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The Farmer's Journal,

AND

TRANSACTIONS

OF

The Lower Canada Board of Agriculture.

Vol. IV. No. 10, Montreal, February, 1857.

POSTAGE FREE.

Price 2s 6d per annum, in advance.

The Farmer's Journal.

We would direct the attention of our readers to an article extracted from the *New England Farmer*, on the *Rural Economy of New England*. It is long, but will well repay careful study. It is evidently the production of a man who has seen what he describes, both in Old and New England, and knows well the weak points of our American agriculture. Objections may, we know, be taken to some of his opinions, on the ground of difference of circumstances and climate, but still the grand truth remains, that farming, if carried on in Great Britain in the same manner as in the United States and British Provinces, would not pay there any better than here; probably much worse. The truth is that farming is a business of some complexity, requiring many close calculations and adjustments; and that in a new country where the new settler must bend to circumstances, and finds a degree of natural fertility which makes up for want of skill and for necessary omissions, it is difficult to introduce that careful adjustment of all the parts of the farm, that adaptation of all to each other, which prevails in the old world. Yet, the time has come when this must be attempted; and we trust that the intelligent and reading farmers of America, will yet show that agriculture on this side of the Atlantic may be pursued by farmer proprietors, with as much skill as by the tenant farmers of England, and with more profitable results.

We would also ask attention to an arti-

cle on *growing Fruit for Market*. The large cities of Canada require better supplies of fruit, more especially of the finer varieties of the small fruits, and the present facilities for railway communication would allow this culture to be profitably carried on at a much greater distance from towns than formerly, and in more varied conditions of soil and climate. Excellent fruit and vegetables are brought to market in our Canadian cities, and often in ample quantity; but there is still a deficiency in the regular supply of the finer small fruits. We may instance the gem of them all, the strawberry; and fine sorts of raspberries, blackberries, cherries and plums, are also rare. With much lower prices than those ordinarily obtained for some of these fruits, any one acquainted with the business, and managing it on a large scale, would realize handsome profits.

Uses of Snow.

Snow is in Canada one of those over abundant gifts of Providence that, like the air we breathe and the water we drink, are too common often to excite our interest or our gratitude. Yet snow is a thing wonderful in its origin and structure, and having great and important uses in nature.

Snow differs from ice in its origin. Snow is frozen vapour, whereas mere ice is frozen water. Vapour in freezing, as we may see by looking at the frosted window panes, and the little tufts of icy needles that form in frosty weather on the heads of nails, forms delicate crystals, and these when produced in the air as snow flakes, are exceedingly thin,

six-sided films of ice, often extended into stars by the projection of pointed or feathered expansions of their angles. In mild weather these stars become very large and being entangled together, form large loose flakes. The thinness and smoothness of the snow crystals, gives the slippery anti-friction surface of the polished sleigh track, and the lightness and porosity of the snow make it one of the best non-conductors of heat, and consequently enables it to protect the ground from excessive frost.

The snow is in truth a huge fleecy blanket spread over the surface, to protect tender plants and prevent the frost from penetrating too deeply into the soil. So true is this, that however cold the air above, the temperature under the snow will rarely be found much below the freezing point. Hence, under a deep covering of snow, the ground is frozen only very slightly; and when the snow is gone, vegetation is not retarded by the coldness of a frozen subsoil. Under snow the temperature is also equable, and the great injuries which result from the alternate freezing and thawing of plants are prevented. Many plants can be imbedded in frozen soil without injury, but if alternately frozen and thawed they soon perish.

But snow is not only a covering, it is a manure, or rather a collector of manure. The old popular impression to this effect, is confirmed by chemical investigation. It has been ascertained by Liebig and Johnston that, while the composition of newly fallen snow is nearly identical with that of rain water, snow which has remained for some time on the ground, affords, when

thawed, a quantity of ammonia not previously present in it. This is accounted for by the porous character of the material, which enables it to absorb ammoniacal or other vapors, thus purifying the air, and at the same time collecting one of the richest and most volatile of manures for the nutrition of vegetation in the spring. Ammonia is also known to enable plants to thrive with less light than they ordinarily require, hence it is not impossible that when under snow and plentifully supplied with this substance, they may actually grow. This, as well as the effect of a gradual thawing of the snow in preventing the leaves from being frost-bitten, may account for the bright green colour which grass often presents after the snow has left it.

Snow like rain falls on the lands of the just and the unjust. It benefits the bad as well as the good farmer. Yet the uses above stated, suggest the question—do we use all the means in our power to receive benefit from this useful gift of nature. Our ordinary clearing and cultivation tend to lay bare the land to the influence of winter storms, and to cause the snow to drift into piles, and to fill up water courses and holes, so that it is not evenly covering the surface. In this way much of its benefit is lost. In nature, on the other hand, the shelter of the forest, and even of the shrubs and withered herbage, ensures a more even covering of snow. If possible, we should imitate nature in this, and by belts of trees or hedge rows shelter those places which by experience we find to drift bare of their natural winter covering. The benefits of such shelter are largely realised in Great Britain, and also on new farms in this country, while still sheltered by the forest; but the bare unsheltered surface of many of the older districts, has this want of protection from the destructive effects of the winter blasts, added to the other causes of its increasing sterility.

Other effects of the more or less equal distribution of snow are also worthy of notice. When parts of a field are bare and other parts covered with snow-banks, the penetration of the frost is unequal, and the snow-water instead of sinking with its ammoniacal matter into the soil, runs off into the streamlets and drains, cutting trenches in the soft ground, and rapidly swelling the brooks and rivers. Thus, two-fold losses are sustained, independently of the manifold winter inconveniences of snow-drifts.

IMPORTATION OF GRAIN, SEEDS, ROOTS, &c., FROM FOREIGN COUNTRIES.

We publish the following correspondence on the subject of the importation of grain, seeds, &c., from foreign countries into Lower Canada for seed. The Honble. the Minister of Agriculture is entitled to the thanks of Agriculturists for this mark of attention to their interests, and it would be very desirable that some action would be taken in the matter to procure some new seed—particularly of Black Sea Wheat, that has been found to succeed so well in Lower Canada, but which requires to be frequently renewed. The Board of Agriculture have addressed Circulars to all the Agricultural Societies in Lower Canada, embodying the letter of the Minister, and recommending the subject to their attention at their Annual Meetings in February, and requesting a reply from each on or before the 15th of March next, in order that arrangements may be made in time to ship grain or seeds next fall from the Baltic or Black Sea, before the closing of the navigation.

BOARD OF AGRIC. AND STATISTICS, }
Toronto, Dec. 17th, 1856. }

WILLIAM EVANS, Esq.,
Secretary B. of A.

DEAR SIR.—I have the honor to inform you that should the Board of Agriculture or the Agricultural Association desire to appropriate any portion of its funds to the purchase of particular descriptions of grain, seeds, roots, &c., in foreign countries, this Department will assume the responsibility of procuring the purchases to be made, through the agency of the British Consul on the spot, should there be any such officer there.

The Minister of Agriculture has every reason to believe that such assistance will be cheerfully rendered by those officers. Of course all expenses must be covered by the Association seeking the purchase. Please mention the matter to the President.

Your's with regard.

WILLIAM HUTTON,
Secretary.

GRANTHAM HALL,
24th Dec., 1856. }

MY DEAR SIR.—Begging reference to my letter of this date, respecting the importation of grain for the Association from foreign parts, I take upon myself to order a small quantity of spring wheat, say fifty bushels in all, of the different kinds, (if more than one be grown) most esteemed where grown; to be good samples of last summer's crop. Particular mention to be made that it is required for seed. It would also be desirable (if the information could readily be obtained) to know about the time it was sown and reaped. You may mention that some samples imported into Lower Canada, a few years ago, did not grow, and request that every precaution may be taken to avoid kiln dried grain or grain which has been submitted to any process which may have destroyed its vegetating

powers. I wish it from the immediate neighbourhood of Riga. If the Consul there finds difficulty in fulfilling the order, and forwarding it at once, he might be instructed to send the order to the Consul at Dantzic, with a request that the wheat might be selected from that grown in his vicinity, and forwarded at once to Hamburg, between which place and Dantzic I believe a rail communication to exist. From that port to England is a weekly steam communication. It may be forwarded thence by our steamers to Portland, so as to reach Lower Canada in April, in time for our spring sowing. By these means a year will be gained. As my object in mentioning the above places for the purchase of grain, is on account of their latitude; I request that care may be taken to avoid the purchase of wheat sent to those parts for sale from more southern districts. Will you see that my letter is forwarded to the Minister of Agriculture, with a request that, if practicable, it may be acted upon at once.

I remain,

My dear Sir,
Very truly yours.

R. N. WATTS,

Pres., B. of A.

To WILLIAM EVANS, Esq.,
Sec.-Treas., B. of A.

GRANTHAM HALL,
24th Dec., 1856. }

MY DEAR SIR.—I have received the copy of Mr. Hutton's letter of the 17th instant, on the subject of the importation of grain, seeds and roots from foreign countries. It is a good practical idea, and can be carried out in a much more efficient and economical manner by the Government according to the plan suggested, than by private parties. The Foreign Consuls are mostly merchants, and well qualified to select what is wanted. In thanking the Minister of Agriculture for his communication, you will inform him that it shall be laid before the Board at its next meeting, which, however, does not take place before the close of the winter or the opening of the navigation.

There can be no doubt that the Board will gladly determine some desirable plan of availing itself of the offer.

In the mean while, it will advance business, if you ascertain from the Presidents of the different Societies whether they are disposed (and in what manner, stating particulars) to avail themselves of the offer on the conditions prescribed in Mr. Hutton's letter. You will request them to send you an answer before the 15th of March next. The Societies assemble in February to re-organize. They will, therefore, have both opportunity to consult and time to reply by that date. The whole summer will then remain for the fulfilment of any orders from the Baltic. We must not lose sight of the fact that the navigation of the Baltic is closed during the winter months, while it appears to me most desirable that any wheat for Lower Canada should be grown in the neighbourhood of that Sea.

I remain,

My dear Sir,
Very truly yours.

R. N. WATTS,

Pres., B. of A.

To WM. EVANS, Esq.,
Sec.-Treas., B. of A.

Oil-Producing Seeds and Plants.

Perhaps the following items may prove germs of some future improvements in our systems of rotation or lists of profitable crops.

Rape, which is very extensively cultivated in France, Belgium, and Holland, for the seed, has also been profitably grown in England for the same purpose. The experiments which have been made in raising it at Boxted lodge, county of Essex, show that the cultivation of rape for seed could be profitably prosecuted. During this season about £20 (or nearly \$100) per acre, has been realized. Whether it could be profitably raised in this country can only be determined by repeated trials, which, to be safe, should be on a small scale.

The fact is not very extensively known, we presume, that the Swedish turnip (*ruta бага*) produces nearly the same amount of seed as the rape plant, and that the seed of the former yields nearly as much oil as the seed of the latter. While the price of turnip seed is as high as it is at present, there will be no substitution of it for rape seed; but in a change of circumstances this fact might be turned to some good account.

