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OFFICIAL SERIES.

# THE FARMERS' JOURNAL,

AND

# Transactions of the Board of Agriculture

OF

# LOWER CANADA.

VOL : XI. APRIL, 1859. NO. 8.

CONTENTS.

(*General.*)



☞ All communications to be adressed—If for the French Journal, to J. PERRAULT, Esq., Secretary-Treasurer and Editor :—If for the English Journal, to JAMES ANDERSON, Esq., F. S. S. A., &c., &c., Editor, Board of Agriculture, Montreal.

N. B.—Communications received before the 15th of each month will appear in the ensuing Number.

*"O! fortunatos nimium, sua si bona norint,*
*Agricolas! quibus ipsa, procul discordibus armis,*
*Fundit humo facilem victum justissima tellus."*
VIRG. GEO.

MONTREAL

PRINTED BY DEMONTIGNY & C° PROPRIETORS & PUBLISHERS

18 & 20, ST. GABRIEL STREET.

Subscription One Dollar per Annum.

# APRIL, 1859.

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ENGRAVINGS.

## APRIL.

This Month is generally distinguished by high winds and changeable weather. We think it favourable to agriculture, when the ground is protected with a good covering of snow to the end of March, and the sooner we have spring after the first of April, the better—as it gives us an early seed time. Wheat and oats sown the first week of April have often produced abundantly. If fall wheat were sown in August, and well covered, it might perhaps, be successfully cultivated. The wheat plant is very hardy ; and if early sown and well rooted,and the soil well drained, it might suffer little injury. The danger arises from the soil thawing in the spring, when it is liable to be thrown out, and many of the fibres broken and torn asunder by the alternate freezing and thawing--the contraction and expansion of the soil. The steady winters of Lower Canada are more favourable in many respects, than the changeable winters of Upper Canada and the States ; and unseasonable frosts in spring and fall are not so common. Sowing should commence the moment the land is ready for working ; and in this advantage do we reap the benefit of thorough drainage. Oats, peas and beans may be sown as early as the soil can be harrowed, and patatoes should be planted early. Stock are much stinted in food in July and August, and we should prepare in good time against any accidental loss, by sowing a fair proportion of mowing crops for soiling, when the pastures begin to fail—clover, Alfalfa or Lucerne, Indian Corn, Rye sown thick and cut down green, Alsyke or Swedish Clover, or Buckwheat. Even a small breadth of such crops cut down, and fed out in the latter end of July and August, would be of great advantage. A close sward of grass is less easily effected, but the common pastures of this country, when not carefully seeded down, are sure to suffer severely from drought. The sowing of barley, the best crop with which to sow grass seeds, may be deferred till May—until warm weather obtains ; and excellent crops have been ripened without a shower. Wheat sowing has been generally differed till the 15th or 20th of May, as early sown crops have suffered so severely from the fly. All seeds should be carefully washed or pickled, and dried with lime or ashes, as we recommended in a former Number of the Journal. We would again recommend thorough draining. We are, and ever will be its conscientious and persistent advocates But wet soils cannot be well or timeously ploughed—they cannot be properly harrowed—the seed perishes—at least a large proportion—the manure sours, or remains inactive—fly and rust prevail—the harvests are late and deficient. By accidental favouring circumstances, the farmer may reap a chance, or *stolen* crop—and a good one—but he cannot succeed in raising good crops regularly. Unless in exceptional, and very adverse seasons, good crops will infallibly result from good cultivation, and these exceptional seasons are, fortunately, of rare occurence in Canada. We are convinced too, that as improved cultivation becomes fashionable, the drill culture will generally supersede the broadcast system. But this,

of course, will be a work of time. The season for activity is now upon us. Let us be prepared for it at all hazards.

Our working season is generally so short, that labourers at call when required, and money to pay them, are essentially necessary ;—for without these, we will not have a fair chance of success. Unless work be performed in due season, we are certain to incur a loss ; and the farmer is well off, who has the command of labour in his own family. There is too frequently a great waste of seed, from want of thorough draining and careless covering—in the first case perishing from drowning—in the second, being filched away by birds and vermin, or perishing from exposure. The sowing of wheat should not be delayed beyond the 20th of May, and, if avoidable, this period would be considered late—the young plants often suffering severely from the heat and droughts which occur about this time. But wheat coming into ear between the 25th of June and 15th of July, will probably be in a greater or less degree damaged by the fly. Indian Corn generally answers best when planted from the 20th to the 21st of May.

The sooner all the manure required is got into the soil, if sufficiently dry, the better. Flax is well adapted for a deep clay soil, if properly drained and fertile. The land ought to be perfectly pulverised, and thoroughly cleaned—the seed sown early in May—the earliest sown generally producing the best crop, and if the soil should be somewhat, but not injuriously moist, the seed will vegetate the more quickly.

Two bushels an acre of good clean seed ought to produce a crop neither too thick nor too thinly planted. Hemp does not thrive well on a stiff soil, and strong rich land produces a coarse quality—so that cultivators are regulated in their choice of soil by the description of Hemp they wish to raise. When planted for cordage, it should be grown in drills—producing a strong coarse fibre ;—when for weaving, broadcast, when the stems grow up fine and slender in proportion to their proximity. Three bushels of seed may be used when sown broadcast, and, in drills, a bushel and a half will be sufficient. Great vigilance is necessary to keep off the birds.

We must now strive to get our land in the best condition for planting, the moment the weather will permit. We must prepare manure abundantly for the corn and patato crops. Spring rolling of meadows is useful, rendering the surface smooth for mowing. Plaster may be beneficially sown early in spring. In turning over greensward neatly, we should cut the furrow slices at least one half wider than thick.

We would again urge on our readers the great benefit to be derived from Root crops. The amount of Cattle food thus obtained, and the great benefit arising from feeding them out with dry straw in winter, is incalculable. They will exceed in value a good crop of hay from the same extent. We must continue to feed until the grass has a considerable start in the pastures. Cattle injure the young pastures much, if allowed to range over them, trampling and pulling up the young roots before the ground has had time to beeome settled and firm.—Cows with calf should have a bountiful allowance. Reclaim your lands by thorough draining—making them the most valuable, probably, of the whole farm. Take

care to have sufficient seed of all kinds provided—of the best quality, and prepare it carefully by washing and pickling, drying it with lime or wood ashes before committing it to the ground. Continue to erect and repair fences, clearing the surface from stones, stumps and obstructions, when time allows. Have your working stock in prime order. Cart out and turn over manure heaps. Take care not to allow waste by washing or otherwise. Take care not to turn over clay soils in a wet state, but let ploughing go on uninterruptedly, and endeavour yearly to gain in depth where a fertile soil will permit of it. Be careful in selecting your potato seed of hardy varieties, hitherto free frem desease. By and by, your poultry will require less animal feeding, and if allowed a wider range, will collect for themselves vast numbers of worms, grubs and insects, Give grain and roots, the latter moderately, if you can spare them to ewes about to lamb.

The pens devoted to your swine, should now show a large encrease. The dams should receive a large supply of liquid food, with salt, and a little meal of some kind occasionally, when procurable. See that your working gear is all in good order, carts, wagons, mowing machines, rakes, and implements of all descriptions There will be no time to lose with such preliminaries in the working season.

J. A.

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## NUMBERS OF SQUARES IN AN ACRE.

The following table is convenient for reference when desiring to know the number of trees or plants which will occupy an acre when set out at given distances apart. It will also assist in determining the amount of manure to be applied to a hill, when distributing a certain number of pounds or loads upon an acre. *An acre contains* 43,560 *square feet*. It is usually better to keep this number of squares by dividing this sum (43,560) by the number of feet inclosed by four hills.

| Distance apart each way. | No. of sqrs. or hills. | Distance apart each way | No. of sqrs. or hills. |
|---|---|---|---|
| 1 foot | 43,360 | 12 feet | 300 |
| 1½ feet | 19,360 | 15 " | 190 |
| 2 " | 10,890 | 18 " | 134 |
| 2½ " | 6,969 | 20 " | 108 |
| 3 " | 4,840 | 22 " | 90 |
| 3½ " | 3,535 | 25 " | 69 |
| 4 " | 2,722 | 30 " | 48 |
| 5 " | 1,742 | 35 " | 35 |
| 6 " | 1,210 | 40 " | 27 |
| 8 " | 680 | 45 " | 21 |
| 10 " | 435 | 50 " | 17 |

If the rows are three feet apart each way, there will be three times three feet or nine feet in each square, and 43,560 devided by 9 gives 4840 squares, trees, or hills. If the rows be two feet apart one way and three feet the other, the enclosed space will be two times three, or 6 feet. 43,560 devided by six, gives 7260 as the number of squares. In rows 3 by 3½ feet there are 10½ feet. 43,560 devided by 10½, gives 4148 squares; and so for other distances.

This table would not be quite accurate if allowance be made for rows around the entire outside, as in that case there would be one more row each way than the number of squares. Thus, in a square plot of one acre, with the rows three feet apart each way, there would be, say 69 rows each way. As two of the corner trees would count both ways, we must add to the 4840 hills, (in the table,) 4 times 69 hills, less 2, or 274, making the total number 4114. These figures are illustrative only, and not exact, as the precise number of rows in the instance given is a little over 69½.—*American Agriculturist.*

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## MANURES.

There are comparatively few farmers in this country, who are aware how great is the loss of substance during unchecked fermentation. They have little regard to the collection, the fermentation, the preservation, and the economical application of manures. During unchecked fermentation, nitrogen in the form of ammonia, may be detected, passing off in large quantities—at the sametime, that carbonic acid and other substances are liberated profusely. It is well to preserve the decaying substances from wasteful exposure to air and moisture when practicable, and to sprinkle gypsum occasionally over the surface of the yard and heaps, to serve in arresting the escape of ammonia. It is now well known by all experienced farmers, that one of the most advantageous methods of applying manures is by making them into a compost beforehand,—thus supplying absorbent materials, so as to take up and prevent the escape of any of the more valuable volatile portions ; and refuse of all kinds should be added in order to hasten the decomposition of substances which, if not so applied, would decay but slowly. Fish refuse we have already announced, is about to be employed on a large scale in the preparation of a valuable artificial manure, both for home use, and for exportation ; and it will no doubt, from the comparative moderate price at which it will be produced, supersede guano in foreign markets. It will form a valuable and important export. The subject of liquid manure ought to engage more of the attention of the farmers of all extents. Farmers are now convinced that it will not do to let a large portion of the valuable washings of their manure escape to the road, or be wasted by evaporation. All that is wanted, is to provide some cheap tight receptacle, to receive and retain the liquid. For a trial it might be constructed of old boards or planks packed with clay behind—so as to be thoroughly tight and retentive. After this rude trial, the farmer will lose no time in procuring a more perfect and permanent receptacle of brick or stone. The liquid may be pumped out and used with a water cart, or simply pumped upon the compost heap—others prefer to throw ashes, plaster, and other absorbents into the manure tank to soak up the liquid.

