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LOWER CANADA AGRICULTURIST

MANUFACTURING, COMMERCIAL, AND COLONIZATION INTELLIGENCER;

OFFICIAL SERIES OF THE AGRICULTURAL BOARD AND SOCIETIES.

PUBLISHED UNDER THE DIRECTION OF

M. J. PERRAULT,

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Pupil of the Royal Agricultural College of Cirencester, Gloucestershire, England,
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Member of the Imperial Zoological Society of Paris. &c.*

DECEMBER, 1866.

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Official Rep't.

BOARD OF AGRICULTURE FOR LOWER CANADA.

Re-organization of Agricultural Societies.

IR.—In conformity with the Agricultural Act, the annual meeting of Agricultural Societies must be held in December instead of January, the judicial districts of Beauharnois, Bedford, Arthabaska, and St. Francis, being excepted. At the said meeting, four persons will have to be elected members of the Board, in place of those who retire by rotation, namely: Major Campbell, Hon. L. V. Sicotte, Hon. U. Tessier, and M. Ross, M.P.P. These gentlemen are eligible to be re-elected, the Hon. L. V. Sicotte de-

clining re-election on account of his pressing judicial duties. The report of election of the four members to this Board is to be sent at once to the Honorable the Minister of Agriculture.

Each Society must be reorganized at the same time, and a copy of the proceedings of the reorganization, with the name of every office-bearer, must be sent early to this Board to ensure publication in the official journal.

I have the honor to be, Sir,
Your obedient servant,
GEORGES LECLERE.

Montreal, December, 1866.

EDITORIAL DEPARTMENT.

REORGANIZATION OF THE AGRICULTURAL SOCIETIES.

THOSE who follow with close observation the onward march of Agricultural improvements in Lower Canada, must report considerable progress within the last ten years. No doubt, every county has not been blessed with an equal share of the general improvement. But if so, the responsibility must be attached to the Societies themselves, which have not availed themselves of the means of promoting the best interests of their members. How is it that in several counties improved stock have been largely imported from the best herds in Europe? How is it that means have been found to do so? How is it that in those counties farming has improved in every field operation? It is through the intelligence and energy of the Directors that these wonders have been accomplished. If they had kept on the old system of costly, oftentimes worthless, Annual Exhibitions, and been happy over it, no stock would have been imported, no awards would have been given for the best crops on the field, but every cent would have been squandered year after year in prizes at the Annual Exhibition, much to the immediate contentment of those sharing in the plunder; but much also to the detriment of the best interests of the society.

Now, it is useless to keep on the Annual Exhibitions as they are generally, for no organized practical results can follow. We

believe that they might be disposed of altogether for a certain time, so as to allow the importation of stock to be made on a large scale. But supposing this to be impossible with some counties, why not dispense with the Exhibition every other year? But if that is still found impossible, then cut down your Prize List to the lowest expenditure, and save the balance for other purposes. This must be done, or no hope can be entertained of improving the present state of apathy of several of our Agricultural Societies. Stock alone must be awarded prizes at the Annual Exhibition. Agricultural productions should be judged in the field, not on the Exhibition grounds. Every Society which has paid some attention to the proper expenditure of its revenue has adopted that course at the first step. Why give prizes for butter? Is not that article already well made, and would not the same amount of money now paid in prizes be much better employed in the importation of Stock? Never should the Exhibition, admitting Stock alone, entail an expenditure higher than one-third of the annual revenue. The balance should be applied partly in prizes for the best crops in the field, and mainly in importing stock for the general improvement of the different breeds in the county.

The Agricultural Society of Hochelaga has set the example of this policy, and we know with what splendid results, not only in its limits, but in the whole Province. The Quebec Society followed with the importation of a superior Hunter. Beauhar-

nois also imported thorough bred cattle, and a Clydesdale, which has done wonders in the vicinity. Sherbrooke has imported a Cleveland Bay, which has proved a capital stallion. Now Beauharnois, Huntingdon, and Chateauguay, are each to have an imported stallion from France. The first is a Porcheron, the celebrated coach and artillery horse. The second is a Normand or carriage horse: and the third is a "Breton." From those three breeds have the Canadian horse sprung, and we doubt not that an effusion of new blood in Canada will do wonders.

This example should be followed, we believe, by every Society in the Province. It is always possible for the Society to find means enough to make the investment, which is a paying one; and in every county are to be found men of wealth, who will heartily join in the purchase of good stock for the use of the locality. Now is the time to discuss these questions at the Annual Meeting, when the operations of the coming year are to be discussed and determined. In 1867, the Provincial Exhibition is to take place at Quebec, when large prizes are to be offered for Imported Stock. We hope that the County Societies will avail themselves of the occasion to adopt at once resolutions in favour of importing the stallions of which the country is in so great need.

ON THE DUTY AND ADVANTAGES OF SUPPORTING THE AGRICULTURAL PRIZES.

 S every country must acquire Agricultural knowledge by its own exertions, or remain ignorant, it ought to consider whether ingenious discoveries or skilful experiments will not be generally lost by changes of property, or buried in the tombs to which their authors are devoted, unless they are recorded and circulated by the same means which have saved science from oblivion, and spread civilization wherever it exists. Is there a man who would wish to carry out of the world, a useful discovery he has made in it, or who would not feel pleasure from the reflection that he may be doing good to mankind after he is dead? He who shrinks from publishing whatever may have this effect, commits an act he abhors and loses the satisfaction arising from disinterested benevolence.

No censure of the genius of our country is intended by the observation, that it does not appear with much splendor in the

science of Agriculture; since the mind of man is not constructed for the comprehension of abstruse subjects, without study, nor for the attainment of skill without practice. An incitement to exercise its powers, must precede a display of its talents. The human mind is enfeebled by idleness and rendered vigorous by exertion. By compositions concerning Agriculture, the writer will improve his own knowledge, awaken the understanding of others, and cultivate the only mode by which perfection is attainable. Without them, whatever may be the genius of a people for the acquisition of accomplishments by which they are adorned, it will become dormant as those by which they must live.

The study of Agriculture, and a habit of writing upon the subject, will bestow upon the wealthy farmers no small portion of pleasure, by furnishing them with the means of escaping from the irksomeness of too much leisure, and from the regret of having wasted time in unprofitable employments. Those placed above the necessity of bodily labour, must recompense themselves by mental, or sink into a state of apathy, unfriendly to health, happiness and virtue. What subject can be better fitted for substituting activity for languor than one which can gratify self-interest, provide for the exercise of benevolence, and awaken the love of our country?

The strongest reason which invites us to become attentive to the encouragement of Agricultural publications, remains to be noticed. Agriculture, commerce and manufactures are the three great objects of individual interest, and national solicitude. To preserve them, each ought to understand its own rights; to lose them, ignorance will suffice for either. Though Agriculture may need no charter, require no bounties, claim no monopolies, and ask for no legal augmentations of the prices of her commodities, she may yet feel an unpropitious legal providence, and languish under justice. Though she may flourish in the enjoyment of equal rights with her competitors, she may be stunted, or even stifled by an unequal pressure. Commerce never confines her knowledge to the structure of her ships and the properties of the magnet; nor manufacturing to the powers of steam and the fabrication of tools. Both are politicians. Both write, publish and petition, to gain improvement, justice or favor. Both sift the laws by which they are affected. Why should agriculture confine her atten-

tion to vehicles and lose sight of cargoes? why should she be careful of her lands and her tools, and careless of her crops? Both her sisters shun this straight road towards impoverishment, and renounce the recreation to be expected from the soups of charity. Every human interest inhabits a human heart, and every human heart pants for wealth or competency. Ought Agriculture to be indifferent to blessings considered by her sisters as essential for human happiness, or remain ignorant of the extent to which their wishes may be gratified, without injury to her rights; may she not at least be permitted to consider, whether bounties to expel competition unlike premiums for exciting it, are likely to beget industry, perfection and economy; or idleness, want of dexterity and profusion? whether the English policy of forcing their manufactures into a competition with those of all the world, or the policy of protecting ours against a competition in industry even with Agriculture, is most likely to compass the end which both countries have in view? Every social interest to flourish, must know whether it buys benefits or scourges. If Agriculture has determined whether an equal or an unequal distribution of rights among men, or between interests composed of men, is most suitable to her nature, or most likely to advance her prosperity, she has solid ground to stand on for making this enquiry. If her political ignorance is like a narcotic administered to a confiding virgin, no physician who wishes to see her vigilant in the preservation of her treasure, can disapprove of her acquiring an intimate knowledge of her own interest, and an acute discernment of such measures as may advance or obstruct it. How can she gain a capacity for this discrimination, so essential to her prosperity, but by an industrious exercise of her best talents through the medium of the press?

In a struggle for empire, even among the true, sound and virtuous social interests, ought Agriculture to relinquish her pretensions to equality, if not to pre-eminence, and tamely yield up a prize, to gain which she so largely contributed? Perhaps a free and candid discussion of her claim to justice, may disclose some less worthy competitor, whose prowess may evince the necessity for a coalition between those interests, founded in principles of mutual right and pure friendship. Are not the consequences of such an union to private happiness and public prosperity, worthy of a diligent en-

quiry? Laws may affect Agriculture as well as commerce or manufactures; and hence as powerfully require the attention of a society confined to that special object, as laws affecting commerce or manufactures require the attention of societies for their improvement. Would not a resolution by a society for promoting commerce, manufactures or internal improvements, to disregard legal favor, justice or injury, and to repose in legal ignorance, be a renunciation of the source of success, and prophetic of its fate? The patriotic advocates for internal improvements, far from confining themselves to mathematical discussions, contend that legislation constitutes the source of their prosperity or decay, and laboriously investigate its influence upon inferior objects. Are these enquiries irrelative, or ought the cardinal internal improvement to be prohibited by its advocates from acquiring a species of knowledge even necessary for the prosperity of her handmaids? Is not a fair competition in industry under the shield of equal laws between the interests which cover all, as necessary to excite emulation and to produce improvement, as such a competition among associated individuals?

