking better, but the finer kinds were held at 60s. @ 61s. per quarter. The stocks of wheat have never known to be so much reduced in all parts of Germany as at present.

In France the wheat crop of the south has been begun to be harvested, and the farmers are reported to be well satisfied both as to quantity and quality. If all goes well it is expected that another month or up to the 15th of August, will insure a crop the abundance of which will be certain. The decline of wheat is very general in the provincial markets. Out of 99 places, 58 are reported where wheat and flour had declined, 39 are reported steady, and two with an advance. At Paris no large trade could be effected without concessions, but California white is quoted there at 63s. per quarter, which shows that fine wheats are maintained steady at the prevailing rates of the past month.

From the Black Sea at Treganrog the advances were favorable as to the crops, but the stocks of old wheat are exhausted.

From these reports we draw the inference that prices will decline abroad soon after the harvest is completed, which will hardly be sooner than the first of September. Mean while the United States will furnish such supplies as she can up to that time at rates not much below those that are ruling at present. We look for a large export grain trade from France to England. It is usual where that country has a good crop. If she has ten million of bushels to spare it will make a dull export grain trade for the American wheat dealers in the fall of the year. The French farmers will all be anxious to sell immediately and to press their grain in the market, as the present crop is the first they have had since the close of the German war, and we must look for an early export. This crop of that country will also affect the demand for California wheat considerably. Heretofore for several years France has been a large consumer also of the Mediterranean and Black Sea supplies. These also will press on the British markets, and tend to make prices lower during the winter season. Should we ship any large amount to Great Britain during the next two months, it would clear off nearly our whole surplus, and leave us our home markets to supply, and we believe that is about all we will be able to do. But unfortunately we will not find that out till it is too late.

Royal Agricultural Show, England.

We have received a long report of the Royal Agricultural Society of England show which has just taken place at Cardiff in South Wales. The show of cattle was larger than at Woolverhampton, among the aged Short-horn bulls, the contest lay between Mr. Linton's, *Lord Irwin*, and Mr. Outhwaite's, *Royal Windsor*, the latter carrying off the palm.

The bull calf class spoken of is very excellent, the gem being one shown by Lady Pigot of Branches Park.

We see that the well-known breeder, Colonel Towneley was a prize taker in several classes.

The Herefords were not in great show, but the few specimens sent forward were very excellent. The Devons were likewise well represented. The Jerseys and Guernseys were very good.

Sheep numerically not as well represented as usual, there being only 383 pens against 444 at Woolverhampton last year.

In Leicesters the Rev. Geo. Inze, Tamworth, Leicestershire, was very lucky, while in Cotswolds the run lay between the executors of the late Thomas Gillet, Farringdon, Oxford, and one Mr. Thomas, (Cowbridge, Glamorgan), Lincolns were best represented by Mr. Dudding, Wragby, Lincoln, and Mr. Marshall, Branston, Lincoln.

In Southdowns we note several prizes to Mr. Rigden.

While Lord Walsingham usually especially successful was beaten except in shearing ewes.

In Pigs the display was marvellous amongst which Mr. Peter Eden of Salford, Manchester, came out successful.

The report speaks very highly of the Carters Seed stand, men who supply an immense quantity of the better kinds of seed to our Canadian Seedsmen.

The Weather Report.

August, 1872.

The mean temperature of August was 69° 7, being 3.4 warmer than the average of thirty years, and 2.1 warmer than August 1871. It also is the warmest August ever recorded at this station; the highest previously being August, 1853, (68° 6). The highest temperature occurred on the 22nd, 91° 8; and the lowest on the morning of the 30th, when it fell to 51, a monthly range of 40° 8.

Warmest day 22nd. Mean 78.6, or 13.6 above the average.

Coldest day 30th. Mean 56.1 or 7.0 below the average.

The highest temperature ever recorded in August was 99° 2, on 24th August, 1845, and the lowest 40° 0, on 27th August, 1870.

... fell on 19 days, and amounted to 2.405, being 0.616 less than the average; of this fall fully one half fell from 1 to 5, P. M.,

on 2nd; while on 10 days the amount was only a mere sprinkling.

Cloudiness wa. in excess of the usual amount, and may be divided as 12 clouded, 14 partially so, and 5 clear days.

The wind has maintained the same character of excessive calmness and variability as the previous month, and may be divided as N. 2 days, N. E. 1, E. 5, S. E. 2, S. 6, S. W. 6, and N. W. 9.

Thunder or lightning occurred on 1, 2, 7, 14, 20, 26 and 29th.

A New Variety of Wheat.

We have received a sample of a new variety of wheat, the "White Chaff Midge Proof." The sample sent to us by the Messrs. Bruce, Seedsmen, of Hamilton, was grown by Mr. J. Leo, of Saltfleet, near Hamilton. We cannot think, by its appearance, that it is entirely free from the attacks of the midge.

It is a fine sample—growing two or three inches higher than the Deihl, and ripening a few days later.

The sample is clear and clean, much like the Treadwell in size, but very white. It has yielded this year twenty-seven bushels per acre, upon a clay loam, under ordinary cultivation.

Hints to Guide Farmers seeking new Homes.

The present is the season which some people, (always troubled by a desire for change,) leave their old farms to seek for new ones. There may in some cases, be good reason for this course, but very often the desire to do so, is principally dictated, by the desire for change only—by the idea that some other place is better than the one they have,—and the feeling also prevails extensively, "that as they have failed in acquiring the benefit and independence, they were in search of "where they were," they will simply change and see "what that will do for them," leaving the benefits to be derived, undefined, and in some cases quite imaginary. To any one who is selecting a new home for his family, I would offer a few practical hints for his guidance. Forty years experience in Canada, and a remarkable statistical knowledge of almost all of it, (derived from a series of circumstances, connected with coming in contact with great numbers of people from all parts of the Dominion), has led to the following conclusions.

1st. Do not buy only a farm because it is cheap, especially when you find the former owner, or occupant, has (after many years' trial) failed to do well on it. Recollect, (in comparison with you) he had the land for nothing, because he had it paid for from some source or another, and failed to do any good with it; whilst you have it to pay for, and it may be subject for careful consideration, why you should succeed under less favorable auspices, where he failed.

2nd. "Never buy a wet farm" if your decision, above, is arrived at, by your own having been too dry.

The last season has been a most exceptional one, and the next may be altogether as much the other way, and I would strongly urge great care on this point unless there is some very good reason for such selection being accepted. A wet farm is somewhat similarly circumstanced, to a stony one. To drain it, you must in all probability expend a second value in so doing, before you can derive any benefit whatever at first, just similarly, as you must again expend the value of the land, in clearing away the stone, before you can use it to advantage, or derive proper value from it by the use of improved, and labor saving implements. A stony farm is certainly so much worse, as this, that after clearing away the stone you may have to drain it, and you certainly must do so, to derive full benefit from it. But these improvements are for secondary outlay, you must get immediate good returns, to enable you to pay for the land. Other outlay, may be profitable, and advisable after the farm is paid for, but not often with ordinary means sooner.

3rd. Do not allow your first impressions, and judgement, to be biassed, by the owner of any farm, going over it with you the first time. You may be sure he wants to sell (as you want to buy) and from some reason generally best known to himself, and this generally happens to be something that if you were honestly made aware of, you probably would not be so inclined to purchase the farm. I do not mean to say all would refrain from telling the faults the land had, but certainly many would omit doing so.

In such cases both suffer; but yours is permanent, or until some one comes, and does again, what you have just done, "buys the farm under false impressions," whereas the owner or seller only suffers in the opinion of the buyer as an untruthful man.

4th. Never buy a hill-side farm, if you can avoid it although they sometimes bring excellent crops, there is no comfort to be had in working it, whether hauling in grain or hauling g (u)ar, all is done with increased labor and difficulty, and at considerable extra expense. Recollect that in all cases if you can manure, plant, work, take off, and market, "the result of one hundred acres of land, so situated that, from "quality of soil," drainage, "position of homestead," distance from market and fifty other causes, not easily enumerated in detail, you can save \$2 an acre every year, from those causes this amounts to an enormous advantage in the first purchase of such a farm in comparison with others less favorably situated, or in other words, such a farm is absolutely worth a capitalized sum, equal to ten years' purchase of the amount actually so saved, and interest thereon included. And in valuing farms, my experience goes to show, that few people will be willing to sell,

a poor farm, or one without these advantages, at a relative low price. And in addition there are many other drawbacks, such as a piece of bad road, a bad hill, or long piece of corduroy crossing that will cause a long and sometimes permanent obstruction. "The fact is one farm has plenty of "water," and another none." facilities for procuring supplies "of all kinds from some neighboring mill or village, railroad station, and many others. All these items most materially influence the cost of conducting to a successful issue, a farm in this country, where labor is so dear, and time is labor.

It is therefore quite apparent, there is much food for reflections, when selecting a new farm, not one tenth of which can be recapitulated here but which will by the advantages, or disadvantages, most materially alter the advisability of purchasing at a price.

And yet plenty of people, can be found, who will recklessly, purchase poor badly situated lands—because "they are cheap," and easily attainable—on which they and their families, will live, and struggle, spending the best of their lives, with scarce sufficient return, to sustain them with ordinary decency as to clothing, and almost without luxuries of any kind, and it is to this cause, amongst others, that farming in Canada, owes its uncertainty; I can at this moment point to hundreds of farms attended with just such results, as have been portrayed.

To a good farmer, a first-class farm, is a very valuable acquisition, and has great value, and most deservedly so, and verily these are, here in Canada, thousands of them also.

It is just so in England; poor lands have a certain value, simply because they are cheaply and easily attainable, and generally so upied by persons, whose ambition or enterprise, does not reach any point beyond simply to exist.

Of course the foregoing observations are made altogether irrespective of any particular value, the timber on such bad lands, may have, hard wood, does not often possess much saleable value,—except for lumberers use—and unless within cord-wood selling distance, the labor of handling it when any where below a value of \$2.50 per cord is too much, except within two trips a day distance of market. All the shipping hard wood, that can be obtained by lumberers, off a hard wood lot, will generally only be worth just enough, to tempt a man to destroy his woods by its sale, rendering the remainder very liable to injury by fire, from the chips laying about, where such selection has been made.

With pine, of course it is very different, but we are now valuing lands for farmers, not for lumber or for lumbering purposes.

In the foregoing comparison of value between good and bad land, I have not yet reckoned the enormous amount as a local over a number of years, a small yield less

per acre, which a poor place must of necessity produce, than a rich one.

The same proportion will of course apply to all else grown on the farm. In wheat the loss is about \$4 an acre, in hay about probably \$2.50, in oats about \$2, in barley about \$2.50, or somewhat more, average say \$2.75, shewing an absolute loss per acre, annually, as interest and sinking fund as before calculated, of over \$3,000 value to the first cost in purchasing a poor farm in comparison with a good one, as all land unless some great difficulties be attributed to locality costs about the same to work.

C.

Prosperity of Agricultural interests, Including Value of Land.

Land is steadily increasing in value, in all sections of the Province of Ontario; very few people are aware of the extent of this increase. Those living in cities and who happen to have a few lots, (often taken in on debt and utterly neglected), if they do not happen to meet with chance customers, think no advance in value has taken place, whereas those who deal in lands, and understand the business, and are known to have large tracts of land to dispose of, are now readily obtaining nearly twice the amount such lands would have brought eighteen months since. The very waste or refuse lots, that have hitherto laid neglected, and been considered almost worthless, are now often sold at high figures; whilst those lands, that are good, and hence, have been improved, are continually changing hands, at an increase of thirty to forty per cent advance, on former valuations, and were then considered almost unsaleable at prices then asked; this increased value cannot certainly be said to be due to emigration alone, and hence we must believe the general prosperity of the Agricultural interest to be the cause.

Nothing shows this in a greater degree, than the immense business done in Agricultural implements; these factories are springing up in every section, and instead of the old terms of sale, viz., until January following for one half, and the balance a year afterwards, "cash" is often paid to save interest.

Store keepers are now getting large sums of money, even in midsummer; whereas formerly no farmer could pay his store account until January; and always calculated on getting a year's credit for all goods used in his household. These are facts, and this increased value of land, and prosperity has taken place, notwithstanding grants of free land, are competing with their high prices, and increasing sales.

We want however one thing to complete our positions; that is, a grant of Government money, at a rate of interest, not exceeding six per cent., to be loaned to any solvent farmer, with the understanding, that it is for the express purpose of draining

his lands; this money to be repayable at any time he may choose, or be extended over a term of, say twenty years, with sufficient fund, payable annually as sinking fund to meet the principal, at the end of that term.

This money must not be loaned, like the Building Society lends, as in reality these institutions are getting upwards of *twelve per cent.*; and as a consequence the borrower is paying it. These institutions tell outsiders all this is false, but we know better, we know they are paying eleven per cent. to their stock-holders, and every man connected with their society is getting rich. "Directors and Managers," and we all know that money does not breed like cattle by being gathered together; somebody pays all these high rates of interest, and high salaries, and as we are very sure the stock-holders do not do so, the borrowers must.

These results are brought about by deceptive statements, that figure in clever accountants hands, can be easily made to show; but facts, are facts, and dividends, and large amounts carried to the "rest," are substantive things, and the farmers pay all this in reality, they are told that they could not invest small monthly or annual sums, (repayment of principal) But if my views were carried out, and the farmer were to have at his command, money for draining, and improvements, at six per cent. interest, and any money he may be able to repay, on account of principal, from time to time, in excess of such interest be credited to his account, and also an interest allowed him on all deposits, he would find such money, and improvements made therefrom, cost somewhere about half that at present obtained, from Building Societies.

The increased taxation would amply repay the Government, the cost of such a department, and the benefit would be immense. The cost of searching titles and law expenses, would by their number, be reduced to a minimum amount. If this idea was once to take possession of some of our liberal members' minds, it would soon become a fixed fact. We are all, in Ontario, in a position to offer first rate security, and the expenditure contemplated, would amply be repaid, and farms now almost useless from want of draining, would be rendered fertile and productive.

This cannot be done unless money can be obtained at six per cent. Every farmer hates the name of a mortgage on his farm, "the poison," as he well knows from past experience, that before he "gets through" he will pay at least twelve per cent. for his money, especially when taking into account the sacrifices he must continually make, to meet the payment day, or suffer the pain and penalties of foreclosure.

In loan of the ordinary nature, every one gains by active pressure, being brought to bear on the borrowers, who are compelled therefore to pay punctual, cost what it might, whereas were it a Government loan,

and for draining purposes, leniency might be with justice—and most advisably—be extended, rather than losses incurred by sacrificing property, cattle, &c., as is too often the case at present with borrowers.

C.

Large vs. Small Farms.

Much controversy has existed, caused by the belief that small farms are so much better than large ones for the North American Continent. If such were the case, and we were all forced to believe against the "stomach of our sense," that such a statement is fact without any remedy within our own control, Canada offers but a very poor inducement, for emigrants, or for the tenant farmers of England as a home, where themselves and families can find happiness and affluence. In fact we cannot help feeling that with such views, there is an absolute incongruity, in the statement that Canada is a fit place for any but laborers. The thing is simply absurd as we will proceed to demonstrate.

First to believe such a doctrine that the Canadian farmer must rely altogether on his own labor, that is on the labor of his own pair of hands, or those of his family. If on that of his own hands it follows that the value of a farm in Canada worth generally about \$2,000, and stock and implements \$1,000 more—is only so far valuable as it enables a man to earn something about laborers wages, or say about \$240 a year, which is an interest on \$3,000, (the value of the farm stock and implements). This we know a farm and stock worth \$3,000 purchase is worth at least the \$240 to \$300 a year as a rental, thus allowing the emigrant from home to invest his money in purchasing a farm, to get for the same \$240 to \$300 a year, and to work for some one else instead of working on his own farm and get paid the above amount a year as wages, for so doing.

