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# THE FARMER AND MECHANIC.

Vol. I.

TORONTO, CANADA WEST, NOVEMBER, 1848.

No. 2.

## THIRD MEETING OF THE PROVINCIAL AGRICULTURAL ASSOCIATION OF UPPER CANADA.

Since the publication of the first number of the *Farmer & Mechanic*, the above exhibition took place in the town of Cobourg, the capital of the Newcastle District. Owing to the unfavorable state of the weather, during the days on which the entries, by announcement, were to be made, many were deterred from bringing forward their stock, and other articles to be exhibited; and, not a few from this cause, together with a boisterous storm, which experienced sailors say has not been equalled for fifteen years on Lake Ontario, were prevented from attending the show. From these causes, therefore, both the number of articles entered for competition, and the visitors from a distance were not so great, as, doubtless, otherwise would have been the case. The Exhibition, however, on the whole, was highly creditable to the gentlemen who took a prominent part in maturing and completing the arrangements, and also to the noble cause of agricultural, mechanical, and general improvement of the country. Every friend of Canadian improvement, who visited the great national fair under notice, must have returned to his home under a strong conviction of the benefit that has been conferred on the country, by the establishment of an association which has for its object the encouragement of every branch of productive industry, and especially the annual concentration of the choicest productions of our land, including the handiwork of the ladies, men of genius, the promoters of the arts, and, in fact, of everything that the industry and ingenuity of all classes of our mixed population are capable of producing. The three exhibitions that have been held by the Agricultural Association of Upper Canada, have taken place

at too late a period of the year, thereby detracting materially from the interest that thousands otherwise would have taken in them, simply in consequence of the bad state of the roads, and the risk that the competitors have been exposed to in having their property injured by taking it long distances, and in receiving damage from exposure several days to the inclemency of the weather. This evil, happily, in future will be obviated, and the next exhibition will be held during the first week of September, in the city of Kingston, at which period, in an average of seasons, the weather in this country is favorable for large gatherings of people.

As the character of the Association is now fairly established, those who take an active interest in aiding the accomplishment of the great objects for which it has been founded, will only have to unite their energies and talents in the most efficient manner, and patiently await the results. The Association has strong claims for support upon the government of the country; its claims are equally strong upon the District and Township Agricultural Societies; and it has still stronger claims for support upon every friend of Canada. This institution was not established to confer benefits upon a few interested persons. All classes and conditions of society may avail themselves of the valuable benefits that will be conferred as a reward of merit, at its annual gatherings. The premiums, though small, will doubtless be increased from time to time, as the state of the funds, and the general feeling evinced in its welfare, would seem to warrant. To ensure a large collection of the choicest articles of the country for competition, it is essentially necessary that large premiums should be awarded, and in order that the association might be warranted in

in so doing, its financial resources must be ample.

All that is now required, on the part of the friends of the Association is a concentration and unity of action among all classes of the people throughout the various districts of the country. This purpose, we are told, will be aimed at by Mr. George Buckland, the secretary of the Association, who will personally visit every district in Western Canada, for the purpose of laying before the friends of agricultural improvement, the real objects and benefits to be gained by "a long pull, a strong pull, and a pull altogether." in this, the only national institution that has for its object the development of the agricultural, mechanical, and general productive resources of the country. As an advocate of every real improvement, we shall feel it a pleasure as well as a duty, in promoting, to the best of our editorial ability, not only the welfare of the Provincial Agricultural Association, but likewise the best interests of the District and Township Societies scattered throughout the country.

To return to the exhibition at Cobourg. In our strolls about the well arranged grounds we saw much to admire, of which a bare mention here would occupy more space than can be bestowed on this article; therefore some of the most important articles only can be noticed at this time.

#### HORNED CATTLE.

Of Durhams we noticed that there was a large collection, and the outer districts contributed largely to the value of this department of the show. The thorough-bred Durham Bulls on the ground, got by the imported stock of Mr. Thomas Mairs, of Vespra, Simcoe District, were noble animals, and the grade animals of the same stock, gave indubitable evidence of the value of this breed over many others, in improving the fattening properties of the native stock. Indeed the propensity of the Durham breed of cattle to fatten is so great, that care must be employed in making judicious crossings,

or else the milking and breeding properties of the cows will be almost entirely destroyed. The Hon. Adam Fergusson, of Woodhill, the President of the Association, is one of the most spirited breeders of this improved race of British cattle, and in a number of instances, we have seen heifers of his stock at the local shows of the country, so far that they were utterly useless for breeding purposes. An animal of this kind, belonging to that gentleman, was sent down to Toronto on the week previous to the show, with a view of sending it forward to Cobourg, but owing to the boisterous state of the weather it was left in that city, and sold to some one of the butchers for a high price, and will doubtless be exhibited at the Christmas Holidays, on the shambles. This heifer is the most perfect picture, in point of symmetry, that ever fell to our lot to behold, and her size is certainly equal to the largest ox of the native breed. Those who breed Durhams must bear in mind that they require abundant pastures, and a rich and liberal supply of food to carry them in good condition through our long winters. For illustration a simile may be used, in showing the cost of keeping this, over some of the smaller races of improved cattle, which will give the reader a better idea of what is meant, than if any other mode was employed. The Lower Canadian horses are a distinct breed; they are small, hardy, and require but little care, and cost but little to keep them in good working condition, and in many respects are the most valuable race of animals that could be employed on the farm. On the other hand, they are too small for dray horses, or roadsters, and are not equal to the famous English black cart horse for heavy work, nor would they compare with the Cleveland bays, or some of the other improved carriage horses that partake of a dash of the high-mettled blood horse, as an animal for all work. Their form, symmetry, and action, in a general point of view, though in many instances of an unexceptionable character, would not entitle them

to be considered equal to many of the improved breeds of British horses, nor would they command a price in the market that would at all compare with that of the latter. Precisely the same may be said of the Devons. Ayrshires, the Highland, and a score of the distinct breeds of British cattle, when compared with the beautiful, kindly-tempered, large and well proportioned Durhams.

#### IMPROVED NORTH DEVONS.

We were sorry to perceive that the show of this breed was rather meagre, especially when the fact is taken into account, that on the great majority of farms in Canada, this is decidedly the breed of improved cattle that is in every respect the best calculated to give the largest return for the capital and attention employed in their breeding. Richard Gapper, Esq., of Yonge Street, Home District, exhibited a Bull and Cow of this breed that merited the highest encomiums. The bull appeared to be perfect of his kind, but was rather small. The cow was certainly the handsomest creature of this kind that we have ever seen. The assertion has been made that the North Devon would prove an invaluable acquisition to the great mass of Canadian farmers. This would especially be the case on light lands, and where the pasture is apt to fail in mid-summer; not that they can live on the wind, but being close jointed, and of a compact form, and withal, hardy in their constitution, and well adapted for enduring hard winters and hot summers, they are especially valuable for those farmers who are not noted for giving great attention to their horned cattle. The inference must not be made that the husbandman will not be rewarded for giving a reasonable amount of attention to this, as well as to all other races of cattle. All that is intended to be implied is, that where palpable neglect is given, the Devons, like the Lower Canadian horses, will not suffer in proportion to many of the other breeds of cattle. The beef of this breed, in point of

quality, when compared with that of the Durhams, presents as great a contrast as does the mutton of the South Down to that of the Leicester or Lincolnshire breed of sheep. The beef of the Devons is beautifully mixed in nearly equal proportions of fat and lean; its texture is proverbially fine and close; and the fat, when even ordinary pains are taken in the feeding, presents a marbled appearance; and in fact all good judges of a fine joint of roast beef, would pay a higher price for it than for beef equally well fed, of other breeds. In the early settlement of the colony of Massachusetts, the Devon breed of horned cattle were introduced into favor, and from those early importations, by care, an almost distinct race of cattle has been produced. Like all the other gradations of Devons, the horned cattle of the Eastern States are red, with beautifully turned up horns, and are, to the other breeds of cattle what the full-blooded horse is to the strong heavy roadster. So proverbial have the grade Devons of New England become for their fleetness and endurance in the yoke, that extraordinary prices are paid for them for the Western and Southern markets. The eastern farmer prides himself in his numerous yokes of fine, sleek, red Devons, and at the autumnal fairs it is not an uncommon sight to see from one to five hundred yoke of red oxen, so equally matched, and so uniform in size and appearance, that a stranger to such exhibitions could not well distinguish them apart. At a late fair at New Haven, no less than one hundred yoke of well bred and evenly matched red oxen were attached to a large caravan, which was paraded through the town, fitted up in a superb style, accompanied by a band of music, and a large dinner party, decorated with flags, ribbons, and other costly articles of parade. Oxen of this breed will travel as fast before the plough as most breeds of horses, and since deep ploughing has been found on most soils to greatly increase

their productiveness, from two to three yoke of those oxen are regularly used at the plough, and that, too, at a cost not exceeding what would be required to keep up a span of horses, in good condition.

We heartily desire to see agricultural societies in Canada, from the highest to the lowest, make it a rule to offer a distinct class of premiums for improved North Devon cattle. The Provincial Association, in this respect, have set a noble example, and by increasing the amount of premiums added to what the local societies are capable of doing, this breed might, in a very few years, be made to supplant the old fashioned Canadian stock.

#### HORSES.

The show of horses was, in every respect, to our mind. The stock of CLYDE, the imported *drag* horse, was in great numbers on the *show ground*, and although for many purposes they are quite too large, still for conveying heavy burdens a great distance over bad roads, and for the purpose of stocking the country with large sized breeding mares, to be crossed with medium sized horses, they will be found invaluable. The Clydesdale horses are used in England principally in the coal districts, and in this country they are highly prized by the proprietors of country mills. It is not exactly the race of horses that is in every respect suited to the condition of Canadian farmers. A horse of all work, something after the style of the old fashioned Suffolk Punch of England, the celebrated Norman horse of the south of France, or to come a little nearer home, the Messenger breed of horses of the United States and Canada, are in every respect their superiors.

The CLEVELAND BAYS, exhibited by Messrs. Davis and Ashford, of the Home District, attracted much attention by all true admirers of the Horse.

Alfred, an imported English horse, was purchased by Messrs. Nathaniel and Thomas Davis, of the township of York, of the im-

porter, who resides in the neighbourhood of Geneva, N. Y. The Messrs. Davis are among the most spirited breeders of horses in Canada. Pretty soon after the first exhibition of the Agricultural Association of Upper Canada, held at the Government House, Toronto, those gentlemen having been unsuccessful in getting as large a proportion of the premiums as they doubtless considered they were entitled to, at once proceeded over to New York State; and purchased, at a great cost, the horse whose name stands at the head of this paragraph, to whom, on two different occasions, was awarded the first premium, by the New York State Agricultural Society. The horse which was entitled, by the opinion of the judges, to the £10 premium, belonged to Mr. J. Ashford; he was got by Old Alfred, whilst owned in Geneva. The writer of this report, whilst at the New York State Agricultural Exhibition, at Auburn, witnessed, with much interest, old Alfred, with four of his progeny standing in a row, bordering on a circle of a large circumference, during the period that the judges were carefully examining the merits of the numerous stallions entered for competition; the three and four years old Alfreds bore a strong resemblance both in points, symmetry, color, and general appearance, to their sire; and the oldest of the number, if we recollect correctly, has been subsequently purchased by Mr. Ashford, and to which the first premium has been awarded, as being, in the opinion of the judges, the best horse for agricultural purposes exhibited at the late Provincial meeting. If the Provincial Agricultural Society had not been established, it is highly probable that those excellent horses would have been retained in the United States, by some of the breeders of horses in that country. This, then, is a strong and presumptive argument in favor of those great national gatherings for the encouragement of agricultural improvement, and what has been done in this particular may be carried out in

all the operations or transactions of the Association. If, instead of £10 being awarded for the best stallion for agricultural purposes, the sum of £25 had been awarded by the Association, the effect of such a premium would have been increased just in proportion to its increased value. Were large premiums awarded, and continued to be awarded by the Agricultural Associations, breeders of live stock would resolve to make great efforts to obtain those prizes. A premium of £25 would be equal to the annual interest of upwards of £400. This sum expended in the purchase of a stallion, would command a first class horse, of the improved breeds, in any country. Such a horse once imported, would command patronage from all parts of the country, and a more lucrative property, of this character, in proper hands, could not be desired. The premium would pay the interest on the investment or purchase money, and the liberal support that would pour in from all parts of the country, would afford a rich reward to the spirited owner of the animal. The country, however, would derive the greatest degree of benefit from the importation of such stock, and when the fact became generally known that large premiums would annually be given, competition would yearly increase, and from the operation of such liberal encouragement, the breeders of stock would avail themselves of every opportunity of adding large acquisitions to the most valuable improved breeds of agricultural live-stock.