Between Dunkirk and Paris, the white poppy appears to be gradually taking the place of rape as an oil-producing plant. It appears that the quantity of seed from the white poppy exceeds that from the rape plant, while the per-centage of oil from a given weight of seed is also higher—*being about double of that obtained from flaxseed*. If the seed of the white poppy should prove equally rich in oil, when grown in this country, the enterprise of those who should first venture upon its cultivation might secure an abundant reward. In addition to its utility, a field of white poppies in flower is said to be an object of remarkable beauty.

CORRESPONDENCE.

To the Editor of the *Farmer's Journal*.

SIR.—Since I have had the honour to be the Assistant Secretary of the Board of Agriculture for Lower Canada, it seemed to me that the Agricultural Act was misunderstood by many of the Officers of the County Agricultural Societies, who took the trouble of casting their eye on the law before sending any documents to the Board for their sanction, which put the members of the Board in a position that they could hardly decide the questions brought before them. The Act 16 Vic., Chap. 18, having been amended by the Act 19 Vic., Chap. 47, the two Acts being mixed together, the law is so confused that hardly can we receive from the Societies a regular document out of five; therefore, I thought it proper to make the above analysis, before the Agricultural Societies re-organise in February next; and offer it to the Societies, confident that they will excuse the style in which I wrote it.

Believe me, &c.

T. CHAGNON,
Asst. Sec. B. A.

Montreal, Jan. 20th, 1857.

ANALYSIS of the Act 16 Vic., Chap. 18, and 19 Vic., Chap. 47. About the Organization of Agricultural Societies in Lower Canada.

By T. CHAGNON, Esq., Advocate, and Assistant Secretary to the Board of Agriculture for Lower Canada.

[The first was assented to on the 10th November, 1852, and the second on the 19th June, 1856.]

I. From and after the date of the 1st Act, 16 Vic., Chap. 18, (1st January, 1853) an Agricultural Society may be formed in each of the Counties of Lower Canada, whenever thirty persons shall become Members thereof, by signing a declaration in the form of Schedule A, at the foot of this analysis, and subscribing each not less than five shillings annually to the funds of the said Society, and a true copy of the said declaration shall, within one month after being so signed, be transmitted to the Board of Agriculture.

II. To encourage improvement in Agriculture, by holding meetings for discussion, hearing lectures on subjects connected with the theory and practice of improved husbandry; by importing or otherwise procuring seeds, plants and animals of new and valuable kinds; by offering prizes for essays on questions of scientific enquiry relating to agriculture; and by awarding premiums for excellence in raising or introduction of stock, the invention or improvement of agricultural implements and machines, the production of grain and vegetables.

III. Societies shall hold their Annual Meetings in February in each year, and shall elect a President, a Vice-President, a Secretary-Treasurer and not more than 7 Directors, all of whom shall form the Board of Directors for such Society.

IV. Officers and Directors shall and may for the year next following the Annual Meeting, and until the election of their successors, exercise all the powers vested in the Society by this Act, holding their meetings pursuant to notice to each from the President, or in his absence, from the Vice-President, given one week at least before the day appointed for such meeting. The quorum will be of five at least, and the said Officers and Directors shall have power to make, alter or repeal By-Laws and Rules for the management of the Society.

V. Officers and Directors shall submit at their Annual Meeting a Report of their proceedings during the year, with the names of the Members their subscription, names of those to whom premiums have been awarded, the amount of such premiums respectively, and the name of the animal, article, &c., in respect to which the same was granted, with remarks on the agriculture of the County—also a report of receipts and expenditures, which, after being approved of by the meeting, shall be entered in the Society's Journal, and a copy, certified by the President, Vice-President or Secretary, shall be sent to the Board of Agriculture, on or before the first day of April following.

VI. Officers and Directors are bound to answer queries by the Board or the Minister of Agriculture, and to act according to the recommendation of the said Board.

VII. Each County Society is bound to hold at least one Show in each year, for the exhibition of agricultural products, farm stock, implements, &c., notice whereof being publicly posted in each Parish and Township of said County. Prizes may be in money, books on agriculture, implements or grain.

VIII. Instead of holding a Show a Society can have a Public Granary, Agricultural Schools, Model Farms, for the improvement of Agriculture, on obtaining the approval of the Board of Agriculture.

IX. The Secretary-Treasurer, only, can have a salary of a sum not exceeding seven per cent on all moneys expended by such Society, in lieu of salary and allowance for Stationery and other contingent expenses.

X. The Societies organized under this Act shall be Bodies Politic and Corporate, and shall have power to have land, but not more than 100 acres at one time, to hold their Show and Exhibition or for a Model Farm.

XI. On sending an attested list of subscriptions, in the form of Schedule B, at the foot of this analysis, signed by the Secretary-Treasurer of the Society, sworn to before a Justice of the Peace, the Vice-President and Secretary of the Board of Agriculture shall certify to the Minister of Agriculture that statements and reports as required by this Act, have been sent to this Board, and such Society will receive three times the amount of its subscriptions, to the amount of two hundred pounds, (according to the Amendment Act of the 19th June, 1856. 19 Vic., Chap. 47.)

XII. The Board of Agriculture will receive that money and pay it over to Societies, less 10 per cent, they have a right to retain for the use of the Agricultural Association.

XIII. Any Treasurer or other who shall make a false affidavit that a sum of money has been paid to him, shall be held to have committed perjury and liable to all penalties which the Law inflict for that offence.

Society may be formed in each County, and how.

Object of such Societies, and how to be promoted.

Annual Meetings.

Term of Office.

Meetings.

Quorum.

Powers.

Annual Report to be made by Directors; what it shall contain.

Answering queries of Board &c.

Show in each year.

Public Granaries.

No Salaries to be paid.

Societies to be Corporations.

Government allowance to Societies.

Payment of Grant to Societies.

False Affidavit, Perjury.

Amendment Act, 19 Vic., Chap. 47, 19th June, 1856.

Amendment of the Sec. XI, of the Act 16 Vic., Chap. 18.

I. By this law each of the Counties, as divided by the Parliamentary Representation Act of 1853 and 1855, can have an Agricultural Society and its limits, as well as the Electoral Divisions, provided the latter shall not be entitled to more than one half of the amount of the public grant for a County, viz.: £100; Nevertheless, will be excepted the Counties of Gaspe, Bonaventure, Vaudreuil, Nicolet and Drummond, which may establish or continue to have two Agricultural Societies in their respective limits, which shall retain their present limits and shall be continued under their present organisation.

Horticultural Societies.

II. An Horticultural Society may be formed in any County, City or Town within the limits of such County, and it shall be lawful for the Board of Agriculture in L. C., out of the amount to which the said Counties or Electoral Divisions claiming the same may be respectively entitled from the public funds, to place into their hands a sum equal to that subscribed for that purpose, and not exceeding £37 10s cy.

Allowance to Counties. Where there are two Societies in a County. Amendment of the Sec XII, of the Act 16 Vic., Chap. 18.

III. The Government allowance shall not exceed £200.
IV. In any County in which two Societies shall exist such Societies shall be equally entitled to receive the annual grant, not exceeding one hundred pounds each, in the same manner as County Societies;—provided they subscribed at least one third of that sum. In case only one Society shall be in operation they shall not be deprived of subscribing the sum required to entitle them to the whole grant of £200—and if one of the two Societies does not subscribe enough to entitle them to their grant of £100, viz.: less than £33 6s 8d, the other Society in subscribing the requisite sum over their necessary subscription shall be entitled to the balance of the said grant.

V. Societies organized before this Act, to cease on the 1st of January, 1857, except those in Section I, and to settle their affairs, and transmit the balance in hand of the sum subscribed, by a part of a new County, to the Secretary of the said new County Society, where an Agricultural Society shall be formed under this Act, 19 Vic., Chap. 47;—Provided that such new Society shall be formed and go into operation on or before the first day of August, 1856.

ACT OF FORMATION OF SOCIETY.—SCHEDULE A.

We, whose names are subscribed hereto, agree to form ourselves into a Society, under the provisions of the Acts of Legislature, 16 Vic., Chap. 18, and 19 Vic., Chap. 49, to be called the County of Agricultural Society, and we hereby severally agree to pay to the Treasurer yearly, while we continue members of the Society, the sum set opposite our respective names, and we agree to give written notice to the Secretary whenever we may wish to withdraw from the Society, and we further agree to conform to the Rules and By-Laws of the said Society.

Names.	Residence.	Amount Subscribed.		
		£	s.	d.

ATTESTED LIST OF SUBSCRIPTIONS TO BE SENT TO THE BOARD OF AGRICULTURE.—SCHEDULE B.

COUNTY OF to-wit:

I, A. B., of the County of Treasurer of the County of Agricultural Society, make oath and say, that there are (number) Members belonging to the said Society, who have paid their subscriptions for the present year, and that there is now in my hands the sum of £ being the produce of such subscriptions, ready to be disposed according to Law.

SWORN to before me, this day of A. B.
A. D. 185

C. D., *Justice of the Peace.*

RECEIPT to be sent in duplicate to the Secretary-Treasurer of the Board of Agriculture to receive from him the Government Grant.

We, A. B., President, and C. D., Secretary-Treasurer, of the County of Agricultural Society, acknowledge to have received from E. F., Secretary-Treasurer, Board of Agriculture for Lower Canada, the sum of £ being the Government allowance to this Society, for this year, one thousand eight hundred and fifty

Place. Date.

A. B., *Pres. Co. of Agric. Society,*
C. D., *Sec.-Treas. Co. of Agric. Society.*

REPORT OF RECEIPTS AND EXPENDITURE.

Date.	Receipts.	Expenditure.	Date.	£	s.	d.
	To Govt. Allowance, To <u> </u> &c., &c., &c.	Premiums awarded on, Paid to <u> </u>				
	Balance,					

REPORT OF THE SHOW TO BE SENT TO THE BOARD OF AGRICULTURE.

Class and Section.	Names of Animals, &c.	Prizes Awarded.	Amount of Premium.		Competition.	Residence.
			£	s. d.		
		1st P. 2nd P. 3rd P.				

Remarks:—

Rural Economy of New England.

Greater ignorance and greater neglect of agriculture have been witnessed, nowhere, than in the United States. This is perhaps strongly stated, but is near the truth. In the South and West, the proprietors hold land enough to persist in bad management, for two or three generations; an exuberant soil produced abundant crops, without artificial enrichment, or very heavy labor; when one field was exhausted another was cleared and tilled to poverty in its turn. This kind of farming so impoverished the country in some of the older districts, that the inhabitants were, at length compelled to emigrate to a new region; the employment of more skill and capital on the old farms being out of the question.

In New England, a less fertile soil always demanded more labor; yet few attempts were, for a long time, made and now they are not too frequent, to go out of the common routine of a very restricted cultivation. The inclination among the rural population of New England has been almost universal, to devote all their skill and capital to some branch of trade or manufacture, or to navigation. Those who have been disposed to continue agriculturists, have found it easier and more congenial to their restless and enterprising natures, to sell out, collect their effects, and remove a thousand miles, to a richer region, than to think of improving the old homestead. Change of location or change of pursuit, rather than the employment of more skill and more capital, have, thus far been the means of bettering their condition, among New England farmers. Hence our rural population has been kept scattered and thin, over the face of the country.