It therefore follows that if a farm of say 100 acres has a profit to it when conducted by the owner himself, a second 100 acres equally well conducted, and hired labor expended thereon, must pay better; there is a hundred to maintain at any rate on the first 100 acres, and only a hired man to pay on the second 100 acres, and it is manifest this must be much easier done on double the quantity of land than on half.

It therefore resolves itself into this one fact, "that the farmer of 200 acres has not the money capital or the ability to carry on double the business instead of half, and now we come to the true cause. You have often seen men in a small grocery who have not the ability to conduct a wholesale house, and we may be satisfied to drop all this senseless nonsense about a man from England who has been accustomed to manage a farm of 500 to 1,000 acres of land there, to come to Canada and sit down on 50 or 75 acres of cleared land, and make it pay. He

neither can nor will do so. The business is altogether too sma'l for him to content himself at; and what wonder?

To the laborer who has never done anything but work for some one else, such a change is perfect liberty, but if the tenant farmer of England is to believe such a tale, he will never come here.

Again, as to the saying that none but a family of sons can make farming pay in Canada. The farmer who has sons is not so well off as at first sight may seem. Before men can be men, they must be boys, and for many years small boys, unable to do half what they cost, and when they do come to be able to do a days work, the same pretty nearly as a man; they never do as much, take the month together, except in harvest or seed time, when work pushes. At other seasons they must be kept, fed and clothed; all this costs something, and I very much question if any boy can be made profitable if against his work be charged his board and clothing until he is grown up. Credit him with the value of his labor as he grows older, making an interest account for him. If this were done I question there being any profit in it. So the charge against Canada farming succeeding only where a man's labor or that of his family can be made available, falls to the ground. Of course the family must be raised and provided for when they come, but that has nothing to do with the question at issue, namely whether farming in Canada can be conducted with other labor than that of the farmer himself, or his family; or whether as in England a man can with capital manage a large farm more profitably than he can a small one proportionably.

C.

Encouragement to Young Farmers.

HARD WORK.

As a rule every one must work hard, in one way or another.—And the difference of Farmers' work, and that of Trades is, "that a Farmer's work being to a great degree exercised on live stock, never ceases. Six o'clock comes for mechanics, and merchants, in wholesale business,—and the shop is closed, and all go home; but then begins the farm chores, and the care of live stock—unless, perhaps, in winter, when days are short, the stock will have been attended to during daylight; but the horses are always looked after much later. Now as against this sort of unremitting work, and no comparison with it,—the farmer can take a half or whole holiday whenever he likes, and the season's work does not, as in haying or harvest—particularly press him; and the stock must be looked to even in such days as these. But a man in business can never get away—and except from illness, or on public holidays, he must always be at his post, or his business suffers.

Conveyances for seeing his friends.—Farmers can always command a conveyance, and often a very fine team to draw it,—al-

ways some horse, good, or bad. Whereas, ninety-nine out of every hundred of all other trades or professions must walk; except indeed the favoured few, who having made money, can afford to keep a carriage. But these are *very few in number* in comparison with those who must walk or stay at home. It is here, when a farmer meets a carriage, bowling along, he is very apt to make comparisons between *his* conveyance, if it is a lumber wagon, and the carriage. But he ought to recollect, the same comparison holds good, between himself and the thousands who have no means of conveyance, and they are just as likely to envy him, as he is the possessor of a fine carriage.

GOOD CLOTHES.

The Farmer goes about in old and often very dirty clothes—almost *always* in dirty boots; and with a most woeful neglected appearance, in comparison with even many journeymen tradesmen,—so much so, is this the case, that it has become a by-word, "oh he was dressed like a farmer, in dirty old clothes, and thick, un-backed boots." Now whose fault is this? why, the farmer's own. He never cleans his boots except on Sundays. Whereas, the mechanic, although having nothing but his daily wages, to live on, often dresses himself, and mostly cleans his boots every night—always three or four times a week. And a tradesman or mechanic, not to mention a merchant or storekeeper, would no more neglect his appearance on Sundays; except where his avocation causes a certain amount of dirt and blackness as inseparable from his position. Then go into a merchant's, tradesman's, or mechanic's home, and as a rule, you will find a "door, yard, fence, garden,"—often with choice flowers and fruit in it; and the inside of the house as well as his wife and children, are neat, clean and tidy. Whereas, go into a vast number of farmer's homes, and you find a barn-yard unfenced, and a mass of chips, logs, and rubbish. The garden also unfenced, or so roughly done, as to be a dis-sight, rather than an ornament for flowers and for vegetables, but plenty of weeds.—The house altogether much more dirty and untidy than it ought to be. The wife and family dirty and slovenly in their dress—and having a general appearance of carelessness, and a want of nicety, that pervades other men's homes.—I am pleased to be able to say this is not *always* the case, but it is certainly most frequently so. And as for "music," "drawing," or any of the accomplishments that others, much less well-off persons, there is absolutely, but about one per cent. of an exception to the total absence of all such. The fact is that in seventy-five cases out of a hundred farmers have themselves to blame and no one else. They do not attend to anything of the kind, "anything will do for a farmer to wear." "His boots never want cleaning, no one sees him, and what if they do?" The visitor is in the same state. The road is muddy in wet weather, and dusty in

dry. The garden neglected, except so far as the women can attend to it,—and every thing looking the picture of bad management. Now I appeal to any one, if this state of things is not calculated to depress any one's ideas of the benefits to be probably derived from following farming as a business. Any one would agree that where such views and conditions of a home-stead, and about a farm as well, are the rule, (of course there are some and often many exceptions), farming must be a poor miserable business, and without profit at the bottom of it all.—Whereas the reverse is the fact. Farming really does pay, and pay well, and as much happiness, and quiet peace,—as well as cleanliness, order and comfort, in doors and out, can be had on the farm as any where else. But not until farmers determine to be more respectable about their homes, will farming be liked as a business. They must have more "order, beauty, cleanliness, neatness"—and attention to little matters about the house and homestead.—"They must do as others do," and "raise the standard of their girls as well as boys by education." They must have "pianos" and music, with books and newspapers, and these things can be got one after another, when once they exert determination to better their condition.

The farmer must be more neat in his dress, although ever so homely. He may rely on it that so long as he sets but little and light estimate on himself, his appearance and his calling, others will hold him proportionally cheap; and, comparatively, insignificant.

Nothing shows the status of farmers generally, more than the lines of railroad that lead through a farming country, in comparison with commercial or manufacturing districts. The neglected and slovenly personal appearance of the agricultural population, who travel, in comparison with the commercial, is very apparent.

Then the homesteads.—Look at a true well kept household, in a village, or town, or even the residence of a man who has been accustomed to live neatly. And again, look at the great majority of houses along the road—one such trip will satisfy any thinking mind of where the want is, and where the amendment must begin.

There are many farm homesteads the reverse of all this, and there are many well to do farmers, but let any one travel through the length and breadth of Ontario, and carefully note the facts, and he will decidedly report in favour of my statement.

C. C.

Successful and Unsuccessful Farming in Canada.

There are now in Canada thousands of successful farmers, and there are also a great many men engaged in farming who just manage to "keep their heads above water," and that is all, and it is to [the complaints and

examples of this latter that agriculture as a business in Canada owes its bad odour—and yet these latter have often the same quality of land, and very generally have acquired the farm at an easier rate (often by inheritance or otherwise) than by purchase. We have all noticed an hundred times and more, where men fail in making a farm pay, they do not on that account value the farm at one dollar the less, but they come to the conclusion they will let it—if they stop soon enough—and if they have gone on as long as possible, they may conclude they will be forced to “sell out,” and yet they never think of blaming themselves, forgetting that too often they have undertaken a business for which they have neither brains, capacity, or taste, and only follow it because their father made and saved the money to buy the farm, and dying has left it to some one who survives him. Where people begin from “the stump, they rarely fail to do well, if they are equal to clearing and paying for the farm. Whether the fault lies in the system, the country, or the man, may not, therefore, be a difficult question to answer. Forty years’ residence in Canada, and a most intimate acquaintance with every part of Ontario, has long caused the conviction to be forced upon my mind that Canada is a good farming country, when the farm is in energetic hands. I well know of many instances to support this view, and especially one, who, from one hundred acres of land, has made sufficient money to send to England for a supply of blooded stock—“Cattle,” “sheep,” and “pigs.”

All, or many of us, know several such men, and cases just similarly situated, as to success, who are altogether fore-handed, the value of whose live-stock, although they are only Canadian bred, without any thorough-bred amongst them, would be worth at least \$3,000 (including, of course, their dead stock likewise).

Most of these men have money loaned out to poorer neighbours, and their own income, in addition, regularly exceeds their expenditure, as the years come round. These men are continually purchasing land for their boys, or implements, or stock for themselves; and notwithstanding these outlays, there balance to be occasionally loaned out, still accumulates. Now, how is this? and why should one man so signally succeed, whilst another so certainly fails, if the fault lies altogether in the country? The cause may be looked for in the “method,” and “judgment of the man himself.”

It has been said by clever men, “There is a very narrow line between a wise man and a fool.” A celebrated English Physician—one of the best and wisest of the old school of medicine, had a favourite saying, “That a man is either a fool or a physician at forty.” I believe in the main he was right, almost all men are either “fools or physicians at forty,” in the sense of the doctor’s meaning; that is to say, it implies that whatever av-

ocation a man engages in will succeed under his management, if at the age of forty he proves himself “not a fool.”

Men of the successful type, are always doing something that others can see well enough will succeed, AFTER it is done, but they never see it soon enough for them to do it first.

And so it goes with farming generally. The unsuccessful man begins wrong with all he does. A very small error in judgment causes a field to be improperly cropped. A pair of unsound horses are injudiciously bought—or from ignorance are often lost by sickness. “Cows miss having calves, mares colts, sows young ones,” and many other small matters fail, from want of requisite judgment, and great loss the year following is the result. Accumulated failures from such, or similar small causes, often force a man into debt and trouble, where, had it been differently ordered, and had he done as his neighbour did, his crop and stock would have been just as good, and his “luck,” as he calls it, would have been as great. The line that divides success and failure is very narrow at first, and may be well and truly compared to two lines of railway, meeting and passing at a union station. Just at the station, both are nearly or quite parallel, but very soon, although the direction is but slightly altered, the two lines of rails are widely apart—and point to quite different courses. So with success and failure. Both start together, nearly or quite parallel, but a few failures cause an immense variation in the direction in which both were previously running. The men of success, whose farm and means have so often been brought under my notice, have not possessed, as a rule, any more advantages than those who are often, and so persistently unfortunate.

I have many times collected clear evidence of this fact, from hearing the various history of their early struggles. I could name and point out fifty farmers—worthy and respectable men they are, too—“Whose butter never was, and never will be, burned that will stick to their bread.” Something is always going wrong with them and their various small enterprises. There is something really deficient in their judgment. They are troubled, as my old friend used to remark, “with after-wit;” an observation well worth remembering. Many people are afflicted with this species of wit, and I know of none that is so unprofitable.

Where success is denied in farming, it is not therefore, always the fault of the avocation. It is much more generally to be traced to the fault or misfortune of the man who is engaged in it. For these men, there is a continual supply—as the old adage says—of “round holes,” and they being square, are always forcing themselves into them, and as a result, of course, they never fit any of them. In fact, circumstances have made these men masters, who were only fitted to be men; and, as a natural consequence, they

usually end where they should have begun—by being men—instead of masters—and farming in Canada gets the blame.

C.

Report of the Minister of Agriculture for the Dominion.

The above Report has just come to hand and we find in it reports on emigration and general agricultural interests.

We find that the total number of emigrants arrived in Canada was last year, 37,020 as against 44, against 475 in the preceeding year.

Immediate employment has been found for all accustomed to labor at high wages.

It has been found, that, owing to the great and growing demand for machinery for saw-mills and factories of different kinds, many of our founders and machinists have enlarged their establishments and thus has ready employment been found for all mechanics in these branches, at high wages, while joiners, bricklayers, brickmakers, shoemakers and tailors found immediate and profitable employment on landing.

The large amount of mason work required by contractors on the different railways, and on the many public and private buildings which have been and now are in the course of erection, has caused wages for such which opened in the spring at \$2.50 per day to increase to \$3.00 and even to \$3.50 per day of ten hours.

So great indeed was the demand for stone-masons, that the Intercolonial contractors, foreseeing scarcity for such skilled labor, engaged about 150 masons and stone-cutters in England and Scotland and in many cases provided funds to pay the men’s passage out.

We are convinced, from present indications, that it would be to the interest of a great many more of this class of mechanics to leave England for Canada next spring; as we feel assured, that there will be a great demand for a large increase of skilled workers in stone, over those now at command and that at very high wages.

Masons and stone-cutters should remember that there is yet on hand, the Prince Edward Island Railway commenced last season, whilst there is yet work for one or two year’s on the Intercolonial, and there are projected, the New Brunswick and Riviere du Loup Railway; the North shore of Quebec Railway; the Levis and Kennebec to be continued; several branches in the Eastern townships, and probably the Northern colonization in Montreal; a projected line from Montreal to Ottawa; the continuation of the Canada Central, Ringetou and Pembroke; the extension of Port Hope, Lindsay, and Beaverton to the Georgian Bay; the Toronto and Nipissing; Toronto and Muskoka; Toronto, Grey and Bruce; and probably, many others in both Provinces for which Act of Incorporation have been obtained.

For many years, there will moreover be many public works to accomplish, in the shape of the construction of harbors of refuge on our Lakes; the drainage of swamp lands in Ontario; with the probable enlargement of the Canal.

All these works require an immense amount of both skilled and unskilled labor, and, while we have but a very small percentage in the country of that number necessary to successfully carry them out, there will be ample work for a many more of the "bone and sinew" of the old country; while, failing these, the agricultural requirements of the country will eagerly grasp at the chance of obtaining thousands more laborers about the farm and in the fields.

We trust that the emigrational policy of country will be one of especial interest and care in the future, as, with the present scarcity of labor, it is impossible for us to bring our lands to that high state of cultivation, which would in any degree, approach our average production to that of the older countries.

In the words of the report that lies before us.

"For the emigrant of next season, the prospect in this Dominion is very encouraging; it is no exaggeration to state that an unlimited number of farm laborers, ploughmen, farmers, and female servants will find immediate employment at high wages, whilst the marked development of the trade and manufactures of the country warrants the conclusion that mechanics generally will be in demand."

We find a very interesting report from the Immigration Agent of Manitoba, Mr. G. McMicken.

Mr. Kenneth McKenzie, who it will be remembered was one of the earliest settlers in Red River, and, who, leaving a large and well cultivated farm in the county of Perth, Ontario; is now farming on a very large scale near Portage la Prairie; states that his cattle of the better grades which he imported there last year have stood the winter admirably, thus speaking well for the healthiness of that climate.

The fertility of the land is highly spoken of, root crops it would appear are produced with certainty, (we should rather fear the grasshopper).

In speaking of the probable profit of raising beet root, the report says, that it can undoubtedly be successfully grown, while the cost of transportation of other sugar being very high, there would be a large margin for profit in the manufacture of beet sugar in the Province, while the fact, that grasshoppers have never there been known to attack the beet (we should hardly think that this last question had been fairly tested), is held out as an additional inducement to the manufacture of beet root sugar in Manitoba.

It is stated, as a peculiarity not common to Canada generally that rye grass is indigenous to the locality.