## SHEEP.

The long-wooled breeds of sheep were not quite equal to what were commonly exhibited at the shows of the Home District Agricultural Society about twelve years ago. This may be accounted for in part from the fact that of late years but very few fresh importations have been made, either of Lincoln, Leicesters, Cotswolds, or improved Oxford breeds of sheep, and from the ex-

ceedingly low price of long combing wool, and from the dull prospect for a continued increased demand for those wools, there appears to be no inducement for additional importations of the above breeds of sheep. This opinion is fully warranted, from the continued growing anxiety that appears to pervade the public mind, to build up and support domestic manufactories; for it is obvious that it is vain to hope to supply the country with a superior article of woollen goods so long as the staple of wool produced by the country is not suited to the manufacture of such goods. To manufacture fine woollens with profit to the manufacturer and country, a fine article of wool must be grown by the farmers, and to induce our farmers to introduce the fine-woolled races of sheep into the country, both manufacturers and agricultural societies must take up the matter in good earnest, and give this important branch of husbandry every possible encouragement.

It should, however, be here remarked that there were a few pens of excellent fat wethers exhibited by Mr. Miller, of Pickering, and John Cade, of Whitley, which were in every respect equal to any animals of the kind which ever came under the writer's notice. There were also a few thoroughbred Leicester ewes and lambs on the ground, that gave evidence of high breeding, and, at least for the purpose of making mutton, may be viewed as a valuable stock for the farmer.

The fine-woolled sheep were of a very inferior quality, and in fact did much discredit to this department of the show.

## PIGS.

The number and quality of well-bred pigs that were exhibited by the farmers of the Newcastle District, to the mind of the writer, far exceeded those that were shown at the previous exhibitions of the Association. They consisted principally of the Berkshire, Woburn, and Leicester breeds, with grade animals of the same races. Some of the

specimens, however, gave evidence of too fine breeding, which may mainly be attributable to the circumstance that most of the distinct breeds of swine, now in the hands of Canadian farmers, have become too much related, in consequence of there having been, comparatively, no recent importations of thorough-bred animals, during the past eight or ten years. By agricultural societies awarding large prizes, frequent importations of this kind would be made, and when an interest is once generally awakened in the minds of Canadian farmers for improvement in their agricultural live stock, a great saving in food, and time expended in reeding, will be effected.

#### AGRICULTURAL IMPLEMENTS.

In this department we felt quite at home, and indeed spent much time in minutely examining almost every machine that had for its object the improvement or better economy of farm labor. The number of entries, and variety of improved farming implements, were not equal to what were exhibited last year at Hamilton. There were, nevertheless, many articles on the ground that deserve at our hands more than a mere cursory notice.

#### SCOTCH PLOUGHS.

In the counties east of Cobourg, the Scotch plough is yet only partially in use among the farmers. It is, however, gradually obtaining favor, and doubtless will shortly be sufficiently patronized to induce some of our best manufacturers to establish themselves in the most populous towns and villages of that portion of the country.

Mr. John Bell, of Toronto, exhibited one of his very celebrated Scotch wooden ploughs, which appeared in every respect worthy the patronage of the Canadian farmers. The greatest objection that can be urged against the speedy extensive use of the improved Scotch plough, is the difficulty that many have to contend with, in getting the irons properly set and sharp-

ened, by country smiths, who, in numerous instances, are unacquainted with those implements; but by degrees this difficulty will be obviated. To show the great advantage that will ultimately be conferred upon this country by large collections of its choicest productions, it may not here be amiss to mention that many gentlemen farmers from distant portions of the country went home disappointed in not being able to purchase ploughs of Mr. Bell. The one that was exhibited was bought up at once; and if twenty of those ploughs had been on the ground, they would all have been purchased. These exhibitions are not only intended as a meeting for competition, but also for all the purposes of a fair, for the purchase and sale of the various commodities exhibited. When this feature becomes once soundly and generally implanted in the character of agricultural shows, both manufacturers and purchasers will thereby derive a great benefit.

Of iron Scotch ploughs there were but two exhibited: the one made by Mr. Gilroy, of Scarboro, being quite equal to those that are imported from Scotland. This implement, for ploughing old sward or a clover ley cannot be surpassed: indeed it is useless to work a wooden plough against any iron one, for the purpose of competing for a premium at a ploughing match. The inference nevertheless must not be made that an iron plough for ordinary purposes excels wooden ones made upon the most improved principles. The great thing to be aimed at in the construction of the plough is to reduce the amount of friction as much as possible, without impairing its turning and general working qualities. In the Scotch iron plough the amount of friction is great when compared with many others, and its mould-board is so constructed that the pressure upon the furrow after it is turned, also increases very materially the draft on the horses. When the foregoing facts are taken into account, together with the great weight

of metal that the team is obliged to force through the soil, it may pretty fairly be argued that no real utility could be gained to the country by the more general use of the iron plough. In competing for premiums it is not only proper that a distinct class should be awarded for iron, but also that they should not be put in competition with wooden ploughs, in the ploughing matches.

SUBSOIL PLOUGH.

There was only one subsoil plough entered for competition, and that too, was a hybrid, if the term is admissible. It had some advantages over all other implements of this kind, that have yet been manufactured. It was perfectly simple in its construction, and its operation in the soil very much resembled that of a wide crow bar working in the substratum horizontally, to the depth of from fourteen to eighteen inches. Most subsoil ploughs have a wing on the furrow side, about four inches wide, to partially perform the office of an ordinary mould-board; this wing materially increases the amount of friction, without performing any real service to the well-working of the implement. To obviate this objection, the implement under notice was void of a wing, and the subsoil, by its operations, would simply be broken and pulverised without removing or mixing it with the active or surface soil. On some soils the use of the subsoil plough would only tend to make the land like a quagmire, unless accompanied with thorough underdraining, an expensive operation, that could not be practised largely in this country with profit, but in other soils it would be productive of an exceedingly large amount of direct benefit. A close retentive or adhesive subsoil, in which water would be held like a basin, and not allowed to pass freely to considerably below the usual depth of ploughing, would, in nine cases out of ten, receive damage from subsoiling; but a permeable subsoil, that would crumble to the touch of the finger and thumb, may be sub-

soiled with the greatest degree of profit. Nearly one half of the arable land in Canada is adapted for subsoiling, without the expensive accompaniment of under-draining, beyond that of low grounds. The great increase of most of the usual crops grown in the country, that might be produced from this simple and unsightly looking implement, cannot be credited, without the matter being put to a practical test by the farmers themselves.

Although there was only one subsoil plough entered for competition, still the fact should not be forgotten that the Messrs. Emery; of Albany, and Messrs. Rapelje & Briggs, of Rochester, N. Y., had a very large assortment of subsoil ploughs, cultivators, and American ploughs of a great variety of patterns and sizes, drilling machines for grain and seeds, thrashing machines, and garden and field implements, of an almost endless variety of patterns, amounting in all to many thousand dollars' worth in value, all of which were arranged in a most beautiful style, and exposed for sale in a manner that, to Canadians at least, appeared novel and interesting. Too much credit cannot be given to those young men for having contributed so largely to the value and interest of this useful department of the exhibition. It is likewise to be regretted that the financial resources of the Association have been such that no substantial mark of commendation could be given them for the great expense they had taken in visiting our national show. This much, however, they have done for their several agricultural establishments: they have circulated some thousands of catalogues gratuitously through the country, which will doubtless, in the course of time, amply repay them for the money and time so liberally and zealously spent in the service of agricultural improvement.

THRASHING MACHINES.

There were only three machines for



thrashing grain entered for competition: and one of those apparently had been long in use. Besides those there were two from Albany, owned by Mr. Emery, the spirited proprietor of the Albany Agricultural Warehouse. One of these was a one horse, and the other a two horse power, both constructed on the endless platform or treadwheel principle. These machines were put in operation at different periods during the last two days of the Fair, and in connection therewith was attached a circular saw for cross-cutting cordwood. To give our Canadian readers some idea of the manner in which business is transacted among our southern neighbours, it is only necessary to state that the proprietors of the Albany Agricultural Warehouse are at this time in process of laying in a stock of lumber and other material for the building of *eight hundred* of those horse powers and thrashers, which it is confidently expected, will be pushed into market and sold *for cash* the approaching season. This opinion is based upon the amount of sales effected the last summer, and to the general satisfaction they have given to purchasers.

Two machines on the same principle, with some very important improvements were exhibited by Mr. Clark, of the village of Paris, Gore District. The improvements consisted of an open cylinder or thrasher, made entirely of wrought iron, such as are now commonly used in connection with six or eight horse power machines, and also in the greater simplicity of the tread wheel, enabling any person at all acquainted with the use of edge tools to repair or renew the wooden bars on which the horses travel, without the slightest difficulty, and in using only one fifth the number of friction rollers, and those, too, of five times the diameter, thereby lessening the amount of friction, and affording a proportionate increase of power, with the same weight and strength of muscle on the machine. A one horse machine, complete for operation, that will cost

£30, will thrash, with the aid of three men, in a day of twelve hours, from 80 to 100 bushels of good wheat. A two horse machine that will cost only an additional £10, will thrash from 150 to 200 bushels in the same time. The great advantages that this machine possesses over all other horse powers, are, the great increase of power that is obtained, enabling one horse to perform the work of two, the extreme simplicity of its construction, putting it in the power of any ordinary farm laborer to keep it in complete working order, and lastly, the ease with which it is transported from one point to another, giving the farmer power to place his entire machine upon the barn floor on a rainy or stormy day, by which he and his farm laborers may profitably employ their time in thrashing out their grain at periods when they otherwise could not find profitable employment within doors. These machines were brought a great distance, entered for competition, and, in the opinion of good judges, were deserving of a premium. Although such a favor was not conferred upon Mr. Clark, nevertheless he will be amply rewarded in the increased sales of his machines.

#### CORN AND COB GRINDERS.

The Messrs. Helm and Son, of Cobourg, exhibited a machine for grinding Indian Corn either with or without the cob, made precisely after the pattern of the machine invented and patented by Mr. Piets, of Rochester. It will gain beautiful fine meal for feeding stock, at the rate of from ten to twelve bushels per hour, and, in point of mechanical workmanship, will favorably compare with, if not exceed, any machine made upon this principle.

#### REAPING MACHINES.

There were three reaping machines on the ground, two manufactured by Messrs. Helm and Son, and one by Mr. Bell, of Toronto. The two former were an improvement upon McCormick's, or the Virginia machine, but the main principles were the

same. The motion of the sickle has been increased about 25 per cent, and many weak points of the original machine that were made of wood, are now, by Mr. Helm, manufactured of wrought iron. In addition to the foregoing improvements, it may be made to cut at least three inches lower, and the power wheel is increased in diameter about 75 per cent, and in fact the whole gearing has been considerably modified and improved, causing in fact many serious objections against this machine to be no longer operative.

#### DOMESTIC MANUFACTURES.

This branch of the show was made up of so many parts, the most of which, in point of merit, were so equal, and at the same time there being nothing exhibited that could be considered new, either in character or principle of construction, that a lengthy report thereon cannot be expected. Many articles entered in this class gave the strongest proof possible of the capacity of our mechanics and manufacturers to produce as good an article as can be imported from other countries.

#### WOOLLEN AND FLAX GOODS.

As was expected, S. E. McKechnie, Esq., of the town of Cobourg, took off nearly all the prizes for woollen goods. There were a few exceptions, but in the main the goods from his establishment, both in quantity and quality, far exceeded all the other lots put together.

In a desultory report such as might be expected from a person who was so ill in health during the most of the fair, that it was absolutely painful to actively engage in scrutinizing the busy scenes that were every where presented to the notice, and, withal, in the absence of notes or memorandums to correct a naturally imperfect memory, the license of taking a wide latitude of thought, and a free and easy style of reasoning, may be indulged in without in the slightest degree detracting from the interest and value of reports of this nature.