The routine of cultivation has, in general, been this—a field of Indian corn, with a border of potatoes—a few fields of small grains—an old pasture and old meadow of natural grass, and with a stock of cattle to suit. The only part of the farm, well cultivated, was the field of Indian corn, which received, commonly, two or three plowings and hoeings—the plant beautiful, in all stages of its growth. No root crops were ever thought of for animals—no manure provided for the farm, except what was thrown from the barn windows, during the winter. Breeds of cattle or horses were not considered; but such were raised or bought, as happened to be. Indeed, with the exception of the working oxen, if the other stock was kept from starving, during the winter, the farmer was satisfied. In a plentiful year, all that was raised was consumed, and if a little waste was necessary to this end, it was readily resorted to. If there was a large crop of corn, the turkeys, pigs and hens were somewhat fatter; and if any hay was left, old hay was considered poor stuff. It would have been difficult, in any county, to have found ten farmers who looked forward to the blending of the oper-

ations of two or three years together, or who had any system of farming or of agricultural economy. How often, even yet, is the question discussed of how much working capital is necessary for a farm, or how many animals it will support, or can be made to support? I do not say that better things have not been attempted, but the experimentalist has, generally been a warning; and after having made his improvements, of walls, fences, showy barns, and orchards; and after having cultivated his fields without economy of labor and with strict economy of manures and outlays in stock and implements, and without a system, running over a term of years, he has found his produce a few tons of hay, a few bushels of corn and potatoes, and has joined his testimony to that of others, that it was impossible to make anything by farming, in New England.

Still, I can call before my mind scenes which even our poor New England agriculture has created, on which my eyes have rested, with a delight which no other scene earth can call forth—the farm-house, looking like a home, shaded by two or three spreading elms, with its large barns, where the grain and hay were stored and the cattle housed, with their large barn doors and ample floors, for husking, and thrashing, and for a play-place, for rainy days; with its extensive orchard; its one or two fields of Indian corn, with pumpkin vines interlaced; its small brook-home of trout, running through the green meadow; within sight of, if not adjoining, the noble wood-lot of trees of clean and smooth bark free from moss, such as are found in no other land, that supplied the fuel of the family fire, which from capacious, fire-places shone on the manly, honest, cheerful faces, through long winter evenings, of a religious New England household.

Still, though our agriculture afforded many lovely scenes, these did not alter its history. Farmers were generally in debt; when the income of the year failed to meet its expenses, they gave notes to the storekeepers for the balance, until the debt, in a few successive years, swelled to a magnitude that demanded a mortgage, the foreclosure of which swallowed up the farm; while the law of attachment swept off its personal property. Such has been the history of our agriculture.

Agriculture has some disadvantages in New England; our late springs and their June frosts,—our droughts—and our long winters.

The evil of late frost is most felt by the farmer in the cultivation of Indian corn; and against this evil, he must offset the splendid advantage he has in the warm summer, when the plant grows *audibly*, and the late falls.

The effect of our droughts can be entirely overcome by deep tillage, which our soil needs. About six years ago, rather in the

way of experiment than of profit, I began to trench two or three acres of land, resolved to trench it five or six years, systematically, mixing about four inches of the subsoil, at every annual trenching, with the upper soil. The natural soil was a gravelly clay loam, of about a foot in depth. By bringing up each year about four inches of subsoil, and bringing it in contact with the atmosphere and manure, the whole soil is now about three feet deep. No drought has ever affected this land. The same thing which I did with the spade, might have been done by the subsoil plow, followed by a common plow, till the soil was sufficiently deep for all purposes.

Our long winters, the farmer must find the blessing in which God has imparted to them, rest and improvement, if not profit.

I do not admit the disadvantage of our soil, for I do not think it, naturally, inferior to the natural soil of England, the best farmed country in the world. Our climate is not as favorable as that of England to the turnip; but Indian corn is a gift of God as valuable to us as the turnip is to England. But we are, for the most part, successful in the culture of the turnip.

The complaint is often made that our New England farmers occupy too much land. This is not the proper form in which the fault, with which our farmers are chargeable, should be stated. The proper complaint is, that our farmers do not employ, in the tillage of their lands, capital proportioned to their acres. Capital, among New England farmers, being limited and more divided than in England, it is expedient that the farms should be smaller, so as to correspond with the working capital. Suppose the working capital to exist in proportion to the acres cultivated, the size of the farm is determined by such circumstances as these, the nature of the soil, the climate, and the kinds of crops prevailing. Branches of agriculture that require a great amount of manual labor, demand a greater division of fields of operation. You are struck with this fact, in the market gardens, in the neighborhood of cities; in the onion cultivation, in the neighborhood of Wethersfield. A larger farm is expedient where a part is fine meadow land, especially, if it be overflowed and mowed by machines, a part in wheat, rye, or oats, with a soil easily prepared for the crop by horse plowing, and a part in Indian corn, cultivated by the plow or cultivator chiefly, and a small part in potatoes and roots. But still larger farming is required, and small farming is an evil in such a case as this, not uncommon in New England; take a mountainous region where the soil is poor and granite, the climate cold, where wheat cannot be cultivated and hardly rye and oats, where, however, grasses and roots flourish, and irrigation is easy from abundant streams, and the slope of the land—here is a region for breeding and fattening cattle, and calls for large farming.

Again, take a cheese farm, a branch of domestic industry, in which ten or twelve good cows suffice to give employment to a family in the country, without assistance; here you call for small farming; for who would wish the cares and help of a large farm to disturb the interior of one of these humble cottages so clean, so orderly, with an air that breathes peace and industry and happiness. But the whole secret of farming, large and small, be it never forgotten, lies in two words, Capital and Skill. Working capital is one of the chiefs agents of production. Three kinds of capital conduce to the development of agricultural wealth. First, *sunk capital*, which is formed, in the course of time, by outlays of all kinds, often through successive generations, for bringing the land into good condition. Second, *working capital*, consisting of animals, implements, and seeds, &c. Third, *intellectual capital*, or agricultural skill, which is improved by experience and thought. In sunk capital—that is outlays through successive generations, for bringing the land into good condition—England is very rich, —New England very poor. Of working capital, England used to deem forty dollars to the acre sufficient; now, she deems eighty dollars to the acre not too much. New England deems that sufficient which the farmer happens to have. I shall not compare the intellectual capital of the two countries, lest I should hurt the feelings of my countrymen, or do injustice to our ancestor's children, who remain in the old home.

I do not claim that the agriculture of New England should be assimilated in all respects, to that of England. I know this is impossible, and I do not regret it. But I do claim, that we should learn, from English experience in agriculture, as we have in manufactures.

England has settled it, that agriculture cannot be conducted with success, without capital and skill. I do claim, that we should not attempt to get along without them, nor consider that our agriculture cannot succeed, till we have tried them. England has settled that agriculture cannot enrich, unless it maintains many animals, sheep, cattle and pigs, which enrich the soil that feeds them. I claim, we should consider this a settled axiom, as true here as there.

England has settled, that it is more than twice as profitable to feed a breed of sheep, on its farms, which are fit for the butcher at from one to two years old, than a breed that is fit for the butcher at from three to four years old; and that it is twice as profitable to raise breeds of sheep, which, when fit for the butcher, will yield from 80 to 100 pounds of net mutton, than a breed which will yield from 40 to 50 pounds. England has further shown, that there are such breeds, and how they may be produced. New England, I claim, must take notice of this fact, and act upon it.

England has shown similar results in cattle. England has shown that her agriculture is rich in crops, and enriched by crops, according as she connects the operations of three or four years together, by a rotation of crops. New England must adopt a system or rotation of her own, or show that England does not produce the result claimed by her system, or that a similar system will not produce similar results here. The English system is, first year, roots; second, barley or oats; third, clover; fourth, wheat. Is there no Arthur Young who can settle ours in New England? If we believe the Quakers, our Arthur Young must leave wheat out of our rotation; for some of that sect have maintained that we have never been able to raise wheat, in Massachusetts, since we hung the Quakers. Our crime was bad enough, and its punishment has been severe enough if it has been the curse of our wheat culture; but I would recommend that we try a somewhat more systematic culture, before we acquiesce in the Quaker doctrine.

England has established breeds of milch cows, which give three or four thousand quarts of milk in a year; and her cows average nearly double the quantity of ours. New England must establish similar breeds if it would have an agriculture as rich as England's, in milk, butter and cheese. England has shown that an agriculture can not be prosperous in which animal produce falls short of the vegetable produce; and the agriculture of Ireland and France confirm this truth. Yet the live stock of New England is said to be diminishing.

England has shown what can be done for wet lands and a moist climate, by drainage. How long are our wet lands to have their fertility obstructed by standing water? If our uplands need not drainage, like those of England, they need deep tillage.

England has shown what cultivation with capital and skill can do for a soil not naturally superior to that of New England. Are we to despair of our soil, because it remains sterile, when we have not cultivated and enriched it? England has shown that the love of country life gives vigor to a race, and strength to a nation. Are we to learn the same lesson, after we have wasted our strength in cities, and lost the freshness of our natures, in the dusty paths of gain?

I come now to the most difficult question, which perplexes many minds, and spreads dependency over many households in New England. Can agriculture be made profitable as a business, and followed as an occupation with a reasonable hope of bettering one's condition in New England? If the farmers of New England should testify that they had found it a profitable pursuit, and state what these profits have been, this would be the most satisfactory settlement of the question. I suppose their testimony generally, would be that they made both ends meet, and, but little, if anything more; at least,

this would be the general testimony, though in some parts of New England it would be less satisfactory than this. But if the farmers of New England testified that they could not get a living by farming, this would not settle the question that farming could not be made profitable in New England, because it might be they had not adopted the right system, or had not employed capital enough, or skill enough, or had not the best and most profitable breeds of cattle on their farms. Let us approach this question from the English side, and by comparison; and see whether English farming is profitable, and how, and from what causes, and what advantages the English farmer has, and what disadvantages we labor under.

Farmers in England are, generally, tenant farmers; who hire the farms they cultivate, and pay rent. They form, there, a class of men, early educated to farming, and who devote their whole lives to it. These men are not exactly laborers, but are in comparatively superior circumstances, and quite intelligent. Farming is their profession, with all the chances of loss and gain; and if the chances of loss are sufficient to keep their attention awakened, the chances of gain are also sufficient, to excite their emulation. England has many examples of fortunes made by farming, which induce many to become farmers by profession; while, at the same time, it is one of the most agreeable, the most healthy, the most honorable professions in which mind and body can be engaged. These farmers live, for the most part, in a quiet, comfortable style, have their newspapers and periodicals, and produce, occasionally, on their tables, a bottle of claret or port. When visiting the country in England, one meets with a hospitable reception from these kind and simple families, who have occupied the same lands for several generations. The most perfect order reigns in their domestic economy, and everything in their houses is conducted with that habitual regularity, which indicates long usage.

Now these farmers in England realize from three dollars and a half to seven dollars and a half per acre, as their net income, or profit, after paying their landlords from five to ten dollars the acre, as rent, and after paying about two dollars an acre, as taxes. They have no desire to change their situation, because they get the net profit stated, employing a working capital of their own, on which they also get interest, of about \$4000, on a farm of from 100 to 150 acres; whereas, to be a proprietor, the farmer would be obliged to invest from \$15,000 to \$20,000 in the farm in addition.