It is common too, so as to prevent an overflow from surplus water finding its way into the the tank, and to prevent washing of the manure heap, to provide drains to carry off the water dropping from the eaves of the buildings. A tank 10 feet long, and 6 feet wide, would suit many farmers, and would give little

trouble in the construction. Such should be covered over, and it is a good practice, to add occasionally a small portion of sulphurie acid or oil of vitriol, to prevent the escape of ammonia ; which may be had at 2½ to 3 cts, per lbs. when sold by the carbon. If the manure heaps are of large size and perfectly made, they will suffer less from washing, as the rain will soak into them, instead of running off, but if located on a slope, the loss will be large. Manure is often bleached by such neglect, so as to lose half its value ; while the valuable washings escape and run to waste—at once a nuisance and discredit to the thriftless owner.

Next a thoroughly drained and pulverised soil, a plentiful supply of organic matter must be present, or artificially supplied to the soil to ensure luxuriant vegetation. This matter must be in a state of progressive decay.

Good and clean cultivation is indeed all important, but it will avail little without a fertile soil, and where fertility is deficient, it must be created and kept up by a periodical supply of manure. Manures created chiefly from the decay of decomposing animal and vegetable matters, or combined with other substanees—the result of such decomposition—supply and contribute to give new life and vigour to the vegetation ; and this loathsome and putrid mass contains all the elements of beauty and loveliness—all that can gratify the palate, or delight the eye—awaiting the magical transmutation of nature, to become vitalized and converted into the choicest of her beautiful forms ; and this alternate decomposition and resuscitation has been continued since the beginning of time, and will be as enduring as time itself—and we are assured since time began, that a singly created atom has never perished, but has been merely changing place—the only change being occasionally a temporary conversion or transmutation—now forming part of one substance—then of another—thus making the wide cuircuit of nature silently and progressively, and patiently obeying her fixed and irrevocable laws.

Manures possess different degrees of power—partly from inherent richness and partly from the rapidity of their action, and power of communicating their ingredients These are given off in liquid solution, or in the form of gass—the greater proportion being taken up by the roots—though a portion may be derived from the atmosphere.

The great secret in saving and mannfacturing manures, consists in retaining to the best purpose these perishable soluble and gaseous portions. We have already said that probably one half is lost by neglecting to preserve the drainage of our farm yards. If retained by a copious application of absorbent material whether in the court, or the liquid manure tank—and nothing is better than bog earthfor the purpose,—there can be no doubt that two acres could be manured for one—and that abundantly. The muck should be dried before application—when it would imbibe five-sixths of its own weight of fertilizing liquid. What an incalculable amount of money is yearly lost by the neglect of our hard working farmers. But *well directed* labour, alone returns abundantly. And time lost in saving and accumulating manures—in thorough drainage and good ploughing and harrowing affords a certain—a large and a direct profit. The farmer should never

forget that every organic substance—every particle of animal and vegetable matter upon the farm is a manure. All excrements, solid or liquid ;—decaying vegetables—turf of grass lands ; mud and peat ; fallen leaves ; decaying bodies of animals ; every organic substance, animal or vegetable, should be carefully prepared or applied to aid reproduction at the earliest opportunity. Nature never intended that anything should be lost. She is our best preceptress.

Much valuable manure is constantly lost from depreciation, by heaping it together to ferment, and heat, and rot ; and as it decays there is too often a wastefull loss of valuable ingredients in the gaseous form, and these elementary ingredients, the first to escape, are precisely those most valuable as food or stimulants to the roots of plants.

As a general rule we would say *first*, preserve all the animal manures as nearly unchanged by heating as possible ; *second*, let them be kept under cover, secure from washing ; and third, let a regulated addition of muck, plaster, and ordinary soil be added, and intimately incorporated to absorb the various ingredients as they are freed and given off during the progress of decomposition. Muck, swamp and bog mud, may be brought into partial fermentation by mixing with them a small portion of easily fermenting farm yard manure, or, in default of this, a portion of alkaline substances, such as ashes, lime, potash, and this quantity will depend on the haste required, and the state of the material to be prepared. The alkalies reduce the muck or bog earth—the latter when composted with farm yard dung, acts as an absorbent, and becomes itself a valuable manure. We should take especial care that all dry long straw and coarse materials of all kinds should be so composted with excrements, or saturated with fertilizing liquid, as to fit it to be become an enriching manurial contribution when buried by the plough in the soil.

Manures in a forward state of decay should be well incorporated with the soil immediatelypreceding to the deposition of the seed of the crop, they are intended to benefit. If there be not time, they can be applied as a top dressing. But unless in the case of soluble manures, before rain there is always a great loss in this mode of application.

Unfermented coarse manures may be mingled with the soil long before their effect is desired.

Let it be borne in mind that, with an animal, so with a plant,—the first food ought to be found ready prepared. The food must be abundant, nourishing and stimulating, to favour the rapid progress of organic development—expanding the stem, leaves and roots, and preparing them to appropriate with vigour, largely and even more quickly, abundant surplus of nutriment. If we wish to ensure a luxuriant crop, we must first secure a luxuriant and vigorous germ. In rich and fertile soils, the absence of abundant nourishment in the earlier stages of vegetation may be less felt ;—but in the poorer soils, we must by, a careful choice of seed samples and abundant mauuring, seek to supply artificially what nature has witheld.

Composition of solid stable manures :

(Richardson.)

| | |
|---|---|
| Carbon | 37.40 |
| Hydrogen | 5.27 |
| Oxygen | 25.52 |
| Nitrogen | 1.76 |
| Ashes | 30.05 |
| | 100.00 |

Composition of ashes of stable manure :

| | |
|---|---|
| Potash | 3.22 |
| Soda | 2.70 |
| Lime | 0.34 |
| Magnesia | 0.26 |
| Sulphuric acid | 3.27 |
| Chlorine | 3.15 |
| Silica | 0.04 |
| Phosphate of lime | 7.11 |
| Phosphate of Magnesia | 2.26 |
| Phosphate of Oxide of Iron | 4.68 |
| Carbonate of lime | 9.34 |
| Carbonate of Magnesia | 1.63 |
| Silica | 27.01 |
| Sand, &c. | 34.96 |
| | 100.00 |

Composition of liquid manure :

(Bossingault.)

| | Horse. | Cow. |
|---|---|---|
| Urea | 31.00 | 18.48 |
| Hipurate of Potash | 4.74 | 16.51 |
| Lactate of Potash | 20.09 | 17.16 |
| Carbonate of Magnesia | 4.16 | 4.74 |
| Carbonate of lime | 10.82 | 0.55 |
| Sulphate of Potash | 1.18 | 3.60 |
| Chloride of Sodium | 1.74 | 1.52 |
| Silica | 1.01 | |
| Water, &c. | 910.76 | 921.32 |
| | 1,000.00 | 1,000.00 |

*Urea*, the principal organic ingredient of Urine consists of :

| | |
|---|---|
| Carbon | 20.0 |
| Hydrogen | 6.6 |
| Oxygen | 46.7 |
| Nitrogen | 26.7 |
| | 100.00 |

It is, therefore, very rich in Nitrogen. In decomposing, it changes into carbonate of ammonia, which rapidly escapes, unless prevented by some absorbent material, as charcoal, or by the chemical action of sulphuric acid, or gypsum.

From the above tables, we see that the liquid manure contains large quantities of potash and soda ; and that a large portion is *Urea*, very rich in Nitrogen, and very similar to the richest ingredients of Guano. Johnston estimates 1,000 gallons of urine of the cow as equal to a hundred weight of Guano.

In the solid manure, we remark there is little Nitrogen—so necessary in producing the richer and most nutritious parts of the grain and root crops—but we find it present in great abundance in the liquid manure. The other organic portions are less easily destroyed. In the ashes or inorganic part, we find all the inorganic constituents of fertile soils.

We have already cautioned our friends against waste—pointing out the simple means by which it is to be avoided.

The mannre should be covered when practicable ;—the manure heap should stand on a level and hollowed surface ; and when carted to the field, should be covered as soon ae possible by the soil, or if standing in the heap should be covered with muck, peat or loam as an absorbent ; gypsum should be sprinkled when procurable to arrest and fix the ammonia ; the liquid manure should be collected as we have already advised in pits made for the purpose,—they may be of cheap construction at the first to evidence the importance of the recommendation—so sure are these temporary make shifts to be supplied by permanent receptacles for the purpose. Absorbent materials and gypsum, or sulphuric acid, when procurable, should be thrown into these for a similar purpose to that intended in the application to manure heaps.

No subject is more deserving of attention to the practical Farmer than the saving, collecting, and judicious application of manures ; and we may return to this subject at a future time. Meantime we have endeavoured to be plain and practical in the few seasonal remarks whe have given above. J. A.