Acting upon this principle, we shall here describe not so fully the style and quality of woollens exhibited at the show as those that were seen by the writer on the third day of the exhibition, while on a visit through the various departments of the extensive woollen manufacturing establishment of S. E. McKechnie, Esq. Certainly this factory is in every respect equal, if not superior to one conducted by a large and wealthy corporate body in the village of Waterloo, in central New York, after it had been many years in successful operation. When equal is here stated, the idea to be conveyed is simply that the same amount of capital, number of hands, and quality of wool employed in the business, will produce as great a quantity of cloth in a given period of time, of equal, if not of superior quality, to that produced in the woollen factories of Waterloo, Auburn, or even of Lowell, or the other Eastern manufacturing cities, a few years ago. In saying this much no disparagement whatever is meant to the Cobourg Factory, but on the contrary, the highest encomium that could be made to a Canadian enterprise, conducted by a single, spirited and enterprising individual, is intended, by the above comparison. The building is very appropriately divided into departments, in the following order:—spinning, carding, weaving, dyeing, fulling, and finishing, a store or sale-room, with an office adjoining, for the transaction of business connected with the establishment, are close to the main building, but detached, so that no person can make any excuse to enter the apartments where some fifty operatives are busily at work, without first having obtained permission by a card of admittance from the managing clerk. The main building is constructed of brick, with the basement story of stone, the whole being five stories high. Large and commodious out wings are being erected, and from the general buzz of business, the inference may be fairly drawn, that this decidedly great Canadian enterprise has proved perfectly

satisfactory to its patriotic and intelligent proprietor. If the profits of this establishment should be equal to 100 per cent. per annum, on the capital invested during the entire period of the ensuing fifteen years, it would be a trifling consideration indeed to the proprietor, when compared to the great boon he has conferred upon the entire Canadian community. The Canadian people have been told ten thousand times by foreigners who have visited our shores, that in consequence of the almost entire absence of enterprise, the foreign credit of the country has been checked, and that the only reason why they do not prosper to as great an extent as they might, is because they evince no desire to adopt the go-ahead system so successfully practised by their American neighbours. Taunts like the foregoing may have been justly made, but from what has been done within the past seven years, to build up a national character for the country, by its bone and sinews, or, in other words, the cultivators of the soil, together with the aid that has been given by such men as Mr. McKechnie, of Cobourg, D. L. McDonald, of Gananoque, the Gambles of the Home District, Gartshore and Co., of Dundas, McQuesten & Co., of Hamilton, and others of a similar stamp throughout various portions of the Province, the opinion is fully warranted that the period is not far distant when much greater exertions will be employed in a similar manner, and when it can no longer be said that the Canadians are less intelligent, industrious, and disposed to go ahead in the performance of their industrial pursuits, than are their neighbours south of the 45th degree of latitude. The broad cloths, winter and summer tweeds, flannels, and strong Canadian Cloths, exhibited at the show, as well as the samples inspected in the store and finishing rooms, were, in every respect, highly creditable to the manufacturer. Much pains is taken in assorting the wool, and from a fleece of long Leicester no less than five qualities are

assorted, each being adapted to the manufacture of different qualities of cloth. The wool being principally of a long staple, a superior article of heavy winter tweeds, common fulled cloth, and Lower Canadian Grays, is turned out in great abundance. An article of heavy fulled cloth can be had, possessing a finish beyond anything that could be expected from long wool, and of a far superior quality to any goods of the kind that has ever yet been offered in the Canadian market, at 25 per cent less than goods of a similar quality sold for last year. The same may be said of the Canadian Grays, the latter being an entirely new style of goods in the Western Canadian market, and adapted almost exclusively for overcoats and pantaloons. It is to be hoped that both large and small dealers in woollen goods will support the establishment under notice, in a manner in keeping with the enterprise.

#### FLAX.

There were only two parcels of flax entered for competition; the one grown by Peter Davy, Esq., of Bath, being water-rotted, and of a light cream colour, and a fine, strong, and even staple; and the other grown by Mr. J. Fewster, rope manufacturer, of the village of Oshawa, Home District, being a dew rotted article, of rather a coarse strong staple, and a light grey colour. Mr. Davy has for many years been a successful flax grower, and formerly used to supply the Provincial Penitentiary with a considerable quantity yearly. His average yield has been 500 lbs. of flax and twenty bushels of seed, per acre. Clean scutched flax is worth 5d. per lb., as an article of export; and to be manufactured into twine, for home consumption, it should bring from 6d. to 7d. per lb. A good article of seed, to be manufactured into oil, is worth at least five shillings currency per bushel. On the rich, clay lands of Canada an acre of tolerably well cultivated land will yield, in an average of seasons, four hundred lbs. of clean scutched flax, one hundred and fifty lbs. of marketable tow,

and fifteen bushels of seed. At the lowest average price which a good article would always command, the net profit, after paying all expenses, would be at least five pounds per acre. The seed and tow will, in most cases, cover the entire expense of managing the crop. Of late, when exchange on England averaged from twelve to sixteen per cent., an importing merchant inquired of the writer where he could purchase from fifteen to twenty tons of water-rotted flax, which he was anxious to ship to Ireland, instead of paying such an enormous premium to Canadian brokers, for exchange. Of course the article could not be had, as there was none grown in the Colony of a quality adapted for exportation. He stated, that from late advices, he should judge that £15 per ton would be given. The foregoing fact is here mentioned, to show that large premiums ought to be given by Agricultural Societies, in order that the Canadian farmers might be induced to engage more generally in the cultivation of a crop, which, by proper attention, might be made to take an important rank among the staple exports of the country.

#### CORDAGE AND TWINE.

Mr. Fewster brought forward some splendid specimens of rope and twine, manufactured of hemp and flax the growth of this country. They were quite equal, in every respect, to the best quality of imported cordage, and doubtless can be afforded at as low a price as an article of a similar quality could be laid down for imported from England or the United States.

#### HEMP.

Of hemp, there was none exhibited in an unmanufactured state; nor is it likely there will be for a long time to come, unless larger premiums be awarded by Agricultural Societies than has yet been done. No country in the world is better adapted for the growth of hemp than a large portion of the vast country known as British North America. Even as far north as the territory bordering on the

Hudson Bay, and as far west as the borders of the rivers that empty into the north shore of Lake Superior, the very best qualities of hemp may be grown, for many years in succession, on the same land, without manure, and without any risk of damage from frosts or other agency. The hemp plant delights in a deep, rich, vegetable mould, such as is found bordering on rivers and small streams; and which, in fact, are too rich for wheat and other grain crops. It may also be cultivated upon rich uplands, but only as a rotation crop. On high land, unless the soil be exceedingly rich, a very heavy dressing of barn-yard manure must be applied for a hemp crop; which will be equal, if not superior to a summer fallow for wheat. Hemp when sown upon rich land, at the rate of two bushels per acre, will smother every description of weeds and grasses; and, as it feeds principally upon decomposed vegetable substances, it will, to a considerable extent, extract from the soil those properties which produce a gross and unhealthy appearance to the wheat plants, thus lessening the chance of rust, the great bane to the Canadian wheat grower. Hemp should be cut before any seeds are formed; and where this is not observed, they will remain in the ground, and grow the following year with the wheat or other crops succeeding it.

This may be made a very important crop to the Canadian farmer; and should be encouraged to as great an extent as possible, by every Agricultural Society. The Western District especially is peculiarly adapted for the extensive growth of this plant. A few experiments have been made in the Township of Dawn, and it is highly gratifying to state that the results have proved very satisfactory to the parties who made them. One party sowed, the past season, ten acres, and the average height of the crop was 7 feet. The late Col. DeLatre, of the neighbourhood of "THE FALLS," has

also grown a number of crops; and there are scores of others, throughout various portions of the Province, who have sufficiently tested the adaptation of this crop to their soil and the climate of the country, to be satisfied that it may be profitably grown. It costs the country a very large sum annually for goods manufactured of hemp, all of which might be produced and manufactured in the Colony at a highly-remunerative profit. Besides this, it might shortly be made an extensive and profitable article of export to Great Britain. Three acres will, in an average of seasons, rather more than average one ton of marketable hemp, worth, for export, £25, and for present domestic use £30 per ton. An experienced hemp dresser will rot, dress, and thoroughly prepare for market a ton per month. When every expense is carefully computed, it will be found that the profit will be, in a series of crops, from £4 to £5 per acre; and when efficient machinery is employed in the preparation of the fibre for market, and water (instead of dew or snow) rotting is practiced, a profit of at least twenty per cent. on the above calculation may safely be relied on.

Although Agricultural Societies have yet been unsuccessful in accomplishing much, as it respects promoting the cultivation of this plant, still it is to be hoped every regularly organised Society in the country will offer premiums for samples of hemp, as well as flax; and, by making those premiums as large as the importance of the interest demands, that at the City of Kingston there will be as sharp a competition in this department of the Show as in Class A and E.

#### DAIRY PRODUCTS AND SUGAR.

The number of entries in this department exceeded those made at the two previous exhibitions of the Association. The cheese, in point of quality, was in most cases highly creditable to the manufacturers; but they were invariably small, and adapted only for local, or home consumption. The largest

cheese dairies of the country were not represented at the show. This circumstance is to be regretted, inasmuch as the opinion is entertained by many that as good cheese cannot be made in Canada as in the best dairy districts of the United States. The small sum of thirty shillings for the best cheese is quite too trifling an inducement to warrant a man to bring forward specimens from his dairy a distance of some one or two hundred miles, as the case may be. As the object of the Show is to bring together the choicest productions of the Province, the premiums ought to be sufficiently large, at least, to pay the travelling and other necessary expenses incurred by the successful competitors. By far the greatest collection were exhibited by Messrs. John and Ralph Wade, of the neighbourhood of Cobourg. The whole was purchased by a Toronto grocer; which is another additional argument for combining with those shows a regular Old Country Fair, for the sale and purchase of articles in the various departments of the Exhibition.

The number of lots of butter, displayed off in good style, in wooden and earthen vessels, considerably exceeded the cheese; and the quality of the former was decidedly superior to that of the latter. To have made the show of butter complete, a distinct class of premiums should be offered for butter packed in sixty or seventy lbs. ferkins, for exportation. If in this class a scale of premiums was offered for the best quality in tub, of not less than sixty lbs., and for the greatest quantity (taking quality also, of course, into the calculation), and those premiums being ample, to induce dairymen from a great distance to have their article represented at the Fair, the obvious result would be, a spirited competition; and the whole quantity exhibited would be bought up by Canadian merchants, at prices quite exceeding those that are usually paid for ferkin butter, for export. Butter has become an important article of export, and might be made to increase at the rate of fifty per cent. per annum, if proper means were adopted to bring about that end. When Canadian butter gets into England, owing to injudicious packing, and sometimes carelessness in the manufacture, it is designated, in most cases, by the very unflattering appellation of *grease*. Now this should no longer be tolerated; and it is for Agricultural Societies to take up the matter in good earnest; and establish, if possible, a better character for Canadian butter in the British market.

MAPLE SUGAR.

The past season, being a very unpropitious one for the manufacture of maple sugar, in most parts of Western Canada, as was expected but few lots were exhibited. Its point of colour, they were inferior to the samples shown last year, at Hamilton. In point of strength, no particular fault could be found, but sufficient pains had not been taken in the process of clarifying. To some the manufacture of maple sugar may not appear an interest worthy of much attention or encouragement. The subject, nevertheless, is worthy of a careful investigation; and those who look a little deeper than merely at the surface of things, will find, that in an average of seasons the business, where farmers have a good sugar bush, may be prosecuted with profit; and the country might be nearly supplied, in the course of time, with a superior article, being the growth and manufacture of this Province. When a future time is here mentioned, it is intended more particularly to the production of sugar by the Indians in the Northern and Western Territories of British America, bordering along the north shores of Lakes Huron and Superior, and the rivers entering those vast inland seas. As unfavourable as was the season for manufacturing maple sugar last Spring, nevertheless the Aborigines of the country, located on the great Manitoulin Island, in Lake Huron, sold or exported upwards of *one hundred tons* of excellent sugar. The business requires encouragement. Information regarding the best methods of clarifying and preparing it for market should be published, and widely circulated. Not only the Aborigines of the country, but every farmer in the Province ought to know how to manufacture, from his maple forest, sugar equal in point of quality to the best South American; and, if desirable, to know also how to manufacture from the brown syrup of the maple an article of loaf sugar equal in every respect to that sold in the stores. Information like this need not cost more than a few shillings; and the expense of putting it in practice may be made to cost nothing more than a little trouble.

CABINET WARE.