Supposing that the maxim "*ne sutor ultra cupidam*" is as applicable to a science as a cobbler, and that the votaries of Agriculture ought to stick to the plough, and continue to "whistle as they drive it for want of thought," whilst her friends and her foes are encouraged to become deeply learned in the subtleties of legislation; yet, as one denies to them the knowledge and skill necessary to make good crops, because all eat, it is superfluous to consider whether verbal communications and local examples of essays and books constitute the best means for effecting the end, since all may be united, and each may operate in its own sphere. Agriculture has certainly flourished most in those countries where the press has been most extensively employed as an auxiliary to example. Its great efficacy may possibly be owing to a quality of the mind neither unfrequent nor inoperative. It is a quality often offended by the wisest lecturers and the brightest examples; but soothed by the appropriations it can make from reading, and delighted by a display of acquirements drawn from the common reservoir of knowledge. To copy example, it looks upon as a species of plagiarism; and therefore, the most beautiful agricultural experiment unrecorded, would be fre-

quently as ephemeral as the tints of the butterfly. To yield to verbal lecture, it abhors as a confession of ignorance; and the excellence of advice is apt to strengthen its opposition. But the activity of this quality, unrestrained by the fear of degradation, and excited by the hope of applause, may be enlisted through the press, and become highly useful in the improvement of Agriculture. Whatever it can thence acquire, it will practice as its own, and propagate with zeal; and its great share both of talent and industry, renders it a coadjutor worthy to be conciliated.

WHENCE THE IMPROVEMENT IN FARMING.

IMOTHY Titcomb, in his *Rural Life*, truly says: "The improvements made in farming and farming implements have not been made by farmers themselves, but by outsiders,—mechanics and men of science—who have marveled at the brainless stupidity which toiled on in its old track of unreasoning routine, and looked with suspicion and discouragement upon innovations. The reason why the farmer has not been foremost in improving the instruments and methods of his own business is, that his mind has been unfitted for improvement by the excessive labors of his body. A man whose whole vital energy is directed to the support of muscle, has, of course, none to direct to the support of thought. A man whose strength is habitually exhausted by labor, becomes, at length, incapable of mental exertion; and I can not help feeling that half the farmers in the country establish insuperable obstacles to their own improvement by their excessive toil. They are nothing more than the living machines of a calling which so far exhausts their vitality that they have neither disposition nor power to improve either themselves or their calling. * * * There is no doubt about the fact that a life whose whole energies are expended in hard bodily labor is such a life as God never intended man should live.

I am perfectly aware that I am not revealing pleasant truths. We are much in the habit of glorifying rural life, and praising the intelligence and virtue of rural populations; and if they believe us they can not receive this with pleasure. But the question which most interests them is not whether these statements are true. Is the philosophy sound? Does a severe and constant tax on the muscular system repress

mental development and tend to make life hard and homely and unattractive? Is not the American farmer, generally, a man who has sacrificed a free and full mental development, and all his finer sensibilities and affections, and a generous and genial family and social life, and the dignities and tasteful proprieties of a well-appointed home, to the support of his muscles? There are instances of a better life than this among farmers, and I should not have written this, if those instances had not proved that this everlasting devotion to labor is unnecessary. There are farmers who prosper in their calling and do not become stolid—whose homes are the abodes of refinement, whose watchword is improvement, and whose aim it is to elevate their calling. If there is a man on the earth whom I honestly honor it is a farmer who has broken away from his slavery to labor, and applied his mind to his soil.

"Mind must be the emancipator of the farmer. Science, intelligence, machinery—these must liberate the bondman of the soil from his long slavery. When I look back and see what has been done for farming within my brief memory, I am full of hope for the future. The plow, under the hand of science, has become a new instrument. The horse now hoes the corn, mows the grass, rakes the hay, reaps, threshes and winnows the wheat; and every year adds new machinery to the farmer's stock, to supersede the clumsy implements which once bound him to his hard and never ending toil. When a farmer begins to use machinery and to study the process of other men, and to apply his mind to farming so far as he can make it take the place of muscle, then he illuminates his calling with a new light, and lifts himself into the dignity of a man."

COUNTY OF OHAMBLY PLOUGHING MATCH.

HE Ploughing Match of the above county was held on the 13th October last, at St. Hubert, on the property of Mr. Moses Vincent. An iron plough, of Paterson's make, presented by Messrs. Cartier, Pominville, and Betournay, advocates to the Society, was awarded to Mr. John Halpin, as the best ploughman who had never before received a plough as a prize. The following gentlemen were awarded the prizes in their respective classes, viz: 1st class, iron ploughs, over 21 years of age—1st, A. Williams; 2nd, X. Brissette; 3rd, L. Brousseau; 4th,

F. Demers; 5th, P. D. Benoit. 2nd class, wooden ploughs, over 21 years of age—1st, E. St. Germain; 2nd, P. Dubuc; 3rd, T. Lussiere. 3rd class, under 21 years, without distinction of ploughs—1st, E. Demers; 2nd, P. Brissette.

QUEEN VICTORIA'S DAIRY FARM.

HERE are cows at Windsor which give thirty quarts of milk a day. The royal short horned herd is formed partly of cows of good old families, the pedigrees of which may be seen in the Herd book partly of well-bred cows, with three, or four crosses of the best pure bred bulls, but not professing to be Herd Book Cattle. So far as could be observed, there does not appear to be any material difference in the milking qualities of the older compared with the newer families.

Nowhere can be seen more clearly in all its combined merits the unrivalled practical utility of the short horn; the dairyman's cow when in profit, the butcher's not in milk. Let the doubters go and see. There are fifty-eight short horn cows in milk at the present time, together with fourteen Alderneys, for the supply of cream, milk and butter, for the Windsor Castle, Buckingham Palace and Osborne, when the Queen goes to these places. The Shaw and Dairy farms are exclusively devoted to the short horns, under the care of Mr. Tait; while the Norfolk farm, "which is appropriated by the lovely Devons, and Flemish farm, where the massive Herefords hold their reign," are much further from the castle, and are both committed to the charge of Mr. Crebuer, under the superintendence of Major-Gen. Hood.

In 1862, we went with a party of American gentleman and ladies, and visited, among other celebrities around Windsor Castle, the Queen's Dairy Farm. It was one of the attractive places we examined, and was very worthy of its distinguished owner.—*Jour. N. Y. State Agricultural Societies.*

MAKING IMPROVEMENTS THAT PAY.

COULD recall instances where farmers went ahead with improvements, without counting the cost, till it took the farms to pay for them. Improvements are a nice thing, if one has the ready cash to make them; if not, beware of the temptation. Only those should be made, at first, that will return the outlay

again. Farming should be conducted on business principles. If a merchant is not able to own a store, he rents one. If a farmer has not money to erect new buildings, he had better get along with his old ones. If a merchant invests money, he expects to get it all back, and more too. If a farmer buys manure or Merino sheep, he should be careful that they are so used that they return the original cost and a profit. If a farmer lays out money in ditching, he should do it where two or three crops will pay it back with interest.

A little learning, in agricultural science, is a dangerous thing, if it is not balanced with judgment. I remember a farmer who owned some hills, or rather he was in debt for some. The soil was sandy loam, except the crests of the hills, which were clay—the top soil having washed down. It was well enough, perhaps,—a wise provision of Nature, our Scientific Editor might call it,—to make the difficult hill-tops poor and the crops light thereon, and the valley rich, and the crops heavy in them, so that the honest farmer could gather the reward of his labor without toiling up the hillsides. But our farmer had read the advantages of underdraining, and among them that the land would not wash, as the water would sink into the drains, and not flow from the surface. So he dug ditches upon the dry hill sides, and opened the clay crests, and put tile in them. Did the heavy thunder showers hereafter linger on the sharp, hard pinnacles, and sink gently down to the artificial channels? Not a bit. In its wrath the water tore up the earth deeper than the drains and sent the little tiles in a heap to the bottom.

I was about to moralize further on the foolishness of squandering money in enterprises that are scarcely begun ere they are abandoned for something more enticing, or from a fear that they will not prove profitable; but it recalls disagreeable recollections, and I quit.—*Rural New Yorker.*

MILK FOR A POUND OF BUTTER.—We have frequently been asked the amount of milk required to make a pound of butter from Jersey stock. We have recently kept an accurate account with our Jersey cow, "Buttercup," and she has made a pound of butter from 4 1-3 quarts, her feed being English hay and stalks, with two quarts of shorts a day. Who has a cow that will do it from less?

FARM OPERATIONS.

FOREST LEAVES AS A MANURE.