Now, I suppose it will be conceded, that where a man is proprietor of his acres, as he is the United States, as well as the farmer of his acres, and has as much skill as a tenant farmer, the same capital to carry on his farm, and as good a farm, that no mode of farming can compete with proprietor farming

The wages of a farm laborer in England are from forty to fifty cents a day, probably now fifty. The prices of farm produce in London, to wit, hay, wheat, mutton, beef, milk, &c., do not average higher than in Boston. The price of farming lands in England are more than double the price of farming lands in New England; but much richer in *sunk* capital.

Taxes in New England probably do not exceed fifty cents an acre, on farming lands; while in England, they are two dollars an acre. Farm laborers' wages in New England are double what they are in England, that is, a dollar a day.

Now, here are the elements of calculation or comparison, to determine whether the same farming which is profitable in England, could be profitable in New England. Observe. I say the *same* farming; for we cannot expect poor farming, without capital and skill, to be profitable in New England, while only good farming, with capital and skill, is profitable in England.

In cost of land, the New England farmer has, I think, the advantage, even after he has enriched it; in taxes, he has the advantage; in markets, equality; in wages, he pays double. Can the disadvantage the New England farmer labors under in the rate of wages be overcome? One would think that a proprietor farmer, in New England, might arrange a system of farming which calls for the least manual labor, and pay a dollar a day for labor, and do more than compete with an English tenant farmer, who pays a heavy rent, heavy taxes, and fifty cents a day for labor.

I can point to many a farm in England, of 150 acres, on which the tenant farmer pays \$1200 a year rent, \$300 a year taxes, and what are there called good wages, and clears, without much trouble, \$6000 a year. But here are the elements of his success—not better markets than ours, but a good stock of sheep of the best breeds, early fit for the butcher, yielding 80 to 100 pounds of net mutton, and a good fleece; the best breeds of cows and of pigs, his farm cultivated with a proper rotation of crops, with proper proportion of meadow and pasture, the farming not high, but such as the most judicious and economical man would approve. Would such a farm, thus cultivated and stocked, in the hands of a New England proprietor farmer, of equal skill, pay—wages being a dollar a day? If it would no profit, then our agriculture is, and is likely to be, in poor condition; if it would yield a remunerating profit, then we may yet have a rich agriculture.

To make more distinct the different results which we should have in New England, if we covered our farms with the best breeds of sheep and cattle, as the English do, that is, breeds of great precocity, and yielding the greatest weight of meat at the earliest age, I make the following statement, which is the result of pretty accurate

calculation, and will bear, I think, examination, and make clear that we may have success in our agriculture, if we will imitate those who have succeeded. The markets in England and New England being equal in price for mutton and wool, and allowing what is not true, that we get as heavy a fleece from our sheep as the English do from theirs—for every fourteen dollars our farmer realizes from a flock of sheep, the English farmer realizes from a flock of the same number, thirty-six dollars; or where our farmer realizes fourteen cents, the English farmer realizes thirty-six cents. And in regard to cattle, oxen and cows, where our farmer, from their milk, and meat, and work, realizes \$28, the English farmer, from the same number, realizes \$36; yet the English farmer never works his oxen. In the one case, the English farmer has an advantage of more than a hundred per cent., and in the other, of about twenty-five per cent. What wonder, if these things be true, that English agriculture is profitable, and our agriculture unprofitable?

Some now living can remember when it was stoutly contended that we could never carry on manufactures to advantage; but time has proved their predictions false. Agriculture is only another and higher branch of manufacturing, carried on by skill and capital, proportioned to the acres cultivated; and when the capital and skill of New England shall turn in this direction, and the love of the country, which is natural to our race, shall return to our bosoms, the present feeling of despair respecting New England agriculture will vanish away.

Agriculture is a art of slow growth, not a science; though science may, and has contributed to its progress, in a degree. In its first stages, agriculture is imperfect and poor, depending almost wholly on the natural fertility of the soil, and poor methods, and not on the skill and capital of man. In this stage it remains, until commerce and manufactures have developed themselves. Then it is found that to feed the cities, and towns, and plains, where manufactures have fixed their seats, agriculture must be developed into an art, requiring skill and capital, as much as any branch of manufacture. If, after manufactures and commerce have been developed in a State, the people have not energy and skill, then, to bring agriculture to a higher development, the whole State languishes, and individual distress, poverty and emigration prevail, and national decay follows. Wise and good men have thus far, watched agriculture in New England, through its primitive stage, in which it relied on the natural fertility of the soil, and as this wore out, have seen the rural population grow thin through emigration, and by engaging in commerce, and navigation, and manufactures; and these good men have not despaired, but have been diligent in stimulating the agricultural spirit of the people, by organizing agricultural societies, establishing

agricultural publications, invoking the aid and patronage of the State, importing the best breeds of cattle, and used every method and endeavour to inaugurate in New England, the second stage of agricultural development, in which skill and capital make agriculture the fruitful mother of harvests and men. These men have never been wanting in hope, and faith, and patience; and others will see, if they do not, the results of their works. M.

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GROWING FRUIT FOR MARKET.

In *The Horticulturist* for August we find the first of a series of papers on "Visits to Country Places around New-York," from which we select the following account of the fruit-growing operations of our friend Dr. I. M. WARD, of Newark, N. J.:

We first visited Dr. I. M. Ward, near Newark, N. J. The doctor is engaged in the laudable pursuit of fruit culture, for the New-York market. This he does from a love of the subject, no less than with a view to the benefit of himself and his family; his example is one which we should be glad to see followed by other gentlemen, who, by showing what may be done by the employment of capital and intelligence, will be the means of teaching others, and thus a better supply of wholesome fruit will be at the command of our great cities, now but half supplied. The demand appears to be unlimited; in New-York, for instance, his agents, the middle men, a class of honest dealers who have risen up since the mode of sending fruit by wholesale, instead of accompanying it, and chafing for the market value, keep an account of the quantity received from each cultivator, and allow full returns in a most business-like way. Thus one of the most serious difficulties is obviated. Dr. Ward employs pickers at so much a bushel or quart, and by the hour; he can be mostly at home to superintend these operations; the fruit is forwarded by a regular steamboat, consigned to the middleman, who receives it within an hour or two, has his market engaged for each variety, and the distribution goes on like clock-work. You may leave Dr. Ward's at breakfast time, and dine at Delmonico's, on his strawberries, which were being picked when you started; or be at a private party in the Fifth Avenue, in the evening, enjoying his grapes or pears, which left Newark at four o'clock.

The proprietor enjoys a great advantage of his own; as the fruit ripens by degrees, the first picking of grapes, blackberries, or strawberries, being insufficient for market, the family have the earliest for themselves and their friends, and, by the time the period of abundance has arrived, they have probably had sufficient to satisfy all, and can devote the whole remaining crop to sales. Dr. Ward has five acres of strawberries, an acre and a half of raspberries, one acre of grapes, two hundred cherry trees planted along his paths and roads, in such positions

as not to injure the other crops by their shade, one thousand pear trees, standards and dwarfs, half an acre or more of currants, and his place is beautified with shade and ornamental trees, forming a *tout ensemble* of plenty and beauty such as thousands living in cities might envy, and if they would study the subject as the doctor studies it, might reap rich returns from.

Though this place has been in the tenure of its present owner but ten years, the returns are already nearly sufficient for the wants of a large family. The strawberry culture is of recent introduction, and we shall be surprised if the entire returns of the present season do not considerably exceed three thousand dollars, with abundance of all farm produce for himself. Surrounded by beautiful scenery, fine wood and water, an intelligent home and visiting circle, our friend and correspondent enjoys a life much to his own taste, and confers a useful boon on his fellow-men. In winter, the family remove to Philadelphia, where the doctor lectures to a class of medical students, and attends to the education of his family. This is a picture so pleasing to the mind, and so so eminently worthy of imitation for its utility, that our host will pardon our holding it up in this way as an example to others. Already his neighbourhood is benefitted and improved by seeing his success; in a few years, this section of New-Jersey will be a main prop in supplying the greedy maw of its neighbor, New-York, to the advantage of both.

Dr. Ward, after much examination, has adopted the Iowa or Washington Strawberry, as producing a large and valuable crop. Burr's new Pine, he thinks, will prove too soft for a carrying crop, though its flavor is unsurpassed. The Early Scarlet follows Iowa in ripening, and is a good market kind. Hovey's Seedling he considers an excellent market crop, and that it must always continue to be valuable. Several other kinds are under experimental cultivation. We were so fortunate as to be there at the earliest picking, when the citizens were paying any price demanded for the first berries of a good size and from the neighborhood, the Southern ones being discarded as soon as the Jersey crop made its appearance. The pear tress here will yield an average crop, which may be worth a thousand dollars; much more than this sum will, no doubt, be realized per annum, when the standard tress come into bearing. Dr. Ward has himself enlightened our readers on his mode of pear culture, so that we need not enter now on the subject. All the larger cities of the Union, and even very many small ones, offer inducements to cultivators to pursue the system we have faintly indicated. A few years only will elapse before this gentlemanly system will be extensively imitated.

SAVING MANURES—USE OF PLASTER.
—Messrs. Editors—Next to a thorough pulverization of the soil, there is probably no department of successful farming more important than a careful saving and proper application of the manures. That the latter, even in these days of progress, does not receive economical attention, is evident not only from the careless management around many yards and stables, where in winter large deposits are naturally made, but from the vast amount of material found on nearly every farm, which is allowed to waste.

First, in barn-yards and around stables: How often we now see the grounds around them better drained than any other part of the farm. All their juices are allowed to run off as soon as the manure becomes thoroughly saturated, and often pass into the highway, hollows in adjoining lands, and sometimes into swamp holes. All this of course is a very great waste of fertilizing power—much greater than it looks to be when we see it running away.

The proper remedies are to have a cistern to retain this extract until it can be taken up for distribution, or what in our view of the matter is as well, to have hollow places in the yard to receive it, and absorbents to fill these places, not only to drink it up, but of themselves, when subjected to its influence, to become valuable manures. If, for instance, basins are made in the farm yard to retain its juices, all the refuse of corn-stalks are easily removed to them from the elevated parts of the yard, and these from their absorbent qualities, readily drink in the juices, and in six or eight months become sufficiently decomposed and assimilated to form a good manure. Turf and muck will answer the same purpose; their liability make the yard muddy in wet times is an objection with many, but when the butts of stalks or leaves from the forest are intermingled, no danger arises from this operation. So with all the waste ever accumulating around the farmer's premises; chips, old rags, or indeed anything absorbent or decomposable, may go into this common receptacle brass and come out gold.

Another method of increasing the quality of manure and of course extending the quantity, is to frequently strew the yard and the manure heap with ground plaster. If done once in two or four weeks, and in quantities to well whiten the heap and the yard, all the better. Brother farmers, this is no blind theory at which we arrive by reasoning and recommend to you for trial. We state the thing as a fact we have established by our own practice, and the results have fallen under our observation. You all admit that the benefits of plaster on newly stocked or recently manured lands, are greater than on old stocked, exhausted soils. You say the plaster does best when it has a little manure to work with. We say, the plaster added to the increasing manure heap, enables it to give still greater action. *Science*, as well

as marked results, tells us so. But some farmers are yet afraid of science, so we will not offer them the dreaded *poison* as they suppose. We wish we understood it better, and ask them, y common sense, which after all is pretty much the same thing with another name—to mix plaster with their manure just for this coming winter. W. BACON.
—Country Gentleman.