In this class there were a number of tasty and well-executed specimens of furniture; but they were not as numerous as were exhibited last year at Hamilton. This may be accounted for, in part, from the few cabinet factories in Cobourg, when com-

pared with those at Hamilton and the villages in the surrounding neighbourhood. In making this remark, nothing derogatory to the character of that branch of mechanics in Cobourg is intended; but, on the contrary, we were agreeably surprised to see so many excellent and beautifully-executed specimens on the ground.

HORTICULTURAL PRODUCTS.

This, to the mind of the writer, was decidedly the most interesting branch of the Show. Horticulture, especially that portion of it that applies to pomonology, or the cultivation of fruit, has been hitherto too much neglected by the Canadian people. The Provincial Society has already materially contributed to awakening an interest among our farmers, in the improved management and cultivation of the garden and orchard. What has been done in this respect is trifling indeed in comparison of what remains yet to be done. The great mass of cultivators of fruit do not act upon any well-defined rules; nor are they at all conversant with the nomenclature of the ordinary varieties of improved fruits, and the mode of management best adapted to their cultivation in the orchard and garden. The Association, in connection with the Local Societies, all acting, of course, in concert, for the promotion of the same object, will doubtless, ere long, remove most of the barriers that prevent our people making that progress in the improved management of the garden and orchard that the adaptation of the country would seem to warrant. The New York State Society has this year set the example in correcting many of the mistakes that pomonologists have been so frequently indulging in, at the cost of the public. A Pomonological Convention, under the patronage of the New York State Agricultural Society, was held lately, at Buffalo; and the various Agricultural Improvement Societies in the State, as well as many in other States and Canada, were represented by efficient delegates. A vast fund of valuable information must have been elicited; and the report of the proceedings, when published, doubtless will throw much light on many points connected with the improved management of the orchard, that will become highly useful to all lovers of choice fruits. A similar Convention, to be held at the period and place of the Annual Meeting of the Upper Canada Agricultural Association, would, within a very few years, become a means of awakening an interest among all classes of our peo-

ple in the rational improvement of the garden and orchard. This arrangement could be effected without costing the Societies either time or money, as the Directors from the various Districts might be appointed to that office; and the day on which the entries were to be made might be profitably spent in examining fruits, in discussing the comparative qualities of the several varieties, in condemning those that are inferior and uncertain bearers, in recommending those that have proved themselves adapted to the country and in every respect worthy of cultivation, in suggesting practical hints on the most improved systems of managing orchard and garden fruits, and in imparting to each other, and through the publication of their annual reports, the public generally, the most certain remedies for the destruction of insects injurious to fruits; and, in fact, in rendering, as far as practicable, the various branches of fruit culture to exact and well defined principles.

The greatest number of choice varieties of apples exhibited by a Canadian cultivator were grown by Mr. W. Neckell, of the vicinity of Cobourg; and the next lot, in point of quality and quantity, were grown by Mr. Thomas, of the village of Colborne. By far the greatest number of choice varieties of apples were exhibited by the enterprising Messrs. Allwanger, Barry, and Rowe, proprietors of the Mount Hope Nursery, Rochester, in the State of New York, which of course were not entered for competition, but were simply brought forward for exhibition, for the purpose of introducing their extensive Nursery Establishment to the notice of the Canadian community. This respectable firm have been connected with Mr. George Leslie's nursery business for the past four years; which connexion, however, is amicably dissolved; and Mr. Leslie having procured all the best varieties cultivated, and perfected arrangements for procuring new ones as they from time to time are ushered into notice, a full and complete assortment of the choicest fruit trees may be had at the Toronto Nursery, each warranted to be true to their sorts, at as low a price as can be had in any part of the United States.

Among the table fruits were three lots of grapes, of the choicest varieties, and of a most delicious quality, grown by Mr. Gray, of Toronto. In their growth they were protected from the frosts and inclemency of the weather by glass; and in bringing them forward to maturity, no artificial heat whatever

was employed. Good judges were free in giving their opinions in most unmeasured terms, in favor of those grapes, and Mr. Allen, of Blackrock, in his admirable speech at the public dinner, said he had visited, on various occasions, the exhibitions of the Horticultural Society of Massachusetts, as well as a great number of other exhibitions in various cities of the Union, and had not on any of those occasions, nor at any period of his life, met with such large and delicious fruit. It is to be regretted that Mr. Gray's name is not among the list of successful competitors. Although no premium was announced in the published list of premiums, still when an article of great merit is brought forward, some substantial mark of reward should be given. In this instance we apprehend that the error must be attributed to an oversight on the part of the judges.

#### SEEDS AND ROOTS.

All the varieties of grain, seeds, and roots, enumerated on the printed schedule of prizes, were liberally represented; indeed the building allotted for this department of the show was quite too small to accommodate the vast quantity of produce that was arranged under this class. Finger samples of winter wheat than were shown are not grown in any country. Some of the best lots were grown in the townships of Clarke and Hope, being of the newly introduced varieties, the Hutchinson and Soul. The sample that was considered No. 3, in point of quality, was unquestionably the most uniform and bright that ever fell to our lot to examine. It was the Soul's variety, grown in the township of Clarke, upon a soil in which a very large amount of small limestones were intermixed with both surface and subsoil. This variety, as well as the Hutchinson's, has obtained great celebrity, and in fact is fast superseding the old fashioned kinds, in many parts of the Newcastle and Home Districts.

The Canada Company's prize of £25 for the best twenty-five bushels of wheat was awarded to Mr. Clarkson Freeman, of the neighbourhood of the city of Hamilton, to whom was awarded the same premium last year, as well as for the best two bushels. Mr. Freeman sows the good old fashioned red chaff white wheat, which for flouring properties cannot be surpassed. His land is a strong clay soil, rather hilly, and is naturally well adapted for the growth of wheat. There was a pretty sharp competition for

this premium, and the lots being uniformly superior in quality, the judges had much difficulty in making a correct decision. There were two lots shown of the same variety, and as they were grown upon adjoining farms, and on the same character of soil, and under similar cultivation, the judges had the greatest possible difficulty to discriminate between them.

The vegetables were in great variety and abundance, and, in point of quality, gave strong evidence of superior cultivation. It is scarcely to be expected that in a report which has already exceeded the bounds usually given to such information, that every article exhibited worthy of commendation should be fully described, or even noticed; therefore, none need take umbrage if their peculiar interests should be neglected.

A squash, said to be the property of the Montreal Horticultural Society, weighing one hundred and seventy pounds, was truly a great curiosity. Much larger, it is said, have been grown on the island of Montreal; but nothing of the kind has hitherto been exhibited at the Western Canadian Shows at all compared with it in size and beauty. These squashes are much more nutritious and fattening for live stock than the common field pumpkin, and likewise are much more prolific.

The samples of sugar beets, mangel wurtzel, ruta baga, and Belgian carrots, were, without question the largest and finest shaped that have yet been exhibited at any of the Provincial shows. The carrots, especially, were of huge proportions. This crop is becoming a great favorite in many parts of the Province, and is cultivated instead of the Swedish turnip. From seven to eight hundred bushels may be expected from an acre of well-cultivated Belgian carrots, and even as great a quantity as one thousand has been grown in Canada. They cost about 25 per cent. more to cultivate than the turnip, and on the other hand they are a certain crop, if ordinary cultivation be given them. A mill owner in the Home District had this season half an acre of carrots, and they have produced so abundantly that next year he intends to cultivate seven acres, the produce of which he proposes to give to his horses and cows.

#### HOLLOW WARE.

"Class O," it is to be regretted, was hollow by name and shape. There were certainly a few articles of merit, but in the main the most ordinary style of goods was

to be seen in this class. This might be accounted for from the few iron foundries and factories that are in the town of Cobourg and villages in its vicinity.

#### LADIES' DEPARTMENT.

If the part which the ladies take in getting up these exhibitions is not the most useful, it certainly may be said to be the most interesting. The only fault that can be found is the small amount of premiums that are offered for the various useful and ornamental specimens of handy-work, that they are capable of executing. The beautiful pieces of embroidery, raised worsted work, fancy netting, &c., that were displayed by the ladies of Canada, were in every respect equal to that department of the New York State shows, held at Utica, Auburn, and Buffalo. If much larger premiums were given, competition would be greater. Instead of a few hundred lady visitors, the grounds would be thronged with many thousands of the "fair" of Canada, and of course so large a display of ladies would excite the curiosity of thousands of our young men to attend the great gathering once a year, who otherwise would not visit them. The ladies' department might be made as useful as it has already become ornamental.

No one would believe the amount of useful articles of apparel that ladies of cultivated minds are capable of producing, unless they journey through the eldest settlements of the country and personally visit our best farmers and mechanics. Every useful and ornamental accomplishment that the ingenuity of the fair sex is capable of devising, should be encouraged by Agricultural Associations, by which means a species of industry will be promoted that is highly commendable even in the highest circles of society. As an instance of what ladies of cultivated minds may do in building up an improved taste among our farmer's wives and daughters, in the manufacture of a superior article of dress, it may be mentioned that Mrs. Dougall, of Picton, many years manufactured for her own use a number of woollen shawls, of a great variety of patterns, all of which in point of quality and appearance, were quite equal to an expensive imported article. The beautiful style of those goods, together with their great durability and adaptation to the climate of the country, encouraged other farmer's wives to obtain a knowledge of the mode of manufacturing them, and from this single branch of domes-



tic industry, some hundreds of pounds annually are saved in the Prince Edwards and Midland Districts. Some five or six specimens of those shawls were exhibited by Mrs. Dougall, at Cobourg, and to the mind of the writer, they were not only worthy of a prize; but also some special mark of commendation.

#### FINE ARTS.

When the Provincial Association was first established, its founders and supporters had their doubts about combining with its exhibitions a department for specimens of fine arts. Some portions of the Press opposed it, and in one instance, some very scurrilous remarks were made, that were calculated to throw the whole affair into contempt with those who look merely at the surface of things. The encouragement of the Fine Arts, however, became one of the prominent departments of the society's exhibition, and all who have visited those shows have left them satisfied that native talent in this respect ought not to be neglected, and that the array of neatly executed drawings and paintings give a finish to the Exhibition. When the Association finds its financial affairs in a healthy condition, premiums for the best sketches of rural landscape, models of farm-houses and out-offices, and other useful drawings of a like nature, should be given.

#### INDIAN PRIZES.

This is decidedly a novel and quite an original feature connected with agricultural and mechanical shows. To have been complete, prizes should have been given for every description of grain, and agricultural live and dead stock that the civilized aborigines of the country produce on their farms. Only one tribe or settlement of Indians competed for the prizes, those living on the borders of Rice Lake. A lively interest was evinced by the different parties who entered articles for competition in this class, and to all appearances they appreciated the beauties of much that was to be seen in the various departments of the show quite as much as many of the whites. It is to be hoped that the Association will continue to stimulate the natives of the country to perform useful acts of industry, whereby they may ultimately be encouraged to adopt a sound system of agriculture on the lands set apart for them by Government.

#### PLOUGHING MATCH.

The place selected for the ploughing match was convenient to the show grounds.

There were nine adult competitors, and three boys. The performance, on the whole, was not very creditable to Canadian ploughing. There was, however, one exception to the rule; but in the main, much better is done at the meetings of the local societies. No. 1 on the boy's class was quite equal if not superior to No. 2 on the class performed by the men. The ploughing done by the boys was altogether superior to that executed by the men, when their respective ages are taken into account.

In concluding this report, allusion should have been made to the proceedings that took place at the dinner, and also many other matters of general interest that transpired, which came under the writer's notice, but prudence warns us to bring our somewhat unconnected remarks to a close.