The last recommendation, that a commodious building be provided for exclusive emigrational purpose, we most heartily endorse; as we consider, that in a country where every able bodied emigrant is worth a considerable sum to the community, the right hand of good fellowship should be extended and the comfort of the "stranger in a strange land" most carefully provided for.

The report touches very lightly, too lightly we think, on the advantages that would surely accrue to the status of Agriculture throughout the Dominion, where the governments to aid in placing technical education (by which we understand establishment of Agricultural Colleges and Experimental Farms) within the reach of the rising generation.

We have also received the Fourth Annual Report of the Directors of Penitentiaries which we leave to the tender mercies of the general press.

Use of Tobacco.

A remarkable instance of tolerance by the human system of the excessive use of tobacco is afforded in the case of Mr. Klaes, of Rotterdam. This gentleman, who was known as the "King of Smokers," has just died in his eightieth year, and is said to have consumed during his long life more than four tons of tobacco. The ruling passion was apparent in the will of the deceased, and in his eccentric request that his oak coffin might be lined with the cedar of his old cigar-boxes, and that a box of French corporal and a package of old Dutch tobacco might be placed at its foot, and by the side of his body his favorite pipe, together with matches, flint and steel, and tinder.—*Lancet*.

COPPERAS AS A DEODORIZER.—"One pound of green copperas costing seven cents, dissolved in one quart of water, and poured down a water closet, will effectually concentrate and destroy the foulest smells. On board ships and steamboats, about hotels and other public places, there is nothing so nice to purify the air. Simple green copperas, dissolved under the bed in anything that will hold water, will render a hospital, or other place for the sick, free from unpleasant smells. For butcher's stalls, fish markets, slaughter houses, sinks, and wherever there are offensive putrid gases, dissolve copperas and sprinkle it about, and in a few days the smell will pass away. If a cat, rat or mouse dies about the house and sends forth an offensive gas, place some dissolved copperas in an open vessel near the place where the nuisance is, and it will soon purify the atmosphere."—*Industrial Monthly*.

BLAIR ATHOL—who was sold at the Middle Park sale for \$62,500, has been earning about \$20,000 a year in the stud. If the stallion retains his health, the investment largely repaid, will prove a good one. A fashionable stock horse, in a country where speed is cultivated, is as valuable a piece of property as a man can have.

Correspondence.

To Correspondents.

We thank our numerous correspondents for their late communications and shall be happy to hear from them again.

It is our wish to make our *correspondence* column a medium for free interchange of views upon all practical and scientific matters and questions of a purely agricultural nature.

Fall Wheat up in Grey.

(To the Editor.)

SIR,—As a number of farmers in the older settlements are under the impression that Fall wheat cannot be raised to advantage in the County of Grey; for the purpose of enlightening them on this point, I send the following to you for publication.

I threshed my fall wheat yesterday; the field in which it grew, barely measuring four acres; it produced 150 bushels of good clear wheat, fit for market. The man attending the boxes states that for every eight sheaves, there was a bushel box of wheat.

Truly yours,

PETER HOLMAN.

Lot 34, Con. 5,

Artemesia, Co. Grey.

NOTE BY ED. C. F.—We thank Mr. Holman for this communication and would be glad if others would give us such practical contradictions of existing fallacies.

Imported Horses.

(To the Editor.)

DEAR SIR,—On account of the deep interest which you take in stock raising and Agriculture you will no doubt be pleased to learn that Mr. Robert Young, Lot 12, Con. 4, East Chinguacousy, has succeeded in safely importing from Scotland, a two year old draught stallion, which is believed to be second to no other hitherto imported to this country.

The same gentleman went to Scotland two years ago and purchased a very valuable stallion for importation, but unfortunately lost him in a storm after having been five days on the Ocean. In consideration of this loss, which must have been very considerable, as the horse was not insured, the highest praise is certainly due to Mr. Young for his energy and perseverance in a second time making an attempt to improve the stock of the country at so great a personal risk.

Yours truly,

A FARMER.

Brampton, Aug. 20th, 1872.

Answer to "Practical Farmer."

(To the Editor.)

SIR:—I regret to see in the *Weekly Globe's* issue of the 2nd instant, that some one, over the signature "Practical Farmer," has set himself to work to belittle the contributors of the CANADA FARMER. I am a farmer, working a very large farm in comparison with most in Canada, and am also a constant reader of the *Globe* and CANADA FARMER, and certainly, so far I have had no reason to agree with the writer in having suffered from the great evils he anticipates, and which he, in such a friendly spirit, warns us all to avoid.

The first thing that strikes me as being rather unusual in the communication alluded to, is that "Practical Farmer states that his anticipations of evil are gathered from some conversation he has had with some gentleman." Now, aside from this gentleman probably not being a farmer, and constituting himself a judge of agricultural matters, I think it would have been better had the gentleman in question given in his views direct, we should at least have had them from the fountain head, and not second-hand.

This gentleman may not be as good a judge of what he pleases to call *trash* as the farmer who contributes it.

No one having a grain of common sense can for one moment deny the utility of farmers contributing their experiences and experiments to an agricultural paper, they are "continually requested to do so;" and even supposing that some should be a little based on theory drawn from former experiments, wherein do these writings differ from those of half the world in this respect, notwithstanding such writings as have enlightened science to a wonderful extent, have never, to my knowledge, been given (like almost all the contributions of the CANADA FARMER) to the public without the *hars* so delicately mentioned. I would beg to call the attention of "Practical Farmer" and the gentleman in question to the fact that agriculture, both in Canada and the United States, has thriven under this system of contributions, and will probably continue to do so after he has withdrawn from his very disinterested position of public adviser.

To show that "Practical Farmer's" advice, and also the gentleman's opinion, should be taken, as the old saying is, with a "grain of salt," or a "pickled onion," we have only to take up any Fruit Growers' Convention, or Report of a Farmers' Club, published in any agricultural paper, to be at once struck with the various opinions there expressed, and the entirely contradictory results of various experiments. These being within the reach of "Practical Farmer," and the gentleman, I wonder much at his folly in writing the letter in question, and no less at your allowing space in your valuable paper for its publication. It seems to me that there is a very doubtful good end in view, and at the same time a certain evil in what has been done.

A HURON FARMER.

August, 1872.

Water Pipes.

(To the Editor.)

SIR,—Would you or some of your numerous correspondents, who have had some experience in conveying water in wooden or iron pipes, be so good as to give a few hints that would be of value to one who has not had any experience in the matter. Whether would wooden or iron pipes be most serviceable.

What would be the probable cost per foot of iron piping $\frac{1}{2}$ or $\frac{3}{4}$ inch bore, and how long would it be likely to last.

Will the water rise in the pipe when conveyed a distance of 300 yards, to a level with the fountain head, when it is only a small spring.

Would some of our readers who have had experience answer.

Dimchouse, July 29, 1872.

Durham Bulls.

(To the Editor.)

SIR,—While attending to some matters pertaining to the business in which I was engaged, I paid a flying visit to Widder Station, a small village on the Grand Trunk, in the Township of Busanquet, and while there I noticed some facts relating to the Agricultural Society of that township, which pleased me very much. I learned that the President of the Society had just arrived with two Durham Bulls for the Society, and of course being a farmer, I was naturally anxious to see what kind of animals he had purchased. I found quite a crowd collected, discussing on the merits and demerits of the animals, some disposed to give the President and the Society credit for this enterprise, while others found fault with the Society for spending the money in such a manner. For my own part, I thought the gentleman had made a good selection, and that it would be a credit to any township to have such animals within its limits. They were a couple of yearlings, large, well formed, and excellent specimens of the Durham, I think the one would be hard to beat. I believe they were bought in the township of Eramosa, from Parkenson and Grieve. In conversation with one of the Directors, I learned that the Society, contrary to the wishes of some of its members, last year bought three Durham Bulls, but they were obliged to dispose of one as unserviceable, so that they have at present four on hand with only a small debt standing against them.

It is a pleasing feature to note the enterprise that is being manifested among our Canadian farmers in reference to their stocks, each one ambitious to excel his neighbor if possible, and the result will be a rapid increase to the wealth of our new Dominion.

It is also satisfactory to note that the township shows of a former day are fast giving way to objects of greater practical benefit, and it is to be hoped that we shall soon see the day when those once honored instructions, will be remembered as things that are gone.

AGRICOLA.

Horse Power Saw Mills.

ANSWERS TO CORRESPONDENTS.

There are no Manufacture of Horse Saw Mills in Canada, nor would such a mill pay expenses.

A saw requires to cut 2,000 feet a day, at least 8 to 10 horse power, and the outlay necessary for a horse saw mill, would be—including horses—quite as much as for steam. In fact, reckoning spare horses, to fill the place of those who may be sick, or disabled, the cost would probably be greater.

This plan of sawing has often been tried in countries where mule, or horse labor cost almost nothing, but always without success, in comparison with steam power. With us here in Canada, a steam saw mill, finds its own fuel, whereas no amount of rich food will keep in condition, horses so worked, provided they work ten hours daily, and are constantly employed. Then the difficulty of getting them to pull together, where there are a number employed, is very great. In fact, ten horses will not do more than seven times as much work as one, from that cause.

The writer, used eight horses many years, for driving a manufactory, and found the foregoing statement to be absolutely correct.

The power of a heavy team of horses, is very small in reality, when they have to keep constantly going, even when ploughing, the motive power rests at trial in turning, and always fail in condition, if ploughed steadily for any length of time. To test the work capable of being done under circumstances very favorable for a head wheel horse-power. The writer adapted a wheel underneath the bar, by which the horses move the machinery that drove his factory. Over this wheel, a chain was passed, and attached to the doubletree, by which the horses drew. At the other end of the chain, was fastened a weight of 200 lbs., and it was found that the pull of the team, exerted on the chain, to do the work the horses had always done, just kept the weight suspended sometimes rising a little, and sometimes falling to the ground, as there was more or less resistance, afforded by the works inside the building. The speed of the horses was $2\frac{1}{2}$ miles an hour, the size of the track was 24 feet diameter.

It therefore follows, that a horse power so applied is equal only to 100 lbs., travelling $2\frac{1}{2}$ miles per hour for each horse. The team so tested were very large and good, but such is the wearying effect on continuous work without intermissions on the animals. The same horses would have pulled up to the beam five times the weight, for a few minutes. The foregoing test was most carefully applied, and for months it had been found, that the same team had been able to do this amount of work, and it seemed very desirable that proof should be given of the absolute power required.

C.

My Farm.

Contrary to previous expectations our root crop gives promise of an abundant yield; on clay lands, however some fields have been partial failures, owing to the neglect of one operation, namely, that of rolling after sowing.

After sowing we had heavy rain, and that succeeded by a hot sun, caked up the ground, giving the seed no chance to come through, which might have been remedied when the ground was baked. Indeed, a few days ago, we saw a practical proof of this in two adjacent clay land farms; in the one, this precaution was heeded and an excellent braird the result; on the other, it was neglected and the result was, the plants were few and far between.

The wheat crop around here has picked up wonderfully and I think threshing will show a fair yield. Indeed one field of Deihl wheat, that we intended to plough up in spring will turn out about 20 bushels to the acre, a yield, which although hardly to be considered very profitable, will, if the present prices continue, a good deal more than pay expenses. We attribute our poor crops of wheat in a great measure to too late seeding. If we can't get our wheat in by the tenth of September, this fall we shall not put it in at all.

During the last few weeks we have had very catchy weather; weeds have grown apace with us, and, notwithstanding the vigorous use of the horse hoe, they have got a good deal the start of us. Potatoes and corn show well.

We shall have a great amount of corn stocks, and are puzzled to know how best to secure them for winter fodder. We should like to hear from some of your readers on this point. Last year we lost three or four tons of corn fodder by heating in a barn. All the spare hay we have we shall feed or sell this year, for the clover take is good, and the probabilities are in favor of an abundant crop next year.

The coming winter should be one of great profit to the hay and straw cutter manufacturers; for every farmer will do well to economize his fodder by the use of a cutting-box.

Last year I saw in your columns quite a controversy between the advocates of the old-fashioned way of pulling turnips and the new system of dragging or ploughing them out; before the season of housing turnips arrives, I should like to see the opinion of the advocates of these several methods again put forward. There appears to me to be much good sense on both sides, but I cannot yet with such proofs only of their respective advantages reconcile myself to entirely throw aside the old-fashioned plan.

R. B.

"The Grange," Ancaster, }
Aug., 1872. }

Money for Draining.

SIR,—I am a farmer who has successfully won his way from poverty to comparative independence. My farm is all cleared, and well-fenced; and the buildings on it are good. A great portion, however, of the land is intersected with wet swales; and, as a rule, this is the case with all the lands taken up and cleared of late years. The cause of this is, of course due to all the dry land having been occupied first—my case may, therefore, be multiplied by thousands.

These wet places on the land are very unproductive, and not only is the immediate land injured by water, but an influence is exerted on all parts contiguous—draining such places, therefore, becomes an absolute necessity. Hitherto we have grubbed along amongst the stumps, doing the best we could, losing half of every crop we sowed, and hoping for the future, "when the stumps should be out and the land cleared and paid for." Thank God, that time has now arrived, and we all feel confident for the future—if we could get the draining done. But this is impossible, unless we can get money at a low rate of interest; we cannot afford to get it from the building societies, as notwithstanding all they say, we know they are paying eleven per cent. dividends to their stockholders, and all other expenses amount to more than one per cent, and the farmer pays all this, in one shape or another; so it is hopeless to think of draining at such a cost of money. Private loans are not as bad, but absolute punctuality is insisted on in their case; and no matter what delay the farmer may have to complain of as a reason for requiring leniency, the lawyer who has effected the loan and made moneys by pressing for payment, by way of costs, can hardly be expected to abstain from proceeding, especially when he has the law on his side as a reason for doing so.

It therefore follows that the farmer must get his money for draining from some other source, and at a cheaper rate—that is, if he is to have his farm drained during the present generation.

What then is to be done? Cannot the Government lend a certain sum, at five per cent., to solvent farmers, whose farms are indisputable security for such advances, with the stipulation that this money is only to be paid when the draining is actually done, and is to be applied to no other purpose. In this way we can get our farms drained at a low cost, and as the farmer each year can pay off the loan, or any portion of it, let him do so. At home, millions of acres have been thus drained, and the land held answerable, even when the money has been expended by the tenant, and why should not we do likewise? The public drainage act does not help us, as individuals cannot get money expended on their farms. All the expenditure so made must be for the public good, and only affords channels for individual enterprise to drain

with, but does not help the draining of the farm in a direct manner.

If you can see any help for this great difficulty, and assist us in overcoming it, you will benefit thousands of farmers.

AN ESSEX FARMER.

An Englishman's First Impressions of Canada.

(To the Editor.)

SIR.—Having but lately arrived in this country, I venture to send you a few of my first impressions, as an Englishman, on the general manners and customs of the people, and of the country as it appears to one looking at it on its sunny and perhaps most favorable side:—

With regard to the face of the country itself, no one, and no Englishman in particular, can fail to remark the gigantic scale on which the works of nature are ordered and arranged; your magnificent rivers, any one of which would be awkward enough to say the least of it, if transported by mistake into our little island, would require some drainage and then would not leave us over much room on which to pride ourselves. Your hilly or rather mountainous parts, especially those which we saw as we passed up the St. Lawrence, and of which we could take in only a small piece at a time; your lakes of gigantic size, which they say are at times as rough as any sea; and, lastly, your falls which the Yankee shrewdly "guessed," would swamp poor Vesuvius in a twink.