WHY is it that the soil of our forests is so exhaustless in its fertility, that it has for years supported the most luxuriant vegetation, and now appears more fertile than ever? It is because they receive every year an abundant manuring. The leaves that fall in autumn decay, and form exactly the sort of nourishment needed for the growth of the parent stock. Not only do they contain the larger part of the material taken up by the tree during the season's growth, but also an immense quantity of matter that has been derived from the atmosphere. We mentioned in a previous article, that the bulk of plants was obtained from other sources than the ground on which they stood, and it is this fact that causes the land on which a forest stands to become every year more fertile. This is also the reason why the soil of a hardwood forest will yield the heaviest crops when cultivated. It does not follow that in the first place it was of the richest qualities, but it is due to the fact that a hardwood tree returns to the soil vastly more than is taken from it. The same will hold good in a greater or less degree in the case of all kinds of vegetables. The economy of nature is such that vegetation shall not be exhaustive, but, on the contrary, enriching to the soil. This condition of affairs is so potent in its effects, that if we could cause a stream of water to flow through the most barren desert, in the course of time the sand would be converted into fertile soil, and luxuriant vegetation would abound on every side. Forest leaves then are valuable fertilizers. They are those which nature herself uses, and therefore possess the qualities most needed. On many farms this readily available means of obtaining a good manure is entirely neglected. Sometimes the leaves are raked up, but they are generally put in a pile and burnt, and the ashes scattered over the ground. This is the very worst of policy. Nor is it much better to save the ashes, as some do, to mix with the manure pile. The leaves themselves should be all saved, and mixed with stable dung. They are excellent to put with the droppings of cattle, or sheep, as this makes them more valuable and more easily handled. Let the boys, then, go to work and gather up all the leaves that are

within reach, and put them under cover, so that they may be at hand ready to be used at any time during the winter. Economy is the surest road to wealth; not a stingy, starving economy, but that which will allow nothing to go to waste that may be turned to a good account. As so much depends upon the size and quality of the manure pile, it behoves the good farmer to leave no means untried to increase it in both respects.

CUTTING TIMBER.

IF oak, hickory, or chestnut be felled in August, in the second running of the sap, and barked, quite a large tree will season perfectly, and even the twigs will remain sound for years; whereas that cut in winter and remaining until the next fall, (as thick as your wrist,) will be completely sap-rotten, and will be almost unfit for any purpose. The body of the oak split into rails will not last more than 10 or 12 years. Chestnut will last longer, but no comparison to that cut in August. Hickory cut in August is not subject to be worm eaten and lasts a long time for fencing. When I began farming in 1802, it was the practice to cut timber for post fencing in the winter. White oak post and black oak rails, cut at that time, would not last more than 10 or 12 years. In 1808, I began cutting fence timber in August. Many of the oak rails cut that year are yet sound, as well as most of the chestnut. If the bark is not taken off this month, it will of itself peel off the 2nd or 3rd year, and leave the tree perfectly sound. The tops of the tree are also more valuable for fuel, than when cut in winter or spring. I advise young farmers to try the experiment, and if post fences do not last twice as long, I forfeit all my experience as worthless.

A MAN OF EXPERIENCE.

MUCK IN THE BARN-YARD.

THE quantity and quality of the harvest is always in proportion to the size of the manure heap; as the latter is large or small, so the former is profitable or worthless. The proper manufacture of manure is then, a most important branch of farming, and one upon which its success largely depends. Persons whose farms are

in the vicinity of a city or town, have an advantage in the way of obtaining fertilizers which is beyond the reach of their back-country friends. They can purchase the manure produced in the stables of the town; and this, if the price paid for it be not excessive, or the distance it has to be conveyed too long, is a very profitable investment of money. But in general it requires an outlay of ready capital, which very few, who depend for a living solely upon their farms, are prepared or willing to make. And again the majority of our farmers live too far from town to make the source at all available. For these and for all others, there is another and a better course left. A load of manure manufactured on the farm is worth about twice as much as one which has to be bought, for the price and expense of carriage diminish the profits derived from it about half. If, therefore, all the manure used is the produce of the farm, the net returns at the end of the year will be almost doubled. Economy and ingenuity will give a great assistance in this matter. The least waste of anything that will act as a fertilizer should be avoided. Saw-dust, the refuse of the kitchen, fallen leaves and different other materials, collected and saved, will prove of great value. But this week we wish more especially to refer to the manufacture of manure. With a little ingenuity and labor much valuable matter that is now frequently lost may be converted into a valuable fertilizer. As the most important parts of manure are those which are most readily dissolved, the drainings of the barn and yard will contain a very large proportion of matter possessing enriching qualities. This is too generally lost. The liquid excrement of the cattle is allowed in the barn to run down through the floor, and be absorbed in the earth underneath, which is never removed, and where it remains to breed a pestilential odor that will make the whole stable unhealthy. In the barn-yard all liquids are either absorbed by the earth or are allowed to drain off. On good farms this course of proceeding is never followed, for the waste and consequent loss caused by it are excessive. A good way to save all liquids and convert them into a fertilizer which may be handled without difficulty is to use muck as an absorbent. This substance, if it has been thoroughly dried, will take up a very large quantity of water, and therefore if it is spread in the stable behind the cattle, or in the barn-yard and sheep-pens, all waste

will be prevented. A farmer who has a muck swamp at his command should never let a summer pass without having twenty or thirty loads brought into his barnyard. That if carefully handled in a proper manner may be converted into valuable manure in the course of a single winter, even where the stock kept is not very large. It may be used not only as above mentioned, but mixed with the dung to prevent its becoming too much healed.

We recommend this course of proceeding to all of our country readers, who have not adopted it already. The details of the application of muck as an absorbent are so much varied by the circumstances under which it is used, that it had better be left to the ingenuity of individuals to decide in what manner it can be used with most advantage in each particular case.

PLEA FOR PERMANENT GRASS LANDS.

OBSERVATION and experience from my youthful years convince me that lands natural to grass, and desired for its production, should never be disturbed by the plough, but their fertility kept up by top-dressing of animal manure, ashes, plaster, muck, earth, or whatsoever enriches pastures at almost any time; mowing lands soon after the hay crop is removed, that the surface dressing may act upon the grass as the earth does upon other crops under cultivation; almost affording protection and warmth during the cold and wintry season. Natural meadows—that is, the level land bordering on streams and rivers—are undoubtedly best for mowing, and can usually be made smooth without even a first ploughing, and are sometimes found self-sustaining, also, lands receiving the wash of hills, roads and barnyards, often keep up their fertility without any direct application, though the hay crop is continually taken off. Lands less favored naturally, must be treated artificially, and strengthened and replenished by irrigation, or some fertilizing substance applied to the surface. Ploughing seems to destroy the life and take away the heart of the land for grass, which almost always soon runs out after it, and must be richly manured and thickly seeded, and the process often repeated, in order to keep it up.

The custom with farmers here, is to plough annually a small piece in their mowing lots,—we have but very little natural meadow land,—put on the entire manure of

a large stock, get a good crop of corn, followed by oats, with new seeding, then a fair hay crop for about two seasons. If the grass has been improved, it has *not* been done by the cast iron plough, but by the liberal manure. A less portion put on as a top-dressing would have resulted in a greater and more permanent benefit, besides the labor of getting off the stones and preparing it for the mower. It is also the custom to plough a piece in the pasture, sow to buckwheat, followed by oats, with new seeding, and it is then assumed that the land is made better, been *enriched*, while in fact it has been made *poorer* to the amount of the two crops taker off, besides otherwise injuring it for the production of grass, as a few years will show.

This unnatural method of *improving* old pastures by *repeated* ploughing and cropping, has in many instances been fairly "*run into the ground*," and many of these naturally fertile and *grassy* hills have become poor and waste places, while others near by, which have never been poisoned by the plough, nor too closely fed, still, to a good degree, maintain their productiveness. If an old pasture could be spared a few years to rest, and to grow up to white birches or other trees, whose roots should penetrate and pervade the compacted soil, while their limbs and leaves would give resting and shade in summer, and warmth in winter, and altogether aerifying, ameliorating, and renewing its condition, then cutting off its young growth, and you have, the best kind of new ground and good pasture for years, enriched by shade and rest, fallen leaves, and decaying stubs and roots. The *first* ploughing is the beginning of evils, and should never be done where grass is desired. To hear an old farmer in passing over his deteriorated mowing or pasture lands say "the grass has run out here, this needs ploughing," is strange logic to me. I believe in *Cincinnatus* and the *plough*, but on *grain* and *not* grass land. The sage saying of the Scotch minister—(our friend John Johnston will agree in this)—when taken by his parishioners, in time of drought, around with them from field to field, to pray for rain and the blessing of heaven upon the parched and feeble crop, coming to a very poor and neglected field, he said to his brethren, "Pass on, pass on; it will be of no use to *pray* over this land—it *needs manure!*" This was common sense and philosophy, as well as piety. It is somewhat of *ploughing* as of

praying to make grass grow on a poor or run-out field—*ploughing will do no good: it needs manure.*—*Corres. in Country Gentleman.*

WHAT STOCK MOST ENRICHES PASTURE.

IT is generally accepted as a fact that soil under pasture grows fertile. When land is ploughed and cropped, and pasture forms part of a systematic rotation, the soil under grass recuperates in power to grow grain. This is due to several causes, prominent among which is the thick turf ploughed under, thus supplying a quantity of manure for the succeeding crop. If a field were left in grass for long a time, and all the growth allowed to rot on the ground, we see no reason why the soil would not increase in fertility so long as this practice was continued. But were the grass removed in the form of hay each year and no compensation made, no practical farmer would contend that the soil grew richer when subjected to such treatment for a long time. Land, in grass, then, becomes rich only in proportion as the growth of vegetable matter from it—as roots, stems, leaves and seed—is returned for manure.

