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THE
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AND

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OF UPPER CANADA.

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JUNE.

The "leafy month of June" commences this year with vegetation further advanced than is the case in the average of seasons at this date. Pasture for cattle has come in early, the season was in every way favourable for getting in the spring crops, and the crops have generally as promising an appearance as could be desired. We have been better off in this respect than our fellow subjects in the British Islands. There, although vegetation ordinarily commences from one to two months earlier than in this country, we should judge from the newspaper reports that it has been this year very little, if any, in advance of us. Mr. Caird, in a late letter to the *London Times* said, that the unusual lateness of the season, and the extraordinary dearth of roots and fodder, were driving stock farmers to their wits' end for the maintenance of sheep, cattle and dairy stock. The cost to which they have been put for purchased food and corn, is quite unprecedented, and the quantity of corn consumed will undoubtedly enhance the price of bread, while the reduced condition of all kinds of live stock will limit the supply of meat, butter and cheese. An early spring would have been invaluable,

but that hope was lost. Mr. Caird, in suggesting remedies, goes on to recommend the use of nitrate of soda upon young grass or seeds, and all good meadows, as a means not only of increasing the produce greatly, but also of forwarding the growth a fortnight or three weeks. He buys the article at 13s. 6d. stg. per cwt. and uses it pretty largely at the rate of 2 cwt. an acre. He also recommends the addition of 1 cwt. of Peruvian Guano, or 2 cwt. of the best superphosphate of lime. He thinks that the application of these manures in such a season as the present has been in England cannot fail to be remunerative, and recommends that they should be applied early in the season and during damp weather.

The most serious exception to the favorable character of the season has been the injury to the fall wheat by the winter and spring frosts. We believe that the amount of the injury has been somewhat exaggerated, and since the setting in of the growing weather the wheat fields have recovered wonderfully, so much so that some farmers who ploughed up their fields are now in some cases disposed to regret doing so. There is no doubt however, that the injury has been very great in some localities, and where there was evidently not plant enough upon the ground to make a

crop, it was of course much better to plough it up, and put in something else. This season, in regard to the wheat crop, affords an illustration of a truth, which will become every year more apparent, viz: that the system of fallowing and sowing grain crops incessantly upon old heavy lands will not answer. Thorough drainage must be adopted, with a better rotation of cropping, embracing two or three years in grass, so as to give the land the porous, fibrous texture, somewhat similar to new land. Wheat on new lands this season, or on dry loamy soils, has not suffered as it has on the frequently cropped, heavy lands.

Before the commencement of June the general spring sowing will have been almost fully completed. An occasional crop of oats may perhaps, however, be sown after the 1st of the month, on good, moist land, with some prospect of a crop. The grain would probably be light, but there would be a good growth of straw. Where from any cause there is not a sufficiency of meadow upon a farm, nothing can afford a much better substitute than a good growth of oats, cut in the unripe state, a little after flowering, and cured in the same manner as hay. Potatoes may be planted during the first week in June in good land, and produce a good yield, although perhaps they may not ripen so well, and may be more subject to the rot, than if planted earlier. The small, early ripening kinds of Indian Corn may also be planted from the 1st to the 10th of the month, and if put in upon fresh, well manured land, and carefully hoed and attended to afterwards, may in an ordinarily favorable season be depended upon for ripening in good time. Indian Corn is also an excellent crop to sow thickly for foddering purposes, either for soiling cattle, or to cure for winter use. Hungarian grass may be sown at any time during this month, and if well put in and no damaging frost occurs, will produce a large amount of good fodder. About 16 lbs. of seed is required to the acre. For sowing

Swede Turnips, from the 1st to the 15th of this month is the proper time. They should be sown in drills, about 27 inches apart, upon well prepared land, the manure ploughed in broadcast, or deposited in the drill; seed, one or two pounds per acre, and if drilled in with fine bone dust, or superphosphate of lime, they will be forwarded in growth, and will get more rapidly into the rough leaf and out of danger from the fly. The common Purple Top Swede is probably fully equal in every respect to any of the newer varieties, and those who can obtain sound and reliable seed of this sort need scarcely look any further. The Kohl Rabi is beginning to be looked upon as a very valuable field crop in England, and likely eventually to rival or supersede the turnip, especially since the latter has become so liable to a species of rot. The plants are raised in a seed bed and transplanted, like cabbages, two feet by one and a half apart, or they may be sown in drills and cultivated precisely in the same way as turnips. The Kohl Rabi is considered a hardier bulb than the turnip, fully equal in its feeding qualities, quite as productive, and may be grown successfully on land that is not good enough for Swedes.

Mangel wurzels, carrots, &c., should be hoed and thinned out; red root or pigeon weed, yellow mustard, cockle and other troublesome weeds carefully pulled out of the wheat and other grain fields; potatoes, Indian corn, &c., gone through with the light plough or cultivator and the hand hoe; the fallows attended to, and the manure drawn out to them; and all the other work of the season properly attended to, so that nothing shall be behind hand at the end of the month when the time for hay-making approaches.

PLEURO-PNEUMONIA.

This fatally contagious disease among horned Cattle has at length made its appearance on this side of the Atlantic, and has been very destructive in one or two

localities on the coasts of Massachusetts. In order to prevent, if possible, its spreading, a law has been passed authorising the civil authorities to order the immediate slaughter of suspected animals, the State making good to the owners the value of the stock. There is great risk of the disease, like most things of that nature, whether in the animal or vegetable kingdom, extending westward, so that we in Canada cannot help feeling personally anxious about the matter. It has been very troublesome for several years past in the eastern part of England, and serious losses have been sustained by many individuals. The diseased Cattle were imported from Holland, Denmark, &c. No specific cure has yet been discovered.

We take the following account of the history of the disease from the *Ohio Farmer*, taken from advanced sheets of the Ohio Agricultural Report for 1859, from the pen of Mr. Klippart, the corresponding Secretary:—

Pleuro-pneumonia is a contagious disease of cattle, which originates spontaneously among the cattle in the vast Russian steppes, more especially in the southern and eastern provinces of Russia. It disseminates itself very rapidly, by means of a virus, which infects all races, sexes, ages and conditions of cattle, but which infects neither man nor any other animal. For a period of upwards of fifteen hundred years, this disease has at times spread desolation beyond the steppes; more especially has it followed in the wake of war and destroyed entire herds, in the several European countries. The first account which we have of it, dates back to the fourth century; in this instance, it was undoubtedly carried westward by emigrants from the East, or Russian provinces. From Panonia, it swept westward through Moldavia, Galicia, Moravia, Bohemia, into Belgium, on the northern route; and through Transylvania, Wallachia, Hungary, Slavonia, Styria, Illyria, into Austria and Tyrol. On account of the great destruction of cattle, it was at that time called the "*Pest.*" During the wars of Charles the Great, in the Ninth Century, this plague broke out and destroyed almost all the cattle that grazed in the Imperial States. About the middle of the same century, it literally swept away

all the cattle of France; after a lapse of twenty years, it again visited France with unabated fury, and afterwards visited the countries on the Rhine, and raged throughout Germany. Towards the middle of the tenth century, it was very disastrous in Austria and Italy. From this last period, until the thirteenth century, there are no accessible records of its operations. During the first half of the thirteenth century it broke out in Hungary, and spread over nearly all the western States of Europe, but was especially destructive in Austria, Moravia and Elsz. Towards the close of the sixteenth century, it was very wide spread, and unusually destructive in Italy and Germany. Its most remarkable advent, however, was during the eighteenth century; during this period it visited every portion of Europe, not excepting isolated England, and some portions twice or thrice; destroying in the aggregate, many millions of cattle, and is known in veterinary history as the period of the great cattle plague. In 1723, it proved more destructive in Brandenburg than elsewhere; and indeed throughout the entire continuance of the seven year's war, it proved itself an inseparable companion, and followed irresistibly in the footsteps of the army, causing great destruction of cattle in Pomerania, Saxony, Prussia and Livonia. From 1793 until 1815, it followed the armies in all the wars which France waged against the eastern European States, and in which Russian steppean cattle accompanied the armies for the purpose of being slaughtered. During this period, Littlehausen, Prussia, Chur and Silesia suffered most, more especially in 1806, by the retreat of the French army, and the pursuit of the "allied powers," being followed by the cattle plague, from the steppean cattle which followed the army, and which communicated the contagion so that it was disseminated far and wide. Even as late as 1815 and 1816, it was not fully extirpated in portions of France and Germany. But from this period, until the declaration of the Russian-Turkish war in 1828, it was not heard of outside the Russian steppes. Immediately after the first battle of the war, the plague raged among the cattle with all its unabated mortality, and swept with terrible destructiveness throughout Austria proper, Galicia and Silesia, but was checked on the Prussian borders by rigid municipal regulations, which were enforced on the most non-intercourse principle. Since the wars of 1814 and 1815, Prussia has escaped with now and then an isolated case, on the Russian Polish borders, which was introduced

by smuggling, but which was vanquished on the spot; so that it did not become general even in limited districts. During the portion of the present century which has already elapsed, the plague has been almost unabated in the steppes, to which it was confined by the countries bordering, on their adopting a rigid police system; and, it leaped this boundary only at the outbreak of wars, which necessitated the movement of armies. According to official accounts pleuro-pneumonia raged in forty-seven governments or departments of Russia, during the years 1814 to 1847, during which period upwards of a million and a half of cattle fell victims to it. In the years 1848 and 1849, it was by no means abated, but spread over Podolia, Volhynia, Bessarabia and Poland.

The Austrian dominions have suffered nine invasions of this destroyer, during the present century, and have suffered immense losses of cattle in consequence. The last two eruptions were in 1848 and 1853: the first of these continued until 1852, and gave the country a respite of one year only, until the Crimean war broke out, and the plague followed as a faithful companion, and devastated the country until the year 1856. During the latter period, Galicia and Hungary, together with the military borders of Lower Austria, Moravia and Austrian Silesia, were visited with terrible destructiveness, and lost over a million of cattle.

AGRICULTURAL STATISTICS.

We make the following extracts from the Report of the Bureau of Agriculture, to which we alluded in our last number. Circulars of Agricultural Queries were sent to the Presidents of all Societies in both Provinces, and to many others. One hundred and two replies were received—72 from Upper Canada, and 30 from Lower Canada.

WHEAT.

“In analyzing the seventy-two Returns received from Upper Canada, it appears

There are six Counties out of the 24 from which there is only one Return each; four from which there are only two Returns each; and five from which there are three Returns each: five Counties give four Returns each, and the rest have five or six—none exceeding the latter number. The highest is Carleton. Winter Wheat, 28½ bushels to the acre; Spring Wheat, 22½

The next highest is Northumberland;—27½ for Winter, and 19 for Spring Wheat. The next is Simcoe;—26¼ for Winter, 22¾ for Spring. York gives, Winter Wheat, 27, and Spring Wheat, 20; but there is only one Return. Bruce gives, Winter Wheat, 25, Spring Wheat, 20. Leeds,—Winter Wheat, 25, Spring Wheat, 16½. Peel gives 24½ Winter Wheat, 18½ Spring Wheat. Ontario gives, Winter Wheat, 22¼, Spring Wheat 23½. The total average is 21 bushels for Winter Wheat, and 18½ for Spring Wheat: and this appears reliable. There is great reason for rejoicing that the averages are so far beyond those of last year, which were for Winter Wheat, 11¼ bushels, and for Spring Wheat, 13½; being an improvement on last year's growth of about 76 per cent. on one, and about 46 per cent. on the other, and being about 16 per cent. above the general average of the last twenty years.

As to damage done to the Wheat crop by midge and rust, forty-two report that no mischief was done to Winter Wheat in 1859. Eighteen report that very slight damage was done; eight report serious and extensive injury—say from 10 to 25 per cent.; and three report a loss of 50 per cent.—one from the County of Welland; one from Haldimand; and one from Wentworth. Six Returns further report serious injury by heavy frost on the 5th June.

The remedy for the midge universally given, is to sow early kinds of Winter Wheat, very early, and the Fife Spring Wheat, either very early, or not till after the 20th May. The Soules, White, Flint, and Blue Stem, and also the White Kentucky, are mentioned in very many of the Returns as the earliest and best Winter Wheat, and the Fife as the best Spring Wheat. Good draining and good cultivation are much recommended; and, in fact, good drainage is the grand essential of successful husbandry. Without it there cannot be early and luxuriant crops, except on very peculiar soils. In five or six cases, however, it occurred that the earliest wheat was the most injured by the June frost; but this frost was exceptional, never having occurred in Canada, except once before, since wheat began to be cultivated in Upper Canada, and but for this early frost, this wheat would have been of the very finest.

The Hon. Mr. French, in what is said to be one of the completest essays ever published on the subject of drainage, thus sums up the loss to undrained land which the excessive evaporation from its surface entails upon it:

1st. The drained land comes into condition for working a week or ten days earlier in the Spring than other lands.

2nd. The growth of the crops is quickened all through the summer by an increase of several degrees in the temperature of the soil. And,

3rdly. The injurious effects of frost are kept off several days later in the Fall.