The roughness of your country was not so much a source of surprise as of wonder to an English eye. First and foremost, your peculiar way of enclosing ground with rough gaggled looking fences, in the place of our green well-kept hedges was very striking; also nearly all your fields which, appearing otherwise fairly cleared, were dotted with numberless blackened stumps. Further westward appeared the yellow wheat fields, such as we left behind in England; now gladdening our eyes like friends in a strange land; whilst, here and there, were interspersed, what we were told, was buck-wheat and Indian-corn. But what is most astonishing to an Englishman is the appearance of your houses and towns. In the place of our brick and stone you have a wooden country, wooden houses, wooden pavement, wooden everything.

Your institutions again are very wonderful both the way in which you travel and your hotel accommodation, both materially different from ours. In England we do our short distances in the travelling way, as regards time, well and punctually, and our system has, in this respect, nearly arrived at a state of perfection. Your system may be good; but, at any rate, works badly. It seems to be the thing in this country to be like the Englishman when invited to a party, always late. However, your conveniences for

travellers are in some ways superior to those of the old country, whilst your Pulman cars are certainly very superior for long journeys. But there is a slight difference in the constitution of the old and new countries, which may account for our differences in taste in this respect. In the old country we are contented with a little room and care not to range about, whilst you, as it appears, with your large country, cannot abide confinement and must (such is apparently the effect of the air of your country) even have liberty to move from car to car, and, accordingly our carriages are divided off into compartments, whilst yours are open to all.

Your river and canal travelling is simply charming; we have nothing to compare with it. What sensation can be more delicious than that of gliding placidly along amongst beautiful islands, or between banks over-spread with rich verdure, or than to feel the sweet breezes blowing as we cross one of your lakes, after being almost scorched to death on land? But, oh! what a difference again when we find ourselves on what we are wont to call terra-firma. It is well enough indeed when in your towns, but in the country, as in a chopping sea you jolt up and down in carriages as light as air. Still we do not expect to find, in a rough and as yet imperfectly civilized country, smooth and even roads such as we have in England, nor carriages built for ease and comfort. Your hotels are based upon very peculiar principles from a European point of view. In yours a traveller inserts his name in a book and is bound to pay for all his meals which recur at stated intervals, a continual succession of tables d'ôte, from the time he enters his name to the time he leaves, whilst we take what we like at whatever time we like, and only pay for what we take—the essential difference between the two being that the English travellers is more at liberty than the Canadian. The argument in favor of the American plan, they say, is; that the hotel keeper is protected from taking in persons to lodge only, which they maintain would debar him from taking in those who would board at his house as well as lodge; but what is to prevent a person from taking his name off the register every morning before breakfast, and putting it on after supper time every evening?

As regarding the habits of the people of your wonderful country, an Englishman's first remark would be on their hard-working industry. They start with the maxim, that early to bed and early to rise makes a man healthy, wealthy, and wise. Our laboring man alone rises at 5 or 6 o'clock, our working man alone has his dinner hour at 12 noon. Here you appear to be all laboring men with few exceptions, and all seem to work with a will. On arriving from the old country, some of us imagine that we may almost put our hands in our pockets and watch the trees grow, that the monkeys will throw us down cocoa nuts, and that we shall all live happily all our lives; their we are disappointed, and,

like Englishmen, grumble, but our friends here soon show us the way.

But to return, the man who really works seems always to succeed, sooner or later, and the work, although hard and rough, seems to bring in good results. And here, in connection with the roughness of the work, it is a noticeable fact, in this country, that a gentleman in your country does not soil his hands by going into business, or by working in the field, as in the case, generally speaking, according to the opinions rife in our country, nor is poverty that damning crime which we have found it sometimes to be at home; and, further, although the habits of your country are primitive, yet your society is as good, and your people as refined as in that of a country which has lived and grown for ages; there is, however, one very noticeable feature about you which we have not, viz., your extreme independence, which is indeed praiseworthy in itself, but which grates at times on the keen senses of an old countryman, who is accustomed to meet with a certain amount of outward civility (or may we say servility?) from those in a lower rank of life than himself, accompanying those services which he has occasion to employ; in your country Jack is as good as his master, and oftentimes better, in practice if not in theory. Another remarkable trait in the character of your Canadian people is your extreme loyalty and strong patriotic feelings. Coming directly from a country, pervaded with the spirit of commerce, and where the sovereignty of £ s. d. is supreme, we are astonished to find that the almighty dollar does not occupy your attention so thoroughly as not to leave room for what we should call mere sentiment, had we not had good reason to know from the feelings of loyalty and patriotism exhibited on the late illness of the heir to the throne of England. That such feelings do also exist amongst us, and show themselves occasionally. Your love for the old country, your home, the land which you all hope to see, must be and is most pleasing to all Englishmen who visit you. Again the hospitality and kindness of your people, although known by hearsay in the old country, must be experienced to be rightly understood and valued, and you may be sure, sir, that all Englishmen, both those who intend staying in this country, and those who merely pay a passing visit, will always have pleasant recollections of the welcome which they receive.

There are a few other remarks which I should like to make before I conclude this lengthy epistle.—First, with regard to emigration, and especially with regard to the workingman, about whom so much is said at the present time. Although I have been so short a time in this country I have had occasion to observe how very badly off you are for hands to work in the fields, and what a high premium labor commands in this country. This is all the more astonishing to one coming from a country where the cry is all for something to do, and where even those who have work have been obliged to 'strike'

on account of the increasing dearness in the bare necessities of life, in order that they may gain a bare subsistence, and it seems wonderful that more persons do not take advantage of the present opportunity given for emigration. The difference from two shillings and sixpence and three shillings per diem to a dollar or four shillings for an ordinary day laborer must be very great, and one would suppose, that alone would induce much larger numbers to leave want for plenty; but, sir, you may not perhaps see the reason for this as an Englishman will.

The laboring classes, and those who would benefit most by a migration to this country, know nothing or next to nothing of this land of plenty; those, indeed, who have heard of Canada, imagine, either that they would come to a strange and foreign land, where the manners of the people are altogether different to their own, and the people themselves inclined to look upon them as interlopers, or they think that this is a land of bears and wolves or of wild Indians, where they would be afraid of leaving their children at home for fear of these monsters, whilst they were working in the forests instead of towns and villages as quiet and happy as their own. And is it surprising that they prefer old England and cabbages to live upon, to Canada and meat as often as they wish it?

But—and I have often asked this question—what are the people to do in the winter when it is cold, cold as we never experience in the old country? They tell me that in this country there is still work to be done. Although the land must be left idle through the long winter months, yet there is work to be found in cutting wood and felling timber, and that although the Canadian farmer cannot afford to keep his laborers in the winter, yet that plenty of work of this kind is to be had, and that perseverance alone is required at first, before the new comer has fallen into the ways of the country, and soon he will find the winter come naturally to him.

Again, as regards the cold, there is an abundance of fuel, that is of wood, so that no man need be without fires for his house. And again, even if labor is hard to find at first during the winter, cannot a man live and save besides out of his summer plenty of \$5 per week? Once again, it appears to be work, and steady work alone that secures success and independence, and what more need be said, when one looks at the happiness and comfort along side of the continued and uninterrupted industry of the Canadian farmer? Let, however, those from the villages of England, and not those from the towns alone, who perhaps have not been in the habit of working steadily and readily; let the laboring men from the old country, who have been in the habit of working and have not means of subsistence there, come over here, and they will soon spread amongst those of their own class the tidings of their success in this the most loyal and friendly to our Flag.

There is another want, besides that of working men in your country, that of domestic servants. There is everywhere a large demand for these, and especially for young servant girls. Many families in your country who would give almost anything for good and really steady servants. Your present class appears very inferior to those in the old country, and good servants are said to be scarce even there. But, in the old country, the term 'good servant' means something different to what it does here. There we are not satisfied with anything falling far short of perfection in the way of waiting at table and first-rate cooking; but, in your country, in this as in other respects, steadiness and general carefulness are all that are required. In this respect, however, undoubtedly times will mend, as the country grows, and that this may be so, and that the country may be as great and as free as it deserves is the heartfelt wish of

Yours, &c,

PERAMBULATOR.

Ancaster, Sept. 1. 1872.

Charley's Letter from New Jersey.

The above letter in our last issue has called down upon us such a number of answers from boys anxious to shew our young correspondent from New Jersey, how fallacious are his ideas of the productiveness of our Canadian farms, that we are for want of space, obliged to take the first two received and reject the balance.

We thank all our young correspondents and especially J. C. of Dereham and Horney.

Answer to "Charley."

To the Editor.

SIR,—I am very glad your correspondent takes the *Globe*, and that you all think it a good paper, my father has been taking it long before I was born, and ever since, he thinks it is the best paper in the Dominion.

We live in Ontario, forty miles west of London, and in the township of Euphemia. It is a splendid farming country, most of our money is made out of grain and cattle. We raise very nice Durham cattle and Leicester sheep, "Charley's" father is quite mistaken about Canada being too cold to grow nice fruit, except apples. We can grow to perfection all the varieties of peaches, pears, plums, currants and gooseberries, we also grow splendid strawberries, long-blackberries, raspberries, and plenty of cranberries in some places. I don't know much about tobacco, but we grow the best of water, melons, musk-melons and cucumbers, and I should have mentioned earlier, that we have many kinds of excellent grapes, you say, you don't have snow down there except at odd times, well, you don't know what a nice thing it is to have plenty of snow. If you would come and spend a winter here, I am sure you would enjoy it ever so much. There

is nothing more pleasant than a sleigh-ride on a clear frosty evening, the merry jingle of the sleigh bells would make you shout for joy. Of course we can't plough or plant trees here in the winter, but we can draw our grain, and pork to market, and draw our firewood for winter and summer use, and the snow protects our winter wheat from the frost.

The little grey-bird, blue-bird, and robin, and many other little birds come here in spring and stay all summer, I think they leave about the middle of September, may be later. We have some large birds here too, such as wild turkeys, cranes, owls and hawks. I am afraid my letter is too long now, so I can't tell you much about the birds this time. I shall be very glad if you write about the porpoises and the swimming men and women, and if this is printed I shall tell you more about the birds, and what I know about our fishes.

MALCOM ALEXANDER.

Euphemia, Ont., Sep., 1872.

Charlie Continued.

To the Editor.

SIR.—On behalf of the Canadian boys I feel a desire to enlighten New Jersey Charlie upon some of the points which he wants to know regarding Canada.

Canada, or at least the part in which I live is a very different country and climate from what I have heard New Jersey to be. I have been told that New Jersey is a great collection of stones and rocks, between the cracks of which grow the fruit trees, grapevines, &c., of which their people boast so much. I suppose this is one reason why there is so little snow there, viz, the heat retained among the stones keeps the cold and snow away. But here I may be wrong and the reason may be its nearness to the sea, and lying further south than we do. Charley and his father are both mistaken a "little," if they think that our country will grow no other kind of fruit except apples. We can raise plums, pears, peaches, and cherries. As for grapes, a distant relation of mine in this township raises from ten to twelve bushels in the open air every year. But I must say our fathers have not gone so strongly into this department as they might do. They prefer growing crops of splendid wheat; also, various root crops on which they feed big fat steers, which they sell to the Yankee buyers who are always ready to snap up all we can produce, and more too, if we had them.

Charley is also wrong in regard to the birds when he thinks that they do not come as far as Canada. They certainly come here and fetch their beautiful songs along with them. True, we have no mocking-birds here; but we have the brown thrush, first of all woodland vocalists. Next we may name the robin, and also the yellow canary. The blue-bird is our spring and summer visitor, but he, along with all the rest of the tuneful

choir, leaves us for more genial climes during our severe winters. The crow, woodpecker, chickadee or titmouse, and blue-jay embrace almost the whole of winter residents. The pretty little snow-birds are to be seen here, as elsewhere, on this Continent at all times during the winter weather, before or after a snow storm.

As for wild animals, there is a variety, such as the weasel; black, red, and grey squirrels; woodchucks or groundhogs; racoons, and foxes. The only really fierce wild animals in Canada are bears and wolves, but both of these have long since been banished from our more civilized settlements. The last bear I know of being killed in this township, was a black one, slain, after an exciting chase, near the village of Ayr, about six years ago.

I could go on to describe our beautiful butterflies, and other winged insects, but I imagine they are not much different from those in New Jersey.

Hoping to hear further from friend Charley,

I am,

Yours, and his, truly,

WATT SCOTT.

Blenheim, Oxford,

September, 1872.

Skimmed Milk for Hens.

The editor of the *Poultry World*, finding that a neighbor whom he had furnished with milk had beaten him in eggs, inquired into the cause and gives the following explanation. To this we may add that any kind of sour milk or butter-milk thickened with bran is very excellent food for all kinds of poultry:

"They commenced laying in October and have been at it ever since, to the astonishment, if not the envy of the neighbors of the fortunate owner, who has been selling eggs for the past four months for forty-five cents per dozen and upwards. Not one particle of meat or scraps is given, and but the veriest trifle of vegetable food in the shape of a few boiled potatoes about once a week. An abundance of grain is allowed of various sorts, ground and unground, but never cooked, and plenty of unburnt oyster shells pounded are at all times accessible. They have a plentiful supply of skimmed milk every day, so that they can help themselves to what they want, no other drink being provided. Skimmed milk and the white of an egg are very much alike though the cream has been separated, undoubtedly the full allowance of Indian corn supplies the only constituents of the yolks. Some farmers think they cannot afford to give milk to hens, but must save it for the pigs. But if skimmed milk is worth one and a half cents per quart to feed to swine, as some claim, it is worth three cents for poultry, if by its use winter eggs can be obtained and sold at high prices."

Horticulture.

EDITOR—D. W. BEADLE,
CORRESPONDING MEMBER OF THE ROYAL HORTICULTURAL SOCIETY, ENGLAND.

Roses from Cuttings.

Instead of throwing our prunings away this spring, I used them as cuttings, putting a whole lot of them—about a dozen or more—in (I am afraid to mention it) a marmalade jar, filled with coarse sand and water, with sufficient of the latter to be about a quarter of an inch or so above the sand. I then plunged the jars into a slight hot-bed, and let the cuttings have all the light and sun possible—never shading once. This was about eight weeks ago. Last week I thought I would have a look how the cuttings were going on at the bottom, as they appeared very healthy at the top. Fancy my delight to find that the new roots had covered the sides of the jar, and were matted together in such a way that I had to wash the sand away under a tap to separate the cuttings without breaking the roots. I call this "striking like willows;" some bits with only one eye at the top, struck almost better than any; others, where I put perhaps two eyes beneath the surface of the sand, have struck from every eye. I can assure you I never saw cuttings so well furnished with roots as these were.

Out of about 120 cuttings of some three dozen different kinds of roses, I only missed striking fifteen, which I think is a very encouraging result; anyhow, I shall consider it the road royal, and experiment again in a similar manner in summer, when I shall pay more attention to the preparing of the cuttings and the way they will strike the readiest. The beauty of my system is its extreme simplicity; the trouble or labor is *nil*; beyond the mere procuring of the cuttings, all one has to do is to leave the jars alone, only giving a little water from time to time to replace what has been lost by evaporation.

As to the size of cuttings, I have put in anything—thick or thin, pithy or weedy, straight shoots or jointed ones, shoots with from one to six eyes—only taking care that the cut in every case was a clean one, such as a good sharp knife will make.—*The Garden.*

Prospects of the Peach Crop in the United States.

From a careful examination of the July Report of the U. S. Department of Agriculture, we have come to the conclusion that the Peach crop will be considerably below the average.

The New England States report that the crop will be above an average, but these states consume more than they produce. New York is put down at 6 per cent., and New Jersey at 2 per cent. above an average;

but the two great Peach-producing States fall far below. Delaware being 50 per cent. and Maryland 28 per cent., short. Virginia is 10 per cent. and Pennsylvania 5 per cent. below. Ohio promises only half a crop, and Michigan about one fifth the usual quantity.