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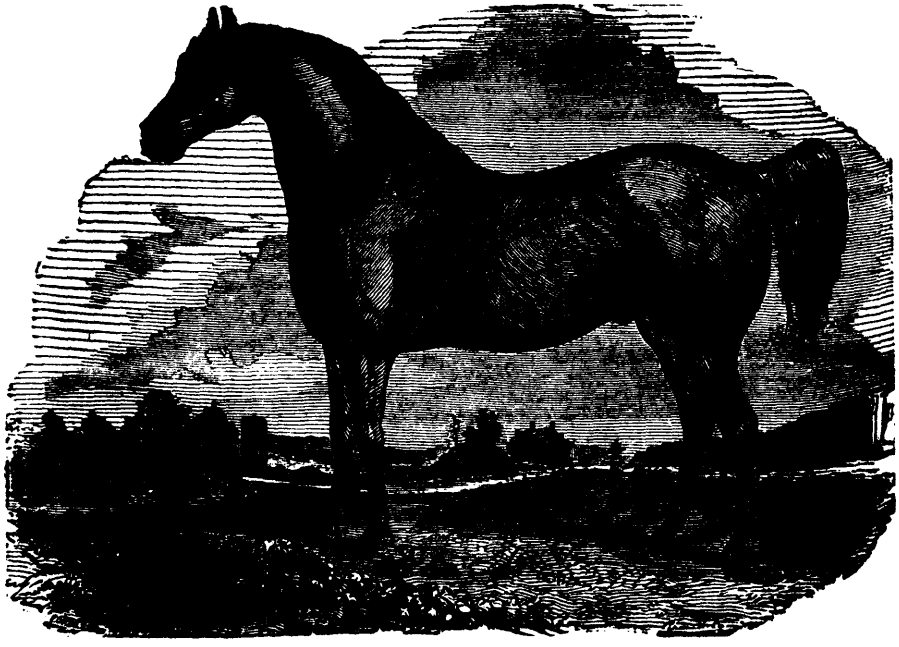
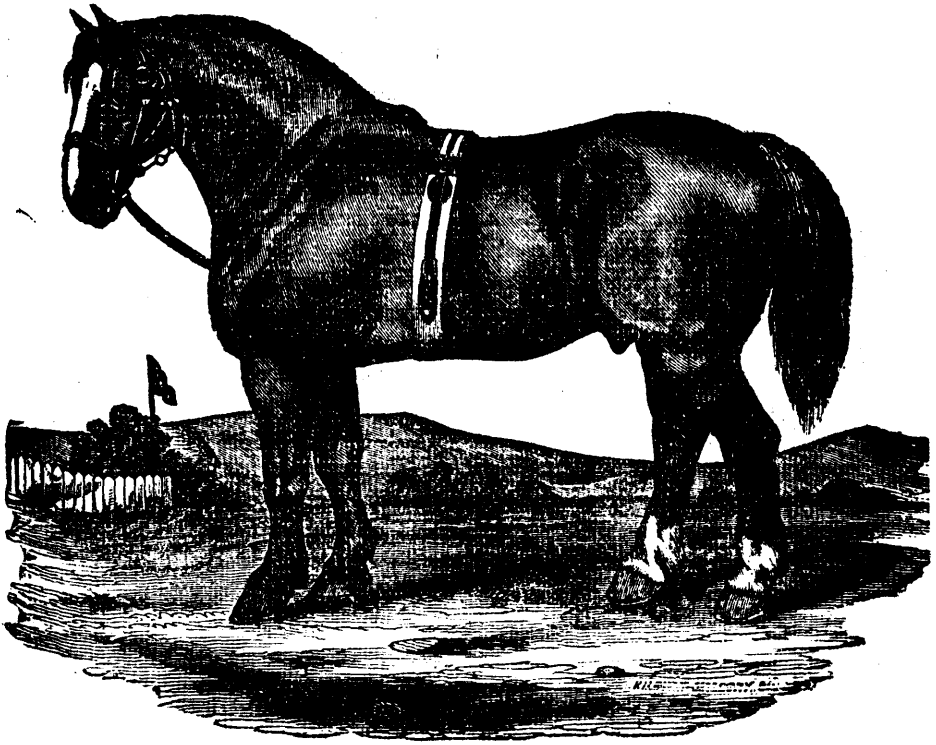


PORTRAIT OF HORSE.

(See Transactions of Board of Agriculture, No. 5, Chapter Second, Page XXV.)



PORTRAIT OF HORSE.

(See Transactions of Board of Agriculture, No. 5, Chapter Second. page XXV.)

## FARM MANAGEMENT.

Why is it that different men with like opportunities, variously fail or succeed, after many years of equal labour. One has largely encreased his capital—the other has all the while deteriorated, and finally becomes a ruined man. The latter frequently comforts himself with the exclamation, Oh! farming is a bad business—a most unrenumerating occupation! He charges on the occupation what has arisen entirely from his own want of method and diligence.

Instead of adopting into practice each improved method of cultivation—instead of selecting the best seeds, and the best stock to be procured in the market—instead of renovating and repairing his fences—instead of devoting the most scrupulous attention to minute details—for the farmer's profits are consituted, with a few exceptions, of a mere aggregation of small profits, or apparent trifles—he is contented to get through his work in his own slovenly fashion, and considers it beneath his notice to bestow attention on such little matters:—in short he leaves all such to take care of themselves. So that his fence and build-

ings become dilapidated—his stock deteriorates yearly—his crop fails—his pastures die off—his ditches silt up—his drains become choaked—his field implements become imperfect and comparatively useless—his work is not performed in due season—his seedtime is delayed till too late—his harvest is consequently late and uncertain—and all these neglects cooperate to effect his speedy ruin—compelling him in a very few years to take refuge in bankruptcy and disgrace. Now how is all this to be avoided? The means are plain and simple. He must be patient, industrious, persevering—attentive to the most minute details—careful of small profits—he must not trust the management to others—he must be able to conduct and participate in the labour of the farm himself, and must be constantly at the head of matters, and he must not be tempted to desert his post by the thousand and one attractions which afford so many convenient excuses to a very considerable number of those, who would fain rejoice in the name and style of Practical Farmers.

The following extracts we consider valuable, as giving a statement of the conditions considered necessary to success across the lines; and it will afford our Readers an opportunity of comparison with their own standard. In forming our estimate of anything, we are greatly aided when opportunities are afforded us of judging by comparison, especially when the instances presented have many conditions approximating, or in common. J. A.

*Capital.*—The first requisite in all undertakings of magnitude, is to "count the cost." The man who commences a building, which to finish would cost ten thousand dollars, with a capital of only five thousand, is certainly ruined, as many farmers are, who, without counting the cost, commence on a scale to which their limited means are wholly inadequate. One of the greatest mistakes which young farmers make in this country, in their anxious wish for large possessions, is not only in purchasing more land than they can pay for, but in the actual expenditure of all their means, without leaving any even to *begin* the great work of farming. Hence, the farm continues for a long series of years poorly provided with stock, with implements, with manure, and with the necessary labor. From this heavy drawback on the profits of his land, the farmer is kept long in debt; the burthen of which not only disheartness him, but prevents that enterprise and energy which are essential to success. This is one fruitful reason why American agriculture is in many places in so low a state. A close observer, in travelling through the country, is thus enabled often to decide from the appearances of the buildings and premises of each occupant, whether he is in or out of debt.

In England—where the enormous taxes of different kinds, imperiously compel the cultivator to farm well, or not farm at all—the indispensable necessity of a heavy capital to begin with, is fully understood. The man who merely *rents* a farm there, must possess as much to stock it and commence operations, as the man who *buys* and pays for a farm of equal size in the best parts of western New-York. The result is, that he is enabled to do everything in the best manner: but is not compelled to bring his goods prematurely to market, to supply his pressing wants; and by having ready money always at command, he can perform every operation at the very best season for product and economy, and make purchases, when necessary, at the most advantageous rate. The English farmer is thus able to pay an amount of tax, often more than the whole product of farms of equal extent in this country.

The importance of possessing the means of doing everything at exactly the right season, cannot be too highly appreciated. One or two illustrations may set this in a clearer light. Two farmers had each a crop of rutabagas, of an acre each. The first, by hoeing his crop early, while the weeds were only an inch high, accomplished the task with two days work, and the young plants then grew vigourously and yielded a heavy return. The second, being prevented by a deficiency of help, had to defer his hoeing one week; and then three days more, by rainy weather, making ten days in all. During this time the weeds had sprung up six to ten inches high, so as to require, instead of two days, no less than six days to hoe them; and so much was the growth of the crop checked at this early stage, that the owner had 150 bushels less on his acre, than the farmer who took time by the forelock. Another instance occurred with an intelligent farmer of this state, who raised two fields of oats on land of similar quality. One field was sown very early and well put in, and yielded a good profit. The other was delayed twelve days, and then hurried: and although the crop was within two-thirds of the amount of the former, yet that difference was just the clear profit of the first crop; so that with the latter, the amount yielded only paid the expenses.

Admitting that the farm is already purchased and paid for, it becomes an object to know what else is needed, and at what cost, before cultivation is commenced. If the buildings and fences are what they should be, which is not often the case, little immediate outlay will be needed for them. But if not, then an estimate must be made of the intended improvements and the necessary sum alotted to them. These being all in order, the following items, requiring an expenditure of capital, will be required on a good farm of 100 acres of improved land, that being not far from the size of a large majority in this state. The estimate will of course vary considerably with circumstances, prices, &c.