NEW METAL.—Galvani's Messenger states that *Aluminum*, a recently discovered metal, is beginning to come into more general use in France. "The eagles which surmount the colors of the army, which have hitherto been made of copper gilt by galvanism, are now made in this new metal, and thus lighten the weight of the flag by nearly 2½ lbs. Aluminum is more sonorous than bronze, and is consequently brought into use for musical instruments. Spoons and forks, drinking cups, &c., have also been formed of it. The weight of aluminum is only about one-fourth that of silver. Fine silver being worth 225 fr. the kilogramme, and aluminum 360 fr., a piece of the latter equal in size to a kilogramme of silver will only be worth 75 fr., instead of 225 fr. Thus a fork and spoon which in silver would cost 50 fr., would be only 15 fr. in this new metal."—Country Gentleman.

CUTTING GRAFTS.—There is no better time to cut grafts than in the commencement of winter. In cutting and packing them away, there are some precautions to be observed. In the first place, let them be amply and distinctly labelled, as it is very annoying to find the names gone at the moment of using them. For this purpose they should be tied up in bunches, not over two or three inches in diameter, with three bands around each bunch—at the ends and middle. The name may be written on a strip of pine board or shingle, half an inch wide, a tenth of an inch thick, and nearly as long as the scions. This, if tied up with the bunch, will keep the name secure. For convenience in quickly determining the name, there should be another strip or shingle, sharp at one end, and with the name distinctly written on the other, thrust into the other with the name projecting from it. If these bunches or bundles are now placed on ends in a box, with plenty of damp moss between them and over the top, they will keep in a cellar in good condition, and any sort may be selected and withdrawn without disturbing the rest, by pulling the projection label. We have never found sand, earth, sawdust, or any other packing substances so convenient, clean, and easily removed and replaced, as moss, for packing grafts. It is needful however, to keep an occasional eye to them, to see that the proper degree of moisture is maintained,—which should be just enough (and *not a particle more*) to keep them from shrivelling. They must, of course, be secure from mice.

Plum grafts, which are sometimes injured by intense cold, are generally better if cut before the approach of the severest weather, and securely packed away.

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To Clean Chaff out of Seed Wheat.

On our late visit to the farm of Mr. John Johnston, near Geneva, N. Y., he informed us that some years ago he was a believer in, and an earnest advocate of the theory that wheat would turn to chaff. In some of the early volumes of the *Genesee Farmer* he cited several facts which had come under his observation, and which appeared to prove that, in spite of botanists and vegetable physiologists, wheat would turn to chaff. This idea was combatted by several correspondents of the *Farmer*; and, as Mr. J. confessed to us, he had to acknowledge to himself that he was worsted in this "paper war." Fully persuaded that he had the best side of the argument, and thinking that his opponents had the advantage simply because better skilled in the use of the pen, he resolved to prove beyond all controversy, by ocular and practical demonstration, that wheat would turn to chaff.

He took three bushels of wheat (we believe this was the quantity, but it is immaterial) and looked it all over, grain by grain, picking out all the chaff. When he had finished, he was satisfied that there was not a grain of chaff in the whole three bushels. Now, then, thought he, I shall have them; if I get chaff from this wheat, it won't do for them to tell me that I sowed chaff with the wheat; and he had no doubt that, as usual, he should have "lots of chaff." The wheat was sown; and the result was, that while there was an abundance of chaff in the wheat cleaned in the ordinary way, there was not a single ear of chaff on the land sown with the clear wheat. This experiment, which Mr. J. made in order to convince the theorists that wheat would turn to chaff, had the effect of convincing him that he was in error, and that the great cause of chaff in wheat must be ascribed to sowing chaff with the seed wheat.

Once satisfied that wheat would not turn to chaff, Mr. J. resolved to sow no more of it; and he hit upon a plan of cleaning seed wheat which took out every grain of chaff. The method is simply this: After the wheat has been cleaned in the ordinary way, by running it through a fanning mill, take the riddles out of the fanning mill, leaving the screen in; take off the rod that shakes the riddles and screens; pour the wheat slowly into the hopper with a basket or a half bushel; turn the mill a little quicker than for ordinary cleaning, and every grain of chaff will be blown out, unless where three seeds stick together, which is sometimes the case with the top seeds. Two men will clean from ten to fifteen bushels per hour. If the wheat is light, say weighing from fifty to fifty-five pounds per bushel, considerable wheat will be blown away with

the chaff; but where good Genesee wheat is raised, as in this section, weighing from sixty to sixty-four pounds per bushel, little or no wheat will be blown out. In some cases it is better to raise the hind end of the fanning mill about two inches from the floor; more wind can be given and not blow away the wheat.

Since Mr. Johnston adopted this method of cleaning his seed wheat, he has not raised a "wine-glass full of chaff in more than twenty years."

We may remark that the same practice is very generally adopted in England, not only in cleaning seed wheat, but in cleaning all their grain for market, more especially barley.

There is a high duty on the process of converting barley into malt (about seventy-five cents per bushel); and the malsters naturally do not wish to pay duty on barley of an inferior quality, or on light grains that will not germinate, or, consequently, make malt. On this account, farmers are particularly careful to clean their barley before sending to market. It is first run through the fanning mill to separate the chaff from it; then through a machine to break off the "pales," or beards; and then again through a fanning mill with a finer set of riddles and screen. After this the riddles are taken out, and the barley is run through as in the process above described. Many farmers have a machine on purpose for this work, and consider it indispensable. It is called a "Heaving Machine." A good sample of English barley, when cleaned in this way, will weigh fifty-six pounds per bushel. On Mr. Lawes' farm, at Rothamstead, we have known his experimental barley to weigh fifty-eight pounds per bushel. This great weight per bushel, however, must not be attributed to the process of cleaning alone. It is more probably due to climate, inasmuch as the wheat, no matter how well it is cleaned, is not so heavy as Genesee wheat.

Mr. Johnston thinks every agricultural paper in the country should give this process of cleaning wheat, and urge their readers to adopt it. If any wheat-grower will once try it, he will never again sow wheat without running it through a fanning mill in the way described.—*Genesee Farmer*.

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Fattening Sheep.

In answering "A Young Farmer's" inquiries upon this subject, made in the *Co. GENT.*, No. 13, Vol. 8, I will merely tell him how other people's sheep have been fattened, and let him use his own discretion in following it, or not.

Sheep must be well protected in cold and wet weather. Sheds for this purpose are to be made, closed on every side but the south. Some straw should be provided in very cold weather for bedding. To fatten them, or any other animal in winter, keep them dry and warm. The more rest they have, consistent with health, the better they fatten.

They need two and a half to three pounds of hay each per day, and from one to three gills of ground corn, or corn and cob-meal. A varied diet of roots and grain is best, as it is not so heating as all grain. Steam the roots and chop them fine. One feed of roots and one or two of grain per day will lessen the amount of hay required. They must have fresh water twice a day at least—and a trough with tar sprinkled with salt, of easy access. Some green pine tops thrown in to them occasionally to browse on, are said to do well in lieu of the tar; but do not neglect to give them salt frequently. Chopped oats may be fed to them in place of corn, if preferred. They may be put up as soon as cold weather comes on, allowing the use of a small lot in fine weather, with access to the shed. These are general directions, to be modified in their application to particular locations and circumstances.

In addition, allow me to advise "A Young Farmer," and old ones also, to provide themselves with a good agricultural library, in addition to their weekly or monthly agricultural journals. They will never regret the purchase, and I will guarantee an outlay of twenty-five dollars so expended, will be more than twice repaid by the information so procured. "A Young Farmer" will find "Randall's Sheep Husbandry" soon paid for, by its telling him how to put on an extra layer of fat on his twelve wethers, which will bring into his some extra dollars.

When you want an agricultural book or treatise, ask the editor of your agricultural paper which is the best work, suited to your wants, locality, &c., upon the particular branch or subject needed, and he will not fail to give you good advice, especially if he is a *Country Gentleman*, or Cultivator. H. H. *Rose Cottage, La.*

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Small Farms.

Mr. Editor:—I find in an old Roman poet this precept to Roman farmers:

"Praise a large farm,—till a small one."

Although it was penned almost two thousand years ago, yet it applies with unabated force to American, and especially to New England farmers. There is among our tillers of the soil a passion to be large land-owners, which is prejudicial to the agricultural interest. Many begin life penniless and landless. Their first scanty earnings are spent in the purchase of land. They go on as their means increase, adding field to field until some of them may have half a township in their possession. For this object they rise early, sit up late, and eat the bread of carefulness. For this they sacrifice all improvement of themselves.

Now is there not a more excellent way? Would it not be better for land-holders to moderate their passion for land, to be content with a few acres, and spend surplus money in the more careful tillage of those few? There would then be land in New

England for all that desire it; agricultural skill would be developed, and many enterprising persons would be retained on farms through life to ennoble the pursuits of their early years, to enlighten by their instruction and example their fellow-laborers, while they are now driven to shops, to merchandize and to professional life, only to be baffled at every turn of fortune.

No one thing, at this time, is more detrimental to the farmers of New England than their propensity to till too much land. It is making whole counties poorer every year. So great has been this impoverishment that it is estimated that a thousand million of dollars are now needed to bring back the soil of the Free States to the high fertility it possessed when the woodman's axe first felled the forests and let in the sun—and this same process must go on till we learn that first lesson in farming; that our income does not depend upon the scanty tillage of many acres, but upon the liberal tillage of a few.

There is an intimate connection between large farms and scanty crops—the earth makes just returns. She yields sparingly or bountifully as we trust her. As most men having large farms, no capital besides their land, buildings and stock, they are not able to introduce more expensive but tried modes of culture, to make experiments or to reclaim their waste lands. When they are urged to make such and such improvements, their plea invariably is, "We cannot afford it. The best we can do is to support our families and pay our taxes. Improvement is out of the question." So they go on, year after year, in those old ways of culture by which a large part of New England soil has become so profitless.

I would suggest to these large land-holders that they turn part of their land back again into capital, and that they use that capital in tilling as they ought to till the rest. Or if they have sons, to divide a portion among them. Then they would be compelled to limit their own strength and skill to a smaller surface. Their net income would be greater, their lands would become better, the withered pasture lands would receive attention, and the meadows, those mines of agricultural wealth, would be drained and recovered.

Oct. 1856.

Draining with Tiles.

BY H. F. FRENCH.

Enough has been said, and written, and observed, to convince all enlightened farmers that a great proportion of the lands in New England which prove in the end most valuable, require to be first relieved of surplus water. This is true of all our low meadows, and a great deal of upland, especially springy hill-sides.

Thorough draining with tiles is, without doubt, the cheapest and best mode of doing this, and, although I remarked in a recent article, that we have not yet arrived at the luxury of using drain tiles, I find that our

farmers are resolving that they will act in this, as in other matters, on the principle that what is worth doing, is worth doing well; and will not be satisfied till the best mode of draining is adopted. To keep up with the spirit of the age, I have myself opened some hundred rods of drains, on my farm, and procured tiles all the way from Albany to lay in them. This being my first attempt, I can only speak now from observation, and the information I have gathered from men and books, on the subject. As this subject must occupy the attention of our farmers more than any other, for many years to come, it being the next great step to be taken in the march of improvement on all our old farms, it will be deemed excusable to begin at the beginning in our discussion. Though milk be "for babes," it cannot injure full grown men to taste it occasionally. So let us first answer.