London, England, Fruit Prices.

Apricots 50 to 75 cents per dozen; *Cherries* 25 to 75 cents per pound; *Grapes* 87½ cents to \$2.50 per pound; *Melons* 75 cents to \$2.00 each; *Peaches* \$3.75 to \$7.50 per dozen; *Strawberries* from 12½ cents to 30 cents per ounce.

When we remember that it takes a pound, at least of strawberries to make one quart, we see that the fruit eaters at home need well-lined pockets to enable them to enjoy many dishes of nice strawberries and cream. Only think of paying two dollars per quart for strawberries. And peaches can be bought here by the bushel for less money than Londoners pay for a dozen. Apricots have been retailing this summer not higher than 30 cents per quart; and good grapes can be had in their season for 6 to 10 cents per pound for hardy sorts grown in the open air, and fine hot-house grapes at 50 cents to \$1.00 per pound. And yet fruit growers do well at raising fruit at these prices. Surely Canadians have sound advantages for which they have good reason to be thankful and contented.

Nicanor Strawberry.

"When the Nicanor was first introduced we spoke in rather a condemnatory terms of it, but we must change our opinion after seeing it on better ground, and with better care. Why, the plants are literally loaded down with fruit, and two years old at that. The surfaces of the fruit similar to the Wilson, ripening very evenly, and of a bright, scarlet color, and sufficiently firm to carry to any market."

We cut the above from the *Fruit Recorder*, and wish to unite with friend Purdy in a similar confession. We were disposed to condemn Nicanor, from the result of our first two year's experience, on a rather cold, moist soil, but are now from a third year's experience, and this year on a sandy loam, inclined to think quite favorable of it as an early family berry. We think almost any family, growing this and the Wilson together, would be likely to confine their first pickings to the bed of Nicanors, and allow the Wilsons to remain on their vines several days longer, until they had lost a portion of their acidity.

We are admonished, by this and similar experience, to be slow to condemn any new fruit that has respectable endorsement, until we have tried it on various soils, and under various circumstances. There are but few varieties of our best fruits that are adapted

to all soils and climates, and am I to discard a variety that has proved highly satisfactory to me, because it fails in other localities? At the same time we should be careful about recommending a variety for general culture, because it has succeeded with us.—*Rural Home.*

Pleroma Sarmentosa.

This beautiful Peruvian plant was discovered by the well known naturalists and travellers, Humboldt and Bonpland many years ago, near Cuenca, at an elevation of about 8,000 feet. It is known by the natives of Peru as "Flora de Gallicaso;" and although known to botanists for a long time, it is only within the past half dozen years that florists have obtained the plants for cultivation.

This Pleroma is well adapted to green-house culture, and a splendid and valuable acquisition. No words can convey a true idea of the beautiful and brilliant color of the petals. The plant is a rather small, straggling shrub, the small twigs covered with numerous villous hairs. Flowers two inches or more in diameter, and of a deep violet color, produced in small panicles at the ends of the branchlets. The large, brilliant-colored flowers are so showy that a plant in bloom is an object that cannot fail to attract attention even among the most showy collection of green-house plants.

We copy the above from the *Rural New Yorker* in order to call the attention of our readers to this beautiful plant. It has been imported by some of our leading nurserymen, and can no doubt be had at a reasonable cost, and we feel confident it will prove to be a most charming addition to our green-house plants.

Cherries.

For market, it is very important that the fruit be large, handsome, firm, with a tough skin. Some of our most delicious cherries, such as Yellow Spanish and Coe's Transparent, are so tender in skin or flesh as to be almost worthless for shipping.

Black Tartarian stands decidedly at the head of the list for profit. It meets with the most ready sale of all varieties. It is uniformly productive, very large, heart-shaped, purplish black, firm, juicy, sweet. We would advise any one in this vicinity setting out for market a cherry orchard, to plant three-fourths of them Black Tartarian.

Among other kinds of black or purple cherries sold quite largely in Rochester market are, Black Eagle, Knight's Early Black, and Black Russian—the latter a late, firm, rather bitter, second or third rate cherry, which sometimes sells well on account of its lateness.

Napoleon Bigarreau—probably the most profitable yellow cherry for market. Very

large, heart shape, pale yellow, with red cheek, flesh firm, juicy, good. Tree vigorous and productive. This variety is in demand for canning—the yellow being preferred to the red for that purpose—and probably ranks next to the Black Tartarian for profit.

We select the above kinds most extensively grown for market here. We have little doubt that those who should confine themselves to Black Tartarian and Napoleon Bigarreau would come out with the most money. For family use, we would plant one tree each of Yellow Spanish, Coe's Transparent, Rockport, May-Duke, and Reine Hortense.—*Rural Home.*

Cause of Black Knot in the Plum Tree

I have been trying to find out the cause of the black knot on the Plum tree, I cut the branches all off a small tree and when the young shoots came out I saw a great many small ants eating the young shoots and taking off part of the bark and when the bark was broken the Black knot started in a few days.

JAMES LITTLE.

The Past Winter near Gifford.

To the Editor.

SIR,—I have had several honey suckle, killed last winter, one Lombardy poplar, and two or three silver leaved poplar or abele; also several apple trees. Apple trees that were ten years old have been killed all over this county, and vines killed. We think the severe winter was the cause. I have ten trees of the Northern Spy planted in 1862 and there is no fruit on them yet, although they are healthy growing trees.

T. M.

Will our correspondent inform us whether the evergreen trees in his part of the country seem to have suffered from the winter.

Training Grape Vines.

In the July number of the Horticulturist may be found the following remarks by the Editor. "Experience has developed one sound, uniform information, viz.; that grape vines are more healthy and productive when allowed to climb upward on trees, or trellises, than if confined to stakes. But at the same time it is a little at the sacrifice of quality. We believe most of the vineyards throughout the country are failures simply because the vines are pruned too close, and all parts exposed to a scorching sun. If we could train our vines upon arbors, overhead, and allowed them to make and enjoy a cooling shade of their own, we doubt not vine culture would be more steadily encouraging."

We take the liberty to invite the Editor of the Horticulturist to visit the vineyards of Mr. Solomon White, in the Township of Toronto, County of Peel, and see that we

can train our vines upon arbors, overhead, and that trained in this form there is no sacrifice of quality whatever, but on the contrary the fruit is the finest of the variety, that can be grown in this climate.

The Wagner Apple.

We notice very flattering accounts of this variety of apple, lately, in our exchanges. It was sent out for trial to the members of the Fruit Growers' Association of Ontario the past spring. It is spoken of very favorably as being a variety that has a reputation for early fruiting, for yielding handsome marketable fruit, and for health and hardihood of tree. Large orchards in Michigan have borne good crops of fruit annually.

When to Bud.

The season for budding is from July to September, and yet the best time, the time when the operation is most likely to be successful, is variable. The best time is that in which the bud will most speedily and certainly unite with the stock, and experience has taught us that this is while the stock is in a growing state, so that the bark will separate freely from the wood, and yet when the activity of growth is somewhat diminished, which time is usually indicated by the formation of the terminal bud of the stock. At this stage also, the sap under the bark will have thickened and become viscid or sticky. This condition of the stock is the most favorable time for budding, and as a rule it will be found that Plum stocks reach it the earliest in the season; then follow Pear, Quince, Apple, Cherry and Peach stocks, in the order in which they are named.—*Canadian Fruit, Flower and Kitchen Gardener.*

Gooseberries without Mildew.

We have just received from Mr. John Dutton, of Stratford, a sample of Gooseberries of his own growing, which are very fine indeed, and perfectly free from mildew. They are of large size and excellent flavor. These samples shew that it is quite possible to grow fine gooseberries at Stratford, and preserve them from mildew. In the note which accompanied the fruit, Mr. Dutton says, that he makes reference to them in his report to the Fruit Growers' Association. We hope he explains fully his mode of treatment, so that the fruit growers elsewhere may attain to the same perfection.

Cutting down Asparagus.

Mr. Sargent writes.—"The earliest, best and largest asparagus in this neighborhood, is in the garden of a slovenly cultivator, who cuts all his spears or seed stems down immediately after the asparagus season is over—repeats this process once or twice during the summer, thus never having any seeds; in

fact, at this moment his beds are as smooth as the back of your hands. And this is not only their usual appearance, but this has been his habit for five or ten years. Now if my neighbor's course is correct, all other cultivators of asparagus are entirely wrong.

"I should like to hear what you have got to say about this. I am aware the ripening of seed somewhat diminishes the vitality of the plant. All growers of plants are told not to let them seed; but on the other hand, your theory about strengthening lawns by occasionally letting the grass grow to kill out the weeds, on the principle that the longer and stronger the tops of grass, the longer and stronger the roots, would be entirely opposed to my neighbor's theory of practice with his asparagus."

This very suggestive note of Mr. Sargent's may be of great value to cultivators, if they will give it careful study, in connection with known laws of plant life.

First, there is no doubt, for this has been proved over and over again, that if we cut away every spear of asparagus as soon as it appears above the ground, never allowing one to appear above the ground, the plant would be weakened; and if the same course be pursued the second year, it would be entirely destroyed. This plan is successfully pursued in the destruction of Canada Thistle, Horse Nettle, and other terrible pests.

Secondly, it is also well known that after the time of flowering, there is a terrible strain on the vital functions of the whole plant, root and branch. After flowering the Mignonette produces seeds and dies, but if every flower be picked off as it appears, the Mignonette becomes a perennial, and there appears no limit to its duration. The strength of the root is, therefore, assisted by non-flowering or fruiting. This accords with Mr. Sargent's observations on the asparagus.

But we must not forget our first point. Remembering the first and second position together, it would seem to be a good thing to let asparagus grow up to the time of flowering, and then to cut the stems entirely away. Mr. Sargent also suggests a danger which may occur in lawn management. In order to strengthen the roots, and to smother out fine growing weeds, one might let their lawns go uncut for one season; but the grass should be cut before flowering, or the exhaustion will be greater than the gain. Agriculturists also may reap a lesson. If they wish to take hay a second year from the same roots, the grass should be cut as early as possible the first season.—*Gardener's Monthly.*

Apple Crop in the United States.

According to the monthly report of the department of Agriculture we notice that the apple crop promises to be above an average.

In New England, all the States, except

Vermont, are above an average, while New York is reported to be six per cent., New Jersey 29 per cent., and Pennsylvania 5 per cent. above. Ohio is reported to be 11 per cent. below an average, but Delaware is 20 per cent., and Michigan one per cent., Arkansas 2 per cent., and Minnesota six per cent. above.

Fruit in New Brunswick.

I have been engaged for several years in growing fruit trees, and being tolerably successful, I intend its further pursuit. I have had scions from different parts of Nova-Scotia, some of which have been prosperous in this locality, others less so. Our most prosperous have been the R. J. Greening, Hubbardston, Nonsuch, Alexander and Ribston Pippin. English Red Streak and Golden Pippin are good samples for our climate. My Nursery is situate near the Bay of Fundy, on the north side of a slope exposed to the north and north-west winds, and the county (Albert,) fronts on this Bay for some thirty miles. The south-west winds blowing directly up the Bay are unfavorable for fruit growing, yet the most hardy kinds are prosperous.

I have made experiments with wind-breaks for a shelter to my young trees, and find these answer a good purpose.

I see by the *Globe* that the Fruit Growers' Association of Ontario, is giving encouragement to its members by supplying them with hardy varieties of scions and young trees, and an annual report containing valuable information.

I should be pleased to become a member of the Association if it be advisable. I enclose a dollar for this purpose.

ISAIAH TINGLEY.

Hopewell Corner,
Albert County,
New Brunswick. }

Uses of the Sun Flower

In the *Argentine Republic* the culture of this plant is strongly recommended, because the flowers are believed to afford bees the best material for wax, and the best honey; the petals of the flowers to yield a valuable dye, the seeds to give fifty per cent. of oil, excellent for cooking and illuminating purposes, while they are also a superior food for poultry and for cows, increasing the flow of milk; the bottom of the calyx may be used for food in the same way as the artichoke which it closely resembles; the wood will yield one per cent. of potash, while common hard wood only yields one tenth as much, the leaves may be used as food for animals, or made into a good smoking tobacco; while the bark, properly prepared, affords material for the manufacture of paper.

New Pea, Dr. Hogg.

The vast number of new Peas that have emanated from the skilful cross-breeding of Mr. Laxton, of Stanford, bid fair to supplant many of the old varieties, with the names of which we have long been familiar. The great merit of these new varieties is, that they possess qualities far superior to the old ones, with every stage of earliness. Some there are which, being wrinkled Peas, are as early as Dillstone's, and there is no form of the old classes of Peas which has not its representative among the wrinkled Marrows of Mr. Laxton's novelties.

One of the best of these new varieties bears the name of "Dr. Hogg." It may be described as a dwarf and early Ne Plus Ultra. No higher recommendation could be given to it than to introduce it as a competitor of Ne Plus Ultra. The plant grows about 4 feet high. In dry seasons it will not, perhaps, be taller than 3 feet, and in wet ones such as the present it will reach 5 feet. The stem is simple, and well covered with pods, which number from nine to ten. These are 4 inches long and over three-quarters of an inch wide, of a dark blue green, like those of the early Green Marrows and Ne Plus Ultra, much curved like Auvergne, and containing nine very large Peas, which are of a deep green colour.

The ripe seed is green and wrinkled. The seed was sown on the 23rd of February, and the plants were in full bloom on the 24th of May. The pods were fit for use on the 16th of June. Or, to sum up the whole, it is a fine Ne Plus Ultra, coming in one week after Dillstone's, the earliest of all peas, and thirteen days earlier than the old Ne Plus Ultra. This is a valuable acquisition.

On Black Caps.

The Fruit Growers' Association distributed to each of its members in 1871 a plant of the "Marmoth Cluster," one of the varieties of the above excellent fruit. I believe the cultivation of this species of the raspberry was first undertaken in the United States, and in that country this berry is becoming very popular; the kind under consideration has amongst its good qualities the advantages of being quite hardy, an immense bearer, and is nearly thornless. It is easily propagated by laying down the canes early in the season and throwing a few inches of soil on them, they will not only root at the tips, but if covered at intervals, all along the stem.

The year I received my black raspberries I was enabled by this means to obtain *Twenty-four* new plants, and this year I could make a hundred if required.

These few facts may be of interest to some of the subscribers of the "FARMER," who are also members of our Association, and are unacquainted with the habits of this variety, and are patiently waiting for it to "sucker" as is the case of the Antwerp family.

Such an one would require more patience than that possessed by the patient man of old, if he wanted to set out a twenty acre "patch" from the product of his humble beginning of the one distributed.

The best plants are made from the "tips," and from now until the second week in September is the proper time to arrange for propagation, and if the bushes are well grown and a number required, the shoots of this year should have been pinched about the middle of July, to make them branch, and at this season, or when the tips of the canes show an unusual dark color, and are bare of leaves, a few inches of soil should be thrown on them, and in a few weeks they will form good plants.

The branch which connects them with the parent stem should be cut after the leaves have fallen, leaving a foot or so on the tip end, this will mark the spot where it grows and it may thus be readily found in the spring, and transplanted into rows. These will not give fruit the first season, but will make a very healthy growth for next year's bearing.

From twenty-five to fifty bushes will be found quite sufficient for an ordinary family. I have picked as much as six quarts of fruit from one bush which has been established for two years. The Marmoth Cluster is late in ripening, and the berries will come in a little later than the Antwerp family; and before the blackberry, making a valuable link in the small fruit season.