Land is enriched by pasturing for the production of grains in two ways; the formation of a sod to be rotted for manure, and the deposition of the solid and excrements of the stock. It is important for the grain farmer to consider the kind of stock which, feeding on his pastures, will enrich them most. There is, perhaps, not much practical difference in the amount of manure made by various animals on the same pasture; but the form in which it is deposited, and the habits of stock in choosing their resting places ought to be well considered. Horses are the very worst fertilizers of pasture; they are very close feeders, and they delight to graze the summit of knolls, and all spots where the herbage is short and sweet. On such spots they are continually feeding, yet they manure them very little. The observer will find their droppings mostly in rich hollows, and places where the herbage is rank and coarse, showing that the soil is already fertile above the average of the field. In this respect cattle have not the same instinct as the horse, and they are neither so close nor so dainty feeders, but the objection holds against them, as the horse, that their manure is not scattered sufficiently for the good land. This is, indeed, the chief objection

to employing horses or cattle to enrich land by pasturing. If the grass is turned into hay and fed to them in the yard or stable, the manure therefrom may all be saved and applied judiciously. But this course involves much labor. In the field every observant farmer knows that the droppings of horses and cattle seem to fertilize the soil but little when their bulk is considered, and the best effects are invariably seen not from the solid but from the liquid manures that fall on the field. In pasturing cattle and horses we conclude that not more than one part in a hundred receives any manure, while the ninety-nine other parts are impoverished as much as though the grass were cut and removed in the form of hay.

Without doubt sheep are the very best stock with which to enrich land by pasturing. They range over the whole field, and refuse hardly anything. Their manure is scattered in the very best form it could be applied as a top-dressing. If they frequent the knolls where the grass is sweet they also enrich them, and they choose for their resting places at night, and therefore fertilize, the highest part of the field. If desirable, a flock may, with little trouble, be nightly folded on the poorest spots of the field. In hot weather they will frequent the shade of trees, but from such places the accumulated manure is easily scraped up and distributed to other parts. And the farmer who is mainly a grain grower will find no stock more profitable and convenient for all his purposes than sheep.—*N. Y. Farmer.*

WINTER WORK ON THE FARM.

E often hear farmers say: "It soon will be winter, and then we shall have nothing to do." This is a great mistake. It has become a trite and true saying, that there is always something to be done on a farm. It is so. A true farmer never need be unemployed unnes-

sarily. To be sure, the more confined and heavy manual labor must be performed during the other three seasons, but winter brings its share of duties, which will require constant attendance from the farmer whose motto is progression.

The winter days being short, the proper care of his stock will occupy a goodly portion of it; and here let me remark, that nothing pays better than good care of animals during the months they are confined to the yard and stables. Another item of winter work which should always be performed, is the cutting, hauling and piling of the year's fuel. The workshop will take a large share of the time, for we assume that every farmer is, or ought to be, mechanic enough to repair his tools, carriages, &c., and make the more common kind. There will be much of this sort of work to attend to in preparing everything for the more active duties of the coming season. Here let me remark that farmers should always have seasoned lumber on hand suitable for repairs, and the construction of such articles as they would be likely to need. Another and great branch of labor which must be attended to at this season, is planning—brain labor. Every farmer should have a rough draft of his farm on paper—he has it in his head—to which he can refer, and on which he can make such alterations and additions as he sees fit, to be carried into operation in due season. In this planning business he will find ample work for the long evenings and unoccupied hours. And lastly, the winter season is the time for reading, study, and replenishing and refreshing his mind for more active duties. He must be a "book farmer," to some extent, else he will fall behind the times. In all of these labors and duties, and the cultivation of those neighborly, social qualities, for which the season is peculiarly appropriate, no farmer need lack of finding enough to do, and to profit by. G. E. B.

BREEDERS' DEPARTMENT.

CLEANLINESS OF SWINE.

N one respect, farmers commonly show the worst of their management in fattening hogs. These animals appreciate and enjoy cleanliness, yet their owners make them live in dirt, and then charge them with a natural fondness for filth. This is oppression and slander combined. Every person familiar

with their habits, knows that when clean straw bed and other comforts are given them, they are scrupulous to keep them clean. When shut up in a narrow pen, where they must eat, sleep, and live in one apartment, they cannot but be uncomfortable; and such a condition greatly retards their thriving. A "hog pen" has become proverbially a repulsive place; this is the

owner's fault, and should never be suffered. There is no reason why it should not be clean, and even attractive. We hear farmers who raise grain say that they have more straw than they can sometimes use, while at the same moment their hogs have not enough of it to make a dry and clean bed.

Animals can never thrive well unless kept clean. Every one knows that a well groomed horse is better than a neglected one, with a shabby coat. Nearly the same result has been found when this treatment is applied to swine. Let every manager lay down this rule, that *a hog pen should never be distinguished by its odour twenty feet distant.* The sleeping apartment should be separate, and kept perfectly clean and dry. The other portion should be daily cleaned out, and the manure at once mixed with muck, loam, coal ashes, &c., to make compost and destroy the odour, which is as injurious to the health of swine to breathe as it is to human beings. It is not necessary that a piggery should cost five hundred dollars that it should be kept in splendid order; a cheap and simple structure may be subjected to the most perfect system of cleanliness. The satisfaction it will afford the owner, the comfort to the occupant, and the profits to the purse, will be a three fold compensation.

SCALE OF POINTS FOR BULLS.

No.	Points.
1. Pedigree on small side,	1
2. Pedigree on female side,	1
3. Head fine and tapering,	1
4. Forehead broad,	1
5. Cheek small,	1
6. Throat clean,	1
7. Muzzle fine and encircled with a light color,	1
8. Nostrils high and open,	1
9. Horns smooth, crumpled, not too thick at the base and tapering, tipped with black,	1
10. Ears small and thin,	1
11. Ears of a deep orange color within,	1
12. Eye full and lively,	1
13. Neck arched, powerful, but not too coarse and heavy,	1
14. Chest broad and deep,	1
15. Barrel hooped, broad and deep,	1
16. Well ribbed home, having but little space between the last rib and the hip,	1
17. Back straight from the withers to the top of the hip,	1

18. Back straight from the top of the hips to the setting on the tail, and the tail at right angles with the back,	1
19. Tail fine,	1
20. Tail hanging down to the hocks,	1
21. Hide mellow and moveable, but not too loose,	1
22. Hide covered with fine and soft hair,	1
23. Hide of a good color,	1
24. Fore-legs short and straight,	1
25. Fore-arm large and powerful, swelling and full above the knee, and fine below it,	1
26. Hind-quarters, from the hock to the point of the rump, long and well filled up	1
27. Hind-legs short and straight (below the hocks) and bones rather fine,	1
28. Hind-legs squarely placed, and not too close together when viewed from behind,	1
29. Hind-legs not to cross in walking,	1
30. Hoofs small,	1
31. Growth,	1
32. General appearance,	1
33. Condition,	1

Perfection, 33

No prize shall be awarded to a bull having less than 27 points.

SCALE OF POINTS FOR JERSEY COWS AND HEIFERS.

No.	Points
1. Pedigree on male side,	1
2. Pedigree on female side,	1
3. Head small, fine and tapering,	1
4. Cheek small,	1
5. Throat clean,	1
6. Muzzle fine and encircled with a light color,	1
7. Nostrils high and open,	1
8. Horns smooth, crumpled, not too thick at the base and tapering, tipped with black,	1
9. Ears small and thin,	1
10. Ears of a deep orange color within,	1
11. Eye full and placid,	1
12. Neck straight and lightly placed on the shoulders,	1
13. Chest broad and deep,	1
14. Barrel hooped, broad and deep,	1
15. Well ribbed home, having but little space between the last rib and the hip,	1

16. Back straight from the withers to the top of the hip, 1
17. Back straight from the top of the hip to the setting on of the tail, and the tail at right angles with the back, 1
18. Tail fine, 1
19. Tail hanging down to the hocks, 1
20. Hide thin and moveable, but not too loose, 1
21. Hide covered with fine and soft hair, 1
22. Hide of a good color, 1
23. Fore-legs short, straight and fine, 1
24. Fore-arm, swelling and full above the knee, and fine below it, 1
25. Hind-quarters, from the hock to the point of the rump, long and well filled up, 1
26. Hind-legs short and straight (below the hocks), and bones rather fine, 1
27. Hind-legs squarely placed, and not too close together when viewed from behind, 1
28. Hind-legs not to cross in walking, 1
29. Hoofs small, 1
30. Udder full in form—that is, well in line with the belly, 1
31. Udder well up behind, 1
32. Teats large and squarely placed, being wide apart, 1
33. Milk veins very prominent, 1
34. Growth, 1
35. General appearance, 1
36. Condition, 1

Perfection, 36

Three points shall be deducted from the number required for the perfection of heifers, as their udder and milk veins cannot be fully developed. A heifer will be considered perfect at 33 points.

No prize shall be awarded to cows, or heifers, having less than 29 points.

BED YOUR STABLES.

 HORSE will get tired standing and treading on a hard floor; so will a cow, a sheep, a man. A soft bed feels easy—gives rest. And yet we neglect the bedding of our stables to a great extent. Injured limbs and other ailments, especially of the hoof, are the result often of a neglect here, as has been clearly enough shown, and as any man can clearly enough

see, if he gives the subject a moment's thought. Bed with straw, which is plenty, or sawdust, or tan bark, or shavings. The dryer these materials are the better. Every day remove the moistened bedding and replace with new. Such a floor, well bedded, adds greatly to the warmth of a stable, and thus becomes a fodder saver. The small holes and crevices in a floor with a good bedding upon them, will let little or no cold through, and will drain the stable. Rather have a ground floor than hard, naked plank—*Rural World*.