*Live Stock.*—This will vary much with the character and quality of the land, its connection with market, &c., but the following is a fair average, for fertile land, and the prices an average for different years, although lower than they have recently been :—

| | |
|---|---|
| 3 horses, at $100, $300—1 yoke of oxen, $100..... | $400 |
| 8 milch Cows, $25, $200—10 steers, heifers and calves, $100,..... | 300 |
| 20 Pigs, $5, $100—100 sheep. $2, $200,..... | 300 |
| Poultry, &c.,..... | 10 |
| | $1010 |

*Implements.*—To farm *economically*, these must be of the best sort, especially those which are daily used. A plow, for an instance, that saves only *one-eight* of a team's strength, will save an hour a day, or more than *twelve* days (worth $24,) in a hundred—an amount, annually, that would be well worth paying freely for in the best plow. A simple hand-hoe,—so well made that it shall enable the labourer to do one hour's more work daily, will save twelve days in a hundred,—enough to pay for many of the best made implements of the kind. These examples are sufficient to show the importance of securing the best.

| | |
|---|---|
| 2 plows fitted for work, and 1 small do., $23—1 cultivator, $7,..... | $32.00 |
| 1 harrow, $10—1 roller, £10—1 seed planter, $15..... | 35.00 |
| 1 fanning mill, 1 straw cutter, $40—1 root slicer, $28,..... | 68.00 |
| 1 farm wagon, 1 ox-cart, 1 horse-cart, with hay-racks, &c.,..... | 180.00 |
| Harness for three horses,..... | 50.00 |
| 1 shovel, 1 spade, 2 manure-forks, 3 hay-forks, 1 pointed shovel, 1 grain shovel, 1 pick, 1 hammer, 1 wood saw, 1 turnip-hook, 2 ladders, 2 sheep-shears, 2 steelyards, (large and small,) 1 one-half bushel measure, each $1,..... | 20.00 |

| | |
|---|---|
| 1 horse rake, $8—2 grain-cradles, 2 scythes, $12 | 20.00 |
| 1 wheelbarrow, $5—1 maul and wedges, 2 axes, $6.50, | 11.50 |
| 1 hay-knife, 1 ox-chain | 6.00 |
| 1 tape line, for measuring fields and crops, | 2.00 |
| 1 grindstone, $3—1 crowbar, $3—1 sled and fixtures, $30, | 35.00 |
| Hand-hoes, hand-rakes, baskets, stable lantern, currycomb and brush, grain-bags, &cr, say | 15.00 |
| | $474.50 |

The addition of a subsoil plow, sowing machine, mower and reaper, threshing machines, horse-power for sawing wood, cutting straw, &c., would more than double the amount, bnt young farmers may hire most of these dnring the earlier periods of their practice. A set of the simpler carpenter's tools, for repairing implements in rainy weather, would soon repay their cost.

Besides the preceding, the *seeds* from the various farm crops, would cost not less than $75 ; hired labor for one year, to do the work well, would probably be as much as $350 ; and food for maintaining all the domestic animals from the opening of spring until grass, and grain for horses till harvest, would not be less in value than $100 ; $525 in all.

| | |
|---|---|
| For domestic animals, | $1010.00 |
| " implements, | 474.50 |
| " seeds, food and labor, | 525.50 |
| | $2009.50 |

Thus, two thousand dollars are required the first year for stocking and conducting satisfactorily the operations of a huudred acres of good land—a much larger sum than is commonly supposed to be necessary, but none too much for the most profitable management. If this sum cannot be had, let the farmer purchase but fifty acres, so as to leave him a larger surplus of money, that he may till his land *well*.

*Size of Farms.*—The great loss from a superficial, skimming culture, has been fully shown. Take the corn-crop as an illustration. There are many whose yearly products per acre do not exceed 25 bushels. There are others skilled in good management, who obtain as an average, not less than 80 bushels per acre. Now observe the difference in the profits of each. The first gets 250 bushels from ten acres. In doing this, he has to plow ten acres, harrow ten acres, mark out ten acres, find seed for ten acres, plant, cultivate, hoe, and cut up ten acres, besides paying the interest and taxes on this extent of land, worth about five hundred dollars. The other cultivator gets 250 bushels from about three acres —and he only plows, plants, cultivates and hoes, this limited piece to obtain the same amount—and from the fine tilth and freedom from weeds, this is much easier done, even on an equal surface. The same reasoning applies to every part of the farm. Be sure then, to cultivate no more than can be done in the best manner, whether it be ten, fifty, or five hundred acres. Two well known neighbors owned, one four hundred, and the other seventy-five acres—yet the larger farmer admitted that he made less than his limited neighbor. There is a rule to determine the proper size for a farm, that can be scarcely ever misapplied, namely, *to reduce its dimensions until the labour expended shall perform everything in the best manner*. If, for instance, the farmer lays out one thousand dollars yearly on three hundred acres, and finds the sum insufficient, then dispose of such a portion as will allow the thousand dollars to accomplish the very best cultivation. This will give the greatest nett proceeds, even if it be but a hundred acres.

As an example of what may be obtained from a small piece of land, the following products of fifty acres are given, and are not more than have been often raised separately by good farmers, with economical culture, and are much less than some premium crops obtained at higher cost :—

| | | | |
|---|---|---|---|
| 10 | acres | wheat, 35 bushels per acre, | $350 |
| 2 | " | corn, 90 " " 50c., | 225 |
| 2 | " | patatoes, 400 " " 35c., | 140 |
| 1 | " | carrots, 500 " " 15c., | 75 |
| 6 | " | winter apples, 200 bushels per acre, 22c., | 300 |
| 6 | " | hay, 3 tons per acre, $6, | 108 |
| 10 | " | pasture, worth | 60 |
| 5 | " | barley, 40 bushels per acre, 50c., | 100 |
| 5 | " | oats, 50 " " 35c., | 87 |
| | | Total products of 50 acres of fine land | $1445 |

Good land could be brought to this state of fertility, including complete underdraining and ample manuring, at less than a total cost of one hundred dollars per acre, where land is at an average price for the northern and middle states ; it would then be incomparably cheaper than many poor farms at nothing; for while fifty acres could be tilled for four hundred dollars, leaving over one thonsand dollars nett profits, large, poor farms, hardly pay the labor spent upon them. A proprietor of such a farm declared, " It takes me and my hired man hard at work all the year, to raise enough to pay him only."—*Ed. Country Gentleman.*

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## ARTIFICIAL MANURES.

The Royal Agricultural Society had an important share in the propagation of the principles of thorough drainage first propounded by their author in a complete shape in a lecture at one of their meetings at New-Castle. Another great change, by a fortunate coincidence, accompanied, or rather preceeded, the conquest over the clay lands. This was the chemical revolution which gave the farmer the use of concentrated portable manures for stimulating the growth of crops in a degree unknown to the preceeding generation. Previous to 1835, as nearly as we can fix the date, agriculturists, in addition to farm-yard dung or night-soil, employed as manures, lime, chalk, gypsum, marl, soot, salt, saltpetre, rapecake and bones. The discovery of the fertilizing properties of bone was accidentally made at a Yorkshire foxhound kennel. Liberally used on the heaths and wolds of Lincolnshire, it was the philosopher's stone which turned rabbit-warens and gorse fox coverts into fields of golden grain. A Mr. Nelson, one of the late Lord Yarborough's tenants, used to say, that " he did not care who knew that he had made £80,000 out of his farm by employing bones before other people knew the use of them." But what succeeded in one parish or even one field often failed in the next, and sometimes the farm which had once yielded bountifully, in return for a dressing of lime or gypsum, stubbornly refused to respond to a second application. Worse than all, the root crop—the foundation of the Norfolk rotation, the wealth of half-a-dozen counties—began to fail devoured in tender infancy by the fly ; and, without the turnip, where was the food for sheep and winter-fed cattle ? The philosopher came to the assistance of

the farmer, and rescued him by timely aid from the difficulties whioh beset him. Nitrate of soda and guano were imported; superphosphate of lime from bones was invented; and agricultural chemistry, having earned the place of a practical, that is, a profitable science, the anomalies in connexion with the use of lime, chalk, gypsum, &c., were mastered and explained by the joint exertions of the farmer and his new ally the chemist. Nitrate of soda was imported from Peru, and sold in small quantities by an agricultnral manure dealer somewhere about 1825, and in the same year a cargo of guano was consigned to a Mr. Myers, a Liverpool merchant. Guano (of any agricultural value) is the dung of sea-fowl feeding on fish in a zone where rain rarely falls. The guano of the Peruvian islands was protected in the time of the Incas by special laws. In 1609 its properties were fully described in a work published in Lisbon by Garcilasso de la Vega; but this precious fertilizer was neglected in Europe until the date of Mr. Myers' importation, when investigations into the chemistry of agriculture commenced with Sir Humphrey Davy, with very little practical effect during his lifetime, and carried on by continental philosophers, were beginning to bear fruit. Guano, although incredulously received by farmers in 1836, was eagerly accepted by the dealers in artificial manures, and sold, either in a pure state or under a special name, mixed with less active ingredients. In 1843, a store inferior to that of Peru having been discovered on the Ichaboe islands, on the coast of Africa, 1,100 feet long, 400 broad, and on an average 35 feet deep, the whole was removed before the close of 1844, and realized upwards of a million sterling Three years previously, an article of forty-three pages, from the German of Dr. Charles Sprengle, appeared in the first volume of the "Journal of the Royal Agricnltural Society," in which, though every kind of animal manure was described, guano only received a passing mention as a curiosity, and no note to supply the deficiency was attached by the editor; so little was it then known to the most intelligent cultivators, and so speedily had the knowledge of its value spread in the interval. This single fact would alone show that we had reached a new era in the history of farming.—*Quarterly Review for April.*

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Dissolving Bones in Sulphuric Acid.—A praclical Scetch farmer of large experience, Mr. Tenaut, thus describes his process:

"I put 25 bushels of bones into 3 old boilers, and next pour in 2 bottles of acid of about 170 pounds each, and 36 Scotch pints (18 inperial gallons) of boiling water into each boiler. It boils away at a great rate for some time, and in a day or two we empty the boilers into two cart loads of light mould, and turn the mixture over. At this stage the bones are only partially dissolved, but they heat and decompose in the heap after being turned over three or four times; and in the course of seven or eight weeks the compost becomes dry and breaks down with a shovel."

Another Moving Machine Wanted.—It may sound a little singular to those who know the number of patents granted to hear us say that another is wanted; and each particular patentee, we suppose, will hoot the idea that we now advance, when we assert that very much the larger portion of the farmers of the Eastern and Northern States are as yet unprovided with a machine suitable to their wants. There are thousands of farmers living in comfortable circums-

tances, that do not and should not keep but one horse, and yet the tendency of all moving-machine inventors, with but a trifling exception, has been to cater for men who keep strong teams, such as can operate one of the heavy two-horse machines, only working half a day, and then changing for a fresh pair or else over-work a single pair. Now what we want, and it is what inventors should turn their attention to, is a compact, light one-horse mowing machine, that can be afforded at a price within reach of the large class who keep but one horse, yet who are under just as much necessity of using labor-saving machinery as the largest owners of broad fields. We cannot advise small farmers to buy large machines, because we do not believe it would be profitable for mowing-machine manufacturers to give them one suitable to their circumstances, which they could and would not afford to buy.—*New York Tribune.*

## Grazier and Breeder.

### THE FEEDING OF HORNED AND POLLED CATTLE, AND THE PRODUCTION (OR MANUFACTURE) OF BUTCHER'S MEAT.

We shall proceed with our statement of the composition and feeding properties of articles in common use.. J. A.