In Lower Canada there is very little progress in this important branch of agriculture. Only seven report that a little drainage is done; all the rest report that none is done. Its value is evidently very little understood. If premiums were offered by Societies for the greatest extent of underdraining, the benefit would soon be manifest, and the present averages of grain crops greatly increased.

As to the proportion which Winter Wheat bears to Spring Wheat, 31 Returns state that the growth of Spring Wheat greatly predominates, being double that of Winter Wheat; the whole crop consisting of two-thirds of Spring to one-third of Winter Wheat. Thirteen state that the growth of both is about equal,—and fifteen state that the growth of Winter Wheat predominates over that of Spring, to the extent of one-third. From comparing the returns it may be estimated that the number of acres under Wheat, is about one-third of Winter Wheat and two-thirds of Spring. Five years ago there was not one acre of Spring Wheat in Upper Canada for every ten of Winter Wheat. This certainly is an extraordinary change, brought about chiefly by the fearful invasions of the Wheat Midge, but will probably be temporary, and will continue only until draining and high cultivation shall have rendered the insect innocuous here, as it has been already rendered in Great Britain by what is called "high farming." The general average of the Wheat crop in Great Britain is 28 bushels: (three-quarters and a half), and the average weight 60 lbs per bushel. There seems no good reason why the average of Upper Canada should not in a few years equal that of Great Britain, by attention to drainage and high cultivation. Soil and climate are naturally well adapted for the growth of Wheat.

Of the 30 Returns received from Lower Canada, there are only four which report any winter wheat grown, and they state the average to be 18, 15, 20, 15,—equal to 17 bushels per acre. The County of Laval gives 18; County of Ottawa 15—and two from Pontiac give 20 and 15.

Twenty-three report the growth of some Spring Wheat—one from Terrebonne states

the average to be about 20 bushels; one from Pontiac, and one from Megantic give 18; one from Grantham 17; one from Leeds 16½; three from Pontiac and Lotbiniere 15; one from Megantic 14; one from Ottawa 13; three from Bellechasse, Bagot and Lotbiniere give 11: one from Chicoutimi and Montmagne give 11; and six others state the average to be 9 bushels. The total average of Spring Wheat in Lower Canada, is 13 bushels per acre.

Ten of the returns state that very considerable injury has been done to Spring Wheat by the wheat midge:—Chicoutimi, Iberville, Bagot, Joliette, and Timiscouata, report from 25 to 50 per cent.; seventeen report that the damage done has been very little, if any, this year. The remedy suggested is, to sow very early or very late, and by one to run a rope steeped with Turpentine over the heads of the Wheat when in blossom. The Black Sea Wheat is the most recommended. The Fife is mentioned only by five parties in Lower Canada, although universally esteemed in Upper Canada.

OATS.

The total average of Oats in *Upper Canada*, is 34½ bushels per acre.

Two Counties report 50 bushels per acre.

Three " " 45 " "

Nineteen " " 40 " "

Thirteen " " 35 " "

Twenty-two " " 30 " "

Seven " " 25 " "

Two " " 20 " "

Simcoe, Ontario, Kent, and Wentworth, give the highest returns, Lanark and Renfrew, the lowest; the common Black Oats are the most recommended; the average of 1858 was 32 bushels per acre, so that there is an improvement of about 8 per cent. on the crop of last year.

Considering that the statute bushel of Oats here is only 34 lb., and that the average of Great Britain is 60 bushels per acre, of 40 lb. per bushel, there is great room for improvement in the cultivation of this crop. There does not appear anything in the soil or climate of Upper Canada detrimental to the growth of this grain, and it may be inferred that the difficulty arises from inferior cultivation. The importation of new varieties of seed has taken place to a considerable extent, and it is to be hoped that the improvement will continue progressing, till we approximate somewhat nearer to British averages.

In Lower Canada the Returns show an average of 22½ bushels per acre. Megantic returns 30, and Pontiac 26 bushels.

BARLEY.

The average return of this grain in Upper Canada is 27½ bushels per acre; sixteen returns report but little grown—there are 56 returns. In Lower Canada the average is 23 bushels per acre; Chicoutimi, Bellechasse, Megantic, Nicolet, and Pontiac, give 30 bushels. The growth of this species of grain is very much on the increase in Lower Canada; there are only 3 Reports out of the 30 which state that very little is grown. Winter Barley is coming into use, and promises to be a prolific and valuable cereal. Some idea may be formed of the extensive growth of Barley, when it is stated that in the City of Albany, about 600,000 bushels were imported from Lower Canada in the Fall of 1859. Some very fine crops of Winter Barley are reported to the Bureau. A Mr. Haven, near St. Catharines, states that he grew 150 bushels on 3 acres. A Mr. McCarty, near Niagara, reaped a field on the 12th July. He says:—"I sow 3 bushels per acre, and my yield has been in fallow 60 bushels—and on Corn-land 40 bushels per acre. The Corn-land was equally good as the fallow; what made the difference in the yield in my opinion was, that the latter was sown on the 20th September, and the former on the 1st of that month." He adds:—"I believe under any circumstances it will yield double the quantity of Spring Barley; it is ripe on the 1st July before the Midge can strike it—we sell it at \$1 per bushel.

This correspondent also remarks:—"It ought to be widely known, that Barley flour used as Buckwheat-flour, is far superior to it; it is delicate in flavor, and most wholesome."

Winter Barley, it is stated, is chiefly grown in mild climates where the Winters are short, and the Spring dry, such as the South of France, Italy and Spain, or in countries where deep snow covers the ground all Winter, and goes off rapidly in Spring, such as Russia, Poland, and parts of North America.

That the introduction of this new species of grain will be a valuable acquisition to Canada, is further shown by a report of Mr. Charles Chapman, of Ottawa, who has sent a sample to this Department.

[A communication from Mr. Chapman, on the subject of Winter Barley, similar in substance to that published in the *Agriculturist* some time ago, is here inserted.]

RYE.

Of rye the average return in *Upper Canada* is 18 bushels per acre, but 50 of

the returns report that there is very little or none grown.

In Lower Canada this grain is represented in 22 returns (out of the 30 received,) to be cultivated for bread. The average is 13 bushels per acre, and cannot be a remunerating crop. Lotbiniere and Megantic return the largest averages; the former 20, and the latter 18 bushels per acre. Chicoutimi returns 17.

INDIAN CORN.

Only 37 Returns from Upper Canada have furnished reports of this crop, of which the average is 30 and 24-60 per acre. 28 report very little grown, and 10 report the crop much injured by the early frost of June, which, although very injurious to the crop of 1859, may be esteemed altogether exceptional, as a similar frost has not occurred since the year 1836.

In Lower Canada Indian Corn, Peas and Buckwheat seem to be very little cultivated and with very partial success.

PEAS.

Sixty-four Returns from Upper Canada have reported on this crop. The average is 23½ bushels per acre—only six report injury by bug, and 58 are unanimous in declaring that no injury has been done by the insect, which, for many years previous to 1858 had been very destructive, but has this year nearly disappeared.

BUCKWHEAT.

The Returns of this crop in Upper Canada are so deficient that little can be said about it. There are only 26 Returns with regard to it, and these show an average of 18 bushels per acre. The extent of land under this crop is very small.

POTATOES.

With regard to this crop there is a very great improvement in Upper Canada. The rot appears to prevail still, but to a very limited extent. The average of last year was 125 bushels per acre—that of this year is 176. 45 of the Returns state positively that there was no rot this year; 14 state that from 25 to 50 per cent. of the crop was lost, and 12 state that the loss was light, say from 5 to 10 percent. None can account for it, but many attribute it to an insect, the ravages of which are always the worst in damp soil and situations, and in wet seasons. The "Irish Cup" seems to be the most generally recommended as the freest from rot, although stated by one to be the worst. New land is much recommended as a preventive, and dry situations. In Lower Canada also the yield of this

crop appears to be very much on the increase. The average of 26 returns is 175 bushels per acre, being about 50 per cent. greater than last year. The rot is stated not to be so prevalent as usual. 11 report serious injury, and nineteen report that very little damage was done this year. It may be safely inferred, or at all events reasonably hoped, that the rot is leaving Canada.

HAY.

This crop was exceedingly deficient in Upper Canada; 3 only out of 72 return the produce at 2 tons per acre; 26 return 1 ton and a half per acre; 15 return 1 ton per acre, and 28 return from $\frac{1}{4}$ to $\frac{3}{4}$ ton. 48 use Gypsum or Plaster as top-dressing, and 18 use barn-yard manure occasionally.

In Lower Canada this crop was very far superior to that of the Upper Province.

The averages are nearly 2 tons per acre, and there has been a considerable export of it to the Upper Province. In this article of produce Lower Canada generally surpasses Upper Canada.

TURNIPS.

Sixty-nine of the returns from Upper Canada report, that the cultivation of Turnip is on the increase, and that they are grown very successfully; one reports 1,000 bushels; one 900; six report 800; 15 report from 500 to 700 bushels, and 18 report from 300 to 500. This shows a great increase on former years, and it is a very favorable sign, as there cannot be successful cultivation of grain crops unless there be also that of green crops. In fact the extensive and proper culture of green crops is the very foundation of good farming. Last year the returns of green crops cultivated were so inconsiderable, that they were not included in the Report of this Department, but it is now becoming an important item in the production of the country.

In Lower Canada nineteen of the returns state that this crop is on the increase; six have reported the growth of from 400 to 1000 bushels; one reports 1000 bushels; one 700; six 600; and two 500.

FLAX AND HEMP.

Forty Returns from Upper Canada state that neither of these is grown; 22 state that very little Flax is grown, and that chiefly for the seed; one states that the growth of Flax is on the increase, and one from the County of Lincoln states that hemp has been tried there this year. It may be satisfactory, however, to know that the transactions of the Board of Agriculture for December, report that the Messrs. Perine had 400 acres under this crop in the Town-

ship of Woolwich, in the County of Waterloo, this last season, (1859,) and that it proved very remunerative, producing 12 bushels per acre of flax-seed weighing 56 lbs. per bushel, and 325 lbs. of fibre per acre, which Messrs. Perine consider a pretty fair yield, for dew-rotting; they prepare the fibre for cloth, thread, and twine, but complain that they have no market in Canada West. This latter evil will soon be remedied, for if farmers will only produce the article of good quality, moveable scutching mills will soon be forthcoming. There is a great demand for flax in Great Britain at remunerating prices. At the present time flax is selling at from 6d. to 8 $\frac{1}{2}$ d. sterling, per lb. in the North of Ireland, and the acre of flax is worth from £12 to £20 sterling.

MANURE MAKING AND STOCK-FEEDING.

It may be safely and positively given as a rule that ordinary farm-yard manure ought to be charged with no more fermentative or organic matter, as the droppings of animals, than will decompose it by a slow process of fermentation. If active fermentation be produced by heavily charging it with animal ejecta, and then lightly heaping it for the circulation of free air, a wasteful heat will take place by the union of oxygen with the carbon present, and a compound of gases will be thrown off in the form of carbonic acid, ammonia, and whatever volatile matters may happen to have been in combination with the non fermentative carbon of the matured gum-like straw, or with the actively fermentative refuse of the green food the animals ate. If straw manure be required in a perfectly decomposed form for a winter or an early spring dressing, this must be managed, to be done economically, by "taking time by the forelock," by getting the straw sufficiently trodden down and charged early enough in the autumn to admit of the required result without unnecessary loss by dissipation. Some loss of gases will no doubt take place by fermenting straw at a moderate degree of heat, but the gain by transformation and decomposition till it can be readily fed on by the plants it is to be applied to, far surpasses that loss.

If the green crops, that straw manure is generally applied to, collect for returning to the soil the atmospheric elements that have been taken up by, and carried off in corn crops, why, it is evidently requisite

that these green crops should have the greatest possible benefit to be imparted to them by the use of straw as a fertiliser. An observation, made I believe by Mr. Hudson, to the effect that he "found his farm-yard manure greatly improved by exposing it the sun and air of summer for a fortnight," is suggestive on this point although his theory, that "something was absorbed by it from the air during the exposure," is certainly erroneous. It would lose a certain proportion of its carbonaceous compounds by being charged with water by dews and rain, if any fell, and evaporation by the sun's heat. This loss would vary according as the elements of the straw had been liberated by fermentation in the heap. Therefore, although the above observation would undoubtedly be correct as regards the fact, the theory of it would be untenable. Its "improvement" would simply arise from a much greater proportion of the straw being reduced to a state of solubility, or to a condition for the first crop of plants to take it up; and as green crops are the agents used to restore soils, partially decomposed straw manure would be "improved," or made more profitable, if so treated. Exposure to dews, or "dew-rotting," is a rapid natural process of decomposing vegetable textures, particularly when they have been subjected to slight fermentation. These considerations prove two things: the necessity of gummy insoluble textures, as straw, being decomposed by a slow process of fermentation; and the great importance it is to have this perfectly done for rapid-growing restorative crops.