### Agricultural.

#### SHEEP HUSBANDRY.

We regret to have to announce to the agriculturists of Canada that the wool market is likely to be very dull for some time to come. The cause may obviously be attributed to the great attention that has been paid to wool growing throughout the entire world, and especially in the United States and South America. On the vast prairies sheep cost but a mere trifle beyond the expense of hiring shepherds to keep them throughout the entire year; and since cheap navigation has become the order of the day, wool may be transported almost any given distance, at a mere nominal cost. Wool, as an article of export, has never been an item of very great importance in Canada; but for domestic purposes, its value is vastly on the increase. If the woollen manufacturing establishments should increase during the next ten years, at the same ratio that they have done during the past ten, the result would be that the Canadian people would almost entirely be independent of other countries for a supply of woollen goods. In consequence of the coarseness of the staple of wool, manufacturers are obliged to make a heavy article of cloth, suited only for win-

ter's wear. Within the past two years some attention has been paid to the production of fine wool; and contrary to the expectations of many, American Merino sheep are as hardy as any of the races in the possession of our farmers. A good quality of Merino wool is worth, for domestic use, about 1s. 9d. per lb., and half-bred do. 1s. 3d. The Leicester, and other long combing wools, will not bring, in cash, more than 9d. per lb., and even that is more than can be paid for it for exportation to the United States and England. A good flock of Leicesters will average each about 5 lbs. of wool, and not more than 3½ lbs. per fleece may be safely reckoned from a flock of the improved merinos. Three merino sheep may be kept throughout the year on the same food that would be consumed by two Leicesters. The mutton of the latter is worth more in the market and the quality is better than that of the Merinos. In a national point of view fine wool is the most profitable to produce, and since the great bulk of the people will wear fine coats, it is important both in a national and individual sense, that they should be the growth and manufacture of our own country.

From the Journal of Agriculture.

### VEGETABLE FOOD.

#### VALUE OF THE INORGANIC INGREDIENTS OF VEGETABLE FOOD, AND PARTICULARLY OF THE PHOSPHATES.

To read the following would, one would think, be sufficient, if anything were needed, to show the practicable applicability of science to Agriculture, and the criminal supineness of agricultural communities in not providing for a stronger infusion of agricultural knowledge in the courses of instruction adopted in our country schools for the rising generation of American agriculturists.

How sincerely do we lament that the writer, and the few others our country can boast of like him, accomplished and capable, to exemplify the connection between science and field practice, have so little leisure to favor us in this way. It is, however, a mat-

ter for congratulation that the barriers which have separated theory from practice in the art of cultivation, are every day giving way, and the time fast coming when the practical farmer will solicit the good offices of the animal and vegetable chemist, inviting him to walk with him to his stercorary and his fields, as the surest means of securing for his vocation both respect and profit.

*To the Editor of the Farmers' Library.*

MY DEAR SIR,—In page 6 of Mr. E. N. Horsford's Essay on the Nitrogenous Ingredients of Vegetable Food, is the following passage:—

"The various forms of food derived from grains, herbage, and roots, furnish—

- 1st. Bodies containing nitrogen;
- 2nd. Bodies destitute of nitrogen;
- 3rd. Inorganic salts—

All of which are serviceable in the animal economy. The nitrogenous bodies, from their solution in the blood, form the tissues, the actual organism. The bodies wanting nitrogen contribute, by their more or less perfect combustion, to the warmth of the animal body; and the salts of the alkalies and alkaline earths (the inorganic salts) serve to build up the osseous framework, besides constituting an essential part of every organ of the animal system. Their values for the latter purpose are in proportion to the phosphates their ashes contain."

Hence will be seen the value of the inorganic ingredients of vegetable food, and particularly of the phosphates.

Mr. Horsford also states that the difference of the nitrogenous ingredients in different analyses of the same kind of grain probably arises from a difference in the soils in which the samples analyzed were grown. That the differences in the inorganic ingredients of the same kind of grain, shown by the various analyses of the best chemists arise from the same cause cannot be doubted, and notoriously in the phosphates; for we find that when a soil is exhausted of this valuable ingredient, all the nitrogenous manure in the world, without phosphates, will not produce the cereal grains.

I will add, that in feeding young animals whose bones and muscles have yet to grow and enlarge, the importance of a liberal supply of phosphates in their food is too evident to admit of a doubt.

The phosphates, then, being clearly next in nutritive value to the nitrogen, it becomes a subject of the highest interest for the agriculturist to discover by what means, or if at

all, he can increase the quantity of these ingredients in the grain and roots on which he feeds his stock.

This question has not yet been opened by the scientific agriculturists of Europe, and it is one the true solution of which of right belongs to the Public Model Farm and the Agricultural College; for it combines and links together experiment on the manure and, through the food, on the animal, the Alpha and Omega of Agriculture.

I have already stated in various publications, that analysis, made at my instigation, of Indian corn grown with guano, which contains the phosphates in the fittest state for immediate assimilation by the plough, show about 30 per cent more of this ingredient than the same grain grown on the same spot of ground with common barn-yard manure. Accounts from Europe show also that experiments with bones treated with sulphuric acid according to the recipes given, by which the phosphates are rendered soluble, and therefore more immediately available to the plant than in bone-dust alone, have resulted in most surprising crops of fine and full-looking grain.

But the experiment has not yet been carried forward there by contrasting the fattening of stock with this grain, and with that sown under the influence of common manure. Nor have they yet continued it by contrasting the quantity of the phosphates in the grain of one year's growth, with that in the grain arising from this same seed sown the second and third years. It is far from improbable that treatment with superphosphate of lime (bones and sulphuric acid) or with guano, may, to a certain extent, add something each season to these valuable ingredients of food. This consequence theory shows to be of vast importance. With respect to the practical proof of this theory by the fattening of animals, I can only state that a few experiments made here with roots grown on guano soil, have been attended with great success; much more, however, remains to be done before its value can be fully estimated.

What effect may be produced by such phosphated food on the milk, the butter, the quality and flavor of the meat, or the strength of bone and muscle, of course I cannot answer. My opinion is favorable toward the experiment, and the chief object of this communication is to call the attention of agriculturists to the subject, in order that

these experiments may be made carefully the ensuing spring.

With respect, yours,

J. E. TESCHEMACHER.

Boston, 12th Feb., 1847.

From the New York Farmer and Mechanic.

### FATTENING HOGS.

FRIEND STARR,—As this is the season for fattening pork, a few remarks upon the subject may not be uninteresting to your numerous agricultural readers.

To fatten a hog or an ox where there is plenty of corn and potatoes requires no great skill, but to do it in a manner that will render the animal more valuable to the farmer, when fit for market, than the substance consumed in fattening would be, besides paying for the trouble of doing it, is a matter worthy of consideration.

The summer of 1836 being very dry, my corn and potato crop came in light, and compelled me to try an experiment, which I found to work so well that I have since followed it to my entire satisfaction. It was this, I adopted the feeding of apples, of which I had an abundant crop, mixed with pumpkins, a few potatoes, and a small quantity of meal, prepared in the following manner. For convenience I set in my swill house, adjacent to the sty, a large iron kettle, holding about nine bushels, and then had a wooden cylinder made that held from twelve to fifteen more, and hooped with iron bands, just large enough to set upon the arch outside of the kettle, and by putting a little clay or mortar on the arch before setting on the leak (as I called it) I made it perfectly tight, I then had a cover or lid fitted to the top, which was also made tight or nearly so, by laying on a piece of cotton cloth or canvass underneath it, before putting it on.

Into this kettle I first put about three bushels of potatoes washed clean, then filled to the curb with cut pumpkins, and filled the curb to the top with apples, adding two, three or more pails of water, in proportion to the quantity of meal that I intend to mix with it after mashing. After letting this boil awhile I remove the cover and fill again with apples, and again make tight.

The apples and pumpkins, you will notice, are steamed by this process, and when all are sufficiently cooked, they are taken out, well mixed, and a half bushel of corn meal or a bucket of ground oats and peas, or of

buckwheat and rye, instead, added to the mixture while hot, and thus rendered more valuable for being cooked with the mass. I think that sweet apples fed in this way to hogs are worth nearly as much as potatoes, and sour ones more than half as much.

I have never made pork with as little expense or less trouble, than since I have practised this method.

I now prepare most of my feed in this way for fattening my beef and mutton, and find it equally advantageous, indeed I believe that I get the best profit from feeding sheep in this way, particularly my old ones. My course is, in the month of October, to select from my flock all that do not promise fair to winter well, old ewes in particular, which will be likely to die in the spring, as all sheep growers know that they are liable to do, and give them a good chance for fall feed, and also feeding them with the same kind of substances that I do my hogs, and by the first of January have them all first rate mutton, bearing good fleeces. This kind of feed is excellent for milch cows, and cows that come in early, or for ewes that are with lamb. It does well to mix with cut feed, only there should be more water put into the mixture.

When my potatoes get short, I put in beets and carrots for my sheep and cattle, and consider them much better for being cooked. Turnips are easily raised, and are very good food for sheep or cattle during the winter, yet will not compare in value with either carrots or beets. Potatoes or pumpkins are valuable for horses, fed raw. I never knew a horse to be troubled with the bots that was fed with a few raw potatoes every week.

I have made my communication rather desultory, but my principal object in this communication is to show the value of apples for fattening hogs and sheep, when mixed with other substances, and the saving to farmers from picking out their old sheep and fattening them, instead of pelting them in the fall, or letting them die in the spring, as many do.

When a sheep gets old and the front teeth partly gone or pointed, the best way is, to take them out entirely, as they feed better without than with them.

Yours,

A VERMONT FARMER.

Windsor Co., Vt., Nov. 1, 1846.

From the Farmers' Herald.

### A DAY AT MR. MECCHI'S, TIPTREE HALL, ESSEX.

MR. MECCHI first showed us over the entire arrangements of his farm-yard and buildings. For live stock his study has been to obtain a dry bed, warmth and air. The bullocks are in pens in the bullock shed, and in each pen are placed two bullocks loose. Proper troughs are placed at the head of each pen for food and water. The sheep sheds have the floors raised about three feet from the level of the ground; the floors are of battens, three inches in width, having one inch opening between each batten for the manure to fall through. The value of this manure is highly spoken of by Mr. Mechi. About eighty sheep were kept in those sheds during winter, and did well; at present the sheds were empty. About twelve square feet are allowed for each sheep in such sheds. Upwards of 100 pigs were classed in various sheds about the yard. The pigs, as well as the bullocks, looked remarkably healthy and clean, and all were busily engaged eating mangold wurtzel. The cart horses were but of an ordinary description. A steam engine has lately been erected in a building adjoining the barn. The engine is used for various purposes, such as thrashing, cleaning, and grinding the corn into flour, cutting green crops, hay, straw, &c. The straw used for litter is principally previously cut into chaff. The buildings surrounding the yard have, of course, eave gutters to convey away all water falling upon the building, and it is even in contemplation to put a light roof over the entire farm-yard, to keep the rain from the manure. Iron seems a favorite material; the pens being formed of iron hurdles as well as the fences. The troughs are of iron, as likewise the frames upon which the stacks stand. The boilers for steaming and preparing food for cattle are well arranged; in fact the whole of the buildings and arrangements in the farm-yard are admirably adapted for the purposes intended.

Having finished our examination of the buildings, Mr. Mechi, with his bailiffs, accompanied us over the farm. The prominent feature of his system of farming is a white and green crop alternately, thin sowing, and the great desideratum of all farming, plenty of manure (farm-yard manure in preference to artificial) and drainage. The crop generally looked well, having a fine

green healthy appearance, although the wheat appeared thinner on the ground than we had been accustomed to, but Mr. Mechi believes that he is more likely to have an abundant crop than if it were thicker. One land in a large field of wheat being sown with nearly the usual quantity of seed, he asked one of our party, who was a good judge of crops, to select from the field this land so sown. The gentleman, after considerable care, pointed out the land in question, when Mr. Mechi laughingly retorted that he had been enabled to discern it by the assistance of the "yellow tinge" in the lower blades.