*Barley Sprouts, or Comins.*—These are the young rootlets which fall off from the extremities of the Malted grain, when the malster arrests the malting process, and dries the grain.

Comins, when burned, leave 7,25 per cent of ash, containing the followig ingredients :

| | |
|---|---|
| Potash and Soda | 36.78 |
| Lime | 3.09 |
| Magnesia | 5.46 |
| Oxide of Iron | 1.09 |
| Phosphoric acid | 24.87 |
| Sulphuric acid | 4.84 |
| Chlorine | 7.95 |
| Silica, soluble in water | 1.80 |
| Insoluble Silica | 13.96 |
| | 99.84 |

Comins are thus rich in alkaline salts, phosphoric acid and silica, and may therefore be advantageously employed ; both as food for animals and manure.

*Malt.*—According to Dr. R. D. Thompson, the composition of the same Barley is thus altered by malting :

| | Barley. | | Malt | |
|---|---|---|---|---|
| | Natural State | at 212. | Natural State | at 212 |
| Carbon | 41.64 | 46.11 | 42.44 | 43.93 |
| Hydrogen | 2.06 | 6.65 | 6.64 | 7.00 |
| Nitrogen | 1.81 | 2.01 | 1.11 | 1.29 |
| Oxygen | 37.66 | 41.06 | 43.08 | 46.51 |
| Ash | 3.41 | 4.17 | 1.68 | 1,27 |
| Water | 9.46 | — | 5.05 | — |
| | 100.00 | 100.00 | 100.00 | 100.00 |

Hence Barley loses carbon in malting, probably in the form of acid, and also nitrogen, in the shape of albumen—possibly in part as ammonia—whilst the malt has gained hydrogen and oxygen—that is water; and 100 parts by weight of Barley is reduced to 80 parts by weight of Malt. So that the nutritive powers of Barley and malt would appear to be as follows:

59 Barley .... 100 Malt, according to the lowest extent.
79 Barley .... 100 Malt, to the highest.

The composition of Ash is as follows:

| | Barley. | Malt. |
|---|---|---|
| Potash | 16.00 | 14.54 |
| Soda | 8.86 | 6.08 |
| Lime | 3.23 | 3.89 |
| Magnesia | 4.30 | 9.82 |
| Oxide of Iron | 0.83 | 1.59 |
| Phosphoric acid | 36.80 | 35.34 |
| Sulphuric acid | 0.16 | |
| Chlorine | 0.15 | trace. |
| Silica | 29.67 | 28.74 |
| | 100.00 | 100.00 |
| Per centage of Ash | 3.05 | 2.52 |

The loss sustained by the Barley in Malting, may perhaps be stated as follows:

| | |
|---|---|
| Water | 6.00 |
| Saline Matter | 0.48 |
| Organic Matter | 12.52 |
| | 19.00 |

*Barley Meal.*—This is much used for feeding pigs in some places—whole grains as a mash for horses. According to Johnston, a crop of 40 bushels to the acre, produced at the rate of 40 bushels, weighing 2100lbs.; Starch, Sugar, &c. 1260lbs.; Gluten &c., from 250lbs. to 310lbs.; Oil or Fat, from 42lbs. to 63lbs.; and 60lbs. of Saline matter.

*Oats.*—According to Johnston the quantity of nutritive matter afforded by an acre of land from a crop of Oats producing 50 bushels, will be as follows; 50 bushels weighing 2100lbs., give 420lbs. of husk, or woody fibre; 1050lbs. of Starch; from 290lbs. to 400lbs. of Gluten, &c.; from 75lbs. to 150lbs. of Oil or fat, and 80lbs. of Saline matter.

Composition of the grain of Oat has been found to be as follows:

| | Hopetoun Oats, Ayrshire. Fromberg. | Potato Oats, Northumberland. Norton. |
|---|---|---|
| Starch | 64.80 | 65.60 |
| Sugar | 2.58 | 0.80 |
| Gum | 2.41 | 2.28 |
| Nil | 6.97 | 7.38 |
| Casein (avenine.) | 16.26 | 16.29 |
| Albumen | 1.29 | 2.17 |
| Gluten | 1.46 | 1.45 |
| Epidermis | 2.39 | 2.28 |
| Alkaline salts and loss | 1.84 | 1.75 |
| | 100.00 | 100.00 |

The fattening qualities of the oat must be very great. The Maize or Indian Corn is celebrated for fattening animals, and Dumas gives only 9 per cent as its maximum of fatty matter. Bousingault gives 7 per cent as the average ; while Liebig has denied that it contains more than 5 per cent. If we take 7 as the average, the meal of oat, so far as oil is concerned, should nearly equal that of Indian Corn.

The per centage of ash is :

| | Grain. | Husk. | Straw |
|---|---|---|---|
| Oat | 2.6 to 3.9 | 5 to 8 | 4.1 to 9.2 |

and its composition is as follows :

| | Potato Oats, Northumberland. Norton. | |
|---|---|---|
| Potash<br>Soda | 31.56 | 16.27 |
| Lime | 5.32 | 10.41 |
| Magnesia | 8.69 | 9.98 |
| Peroxide of Iron | 0.88 | 5.08 |
| Peroxide of Manganese | | 1.25 |
| Sulphuric acid | | |
| Phosphoric acid | 49.19 | 46.26 |
| Chloride of Sodium (common salt) | 0.35 | |
| Chloride of Potassum | | 5.32 |
| Soluble Silica | 0.89 | |
| Insoluble silica | 0.98 | 3.70 |
| | 97.86 | 98.27 |

In every portion of the plant but the grain, observes Norton, we have found Sulphuric acid in the watery solution of the ash ; in the grain it seems to give way to phosphoric acid. In the only instance in which sulphuric acid was present, it was in a poor crop, grown on an exhausted soil, and it is possible the sulphuric acid may have been present, because the crop found it impossible to obtain a full supply of phosphoric acid. The supply of phosphoric acid is quite remarkable, constituting as it does, nearly or quite one-half of the ash. It is easy to see therefore how bones or guano should benefit the oat crop. Silica is in small quantity in the grain, compared with the other parts of the plant.

*Pease Meal.*—The quantity of nutritive matter derived from an acre of peas is as follows : A crop producing 25 bushels, 1600lbs ; give of husk or woody fibre, 130lbs. ; of starch, gum, &c. 800lbs ; of gluten, 360lbs, ; of oil or fat, 34lbs. ; and of saline matter, 48lbs.

*Bean Meal.*—This is an excellent food for the horse, when mixed with oats, or in a mash of boiled barley. It is also much praised for fattening Oxen.

The quantity of nutritive matter derived from an acre of Beans producing 30 bushels, or 1900lbs. per acre is, of husk or woody fibre, 190lbs. ; of starch, sugar, &c., 760lbs. ; of gluten &c., from 450lbs. to 530lbs. ; of oil or fat, from 38lbs. to 57lbs. ; and of saline matter, 57lbs.

The chemical composition of two last, have not yet been carefully investigated.

| | Water. | Husk. | Meal. | Starch. | Legumin. | Grain, &c. |
|---|---|---|---|---|---|---|
| Peas | 14.0 | 10.5 | 75.5 | 65.0 | 23 | 12 |
| Field Beans | 15.5 | 16.2 | 68.3 | 69.0 | 19 | 12 |

Proportion of Ash :

| | Grain. | Husk. | Straw. |
|---|---|---|---|
| Field Beans | 2.1 to 4.0 | | 3.1 to 7.0 |
| Field Peas | 2.5 to 3.0 | Pod. 7. 1. | 4.3 to 6.2 |

Composition of ash :

| | Bean Ash. Mean of 3 analysis. | Pea Ash. Mean of 4 analysis. |
|---|---|---|
| Potash | 33.56 | 36.05 |
| Soda | 10.60 | 7.42 |
| Lime | 5.77 | 5.29 |
| Magnesia | 7.99 | 8.46 |
| Oxide of Iron | 0.56 | 0.99 |
| Phosphoric acid | 37.57 | 33.29 |
| Sulphuric acid | 1.00 | 4.36 |
| Chlorine | 0.73 | |
| Silica | 1.15 | 0.51 |
| Chloride of sodium (common salt.) | | 3.13 |
| | 98.83 | 99.50 |

It will be observed that these leguminous grains contain a large proportion of the protein compounds, and are therefore eminently useful in supplying the waste of muscular matter.

*Indian Corn.*—This grain is nourishing to every kind of stock. It is raised on this continent in large quantity for human food, as well as for stock. It is especially well adapted for the feeding of poultry.

The nutritive matter afforded by an acre of this grain, producing 30 bushels, or 1800lbs, is as follows : Husk and woody fibre, 100lbs. ; of starch, sugar, &c,, 1250lbs. ; of gluten, &c., 216lbs. ; of oil or fat, from 95lbs. to 107lbs. ; and of saline matter, 47lbs. The most remarkable result is the large quantity of fat contained in this grain.

When dried, the composition, according to Payen, is as follows :

| | |
|---|---|
| Husk | 5.9 |
| Gluten, &c. | 12.3 |
| Starch | 71.2 |
| Sugar and Gum | 0.4 |
| Fatty matter | 9.0 |
| Saline matter or ash | 1.2 |
| | 100.00 |

Composition of the Ash of the United States by Fromberg, and from Germany, by Letellier—mean of two analyses :

| | |
|---|---|
| Potash<br>Soda | 32.48 |
| Lime | 1.44 |
| Magnesia | 16.22 |
| Oxide of Iron | 0.30 |
| Phosphoric acid | 44.87 |
| Sulphuric acid | 2.77 |
| Chlorine | 0.18 |
| Silica | 1.44 |
| | 99.70 |

According to the analysis of Letellier, Indian Corn consists almost entirely of the phosphates of Potash, Soda and Magnesia.

*To be continued*

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## AYRSHIRE OR DEVON CATTLE AS DAIRY STOCK.