The only considerations that require observance in regard to pits and covered sheds is to have enough dry straw at hand to prevent any of the droppings from running away through the walls and floors of them, and from dripping on the roads to the field when they are being emptied. If this be done in the winter, the generally economical method of a light and frequent dressing should be especially practised in this case, for a large proportion of the fertilizing elements are in a soluble form, and as few soils are of a condition to suddenly unite, with and fix a large amount of these elements, subsequent heavy rains may wash them into drains or deep into the subsoil beyond the reach of domestic plants. I have seen water highly coloured running off clay lands after a heavy winter dressing, and this too when it has been ploughed in.

Much inconvenience and loss often arise from too little care being taken to keep straw dry. If it be necessary to thresh out as much as can be trodden down in two or

three months, it should be stacked evenly—it is no more trouble—and roughly thatched. I often see as much as one-half, at the least, of the value of the ejecta from a row of bullocks running to waste out of the sink-hole from the place they are tied up in. There are brick reservoirs, it is true, and liquid carts with troughs and all complete, but a man or boy cannot always be there to sweep the places down and then empty them into the water-tight cart, that they may not soak into the sandy soil beneath. It may be said, "asphalte the floor and cistern that they may be impervious." But something better than that can be said on behalf of plain farming; there ought to be no call for a liquid manure-cart at all. Liquid manure (if there be any) from a farm-yard ought not to be worth carriage. If straw be kept dry, and the liquid of the yard cannot be soaked up, then the yards are at fault. If, too, the straw to each yarded animal be so small in quantity that an ordinary rain washes much of value from the yards, then the system is bad. Either too many bullocks are kept in proportion to sheep, or winter feeding is practised where it would be better to expend money in cake and corn, in the spring and summer on Tares, Rye, Clover, Rape, and early Turnip lands.

Where it is possible to arrange the straw of a farm so that that which grew on one determined soil shall be applied to another determined soil—for example, from heavy to light, and *vice versa*, or from chalk to soil deficient in that earth—by all means let this be done. This is not always practicable where a farm is situate on a table land of uniform soil; but the crust of this country is so variable that a vast amount of good may be produced by forecasting, and incurring the trifling expense that this change would require. When a purchase of straw is about to be made this view should not be forgotten. If it be good to apply clay, chalk, sand, moor, and so on, according to circumstances, it must be good to vary the great fertiliser straw in a similar way. The atmospheric constituents of straw are much alike; but the inorganic or earthy are quite different where grown on different determined soils. Analytical chemists have favoured us with numerous results of what 100 or 1000 parts of Wheat and Barley straw have yielded, and they have told us that as this is so, Wheat or Barley straw requires so and so. But this is more suggestive than conclusive. It would be folly to accept the theory that because one sample of vegetation or animal substance possessed certain constituents in

given proportions, the same sorts must contain the same classes and proportions of elements. Animals would thrive equally well on a variety of kinds of food. Nature admits of this. So it is with corn crops, and especially the straw of them. As great a collection of fertilisers in the shape of straw will take place on a soil containing no earth but fine clay as will grow on a soil principally made up of silicates. A dressing of one earth on another earth does more good than by merely altering its physical character. This is proved by the facts that an application of chalk will be entirely taken up in the course of time by the crops that follow: also by the exhaustion of clay when applied to moor or fen soils, and so on. Therefore as the chemical character of soils is changed by their physical opposites, and as straw contains some of the inorganic elements of the soils it grew on, what can be more worthy of attention than the point in question, how these elements are so easily made soluble, and when surrendered are available for again entering into reproduction? This point chanced to be the last in this part of our subject, but it is not the least. *W. G.—London Gardeners' Chronicle.*

BLACK HAWK HORSES.

We copy the following, in reference to this breed of horses, now so much in favor in the adjoining States, from the Transactions of the State of Maine Agricultural Society:—

“For the satisfaction of those in Maine who are in possession of Black Hawk horses, we copy the following letters, first published in the *Boston Cultivator*. The first is an extract from a letter of Benjamin Thurston, of Lowell, who was for several years the owner of Black Hawk, under whose training he was brought on the trotting course, and by whom he was sold to Mr. Hill, in 1844. Under date of Oct. 7th, 1847, he says:

“It gives me much pleasure to answer your letter, as I feel a great interest in anything which relates to Black Hawk. I will answer your questions in the order in which they are asked.

“Black Hawk was raised by Mr. Twombly, of Greenland, (formerly of Durham,) N. H. 2nd. He was begotten by Sherman Morgan, owned by Mr. Bellows at that time. 3rd. His dam was repre-

mented to be a half-blood English mare, raised in New Brunswick. She was finely proportioned, and of great speed. Although never trained, I think she could trot a mile in less than three minutes.

“This letter, it will be noticed, was written nearly eight years ago. To show the estimation in which Black Hawk and his progeny were then held by Mr. Thurston, it will not be out of place to introduce another extract from the same letter, as follows:

“I bought Black Hawk when he was four years old; for six years used him as my family horse, and think him, without exception, the finest horse I ever knew. I have owned a number of horses for the last twenty-five years—varying from ten to thirty-five at a time—and have also been in the habit of purchasing the finest I could find for sale; but if the choicest qualities of the best horses I ever owned were combined, I do not think they would produce an animal to surpass Black Hawk. In the first place, he is the best roadster I ever drew rein over. I have frequently driven him fifty miles in half a day, and once drove him sixty-three miles in seven hours and fifteen minutes. He did it with perfect ease, and indeed I never saw him appear fatigued. At the time I owned him, I believe he could have trotted one hundred miles in ten hours, or sixteen miles in one hour, or one mile in two minutes and forty seconds. In the second place, he has the best disposition of any horse I ever knew, and is perfectly safe for a lady to ride or drive. Thirdly, he will draw as kindly as any team-horse. His stock is unequalled. There are in this part of the country some ten or twelve of his get, five or six years old. These can trot a mile in from two minutes thirty-five seconds, and sell at prices ranging from \$500 to \$1000. They are finely proportioned, good sized, nice gaited, hardy compact animals.”

“We next introduce an extract from a letter written by John Bellows of Lancaster, N. H., (owner of horse Sherman Morgan,) to David Hill of Bridport, Vt. It comprises an interesting description of the sire of Black Hawk. Its date is March 24th, 1848:—

“In answer to inquiries relative to the origin of your famous horse Black Hawk, I state that he was foaled at Durham, N. H., the property of Ezekiel Twombly, now of Greenland, N. H. His dam was a good sized, fast trotting, black mare, resembling in appearance, the Messenger stock of horse.

His sire, old Sherman Morgan, was truly a prodigy among horses. He was fourteen and a half hands high; his greatest weight while owned by me, 925 lbs.; of chestnut colour; well sprung in cord; muscular; in action exhibiting wonderful strength and agility; though apparently mettlesome, yet easy of control; sagacious and patient in trouble, and of matchless endurance. He had a lively countenance, with an amiableness of expression, captivating, in effect beyond any horse I have ever seen. He was foaled at Lyndon, Vt., in 1815, the property of James Sherman Esq., and died at my stable, in January, in 1835. But for this animal, Morgan horses would never had the celebrity they enjoy. His dam was bought by Sherman Morgan of Dr. Fiske of Providence, R. I., and was said to have been imported. She was of good size and fine appearance; of a chestnut colour; elegant in action, and a speedy trotter. His (Sherman Morgan's) sire was the Goss (or Justin) Morgan, brought to Randolph, Vt., by Col. Morgan."

Correspondence.

ORILLIA, May 18th, 1860.

To the Editors of the *Agriculturist* :

SIR,—In accordance with old country custom, I beg to enclose small dried specimens of a grass (apparently indigenous) hoping that you will be able to give its name.

It is perennial, grows from two to four feet high, according to soil, &c.; is propagated either by seed or by dividing the stools; comes in exactly along with the red clover, and unlike timothy, produces an excellent aftermath.

I remain, yours &c.,

J. CUPPAGE.

P.S.—If the Alsike Clover comes from Sweden, why is it not more hardy? I sowed a patch last summer for experiment in light dry soil. When the snow went off it looked beautiful—appeared to have grown during winter—but the frost afterwards killed every plant—not one left.

J. C.

[The specimen of grass sent us by our correspondent is the Rough Cock's Foot, or, as it is commonly called in America, Orchard Grass. We are not aware that it is indigenous to Canada, though we have seen it growing in situations which would lead to the supposition that it is, but it is

said to have been originally introduced into England from this continent. This grass resembles a little in appearance at first sight the common June grass, or spear grass, so generally found in old meadows, but is a much rougher, stronger plant. The spikelets of the seed head are distinctly arranged in dense, globular, one sided tufts, supported upon three or four, or more separate branches from the centre stem, and the plant has received its name from the fancied resemblance which this branched form gives the spike to the foot of a cock. It grows to the height of two feet or more, and the root is perennial, fibrous, tufted. The stem erect, round, finely ribbed, or striated, and rough, bearing five or six leaves with rough striated sheaths. Leaves nearly of an equal width the entire length except near the points, flat, acute, spreading, rough on both surfaces, harsh, of a dull green, the edges minutely toothed. This is a valuable grass, and is much relished by all kinds of live stock, especially sheep. It should be eaten off before it is allowed to grow harsh and coarse. The Orchard Grass has been highly commended by Judge Buell, in the *Albany Cultivator*. The seed can be obtained of Mr. Fleming, seedsman, of this city, at about two dollars per bushel. It is very light, weighing only ten or twelve pounds per bushel, and about two bushels are required to the acre. We would strongly recommend the sowing of some portion of Cock's-Foot, at the proper season, along with other grasses.

In regard to Alsike Clover, our information heretofore has led us to believe it equally hardy with any other forage plant. During the present season many fields of red clover, on strong, undrained lands have been killed by the heaving out of the roots, by the action of the frost in spring, after the disappearance of the snow, in the same way in which wheat is killed, the long tap roots being strewn upon the ground as if pulled out by hand. It is probable that Alsike Clover might, in similar situations,

suffer from the same cause, but we have not before heard of it being killed by direct action of the frost on light, dry soils.

The following remarks on the Rough Cock's-foot Grass (*Dactylis Glomerata*), are from Parnell's Grasses of Britain:

The Cock's-Foot Grass, one of the commonest of all grasses, is found in orchards, woods, hedges, and waste places, and is said to have been originally introduced from Virginia by the Society of Arts. It grows most luxuriantly in damp and shady situations. As an agricultural grass, Mr. Sinclair states, that it is deserving of particular notice, that the herbage, when suffered to grow rank or old for want of sufficient stocking, contains nearly one-half less nourishment than that which is of recent growth. Hence this grass is of more value for pasture than for hay; yet, even for the latter purpose, it will be found superior to rye-grass (*Lolium perenne*), and many other grasses. To reap the full benefit of its merits as a pasture grass, it should be kept closely cropped either by cattle or the scythe. Oxen, sheep, and horses eat this grass readily, but dislike it when allowed to grow too coarse. It succeeds best when the subsoil is porous and not stagnant, so that the fibrous root may penetrate to a considerable depth, which causes the plant to be productive in an extraordinary degree, and remains permanent. But when the surface soil is thin, incumbent on tenacious clay, or when the subsoil is retentive of superfluous moisture, this grass succeeds imperfectly, and the slender hold that the roots have in such soil renders the plant liable to be drawn out of the ground by the cattle when grazing. The pastures most celebrated for fattening stock in Devonshire, Lincolnshire, and in the vale of Aylesbury, are partly formed of this grass. It is less impoverishing to the soil than the rye-grass. A combination of three parts cock's-foot, and one part composed of hard fescue grass, meadow fescue, rough stalked meadow grass, cat's tail or timothy, and rye grass, will secure the most productive and nutritive pasture in alternation with grain crops.

Dactylis glomerata is common throughout Scotland, England, Ireland, Norway, Sweden, Denmark, Germany, France, Spain, Portugal, Northern Africa, Russia, and the United States. It is not found in Lapland, or further north than latitude 63. Its limit of altitude seems to be about 1000 feet above the sea.

Flowers from June till August.

THE DOG NUISANCE.

To the Editors of the *Agriculturist*.

MR. EDITOR,—As the dog nuisance has become intolerable in Otonabee, as well as other places, and as we have presented two petitions to our Council without effect: the first to fine bitches going at large at certain seasons; the other to tax all dogs \$1, and bitches \$2, our Reeve thinking it illegal to *fine or tax bitches distinct from dogs*, will you or some of our friends learned in the law, give us reliable advice upon the subject, or will any person devise a better remedy than the one we have suggested, to alleviate the evil.

Trusting that the subject is of sufficient importance to obtain a place in your columns, and a reply, I am Sir,

Yours, faithfully,

HENRY BAWBELL.

Otonabee, May, 1860.

[We are not aware of the existence of any law to prevent a greater tax being imposed upon bitches running at large than upon dogs. The losses and injury incurred through dogs in killing sheep and other ways is so great, that if people will not be restrained by their good sense, or regard for their neighbors, from keeping such numbers of useless and mischievous animals certainly the Municipalities ought to have the power, if they have not already, to compel individuals to give due consideration to the public safety in this respect.]

BONE DUST.

To the Editors of the *Agriculturist*.

TUCKLOW, May 9th, 1860.