P. E. BUCKE.

Ottawa, 5th Aug., 1872.

INFLUENCE OF VARIOUSLY COLOURED LIGHT ON VEGETATION.—As the result of a series of experiments upon the influence of variously coloured light upon vegetation, Dr. Bert has arrived at the following conclusions: 1. That green light is almost as fatal to vegetation as darkness. 2. That red light is very detrimental to plants, though in a less degree than green light. 3. That though yellow light is far less detrimental than the preceding, it is more injurious than blue light. 4. That all the colours taken singly are injurious to plants, and that their union in the proportion to form white light is necessary for healthy growth.

The author has examined the transmitted light from the leaves of various plants, and finds that there is a slight difference in the rays which different leaves absorb and utilize; and this, he believes, explains the fact that certain plants flourish in the shade of trees, while others will scarcely exist; in the former case, it is supposed that the rays required by the plant are not absorbed by the leaves of the trees, but in the latter they are.

TEA-GROWING IN INDIA.—The experiment of growing tea in India is proving quite successful. In 1862, the crop was estimated at 1,000,000 lbs.; in 1871 at something over \$20,000,000. It is claimed that India now compete with China in producing teas of the best quality.

Results of Curculio Catching.

In 1871 Mr. Samuel Burner of Hamilton, a member of the Fruit Growers' Association of Ontario, by jarring his plum trees, caught *three thousand one hundred and sixty-one* curculio, and drew from the Association therefor the prize of ten dollars. He now writes to the Secretary of the Association as follows:—

"With regard to the number I have caught this season, I might say that I have caught but few, as compared with last year, only *eight hundred and six* altogether, or only two more than I caught in one morning last year. But the result is equally satisfactory. I have a splendid crop of clean plums."

A few days ago we were in the garden of Dr. L. Cross of St. Catharines, and noticed that his plum trees were well filled with fine fruit. The Doctor said that he was well satisfied with the results of but a few hours work, that for about fifteen days he had spent something like an hour each day in jarring the trees and securing the curculio, and that now he had about a hundred trees well filled with choice plums, and that taking his labor in a pecuniary point of view, he would be most amply repaid for his expenditure in catching the curculio.

There is no reason then why we should let the curculio rob us of our plums, none but the lay and confess need be without this fine fruit.

New Pear—Elliott Seedling.

To the Directors of the Fruit Growers' Association of Ontario.

Your Committee on Seedling Fruits, beg to report upon the Elliott Seedling pear, submitted and sent from two sections of Ontario, one package of specimens coming from Mr. James Dougall of Windsor; the other from Mr. Simon Roy of Berlin.

We proceed to describe those sent by Mr. Dougall of Windsor, and received 27th July 1872, fully ripe at this date, fruit rather small in size, short pyriform with a very small fleshy lip; skin smooth, pale yellowish green, with a pale brown cheek; one side of these pears is flattish, having somewhat the appearance of a suture, stalk stout from 2 to 2½ inches long inserted without depression, a little oblique calyx open and set in a moderately wide corrugated basin. Flesh juicy and agreeably refreshing from appearance of spur and stems, fruit hangs in clusters.

As to the other package containing specimens submitted by Mr. Simon Roy of Berlin, and also called the Elliott Seedling; your committee mark such a difference in many essential respects from those received from Windsor, will proceed to point out, these marks of distinction, namely, size of fruit nearly medium. As compared with those coming from Windsor, long pyriform, with a

distinctly brown streaked cheek, calyx closed, and stems, which unfortunately were curtailed in their full length, set at nearly right angles to the fruit.

Fruit having an unusually fleshy protuberance or lip extending along the upper side of this extremely oblique stem, half an inch, all the specimens at this date August the 2nd still firm and unripe. Your committee feel considerable doubt as to their being the product of the same seedling, and would recommend the appointment of a suitable committee to visit the trees, in bearing an other season, should the gentlemen putting them forward request it.

All as which we beg to submit.

(Signed,)

W. HOLTON,
JOHN FREED,
W. H. MILLS,
R. BARNET.

TWO NEW PEACHES.—RICHMOND AND ATLANTA.—We notice that Dr. E. Ware Sylvester, of Lyons, N. Y. in disseminating two new seedling peaches raised by him. A number of pits planted in 1857 produced some five hundred trees which were allowed to fruit, and these two selected from them as the best. Mr. Downing thus describes them:

"The **RICHMOND** is of large size, roundish, slightly compressed, suture distinct, ending at the apex which is a little swollen; skin one yellow, shaded and mottled with dark rich red; flesh yellow, slightly red at the stone, from which it separates freely—very juicy, melting sweet for a yellow Peach, quality very good; ripens three or four days later than Crawford's Early, and less acid in flavor."

"The **ATLANTA** is of medium to large size, roundish, slightly depressed, smooth and regular; suture large, extending nearly round the fruit, cavity quite deep; skin whitish, shaded, mottled with a deep red and almost purplish in the sun; flesh, white, a little red at the stone, juicy, melting with a sweet rich, rare-ripe like flavor—adheres partially to the stone; quality very good; ripens last of September."

Dr. Sylvester says:—"We think the Richmond is the peach for the million for these reasons:—Tree healthy and more hardy than the Early Crawford and if such a thing is possible a more abundant bearer; and it has this advantage of the Early Crawford, it is nearly, or quite as sweet as the best white flesh peaches."

CALIFORNIA RAISINS—Several grape growers in California have succeeded in producing raisins of fine quality. Messrs Wadsworth and Butterfield, from their vine yard on the foot of the hills near Nevada city, have produced from 450 pounds of grapes, 150 pounds of raisins of superior flavour, claimed to be equal to the best Malaga, and worth 24 cents per pound. This furnishes a fine margin for profit, as it secures 8 cents per pound for grapes, which is a very remunerative figure for California.

Entomology.

Earth Worms.

To the Editor.

SIR,—I and a neighbor recently had short friendly discussion respecting the merits and demerits of the common angle worm. He stated that he has a plot of land which used to be productive kind and mellow, but which is now very hard and barren, and much infested with angle or earth worms and feels confident that they are the main cause of the change. I pleaded on their behalf "not guilty," and said that I thought he had fallen into the very common error of tracing effects to the wrong cause, and that I look upon the earth worm as a friend and seldom (if ever) an enemy.

I know that it is quite common to look upon everything in the shape of a worm as an unmitigated evil, but from observation and reading I think the angle worm is an exception. I proposed to refer the matter to you, to which he cheerfully agreed, and we shall wait for your reply through the columns of your instructive journal.

He desires me to state that the soil referred to above is black muck with clay subsoil.

J. GLOVER.

Yamouli, St. Thomas, P. O.

NOTE BY EDITOR.—Our opinion regarding earth-worms as before expressed in this Journal is that they are much more beneficial than injurious; in fact the injuries they commit are so slight, and inappreciable that we cannot in justice include them amongst the enemies of the agriculturist. Instead of rendering a soil hard and barren, their effects upon it are quite of the opposite character—they feed upon earthy matter from which they digest the fine vegetable mould that it contains reject the remainder at the mouth of their furrows, thus continually adding to the depth of the soil. They are also important and serviceable agents in loosening a hard soil and opening it for the penetration of air and water through their habit of burrowing and crawling through the upper stratum. The plot of land referred to by our correspondent probably owes its changed condition to defective drainage or want of tillage—of course we can give no positive opinion on this point, without personal examination—but we do not think the harm can with any justice be laid upon our friends, the earth worms.

Tortoise Beetles.

A correspondent at Bayfield, Mr. A. B. Brownson, writes as follows.—

"I have this day, when pruning the Chauton Grape, found a specimen of the animal kingdom which I will describe. He, she, or it, resembles a small mud-turtle. When I

caught it, the color was of an oak-color beautifully varnished. I have never seen the like before; I send it to you to ascertain what it is. By giving its name you will oblige."

As no specimen was received with this communication we were at first somewhat puzzled to know what could be referred to, especially as no exact description is afforded us. However, we fancy we are not far wrong in stating the specimen to have been a Tortoise Beetle, (*Deloyala clavata*, Oliv.). It is an oval insect about quarter of an inch long, surrounded by a thin semi-transparent projecting shell, on which there are four dark colored patches which resemble in appearance the extended paws of a mud-turtle. The insect feeds upon the leaves of the potato, tomato and other plants of the *Solanum* family; it is not at all likely that it fed upon the grape-vine upon which it was found.

There are a number of different species of these "tortoise beetles," all of which are distinguished by the singular projecting shell that surrounds the body. Our most common species is often destructive to plants of the *Cucurbitaceae* family, such as the Morning Glory, and further south, the sweet-potato. It is a very beautiful insect when seen alive in the sunshine, looking at one moment like a bead of burnished gold, then of a pearly hue, then like a brilliant opal and presently perhaps of a dull yellowish hue. We shall be glad to learn from our correspondent whether we are correct or not in our guess as to his specimen.

We always desire specimens to be sent us in any case of this kind, as it is almost impossible for even the most skilful Entomologist to say what insect is referred to among the tens of thousand species that inhabit our country.

Practical Entomology.

In the notice already given of the Annual Report for 1871, of the Commissioner of Agriculture and Arts for this Province, attention has already been drawn to the great value of that portion relating to the noxious and beneficial insects of this country, contributed by the Entomological Society of Ontario. This report, as well as its predecessor of last year, has been spoken of in very high terms by many eminent publications both in the United States and England. From among these we desire to bring before our readers, and especially the members of the Legislative Assembly, the notice contained in a recent number of *Nature*, one of the highest scientific periodicals in England:—

ECONOMIC ENTOMOLOGY.

"We have more than once had occasion to refer to the zeal with which the investigation of the insect pests so destructive to our crops of roots and fruits is carried on on the other side of the Atlantic. Three publications now lying before us—two from the

United States, and one from Canada—furnish a text for a few further remarks on this subject. They are: "Fourth Annual Report of the Noxious, Beneficial, and other insects of the State of Missouri," by Charles V. Riley, State Entomologist; "Second Annual Report on the Injurious and Beneficial Insects of Massachusetts," by A. S. Packard, jun., M. D.; and "Report of the Entomological Society of the Province of Ontario for the year 1871." These are all official publications; the two first being Reports made to the State Boards of Agriculture; the last printed by order of the Legislative Assembly. They represent the result of investigations made at the expense of the citizens of the respective States or Province, who are willing to tax themselves in order that the highest scientific experience at their command may be brought to bear on researches whose object is the material improvement of the resources of their country. The only similar efforts to which we can point in this country are the result of private enterprise. The Royal Agricultural Society has long engaged the services of a chemist to analyse manures and feeding-stuffs, and we recorded not long since the addition to its staff of a consulting botanist, and its intention to appoint also a consulting entomologist; but their investigations are carried on exclusively for the benefit of the members of their Society. The Royal Horticultural Society has also arranged for a course of lectures on Economic Entomology, and last year invited competition for prizes for collections of insects to illustrate this subject.

"We have so often expressed our view on the relative advantage of having these investigations carried on by private enterprise, or under the direction of the State, that it is needless to repeat it here. Dr Packard thus forcibly advocates the latter alternative, referring to M. Pasteur's labors in endeavoring to mitigate the scourge of the *pebrine* in the South of France:—"It should be remembered that this remarkable result is due primarily to the most abstruse researches upon microscopic plants by specialists, for the pure love of science. Their cluster studies, put to practical account, save the destruction of one of the largest agricultural industries in Southern Europe. In like manner, had the general Government or individual States encouraged the botanist and entomologist in their studies, and caused them to be turned to practical accounts, we should not have had to give up the cultivation of wheat in the northernmost States; our cotton crop would perhaps have been doubled; and our garden and field crops have regularly yielded a steady return to the producer." It must be recollected that the Federal Government at Washington is now spending large sums in the compilation and printing of enormous numbers of the Monthly Agricultural Reports, in addition to the money devoted by the separate States."

After referring specially to the Reports of Mr. Riley and Dr. Packard, the article continues:—

"The Canadian Report is interesting, as being the result of the first appropriation of money for these purposes, as far as we are aware, by any of our American colonies. The Entomological Society of Ontario is subsidised by the Legislative Assembly, in order to encourage the devotion of its labors to inquiries of a practical character for the benefit of the colony. The present Report, of nearly 100 closely printed pages, well illustrated with woodcuts, gives promise of much useful work. The Reports is divided into sections relating to insects injurious to the apple, grape, plum, current and gooseberry, wheat crops, potato, cabbage, and cucumber tribe, by different competent members of the Society."

"We have referred to these Reports in order to draw from them a lesson as to the direction of the labors of our botanists and entomologists at home. We have among us at least as high scientific talent in these branches as in the United States, but with a few rare exceptions, this talent is not devoted to researches which have a definite practical bearing on the welfare of the country. If, as we believe to be the case, the reason of this is that such researches can rarely pay the investigator directly, is not the reasoning sound which would advocate the devotion of public money to purposes which must inevitably yield such large returns to the community at large?"—(*Nature*, July 11, 1872.)

It must be a source of much gratification to the Hon. Commissioner of Agriculture and the members of the Legislature, as well as to those especially employed in the preparation of the Report, to learn from so high an authority that this Province sets a lesson to the Northern country, in the enlightened policy of aiding practical scientific work. We trust that we shall never retrace our steps in this respect, but continue our exertions and our subsidies, not only for the promotion and encouragement of this branch of practical science, but to others also that are of immediate economic benefit to our land.

NEW ZEALAND FLAX.—Mr. A. Carr, of Carbondale, Pennsylvania, who for some years resided in New Zealand, and gave special attention to the variety of flax cultivated in that island, thinks it could be profitably produced in this country. The dressed fibre commands the present year in the English market, £25 per ton, and in New York, nine cents per pound in gold. It can be used as a substitute in all products manufactured from the common variety, as linens, cordage, paper, &c., and is extensively used for stuffing chairs, mattresses, &c., being as suitable and durable for that purpose as horse hair.

Agricultural Intelligence.

Ancaster Agricultural Society.

We have received a Report of the Annual Meeting of the Directors of this Society for the purpose of organizing for the fall exhibition. The prize-list is greatly enlarged and with the new town hall and the fair grounds now belonging to the Society, a very successful show is looked for.

We see that Ancaster proposes holding a fall fair for the sale of live stock, &c., on the same day, and in connection with the Society's Exhibition.

We commend this course to the careful attention of our township Societies, thinking that the union of an exhibition, and grand fall market could be carried out with great mutual advantage.

Ancaster is one of the villages which last Spring established regular periodical fairs, their first was a perfect success; we wish them prosperity in this line in the future, and hope that we shall next year have the pleasure of noticing in our columns the successful establishment of many more of these periodical fairs throughout the country.

GUELPH CENTRAL EXHIBITION, is to be held at Guelph on the 1st, 2nd, 3rd and 4th days of October next, when \$8,000 will be offered in Premiums.

We feel assured that the Show will fully come up to the standard of that held in Guelph last year.

We refer the readers of the CANADA FARMER to advertisement in our September issue.

List of Agricultural Exhibitions to be held in Canada, during the coming Fall.

AGRICULTURAL SOCIETY, WHERE HELD,	DATE,	NAME OF SECRETARY.
Addington, at Newborough,	9th Oct.,	J. B. Aylesworth.
Ancaster, (Tshp.), at Ancaster,	8th Oct.,	Jno. Robb.
Barton and Glanford, (Tshp.), at Mount Hope,	1st Oct.,	W. Calder.
Brant, North, at Paris,	19th and 20th Sep.,	D. R. Diekson.
Brant, South, at Brantford	15th and 16th Oct.,	W. Sanderson.
Brockville and Elizabethtown, at Unionville,	19th and 20th Sep.,	B. Sovereine.
Dundas, at Morrisburgh,	17th and 18th Sep.,	A. G. Woodward.
Durham, E. at Millbrook,	8th and 9th Oct.,	Jno. Foote.
Durham, W., at Bowmanville,	3rd and 4th Oct.,	R. Windatt.
Elgin, E., at St. Thomas,	1st Oct.,	H. Selin.