"Lactometer" writes—"1. I will be obliged by your letting me know in the next issue of your paper the respective merits of Devon and Ayrshire cattle for dairy purposes. 2. The best market to buy them. 3. The probable price of of one, two, and three years old. I like the Ayrshire as milkers, but consider the calves of the Devon would pay best. 4. I rear all the calves, bullocks, and heifers until two and a half years old, and intend crossing the cows either with a thorough-bred Durham or Devon Bull. Which would you recommend? 5. There is a fair at Bristol in March; would it be a good place to get in-calve Devon cows or heifers? 5. Could you rely on those offered for sale there as Devons to be genuine?" 1. The Ayrshire is a capital dairy cow, yielding a larger quantity of milk than the Devon; but the latter, in some reported experiments is reputed to produce the richest milk. 2. To get them purely bred they must be sought for in Devon, at the spring and yearly summer fairs. 3. We cannot hazard an opinion as to the prices, which, like other marketable things, rise and fall according to the supply and demand. 4. The Devon bull, on well formed Irish cows, makes a most excellent and profitable cross; but the cross of the short-horn being more fashionable, generally pays best. 5. You may chance to get Devons at Bristol, but of this we can't be certain. The best fairs are Ashbittle, 25th February; Bishops Lydiard, near Taunton, 25th March; Barnstaple, the Friday before the 21st April; and the monthly markets of Taunton, Wiveliscomb, Tiverton, and Moulton. Those offered for sale by good breeders may be relied on as well bred.

## ROOTS FOR FEEDING HORSES.

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Horses in livery stables, and all animals kept upon dry food the entire year, need a liberal feeding of roots to keep their digestive organs in healthful action. It is owing to the fact of their medical or aperient qualities that we see such extravagant statements as are freqeently made up after short trials—that a bushel of carrots are equal to a bushel of oats as food for a horse. The facts are, it is contrary to nature for horses to be kept month after month, and year after year, upon dry hay and grain, without grass or roots. Every horse-owner should remember this, and let a liberal supply of green food enter into the bill of fare for his horse, that his health may be kept up, nor himself suffer loss from neglecting this precaution. We never yet found a livery stable keeper that had tried them who did not value carrots very highly. Let the reader who owns a horse use roots "as a medicine," if nothing more.

## Ladies Department.

### HOW A SMALL FARM WAS MADE TO PAY

A LETTER FROM A FARMER'S WIFE.

*To the Editor of the N. Y. Tribune.*

SIR: I would like to write you a few words on farming, not the farming with a heavy purse, which is able to buy the various fertilizers, and help from the Emerald Isle, but the farming, which is done mostly with one pair of hands, having to contend with sickness and penury. Ten years since my husband purchased a farm of 75 acres, one mile nortn-west of the then flourishing village of New-Britain, commenced his labor in hopes to improve his farm and support his family. He soon saw his mistake, that he must feed his farm, before his farm could feed his family. He had to resort to the work shop to support his family. He put one cow on his farm, and that was as much stock as he could winter, the crops were hardly worth harvesting. He soon found that his land was deficient in lime and potash. He then commenced composting with unslacked lime, salt, gypsum and ashes, mixed with sods. After freely manuring, his corn will now yeild 50 bushels, shelled, to the acre; rye 25 bushels. He harvested the past eason, 160 bushels of corn, 300 bushels of turnips, with rye, oats, buckwheat, and vegetables too numerous to mentiou, including one acre tobacco. We keep 12 heads of fine cattle. From a dairy of five cows we have sold, the past season 700 pounds of butter, for 25 cents a pound; made 380 pounds of cheese, beside furnishing butter and milk for the family; we keep one horse also. We are rear the farm of Elihu Burritt, who, after all his wanderings in fereign countries, visiting many of the most beautiful places on earth, has come home to the place of his nativity, selecled a cold, sterile, rocky eminence, commenced to build himself a home, and make his grave among his kindred. I have often seen him, with his hired man picking up the many thousand stones, then after ploughing go cheerfully to work to pick just as many as there were before, with a smile on his countenance, and not one single line of discouragement written on his noble brew Then, I have thought, such energy and perseverence would make all the waste places of the earth to bud and blossom like the rose. I would only add, my husband is a Republican, as also his sons.

MRS. LUMAN HOLCOMB.

New-Britain, Conn., Dec., 27 1858.

TOMATOES FOR WINTER USE.—A correspondant, writing in criticism of our recommendation of drying tomatoes, supposes that we were not aware how easily they could he preserved by bottling, because "the city people are so far behind the rural districts in all that appertains to food." Our female friend is quite mistaken. There are more tomatoes put up in this city every year than would fill the largest barn ever built in the rural districts. The quantities, too, of every kind of fruit, and also corn, beans, peas and other vegetables, as well as meats, preserved in air-exhausted, hermetically-sealed cans, enough to astonish one not acqnainted with the magnitude of the business. Still, we must repeat our advice to dry tomatoes, and not only this fruit but every other, as cheaper, more convenient to many, and becanse it affords further variety of food, even where the same article is preserved in cans or bottles.

STRICHNINE.—Prof. Trail of Edinburgh has published a paper on the detection of strychnine, in which he states that the best method of eliminating this powerful poison from the stomach's contents is by digesting these matters with alcohol filtering and concentrating the filtered liquid by a gentle heat. To separate any animal matter taken up with the strychnine, boiling this liquid with a little acetic acid, and again filtering, will effect a clear solution of the strychnine.

EFFECT OF BRINE ON THE HUMAN SYSTEM.—In consequence of accidents caused by the use of the brine of herring or salt meat, the Council of Health in Paris has been charged with examining to what extent brine may be allowed in food. Numerous experiments have been tried at Atfort, which have led to the following conclusions: the use of brine as a condiment or seasoning in the nourishment of man has hitherto had no injurious effects, and nothing authorizes the opinion that an economical process so advantageous for the poor should be proscribed. The same is not true of the abuse that is made of this substance in the nourishment and in the treatment of the diseases of certain animals, especially swine and horses. Authentic facts and recent experiments show that the mixture of brine in considerable quantity with food may produce real poisoning. In all cases, brine preserved too long or in contact with rancid meat, should not be employed except with the greatest care, and after it has been purified by skimming all the scum which forms on the surface.

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## LIGHTS AND SHADOWS.

The gloomiest day hath gleams of light,
The darkest wave hath bright foam near it,
And twinkles through the darkiest night
Some solitary star to cheer it.

The gloomiest soul is not all gloom,
The saddest heart is not all sadness;
And sweetly o'er the darkest doom,
There shines some lingering beam of gladness.

Despair is never quite despair:
Nor life nor death the future closes;
All round the shadowy brow of Care,
Will Hope and Fancy twine their roses.

MRS. HEMANS.

## THE STRANGER ON THE SILL.

BY T. D. REED.

Between broad fields of wheat and corn
Is the lovely home where I was born;
The peach tree leans against the wall,
And the woodbine wanders over all;
There is the shaded door way still—
But a stranger's foot has crossed the sill.

There is the barn ; and, as of yore,
I can smell the hay from the open door,
And see the busy swallows throng,
And hear the pewee's mournful song ;
But the stranger comes ! O ! painful proof—
His sheaves are piled to the heated roof.

There is the orchard—the very trees,
That knew my childhood so well to please,
Where I watched the shadowy moments run,
Till my life imbibed more of shade than sun ;
The swing from the bough still sweeps the air,
But the stranger's children are swinging there.

It hubbles, the shady spring below,
With its bulrush brook where the hazels grow ;
'Twas there I found the calamous root,
And heard the robin lave his wing—
And watched the minnows poise and shoot,
But the stranger's bucket is at the spring.

O, ye who daily cross the sill,
Step lightly, for I love it still ;
And when you crowd the old barn eaves,
Then think what countless harvest sheaves
Have passed within that scented door,
To gladden eyes that are no more.

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Mrs. Traill's Bread.—Wash and pare half a pail of potatoes, taking care to remove all dark specks; throw them into a vessel of clean water as you pare them, as they are apt to acquire a brownish colour, which spoils the white and delicate appearance of the bread. Boil the potatoes till to reduced to a pulp, bruising any lumps smooth with a wooden beetle or pounder: it will then have the consistency of thick gruel: when cool enough to bear your hand in it, stir in as much flour as will make the mixture the thickness of thick batter ; add a good handful of salt, and two cupfuls of your hop barm or any good rising that you may have. A deep, red earthern pot, or a wooden pail, will be a good vessel to countain your sponge. It is a wise precaution to stand your vessel in a pan, as it is apt to flow over. If set to rise over-night, it will be risen time enough to work up in the morning early: in summer we seldom make this potato-bread, on account of the potatoes then not being so fit for the purpose, for, while young, they will not boil down so smoothly; but from the month of August till May, it may be made with great advantage. The quantity of sponge above, will raise two larges milk-dishes of flour, or about twenty pounds of flour. If you have a large kneading-trough, you can mix the whole at once, and knead it well and thoroughly; but if your through be too small for convenience, divide your sponge, and make two masses of dough, working it very stiff on your board, scoring the top with a knife, and cover it up by the fire with a clean cloth; or you maymake only half the quantity, using, of course, less potatoes and water. In about

two hours, or may be longer, you will have a light dough, like a honeycumb, to make into loaves. When baked, take your bread out of the pan, wet the crast of your loaves over with clean water or milk, and wrap them in a clean cloth, setting them up on one side against a shelf till cold. This plan keeps the bread from becoming hard and dry. For lightness, sweetness and economy this is the best bread I know, resembling reaily-good baker's bread in texture and look. I cordially recommend it to the attention of the Canadian housewife.

INDIAN-MEAL BREAD.—Add six pounds of sifted Indian-meal to six pounds of wheaten flour; one gallon of water, pour, boiling-hot, on the Indian-meal; when cool enough to work with the hand, mix in the wheaten flour, and a cup of yeast, with a little salt; knead the mass, and set it to rise near the fire. This bread has a fine yellow colour, and is best used pretty fresh, as the Indian-meal is of a drying quality.