DEAR SIR,—Would you be kind enough to inform me if there is a Bone Factory in Toronto, if so how much per bushel for fine dust: I want it for turnips.

Yours, &c.

WILLIAM WOODS.

[Mr. Peter R. Lamb, of this city, has a mill for grinding bones for manure. The price of the coarse or inch bones has been 40 cents per bushel, of the half-inch bones, 50 cents, and of the finely ground or bone dust, 60 cents per bushel.]

METCALFE FARMER'S CLUB.—THE CULTURE OF FRUIT.

To the Editors of the Agriculturist.

METCALFE, May 10th, 1860.

The paper herewith enclosed, was read before the "Metcalf Farmers' Club," on the 7th inst. by the Secretary. If you think any of the hints given, are of importance to the fruit growers of Canada, and can find room for it in the *Agriculturist*, please publish it, and oblige the members of the Club.

Yours, &c.

THOMAS MOYLE,
Secretary.

"In the culture of Fruit Trees there are four things absolutely necessary to insure success. First, the fencing of the Orchard in a strong and substantial manner before planting. This is of the greatest importance, for a few breachy cattle getting into an orchard will, in an hour, destroy all the trees within their reach, and it will be the work of years to replace them.

Secondly, The proper Preparation of the Land for Planting. If this is not naturally dry, it should be made so by thorough draining. In level lands and clay soils a drain at least three feet deep should be made between each row of trees, before or immediately after planting. It may be as well to mention that I speak of Apple Trees here, because I consider them the principal fruit, but all kinds of fruit trees require the same treatment. Apple Trees planted in wet land become in two or three years, miserable, stunted, moss-covered things, and no treatment, however judicious it may be, can afterwards restore them. The ground should also be in a good state of cultivation, well manured, and planted with some hoe crop, at least one year before the trees are set out, and the same system of cropping should be continued three or four years after. All writers on the subject agree in asserting that grain crops are very injurious to young orchards. In planting, the trees should be set about 30 feet apart in the rows: great care is necessary to place the roots in a proper direction in the holes, to lay them out straight, and to pack some rich mellow soil around them. If in a dry time, a pail of water may be thrown in when the excavation is two-thirds filled up, but that is not done except in late planting in Spring. They should then be staked and mulched, that is, straw or chips placed around the tree for a distance of three feet, to keep

the land mellow and moist until the tree begins to grow well.

Thirdly. The selection of the Trees is a very important matter, as the future prosperity of the orchard will in a great measure depend on this point. If the trees are thrifty and free from disease, they soon come into bearing, and repay the labour and care bestowed upon them. On the other hand, if diseased or stunted, they dwindle on a few years and then die, leaving you to begin your labour again. No trees then should be planted, or even bought, if diseased. This can be easily ascertained by the general appearance of the tree, the bark being rough and shrivelled, the limbs short, crooked and mossy, and covered with the Sealy Aphid or Bark Louse. Such trees will never pay for the trouble of planting. The kinds to be selected must chiefly depend on the fancy of the owner, bearing in mind however, that all kinds will not flourish alike in the region and climate we live in. The following, however, I have seen growing in this neighbourhood and can recommend them as being well suited to the country, good bearers and excellent fruit. For summer apples, Early Harvest, Sweet Bough, Red Astrachan. For Autumn, Drop D'Or or Golden Drop, Fall Pippin, Porter, Rambo, Fameuse, Maiden's Blush, Gravenstein and Pound Pippin. For Winter, Baldwin, Bellefleur, Esopus Spitzenburg, Northern Spy, Pomme Grise, Rhode Island Greening, Swaar and Roxbury Russet. The most of the apples here spoken of combine the qualities of good cookers and good dessert fruit, and are strongly recommended by Mr. Downing and Mr. Barry as being well suited to the latitude of Western New York, and experience proves that they also suit this part of Canada. I should also advise the planting of from six to twelve Pear Trees, according to the size of the orchard, which will require the same treatment as the Apple. The kinds might be the Virgalieu, Bartlett, Beurre Diel, Flemish Beauty, Steven's Genesec, and Winter Nellis, representing Summer, Autumn and Winter Pears. The finer kinds of Plums and Cherries do not answer here, and whether the fault is in the soil or the climate, I cannot say. At present the opinion seems to be that it is the climate, the winters being too cold.

Fourthly. Pruning requires nice judgment. In the first place, to form the head of the young tree properly, the running shoot should be cut off about six feet high to form the lateral branches; and those again should be carefully pruned, to keep them equal in their growth for two or three

years, checking the strongest and encouraging the weakest, until the head of the tree is well formed. After that the main object will be to prevent the wood from getting too thick; and a great deal may be done at this early stage by rubbing off the tender shoots in spring by the hand, instead of the knife. But when the wood hardens the knife must be used, and a saw may be sometimes necessary. When this is used, the cuts should always be made smooth with a knife. Pruning may be done at any time while the wood is growing, as the wounds heal quicker at that time. It is better to prune a little every year than to allow the wood to get thick, and to prune heavy once in two three years. As the orchard grows larger, the pruning must be strictly attended to, and it will be necessary to manure it every three or four years with some well rotted compost, digging it well in around the trees, at the same time taking care not to injure the roots. This is the way I have managed my orchard, and in the sixth year after setting out they grew from three to five bushels of apples to a tree.

Diseases of Fruit Trees.—The disease I suffer most from is what is called Frozen Sap, or Fire Blight. As soon as it strikes a tree, it immediately turns black, and will soon die if the part affected is not cut away. Writers differ greatly as to the cause of it. Some think the sap being frozen after some warm day in winter, is the cause. Others think the heat of the sun is, and others again, think it an insect. But whatever be the cause, the only remedy is to cut away the part affected into the sound wood. There are three kinds of lice that infest fruit trees: the Aphis or Plant Louse, the Woolly Aphis, and the Scaly Aphis. The first fastens on to young buds and shoots, sucking the sap, and preventing their growth. A sprinkling of soap suds will banish them. The second kind fastens on any part of a limb, and will soon girdle it if not removed; a whitewash of lime and soap suds will destroy them. The third kind, the Bark Louse, is the worst here. They fasten on a young tree and will soon kill it if not removed. Their nests are exactly the colour of the bark, and there are from thirty to fifty eggs in each nest. The cure is to scrub the limbs they infest with strong ley about the end of May or beginning of June. Caterpillars are also more or less destructive to the young leaves and fruit. They require sharp watching: a sudden shake of the tree in the morning or evening will throw them down and you can then kill them. In short every individual

tree in your orchard, like your farm stock, will require watchful care and strict attention, for which they will soon repay you. But if neglected, you will find them a constant source of irritation and trouble.

INQUIRIES AND ANSWERS.

To the Editors of the Agriculturist.

I see in the *Country Gentleman* and other agricultural papers, there is a column of "Inquiries and Answers," "Queries," &c., wherein much useful information is elicited. Would it not be well to have one in the *Agriculturist*?

H. B.

[We should be happy to give such a column in the *Agriculturist*. The chief difficulty we have to contend with is, that no one sends us the inquiries, except a stray one or two now and then.]

ON RINGING PIGS.

To the Editors of the Agriculturist.

MR. EDITOR,—I think you will agree with me, that it looks unseemly, and shows want of management, to see a farmer's homestead and fields turned up in the spring, by his pigs, like a fallow field, when so little labour and cost will remedy the evil. If we had to employ the blacksmith to make the rings, and insert them as we used to do in England, it would be some excuse for neglecting the business, but as the remedy is ready, cheap and efficient, I give it for the benefit of those who are no better acquainted with the subject than I was a few years ago.

If you have not the misfortune to be a bachelor, your wife or daughters will have an old bonnet or two thrown away, with the wire in them: take this wire, run it through the flame of a candle to take off the covering, use a little sandpaper to brighten it, cut it into lengths of 4 or 5 inches according to the size of your pigs, file or grind one end sharp, and they are fit for use. If you buy your wire, get stout bonnet wire, or rather annealed wire; then take a rope the size of a bed-cord, make a large noose by tying a slip knot at one end of it, put the noose in the pig's mouth above his tusks, draw it tight, let your assistant haul him near to a post or rail, about three feet high, bestride his neck,

take a wire, and with a pair of pliers push it quickly up through his snout; about half an inch from the centre and half an inch deep, or more if a big pig, bring the two ends to meet, and twist them together close up to the snout, putting a brad awl or nail between the wires to prevent twisting the flesh, then double the twisted wire up into as round a lump as you can. Do the same on each side. When done, pull at your slip knot and let him free, taking care that the rope does not catch the wires and jerk them out, and they will be there at Christmas if rightly done.

Otonabee, May,
1860.

Yours truly,
SWINEHERD.

Agricultural.

HUNGARIAN GRASS.

Wm. Richards, of Richmond, Massachusetts, writing in the *New England Farmer*, says:—

I sowed four bushels of Hungarian grass seed upon ten acres of land, from the 6th to the 16th days of June. In 1858 I got between two and three tons per acre from second quality land, and four tons from good land, made very fine with plow and cultivator, without manure; it yielded grain, or seed, amounting to more than one-fourth of the whole weight, and of the richest kind.

In 1859, in common with some of my neighbors, I was cut short in anticipated results, while others were quite satisfied with its yield. Constant rains prevented my sowing it at the proper time, which is, here in New England, in my opinion, from the 25th of May to the first day of June.

On the third of July occurred that ever memorable shower, to the inhabitants of this vicinity, which washed down our mountain sides a sufficient quantity of gravel and rock to make monuments to the event, which will last for ages to come. The same washed out and buried up about half of my seed, after which the cold season and early frosts cut short the rest to a very great extent, leaving me a chance to gather in about ten tons, which proved to be richly worth what it cost me. The hay possesses a sweetness which gives it a preference in the estimation of hay-eaters, and a richness that makes a greater flow of milk from cows fed upon it, and butter of a superior quality. Like corn, it will do best in a warm season; but it will do better in a cold

season, like the last, than corn, by supplying the farmer with coarse grain, if sowed at the proper time, with anything like careful management. It should not be sown in New England till the ground gets warm. It will decay before it germinates in cold earth, and if it barely germinates in such earth, and remains so a few days, it will receive a sickly hue, and becomes only capable of a dwarfish existence. I am particular on this point, that those who have a great desire to get all sowing done very early, had better not engage much in its cultivation. I have raised it two seasons, have had as good success in stocking after it, both years, as I ever had with wheat, or any thing else. Very many to whom I sold seed last spring have testified to its good qualities as surpassing clover and herdsgrass, and the pleasure they feel in having it in their possession.

One man in the neighborhood said to me recently, "I like it well, my oxen are always ready for it." I replied, "Are not your oxen always ready for any good hay?" He said, "No. Last fall when I was hauling stone with them, till they were weary, they would lie down on other good hay, to rest, before they would eat it, when at the same time they would be ready for the Hungarian."

Similar expressions are common from those who have proved its worth by feeding it to all kinds of stock. I will further suggest for the benefit of any about to commence the cultivation of it, that it seems to demand one day more of drying than other hay.

I am much inclined to the opinion, that it will be found economy to cut it at the time when the seed is mostly ripe, which happens when the blades are about half turned yellow. In this way I have a good crop of grain, next, if not equal, in value, pound for pound, to corn, and a crop of hay, when well cured, that will compare well with other good hay.

This grass never grows too large and stiff, like millet, but each seed throws up from the root, in any thing like fair ground, from one to five or ten stalks, and sometimes, in rich land, sowed thin, from ten to fifty of about equal size, each covered with its own beautiful blades, and when ripe, a heavy head.

HOW TO GROW LARGE POTATOES.

Messrs. Editors:—In the year 1856 I first began to experiment with potatoes, and the result of that trial I wish to make known to your readers, together with some

hints on growing potatoes of a uniformly large size.

Upon a loamy soil, eight rows of potatoes were planted, the rows being ten rods long; furrowed out three and one-half feet apart, and all manured with green stable manure. They were treated in the following manner, and the potatoes, when dug, were weighed with the following result:—

2 rows manured as above,	172 lbs.
2 rows do., with addition of ashes,	182 “
2 rows “ “ lime,	192 “
2 rows “ “ plaster,	191 “

The quantity of lime, plaster and ashes put into the hill was in all cases about a common sized handful. In addition to the above, I planted eight other rows, manured in the hill with stable manure (same as above) and no other dressing. This last experiment was in regard to preparing the seed, each in different ways, with this result:—

1. Two rows planted with seed eyes, had large tops, small potatoes, and yielded 162 lbs. 2. Two rows planted with but ends, had few tops, large potatoes, and yielded 270 lbs. 3. Two rows planted with potatoes cut directly in two in the middle (lengthwise) had tops of medium size, potatoes average quality, and yielded 179 lbs. 4. Two rows planted with whole potatoes, had good tops, fair sized tubers, and the yield was 230 lbs.

By looking at the weight of the rows of potatoes mentioned above, it will be seen that the heaviest yield was that obtained from those planted with but ends, being forty pounds greater than those where the seed was whole when planted. The result of this single experiment led me to think upon the manner of preparing seed to obtain the heaviest return of the best sized potatoes, and since then I have followed this plan.