What are Drain Tiles?

Drain tiles are made of clay, similar to brick clay, moulded by a machine into tubes, usually fourteen inches long, and burnt in a kiln, or furnace, to be about as hard as what are called hard burnt bricks. They are of various forms and sizes. Some are round, with a sole or flat bottom, moulded with the tile, others are horse-shoe formed, open at the bottom, to be laid on the *hard* bottom of a ditch without a sole, or in *soft* places with a sole or flat bottom, of the same material with the tile. The size varies from 1½ to 6 inches calibre, according to the quantity of water to be conveyed. It is a question of expediency, whether to use very large tiles, or to lay two or more courses of smaller size, side by side, when the flow of water is very great.

How are Tiles Laid.

Trenches are opened to the requisite depth, as narrow as convenient for men to walk in. Green hands at ditching will declare they cannot trench three feet deep without breaking the ground 2½ feet wide, but with proper tools, I have found no difficulty in going 4½ feet deep in a trench but two feet wide at top. The English books say that men who work by the rod, always open very narrow trenches. My tools are, first, a common shovel; next, a common spade, and lastly, a long-handled spade, cut down at a machine shop with shears, to 3½ inches width at the point, with a true taper from the heel, making a wedge shaped spade.—With this the ditch is finished, with just comfortable room to lay the tiles straight, and lay in a chip of brick or stone on each side, where a joint is too open. Then having laid the tiles end to end, with a true descent in the trench, commencing at the top, cover them first with something that will exclude sand, which I take to be the worst enemy to contend with. I use spent tan as a convenient and very perfect strainer. The books say turf with the grass down is commonly used. Hay, straw, or pine or hemlock boughs are also used. Having thus

covered the tiles, put into the trench next that part of the earth thrown out, which lets the water pass through most readily, as sand or gravel, or in a clay soil, the top soil. It is perhaps possible with pure clay puddled in, to stop water from getting into the tiles, and no person of common judgment would put pure wet clay immediately on to the tiles. Finally, fill the trenches and make all level, making allowance for what the earth over the drain may settle. The first question that is asked by a novice in the art of draining with tiles always is.

How does the Water get into the Tiles?

The answer is, it gets in at the joints, and thorough the pores of the burnt clay. Professor Mapes says that if you cork up both ends of a common drain tile, and put it under water empty, it will fill by water passing through the pores in two minutes. A Scotchman with whom I recently conversed, who is familiar with the practical operations of tile draining, said that you might stop one end of a tile, and pour in a quart of water every day in the year, and it would all go through. There need be no fear on this point. In any soil but pure clay, you cannot keep the water out of the tiles, and it is very rarely that clay is found that cannot be thoroughly drained with them. This is no new business, and there is no need of any doubt about the facts as to the operation of tile draining.

One advantage of Agricultural Societies.

In the course of the address which was delivered before the Penn. State Ag. Society, at Pittsburg, by Hon. George W. Woodward, we find, here and there, some suggestions which seem well worthy of consideration, and well adapted to promote the interests of the agricultural fraternity at large. We propose to copy, or condense, a few of the more important of these suggestions for the benefit of our readers.

In speaking of the want of interest among farmers in general, in State and County organizations for the promotion of good husbandry and rural industry, and of the benefits which flow from the exhibitions of these States and County Societies, Mr. W. mentions one advantage of them which has been probably less thought of than it deserves to be. He says:

"These fairs, besides furnishing many valuable hints in regard to field crops and cattle raising, afford to farmers an opportunity to examine, compare, and test the various improved implements of husbandry which the mechanical ingenuity of the day is supplying. It is to be expected that an age so fertile in inventions as the present, will be distinguished by some valuable discovery in the application of machinery to the various arts of agriculture, and by the multiplication of implements which are *not worth* possessing. And the fact corresponds with the expectation. There are im-

provements, more or less valuable, in every customary implement of the farm—inventions such as the drill, the reaper, and the thrasher, which lighten and facilitate the labors of the farmer; while there are, also, new implements and modifications of old ones that *promise fairly*, but fail in the performance—that excite hopes only to disappoint them.”

Such worthless or imperfect implements must be peddled off among the less informed and less discriminating of the farming community, and as Mr. W. has remarked:

“If a farmer shuts himself up in the solitude of his own home, (never attending exhibitions where implements are tried and tested,) the agent of the worthless machine is sure to find him out, and to impose on his ignorance. Then comes the vehement denunciation of the Yankee cheat, and the indignant rejection of all applied machinery. If that farmer had attended the last fair, and had observed the different patterns of instruments—witnessed and compared their practical operation, and heard from others the testimony of experience, he could not have been imposed upon, and would have been saved the fruitless waste of money and of wrath, and would have gone home, if not with an improved tool, with improved ideas no less valuable.

“The agricultural fair tries every man's work, of what sort it is; and enables the farmer to prove all things, and to hold fast that only which is good. It is the cure of empiricism and imposture.”

This advantage of agricultural exhibitions is one of much value, as the wages of laborers are so high, and so likely to continue high, that the farmer must depend more and more on labor-saving machines.

This advancement of the laborer's wages Mr. W. is not disposed to regard as an evil; or if an evil, one, at least, with several counter-balancing advantages. One of these is that high wages promote the independence of the laborer and the comforts of his family. Besides some incidental advantages of this kind, the direct effect of high wages on agriculture must be favorable in the end, inasmuch as they will compel the farmer to practice a more careful husbandry. When a farmer has to pay high wages for labor, he cannot afford to let his manure go to waste, or his fields to run to brambles and weeds, or his cultivated fields to produce less than half of what they are capable of producing. And from this cause, also, will arise a growing demand for machinery, which will excite the inventive genius and speculating disposition of our country, flooding the country with implements of all kinds, good, bad, and indifferent. Now the more the farmer is driven into improved culture, and the employment of labour-saving machines, the more will be need, as Mr. W. remarks, the counsel and assistance of agricultural societies, and of that kind of knowledge and experience which he can acquire

better from them than from any other source that will open to him. Farmers should, therefore, take more interest in agricultural societies, as, *when properly managed*, they can promote his interests to a very great extent.

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Good Roads—Macadamizing.

My own inferences, as to what truly constitutes the theory of macadamizing, and so of rendering the roads of the country good and durable, are derived principally from what I have seen and enjoyed in England, or rather in Great Britain; since North Britain, as it is now common to call Scotland, is very like her southern maternal neighbor, south at least of the Grampians, for the excellence of her roads. I have seen several good specimens in our own country; but, alas! they are scarce and exceptional in comparison: “like angels' visits, few and far between;” while so many are like demons' visits, or at least like those of witches on a broomstick, or of hobgoblins on a thunder-cloud, for discomfort and incivism, opposing the progress of our country. England as yet bears the palm; and I fear we are even retrograding—since the introduction of railroads. The latter are all the rage, and all “the age;” and it were not wonderful if other roads recede, as they advance, in the notice and care of the community. But—the inferences—

1. The road proper, or that surface which comes in contact with wheels and heels, is not stones, but soil; loamy and arenaceous, or argillaceous soil; adapted and select, tenacious and solidifying, that it may endure; and so, when once done, it may remain done, without patching or scratching every week or two, to keep it in trim, as a model road, worthy of our country.

2. The use of stones in a road is analogous to that of bones in the body; it is to give strength and consistency to the mass. But as in the body, we want the use, without the sight, of the bones; as the bones are not to stick out, or to grow, like those of an oyster, on the outside; so the stones are to underlie the soil, sustaining what prevades and binds them from above; thus holding the parts of the superincumbent mass, in one interfixing and immoving stratification: thus mutually cohering and confirming the total pile, from the bottom to the top, and so making a good road that will not require to be very often repaired or modified.

3. The great enemy of good roads, when made, is—water! and the great art, to provide against its sway. In cold weather, it soon makes ice, which, in the process of congelation, expands; and this with a power that could heave mountains, and easily dislocate all the forms and the monuments of masonry. Hence roads are soon dashed into pi, as the printers say; or into slop and slush, as the teamsters say, if exposed to the flow and the action of too much water. It

is bad in summer and in winter, destructive to good roads.

4. Macadamized roads provide against the injury of water, in two ways; first, by the due convexity of the surface of the road, that sheds it so finely on either hand; larboard or starboard, to use a sea phrase, into a channel or drain prepared for it, thence taking it off, innoxious, to some secure receptacle beyond: and second, by the structure of the whole, absorbing so cleverly what is not shed from the surface, and which sinks without damage, through the stones, into the native earth, at the bottom.

These four rules, though probably expressed not in the best way, are, I think, the cardinal ones of the system, or plan, or theory, call it as you like, of macadamizing. Its rules subordinate are indeed many. In fixing the convexity of the surface, for example, we must say—*ne quid nimis*; not too much of it! Beware of extremes. If it be too convex, it will shed rain all the better, like the steep roof of a house—only it will shed carriages too, by making them rickety or perilous, or by upsetting them! A steep roof of a house is not a good symbol of the surface of a good road. Indeed, it were better flat, perfectly level, were it not for that enemy—water! Hence, just enough to shed the water well is the rule.

Instead of this, what violations of the rule do we meet, frequently, in our vernacular macadamizing! Surfaces flat, often concave, with little lakes and gullies in the centre, where boys may fish for gudgeons; and where porcine pedestrians may regale their squalid weariness, with the exquisite luxury of *wallowing in the mire*. Hence our roads sometimes become quite porous, continent of all the soft and mushy forms of matter; where wheels dive deep to find any road at all; and where sometimes a coach of aldermen, on an excursion at the expense of the city, driving merrily in its environs, are suddenly plunged, and find themselves softly anchored, and “striving in the business” of reforms of roads, for the first time of their official term! The only cure of such roads, in ordinary, is not the common council, but—Jack Frost. When all froze hard, they are sometimes quite tolerable, and the lazy folks around enjoy the wheeling that comes so cheaply, without taxation, and is the best macadamizing their roads can get or their scientific pates ever consider.