Frontenac, at Kingston,	2nd Oct.,	J. Simpson.
Glengary, at Alexandria,	26th and 27th Sep.,	T. McDonnell.
Grenville, S., at Prescott,	30th Sep. and 1st and 2nd Oct.,	T. J. Tracy.
Guelph, Central, at Guelph,	1st, 2nd, 3rd and 4th Oct.,	Geo. Murton.
Huron, N., at Blyth,	17th and 18th Sep.,	S. Malcomson.
Kinston, at Kingston,	20th Sep.,	E. H. Smythe.
Lanark, S., at Perth,	3rd and 4th Oct.,	A. Campbell.
Landsdowne, (Tshp.), at Landsdowne,	10th Oct.,	G. F. Deane.
Leeds and Grenville, N., at Frankville,	1st and 2nd Oct.,	C. Richards.
Leeds, S., at Ganouque,	3rd Oct.,	W. Brough.
Lennox, at Napanee,	3rd and 4th Oct.,	C. James.
Middlesex, N., at Alsa Craige,	1st and 2nd Oct.,	W. Atkinson.
Monck, at Wellandport,	8th and 9th Oct.,	D. C. Holmes.
Niagara, at Niagara,	8th Oct.,	Alexander Servos.
Norfolk, N. and S., at Simcoe,	16th and 17th Oct.,	H. W. Smith.
Northumberland, E., at Warkworth,	3rd and 4th Oct.,	R. P. Humbut.
Ottawa, at Ottawa	16th, 17th and 18th Sep.,	A. Woodbine.
Ontario, N., at Prince Albert,	1st and 2nd Oct.,	Jno. Christie.
Ontario, S., at Whitby,	19th and 20th Sep.,	Geo. Robbins.
Oxford, N., at Woodstock,	30th Sep. and 1st Oct.,	R. W. Sawtern.
Peel, at Brampton,	4th and 5th Oct.,	D. L. Scott.
Peterboro', W., at Peterboro',	8th and 9th Oct.,	Jno. Carnegie.
Pickering, at Brougham,	10th and 11th Oct.,	—
Perth, S., at St. Mary's,	1st and 2nd Oct.,	W. N. Ford.
Provincial, at Hamilton,	23rd to 27th Sep.,	H. C. Thompson.
Renfrew, S., at Renfrew,	1st Oct.,	R. McLarn.
Russell, at Metcalf,	12th and 13th Sep.,	T. Morgan.
Simcoe, N., at Barrie,	2nd and 3rd Oct.,	T. G. McCarthy.
Toronto, at Toronto,	8th, 9th and 10th Oct.,	W. Edwards.
Waterloo, N., at Berlin,	10th and 11th Oct.,	N. Springer.
Waterloo, S., at Preston,	8th and 9th Oct.,	A. McGregor.
Wellington Centre, at Fergus,	19th and 20th Sep.,	Jno. Beattie.
Wellington, N., Dryton,	8th Oct.,	Rob. Mitchell.
Wentworth, N. and S., Amalgamated with the "Provincial."	—	—
Western Fair, at London,	8th to 11th Oct.,	W. McBride.

York, N. at Newmarket,	5th and 6th Oct.,	E. Jackson.
York, E., at Markham,	1st and 2nd Oct.,	Jas. Robinson.
Cardwell, at Mono Mills,	8th and 9th Oct.,	Jno. Allen.
Decham, at Tillamook,	1st Oct.,	P. T. Williams.
Elgin W., at Walkerton,	2nd Oct.,	A. E. Barclay.
Hastings E., at Robt.	5th Oct.,	P. P. Palmer.
Kent, at Chatham,	2nd and 3rd Oct.,	Geo. Tissiman.
Oxford S., at Oxford,	20th and 21st Sept.,	R. T. Wilham.
Perth N., at Stratford,	3rd and 4th Oct.,	Stewart Campbell.
Stormont, at Newington,	2nd Oct.,	Geo. Shaver.
Thulow, at Thulow's Corner,	1st Oct.,	P. R. Palmer.
Welland, at Welland,	10th and 11th Oct.,	Alex. Reid.

The Sting.

The sting of a bee is naturally more violent than that of a wasp, and with some persons is attended with fatal effects. Two deaths from such a cause have recently occurred. The sting of the bee is barbed at the end like a fish-hook, and consequently is always left in the wound; that of a wasp is pointed, so that it can sting more than once, but a bee cannot. When a person is stung by a bee, let the sting be instantly pulled out for the longer it remains in the flesh, the deeper it will pierce, and the more poisonous it will become. The sting is hollow, and the poison flows through it, which is the cause of the pain and inflammation. The extracting of the sting requires a steady hand, for if it breaks in the wound the pain will continue for a long time. When the sting is extracted, suck the puncture, and thus prevent inflammation.

Spirits of hartshorn, if applied to the affected parts, will more fully complete the cure. The poison is acid, and the alkali will neutralize it. If the hartshorn is not at hand saleratus can be wet and laid upon the place; and soft soap will often ease the acute pain. On some people the sting of bees and wasps have little effect, but it greatly depends upon the state of the blood whether it will prove injurious, and these simple remedies, if applied at once, will soon effect a cure. — *Country Gentlemen.*

California sets an example to her sisters in taking the lead in several important measures affecting her material interests. Her latest example in this line is the appointment of a professional arboriculturist, at a salary of \$15,000 a-year, whose sole duty is to attend to the planting of forest trees all over the State. No better movement than this could be conceived and executed, and it gives a hope for other and older states.

Miscellaneous.

Constructing House Drains and Cess-Pools.

After building a house, and next in importance to having a home to live in, is its drainage. Almost all building sites, are selected for having an elevation above the surrounding level, often considerable, but always some fall for drains. In cities and towns the drainage is the very first thing attended to. And a man would as soon think of building a house without a chimney or outlet for smoke, as without a means of drainage. Of course I do not allude to these miserable small tenements, built expressly to rent, because unfortunate working men must have such homes, and cannot afford to pay anything extra, even for decent drainage, consequently at the "Jaw hole" as the Scotch call it, is the front of the house into the lane or street, run all the wastes contents of various vessels which filth lies "festering" and swelling directly in front of the door, until kind Providence sends rain enough to liquify its nauseous effluvia, sufficiently to cause it to run off, or it is absorbed in the earth. I do not mean to advocate or condemn such miseries, as families are thus often exposed to. It probably is simply their misfortune to be compelled to live in such hovels. But we have now before us the idea of building a snug farm house, which shelters and comforts as a home parents, children people employed on the farm. It is for such we are now going to describe the cheapest, as well as one of the best modes of making drains, building stench traps, and cess pools.

When the site of the new house is selected, dig the cellar drain, and ever afterwards most carefully prevent house refuse, of any kind, by any chance getting into it. This drain should be kept to drain off any soakage water that may otherwise render the cellar damp and unwholesome; thus the fetid atmosphere produced by using the cellar drains for house purposes, will never allow of good butter being made in a cellar so drained. The water drain, and house drain, must therefore be entirely separate.

In constructing the house drain, a stench trap is absolutely requisite, and can be applied to all drains, old or new, for less than twenty cents. It simply consists of an impediment stop placed across the drain, of say one and a half or two inches high. The water will thus be dammed back in the first foot or two of the drain, to the depth of about two inches, when fitting a box on the top of the drain to enable a pail full of refuse to be emptied into it without slopping about; cut a three inch hole in the bottom of the box, through which thrust a pair of tin 3 inch pipe, one say 6 inches long, or just long enough not to touch the bottom of the drain, by about one inch, and at the same time be

sure you let this pipe discharge itself into the little reservoir, or dam, formed by the before mentioned obstruction. It will be thus seen that all matters thrown down the drains run through the tin pipe, whose mouth or outlet, is placed below the level of the dam, and consequently forms a perfect stench trap; at the same time, the water poured in can readily escape and bubble up around the tin pipe, and flow over the dam, but all returning smells, are most entirely and effectually prevented, (by the higher level of water formed by the dam), from coming back up the drain.

This cheap and simple contrivance, I have had in use for twenty years, and consequently am never annoyed by returning smells from the drain.

But drains will stop up, especially if made of wood. Cities use tiles of an expensive kind, but in the country they are usually constructed of wood, and consequently we must guard against any accumulation that may cause such a stoppage, as would otherwise take place in wooden drains.

The best way to effect this where we have little fall, is to divide the fall of the drain into; first, a rapid descent that will wash everything before it; and let this extend say ten feet, then let the drain go the rest of its way on as much or little remaining fall as you possess. If on a dead level it will work perfectly well; but at the junction of the decent and the level, you must sink a square plank box of say 5x5 and 5 feet deep, to act as a cesspool. The rapid descent will carry all obstructions into this box where the thick stuff will subside, and the thin watery portions will readily pass the remaining distance, on a nearly dead level.

Of course some fall, even after catching the heavier portions is very advisable, but very often this cannot be had.

Once in every year or two, this cesspool must be dipped out with a long handled spudgule and the contents carried away as manure, which operation will amply repay cost, and time, as such has the very best and most fertilizing power.

I will undertake to prove that the land on which the contents of this cess pool is thinly spread will produce altogether extra crops, in three years, to pay all cost of putting down drains, and cess pools and "thirty-two and a third per cent." is pretty good profit on any investment, when you consider you have all the comfort and cleanliness besides.

COPPERAS AS A DEODORIZER—"One pound of green copperas costing seven cents, dissolved in one quart of water, and poured down a water closet, will effectually concentrate and destroy the foulest smells. On board ships and steamboats, about hotels and other public places, there is nothing so nice to purify the air. Simple green copperas, dissolved under the bed in anything that will hold water, will render a hospital, or other

place for the sick, free from unpleasant smells. For butcher's stalls, fish markets, slaughter houses, sinks and wherever there are offensive putrid gases, dissolve copperas and sprinkle it about, and in a few days the smell will pass away. If a cat, rat or mouse dies about the house and sends forth an offensive gas, place some dissolved copperas in an open vessel near the place where the nuisance is, and it will soon purify the atmosphere."—*Industrial Monthly.*

Advertisements.

A NEW PREMIUM

TO THE SUBSCRIBERS OF THE

"FIRESIDE JOURNAL,"

To any man child or woman who will forward us ONE DOLLAR for one year's subscription to the "New Dollar Weekly," "THE FIRESIDE JOURNAL," we will forward a

BEAUTIFUL CHROMO,

Size 13x18, (in 12 Oil Colors.)

Incased in a beautiful Rosewood and Gilt Frame, with Glass and back complete; this Chromo was made expressly for us, Entitled:

"THE DARGLE GLEN,"

A Magnificent Landscape Scene.

We cannot describe this elegant picture in words—it is a copy of the Original Painting by DORE. Now is the time to subscribe and get a \$5 Chromo beautifully framed for subscribing for the

"FIRESIDE JOURNAL"

Agents wanted to canvass for this Paper; will allow Agents 35 cents on each subscription; will give a \$65 Sewing Machine for 150 subscribers. Now is your time! Speak quick!

Send us \$1.00 for an Agent's outfit, and commence canvassing for the Journal at once; we will return the \$1.50 after you have taken 15 subscribers. Start at once! Don't delay! Time is money!

Our premium cannot be beat by any publisher in the world.

Every Mother's Son and Daughter send ONE DOLLAR and receive our Beautiful Premium, and—BURN. Send stamp for a sample copy.

Address, CHAS. THOMPSON, Publisher of Fireside Journal, Bridgewater, Conn. P.S.—Agents wanted to sell Campaign Badges, &c. Send stamp for a price list. v4-33t.

Choicest Dutch Bulbs and Flower Roots,

Direct from the Grower,

OVERVEEN NEAR HAARLEM, HOLLAND.

Elaborate and instructive Catalogues are now ready and will be sent free to all applicants.

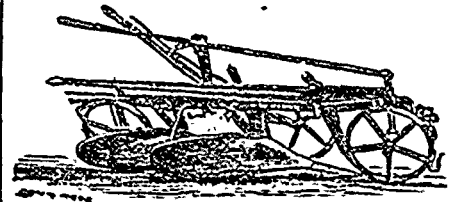
Apply, Agent, ANT. ROOZEN & SON,

147 St

Box, 48, D. LONDON, Ont.

TORONTO AGRICULTURAL WAREHOUSE AND SEED STORE.

IMPROVED CHAMPION



DOUBLE FURROW PLOUGH.

With it one man and three horses can do the work of two men and four horses with two ordinary ploughs. Send for circular giving full particulars.

WILLIAM RENNIE, Toronto.

Great Short-Horn Sale!

AT

'The Plains,' near Paris,

ONTARIO.

WEDNESDAY, 16th OCT., 1872.

The undersigned will sell at "The Plains," near Paris, Ontario, on Wednesday the 16th October, 1872.

40 HIGH-BRED SHORT-HORNS,

Comprising 15 bulls & 25 cows & heifers, all fine animals. Among the bulls is Knight of St. George, (2644), a pure Booth, bull, bred by Mr. Carr, of Blackhouse, Yorkshire, England from Windsor's Queen, the dam of so many first class bulls. The other bulls are all sons of Knight of St. George.

The cows and heifers are descended from the celebrated bulls "Duke of Airdrie," (2743), Oxford Lad, (2473), Crown Prince of Athelstane, (2152), and Knight of St. George, (26514). Several of them are of the Plana tribe, to which, Mr. McMillan's famous prize bull, "Platanet," (bred by me,) belongs.

There will also be sold on the same day, 50 cotswold and 30 Leicester Sheep.

Catalogues of the stock will be furnished on application.

Address,

DAVID CHRISTIE,

Paris, P. O.

Ontario.

The Wheat Field of America!

Healthful Climate, Free Homes, Good Markets.

THE NORTHERN PACIFIC RAILROAD offers for sale its Lands in Central and Western Minnesota, embracing: 1. The best Wheat Land; 2. Excellent Timber for the Mill the Farm and the Fire; 3. Rich Prairie Pasturage and Natural Meadow, watered by clear Lakes and running streams—in a Healthful Climate, where Fever and Agues is unknown:

Grain can be shipped hence by lake to market as cheaply as from Eastern Iowa or Central Illinois. Cars now run through these Lands from Lake Superior to Dakota. Price of land close to track, \$4.00 to \$8.00 per acre; further away \$2.50 to \$4.00. **Seven Years' Credit; Warrantee Deeds; Northern Pacific 7-30 Bonds**, now selling at par, received for land at \$1.10. No other unoccupied Lands present such a vantage to settlers.

SOLDIERS under the New Law (March, 1872) get 160 acres FREE, near the Railroad by one and two years' residence.

Apple and Plum Seedlings.

100,000 Apple Seedlings, 2 years old.
40,000 Canada Plum, do first-class.

W. HOLTON.

C. F. No. 9-11.

FARM FOR SALE.

100 acres, 60 of which have been under cultivation 5 or 6 years. Sugar grove, orchard, frame barn, 40x40, comfortable house, etc., etc., in Sakelec, Howick Township, Huron Co., Ont. 7 1/2 miles, where are school, sawmill, store, post office, etc. R. R. depot 5 miles. Farm implements and horses will be sold with the farm at option of buyer. Farm \$2,350, cash. Purchaser to pay expenses of sale.