When preparing my potatoes for seed, the eye or seed end is cut off and used for the hogs or sheep; at any rate, it is not planted. What remains of the potato is cut up in pieces, each containing from three to five eyes, and there are planted one piece in a hill, three feet apart one way, and eighteen inches the other. And let me say in conclusion of this part of my article, if your readers would grow potatoes of a large size, let the seed ends be thrown aside when planting.

It has been my practice to plant peas with potatoes for many years, and I have found them of great advantage to the potatoes, besides obtaining a good crop of peas with but little labor. I put from three

to five peas in each hill; they come up about the same time as the potatoes, are supported through the season by the tops of them, and when ripe are pulled and put in small piles to dry. I think potatoes are less liable to rot if peas are planted with them. It is a method which I earnestly recommend to all farmers—*Boston Cultivator*.

INDIAN CORN.

Of this crop, little need be said. It will stand bad management as well as any other crop, but it is exceedingly grateful for good cultivation and heavy manuring. It requires a warm, dry, rich soil. The motto of the corn-planter should be “good culture.” In our experiments with various manures on Indian corn, gypsum or plaster proved the most profitable. Ashes had little effect, though this might not be the case on other soils. Ammonia is what we need, but this can not be purchased sufficiently cheap to render its use in the majority of cases profitable. The cheapest source at present, with the exception of home manures, is Peruvian guano. If the corn is planted on a clover sod, it may be well to let the clover grow till just before planting, and then turn it under and plant immediately.

In our own experiments, the plaster was applied in the hill with the seed, at the time of planting, a little over a bushel per acre. This year, we shall try the effect of a larger quantity. The general mode is to scatter it round the plants when three or four inches high.

We have little faith in the various recommendations of soaking seed corn in solutions of ammonia, chloride of lime, copperas, etc. Soaking old, dry seeds in a solution of chloride of lime is said to facilitate the softening of the husk, and thus render germination easier. This is probably true; but that the small quantity of any ingredient that seed can absorb can materially help its after growth, is inconsistent with all our ideas of the nourishment and growth of plants. In the majority of experiments that have been made on this subject, it is quite probable that the result would have been just as good if the seed had been simply soaked in water alone for twenty-four or forty-eight hours. Generally, this even is unnecessary.—*Genevsee Farmer*.

SOWING CORN FOR FODDER.—There are very few farmers who do not run short of good succulent pasture by the last of August or early in autumn. To supply this defi-

ciency, an acre or two of ground sown with corn for soiling at that season would be almost invaluable. Every farmer knows how eagerly cattle devour the entire plant of Indian corn in its green state; and land in good condition will produce heavy crops of it. That it affords an excellent fall feed, for dairy purposes, there is no doubt; and it is clearly ascertained that it may, on some farms at least, be profitably grown for winter fodder. Much of course, depends on the character of the farm, and something I suppose may depend upon the season; but in case of the prospect being dark at the end of June for fall and winter food, I see no reason why the farmer could not profitably devote an acre or two, where the land is fit for the purpose, to the sowing of corn for fodder, to be fed out green in early autumn, or to be cured for winter, as the case may seem to require.

For a few years past, I have observed repeated recommendations in the agricultural papers to sow corn for soiling purposes, and I would thus early call the attention of farmers to this subject, and advise them to look at this matter.

Sowing in drills is much the preferable mode, as it requires only about one-half or two-thirds the amount of seed needed for broadcast sowing; besides, drills, by admitting the cultivator, leave the ground clean and mellow, and this greatly adds to the growth of the crop: they admit of easier harvesting, and yield about one-third more fodder per acre.

The ground should be prepared as for any other crop. Furrow, or mark off the ground three feet apart. Strew the seed in the furrows at the rate of forty or fifty grains to a foot. It should not be sown thinner than this, as the crop will be smaller.

The greatest difficulty with this crop is curing it properly before stacking. The leaves may become perfectly dry while a large quantity of water remains in the stalks, which causes fermentation and the complete loss of the fodder when placed in large stacks. I have found it much the best way to place it in long rows in an upright position under cover.

Curing is the only difficulty with this crop, and this may be obviated in a measure when understood. Ten to twelve tons of green fodder and five or six of dry may be had from a good acre. FRYE, Jr.—*Country Gentleman.*

SOAKING OF SEEDS.—One of the best methods of preparation of seeds for an early start is to soak them in diluted liquid manure. Hen dung is much recommended for

this purpose! Sometimes soaked seeds do not come forward, or rot in the ground; but frequently it is the case that the seeds are not attended to, but are allowed to heat, or sometimes to get dry, before they are sown. Another point is to have for small seeds, the soil in good warm friable condition; if the seeds are soaked and the surface of the soil is warm, and the soil itself is pressed down close to the seed by rolling, or the hoe, when the sowing is done, it will make a material difference in the time which they will take to sprout; and besides this the manure with which their outer coat is saturated, protects them from the attacks of worms and insects.

AGE OF SHEEP FOR MUTTON.—A late English writer says: "A sheep to be in high order for the palate of the epicure, should not be killed earlier than five years old, at which age the mutton will be rich and succulent, of a dark color, and full of the richest gravy—whereas, if only two years old, it is flabby, pale and flavorless."

Horticultural.

GARDEN MEMORANDA FOR JUNE.

The principal sowing seasons for general crops may be considered as past, but there are many kinds of seed which may be sown this month; and the gardener should ascertain the success of his former plantings, in order to make up any deficiencies from failures, before the season be too far advanced. As the warm weather progresses the gardener should be on the alert, in order to conquer the various kinds of insects. Burn damp litter, stubble, leaves, weeds, &c., near fruit trees, and sow ashes over the ground. Attend to plantations of Cabbages, Cauliflowers, &c., hoe them frequently, and draw earth to their stems; look out for and destroy grub worms, caterpillars, and other insects: thin out the early plantings of Beets, Carrots, Parsnips, Salsify, &c., and destroy weeds, to prevent their seeding the ground. Plant and sow such kinds of seed as were omitted last month. Watering will now frequently be required for newly planted vegetables, both at the time of transplanting, and occasion-

ally afterward in dry weather, until the roots are established in the soil. Likewise, seed-beds, recently sown, till the young plants become vigorous. Weeding must be very diligently attended to, both by hand and hoe; for as weeds grow luxuriantly, it is necessary to eradicate them before they spread too far, as, by neglect, they will not only impede the growth, but eventually smother the plants.

CELERY.—The following remarks, from Bridgeman's Young Gardener's Assistant, on the cultivation of this vegetable, so much esteemed as a salad, are just in season:—

"The early sown plants should be pricked out in a nursery bed of cool rich earth, as soon as they are two or three inches high, there to remain about a month, after which they will be fit to transplant into the trenches.

Choose for this purpose a piece of rich ground, in an open exposure; mark out the trenches by line, ten or twelve inches wide, and allow the space of three feet between them, which will be sufficient for the early plantations. Dig each trench a moderate spade deep, laying the dug-out earth equally on each side, between the trenches; put three inches deep of very rotten dung in the bottom of each trench, then pare the sides, and dig the dung and parings with an inch or two of the loose mould at the bottom, incorporating all well together, and put in the plants.

Previous to planting, trim the plants, by cutting off the long straggling leaves, and also the ends of the roots. Let them be planted with a dibble, in single rows, along the middle of each trench, five or six inches between plant and plant; as soon as they are planted, give them a plentiful watering, and let them be shaded until they strike root and begin to grow.

The main crops may be planted in the same way, but in trenches four feet distant from each other, and an inch or two farther from plant to plant; or in beds made in the following manner, which, for the ease of preserving the plants in winter, will be found extremely convenient, besides a greater quantity can be raised on a given piece of ground.

Lay out the ground into beds four feet wide, with alleys between, three feet; dig the beds a spade deep, throwing the earth on the alleys: when done, lay four or five inches of good, well-rotted dung all over

the bottom of the beds, dig and incorporate it with loose earth, and cover the whole with an inch or two of earth from the alleys; plant four rows in each bed at equal distances, and from six to eight inches apart in the rows; after which give them a plentiful watering, and shade them.

The plants must be hoed occasionally, until grown of sufficient size for earthing, which is done with the assistance of boards, by laying them along the rows, to support the leaves while you are putting in the earth from the alleys, and removing them, as you progress in the business.

The earthing should never be done when the plants are wet, as this is apt to make the Celery rusty, but should be performed gradually in fine weather as the plants progress in growth, repeating the earthing every two weeks; at which time care should be taken to gather up all the leaves neatly, and not to bury the hearts of the plants. When they are grown two feet high, and well blanched, they are fit for the table.

As Celery will grow three or four feet high in one season, it will be necessary to delay the planting of that which is intended for winter use until the latter end of July, but the trenches should always be got ready soon enough to avoid a serious drought, which often delays the planting till too late in the season. The blanching of Celery for winter use may be delayed until October."

THE VINE.—We are glad to see that a considerable amount of attention is now being attracted to the cultivation of the grape in this Province. The following remarks from P. Barry's "Fruit Garden," on the culture, pruning, and training hardy grape vines, will be found to contain a good deal of valuable and interesting information:—

"The management of our native grapes is exceedingly simple. Immense crops of Catawba and Isabella, and especially the latter, are raised throughout the country in the entire absence of any systematic mode of training or pruning. A single vine in a neighbor's garden, carried to the flat roof of an outbuilding, and allowed to ramble there at pleasure, without any care but a very imperfect pruning every spring, produces annually many bushels of fruit. But the quality is, of course, greatly inferior to that produced on well-pruned, trained, and dressed vines. A grape vine neatly trained

on a trellis, with its luxuriant ample foliage, and rich pendulous clusters of fruit, is really one of the most interesting objects in a fruit garden, and, at the same time, one of the most profitable; for the shade and ornament alone that it produces, are a sufficient recompense for its culture.

In planting a grape vine the first point is to prepare a border for the roots.

This must, in the first place, be perfectly dry. If the soil or situation be wet or damp, it must be drained thoroughly, so that no stagnant moisture can exist in it. In the next place it must be deep—three feet is a good depth; and it must not be less than two where abundant and fine crops are expected. The mode of preparation is, to dig out the natural soil to the required depth, and the length and width necessary. For a single vine, the border should be eight or ten feet long and four wide.

When the excavation is made, if the soil be stiff or damp, a few inches, or a foot deep, of small stones, brick, rubbish, etc., may be laid on the bottom as a sort of drainage. On the top of this deposit the compost for the border. This may consist of two parts of good, fresh, friable loam, one of old, well-rotted manure, and one of ashes, shells, broken bones, etc., all completely mixed with one another. The top of the border, when finished, should be at least a foot higher than the surface of the ground, so that it may still remain higher after settling. Having the border thus prepared, the next point is the *trellis*. The form of this will depend on the situation it is to occupy and the mode of training to be adopted. The following description has been designed for a wall. The principal bars or outside frame-work are inch and a half boards, three inches wide, nailed together at the angles.

It is intended for one vine, and may be the height of the wall that it is intended to occupy. The vertical or upright bars are three feet apart and the cross ones six feet; between them are rods of stout wire. The first or lowest cross bar may be two feet from the ground. It is fastened to the wall by iron hooks or brackets. The best and simplest mode of training a vine on such a trellis as this, is to produce two main branches or arms to be trained in a horizontal manner on the first cross bar. From these two arms, permanent, upright canes are trained, one to each of the upright bars of the trellis. These upright canes produce on their sides a succession of bearing shoots from year to year, being pruned after what is called the "spur" system.

Planting the Vine.—As in planting any other tree, the roots should be carefully spread out, and the fine earth worked well in amongst them. Its position should be exactly in the centre of the trellis it is to be trained on.

Pruning.—It must first be observed that the grape vine bears its fruit on shoots of the current year, produced from eyes on the previous year's wood. It is important to understand this, because it shows the necessity of keeping up a supply of young wood wherever we desire fruit to be produced.

To illustrate the pruning, we will suppose the plant to be one or two years old, as ordinarily sent out from the nursery. It may have only one shoot, or it may have several. However this may be, all are pruned off but the strongest, and it is cut back to within two eyes of its base. These two eyes will produce shoots, and when they have made a growth of two or three inches, the weaker one is rubbed off and the strong one trained up. It is allowed to grow on till September, when the bud is pinched to mature and strengthen it. Any side shoots that appear during the summer, should be pinched off, as well as any suckers that may appear about the roots.

Second Year.—If the shoot of last year made a strong growth of ten or twelve feet, it may be now cut back to three eyes, and two canes be trained up; but if it made only a weak growth, it should again be cut back to two eyes, and one shoot only trained up. Side shoots and suckers are pinched off during the summer; and in September these canes are stopped as before, and no fruit is allowed.

Third Year.—We have now two strong canes with which we commence the frame-work of the vine. Each of these is cut back at the winter pruning to within two or three feet of its base, and laid in, and fastened to the lower horizontal bar of the trellis. The bud on the end of each, will produce a shoot to continue the prolongment in a horizontal direction, and a bud on the upper side of each will produce a shoot to be trained to one of the upright bars—the first one on its division, or half of its trellis; all others are rubbed off, or the buds cut out. Thus each of these arms produces two shoots—an upright and a horizontal one. During the summer, these shoots are carefully tied in as required, and side shoots and suckers pinched off when they appear. They are also topped off in September, as before.