ANOTHER BREAD WITH INDIAN-MEAL—Take as much good flour as will fill a good-sized milk-dish; add to the flour a quart of Indian-meal, and a tablespoonful of salt; mix the flour well together: make a hole in the midst, and pour in a large cup of good rising, adding warm water; mingle stiff enough to knead on your flour-board; then when your mass of dough is worked smooth, lay it back in the pan or trough that you mixed it in, and let it lie covered near the fire to rise; when well-risen, divide, and bake in your oven or bake-kettle.

Some persons wet the Indian-meal with hot water first, but either way can be tried. I have used any supporne, or Indian-meal porridge, that has been left after breakfast, in making bread, and found it a very good addition. A good bread can also be made of equal proportions of rye, Indian-meal, and wheaten flour; rye alone does not make such good bread, the rye being very glutinous, which a mixture of Indian-meal corrects.

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## MONTHLY METEOROLOGICAL REPORT FOR DECEMBER 1858.

FROM OBSERVATIONS TAKEN AT ST. MARTIN, ILE JESUS, C. E., LATITUDE 45 DEGREES 32 MINUTES, LONGITUDE, 73 DEGREES, 36 MINUTES WEST, HEIGHT OVER THE LEVEL OF THE SEA 118 FEET.

BY CHS. SMALLWOOD, M. D. L. L. D.

BAROMETER.

| | F inches. |
|---|---|
| Highest reading of the barometer the 25th day | 30.542 |
| Lowest reading of the barometer the 22nd day | 29.307 |
| Monthly mean | 30.015 |

THERMOMETER.

| | |
|---|---|
| Hightest reading the 18th day do | 36°4 |
| Lowest reading the 30th day | 17°9 |
| Monthly Mean | 12°37 |
| Greatest intensity of the suns rays | 40°4 |
| Lowest point of terrestrial radiation | 17°9 |

| | | |
|---|---|---|
| Mean of humidity | | 787 |
| Rain fell on 5 days, amounting to 1.176 inches, it was raining 39 hours 18 minutes | | |
| Snow fell in 12 days, amounting to 16.19 inches, it was snowing 70 hours 10 minutes | | |
| Most prevalent wind N. E. by E. | | |
| Least prevalent wind E | | |
| Most windy day the 9th, mean miles per hour | 18 | 39 |
| Least do do the 24 day do | 0 | 00 |
| Aurora borealis visible on 4 nights | | |
| Zodiacal Light visible | | |
| Ozone was a ratqer | | |

## MONTREAL RETAIL MARKETS.

FRIDAY, March 25th 1859.

| | BONSECOURS. | | | | | | ST. ANN'S. | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | s. | d. | | s. | d. | | s. | d. | | s. | d. | |
| **FLOUR.** | | | | | | | | | | | | |
| Country Flour, per quintal | 18 | 0 | a | 20 | 6 | | 0 | 0 | a | 0 | 0 | |
| Oatmeal, per quintal | 16 | 3 | a | 18 | 9 | | 0 | 0 | a | 0 | 0 | |
| ndian Meal, per quintal | 0 | 0 | a | 0 | 0 | | 0 | 0 | a | 0 | 0 | |
| **GRAIN.** | | | | | | | | | | | | |
| Wheat, per minot | 0 | 0 | a | 0 | 0 | | 0 | 0 | a | 0 | 0 | |
| Oats, per minot | 2 | 9 | a | 3 | 0 | | 2 | 3 | a | 2 | 6 | |
| Barley, per minot | 3 | 6 | a | 3 | 9 | | 0 | 0 | a | 0 | 0 | |
| Pease, per minot | 4 | 6 | a | 5 | 0 | | 0 | 0 | a | 0 | 0 | |
| Buckwheat, per minot | 3 | 0 | a | 3 | 6 | | 0 | 0 | a | 0 | 0 | |
| Indian Corn, yellow | 4 | 6 | a | 5 | 0 | | 0 | 0 | a | 0 | 0 | |
| Rye, per minot | 0 | 0 | a | 0 | 0 | | 0 | 0 | a | 0 | 0 | |
| Flax Seed, per minot | 7 | 0 | a | 7 | 3 | | 0 | 0 | a | 0 | 0 | |
| Timothy, per minot | 9 | 0 | a | 9 | 6 | | 0 | 0 | a | 0 | 0 | |
| **FOWLS AND GAME.** | | | | | | | | | | | | |
| Turkeys, (old) per couple | 6 | 0 | a | 10 | 0 | | 10 | 0 | a | 12 | 0 | |
| Turkeys, (young) per couple | 0 | 0 | a | 0 | 0 | | 6 | 0 | a | 8 | 0 | |
| Geese, (young) per couple | 5 | 0 | a | 10 | 0 | | 3 | 6 | a | 4 | 6 | |
| Ducks, per couple | 3 | 0 | a | 3 | 9 | | 2 | 6 | a | 3 | 0 | |
| Ducks, (wild) per couple | 0 | 0 | a | 0 | 0 | | 0 | 0 | a | 2 | 6 | |
| Fowls, per couple | 2 | 6 | a | 3 | 0 | | 2 | 0 | a | 3 | 0 | |
| Chickens, per couple | 0 | 0 | a | 0 | 0 | | 1 | 3 | a | 1 | 6 | |
| Pigeons, (tame) per couple | 1 | 3 | a | 1 | 6 | | 0 | 0 | a | 0 | 0 | |
| Pigeons, (wild) per dozen | 2 | 6 | a | 3 | 0 | | 3 | 6 | a | 4 | 0 | |
| Partridges, per couple | 0 | 0 | a | 0 | 0 | | 0 | 0 | a | 0 | 0 | |
| Woodcock, per brace | 0 | 0 | a | 0 | 0 | | 0 | 0 | a | 0 | 0 | |
| Hares, per couple | 0 | 0 | a | 0 | 0 | | 0 | 0 | a | 0 | 0 | |
| **MEATS.** | | | | | | | | | | | | |
| Beef, per lb | 0 | 4 | a | 0 | 9 | | 0 | 4 | a | 0 | 8 | |
| Pork, per lb | 0 | 5½ | a | 0 | 6 | | 0 | 6 | a | 0 | 6½ | |
| Mutton, per quarter | 6 | 0 | a | 12 | 0 | | 7 | 0 | a | 12 | 0 | |
| Lamb, per quarter | 2 | 6 | a | 4 | 0 | | 2 | 0 | a | 3 | 9 | |
| Veal, per quarter | 2 | 6 | a | 10 | 0 | | 5 | 0 | a | 15 | 0 | |
| Beef, per 100 lbs | 30 | 0 | a | 45 | 0 | | 30 | 0 | a | 40 | 0 | |
| Pork, (fresh) per 100 lbs | 40 | 0 | a | 42 | 6 | | 27 | 6 | a | 30 | 0 | |
| **DAIRY PRODUCE.** | | | | | | | | | | | | |
| Butter, (fresh) per lb | 1 | 3 | a | 1 | 6 | | 0 | 11 | a | 1 | 0 | |
| Butter, (salt) per lb | 1 | 0 | a | 1 | 1 | | 0 | 8 | a | 0 | 9 | |
| Cheese, per lb, skim milk | 0 | 0 | a | 0 | 0 | | 0 | 0 | a | 0 | 0 | |
| Cheese, per lb, sweet do | 0 | 0 | a | 0 | 0 | | 0 | 0 | a | 0 | 0 | |
| **VEGETABLES.** | | | | | | | | | | | | |
| Beans, (American,) per minot | 0 | 0 | a | 0 | 0 | | 0 | 0 | a | 0 | 0 | |
| Beans, (Canadian) per minot | 7 | 6 | a | 8 | 0 | | 0 | 0 | a | 0 | 0 | |
| Potatoes, (new) per bag | 3 | 0 | a | 3 | 9 | | 4 | 0 | a | 5 | 0 | |
| Turnips, per bag | 0 | 0 | a | 0 | 0 | | 0 | 0 | a | 0 | 0 | |
| Onions, per bushel | 0 | 0 | a | 0 | 0 | | 0 | 0 | a | 0 | 0 | |
| **SUGAR AND HONEY.** | | | | | | | | | | | | |
| Sugar, Maple, per lb, (new) | 0 | 5½ | a | 0 | 6 | | 0 | 4 | a | 0 | 4½ | |
| Honey, per lb | 0 | 0 | a | 0 | 0 | | 0 | 7½ | a | 0 | 8 | |
| **MISCELLANEOUS.** | | | | | | | | | | | | |
| Lard, per lb | 0 | 8 | a | 0 | 9 | | 0 | 8 | a | 0 | 9 | |
| Eggs, per dozen | 1 | 0 | a | 1 | 3 | | 0 | 8 | a | 0 | 9 | |
| Halibut, per lb | 0 | 0 | a | 0 | 7½ | | 0 | 0 | a | 0 | 0 | |
| Haddock, per lb | 0 | 0 | a | 0 | 2½ | | 0 | 0 | a | 0 | 0 | |
| Apples, per barrel | 25 | 0 | a | 35 | 0 | | 15 | 0 | a | 20 | 0 | |
| Oranges, per box | 22 | 6 | a | 25 | 0 | | 0 | 0 | a | 0 | 0 | |
| Hides, per 100 lbs | 0 | 0 | a | 0 | 0 | | 0 | 0 | a | 0 | 0 | |
| Tallow, per lb | 0 | 4½ | a | 0 | 5 | | 0 | 0 | a | 0 | 0 | |
| **BREAD.** | | | | | | | | | | | | |
| Brown Loaf | 0 | 11 | a | 0 | 0 | | 0 | 9 | a | 1 | 0 | |
| White Loaf | 0 | 0 | a | 0 | 0 | | 0 | 9 | a | 0 | | |