STYING AND FEEDING PIGS.

 T a Farmers' Club meeting in Ireland, a speaker said, "Pigs require dry floors, fresh air and cleanliness. Foul air encourages disease; cold air consumes food in making heat, that ought to make fat. It would not be practicable to put in a growing store to take fat, nor would it be judicious to put in a coarse dwarf to make a good bacon hog. You must have a full-grown, fair-conditioned animal, possessing at least some of the principal points to which we have already alluded, and with this and proper attention, it is not easy to conceive the rapidity with which a pig will fatten. There should not be more than six kept in one sty. The farmer has five principal ingredients for this purpose, viz., grain, potatoes, Swedes, mangels and cabbage. The roots well boiled and well bruised, the grain also well boiled—take equal parts of Indian and oatmeal, and any of the grains mentioned you may have, as crushed beans, peas, vetches, rye or barley, with a little pollard and salt, made in thick gruel, added to the roots, and left to ferment and sour, and always given in a luke-warm state at regular hours three times a day. The less excitement or annoyance the better, and a desire for sloth and sleep encouraged by watching his comforts, and the words made applicable that are sometimes used with some easy-going and quiet dispositions:—

"To eat and drink and sleep, what then?
To eat and drink and sleep again."

CONFLICTING STATEMENTS ABOUT FEEDING HORSES.

 F. SMITH, of West Springfield, wanted to hear something about feeding horses, at a meeting of the Harvest Club at Springfield last spring. He kept 3, he said, and used to give them cut feed, but latterly he

thought they did better without it. He puts dry hay in one end of the manger and dry meal in the other, and gives a single pail of water at noon. To hard working horses he would give three quarts of dry corn meal morning and night, and two quarts at noon. The fattest horse he knew of belonged to a neighbor of his, and though much used, was fed in this way. Hogs will fatten well on dry meal and water.

Wm. Collins said that he had kept 30 horses for the last 10 years, and had fed all ways, but preferred moist cut feed, because it takes less meal. Six quarts of corn-meal divided equally into three feedings, and 10 or 12 lbs. of hay daily, are enough for any horse, and too much for an idle one. A horse might eat 10 quarts of meal a day, but it would do him little good. Heaves and broken wind are often the result of over-feeding. There is a general impression that moist feed is best for heaves. He knew an old farrier that prescribed dry oats and hay for a case of this kind and abstinence from water for six months. Cattle and sheep have been known to live months in a pasture without other water than rain or dew, and one case was cited where a horse after having been deprived of water in a pasture 4 weeks, refused to drink when taken out for that purpose on a hot day.—Mr. Coomes, who had a pair of fat work horses, stated that since April last he had fed whole corn soaked, 4 quarts to each twice a day, and thus saved grinding. He soaked simply from one feeding to another, preferring warm water.

POULTRY IN FROSTY WEATHER.



HERE is something exhilarating in frost.—When the early morning breaks on the earth covered with rime, and the hard ground seems to spurn the foot that treads on it, and the sun rises like a disc of burning copper, there is something cheerful about it. Nature has donned her masquerade dress of white. Your horse can not contain himself, and the steady old friend for some months past, content to shake his head or whisk his tail as the only answer to what a granddaughter of ours calls “a good cut o’ the whip,” now seeks to devour space, and to try conclusions with your strength or that of your reins. In like manner your tried friend, the old dog, gaubols, and, in the glee-

someness of his feelings, he picks up a shred of cloth in the field, and shakes and tosses it for very wantonness. The appearance of real winter, then, is a holiday for many, but (ah! those *buts*.) not to all. It is none to the poultry. Water is frozen; the ground is so hard they can not scratch; there is not an insect of any kind on its surface; and they must depend on their owner for everything they want. See that they lack nothing. First, they must have water. Few people have any idea of the suffering caused to birds by the lack of water. Their power of maintaining life on the smallest quantity of food is wonderful, provided they have water; but a practiced eye can tell in a dead fowl or pigeon, whether it suffered or not from thirst. The skin becomes hard, dry and red; the flesh contracts, as it were, and becomes brown, and the whole body looks as if it had been suddenly shriveled or dried up. You must bear in mind they require more food and better than they do in milder weather: and if you can, let them have a greater variety. They want substitutes for the worms and insects. Now, the scraps of meat and fat from the table should go to the fowls. Save the draining of all the glasses, pour them together, and sweep all the crumbs and odd corners of bread into it. Feed the birds often, and, if there is snow, sweep a clean place and feed there. Never feed any kind of bird in such a manner that they will pick up snow with their food; it is a strong medicine to them. The lark that fattens in two days on the white hoarfrost, becomes a wretched skeleton after two days’ snow.—*Cottage Gardener.*

MANAGEMENT OF THE APIARY FOR DECEMBER.



I AM often asked, “What is the best method of wintering bees?” I would say, any method to secure the following conditions:—An even temperature, neither too cold nor too warm; proper ventilation; freedom from moisture; perfect darkness; and quietness. A good cellar or room away from the fire may answer very well, or a house built for the purpose would probably be still better. To secure proper ventilation with common box hives, they may be inverted, and wire cloth or stiff net tacked on the bottom of the hives to keep the bees in. Moveable comb hives should have the honey board removed and wire cloth or stiff net put on in its place. Stocks that

are to be wintered out of doors, if in box hives, should be so ventilated that there will be no danger of the ventilation being closed up by snow or ice; if in moveable comb hives, all under ventilation should be closed up, the honey board should be removed, and after putting on the wire cloth, it should be covered with corn cobs or dry straw—all that the cap or cover of the hive will shut over. It having been a very bad season for bees, where natural swarming was allowed, nearly all swarms will require feeding, and if not already fed, should at once be removed to a warm room and fed enough to winter them, so that it will not be necessary to disturb them during the winter. It would be better to feed a stock two dollars worth of sugar, rather than lose it. Where artificial swarming was practiced, and swarms were made early, not much if any feeding will be necessary.

DRESSING POULTRY FOR MARKET.



POULTRY will always sell much more readily, and often at higher rates, if well dressed than if poorly dressed. The following directions are given, as the result of much experience, by a poultry dealer:

Food in the crop injures the appearance and sale; therefore keep from food twenty-four hours before killing.

Opening the veins in the neck is the best mode of killing. If the head be taken off at first, the skin will recede from the neck bone, presenting a repulsive spectacle.

Most of the poultry in market is "scalded" or "wet picked;" "dry picked" is preferred by a few, and sells, to a limited extent only, at full prices. Poultry may be picked dry without difficulty if done without delay after killing. For scalding poultry, the water should be as near the boiling point as possible, without actually boiling. The bird, held by the legs, should be immersed and lifted up and down in the water three times. Continue to hold the bird by the legs with one hand, while plucking the feathers with the other, without a moment's delay after taking out. If skillfully handled in this way the feathers and pin-feathers may all be removed without breaking the skin. A torn or broken skin greatly injures the appearance.

The intestines should not be "drawn."—After removing the feathers the head may be taken off and the skin drawn over the neck bone and tied. This is the best

method, though much comes to the market with the head on.

It should next be "plunged," by being dipped about two seconds into water nearly, or quite, boiling hot, and then at once into cold water the same length of time. It should be entirely cold, but not frozen, before being packed.

In packing, use clean, hand-thrashed rye straw. If this cannot be had, wheat or oat straw will answer, but be sure that it is clean and free from dust. Place a layer of straw at the bottom, then alternate layers of poultry and straw, taking care to stow snugly, back upwards, legs under the body, filling the vacancies with straw, and filling the package so that the cover will drive down very closely upon the contents, to prevent shifting on the way. Boxes are the best packages, and should contain from 150 to 300 pounds.

FATTENING STOCK.

As the time approaches for fattening stock of different kinds, we propose to notice some of the conditions necessary for success, and also the different kinds of food best adapted to the various kinds of animals.

Experience teaches the farmer some of the best lessons in furnishing food for the various conditions of animal life, but it is very interesting to him to be able to see the harmony existing between the food and its consumer.

The different parts of an animal may be divided into bone, fat, flesh and water, each of which demands different food to develop the system to its utmost capacity. The three first belong more particularly to the solid parts of the animal. The lean part of the animal abounds in nitrogen, the fat in carbon, and the bone in mineral matter—carbon, phosphorous and lime. Suppose now we take a cow in fair condition for fattening at this season of the year. In 100 parts of the solid matter about 15 parts will be lean or nitrogenous, the fat 16 and the mineral matter only about 5 per cent, while the remaining parts, amounting to 61 per cent, or nearly two-thirds of the animal, will be water. Now just in proportion as we fatten an animal, the fleshy or lean part diminishes, while the fat increases. In sheep the fatty matter increases in greater proportion, than in cattle, while in pigs the proportion is much greater than in either. Then again there is a difference between different animals in their mode of depositing fat. In cattle the tendency is

to mix the fat with the lean, forming what is sometimes called marbeling, while sheep fatten on the inside and pigs on the outside, and in all cases there is a proportionate diminution of water. In fat pigs there is only about 43 per cent of water, while in store pigs it will be as high as 61 per cent.