Fourth Year.—Each of last year's

shoots is cut back to within three feet of its base. It may be necessary to cut the horizontal ones closer than the upright ones, to obtain another strong upright shoot. The two upright canes already established, will produce a shoot from their tops, to continue their extension upwards, and the horizontal ones, as before, produce a shoot at the point to be carried outwards, and one on the top to be trained up to one of the upright bars. This year, several fruit shoots will be produced, on each of which, one or two bunches of grapes may be ripened. In this way the vine goes on adding every season two new upright canes, and two or three feet in length to the previous ones, until the whole trellis is covered; when the management will consist in pruning the spurs every winter to about three eyes. Each fruit branch should only be allowed to produce two bunches of fruit, and the top should be pinched at the second eye, or joint above the fruit, in order to arrest the production of useless wood, and turn the sap to the benefit of the fruit.

By such a system as this the trellis is covered in every part with bearing wood, the fruit and the foliage are all exposed fully to the sun, an uniformity of vigor is maintained between the different parts, and the appearance is beautiful. A trellis may be covered with a vine by other modes requiring less labor perhaps, and less time, but none will be found more beneficial or satisfactory in the end.

In the management of a grape vine, as in the management of other trees, summer pruning is of great consequence. If a vine is left to itself all summer, or from one winter pruning to another, it will be found that a vast quantity of useless wood has been produced, and that to the serious detriment of the bearing shoots for the following year. Every two weeks the growing vine should be visited, shoots tied in, strong ones checked, superfluous ones rubbed off, and every part kept in its proper place, and in a proper degree of vigor. In certain cases, where the mode of training above described cannot be conveniently adopted, two or three poles, twelve to fifteen feet high, may be sunk in the ground, with a space of three or four feet between them at the bottom, and fastened together at the top, forming a cone, around which the permanent canes may be trained in a spiral manner.

This produces a very beautiful effect, and occupies comparatively little space, but the grapes will not all ripen so well, nor will the training be so easy as on the flat surface of a trellis.

Very tasteful arbors may also be made over some of the walks, by training the vine over the woodwork, in the same manner as on the trellis.

This is a very common practice and offers many advantages. Ingenious persons who care well for their garden, as well in its appearance as its productions, will conceive other plans still better adapted to their particular wants and taste than any of these; but the main point must always be kept in view, that is, to provide for the foliage and the fruit, a free open exposure to the sun. Any system that does not secure this, will fail to a greater or less extent.

The Isabella grape succeeds well even as far north as Maine, by laying it down in winter and covering it with mats, straw, boughs of evergreens, &c."

J. F.

GUM-SHELLAC IN PRUNING TREES, AND IN CUTTING OFF YOUNG TREES IN THE NURSERY.—Young trees which were budded the past season will require to be cut off above the bud this spring. The plan adopted by many nursemen is to cut the tree an inch or half an inch above the bud, and after the latter has begun to grow, to trim the trunk down to the point of connection with a sharp knife. As the young shoot is exceedingly tender, it is in great danger of being injured by this operation. The necessity for this laborious and objectionable method results from the danger of the buds being killed by the drying of the trunk down from the place at which it is cut. We have practiced for several years, and on many thousands of trees, a plan which saves entirely the second trimming, and which has been fully successful. We trim the tree down close to the bud at the first operation, and paint the surface of the cut with a thick solution of gum-shellac in alcohol. As the gum is not soluble in water it is not washed off by the rains, and it preserves the tree alive to the very end, so that the wound heals in the most perfect manner, making a smoother joint than can be produced in any other way. This preparation may also be used with advantage for coating the wounds made in pruning choice trees.

PROFITS OF FRUIT.—The New-England Farmer states that the Northern Spy apple now sells for fifty to seventy-five cents a dozen at retail in the Boston market. This remark of course applies to those only of fine quality and well kept. Fruit that is better than the average will always bring not only a high price, but will also com

mand a ready sale. The Northern Spy is one of those fruits that will always show the effect of good treatment, and those are the sorts that afford the highest profits under skillful hands. It has been objected to this apple that it is hard to convey to market, on account of its liability to bruise. This is the very quality that gives it its high value in selling. A half a day's labor in extra pains in packing, will repay the cost of a week's labor in putting up. It is the difference in the results of common and skillful management, in raising, gathering, ripening and packing that gives such great prices to the finest pears. Farmers! if you wish to make money by marketing fruit, pursue such a course as will enable you to exhibit specimens, finer in quality and more splendid in appearance than those around you, and you can command almost whatever you choose.—*Country Gentleman*.

EFFECTS OF ARTIFICIAL LIGHT ON VEGETATION.—In answer to an inquiry on this subject, a correspondent of the *London Builder* states:—"I planted vegetables in a place where daylight could not penetrate, over which I suspended a paraffine oil lamp, with a reflector to throw the light upon the plants. They have grown up a beautiful dark green. I have also lighted a greenhouse with lamps every night, and find it not only increases vegetation, but gives a beautiful deep tinge to the plants."

INTERESTING TO POMOLOGISTS.—Mr. Dubreil, the eminent French pomologist, states that he has produced much larger fruits than usual by moistening the surface of the green fruit with a solution of sulphate of iron, $\frac{1}{4}$ grains to a quart of water. This was done when the fruit first set, when it was half, and when it was three-quarters grown, taking care never to do it when the sun was shining. It has long been well known that this solution greatly stimulated absorption.

INCREASE OF STRAWBERRY PLANTS.—The rapid increase from a strawberry plant in the course of a few years, under favorable circumstances, can be hardly comprehended by one who has never observed this increase. There is a difference in varieties. In rich soils, some will occasionally produce a hundred in a single year, but calling the number but thirty, the yield would be 900 at the end of the second year; 27,000 at the end of the third; 810,000 at the end of the fourth; 24,300,000 at the end of the fifth; 727,000,000 at the end of the sixth, &c. Cultivators who do not wish to pay high prices per hundred for new sorts, may soon obtain all they need by increase.

TREES.—Mr. George Leslie, of the Toronto Nurseries, has lately sent a handsome donation in the shape of 150 trees of different sorts to the Agricultural Society of Kingston, for the purpose of adorning and beautifying the grounds around the Crystal Palace, belonging to the Association there. Such a present is alike honorable to the giver and must be very gratifying to the recipients.

Deterinary.

HORSE BREEDING IN BRITAIN.—A writer in *Bell's Life* complains of the number of "weeds" that are being used to breed from. He says:

"We may be believed when we assert that notwithstanding the liberal sums given with the laudable intention of stimulating and improving the breed of horses throughout the country, that the present administration of those sums under the existing *regime* upon the turf, is merely a lavish expenditure, to defeat the very object which those grants were originally instituted to promote. To commence upon a proper basis, and one that will insure successful results, there must be a sweeping reform in existing racing arrangements, and one that will tend to the total annihilation of "weeds." Our general horses are fast losing stamina; the same class from which the multitude of coach horses were some years ago drawn, has been that which furnished our troopers. Since the rail superseded the road, breeders have had less temptation to be careful in the selection of sires than formerly existed, and the 'right sort' is not now so procurable as in those days. Coach horses with questionable legs and feet, and any malformation of form, were seldom purchased, and became a drug in the market. Coaching is now defunct, and with its dissolution vanished one of the best incentives that could exist to the promulgation of the doctrine, that soundness, size, and action were essential to success in breeding general horses. This being unquestionably the case, it appears strange that the wisdom or the rulers of a great people, would not, ere now, have hit upon some happy expedient to keep up that system in horse breeding which is most essential to the welfare and honor of our country, and the glory of our arms.

DEVELOPMENT OF THE TEETH OF CATTLE, AND MODE OF ASCERTAINING THEIR AGE BY THE SAME.—Persons acquainted with the dentition of "neat stock," can form a

pretty accurate idea of age, from the period of birth up to that of adult life, and this method of ascertaining the age of an animal is, probably, more correct than that which applies to *horns*; for, by means of a rasp applied to the rings of the horns, any amount of imposition may be practiced, when it is well known that the same liberties are not to be taken with the teeth, without the chances of discovery. It is possible that there may be some slight variations from the following rules, in the development of the teeth, yet such variations will not embrace a period of over a month or six weeks, which at maturity does not amount to much, and may be considered as purely accidental—out of the ordinary course of nature. The front teeth or temporary incisors are found in the lower jaw: there are eight of them, all prominent at the age of four weeks. The calf is usually born with three temporary grinders or molars: the fourth appears six months after birth; the fifth appears at the age of fifteen months; and the sixth is to be seen at the age of two and a half years; now, the animal has a "full mouth" of temporary teeth, numbering thirty-two. At this period a very remarkable change in the teeth is about to occur; the temporary ones, having answered the purposes for which they were intended, are to be removed in the following order, so as to give place to others which shall correspond to the increase in the size of the jaw bones, and prove as durable as other bones of the body. At the age of two years the central or middle incisors (lower jaw) are shed and replaced by two permanent ones. At the age of three, the two incisors known as the inner middle undergo the same process.—At the age of four, the outer middle are shed, and replaced by permanent teeth. At the age of five, the corner incisors are also transformed in the same manner, and the animal has a full set (eight) of permanent front teeth. The first and second permanent molars known as grinders, appear in the upper and lower jaws on each side, at the age of two years; and at intervals of one year, the other four are successively cut; so that at the age of six years the animal has a full mouth of permanent grinders.—*American Stock Journal*.

Domestic.

KEEPING HAMS.—Noticing an enquiry in the *Rural* for a recipe for keeping hams, I send you one that I will warrant, by using the ingredients prescribed, will keep

them any reasonable length of time—that is for one or two years—sound, sweet and good. When the hams are sufficiently dried after killing, pack them away in dry salt, in a box or barrel, taking care to fill all the open places among the hams, until they are completely covered.—MATTHEW C. HYLAND, *Lebanon, Madison Co., N. Y.*

RUSKS.—Take a quart of night's milk, put in a teacup of yeast, a little salt thickened with flour: let stand until morning. Boil six middling large potatoes, and mix in the sponge; let rise again. Take half a pound of butter and mix in the flour, and half a pound of sugar, if you like, and the whites of three eggs beaten to a stiff froth. Pour your sponge in and then the egg, grate in some nutmeg, mix middling stiff, and let rise: then butter your hands, and mould in small cakes, and let rise again. Bake in a quick oven half an hour. This is consumption bread.

BREAD PUDDING.—Boil the milk, and pour over the bread, and cover it up until it cools; put in three well-beaten eggs, one teaspoonful of butter, one of ground cinnamon, sweeten to the taste, and bake an hour and a half. This is a good way to use up hard bread and crusts.

RICE PUDDING.—To one quart of milk, take one teacup of rice, one of raisins, a teaspoonful of salt. Sweeten to the taste, and season with nutmeg. Bake two hours in a slow oven.

CLEANING BONNETS.—Place the bonnet in a tub, and pour on boiling water; scrub each one carefully with brush and soap, then rinse in hot water; after which put two tablespoonfuls of oxalic acid in a basin, and pour on a quart of boiling water—the stains will instantly disappear—then rinse in clear water, and hang in the sun to dry.

ECONOMY IN BREAD-MAKING.—To make yeast bread, mix up your sponge in the evening, in the morning put your kettle on, put in some milk, let it come to a boil, thicken it with corn meal, as soon as it is cool enough mix it in your sponge with a little flour; when light, mould it out—don't mix it very stiff, put plenty of hand and shoulder on, that's what makes good bread, kneading it a good deal.

TAKE CARE OF YOUR FURS.—To preserve them properly, and in nice condition, they should be packed away in a box, or place by themselves, where they will not be likely to be overhauled, or tumbled, in looking for other things. A cedar box is the best, the furs then requiring no other

preventive against moths; but if this cannot be obtained, a flat box, or band box will answer, into which put the furs, nicely folded in an old linen cloth, and plentifully sprinkled with pepper, or pepper pods, which is much better and more effectual than camphor. This method will keep them in good order any length of time.

BOILING POTATOES.—A correspondent of the *Horticulturist*, states that the great secret of boiling potatoes right, is to select them of about equal size, place them in a flat vessel, so that all will be on the bottom, fill in water enough only to cover one-half to two-thirds of each potato and boil them thus. He argues that a potato should never be covered with water when it is cooked by the boiling process. All potatoes cooked under water are waxy, only those that are on the top, or are half way out of the water, present that mealy quality so desirable in the potato.

HOW TO PRESERVE LADIES' FURS.—Fine furs should be kept in a cold place. An experienced dealer will tell, the moment he puts his hand on a piece of fur, if it has been lying in a warm, dry atmosphere; it renders the fur harsh, dry and shabby, entirely destroying the rich, smooth softness which it will have if kept in a cold room.