Mr. Mechi informs us that seven quarters of wheat per acre were produced last season from a field on which he has now a good crop of peas growing, and was drained twelve feet apart, and two feet eight inches deep. Upon the rising land adjoining is a field of wheat, which was drained fourteen feet apart, and two feet six inches deep, and although it is now some three or four years since this was done, the wheat over the drains to the width of about four feet looks stronger and better than on the intermediate places between them and the next drain. This is so decisive that a person standing half a mile distant could, by the fine appearance of the wheat over each drain, point out every drain in the field. In another field of wheat adjoining, the land has been drained forty feet apart and four feet deep. The colour of the wheat over each of the deep drains was by no means so good or distinct as in that previously examined. One field, part of which is now growing a fine crop of beans, and upon the other part an excellent crop of clover, was drained twelve feet apart and two feet eight inches deep. The land now sown with mangold wurtzel is drained five feet deep and thirty feet apart, but the plants not being more than an inch above the ground, we could make little observation with regard to the effects of deep drainage there. In another field there is a fine crop of winter barley in full ear, about four feet six inches high. The barley was sown in September. Another portion of the same field was sown with rye, which has been lately cut for stall feeding. On what is called the "bog-field" there is now growing a second crop of wheat in succession. Formerly some portion of this field was a complete quagmire, but by judiciously putting in a large drain, 10 feet in depth, the land was laid dry. From this drain flows a large

stream of beautiful water, which supplies the house and premises. In a field adjoining there is one of the heaviest crops of rye and tares we ever beheld. This field was drained about four years since, fourteen feet apart and two feet deep, and, notwithstanding Mr. Mechi's celebrated advocacy for very deep drains, he has had the great good sense not yet to alter the drainage on this field as well as some others, and the result is, that at present he has a sufficient quantity of land drained upon the different systems fairly to test their respective merits, provided he suffers them to remain undisturbed for two or three years longer. As for the first and perhaps the second year, deep drainage would doubtless have the advantage; but judging from the crop of land, and recollecting the long-continued rains of last winter, we formed by no means that high opinion of deep draining at great width, or, say forty or fifty feet apart, as is entertained by Mr. Mechi. We also considered the clay on his land as altogether different in its nature from the strong London blue clay, or that which requires being frozen or white-hardened before it will dissolve in water; but although differing from Mr. Mechi in opinion, both as to the mode of drainage and as to the nature of his clay, we feel it but due to him to state that he appears desirous not only of adopting the best method of draining, but of everything else he has to do at Tiptree Hall. He takes great personal interest in every improvement, and having realized an ample fortune by business, can afford both money and time carefully to test the merits of whatever plan may be desirable; and there can be little doubt that the public are indebted to him for having so energetically called their attention to agricultural improvement.

#### ONE IMPORTANT CAUSE OF NON-IMPROVEMENT IN AGRICULTURE.

I had occasion to visit the son of a friend of mine, at a school of great respectability in a wealthy agricultural district. The master, a very intelligent person, showed me the details of his well-arranged establishment, which was certainly a pattern in every respect. On entering the well-filled school-room, he observed that most of his scholars were farmers' sons. Glancing at his library I enquired what books on agricultural subjects it contained? The master seemed struck with surprise (as if the thought of such books had never occurred to him) and

replied, "with shame I acknowledge, not one; but send me a list of such as you recommend, and I will immediately procure them." Now I apprehend this case might be multiplied by a thousand or more. Can we wonder then, that a youth who never heard the word agriculture at school, and who is seldom or never sent into different districts to be taught agriculture as a science, should go home to his parent, and follow his plan of farming, be it good, bad, or indifferent. In all other trades and professions an apprenticeship is considered essential to the acquirement of knowledge; but farming, the most necessary of all trades, is to be left to chance, or rather mischance. A system of uniformity is essential in making a hat, coat, or shoes; there are established educational rules for the church, the bar, and the senate; but agriculture, the greatest interest of all, on which our very existence depends, economically and politically, is to be like a ship without a compass, tossed about by the ever-varying gale of individual opinion, without the hope of reaching the port of Perfection. Were a youth ever so much inclined to furnish his mind with comparisons and observations of the various systems of culture in our own or different counties, as well as in foreign climes, there is under the present school system no opportunity for his doing so; and no doubt he would be surprised if told that we are a century at least behind the Chinese in agricultural practice. I hope we shall soon see every school, and in fact every farmer's parlour, possessing a few sound practical works on agriculture. I presume no man will consider he knows every thing in agriculture: if he does, it is unfortunate for him. Little as I am acquainted with the subject, I am fully convinced that it is full of interest, and of such extent that a life-time of study and practice would find us on the wrong side of perfection.—[London Agricultural Gazette,

#### MANAGEMENT OF MANURE.

It is always best made when under shelter: and perhaps no better can be made, other things being equal, than in Mr. Warner's system of box-feeding, where the litter accumulates under the animal, and is applied in quantity sufficient to absorb all the urine. It is surprising what a quantity of excellent manure may thus be made. An ox in a box 10 feet square, and well littered every morning, will rise in its shed only about three inches a week; but the manure below it is

hard, compressed, and will monthly, when turned out, form a heap of at least six cubic yards of first-rate material, containing, as it does, the whole of the urine. We clean out our boxes monthly, cart the materials to heaps in the fields, for our turnips and other root crops; and in turning it over, mix and cover it well with the earth on which it is laid. It is taken always to that part of the field where there is the thickest soil, that the land may not suffer from being thus robbed. The sheep dung, the sheep being fed under sheds, is allowed to accumulate for a month also, and is taken away to heaps in like manner. The stable dung, and that from the cattle stalls, cleaned out every day, is taken to a heap by the liquid manure tank, with the contents of which it is soaked, whenever the tank is full; and it is also well soaked when it is carted away in spring to the field. Dung, as we understand, does not contain, when perfectly fresh, much ammoniacal matter, but it contains that (mucous matter and urea) which forms (chiefly carbonate of) ammonia during the process of putrefaction which almost immediately ensues: and it has been contended, that if spread out in the field, when perfectly fresh, on the surface, or at most under a very slight covering of earth, its nitrogen compounds would form nitrates, and not compounds of ammonia, and thus as available as vegetable food, with less risk of waste. Nitrates are very rarely found in our soils, and that is against the theory, but the doctrine is nevertheless a fair subject for experiment, and to test it, when clearing out the cattle boxes, let, say 30 tons, be spread at once on an acre of ploughed stubble, for the Swede crop of the ensuing season, and another 30 tons put in a heap on the land, and turned, mixing with earth, &c., according to rule, and then in April or May plough it in on an adjoining acre: the resulting crop, if managed alike in every other respect, will tell the truth on this point. Farm manure may be considered, on the average, as containing about 10 lbs. of nitrogen in the ton; this, in the ordinary course of putrefaction, will form about 23 lbs. of carbonate of ammonia, to fix the ammonia of which requires 35 lbs. of the sulphuric acid of commerce; it will, however, be safer to use a smaller quantity, and it may be thrown among the liquid manure with which you soak the heap; 70 or 80 lbs. per ton of the common green vitriol will answer the same purpose, and as for sulphate of lime (gypsum), which is to a certain extent a fixer of ammonia, it may be well to apply an excess of that, as it has a value of its own as a manure: one cwt. of it may, therefore, be mixed per ton of the manure. Farm dung should be turned once,

and mixed with earth shortly after being carted out to the field in this month, and then again three weeks before it is applied: the first turning will cost 1d., and the second ½d. per cubic yard, measured before turning.

Liquid manure may be applied either by soaking manure heaps, or it may be hoarded up in tanks till spring, and carted out in water-carts on the land: in the latter case it may be well to fix the ammonia, which, when putrifying, it contains. And to guide to the economical performance of this, we may mention that 17 lbs. of ammonia require about half a cwt. of the sulphuric acid of commerce for its fixation, and that the same quantity of sulphuric acid is contained in about 1½ cwt. of sulphate of iron. Now, fresh urine, averaging all that is produced from the various animals on the farm, may be considered to contain about 2 lbs. of ammonia in ten or twelve gallons; that is, in 100 to 120 lbs.: and the horse yields 3 to 5 lbs., the cow 30 to 40 lbs., and the sheep and pig probably 2 to 3 lbs. of urine daily.

It must not be forgotten that the value of manure depends not only upon its nitrogenous or ammoniacal compound, but also upon its mineral parts: and it differs greatly in these, according to the food and the age and condition of the animals which produce it. It is believed that the greater value which every farmer recognises in the dung of cake-fed beasts arises chiefly from the greater quantity of phosphates which it contains—those phosphates being contained in the food of the cattle. And the great difference in the value of their manure between a full-grown half-fat ox and a milch cow or a young beast, arises from the latter requiring all the phosphates in their food, one for the growth of its bones, and the other for the secretion of its milk, while the former, requiring them for neither of these purposes, passed them out in its manure. Manure also depend- for some of its value on its bulk—its influence on the texture of the soil; but this, while sometimes beneficial, as on clay soils, where it ought to be applied fresh, is sometimes injurious, as on light soils, where, accordingly, it ought to be kept, if this can be done with safety to its volatile ingredients, till it is rotten, and of an unctuous texture. It would be beneficial if the terms on which farmers hold their lands were so modified as to allow of their changing the cattle food produced on their farms for any other kind of cattle food they might prefer—they would then be able to buy or to sell straw, according as a stiff or a light soil appeared to them to require a bulky fibrous manure, or one of a more condensed and less bulky character; and all this would be attended with benefit, not only to

themselves, but to their landlords also.—  
(Monthly Journal of Agriculture.)

### REMARKABLY PRODUCTIVE COWS.

A notice of some of the most remarkable cows of which accounts have been made public, may be read with interest, as it serves to show what is attainable in this respect.

The most extraordinary cow of which we have any record, is one which was owned by William Cramp, of Lewes, Sussex, England, concerning which the Board of Agriculture collected the following facts:—She was of the Sussex breed, and was calved in 1799. From May 1, 1805, to April 2, 1806, forty eight weeks and one day, her milk produced 540 lbs. of butter. The next year, or from April 19, the day she calved, to Feb. 27, 1807, forty-five weeks, she produced 450 lbs. of butter. It is stated she was sick this year, and under the care of a farrier three weeks after calving. The third year, from April 6, 1807, the time she calved, to April 4, 1808, fifty one weeks and four days, she produced 675 lbs. of butter. The fourth year, from April 22, 1808, the time she calved, to February 13, 1809, forty-two weeks and three days, she produced 466 lbs. of butter. The fifth year, from April 3, 1809, to May 8, 1810, fifty-seven weeks, she produced 594 lbs. of butter. The greatest quantity of butter mentioned as having been produced by this cow in any one week, was 18 lbs., and the greatest quantity of milk mentioned as having been given in any one day, was 20 quarts. She was well fed at all times. "In summer she was well fed on clover, lucerne, rye-grass and carrots, three or four times a day, and at noon about four gallons of grains and two of bran mixed together. In winter she was fed with hay, grains, and bran, mixed as before stated, feeding often."

The next most remarkable in the catalogue is the celebrated Oaks or "Danvers prize-cow." The first notice we find of her is in a communication of E. Hersy Derby, Esq., to the Massachusetts Agricultural Repository and Journal, dated Dec. 25, 1816. From this it appears that in 1813, Caleb Oaks, of Danvers, Mass., bought this cow of a brother-in-law, by whom she had been purchased of a drover. She was then five years old. Mr. Oaks made from her the first year 180 lbs. of butter. The next year, 1814, she produced 300 lbs.; in 1815, over 400 lbs.; in 1816, 484 lbs. In the latter year she took the first premium at the Massachusetts show at Brighton. The greatest quantity of butter made from her in one week was 19½ lbs.; the greatest quantity of milk given per day was 16 to 18 quarts. She was fed, in addition to ordinary pasture feed, with one bushel of Indian meal per week, and al-

lowed to drink all her skimmed milk. After the above trials, she was purchased by the Hon. Josiah Quincy; her yield in butter, however, never came up to what it had before been, though she sometimes made 16 lbs. per week, and her milk was of such richness that five quarts of it frequently yielded a pound of butter.

Mr. Colman states that he found in Ireland a dairy of fine cows, of the Kerry breed (a small race) which averaged 320 lbs. of butter to each for the season.

The milk given by one of Col. Jaques's "cream-pot" cows in three days, afforded 9 lbs. of butter, or at the rate of 21 lbs. per week; and another of the same family made 19 lbs. per week.

Six Durham cows belonging to Geo. Vail, of Troy, made in 30 days, (June, 1844) 262 lbs. 7 oz. of butter, being an average of 43 lbs. 12oz. to each cow. The average quantity of milk per day for each cow was 22½ quarts. The feed was grass only.

Mr. Colman, in his fourth report on the Agriculture of Massachusetts, gives a list of sixty-six "native" cows and their produce, from which we take the following:—

The Nourse cow, owned in North Salem, made 20 lbs. of butter in one week, and averaged 14 lbs. per week for four successive months.

A cow owned by S. D. Coit, of Pittsfield, from Dec. 1 to April 26, 148 days, produced 193 lbs. of butter.

Four cows belonging to Jesse Putnam, Danvers, Mass., in 1830, averaged more than 208 lbs. of butter each for the season. Highly fed.

A cow owned by S. Aenshaw, Springfield, produced 17½ lbs. of butter per week, and in one case, 21 lbs. of excellent butter. In 4½ days, that is, 4 days and 1 milking, she produced 14 lbs. 3 oz. of butter—at the rate of 22½ lbs. per week.