If now we look at the structure of different animals, we shall notice a great difference in their adaptation to digest different kinds of food. In pigs the stomach is very small, while the intestinal canal is very long in proportion to most animals, thus indicating a more concentrated kind of food adapted to the size of the stomach. The experience of every farmer confirms this. Straw, or very bulky food, cannot be digested in the stomach of the pig. In sheep the stomach is larger in proportion to its size than in the hog, and can digest coarser food, while in cattle and horses, food should be coarser still, in order to satisfy the conditions of the system. If we compare the offal of these different animals, we shall find that of the hog less than one-half that of the ox and sheep. For these data we are chiefly indebted to Prof. Voelcker, who has published an interesting lecture on the principles of nutrition as applied to the rearing and fattening of stock.—*Me. Farmer.*

LATE vs. EARLY COLTS.

In conversing with some of the gentlemen particularly familiar with the subject of breeding, who were in attendance at the recent exhibition of horses in this city, we found it to be the opinion of many of them, that it was far better to have colts dropped late in the season than in the spring, as is now the almost universal practice, and in some sections of the State the former is fast gaining ground. It certainly has many advantages. Where colts come in the spring and are taken off at the approach of cold weather, they are poorly fitted to withstand the severe season of winter, are obliged to be kept on dry forage ; if given a little grain as an extra feed, they are often injured by it, as their system is easily thrown out of order thereby, and they almost invariably come out in the spring very poor. Now it seems to us that these disadvantages can be most completely overcome by just reversing the general order.—Have colts come in the fall, say about the last of August, and let them remain with the mare through the winter.

Provide a large stall, have the floor well furnished with straw, sawdust or fine shavings as a litter, and turn them in together loose. Feed the mare well; giving a moderate quantity of grain. This will make the milk richer, and consequently the colt will receive the full benefit of the grain without the ill results attending the feeding it to them when young. Then in the spring, with the fresh starting of new, tender grass, the colt can be taken off, and enclosed in some spot where he can have a choice "bite," where in a short time he will be all ready to go on growing, and by fall will have attained sufficient age, and practice in "foraging" to withstand the winter well. The matter is worthy of attention by all who are engaged in breeding. —*Maine Farmer.*

BEE-KEEPING AXIOMS.



HERE are a few first principles in bee-keeping which ought to be as familiar to the apiarian as the letters of his alphabet :

Bees gorged with honey never volunteer an attack.

Bees may always be made peaceable by inducing them to accept of liquid sweets.

Bees when frightened by smoke or by drumming their hives, fill themselves with honey and loose all disposition to sting, unless they are hurt.

Bees dislike any quick movement about their hives, especially any motion which jars their combs.

Bees dislike the odor of sweaty animals, and will not endure impure air from human lungs.

The-beekeeper will ordinarily derive all his profits from stocks strong and healthy, an early Spring.

In districts where forage is abundant only for a short period, the largest yield of honey will be secured by a very moderate increase of stocks.

A moderate increase of colonies in any one season will, in the long run, prove to be the easiest, safest, and cheapest mode of managing bees.

Queenless colonies, unless supplied with a queen, will inevitably dwindle away, or be destroyed by the bee-moth, or by robber-bees.

The formation of new colonies should ordinarily be confined to the season when bees are accumulating honey, and if this, or any other operation must be performed when forage is scarce, the greatest precautions should be used to prevent robbing.

The essence of all profitable bee-keeping is contained in OETTL's golden rule; keep your stocks strong. If you cannot succeed in doing this, the more money you invest in bees, the heavier will be your losses; while, if your stocks are strong, you will show that you are a *bee-master*, as well as a bee-keeper, and may safely calculate on generous returns from your industrious subjects.—*Langstroth.*

TROTTING THE TWENTY-MILES-AN-HOUR EXPLOITS.

TROTTING twenty miles an hour has been accomplished by three horses only, Young Trustee, Lady Fulton, and Captain McGowen. Other celebrated horses have tried to make themselves wonderful in this attempt, but want of blood on the last two or three miles has deprived them of the honor. In 1833 a gray gelding called Paul Pry trotted eighteen miles and thirty-six yards in 58 minutes and 52 seconds without fatigue, under the saddle. Hiram Woodruff rode this horse when he (Hiram, not the horse) was a mere boy. About the same time a horse called "Jerry" trotted 17 miles in 58 minutes, under the saddle; and the English trotting stallion Bellfounder, 17½ miles within the hour, but it was not till 1848 that a horse was found that could do the 20 miles within 60 minutes. That horse was Young Trustee, out of the celebrated trotting mare Fanny Pullen. Trustee was more than a half-breed. He performed the feat on the Union Course, Long Island, on the 20th of October of that year, never breaking throughout the whole performance. Burline, then so well known among the followers and admirers of the sports of the turf, handled the ribbons on that memorable occasion. On the twentieth mile the horse came in apparently as fresh as ever, doing it in 2:51½—the fastest of the match—and trotting the twenty miles in 59 minutes and 35½ seconds. The time on that occasion was carefully kept, and everybody concerned felt satisfied that the horse actually accomplished the feat. Some months after this a black gelding, sporting the name of Ajax, a sinewy and closely built animal, sired by Abdallah, attempted to hang out on a twenty-mile an-hour gait, but failed, overrunning the hour by 7 minutes and 37½ seconds. The same year, in the autumn, a horse called Woodpecker attempted to share the laurels

of Young Trustee, but after going nineteen miles in 57:43, his owner was afraid of losing his horse, and stopped him, having only 2:17 to accomplish the last mile. No further attempts were made to equal or surpass Young Trustee's marvellous feat until 1855, when Trustee, Senior was matched against Spangle. In this case the winning horse overran the hour by five minutes and fifty-nine seconds. Flora Temple, on the 24th of May, of the same year aspired to divide the honors with Young Trustee, but she failed to accomplish the task in consequence of throwing a shoe on the eighth mile. On the twelfth or thirteenth mile she was withdrawn. About this time it was known that Lady Fulton had a desire to test her power of endurance and blood over the track at a twenty-mile-an-hour gait. Accordingly, on the 12th of July the match came off, and to the agreeable disappointment and astonishment of her friends, she accomplished the feat, having however, only five seconds to spare. She was a mare almost unknown to the track, but from and after this time her name was in the mouths of turfmen. She was a blood bay, weighing only seven hundred pounds. How she ever managed to astonish the sporting world was a mystery when it was known at that time she was only an ordinary horse. It was with great distress that she got to the end of her journey. She not only sweated profusely, but lathered where ever the harness touched her, and broke six or eight times during the race. But we now come to the greatest performance on record, only exceeded by that of to-day, in which Captain McGowen, on the 31st day of October, 1865, beat the time of Young Trustee by one minute and ten and a-half seconds, and the time of Lady Fulton by a minute and a-half, the only other horses that were ever able to trot twenty miles within an hour. On that occasion, it will be remembered, Captain McGowen had all the elements against him, and nothing in his favor. The track, however, was in good condition, and the horse, elastic and plump, was driven by J. J. Bowen. He broke only once, and that was on going out of the back-stretch of the first half of the seventeenth mile. An hour after the match, Captain McGowen exhibited no distress. The veterinary surgeons who examined him pronounced him good for another similar match.

It may not be uninteresting to know the

exact time heretofore made in the feat of trotting twenty miles an hour by the three horses, *Young Trustee*, *Lady Fulton*, and *Capt. McGowen*.

YOUNG TRUSTEE, OCT. 20, 1848.

Miles.	Time of Miles.	Aggr's.	Miles.	Time of Miles.	Aggr's.
First	3:01	3:01	Eleventh	3:03	32:39
Second	2:56	5:57	Twelfth	2:54	35:33
Third	2:52	8:53	Thirteenth	2:59	38:36
Fourth	2:55	11:50	Fourteenth	3:03	41:35
Fifth	2:54	14:44	Fifteenth	3:04	44:39
Sixth	2:56	17:40	Sixteenth	3:06	47:44
Seventh	2:57	20:37	Sevent'nth	2:59	51:42
Eighth	2:58	23:35	Eighteenth	3:01	53:44
Ninth	3:00	26:35	Nineteenth	2:59	46:43
Tenth	3:01	29:36	Twentieth	2:51½	59:35½

LADY FULTON, JULY 12, 1848.

Miles.	Time of Miles.	Aggr's.	Miles.	Time of Miles.	Aggr's.
First	2:54	2:54	Eleventh	2:56	32:33
Second	2:53	5:47	Twelfth	2:58	35:31
Third	2:56	8:43	Thirteenth	3:02½	38:33½
Fourth	2:54½	11:37½	Fourteenth	2:57½	41:01
Fifth	2:58½	14:36½	Fifteenth	3:02½	44:33½
Sixth	2:58	17:34	Sixteenth	3:03½	47:37½
Seventh	2:56	20:30	Sevent'nth	3:07	50:24
Eighth	2:57	23:27	Eight'nth	3:06	53:30
Ninth	3:12½	26:39½	Ninet'nth	3:07	56:57
Tenth	2:57½	29:37	Twentieth	2:58	59:55

CAPT. MCGOWAN, OCT. 31, 1865.