When furs have been laid away for some months they acquire an old squeezed appearance which may be remedied in a great measure as follows:—Warm some new bran or fine sawdust in a pan, but do not let it burn; then rub it thoroughly into the fur with the hand. Repeat this two or three times; then shake and brush the fur until free from dust.

Miscellaneous.

MILLIONAIRES.—There lately died, at Bombay, a Parsee merchant, Sir Jamsetjee Jejeebhoy, the first native of Hindostan who was elevated to the rank of Baronet, an hereditary title, yet which does not belong to the British peerage, as many of our contemporaries think. His will has been proved in the Supreme Court of Bombay, and the whole of his property, real and personal, was sworn under eighty-five lacs of rupees—£8,500,000—which amounts to \$42,500,000 in American money. This is perhaps, the largest fortune left by any British subject, not a nobleman, for the Marquis of Westminster, who owns one-half of the "West End of London," besides vast landed estates in the provinces,

has an income of £800,000 per annum, which, taken at thirty years' purchase, might be capitalized at £240,000,000, which is equivalent to \$1,200,000,000 of money. The late F. Warkanauth Tagore, of Calcutta, who died of a broken heart some twelve years ago, because his fortune had dwindled down, in the commercial panic of 1847, to the amount of ten million of dollars, was worth three times as much at one time, and commenced the world with only a few rupees. There are several merchants and bankers in London who are respectively worth from one to four millions sterling. In Manchester, in the spring of 1850, six local bankers dined together at the Albion Hotel, on a particular day, and were said to represent between them £12,000,000, equal to \$60,000,000. These be the true money kings. With us, when a man is supposed to have \$100,000 he immediately obtains the brevet title Millionaire.—*Philadelphia Press.*

DISTINGUISHED FARMERS GONE.—The papers of last week brought us notice of the death of two men to whom the agriculturists of the country are indebted for many of the improvements which we enjoy.

One of them is that of David Thomas, of Union Springs, New York, and the other that of William Jarvis, sometimes called Consul Jarvis, of Wethersfield, Vermont.

DAVID THOMAS has long been a friend and improver of Agriculture and Horticulture, and his writings on these subjects have been the result of practical experience, aided by close observation and scientific research.—In the prime of his life he was appointed by Dewitt Clinton Chief Engineer on the Erie Canal during its construction; the western division of which, together with the Cayuga and Seneca Canals, were constructed under his charge.

At a later period he devoted himself assiduously to Agriculture and Horticulture, and particularly to fruit, in which pursuits he was very successful.

The *Auburn Advertiser*, in noticing his death, says that "a long life, devoted to scientific pursuits, and to all the high and christian obligations of society is closed, leaving a memory that his friends will most gratefully cherish."

WILLIAM JARVIS is known among the farmers of Maine, and, indeed, those of the Union, as one of the first and most successful sheep-raisers and wool-growers, and for his enterprise, more than forty years ago, while American Consul at Cadiz, in Spain, of shipping the first cargoes of the celebrated Merinoes into this country. A few mer-

inoes had been previously introduced by Humphries and Livingston, if we mistake not, but Jarvis imported them by the ship-load and acquired a fortune by the venture.

He had a large farm in Wethersfield, Vt., where he placed his flocks, from which the early Merino flocks of Maine were derived, and which, after all, have proved as profitable as any derived, more recently; from other sources.

He died on the 21st of last month, of paralysis, at the good old age of 89 years.—*Maine Farmer, (February).*

QUALIFICATION FOR A RIFLEMAN; AND A FEW HINTS TO GENTLEMEN OF THE RIFLE CORPS.—No man can feel more secret exultation than the well-trained pedestrian, confident in his speed, secure in his aim, and un baffled in his science.

Steady, very steady, should his hand be, and at times wholly without a pulse.

Wary and circumspect, never going rashly to work. Patient under suspense, calm and unruffled in moments of intense interest; keeping all sensations under rigid control, not suffering them to interfere with his equanimity, or to disturb the coolness and self-possession which at such moments are more than ever necessary to his operations.

That he may preserve in all their due vigour and steadiness these indispensable qualities, he should add to them, in hours of leisure and refreshment, the further grace of temperance and moderation.

When the nerves are unsteady the rifle begins to betray a want of fixed purpose and resolution; it does, as it were, vibrate considerably. Under these circumstances the balls are apt to take any untoward direction, such as are wholly unlooked for. Very wanton courses they will sometimes take.

Ye, who eat long like your mothers, and fast like your fathers—ye, believe me, had much better remain at home with your household goods, and cultivate decisive apoplexies. Everybody will tell you how well you look; so let out your waistcoats and your waistbands most amply, my much-cherished friend; eat, drink, and be happy; or, if the god of war be warm within you, if so great, such an extinguishable ardour burns in your bosoms, arrange yourselves, I pray you, in an ample punt on a domestic fish-pond, with a rod, a line, and that admirable contrivance the float; but let not your obese fingers aspire to dally with a rifle.

Tell me, now, could you hit any given acre of land at fifty paces? I should rather think not. As for a rifle, then, have noth-

ing to do with it, I beseech you, my good fellow, lest it should go off unadvisedly.

After all, we doubt not your resolution to attack the foe, for we have had a very high opinion of the courage of a well-fed man ever since we heard the story that Wilkes delighted to tell of Alderman Sawbridge, which for your satisfaction we will recount:—

The Alderman was induced to go hunting, a sport that was novel to him; and having some sort of indistinct idea that danger was connected with it, he went forth in the uniform of the City train-bands, to which he belonged. Being told that the hare was coming his way, he boldly laid his hand on the hilt of his sword, and replied, with perfect self-possession, 'Is he, sir? Let him come!'—*Scrope's Art of Deer-stalking.*

RECIPE FOR IMPROVING CIDER.—Let the new cider from sour apples (sound and selected fruit is to be preferred) ferment from one week to three weeks, as the weather is warm or cool. When it has attained to lively fermentation, add to each gallon, according to its acidity, from half a pound to two pounds of white crushed sugar, and let the whole ferment until it possesses precisely the taste which it is desired should be permanent.

In this condition pour out a quart of the cider, and add for each gallon, one quarter of an ounce of Sulphite of Lime, known as an article of manufacture under the name of *Anti-Chloride of Lime*. Stir the powder and cider until intimately mixed, and return the emulsion to the fermenting liquid. Agitate briskly and thoroughly for a few moments, and then let the cider settle. The fermentation will cease at once. When, after a few days, the cider has become clear, draw off and bottle carefully, or remove the sediment and return to the original vessel. If loosely corked, or kept in a barrel on draft, it will retain its taste as a still cider. If preserved in bottles carefully corked, which is better, it will become a sparkling cider, and may be kept indefinitely long.

THE OTTAWA VALLEY.—Mr A. J. Russell describes the immense extent and capabilities of the Ottawa Valley as follows:—"The Ottawa and its tributaries drain an area of about seventy-seven thousand square miles. Of this great region, about one-sixth part is surveyed and organized into townships and signiories; the operations of the lumberers extend over about one-sixth more, and the remaining two-thirds are comparatively unknown. Were the whole peopled in the same proportion to the area as Scot-

land, it would have eight millions of inhabitants; or taking the same rate as the State of New Hampshire, which is probably near what it should ultimately sustain, its population would be three millions. At present, the population of the valley of the Ottawa is about 200,000 souls. As no action can be taken on such cultivation, it may be better for the practical purpose of ascertaining how many settlers could be put into it, to take the present population of the settled parts of it as data for such proportion of the remainder as may be considered nearly equally fit for settlement. From Bytown upwards, the Valley of the Ottawa may be estimated at fifty-three thousand superficial square miles; and the tract between its head waters and Lake Huron, at nine thousand square miles. In 1852, the Counties of Carleton, Lanark and Renfrew, contained about 10,000 surveyed lots of land, of which 2500 were vacant lands of the Crown, and about 800 more were private unoccupied lands—shewing that one-third of the whole were waste lands, unfit for cultivation or otherwise unoccupied. The remaining two-thirds contained at the time a population a little over 70,000 souls—giving an average population to the whole of $22\frac{1}{2}$ souls to the square mile, or in the proportion of 33 to the occupied lands; that is about $10\frac{1}{4}$ to each occupied two hundred acre lot.

MASON AND DIXON'S LINE.—On the 4th of August, 1763, Thomas and Richard Penn, and Lord Baltimore, being together in London, agreed with Charles Mason and Jeremiah Dixon, two mathematicians or surveyors, to mark, run out, and fix the boundary line between Maryland on the one hand, and Delaware and Pennsylvania the other. Mason and Dixon landed in Philadelphia on the 15th of November following, and began their work at once. They adopted the peninsular lines, the radius and tangent point of the circular of their predecessors. They next ascertained the north-eastern corner of Maryland, and proceeded to run the dividing parallel of latitude. They pursued this parallel a distance of 23 miles, 18 chains and 21 links, from the place of the beginning at the N. E. corner of Maryland to the bottom of a valley on Dunkard creek, where an Indian war path crossed their route, and here on the 19th of November, 1767—92 years ago—their Indian escort told them it was the will of the Sioux Nation that the surveys should cease, and they terminated accordingly, leaving 36 miles, 6 chains and 50 links as the exact distance remaining to be run west to the south-west angle of

Pennsylvania, not far from the Board Trei-Tunnel, on the Baltimore and Ohio Rael road. Dixon died at Durham, England, in 1777; Mason died in Pennsylvania, 1787.

IRON ORE.—The Brockville *Recorder* states that the mines of Messrs. Chaffey & Brothers will be most prolific of the richest ore, and that even now, if the works were in thorough working order to produce the quantity, a ready market for the ore could be obtained in the United States to the amount of from 30,000 to 40,000 tons per year, not to speak of the demand likely to arise for the ore in Great Britain, whence Messrs. Chaffey & Brothers have shipped this fall 200 tons in order to have it thoroughly tested with the best qualities of British ore. We are told that the ore from the Crosby mines can be laded at Erie for \$3 per ton, while the ore from Lake Superior cannot be laid down at near that price. We anticipate, therefore, when the improvements intended at the South Crosby mines are carried out, that a large population will be added to the township of South Crosby, and, of course, a home market established for all articles raised by the farmers. Such are the benefits of mines and factories wherever such are put in active operation, and in the hands of the Messrs. Chaffey we know that everything will be done that energy and enterprise can accomplish.

AN OPEN EYE.—The whole book of Job seems to have been chiefly written and placed in the inspired volume to show the value of natural history, and its power on the human heart. I cannot pass by it without pointing out the evidences of the beauty of the country that Job inhabited. Observe, first, it was an arable country. "The oxen were plowing, and the asses were feeding beside them." It was a pastoral country; his substance, besides camels and asses, was 7000 sheep. It was a mountain country, fed by streams descending from them. "My brethren have dealt deceitfully as a brook, and as the stream of brooks they pass away; which are brackish by reason of the ice, and wherein the snow is hid: What time they wax warm they vanish: when it is hot they are consumed out of their place." Again, "If I wash myself with snow-water, and make my hands never so clean." Again, "Drought and heat consume the snow-water." It was a rocky country, with forests and verdure rooted in the rocks. "His branch shooteth forth in the garden; his roots are wrapped about the heap and seeth the place of stones." Again, "Thou shalt be in league

with the stones of the field." It was a place visited, like the valleys of Switzerland, by convulsions and falls of mountains. "Surely the mountains falling cometh to nought, and the rock is removed out of his place." "The waters wear the stones; Thou wastest away the things which grow out of the dust of the earth." "He removeth the mountains and they know not: He overturneth them in His anger." He putteth forth His hand upon the rock; He overturneth the mountains by the roots; He cutteth out rivers among the rocks." I have not time to go further into this; but you see Job's country was full of pleasant brooks and rivers, rushing among the rocks, and all other sweet and noble elements of landscape. The magnificent allusions to natural scenery throughout the book are therefore calculated to touch the heart to the end of time.—*John Ruskin.*

NEW SHIP CANAL IN CANADA.—Our northern neighbors are not only distinguished for great and bold projects, but also for successfully carrying them out. The public works of Canada, in proportion to the number of inhabitants in the provinces, are, by far the greatest on our continent. The ship canal which unites Lake Erie and Ontario is a work without a rival; the great bridge over the St. Lawrence, at Montreal, is the most stupendous work of the kind in the world; and the Grand Trunk Railway, extending from Quebec to Lake Huron, has no peer in any land. In addition to these great works a new one is proposed for uniting Lake Huron, by a ship canal, with the Ottawa river, thence to Montreal, down the St. Lawrence. Such a canal would carry off all the shipping from the upper lakes connecting the great North-west, as it would obviate the long roundabout navigation of Lakes Erie and Ontario. The route of the new ship canal has been surveyed, and the project declared to be practical, at no very great expense. Our railroad lines communicating with the great North-west must look well to their arrangements; or they will find much of their business going by the shorter northern routes in Canada. The Canadian lines of steamers running between Liverpool and Quebec now form a continuous short connection with Europe and our western States.—*Scientific American.*

THE EFFECTS OF SMOKING IN FRANCE.—The remarkable research made by M. Bouisson upon the danger of smoking has attracted the notice of the Academy of Sciences in Paris, and has been rewarded with high praise. The horrors hitherto unknown, or unacknowledged, with which smokers are

threatened, nay more, convicted by M. Bouisson, are sufficient upon bare anticipation to ruin the revenue and the pipe-makers also. Cancer in the mouth M. Bouisson declares to have grown so frequent from the use of tobacco that it now forms one of the most dreaded diseases in the hospitals; and at Montpellier, where M. Bouisson resides, the operation of its extraction forms the principal practice of the surgeons there. In a short period of time, from 1845 to 1859, M. Bouisson himself performed sixty-eight operations for cancer in the lips, at the Hospital Saint Eloi. The writers on cancer previous to our day mention the rare occurrence of the disease in the lips, and it has therefore become evident that it must have increased of late years in proportion with the smoking of tobacco. M. Bouisson proves this fact by the relative increase in the French duties on tobacco which, in 1812, brought an annual amount of twenty-five millions, and now give a revenue of one hundred and thirty millions; almost that attained by the duties on wines and spirits, and far beyond that rendered by those on sugar.