# Agricultural Societies, Lower-Canada, 1859.

| Societies. | Where established. | Presidents. | Vice-Presidents. | Secretary-Treasurers. | Boards of Management. |
|---|---|---|---|---|---|
| Argenteuil | St. André | E. Jones, Jr | T Jefferson | H Howard | E Hendrew. Ths Owens, H T A McArthur, A Burwash, J Pallock, W Gordon, T Morrisson. |
| Arthabaska | St. Christophe | A Stein | C A Pacaud | J G Dumoulin | James Goodhue, Jr. E Farwell, E J Paradis, T Girouard, C Bruno, J Murphy, S Piché. |
| Bagot | Ste. Rosalie | J. Pilon | J Théberge | P S Gendron | T Bélanger, P Poulin, T Chartier, A Morin. A McCleen, S Gévry, M Desmarais. |
| Beauharnais | Beauharnais | J. Keith | J B Scott | J M Browning | H Laurin, O Lynch, L Julien, J Symonds. J B Bougie, D Benny, J Massé. |
| Beauce | St. Joseph | J. O. C. Arcand | Z Bertrand | T S A Bélanger | Honorable Et H J Duchesnay, T J Taschereau, J P Proulx, L Labreque, G Lessard, A Pageot, A Cathcart. |
| Bellechasse | St. Michel | O. C. Fortier | E Forgues | P Forgues | J Jolivet, F X Bélanger, E Lacombe, Chs Paquet, E Brochu, F Fournier, L E Turgeon. |
| Berthier | Berthier | P A Dostaler | Xavier Désy | Rémi Laferrière | M Robillard, F Gagnon, J Boucher, M Ens, J Contois. N Durand. A Morrison. |
| Bonaventure, No 1 | New Carlisle | Hon. J G Thompson | R Montgomery | W MacDonald | Wm McPherson, D Fairservice, B McGie, A Carcaud, F Briard, Et. Martel, Jas McCraken. |
| Bonaventure, No 2 | Carleton | J. Meagher | J. Fraser | J. Meagher | J. Sillars, F. Ingram, R. Busteed, J. G. Fair, J. Campbell, J. N. Vergy, J. Hamilton. [?] |
| Brome | Brome | E. G. Ball | S Pettes | N Pettes | P Hunt, M L Elkins, Jr., J B Archeis, J P Brien, T French, C L Hall, M T Wells. |
| Charlevoix, No. 1. | Malbaie | J. Nairne | Hon J M Fraser | E Tremblay | J McLaren, C Lemeule, F Belleville, P Hurvey T Harvey, T Villeneuve, A Lemieux. |
| Charlevoix, No. 2. | Baie St. Paul | B. Cimon | E Boivin | J O Perron | B Savard, J Gauthier, C Bouchard, E Boily, E Gagnier. H Bouchard J Cimon. |
| Chambly | Longueuil | John Yule | J B Jodoin | L Benoit | G Prevost, T Sicotte, A Demers. J Trudeau, Frs David, Ls Sénécal, A Chagnon, fils. |
| Champlain | Ste. Geneviève Bat. | A. J. Martineau | S Rocheleau | R Trudel | A R Lafleche, A Massicotte, E Rinfret, G Brust, M Trudel, J Grenier, L Fuzene. |
| Chateauguay | Ormstown | G. W. Baker | G A Beaudry | W Cross | J Cowan, J Baillie, J Cottingham, P Reid, J McFee, W Logan, W A W Duguay. |
| Chicoutimi | Chicoutimi | P. C. L. Dubois | R Blair, Senr | O Bossé | L Tremblay, J Maltais, w E Price, Ls Gravelle, G McKenzie, F Langlois, V Martin. |
| Compton | Compton | A. O. Kellum | A J Lindsay | S J Pomroy | J McClary, S Woodword, J Jordan, H French, E H Caswell. A Leonard, W Planch. |
| Deux-Montagnes | St. Benoit | J. B. D'Aoust | L Rodrigue | D Masson | D Dupras, J Hamelin, Wm McGeoh. M Gumdon, Wm Ingliss, R Waker, A Lefebvre. |
| Dorchester | St. Anselme | J. Bte. Carrier | J Roy | F F Buteau | S Larochelle, J Roy. F Dion, F Turgeon. G Roger, F X Roy, F Turgeon. |
| Drummond. No. 1 | Drummondville | Hon. Wm Sheppard | Capt. V. Cook | R. N. Watts | Robert Heriot, John Rolph, Joseph Boisvert, Alex Lespérance, Henry K. Henming, Wm Robins, A Milette. |
| Drummond, No. 2. | L'Avenir | H S Griffin | T P Blake | J B E Dorion | Wm Burrill, B Reed, M Gagnon, J O'Brien, N Pronix, G Evans. A Wilcox. |
| Gaspé, No 1 | Percé | Ph. LeBouthillier | Ths Savage | O T Cormick | Capt Baker, Ths Carn, J Carn, J Flynn, T E Tuzo. R Moir, J Couture. |
| Gaspé. No. 2 | Gaspé Basin | John Eden | J Perchard | Joseph Eden | Major Becheronise, Thomas Suddard, A Coffin. W Clark, W Amott. R Patterson, J Carter. |
| Hochelaga | Montreal | Dods | F Beaudry | J Smith | J Muir. Ed Quin, Jos. Lamouette, H Broche, D Doummond, H Longlois. E Holdsworth. |
| Huntingdon | Huntingdon | S. H. Schuyler. | S Davidson | P McFarlane | J McDearmic, A O'gilvie, A Oliver, D McFarlane, A Henderson, A McGrégor, D McKae. |
| Iberville | St. Athanase | A. Dufresne | L Fournier | Wm Tyler | A Demers, M Guertin, J B Bissonet, M Benjamin, F X Poulin, F Ouimet, H Goineau. |
| Jacques Cartier | St. Laurent | P. Fallon | J Robillard | M M LeCavalier | J Bte Quesnel Wm Hodge. G Lecavalier, J Smith, G Valois, A Filiatrault, C Théoret. |
| Joliette | Industrie | Wm. Berczy | Ls Leveque | Ed Guilbault | N Corneiller, G de Lanaudière, B H Leprohon. J'Beausoleil, M Massicotte. F Trudeau, L Voligny. |
| Kamouraska | Kamouraska | F. Pilote, Ptre | A Fraser | J O E Dumais | Dr A T Michaud, P Dessaint. Ed Ennis, H Paradis, J Ladglois Col U Dubé, A Casgrain. |
| Laprairie | Laprairie | Wm. Cleghorn | Ls Brosseau | H Lanctot | John McIntosh. F Barbeau, J Lefebvre. Mr Dunn. J Beaudoin. |
| L'Assomption | L'Assomption | Hon. P. U. Archambeault | Ulric Deschamps | A Archambault | J Auger, P Archambeault, A Trudeau, N Vinet, B Lachapelle, A Martel. |
| Levy | St Henri | F. M. Giroux | T G Blanchet | F Bourget | R Vallières, N Bt G Bégin, C Lemieux, P Lageux. B Demers, L Carrier, R Hallé |
| L'Islet | L'Islet | O. E. Casgrain | T Michaud | S R Dominique | P A Dionne. A Mtville, T Dumas. X Fairner, J Gamache, C Gagnée, Et Boulet. |
| Lotbinière | St. Sylvestre | J. Mitchel | E Montgomery | J Parke | T Walker. C McCaffrey, J Brown. H Mackey. P Stocken, J McKee, J W Bridget. |
| Laval | St. Martin | P. Labelle | M Ouimet | Dr Smallwood | G Desnoyers, G Paquet, J B Délma, fils, F Larose, L A Lahaise, P Gravelle, L Bellefleur. |
| Maskinongé | Rivière-du-Loup | J. Fortin | J Carifel | G E Mayrand | E Garon. A Lesage, C Martin, Dr Boucher, J Voysard, J Legris, G Lessard. |
| Megantic, No. 1 | Inverness | D. McKinnon | A McKillop | Dr McGillivray | P McKenzie, D Stewart, R Hill. W Mowat, S Statlan, R Cox, Wm Gordon. |
| Megantic, No. 2 | Leeds | J. R. Lambly | J Ross | J Hutchison | W Frazer, J Cochran, Ths Scallon, W Church, D Donaldson. J Oliver, J McLean. |
| Misisquoi | Bedford | Hon. P. H. Moore | A Westover | J D O Meigs | A Trumick. P Spence. P Smith, G Truss, P C Derck, J Hunter, N M Blime. |
| Montmagny | Montmagny | M. Tétu | Dr Beaubien | N Nadeau | L Blais, L Fortin W Bossé, G Blais, P Blais, J Paré. J O Charbonneau. |
| Montmorency | Chateau Richer | P Gariépy | C Lefrançois | A Gravel | N Paré, Ls Simcoe, Ls Raucourt, F Caron, P Jacob, C Huot, P Trahan. |
| Montcalm | Ste. Julienne | J. Dufresne | J Melrose | A H DeCaussin | G Gilmour, F Foucher, J Aumont, P Dufault, B Bertrand, J Smiley, P Skelly. |
| Napierville | Napierville | A. Brossard | J Pepin | A Merizzi | L Odell, P N Lefebvre, J Grégoire, J Trudeau, W Elmidge, P D Hébert, J Gadoua. |
| Nicolet, No. 1 | Bécancour | S. A. Lambert | L Leblanc | J Jutras | A Leblanc, J Desilets A Nuisson, E Brussard, F Prince, A J La Barre, A McDonnaid. |
| Nicolet, No. 2 | Ste. Monique | F. Décoteau | Lt Col J Beanbien | Dr A A Alexander | Rev C Rousseau, J Trudel, J Réné, G Désilets, A Leblanc, F Manseau, M Provencher. |
| Ottawa. No. 1 | Aylmer | R McDonnell | R Conroy | Chs. Symmes | Wm Gumes C Wright, Chs Delisle, G Radmon, J Cassedy, J Gordon, C A Brigham. |
| Ottawa, No. 2 | Thurso | A. McNaughton | G W Cameron | A Waters | G W Eaton, J Larivell, A McLachlann, Wm Carson, J McGillvray, J Parker, J Cummings. |
| Pontiac | Clarendon | J. Laird | H Brownlee | G M Judgson | Mr Craig, Ths Dodds, Ths Moorhead, R Thompson, J Shaw, J Macfarlane, W McDonnell. |
| Québec | Québec | H. S. Anderson | J Dinning | Wm Moore | J Mercier, A Robertsod, C Tétu, J B Renaud, J E DeBlois, Wm Makeham, L Bilodeau. |
| Richelieu | Sorel | G. A. Massue | G W Dorge | J G Crebassa | J Lamere, J C Chapdelaine, Chs Sheppard, R Lanaverse, J B Laferthé. L N Ferland, Chs Neau. |
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