Address

A. W. MACDONALD,

Box, 773, New York City,

First offer accepted. Possession given immediately.

C. F. No. 9-11.

TREES,

PLANTS & BULBOUS ROOTS

For AUTUMN of 1872.

Ellwanger & Barry offer to Planters and Dealers the largest and most complete stock in the country of Standard and Dwarf Fruit Trees, Grape Vines, Small Fruits, Ornamental Trees, Shrubs, Evergreens, New & Rare Fruit & Ornamental Trees, New & Rare Green & Hot House Plants, Bulbous Flowering Roots.

Small parcels forwarded by mail when desired. Prompt attention to all inquiries. Descriptive and Illustrated Priced Catalogues sent prepaid on receipt of stamp, as follows:

No 1 Fruits, 10c. No 2 Ornamental Trees, 10c. No. 3—Greenhouse, 10c. No. 4—Wholesale, (Just Published,) Free. No 5—Bulbs, Free: Address, Established 1840

ELLWANGER & BARRY,

Mount Hope Nurseries, ROCHESTER, N.Y.



FOR FATTENING AND BRINGING INTO CONDITION Horses, Cows, Calves, Sheep and Pigs. The

YORKSHIRE CATTLE FEEDER

Is used and recommended by first-class breeders. Stock fed with it have always taken first prizes. Milk Cattle produce more milk and butter. It fattens in one fourth the usual time, and saves food. Price 25 cents, and \$1.00 per box. A dollar box contains 200 feeds.

HUGH MILLER & Co.

Agricultural Chemists, 167 King street East,

Toronto.

For sale by Druggists, everywhere.

C. F. No. 9-11.

Fruit and Ornamental Trees,

AT THE

HAMILTON NURSERIES!

I offer for full planting, a large stock of first-class trees, of all the leading popular sorts.

Dealers, Planters, and Nurserymen attending the Provincial Fair, are invited to visit the grounds on Main street East, and inspect the stock.

Descriptive Catalogues furnished on application. W. HOLTON

September, 1872.

TORONTO NURSERIES,

WHOLESALE AND RETAIL.

We offer for FALL PLANTING, a splendid stock of GENERAL NURSERY PRODUCTIONS.

Enclose 3 cent Stamp for our Priced Descriptive Catalogue.

GEO. LESLIE & SONS,
Leslie, P. O., Ont.

C. F. No. 9-11.

TRANSPORTATION AT REDUCED

RATES furnished from all principal points East to purchasers of Railroad Lands, and to Settlers on Government Homesteads. Purchasers, their wives and children carried free over the Northern Pacific Road. Now is the time for Settlers and Colonies to get Railroad Lands and Government Homesteads close to the track.

Send for Pamphlet containing full information, map and copy of New Homestead Law. Address:

LAND DEPARTMENT, NORTHERN PACIFIC RAILROAD, ST. PAUL, MINN.,

OR 23 FIFTH AVENUE,

COR. 9TH ST., NEW YORK.

v4-7-121

Trees! Flowers! Bulbs! Seeds!

HEDGE PLANTS!

Nursery Tock! Fruit and Flower Plates!

Address, F. K. PHOENIX,

BLOMINGTON NURSERY,

ILLINOIS.

600 Acres; 21st year; 12 Greenhouses.

Apples and Crab, 1st class trees, 1,000 1 yr.; \$20; 2 y. \$30; 3 y. \$40; 4 y. \$50

Standard Pears, 1st class, 1 to 6 feet, 100, \$25. 2nd class, 1 to 5 feet, 100, \$15.

Concord Grape, 1st class, 1 yr. 1,000, \$25. Doolittle, Mammoth Cluster and Philadelphia Raspberries, also Killatimy Blackberries, 1st class, 1,000, \$8.

4 Catalogues, 20 cents.

v1 8-61.

USE

Park's Cotton Warp,

The best in the Dominion.

Full length and correctly numbered. For sale by all Dealers.

ALEXANDER SPINCE.

Montreal, Agent.

CENTRAL EXHIBITION,

1872.

\$8,000 Offered In Premiums!

WILL BE HELD

IN THE TOWN OF GUELPH,

ON THE

1st, 2nd, 3rd and 4th of October,

OPEN TO ALL.

PRIZE LISTS and ENTRY PAPERS can be had at the Secretary's Office, Guelph, and also from Secretaries of other Societies throughout the Province.

\$200 is offered for the best span of Roadster horses

G. MURTON,

Secretary.

JAS. LAIDLAW,

President.

Guelph, Aug. 15, 1872.

C. F. No. 9-11.

FIRST PRIZE BEE HIVES.

BUY THE BEST.

J. H. THOMAS'

Moveable Comb or Frame Hives

ARE all that can be desired for a bee-hive. They were awarded the first prize at all the Provincial Fairs for seven years. They possess more advantages than any other hive in the market, yet are more simple in construction and easier to operate with, which we are prepared to demonstrate at any time. In fact, they are the best and cheapest frame hive now before the public. For full particulars send for circular.

PRICE LIST FOR 1872.

Single-boarded Hives.....	\$2 50
Double boarded Hives.....	3 50
Individual right to make.....	3 00
Single-boarded Hive and right together.....	5 00
Double-boarded Hive and right together.....	6 00
Large Gauge or New Entrance, each.....	15
Small or old Gauge, each.....	10
Bee Protector.....	50
Honey Knife.....	75
Honey Extractor—the best in the market.....	10 75
Single Stocks in the single-boarded hive.....	13 00
Italian Queens, from latest importations.....	5 00
Canadian Bee keeper's Guide, pre-paid.....	25

Township and county rights for sale at great bargains. Send for circular.

All orders must be accompanied with the cash, and addressed to

J. H. THOMAS,
Brooklin, Ont.

v4-3-61

THE FOURTH ANNUAL SALE

OF

Thorough-bred Shorthorns, AT BOW PARK.

THREE MILES FROM THE TOWN OF GRANTFORD,

WILL BE HELD ON

THURSDAY, 17TH OCTOBER,

WHEN

25 YEARLING BULLS AND BULL CALVES,

AND

15 COWS AND HEIFERS.

Of both sexes, with pedigree papers, will be sold with a license. All the Animals to be sold are duly registered in the Canada Herd Book, and other registered or entitled to pass by in the American Herd Book.

Sale at One o'clock Precisely.

Terms: Cash for the satisfactory endorsed note of the bank at the rate of eight per cent. for cash. Catalogues will be sent on application.

GEORGE BROWN.

P. W. P. O. S.

Box 104, Grantford, Ont.

GREENS, BULBS, HEDGE PLANTS, Seeds, Fruit and Flower Cuttings. Catalogues, 20c. P. K. PHOENIX, Nursery, 411-413, Adelaide St. W.

WILSON, BOWMAN & CO.
MANUFACTURERS OF

THE LOCKMAN'S SHUTTLE SEWING MACHINE

THE FASTEST AND SIMPLEST

FAMILY SHUTTLE SEWING MACHINE

HAMILTON, ONT.

PERMANENT FACTORY

Markets.

Toronto Markets.

"CANADA FARMER" Office, Sep. 15, 1872.

The produce and provision trades have been quiet during the past month, closing with light receipts and generally limited demand. The movement in bread-stuffs is becoming more active, under advanced quotations from Liverpool and the West, and prices of flour and grain have steadily risen.

In this city the wholesale prices are as follows:—

FLOUR AND MEAL.

Flour—Superfine, \$6 40 to \$7 00; Fancy, \$6 55 to \$6 65.

Oatmeal—\$4 60 to \$4 70.

Cornmeal—\$3 25.

Bran \$14 to \$14 50.

GRAIN.

Wheat—Soules, \$1 37; Treadwell, \$1 35; Spring, \$1 28.

Barley—No. 1, 67c to 70c; No. 2, 63c to 65c.

Oats—38c to 40c.

Rye—Nominal, none offering.

Peas—60c

HAY AND STRAW.

Hay, in liberal supply, at \$21 to \$26.

Straw—\$14 to \$16, in short supply.

PROVISIONS.

Beef, by the side, Nominal.

Mutton, by the carcass, 8c to 10c.

Pork—Mess, \$16 50, small lots.

Bacon—Cumberland Cut, 7 1/2c to 8c; Canada, 7c

Hams—Salted, nominal.

Lard—10c to 10 1/2c.

Butter—Dairy, choice, 15c.

Eggs—Packed, none.

Cheese—11 1/2c.

Dried Apples—9 1/2c to 10c.

Salt—Goderich, \$1 12 to \$1 15;

HIDES AND SKINS.

Hides—No. 1, cured and inspected, per lb 9 1/2c; No. 1, inspected, green, 9c; No. 2, inspected, green, 8c.

Lambskins—50c, nominal

Calfskins—green, \$1 00.

Wool—Fleece, 50c.

THE CATTLE MARKET.

Beves (live weight) \$4 to \$5 per cwt.

Sheep—74 to \$6 00

Cattle—\$3 to \$7.

Lambs—\$2 50 to \$4 00.

Sept. 15.—Flour, No. 1 super, \$6 25 to \$6 50, fall wheat, \$1 25 to 0 00; (new) \$0 00 to \$0 00; spring wheat, \$0 00 to \$0 00, barley, 50c to 65c; peas, 50c to 60c; oats, 38c to 40c; cattle (live weight), \$3 00 to \$3 50; beef, \$5 00 to \$10 00; in 1 lb, \$6 00 to 10 00, dressed hogs, \$0 00 to \$0 00, hides, \$7 00 to \$0 00; sheepskins, \$1 00 to \$1 10; wool, 00c to 00c, butter, 14c to 15c; eggs, 12c to 13c; cheese, 9c to 10c; hay, \$15 00 to \$20; potatoes, \$0 45 to \$0 50; corn, 00c to 00

Sept. 15.—Flour, No. 1 Super, \$6 00 to \$6 50, fall wheat, \$1 05 to \$1 20; spring wheat, \$1 18 to \$1 22, barley, 50c to 60c, pea, 60c to 65c; oats, 35c to 40c; cattle, (live weight) \$3 00 to \$4 50; beef, \$6 00 to \$7 00, mutton, \$6 00 to \$7 00, dressed hogs, \$6 00 to \$6 50, hides \$7 00 to \$0 00, sheepskins, \$1 20 to \$0 00, wool, 40c to 46c, butter, 12 1/2c to 14c; eggs 12 1/2c to 0c, cheese, 00c to 00c; hay, \$17 to \$20; potatoes, \$0 40 to \$0 60, corn, 00c to 00c.

Sept. 15.—Flour, No. 1 super (old ground) \$6 25 to \$0 00, fall wheat \$1 30 to \$1 35; spring wheat \$1 30 to \$0 00, barley, 57c, pea, 60c, oats, 32c to 00c, cattle (live weight) \$3 00 to \$4 40, beef, \$5 00 to \$5 50, mutton, \$6 00 to \$7 00; dressed hogs, \$7 00 to \$0 00, hides, \$8 00 to \$9 00, sheepskins, \$1 to \$1 50, wool, none; butter, 12c to 20c; eggs, 11c to 14c; cheese, 10c to 15c, hay, \$00 00 to \$00 00, potatoes, \$0 00; corn, none.

Sept. 15.—Flour, No. 1 super \$0 00 to \$0 00; fall wheat, \$1 30 to 1 37, spring wheat, \$1 25 to \$1 32, barley, 50c to 55c, peas, 50c to 60c, oats, 32c to 36c; cattle, (live weight) \$4 00 to \$4 50; beef, \$6 00 to \$6 50; mutton \$5 00 to \$5 00; dressed hogs, \$0 00 to \$0 00, hides, \$8 00, to \$9 00; sheepskins, \$0 75 to \$1 00, wool, 40c to 55c, butter 12c to 14c, eggs 12c to 15c, cheese, 8 1/2c to 9c, hay, \$14 00 to \$16 00; potatoes, \$0 to 60c; corn, 45c to 50c; red winter wheat, new and old, \$1 20c to \$1 30c.

Contents of this Number.

THE FIELD.	PAGE.
Hunts for September	301
Hops in England; Hops in Michigan	302
Hops; Save your Clover seed	302
Wheat Sowing	302
How Swedish Turnips were introduced into Scotland	303
Destruccion of Forest trees in India	303
Beet Sugar in U. S.	303
The Agricultural and Commercial value of Artificial Manures	304
When to sell farm produce	305
Hybrid Wheat	305
English Farming	305
How to make land lumpy	305
STOCK DEPARTMENT:	
National Swine Breeders Convention	307
Sales of Short-Horns	307
Profits of Sheep Feeding	308
Standard of Ayrshire Cows	308
Grades and Crosses, Difference between	308
Can Short-Horns be improved	308
The Principles of Breeding Domestic Animals	309
Food for breeding Sows	311
Selecting Rams	311
Origin of Chester White Pigs	311
Cattle Plague in England	312
Not-s on the Her-fords	313
VETERINARY DEPARTMENT:	
Allment to a Calf—Diphtheria in Horses	313
Intestinal Obstruction	314
THE DAIRY:	
American vs English Cheese	314
A Pint of Milk; How easily is butter spoiled	314
Churning	314
Winter Dairy	315
Our exports of Dairy Produce	315
Good Butter; Milk Statistics	316
Alderney Cows as butter makers	316
The secret of good butter	317
How to acquire a dairy of good cows	317
APIARY:	
Bees and Honey in France; Bee Hunting in Australia	318
Bees in Iowa, Iowa; Mortality among Bees	319
POULTRY YARD:	
Breeding and Feeding Turkeys	319
Poultry on the Farm	320
EDITORIAL:	
The coming Provincial Exhibition	321
The coming Fall Fairs	321
Provincial Plowing Matches	322
Probable Wheat Prices	322
Royal Agricultural Show Cardiff, England	322
Hits to guide farmers in seeking new homes	323
Prosperity of Agricultural Interests, &c.	324
Large vs. small farms	324
Encouragement to young farmers	325
Successful vs. unsuccessful farming	325
Report of the Minister of Agriculture for the Dominion	326
CORRESPONDENCE:	
Fall Wheat in Greg; Imported Horses	327
Answer to "Practical Farmer;" Water pipes	328
Durham Bulls; Horse power Saw Mills	328
My farm; Money for Draining	329
An Englishman's first impressions of Canada	329
Answers to "Charley" of New Jersey	331
HORTICULTURE:	
Roses from Cuttings; Prospect of Peach crop in U. S.	332
London, England, fruit prices; Micanor Strawberry	332
Floraria Sarmatosa; Cherries	332
Gooseberries without milldew; Cutting Asparagus	333
Apple crop in U. S.	333
Fruit in New Brunswick	334
Uses of the Sunflower; New Pea, Dr. Hogg	334
California Raisins	335
Results of Carculio Catching	335
New Pear, Elliott Seedling	335
ENTOMOLOGY:	
Farth Worm; Tortoise Beetles	335
Practical Entomology	336
AGRICULTURAL NEWS:	
Ancaster Agricultural Society	337
List of Agricultural Exhibitions to be held in Canada during the coming Fall	337

THE CANADA FARMER is printed and published on the 15th of every month, by the GLOBE PRINTING COMPANY, at their Printing House, 26 and 28 King Street East, Toronto, Ontario, where all communications for the paper must be addressed.

Subscription Price, \$1 per annum (POSTAGE FREE) payable in advance.

THE CANADA FARMER presents a first-class medium for agricultural advertisements. Terms of advertising, 20 cents per line space. Twelve lines space equals one inch. No advertisements taken for less than ten lines' space.

Communications on Agricultural subjects are invited, addressed to "The Editor of the Canada Farmer," and all orders for the paper are to be sent to

GEORGE BROWN, Managing Director.