"Kaatskill" received the first prize of the New York State Agricultural Society as the best dairy cow exhibited in Poughkeepsie in 1844. We are unable to refer to the original statement furnished the Society by Mr. Donaldson in regard to the produce of this cow, but can say that satisfactory evidence was given that she had yielded, when kept on grass only, 28½ quarts of milk per day, and that from the milk given by her in two days, 6½ lbs. of butter were made being at the rate of 22½ lbs. per week. Her appearance fully corresponds with the account of her produce. It is proper to state that while her milk was measured for the purpose of accurately ascertaining the quantity, she was milked four times every twenty-four hours.—*Albany Cultivator*.

## EGGS AND POULTRY.

Among all nations, and throughout all grades of society, eggs have been a favorite food. But in our cities, and particularly in winter, they are sold at such prices that few families can afford to use them at all, and even those in easy circumstances consider them to be expensive for common use. There is no need of this. Every family, or nearly every family, can, with very little trouble, have eggs in plenty during the year; and of all the animals domesticated for the use of man, the common dunghill fowl is capable of yielding the greatest profit to the owner. In the month of November I put apart eleven hens and a cock, and gave them a small chamber in the wood-house, defended from steams, with an opening to the south. Their food, water, and lime were placed on shelves convenient for them, with nests and chalk nest-eggs in plenty. These hens continued to lay eggs through the winter. From these eleven hens I received an average of six eggs daily during winter; and whenever any one of them was disposed to sit, namely, as soon as she began to cluck, she was separated from the others by a grated partition, and her apartment darkened. These cluckers were well attended and well fed. They could see and partly associate through the grates with the other fowls, and as soon as any one of these prisoners began to sing, she was liberated, and would very soon lay eggs. It is a pleasant thing to feed and tend a bevy of laying hens. They may be trained so as to follow the children, and will lay in a box. Egg-shells contain lime, and when in winter the earth is bound in frost, or covered with snow, if lime be not provided for them, they will not lay; or if they do, the eggs of necessity must be without shells. Old rubbish lime, from chimneys and old buildings, is proper for them, and only needs to be broken. They will often attempt to swallow pieces of lime and plaster as large as walnuts. The singing hen will certainly lay eggs if she find all things agreeable to her; but the hen is so much a jade—as watchful as a weasel and fastidious as a hypocrite—he must, she will have secrecy and mystery about her nest. All eyes but her own must be averted. Follow or watch her, and she will forsake her nest and stop laying. She is best pleased with a box covered at the top, with an aperture for light, and a side door by which she can escape unseen. A farmer may keep 100 fowls in the barn, may suffer them to trample on and destroy his mows of grain, and have fewer eggs than the cottager who keeps a dozen, provides secret nests, chalk nest-eggs, pouped bricks, plenty of corn and other grain, water and gravel for them, and takes care that his hens be not disturbed about their nests. Three chalk eggs in a nest are better than one, and large eggs



please them most. I have smiled to see them fondle round and lay in a nest of gasec eggs. Pullets will begin to lay early in life, when nests and eggs are plenty, and when others are chucking around them. A dozen dung-hill fowls, shut up from other means of obtaining food, will require something more than a quart of corn a day. I sink fifteen bushels a year a fair allowance for them; and after they have become habituated to find at all times a plenty in their little manger, they take, but a few kernels at a time, except just before going to roost, when they will take nearly a spoonful in their crops; but just so sure as their provisions come to them scantied or irregularly, so sure will they raven up a whole cropfull at a time, and stop laying. A dozen fowls well attended will furnish a family with more than two thousand eggs a year, and one hundred full grown chickens for the fall and winter stores. The expense of feeding a dozen fowls will not amount to more than eight bushels of grain. They may be kept in cities as well as in the country, and will do as well shut up the year round as to run at large. A grated room well lighted, ten feet by five, partitioned from a stable or outhouse, is sufficient for the dozen fowls, with their roosting, nests and feeding troughs. In the spring of the year five or six hens will hatch at a time, and the fifty or sixty chickens may be given to one hen. Two hens will take care of one hundred chickens well enough until they begin to climb their little stick roosts. They then should be separated from the hens entirely. I have often kept the chickens when young in my garden. They keep the May-bugs and other insects from the vines. In case of confining fowls in summer, it should be remembered that a ground floor should be chosen; or it would be just as well to set in their pen boxes of well-dried, pulverized earth, for them to wallow in during warm weather. Their pens should be kept clean.—*Scot. Ref. Gaz.*

#### PROTECTION OF ANIMALS AND EFFECTS.

Temperature and exercise are the two great influencing circumstances on the feeding and consequent growth of animals. A flock of Leicester sheep, on tolerably good food, will increase in weight throughout the year about 52 lbs. of mutton for each sheep; but this accumulation takes place chiefly during the spring and summer months, for during cold weather it requires all the farmer's supplies of food to keep them at the same weight. One hundred sheep were folded by divisions of pens, each of which was 22 feet in length, by 10 feet in breadth, and possessed a covered shed attached to it. They were kept there from the 10th of October to the 10th of March.—Each sheep consumed, on an

average, 20 lbs. of Swedes daily. Another hundred sheep were folded in similar pens, but without sheds, during the same time, and their daily consumption of Swedes amounted to 25 lbs. each. The sequel was, that those sheep which enjoyed the protection of the sheds had increased 3 lbs. each more than those which were left unprotected, although the latter had consumed one-fifth more food.—[*Veterinarian, London*]

### Mechanical.

#### CHEMISTRY APPLIED TO ARTS AND MANUFACTURES.

##### METHOD OF DETECTING COTTON IN LINEN.

The following paper on the detection of cotton in linen, translated from Liebig's *Annalen*, of February, 1847, was communicated for that publication by G. C. Kindt, a distinguished German chemist, and will doubtless prove useful and interesting to the readers of the *Merchants Magazine* :—

This subject has frequently engaged the attention of commercial and scientific men; many experiments have been made in order to detect cotton thread in linen; many processes have been recommended, but none have hitherto proved satisfactory. I was therefore much surprised, when a stranger, a few weeks ago, showed me a sample of linen, from the one-half of which all the cotton filaments had been eaten away. He had obtained it in Hamburgh, and asked me whether I could give him a process for effecting this purpose. Now since, as far as I am aware, nothing has been published on this subject, and it is of very general interest, I consider it a duty to communicate the results of my experiments. I had already observed, in experimenting with explosive cotton, flax, &c., that these two substances behave somewhat differently towards concentrated acids; and although it has long been known that strong sulphuric acid converts all vegetable fibre into gum, and when the action is continued for a longer period into sugar, I found that cotton was metamorphosed much more rapidly by the sulphuric acid than flax. It is therefore, by means of concentrated sulphuric acid that cotton may be removed from linen, when mixed with it; and this object may be obtained by the following process :—

The sample to be examined must be freed as perfectly as possible from all dressing, by repeated washing in hot rain or river water, boiling for some length of time, and subsequent rinsing in the same water; and I may expressly observe that its entire removal is necessary for the experiment to succeed. When it has been

well dried, the sample is dipped for about half its length, into common oil of vitriol, and kept there for about half a minute to two minutes, according to the strength of the tissue. The immersed portion is seen to become transparent. It is now placed in water which dissolves out the gummy mass produced from the cotton; this solution may be expedited by a gentle rubbing of the fingers; but since it is not easy to remove the whole of the acid by repeated washing in fresh water, it is advisable to immerse the sample for a few minutes in spirits of hartshorn, (purified potash or soda have just the same effect.) and then to wash it again with water. After it has been freed from the greater portion of the moisture by gentle pressure between blotting paper, it is dried. If it contained cotton, the cotton threads are found to be wanting in that portion which was immersed in the acid; and by counting the threads of the two portions of the sample, its quantity may be very readily estimated.

If the sample has been allowed to remain too long in sulphuric acid, the linen threads likewise become brittle, or even eaten away; if it were not left a sufficient time in it, only a portion of the cotton threads have been removed; to make this sample useful, it must be washed, dried, and the immersion in the acid repeated. When the sample under examination consists of pure linen, the portion immersed in the acid likewise becomes transparent, but more slowly and in a uniform manner; whereas, in the mixed textures, the cotton threads are already perfectly transparent, while the linen threads still continue dark and opaque. The sulphuric acid acts upon the flax threads of pure linen, and the sample is even somewhat transparent after drying, as far as the acid acted upon it, but all the threads in the sample can be seen in their whole course.

Cotton stuffs containing no linen dissolve quickly and entirely in the acid; or if left but one instant in it, become so brittle and gummy that no one will fail to recognise it as cotton when treated in the above manner.

#### TO PREVENT THE SMOKING OF A LAMP.

Smoke is the result of imperfect combustion. Combustion is always imperfect where more matter is decomposed than is consumed. This is evident from the fact that smoke may be collected and burned. To prevent the smoking of a lamp, therefore, it is only necessary to prevent the decomposition of too much oil. This is done by lowering the wick till the blaze terminates without smoke. A little care in trimming a lamp will save expense, (an unnecessary waste of oil,) prevent the blackening of the ceiling, and the offensive and unwholesome smell occasioned by the smoke of a lamp.

#### The Ladies.

In another portion of this sheet a promise is made that in each number some useful, interesting, and appropriate pieces will be carefully prepared or selected for our "fair readers." In performing this promise we beg to crave the indulgence of the ladies, and trust that those who are blessed with a literary taste will aid us in storing the two or three pages in each number devoted to their especial benefit, with a variety of useful hints, appropriate to the style and character of our work.

The ladies in the United States frequently favor the press with highly interesting original pieces, among which are practical hints on the management of household affairs; and in the city of Lowell a very talented weekly sheet has been published for many years, under the editorial management of factory girls. The literary acquirements of the young women in the cities of the Eastern States, are deserving of the highest commendation, and to our mind the Canadian press might do much in promoting a similar state of things in this country. Unless we have intelligent young women, we need not expect in future years to have sage mothers, nor will great progress be made in those arts and sciences that elevate the condition of man. The influence of the mother over the child is all-powerful, and hence the necessity of a greater degree of pains being taken in the education of young ladies. The style and character of the original and selected articles in this department of our paper, will have a direct tendency to improve the tastes of the ladies, and in order to adapt them to the rank and condition of the largest class of readers, we shall be obliged to give an almost endless variety of reading, at the same time keeping in mind its adaptation to our columns.

The following remarks, from the *New York Farmer and Mechanic*, written by an experienced female, will be found reasonable by many of our farmer's wives and daughters:—

#### DIRECTIONS FOR MAKING A HANDSOME CARPET.

SIR,—In your paper of April 1st I noticed a letter from "Roella," asking information about colouring, &c.; and the thought just entered

my mind that our sister Rosella (whom we suppose is by this time married and pleasantly settled in a neat white cottage of her own) might be wishing to make a carpet for her best chamber, hall, or dining room, and feeling willing to grant all the assistance in "my power to aid a young and inexperienced "farmer's wife," in the discharge of her arduous duties, I here present the following directions for making a cheap, handsome, and durable carpet.

Take of the coarsest wool (that which is often thrown away by improvident farmers will do) cleanse it thoroughly, pick and prepare for the machine in the usual way. When carded, out of fifteen pounds of roll-spun as many runs of yarn: this will be sufficient to make twenty-four yards of good broad carpeting. The method of spinning is to cross the band of the wheel and spin two rolls at a time instead of one in the usual manner. This makes a very strong yarn and saves the trouble of doubling and twisting. After the yarn is spun, great pains should be taken in washing and rinsing it, so that it may take a good colour.

*For dark green* take two runs of yarn and place in a common indigo dye, can fully wringing and shaking it at least three times in a day to prevent spotting, until it becomes a good deep blue. Then rinse and dry it. Then prepare a strong yellow dye, made by boiling the leaves of the peach tree in soft water, for three or four hours at least; and after soaking the blue yarn in a strong alum water for five or six hours, place it in the yellow dye, frequently raising it to the air; continue this process for four hours, and you have a beautiful dark green that will never fade.

*For light green;* take the same amount of yarn and reverse the order of coloring, making it first a bright yellow, and then giving it but a light shade of blue. These two colours will make a beautiful shaded stripe of green.