The use of tobacco rarely, however, produces lip cancer in youth. Almost all Bouisson's patients had passed the age of forty. In individuals of the humbler classes who smoke short pipes and tobacco of inferior quality, the disease is more frequent than with the rich, who smoke cigars or long pipes. It becomes evident, therefore, that it is owing more to the constant application of heat to the lips than to the inhaling of the nicotine, that the disease is generated.—With the Orientals, who are careful to maintain the coolness of the mouth-piece by the transmission of the smoke through perfumed water, the disease is unknown. M. Bouisson, whose earnestness in the cause does him the utmost credit, advises a general crusade to be preached by the doctors of every country against the immoderate use of tobacco, as being the only means of exterminating the habit.

TAKING COLD.—A "cold" is not necessarily the result of low or high temperature. A person may go directly from a hot bath into a cold one, or into snow even, and not take cold. On the contrary, he may take cold by pouring a couple of tea-spoonfuls of water upon some part of his dress, or by standing in a door, or before a stove, or sitting near a window or other opening, where one part of the body is colder than another. Let it be kept in mind that uniformity of temperature over the whole body is the first thing to be looked after. It is

the unequal heat upon the different parts of the body that produces colds, by disturbing the uniform circulation of the blood, which in turn induces congestion of some part. If you must keep a partially wet garment on, it would be as well perhaps to wet the whole of it uniformly. The feet are a great source of colds, on account of the variable temperature they are subjected to. Keep these always dry and warm, and avoid draughts of air, hot or cold, wet spots on the garments, and other direct causes of unequal temperature, and keep the system braced up by plenty of sleep, and the eschewing of debilitating foods and drinks, and you will be proof against a cold and its results.

The Coal Area in the United States numbers 196,550 square miles; in Great Britain 5400; France 984; Belgium 510; Spain 200; Russia 100. It is estimated that the British coal fields contain 190,000,000,000 tons of this fuel, computing the coal veins at an average thickness of 35 feet. The North American coal fields, placing the average thickness at 20 feet, have the enormous amount of 4,000,000,000,000 of tons.

A REMARKABLE SPRING.—The Gallatin (Tenn.) *Examiner* says:—Col. James Glover, of the California Overland Mail Company, informs us of the existence of a remarkable spring, on his route, 280 miles east of El Paso, on the road leading to San Antonio. It is fully 150 feet in diameter, and has been sounded to the depth of 8000 feet without finding bottom. The surface is as smooth as that of a mountain lake. It breaks out, running about three miles, when it disappears, and again six miles distant re-appears, forming a stream fifteen to twenty feet deep in some places. It is slightly impregnated with alkali, and contains five varieties of fish. It is called the Leon Hole.

HUMAN ENDURANCE.—During the Arctic voyages in search of Sir John Franklin, it was ascertained what a seaman can do in the way of traveling, carrying, and dragging. The maximum weight proper per man was ascertained to be 220 lbs., and of that weight, 3 lbs. per diem was consumed by each man for food and fuel—namely, 1 lb. of bread, and 1 lb. of meat, while the other pound comprised his spirits, tea, cocoa, sugar, tobacco, and fuel for cooking. Upon this estimate it was found that, for a hundred days' journey, they could march ten miles per diem, and endure with impunity a temperature of 50° or 60° below the freezing point.

KNOWLEDGE, softened with complacency and good-breeding, will make a man equally beloved and respected; but when joined with a severe, distant, and unsociable temper, it begets fear rather than love.

Editorial Notices, &c.

THE WESTMINSTER REVIEW. APRIL, 1860.—New York: Leonard Scott & Co. Toronto: H. Rowsell and the other Booksellers. The contents of this number are: Vedic Religion; Manin and Venice in 1845-9; The Ethics of War; Plutarch and his Times; Austria, and the Government of Hungary; Parliamentary Reform, the Dangers and the Safeguards; Japan; Darwin on the origin of Species; Contemporary Literature; as will be seen, a very interesting table.

THE EDINBURGH REVIEW FOR APRIL, 1860.—New York: Leonard Scott & Co. Toronto: H. Rowsell. The Articles are: Commercial Relations of England and France; The Youth of Milton; The Expense of Public Education in England; English Local Nomenclature: Civil Correspondence and Memoranda of the Duke of Wellington; De Broglies' Church and Roman Empire; The Alleged Shakespeare Forgeries; Darwin on the Origin of Species; France, Savoy and Switzerland.

We have received the American reprints of these valuable Quarterlies, through Mr. Rowsell of this city. The price of either Review is \$3 per annum; any one of the Reviews and Blackwood's Magazine, \$5 per annum; the four Reviews and Blackwood \$10 per annum.

PROFESSOR BUCKLAND, of Toronto University, our accomplished and highly esteemed collaborator in the conducting of the *Agriculturist*, took his departure from Quebec on the 19th of the present month (May) in the steamship Bohemian, for England. He designs spending the summer in Europe, and will visit the great agricultural cattle and implement shows in England.

Scotland, Ireland and France. We hope to be favored with some of the results of his observations fortnightly, for the benefit of the readers of the *Agriculturist*.

THE AGRICULTURIST.—The enlarged edition with which we commenced on the 1st April being again exhausted, we have further increased the number of copies printed from 15th May, and placed the price from that date to the end of the year at 30 cents, with bonus at the same rate (ten per cent.) as formerly, being 11 copies for three dollars. On the 1st July we shall again enlarge the edition, and place the price at 25 cents, with bonus in the same proportion.

THE AGRICULTURIST POST FREE.—We understand that some of our Toronto subscribers were charged postage on the last number of the *Agriculturist*, by mistake of the clerks in the Post Office. On inquiring of Mr. Lesslie, the Postmaster, we were assured by him that the amount should be refunded to the parties.

GLADDING'S HORSE PITCH FORK.—This is a very useful labor saving implement, for unloading hay from the wagon into barn mows and lofts. To unload by horse power, the fork is connected with a block and tackle attached to the ridge, the falling brought down to a match block at the door, to which the horse is fastened, and as he walks off in the ground, the fork goes up with almost a quarter of the load at once. With the Horse Fork a load of hay may be unloaded in much less time, and with much less labor, especially in a high mow, than by hand. Mr. Stephen Bullock, who manufactures the article at Columbia Crossroads, Bradford Co., Penn., sends us a notice for insertion. It is too long for our space, but we can recommend the article to any who would like to try the experiment of unloading hay by horse power. The price of the Horse Fork, with Rope and Chalks, is \$12.00.

Market Intelligence.

TORONTO MARKETS.

MONDAY, May 28, 1860.

The receipts of grain at this point, Saturday, and to-day were very light. Scarce'y any change in former prices is noticeable. The following are the quotations:—

FALL WHEAT \$1 30 a \$1 45. Spring wheat, \$1 10 a \$1 13.

PEAS 55c a 64c.

OATS 32c a 34c.

BARLEY nominal at 55c a 60c.

FLOUR inactive and dull, lower grades declining. Superfine No. 1 at \$5 00 a \$5 05; do No. 2 at \$4 60 a \$4 75; fancy fall wheat at \$5 85 a \$5 50; fancy spring wheat at \$5 25 a \$5 30; extra superfine or double extra, \$6 80 a \$6 50.

BUFFALO MARKETS.

BUFFALO, May 28.

GRAIN.—Wheat dull and heavy. The only sale reported this morning was 2,500 bush. Canada Club at \$1 07. Corn in moderate demand and market lower. The sales of the morning include 17,000 bushels Illinois, not strictly prime at 50c, and 12,000 bushels prime sample Illinois yellow at 53c.

OATS.—Market lower with an improved demand; sales this morning 3,000 bushels Canada at 34c, and 11,000 bushels do. free five days, at 34½c. Other grains nominal.

PROVISIONS heavy. Mess pork firmer and held to-day at \$17.

NEW YORK MARKETS.

New York, May 28.

FLOUR.—Receipts 13,191 barrels; sales 9,000 barrels. State and Western less active but without material change; superfine State \$5 10 a \$5 15; extra State \$5 20 a \$5 25; round hoop Ohio \$5 80 a \$6; superfine Western \$5 10 a \$5 15; common to good extra Western \$5 25 a \$5 50; Southern quiet and unchanged; sales 600 barrels at \$5 75 a \$6 25 for mixed to good, and \$6 30 a \$7 75 for fancy and extra. Canadian quiet; sales 400 barrels at \$5 30 a \$7 40 for extra.

GRAIN.—Wheat drooping; sales 12,000 bushels at \$1 25 for Milwaukee Club. Corn heavy and lower; sales 65,000 bushels at 53½c a 60c for unsound, and 64c a 65c for sound. Oats steady; Southern and Jersey 38c a 40c, Northern and Western 39½c a 42c.

PROVISIONS—Pork firm; sales small at \$17 50 for old mess, and \$17 50 a \$18 for new prime; \$12 50 for old, and \$13 62 for new. Lard firm; sales small at 11½c a 11½c for barrels.

BEDDING OUT PLANTS.

Mr. J. FLEMING, Seedsmen & Florist, Yonge Street, Toronto, offers for sale 20,000 beautiful Bedding and other Greenhouse Plants, including the finest varieties of Verbenas, Petunias, Heliotropes, and other Bedding-out Plants, at \$1 per dozen. The Plants are well grown, and will bear transportation to any part of the country.

For \$2, remitted free of postage, Mr. Fleming will send free by Express, to all stations on the Great Western Railway, and by Grand Trunk West to Sarnia, and East to Brockville, also to stations on the Northern Railroad, one Basket of Plants, carefully packed, comprising 6 Verbenas, 2 Geraniums, 2 Heliotropes, 2 Fuschias, 2 Petunias or Dahlias, with descriptive catalogues.

SEEDS.

Mr. J. A. Simmers, of the Toronto Seed Store, corner of Front St. and West Market Place, in returning his sincere thanks for the patronage so liberally extended to him for the past four years, since commencing the business, would beg to direct the attention of his friends and the public, to his large and well assorted stock of Fresh Garden, Field and Flower Seeds, all of which have been procured with his usual well-known care and practical knowledge from parties in Europe and America, personally known to him; he would therefore venture to say that the quality of all his Seeds cannot be surpassed in this Country or anywhere else.

Farmers and Gardeners are requested to examine before purchasing elsewhere, for it is their interest particularly to procure the best of seed to be had, and SPURIOUS SEEDS are often offered by unscrupulous parties under pretended inducements, which if depended on, may prove fatal to crops, on which purchasers depended for a living.

No seed is sold in Mr. Simmers' establishment without first being carefully tested.

Large supplies of all the leading varieties of the different kinds of seeds most suitable to this climate, are constantly kept on hand.

Catalogues with full directions for sowing and raising vegetable and other seeds, may be had gratis, on application; and Mr. Simmers being a practical gardener of 19 years' experience, he will always feel happy to give all necessary information, personally, regarding the mode of cultivation, selection of varieties, &c., gratuitously to any of his customers,

For the convenience of those who wish to stock a small Garden with Vegetables and Flowers, but are unacquainted with the proper quantities for that purpose, he has collections ready put up. Price of Collection of Garden Seeds, \$2; Flower Seeds, \$1.

HUNGARIAN GRASS.

This valuable grass was introduced into the county of Lambton three years since by the County Agricultural Society, and has given very great satisfaction to all who have tried it. Its ordinary yield is four tons to the acre, and in some cases six tons have been cut. Cattle and all kinds of Stock are very fond of it, preferring it to Timothy. Its fattening qualities too are believed to be superior to those of any other known grass.

Archibald Young, Esquire, Treasurer of Lambton County Agricultural Society, has obtained a quantity, and will send to any person making a postpaid application, sufficient to sow one-third of an acre for One Dollar, or One Bushel for Five Dollars.

All seed will be sent free of charge.

AYRSHIRE CATTLE.—Patrick R. Wright, Esq., Cobourg, C. W., breeder of Ayrshire Cattle, Sheep, &c., has several young Bulls and Heifers for sale. His herd is well known as one of the best in Canada West, and his terms of sale are liberal.

Full Pedigree of all animals—U. C. Stock Register.

The Agriculturist,

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