Miles	First half of each mile	Each mile	Aggregate
First	1:27½	2:54	2:34
Second	1:26½	2:53	5:47
Third	1:27½	2:54	8:41
Fourth	1:24½	2:50½	11:31½
Fifth	1:26½	3:05½	14:36½
Sixth	1:17½	2:43½	17:20
Seventh	1:26	2:55½	20:13½
Eighth	1:26	2:52½	23:06
Ninth	1:27	2:51½	25:57½
Tenth	1:22	2:48	28:45½
Eleventh	1:24½	2:52½	31:38½
Twelfth	1:28	2:55½	34:33½
Thirteenth	1:28	2:57	37:30½
Fourteenth	1:30½	3:03	40:33½
Fifteenth	1:30½	3:02½	43:35½
Sixteenth	1:33½	3:04½	46:40
Seventeenth	1:28	2:55½	49:35½
Eighteenth	1:27½	2:56½	52:32
Nineteenth	1:28	2:55	55:27½
Twentieth	1:29½	2:57½	58:25

Captain McGowen is now eleven years old, and he is nearly through-bred. He was raised in Kentucky; got by Sovereign, out of Sally Miller, she by Eclipse, out of a full blooded four-mile runner. At the match last October it was the general impression that the Captain could not do all his owner, Sam Emerson, had promised. The principal and overshadowing bet was \$4,000 to \$1,500 that he could not. But betting on a horse is a good deal like betting on a man's election in a doubtful district. During the past year this celebrated piece of horseflesh has not been idle. His owner has had in training to trot twenty miles in an hour. The results of to-day's race are here detailed:

The great twenty-one mile trot.

The word "go" was given at 5 minutes of 4 o'clock, and the horse started off in splendid style, the thoughtful crowd watching with profound silence his uniform step and motion as he shot round the course. Hiram Woodruff, jr., his driver, sat behind

him motionless as a statue, looking neither to the right nor to the left, riveting his attention on the gelding as he sped over the ground.

The first mile was made in three and a half minutes in an easy gait, and on the horse went, the party in interest near the judge's stand giving the driver the time at each half-mile, and how many miles, in order that he might send the horse along at a given rate as with a steam gauge to guide him. The second mile was made in 2:43¼.

After the tenth mile it was obvious that the heavy and slippery condition of the track was proving a serious drawback to the horse, for he showed signs of working hard. The reins lay loose upon his back, and his driver was compelled to urge him along with the whip.

The first ten miles were trotted inside of time, with from ten to twelve seconds to spare.

On the thirteenth mile the Captain stopped deliberately of his own accord, and thus ended the long talked of trot.

First half-mile	1:30½
Second half-mile	1:29½
First mile	3:00½
Third half-mile	1:22
Fourth half-mile	1:21½
Second mile	2:43½
Fifth half-mile	1:21½
Sixth half-mile	1:27½
Third mile	2:49
Seventh half-mile	1:25½
Eighth half-mile	1:30
Fourth mile	2:55½
Ninth half-mile	1:21½
Tenth half-mile	1:25½
Fifth mile	2:46½
Eleventh half-mile	1:24½
Twelfth half-mile	1:23
Sixth mile	2:47½
Thirteenth half-mile	1:22
Fourteenth half-mile	1:25
Seventh mile	2:47
Fifteenth half-mile	1:26
Sixteenth half-mile	1:30
Eighth mile	2:56
Seventeenth half-mile	1:31½
Eighteenth half-mile	1:21½
Ninth mile	3:03
Nineteenth half-mile	1:26
Twentieth half-mile	1:31
Tenth mile	2:57
Twenty-first half-mile	1:27
Twenty-second half-mile	1:33
Eleventh mile	3:00
Twenty-third half-mile	1:38
Twenty-fourth half-mile	1:34
Twelfth mile	3:12
Twenty-fifth half-mile	1:38
Twenty-sixth half-mile	2:20
Thirteenth mile	3:58

There is no doubt but the twenty-one miles could have been trotted inside of the hour, had it not been for the bad track. It is not probable that Captain McGowen will be matched against time again this season.

MONTREAL VETERINARY SCHOOL.

Introductory Lecture.

THE introductory lecture of this Institution was delivered on the 15th December at the Anatomical Lecture Room of the Medical Faculty of McGill College, Coté street, by Mr. D. McEachran, Veterinary Surgeon.

The lecturer, after tracing the history of the profession from its earliest dates, pointed out its rise and progress in Europe, and dwelt upon the history of Veterinary Colleges in Britain. He then referred to its introduction into Canada through the influence of the Board of Agriculture of Upper Canada, and remarked the great want of qualified Veterinary Surgeons, there being only nine regularly qualified practitioners in Canada. He then pointed out the cause of the insufficiency of the Veterinary profession in Britain to deal with the important questions, such as rinderpest, pleuro-pneumonia, &c., as owing to the want of sufficient support from Government, and the indifference of the agricultural community. He also stated that on the continent Veterinary Colleges were maintained at government expense, while in Britain they were maintained solely by private enterprise. He shewed the importance of more attention being paid to this important branch of medical science. He urged that Canada ought to learn a lesson from the late bitter experience of the mother country, the rinderpest in its visitation there having destroyed no less than 300,000 cattle in 18 months. This fatal malady was imported from the continent, and swept from one end of the land to the other, carrying death and destruction among the valuable herds, and puzzling alike the veterinary and medical professions to define its nature or stay its course. And why? Because the British Government and people had not previously recognised the importance of the profession. As remarked by Professor Gamgee, "Had it been held in the same estimation as Professor Bouley and his colleagues in France, and the advice of its members been early acted upon, millions sterling might have been saved to the people of Britain." He then asked :

Supposing a similar malady broke out among the cattle in this country, what position were we in to deal with it? He said we should be forced to appoint non-professional men, or such members of the medical profession as would accept the office of inspectors, and the result would be that more money would be lost in six months than would be required to maintain fifty Veterinary Colleges for as many years. . . . It was, therefore, for the Canadian people, through their agricultural associations, to take such steps in this matter as would place the profession in its proper position. By so doing, they would be advancing their own interest and the good of the country more than that of any individual member of the profession. The lecturer was glad to say that some steps had already been taken in the right direction. A veterinary school had been for some time established at Toronto; they had met to-night to inaugurate another in Montreal, and he trusted that a new era in regard to this subject had begun in Canada. He hoped that ere long, instead of the title "Veterinary Surgeon," suggesting the idea of ignorance and dissipation, the profession being strengthened by numbers, and by a higher intellectual standing, it would be enabled to assume its just rights, and claim the privileges due to its important mission. To the young men present who intended to follow the profession, he would say, never was there a richer harvest and so few to reap it; while law and physic were overrun by numbers. In this branch of medical science there was a wide field almost unoccupied. Many young gentlemen of refined tastes (?) considered the veterinary art below their dignity; to such he would remark, it was not profession that made the man, but the man the profession; and the sooner the proper class of men came forward the sooner it would attain its proper position. The first session would be occupied with the important studies of Anatomy and Physiology, the importance of which could not be too forcibly impressed upon them, these being the fundamental principles of medical science, without a thorough knowledge of which the whole superstructure was in danger of falling to pieces. He need hardly tell them that it was in the dissecting room alone a thorough knowledge of anatomy could be obtained. In this department there was doubtless much that was disagreeable to beginners, but when

they came to perceive the beautiful mechanism of the animal structure, the marvellous adaptation of means to an end, which could only be equalled by the wonderful provision which maintained them in health and repaired them in disease, these trifling objections would be dissipated. The lecturer next dwelt on the importance of physiology, which treats of the functions of the different organs. Unless a thorough knowledge of these was obtained, with their various operations in health, it was impossible to understand the changes taking place in disease, as the Veterinarian was entirely guided by the diagnosis obtained from the symptoms, not being aided by communicative intelligence as in the human subject. Having pointed out the essential importance of a thorough knowledge of chemistry and pathology, he also remarked that there was no subject which required more intimate acquaintance with special subjects than that they were about to be engaged in. Agricultural botany, vegetable toxicology, ventilation and stable management, &c., would form part of their studies.

In conclusion, the lecturer intimated that lectures on Anatomy would be delivered on Monday, Wednesday and Friday evenings, and on Tuesday and Thursday evenings on Pathology and Pathological Anatomy, and be continued during the three months following.

Thus the veterinary course is now in full blast, and we may congratulate ourselves on the result of two years' correspondence with the Secretary of the Upper Canada Board of Agriculture, Principal Dawson, and other interested parties. We have constantly advocated in the *Agriculturist* the necessity of veterinary schools, and we have much pleasure in giving now the list of students following the course of lectures, with the full intention of obtaining their diploma after three years' attendance:

- Napoléon Valiquet, .St. Hilaire.
- Wm. Fraser, Quebec.
- W. W. Garlick, London, C.W.
- James Fraser, Woodstock, C.W.
- Wm. Patterson, Montreal.
- C. J. Alloway, Montreal.
- A. Maxwell, Montreal.
- Geo. Swinburn, Montreal.

Several gentlemen besides follow the course, but not with the intention of taking diplomas. We have reason to believe that the above list will be increased considerably, much to our satisfaction; for the interest we have taken in starting the Montreal

Veterinary College is still alive, although not acknowledged by some interested parties. We received no invitation to attend the introductory lecture, and we look upon this as a great injustice; for we assert firmly that no person present on the occasion was more entitled to it than we were, taking into consideration the part we have played in establishing in Montreal veterinary education. Mr. McEachran takes charge of our Breeder's Department.

COURSE OF LECTURES FOR THE MONTREAL VETERINARY SCHOOL.

No. 1.

INTRODUCTORY LECTURE.

Subject: History of Veterinary Science—Prospectus of the Course—Text Books, &c.

FROM the earliest ages in the world's history, we find the horse the companion and servant of man in peace and war; his great strength, his noble prowess, and his docility of temper, made him an invaluable aid to man, even in his rudest ages; his fleetness and endurance particularly adapted him to the requirements of war; and his kind docile disposition made him an indispensable assistant in the more peaceable avocations of husbandry.