It is a great proof of inconsideration, truly, when as we often see, roads are neatly made, sometimes a great expense too, and the first rain discovers cavity and concavity, here and there along its entire line which are so much better, or worse, than “broken cisterns that can hold no water.” They hold it. To fix its surface so as to shed it, they never thought, or never planned to do. Soon these amateur scavengers, the migratory hogs of our farmers, fond of bathing, find the prepared cavities, occupy and enlarge them, and multiply and increase

them, till the road become like a body full of ulcers, insufferable. Then, after a while they begin to consider of the mud, and the misery and now—look out for macadamizing! The nuisance must be abated. Oxen, and wheels, and all hands, go to the shore of the brook, and cart stones, some pebbles, some cobbles, some big as the head of the booby that brought them; all are dumped into the hole together. The big ones, by some law of the operations are found on top. If the whole is leveled down at all the big ones are left—as signs of their finished art instead of all being dashed in first, and sunk to the bottom, and so in order, the smallest on the surface. As it is, and even if it were better, the soil has to get there as it can; by accumulations of dust, by deposits of mud from the wheels, and by the soaking virtues of continuous rains. Then at last the soil is the road, the young rocks roll on the surface; and not a boy or a man in a thousand has the humanity to roll away the stumbling-block, and so do a service to his neighbors and the commonwealth. **RUSTICUS.**

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SCRAPS AND REFUSE ECONOMISED.—

The chemistry of art, like a prudent housewife, economises every scrap. The horse-shoe nails dropped in the streets during the daily traffic, are carefully collected by her, and reappear in the form of swords and guns. The clippings of the travelling tinker are mixed with the parings of horses' hoofs from the smithy, or the cast-off woolen garments of the poorest inhabitant of the sister isle, and soon afterwards, in the forms of dyes of the brightest blue, grace the dress of courtly dames. The main ingredient of writing ink was, possibly, once part of the broken hoop of an old beer barrel. The bones of dead animals yield the chief constituents of lucifer matches. The dregs of port wine, carefully rejected by the port wine drinker in decanting his favorite beverage, are taken by him in the morning in the form of Seidlitz powders, to remove the effects of his debauch. The offal of the streets and the washings of coal gas reappear carefully prepared in the lady's smelling-bottle, or are used to flavor blanc-mange for her friends. This economy of the chemistry of art is only an imitation of what we observe in the chemistry of nature. Animals live and die, and their dead bodies, passing into putridity, escape into the atmosphere, whence plants again mould them into forms of organic life, and those plants actually consisting of a past generation, form our present food.—*Exchange.*

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HORSES AND CARROTS.—For two months past I have fed my two horses upon carrots and hay. My horses are in constant service on the road; and under this treatment they usually come out at the end of the "pile" looking better than when they commenced. My dose is two quarts, morning, noon, and at night—four to each horse; they have as

much good, sweet English hay as they will eat, and *cut*, whether fed to them dry or otherwise. This latter I have always practised every since I have had the management of horses; and I am satisfied that it is the cheapest and best way in which it can be given to the horse. There is no waste, and horses eat it better, and have more time to rest, which is quite an important consideration, where the horse is liable to be taken from the stable at any moment. I am satisfied there is no better way of feeding horses, nor is there any cheaper one—*teat* I have ever tried—than the one mentioned. If there is, will not some person who knows please report? I always cut them quite fine before using. Carrots are most excellent for horses whose wind is in any way affected—such as the heaves, &c. Those who have tried them for this purpose will, I think, agree with me in this; if not, just try the experiment and be satisfied. They are usually cheap, compared with other articles of food of equal nutritiousness. Last year I paid nine dollars per ton, this year eleven, and at the latter period I prefer them to oats—measure for measure.—*Saturday Evening Post.*

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Saw-dust as Litter for Stables.

Some weeks ago an article appeared in the columns of this paper, in which saw-dust was mentioned and recommended as a litter for stables, which possessed a superiority over straw in several particulars. We have just noticed a communication in the *Farmer and Visitor*, (Manchester, N.H.) in which the writer mentions several other advantages in addition to those which were named in the article referred to in our columns. Among the points in which saw-dust was found superior to straw by the person who had tried it in N. H., the first mentioned is, that it occupies less room in the barn, which is not unfrequently, as in the matter of this paper, a matter of some importance. Next, saw-dust is claimed superior to straw, because it absorbs more of the fertilizing matters about the stable, the person using it being very sure that the ammoniacal emanations were less strong on opening the doors in the morning than when straw litter was used. Next, it is said to be much less of a chore to clean the stable, and also, that so little comparatively had to be thrown out that one load lasted a long time. The next thing named as an advantage of saw-dust as litter is, that the manure heap occupied so much less space than when straw was used, and thus admitted more easily of being protected by a covering from the wasting effects of exposure to sun, wind, and rains. Then again it is an obvious advantage to have in one's yard manure in as small bulk as possible, and this is effected to a great extent by the use of saw-dust. The same amount of fertilizing matter is, probably, contained in one kind of manure made from saw-dust, as there would be in two or three

loads of that which had been made from straw litter. Then, too, in the field it would be free from all the trouble which long manure frequently gives.

With so many points of superiority, we think it probable that saw-dust will, hereafter, be more generally used, at least in the neighbourhood of saw-mills. If found to be a convenience or an advantage to any of our readers, it will give us pleasure to know that we have so far succeeded in accomplishing the object of our constant desires, labors, and exertions, which is, to render to our readers the greatest amount of valuable services possible.

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EXCREMENTS FROM HORSES.—"Till well and manure well, is the whole secret of Agriculture."

Tull's theory of tillage, which was to supersede entirely the use of manures, by frequent and unceasing plowings and hoeings, although an entirely repudiated doctrine, still possesses its advantage when used in connection with frequent supplies of manure, and the above quotation from Oliver de Serris, places the whole matter on its proper footing.

Horse Manure ferments and decomposes very rapidly, and if it is not immediately applied to the land, it soon becomes comparatively useless; to prevent which it should be in some way composted; or on a farm where hogs are kept, it is a good and saving practice to have all the dung and litter from the horse stables into a cellar or some other convenient place, where they will have access, and thus incorporate it with their manure, which is of a cool soapy character. They understand their part of the work, and will attend to turning the manure as often as necessary.

Where this method cannot be used a spot should be taken from which the land rises in all directions. If no such place should be found in a convenient locality, one can easily be prepared by a little digging, at the lowest point of which should be inserted a tub or cask, designed to catch all the liquid portions of the manure. This can be covered with a wooden lattice or iron grating, and pump put in; around which the manure should be piled. The pump should be used as often as possible, and the liquid poured over the driest portions of the heap. In this manner both solid and liquid manures are preserved, without as much turning as is necessary under ordinary methods. But a better way still is to incorporate it with muck or pond mud (when they can be procured,) in equal layers with the manure, as in making a compost heap, these not only preserve it by absorption, but are in themselves valuable fertilizers. Substitutes can be found in the use of forest leaves and sods from the road sides. A heap of this kind can hardly be turned too often, and in a dry season the application of water or liquid

manure, will prevent fermentation and produce a more thorough decomposition.

Where it is impossible to procure either of the above ingredients to compost with horse dung, it will be found profitable on a stiff clay farm, to use sand, and clay can be used on a light soil; either of these would pay under such circumstances, as they would improve the mechanical texture of the soil.

The value of horse manure as compared with that of other farm stock, has been a matter of much discussion among scientific men for a long time, the view generally adopted being that it was inferior to most other animal excrements. It would perhaps seem that this question could be easily settled by analysis, but great difficulty arises in finding out anything definite by this mode, as the feed of horses varies so much in different circumstances; but for this, analysis would prove conclusively, and bring this and many similar discussions to an end.

We are of the opinion that when horses are fed mostly on grain, their manure is superior to most others, especially when used in its fresh state, before the escape of nitrogen, which is the most important element of animal manures—not that it is any more necessary to vegetation than carbon, oxygen, and hydrogen, but it is less easily procured by the plant, as there is little of it, in most soils, and they can get none from the air; hence the great value of all manures containing it; and it is very liable to escape, too much care can not be taken to prevent such a loss. Questions of this kind require thorough practical experiments, performed for a series of years with great accuracy, on various kinds of crops, but are seldom attempted by our farmers as they require too much time and labour, which proves the great want of a good Agricultural School and Experimental Farm, sustained in a liberal manner, and managed by practical as well as scientific men. GEO. T. HAMMOND.
—*Farmingdale, N. Y.*

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Green Corn for Soiling.

I have read with interest the number of the *N. E. Farmer* containing Mr. Blakely's article on green corn for soiling, and I will remember the article in the October number referred to by him. I was sorry, then, that the writer did not give his manner of feeding, for very much depends on that, more than many farmers seem to think. But Mr. Blakely has told us how he feeds green corn, and I have observed that those farmers who have not found, on trial, green corn and other green food to be beneficial, have generally used it as he has done. He says: "Three years ago, I fed seven cows quite liberally, for a month or more, on green stalks. My custom was to feed in the morning, as it was the only convenient time of doing it, and to scatter the stalks over a portion of an adjoining pasture on which they had not of late been fed, so as to give them as clean a place as possible, taking care to give them much more than they would immediately consume, which they would generally finish off in the course of the day." Now I beg leave to say to

Mr. B., and to all others who pursue his course, that that is *not* the way, and that that makes all the difference.

Then he says, "I could not perceive that the stalks made much if any difference in the quantity of milk produced; but the cows continued to give less and less, about as the grass failed them, although they continued to consume a proportionably larger amount of stalks." He does not say whether his cows, finally, to cap the climax, jumped the fence between his corn-field and the "adjoining pasture," and ate to excess of the corn which they had so long been impatiently waiting and reaching for; but if they did not, he may consider himself a fortunate man, that his experiment terminated no worse.

And now, by the way, is there any kind of food that cows ever eat that has not been by somebody condemned as useless, or injurious? Some of our so called best farmers have their doubts in regard to carrots as a food to make milk and butter from, (except they be grated and churned with the cream) and very few would dare to feed milch cows on apples, sweet or sour; and some even think Indian meal will dry up the milk; and still others withhold turnips, both tops and bottoms, because they have heard that somebody had a whole churning spoiled so, once; don't doubt but what they did, but the cause was not in the food, but in the way of giving it; and I say again, that makes all the difference. Now we are not afraid to feed any or all of these different kinds of food to milch cows, our trouble being to get enough of them. Having a cold, sour pasture, that won't keep any cow well, I am obliged to raise corn or some kind of feed not found in the pasture, for my cattle, both cows and oxen.

I might keep poorly, three or four cows through the summer, by letting them have the after feed in the fall on all my mowing lots, but by raising from a half to three-fourths of an acre of corn fodder, I am able to keep six or seven well, and that without feeding down my mowing fields, so as to spoil them for succeeding years. In the spring, and before the corn fodder can be grown, I feed with good English hay at night and morning, allowing the cows to get their dinner in the pasture. In the morning, all that give milk have an extra feed of shorts, or some kind of meal, wet up thin in water, and always given in the stall. When the corn is grown enough, I cut and haul it to the barn in a cart, enough at a time to last two or three days, then give at two or three feedings as much as they will eat up clean, butts and all; which is a good deal, especially during the driest part of the summer. And this I do every night and morning, from July till into October, or till the frosts spoil the corn; and always in the barn, so that they expect it nowhere else, and when they are turned out into the pasture, they have nothing to hinder them from feeding on such as they may find in the pasture. They are seldom seen lingering around the cornfield, or knocking stones off from the walls by endeavors to get where they ought not to be; nor do they ever learn to jump or throw fence, as cattle always are inclined to do, when fed with stalks, pumpkins, &c., from the cornfield.

And now, you have been shown *another* way; is it not the *way* that makes all the difference? It gives us the means to keep nearly twice as much stock through the year as we could without the green corn, for while we are feeding the corn in the barn, we are

making, or saving a great amount of manure, that we could not, if we fed it in the pasture. And then, by keeping our cows *out* of the after-feed, we get much more hay the next year with which to winter our extra number of cows above what might be kept in the pasture alone during the summer. Then, during the dry weather, and usual short feed of August and September, our cows are less affected than those that have no green corn. Speaking of manure, I should have said that by stabling the cows every night (which we should hardly have thought of, had it not been for feeding purposes) we can make fully as much manure as at any part of the year.