*For red.* make a strong madder dye, prepared in the following manner.—Soak two and a half pounds of good madder in vinegar and water for twelve hours; then place it in a large brass kettle with at least two and a half pails of soft water. When boiled (but not boiling) dip in it one and a half runs of yarn, (having been previously soaked in alum water for several hours) and let it remain five or seven minutes, raising it two or three times to air. Then wring and carefully shake it over your dye kettle (or you will lose much of your madder,) after which rinse it in soft water, and pour the water into the dye. This yarn will be almost as bright as scarlet and quite as beautiful in a carpet. Now place the dye where it will keep in a state of simmering, put in two and a half runs of yarn prepared as the former, and colour for three hours and you have another shade of

beautiful red. Remove this from the dye, and place it in one-half run more, and let it remain three or four hours; this will be a pale red colour, and serves for the purpose of shading.

*For pink,* take one ounce of pulverized cochineal, tie in a linen bag, and place it in two quarts of soapsuds, (made with fine hard soap.) This will dye one-half run of yarn, which should be divided and a part dipped first, and remain a few minutes before the other is put in, to give a different shade. The whole to remain about two hours, with occasional airings.

*Purple.*—One run of yarn may be coloured purple by boiling a handful of logwood in the remains of the madder dye, and adding the alum water. This will not fade.

*Yellow and Black*—One run of yellow may be coloured as directed for the light green. To this add three runs of yarn coloured black, in a strong logwood dye set with blue vitriol, a half run of pale blue and the same of white, and you have the chain for a handsome carpet.

Eight pounds of cotton carpet filling will now be required to complete the whole, which can easily be dyed by throwing the remains of the different dyes into a large kettle and boiling the whole together. Care should be taken in the arrangement of the colours, and the web should be woven at least a yard wide.

We have just completed a carpet made after the foregoing directions, and although the expense (time and labor included) has not been more than twelve dollars, we would not now exchange it for any imported carpeting for which we should have to pay one dollar per yard.

MARY

North Rochester, O., May, 1847.

*Apropos to Cheese*—RECIPE FOR WELSH RAREBIT, from MAJ. SAM. STEVENS, *Shades Hotel, Thames-street, New York City—the highest authority and the head-quarters in all the United States for Welsh Rarebit:*

"Presented, by Maj. STEVENS, with his most respectful compliments, to Mr SKINNER, Assistant Postmaster General, and in conformity with his promise. May good digestion wait on appetite. New York, January 28, 1845."

Select the finest new cheese you can procure; chop it very fine; put at least a quarter of a pound into an iron or tin saucepan; add a little beer or water; stir it over the fire until perfectly dissolved; have your slice of toast on a warm plate ready to receive it; pour it over the toast and serve it up immediately. Use for dressing, mussard, pepper, and salt, as you like it. The above furnishes a Welsh Rarebit for a single person.—[Skinner's Farmers' Journal.

**BAKED INDIAN PUDDING.**—Scald a quart of milk (skimmed milk will do), and stir in seven table-spoonfuls of sifted Indian Meal, a teaspoonful of salt, a teacupful of molasses, and a great spoonful of ginger or sifted cinnamon. Bake three or four hours.

**A RICH BAKED INDIAN PUDDING.**—Boil a quart of milk and add half a pint of Indian meal. Stir it well. Mix three table spoonfuls of wheat flour with a pint of milk, so as to have it free from lumps. Mix this with the Indian meal, and stir the whole well together. When the whole is moderately warm, stir in three eggs, well beat with three table spoonfuls of sugar. Add two teaspoonfuls of salt, two of ground cinnamon or grated nutmegs, and two teaspoonfuls of melted butter. When the pudding has baked five or six minutes, stir in half a pound of raisins, and add half a pint of milk for them, or they will render it too dry. Bake four hours.

**BOILED INDIAN PUDDING.**—Sifted Indian meal and warm milk should be stirred together pretty stiff. A little salt, and two or three great spoonfuls of molasses, added; a spoonful of ginger, if you like that spice. Boil it in a tight covered pan or a very thick cloth; if the water gets in it will run it. Leave plenty of room, for Indian swells very much. The milk with which you mix it should be merely warm; if it be scalding, the pudding will break in pieces. Some people chop sweet suet fine and warm in the milk; others warm thin slices of sweet apple to be stirred into the pudding. Water will answer instead of milk. Indian pudding should boil four or five hours. This pudding should be eaten with a good sauce, or with butter and molasses. If fruit—such as currants, stewed green or ripe gooseberries, or Morello cherries—be mixed with the pudding and cooked with it, it makes a great addition to the flavor.

The following is a somewhat richer pudding:—Make a stiff batter by stirring Indian meal into a quart of boiling milk or water. Then stir in two table-spoonfuls of flour, three of sugar, half a spoonful of ginger or cinnamon, and two teaspoonfuls of salt. If anything extra is required, add two or three eggs well beaten; but they can be dispensed with; some add a little chopped suet. Such puddings require a long boiling; they will be good in three or four hours, but better if boiled five or six; and some give a boiling for eight or nine hours. They require a good sauce at eating.

**HASTY PUDDING.**—Boil water, a quart, three pints, or two quarts, according to the size of your family; sift your meal; stir five or six spoonfuls of it thoroughly into a bowl of water; when the water in the kettle boils, pour into it the contents of the bowl; stir it well, and let it boil up thick; put in salt to suit your taste;

then stand over the kettle, and sprinkle in meal, handful after handful, stirring it very thoroughly all the time, and letting it boil between whiles. When it is so thick that you stir it with great difficulty, it is about right. It takes about half an hour's cooking. Eat it with milk or molasses. Either Indian meal or rye meal may be used. If the system is in a restricted state, nothing can be better than rye hasty pudding and West India molasses. This diet would save many a one the horrors of dyspepsia.

**INDIAN CAKE, or bannock,** is sweet and cheap food. One quart of sifted meal, two great spoonfuls of molasses, two teaspoonfuls of salt, a bit of shortening half as big as a hen's egg, stirred together; make it pretty moist with scalding water, put it into a well-greased pan, smooth over the surface with a spoon, and bake it brown on both sides before a quick fire. A little stewed pumpkin, scalded with the meal, improves the cake. Bannock split, and dipped in butter, makes very nice toast.

A richer Indian cake may be made by stirring one egg to a half pint of milk, sweetened with two great spoonfuls of molasses, a little ginger or cinnamon; Indian meal stirred in till it is just about thick enough to pour. Spider or bake kettle well greased; cake poured in, covered up, baked half an hour, or three quarters, according to the thickness of the cake. If you have sour milk or butter milk, it is very nice for this kind of cake: the acidity corrected by a teaspoonful of dissolved pearlsh. It is a rule never to use pearlsh for Indian, unless to correct the sourness of milk; it injures the flavour of the meal.

**ANOTHER.**—Two cups of Indian meal, one tablespoonful of molasses, two cups of milk, a little salt, a handful of flour, a little saleratus, mixed up thin, and poured into a buttered bake kettle, hung over the fire uncovered until you can bear your finger upon it, and then set down before the fire. Bake half an hour.

Nice suet improves all kinds of Indian cakes very much.

**RISK.**—Take two cups of yeast, four eggs, four cups of milk, two cups of butter, and two cups of sugar. It must not be kneaded very stiff.

**A DELICIOUS WHEAT PUDDING,** to be eaten with sauce.—Take six eggs, one quart of milk, half a teaspoonful of salt, ten table spoonfuls of flour. This pudding is excellent with any kind of fruit added; when fruit is used it does not require so many eggs. To make the sauce take two cups of sugar, one of butter, melt them together; then add half a cup of wine, and half a cup of cream.

**GINGERBREAD.**—Half a pound of butter, half a pint of molasses, one teaspoonful of saleratus, half a teaspoonful of salt, and half a cup of sour milk or cream.

From the Montreal Witness.

### SUGAR OR MOLASSES FOR PRESERVING MEAT.

The use of sugar or molasses is gaining favor among packers, as preserving meat in a superior manner, having a finer flavor, keeping better and never becoming rusty, and however old, never excessively salt. It has been asserted on high medical authority, that the use of sugar in curing meat would prevent that fearful disease, sea-scurvy. It has been used in curing hams for a long period; indeed a good flavored ham cannot be procured without it; but it is of the greatest importance in curing beef, which is to be kept any length of time, or which is required of a fine flavour. It is used in the first process along with the salt for dried provisions—say one pound of sugar or one pint of molasses to four pounds of salt. With pickled meats it is used in the last process along with salt, to pack up the meat in the cask, say about half of each, sugar and salt.

In order that our readers may understand what is meant by first process and last process above named, we should say that the manner of curing is as follows:—no saltpetre is used. *First.* The pieces must consist of beef, six pound pieces; of pork, four pound pieces. *Second.* The salt must be good, and if saltpetre is desired, but very little should be used. *Third.* The meat must be dry rubbed for three or four days, at least once a day, to extract a certain quantity of water, and to chemically alter the meat. *Fourth.* The meat must be put into pickle so as to cure it sufficiently; in this it should remain ten days, or until it is required to be packed. *Fifth.* It must be well washed with water; if necessary, scraped or cut. *Sixth.* Packed away in barrels with coarse salt, and the package filled up with clean pickle. If they are to be dried or smoked, the dry salt is enough.

### TO TAKE THE HONEY WITHOUT DESTROYING THE BEES.

In the dusk of the evening, when the bees are quietly lodged, approach the hive, and turn it gently over. Having steadily placed it in a small pit, previously dug to receive it, with its bottom upward, cover it with a clean new hive, which has been properly prepared, with a few sticks across the inside of it, and rubbed with aromatic herbs. Having carefully adjusted the mouth of each hive to the other, so that no aperture remains between them, take a small stick, and beat gently round the sides of the lower hive for about ten minutes or a quarter of an hour, in which time the bees will leave their cells in the lower hive, ascend, and adhere to the upper one. Then gently lift the new

hive, with all its little tenants, and place it on the stand from which the other hive was taken. This should be done some time in the week preceding midsummer day, that the bees may have time, before the summer flowers have faded, to lay in a new stock of honey, which they will not fail to do for their subsistence through winter.—*Cooley's Cyclopedia of Practical Receipts.*

### Markets, &c.

MONTREAL, Oct. 27.—Flour, 24s. to 25s.; Ashes—Pot, 28s. 6d.

NEW-YORK, Oct. 27.—Flour, \$5.25 to \$5.44; Meal, \$3.31½ to \$3.34; Wheat—Ohio, \$1.16. Genesee, \$1.26; Rye, 67½c.; Oats, 33c. to 34c.; Pork—Mess, \$12.37 to \$12.50, Prime, \$8.62½.

TORONTO, Oct. 27.—Flour, superfine, in store, 21s. 3d.; Wheat, 3s. 9d. to 4s.; Potatoes, 1s. 8d. to 1. 10½d.; Peas, per bushel, 1s. 10½d. to 2s.; Oats, per bushel, (34lbs.) 1s. to 1s. 1d.; Bacon, per cwt., 35s. to 40s.; Hams, per lb., 5d. to 6d.; Butter—in kegs, per lb., 6d. to 7d.; fresh, 7½d. to 9d.; Pork, per 100lbs., 15s. to 17s. 6d.; Beef, per 100lbs., 15s. to 20s.; Eggs, per dozen, 7d. to 9d.; Hay, per ton, 50s. 65s.; Straw, per ton, 25s. to 30s.; Turkeys, each, 2s. 6d. to 3s. 9d.; Fowls, per couple, 1s. to 1s. 3d.

LIVERPOOL, Oct. 6.—At Liverpool the market has been guided in a great degree by the reports from London. The trade on the 4th and 5th, although steady, was by no means active; and both town and country dealers conducted their purchases with great caution. Old Wheat, both foreign and home grown, maintains former prices, but new has receded 2d. to 3d. per 70lbs. Western Canal and Canada Flour has declined 6d. to 1s. per barrel, the top price of both being quoted at 33s. per brl., other sorts sell at 31s. 6d. to 32s. There is still a good demand for Indian Corn, and our present rates are—yellow 35s. 6d., white 35s. 6d. to 36s., mixed 34s. to 35s. per 480lbs.; both sorts of Indian Meal bring 17s. to 18s. per barrel. All the information we can glean in various quarters confirms us in the opinion that Grain will be in tolerable abundance, and at a cheap price, during the present year. The harvest returns for this country are not much, if anything, below an average.—*Wilkes and Smith.*

PROVISIONS.—Bacon, dried and smoked, 15s. to 30s. per cwt.; Beef, prime, per tierce, 87s. to 95s.; Pork, mess, per brl., 50s. to 56s.; prime, 36s. to 38s.