The corn should be planted at intervals, so that it will not ripen all at once, but continue along through the whole season. The large kinds of sweet corn are best. There are several ways of planting and tending it. I have, of late, spread all the manure, planted in rows, eighteen inches apart, and in the row, four or five inches with a seed-sower or corn-planter. Then draw a cultivator tooth between the rows by hand, a few times, before the corn gets high enough to shade the ground. After that, it takes care of itself.

If Mr. B. wishes to prove that Indian corn is not good food for hogs, let him feed them as he did his cows, throw enough good ears over to them in the morning to last them all day. Has he never seen farmers do that? And have they not, generally, had small, uneasy and squealing hogs? But let us feed corn, or any other good feed, to hogs at their trough, and in proper quantities, and at proper times, and they fatten kindly and contented. So I believe we may all feed cows with any kind of food which they love, having due regard for quantity, times and places, with equally favorably results. A. W. C.

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Winter the best time to Build Green-Houses.

We would strongly urge on all those who contemplate erecting good substantial green-houses, or any other similar horticultural structure, the advantage of the winter for getting the carpenter's work done. The common practice is to put it off as long as possible, and then commence just soon enough to *be to late* to get it in readiness at the desired time. Now the consequence is, everything is done in a hurry, and many little matters overlooked that might have added much to the durability of the house—a point of immense importance in such destructible buildings as those under consideration. More especially are the sashes benefitted by being made, glazed and painted some time before putting them on.

In nine times out of ten, when put on soon after glazing, the glass slips from its place, more or less, and the putty being soft, often is injured in the handling, all of which is remedied by being made some time before using. On the score of economy it is also to be recommended, simply from the fact that it is always easier to get good workmen at reduced prices during the slack time of winter, than at any other.

By following this advice any person contemplating building a vinery, can easily enough have it in readiness for use next spring, as the masonry, if any, takes

but a short time to do. But if any one leaves the carpenter's work until the busy time of spring, and then expects to be in time for planting the vine, and thus secure the season's growth, they will generally find themselves mistaken.

We say again then, if you contemplate building, decide upon the structure, and set your carpenter to work in getting out his part of the building, and which, when spring opens can be reared in a short time, in the best possible condition for withstanding the elements it will have to war against.

—:—

If you wish to keep your sons on the farm, you must put more intellect into your farming. A bright boy wants food for the mind, as well as work for the body. Mere routine will not satisfy him. He will be willing to work when mind directs the hand. Otherwise, you cannot keep him at home. He will be off, ere you are aware. Therefore, read and think, and work out your reading and thinking on your farm. Your boys will stay with you then.

—:—

KEEP MORE STOCK.—Stock growing is fast becoming popular among our most astute farmers. They begin to find, or rather to realize "in the light," as the Quakers say, the truth of the Scotch maxim, "No cattle no manure, no manure no corn." So long as our generous alluvial soils gave crops without stint, the farmer only set down the cost of feeding a pair of three year olds against the small sum for which he sold them; counting as nothing the manure they made, which alone prevented the deterioration of his soil. But all this is changed now. three year olds are sold at this time at more than \$50 a head, and such is their scarcity on the farm, that the soil is fast deteriorating, except among those thinking farmers who have bought as many lean kind, as they have sold fat ones. These men have grown large crops of corn, and fed it all to their animals, thus realising stall-fed prices in their sales, over and above the gain in that extra nitrogenous manure made from corn fed-cattle.—*Rural American.*

—:—

Encouragement to plant Fruit trees:

APPLES FOR EXPORT.—Owing to the failure of the apple crop in Europe, there is a large demand here for exportation, and at least 10,000 barrels of Newtown pippins, embracing the best of the crop, will be sent out this fall. One firm here has already contracts for England to the amount of 6,000 barrels. This variety of apples has the preference over all others, though Baldwins and Russetts are exported to some extent. Shipments this year have commenced early; and all the first quality fruit received in this market up to the 1st of December, of the varieties mentioned, will be readily purchased, to send off.—*N. Y. Journal of Commerce.*

Useful Receipts.

GINGERBREAD.—Two cups of molasses, one cup of melted butter, one egg, one cup of sweet milk, one teaspoonful of soda, one reaping teaspoonful of cream tartar, two tablespoonfuls of ginger, and flour enough to bake a stiff batter. This should be baked with care as it burns easily, and if burned has a bitter taste.

CRULIARS.—One cup of butter, two of sugar, one of milk, one teaspoonful of soda, three eggs, and flour sufficient to roll out with ease. Fry in plenty of good lard.

MOCK SPONGE CAKE.—One quarter of a pound of butter, one of sugar, three eggs, one half a pint of milk, one even teaspoonful of soda, three coffee cups of flour, one heaping teaspoonful of cream tartar, a little salt, and essence of lemon. This will make two loaves. Bake in a quick but not too hot oven.

COOKIES.—One pound a quarter of sugar, three-quarters of a pound of butter, one half a pint of warm water, four tablespoonfuls of caraway seed, one teaspoonful of soda dissolved in three of warm water, three pounds of flour. Roll out very thin, and bake in a very quick oven.

—:—

MONTREAL MARKET PRICES.

Rates at which produce is purchased from the Farmers.

27th Jan., 1857.

Hay from 9 to \$11 per 100 bundles.

Straw from 4 to \$5. do.

Fresh Butter, per lb. from 1s 4d to 1s 6d.

Salt Butter, do from 11d to 1s.

Country Cheese, from 6d to 8d.

Wheat, none offered.

Barley, 3s 9d to 4s 3d.

Rye, none.

Oats, from 2s 2d to 2s 4d.

Yellow Indian Corn, none.

Indian Corn, (Ohio) none.

Buckwheat, none.

Peas, from 3s 9d to 4s 3d.

Beef, per 100 lbs, from \$5 to 8.

Pork, \$8½ to \$9 per 100 lbs.

Mutton, per lb., from 5d to 7d.

Veal, 6d to 7½d.

Eggs, 1s 4d to 1s 6d.

Honey, per lb. 7½d to 8d.

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{ BUREAU OF AGRICULTURE AND STATISTICS,
Toronto, 15th August, 1856.

PRIZE ESSAYS.

£10, £25, £15.

THE above PREMIUMS will be Paid for the Three Best Essays, respectively, on the Origin, Nature and Habits, and the History of the Progress, from time to time, and the Cause of the Visit, of the Weevil, Hessian Fly, Midge, and such other insects as have made ravages on the Wheat Crops in Canada, and on such Diseases as the Wheat Crops have been subjected to, and on the best means of evading or guarding against them.

The Essay to be furnished to the Bureau by the FIFTEENTH day of APRIL next, and to be designated by a motto, a copy of which shall be also forwarded in a sealed note with the name and address of the author. The Prizes will be awarded according to the decision of a Committee, to be named by the Board of Agriculture for Upper and Lower Canada, or, in default of any such decision, by the Bureau, the Essays selected to become the property of the Bureau. A premium will only be awarded in case an Essay of sufficient merit is produced.

It is feared that the farmer in his eagerness to produce wheat, is not paying sufficient attention to the danger of over-cropping, and it is hoped the warning, and the information and advice which may be obtained through the Essays sought for, will aid in arresting the great scourges of the wheat.

P. M. VANKOUGHNET,

12 ins. Minister of Agriculture, &c.



Crown Lands Department.

TORONTO, 31st May, 1856.

NOTICE is hereby given that the under-mentioned Crown Lands, in the Township of WOODBRIDGE, in the County of Kamouraska, L.C., will be open for Sale to actual settlers upon application to FLORENCE DEGUISE, Esquire, at Ste. Anne de la Pocatière, on and after the THIRD day of JULY next, at One Shilling and Six Pence per acre, under the regulations of the 6th August 1852:

TOWNSHIP OF WOODBRIDGE.

3rd Range.

Lot 48 (100), 49 (46).

4th Range.

Lot 1 (122 acres), 2 to 15 incl. (100 a. each), 16 to 25 incl. (100 each), 27 to 31 incl. (100 each), 32 and 33 (100 each), 34 (100), 35 and 36 (100 each), 37 (100), 38 (100), 39 to 48 incl. (100 each), 49 (46).

5th Range.

Lot 1 (100 acres) 2 and 3 (100 a. each), 4 to 8 incl. (100 each), 9 and 10 (100 each), 11 and 12 (100 each), 13 to 17 incl. (100 each), 18 to 21 incl. (100 each), 22 (100), 23 (100), 24 to 26 (100 each), 27 to 29 (100 each), 30 to 32 (100 each), 33 to 38 (100 each), 39 (100), 40 to 45 (100 each), 46 to 48 (100 each), 49 (57).

6th Range.

Lots 1 to 21 incl. (100 each), 22 (100), 23 (100), 24 (100), 25 (100), 26 (100), 27 to 38 (100 each), 40 to 47 (100 each), 48 (100), 49 (48).

7th Range.

Lots 1 to 48 incl. (100 each), 49 (42).

8th Range.

Lots 1 to 13 incl. (100 each), 14 (89), 15 (93), 16 to 48 (100 each), 49 (80).

9th Range.

Lot 1 (71), 2 (65), 3 (66), 4 (67), 5 (68), 6 (69) 7 (71), 8 (72), 9 (73), 10 (69), 11 (48), 12 (37), 13 (20), 14 (21), 15 (32), 16 (72), 17 (83), 18 (84), 19 (85), 20 (86), 21 (87), 22 (88), 23 (90), 24 (91), 25 (92), 26 (94), 27 and 28 (96 each), 29 (98), 30 (99), 31 (100) 32 (102), 33 (103), 34 (104), 35 (105), 36 (106), 37 (107), 38 (108), 39 (110), 40 (111), 41 (112), 42 (114), 43 (115), 44 (116), 45 (118), 46 (119), 47 (120), 48 (122), 49 (80.) 5 ins.



BUREAU OF AGRICULTURE AND STATISTICS,
Toronto, July 28th, 1856.

HIS EXCELLENCY THE GOVERNOR GENERAL, has been pleased to approve of the method of distribution of the LAND IMPROVEMENT FUND, prescribed by the Order in Council herewith, published, in the hope that a judicious and economical management thereof may be thereby insured.

A Circular from the Department will be received by the Head of each Municipality, stating the amount at the disposal of such Municipality.

As the best season of the year for making improvements to which the Fund is applicable is close at hand, it is recommended that the preparations for the appropriation of the Money be made as soon as possible.

The Order in Council is as Follows:—

It is ordered that the Funds derived from the sales of Lands in each particular Township, or other Municipality, and applicable to the purposes of the Fund formed under the 14th Section of the Act 16 Vic. Ch 159, and not already apportioned, be applied to the making, maintaining, altering, or improving of the Roads or Bridges in each of these Townships, or other Municipalities, respectively, and be for this purpose, distributed and disposed of by and through the Municipal Council of each such Township or other Municipality. Each such Council to report to the Bureau of Agriculture the manner of Expenditure of all such Monies on the FIRST DAY of JANUARY and JULY, in each year, and at any intermediate time within ten days after having been called upon so to do, by that Department.

Certified,

W. H. LEE, C. E. C.

P. M. VANKOUGHNET,
Minister of Agriculture.

6 ins.



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Montreal, 1st July, 1854.