From the Sacred Volume we learn that as early as 1650 B.C. the Egyptians employed horses for various purposes. The horse, in his natural state of freedom, enjoys almost perfect immunity from disease; but, subjected to the usages consequent on domestication, we find disease in various forms attack his iron constitution, and break down his noble frame. Hence we may safely infer that those in charge of horses, even in those early days, would seek for those remedies which would relieve his ailments; consequently, we conclude that the veterinary art, however rude it may have been, must be coeval with the domestication of the horse. It is generally supposed that in those early ages the practice of human and brute surgery were followed conjointly by the professors of medicine; be that as it may, we at all events find in the classic ages of Greece and Rome the art was regarded with attention. Xenophon, the leader of armies, and Homer, the prince of poets, did not disdain to write on the subject; and even to the student of the present day, their works are valuable. The great Hippocrates, the most eminent physician of his age, thought it not beneath him to practice indiscrimi-

nately on the horse and his rider. He also produced a work which even now is considered a work of no small merit. We thus find the art gradually progressing in conjunction with the medical science until about 300 years B.C., when Vestigeus, a man of more than ordinary talent, devoted his whole attention to the art, and by the results of his investigations, and the very excellent works which he produced on the management of the horse and treatment of his disease, won for himself a name and same which will live with the science.

After a long period of progression in this, as in all other arts and sciences, succeeded the long gloomy period in the world's history known as the Dark Ages, during which the veterinary art which had just become a science of no mean order, sank to the bottom of the pit of darkness, from which it was about the last to emerge.

"Worse than Egyptian was the darkness in which it remained during a long series of years. It was abandoned to the most ignorant of men, and got principally into the hands of those who were employed in shoeing horses, thence called farriers—and thus the treatment of the diseases of horses was called *farriery*, which designation through, rather unmeaning, it has retained almost up to the present time. The knowledge of these rude professors consisted for the most part of some traditionary lore, containing perhaps one truth with a dozen errors mixed up with the most absurd, and cruel practices. Everything that was too barbarous and too *outré* for human medicine, even when it was at its lowest ebb, was enforced with the utmost rigour on the unresisting victim of man's ignorance and tyranny,—the horse; and when kind nature had herself performed a cure, in defiance of counter active treatment, it was at once ascribed to the potent agency of some ridiculous compound.

During the sixteenth century, when re-suscitation of the arts and sciences begun, the veterinary art also began to take a fresh start. The older works were reprinted and translated into the popular European languages, and thus a fresh impetus was given to it, and a new era for the art begun, and during the succeeding century it made rapid strides on the onward march of improvement. Numerous works, some of them of considerable merit, appeared during this century. In the investigations of the abstruse subjects connected with medical science, the explorers of the science made

use of the bodies of the lower animals for the purpose of dissection, and consequently became familiar with the anatomy and physiology of these animals which naturally led them on to the interesting subject of the pathology of their diseases. Hence we find that many men of high standing in the medical profession relinquished the practice of human, for that of brute surgery.

In the eighteenth century more particularly do we find the art progressing to the rank of a science. To the French, to whom belong the precedence in both human and brute surgery, are we indebted for the establishment of the first Veterinary School at Lyons in the year 1761, the management of which was conducted by the celebrated Bourgelat who added much to the literature of the infant science. The success of this school, and the benefits derived from the improvements in the treatment of stock led to the establishment of another Veterinary College at Alfort near Paris, in the year 1766.

About the same time colleges were also established in the leading European countries particularly Prussia and some of the German states. We find that on the continent of Europe large sums are voted by the respective governments for the support of Veterinary colleges to the payment of a large staff of civil as well as military Veterinary officials and to the institution of bursaries for districts whence youths may be appointed to learn a useful profession almost free of expense to themselves or parents. Large establishments for this purpose may be seen at Paris, Berlin, Vienna, Bruxelles, Stuttgart, Dresden, &c.

Not only are the extensive buildings erected and upheld by state grants, but the salaries of the Professors are also paid by government; accommodation is also provided for boarding the pupils at nominal charges. Louis Napoleon, grants £20,000 a year to French Veterinary schools as readily as he will pay one or two thousand guineas for a thorough bred stallion, or several hundreds for a superb charger.

It was not till the year 1788, that any attempt was made to establish a Veterinary school in England. M. St Bel, a French gentleman who studied at the Royal Veterinary College at Lyons, was the first who proposed to establish a Veterinary school in London. At this time however he did not meet with much encouragement, and the attempt was abandoned. Four years later however, St. Bel was induced to return to London, and renew his proposals this time

with more success, the matter being taken in hand by the Agricultural Society of Odeham in Hampshire, and supported by a number of the leading noblemen.

Through the exertions of the society, the school was established, and St. Bel appointed first professor. He, however, only lived one year after his appointment, consequently he was not privileged to know the result of his exertions. During the year in which he lectured he was assisted by Dr. Belaine, a medical gentleman who exchanged the practice of human for veterinary medicine. St. Bel produced several minor works on the science. He was not exactly the man who was properly adapted to the management of the college, so far as his professional attainments were concerned; but he fully made up for this by the untiring interest he took in the affair. On his death the professorship was held conjointly by Messrs. Coleman and Moorecroft. Coleman was a student of medicine in London, who, possessed of great natural talents and full of deep research, had distinguished himself by some physiological researches which he had made: Moorecroft, a veterinary practitioner who had studied in the French schools, who supplied in practical knowledge what he lacked in educational attainments. He did not long remain connected with it, and Coleman was appointed sole Professor. Under the direction of the indefatigable Coleman the institution soon flourished—more extensive accommodation was provided—in the shape of lecture rooms, dissecting rooms, infirmary, &c., &c. The number of pupils increased, a board of examiners were appointed with power to grant diplomas. Lecturers in the several collateral sciences were appointed, physiology, chemistry, materia medica, &c. A small government grant was also obtained, and the rank of commissioned officers was granted to those who were appointed to regiments.

Several of the leading medical men took a deep interest in the institution, and admitted the pupils to their classes free of charge—and among others the immortal John Hunter was a warm supporter. Thus it was the Royal Veterinary College was instituted, and thus we find the art progressing to the rank of a science.

From this school emanated many men who have highly distinguished themselves; some for scientific investigation of the abstruse subjects connected with the science, others as distinguished authors, such as

Coleman, Clark, Percivall, Jouat, Lumer, Osmer, Moorecroft, &c., and among others the late William Dick, the distinguished founder and able Professor of the Edinburgh Veterinary College, than whom no one has done more to elevate the profession by the soundness of his teachings and his untiring zeal for its welfare.

It may not be uninteresting to trace the gradual progress of this great example of what may be attained by the unrelenting exertions of one man. In 1818, William Dick obtained his diploma, having distinguished himself while a student for his canny shrewdness and clearness of comprehension. Returning to Edinburgh he gave a course of lectures on veterinary subjects in connection with a series of classes originated by a Mr. Scott, of Parton in 1819, Mr. Scott not being able to continue his classes. Mr. Dick rented an unfurnished shop in Nicholson street, where he continued his course of lectures, his class consisting of but one regular student. He next gave a course of lectures gratuitously in the School of Arts which the first year was attended by four students, the second nine. He next opened a school on his own account in the Calton Convening Rooms. In 1823, the Highland and Agricultural Society were induced to take the matter in hand; arrangements were made with Mr. Dick for a course of lectures; the first lecture was given in Calton Convening Rooms on Monday, 24th November, 1823, the course consisting of 24 lectures, they were delivered every Monday and Thursday and were attended by 25 pupils. In 1827, the attention of the Medical gentlemen was directed to the progressing profession, and they gave assistance to the zealous teacher by throwing open their classes to his pupils; the first to do so being Dr. Knox, and, following his example, Dr. Robertson, Dr. Handyside, Dr. Spittle, Henderson, Reid, &c.

In 1833, the present Hall in Clyde street was opened. In 1838, the pupils of this school were admitted as eligible for commissions in the British army, and East India Company's services. In 1839, the title of school was changed to that of college, and Mr. Dick, was named "Professor." In 1844, it was established as a teaching college by Royal Charter.

The staff of teachers, consisted of Professor Dick, Mr. John Barlow, Dr. Geo. Wilson, Mr. Finlay Dun, and Mr. Worthington. Since then the three former have passed away, but they have each left names

which posterity shall know. Thus step by step the Edinburgh Veterinary college progressed, the practice extending, and the number of the pupils increasing year by year, until it attained to its present high position.

This year, however, it has sustained a very serious loss indeed, by the removal of its distinguished head. Announcing the sad event, the North British Agriculturist says:—"The greatest and most distinguished of the teachers of Veterinary science and practice of the present century has passed away. William Dick died on the evening of Wednesday, 4th April, at a quarter to seven o'clock, in his house, Clyde street, Edinburgh, in his 73rd year."

The same paper, speaking of his qualifications as a teacher, says: "It is only necessary to refer to the many eminent veterinary surgeons who studied under him; his natural abilities and acquired knowledge were pre-eminent." The late Dr. Knox, in speaking of Professor Dick, says: "Of the scientific attainments of Mr. Dick, I would say that they were such that the highest society in Great Britain would be glad to have him as an associate; and there is not an institution in the world, not even the Academy of Sciences in France, which would not be happy to rank him among their members." This, however, was a peculiar and accidental circumstance, which might never again happen, that they would have a man placed at their

head so fond of his art, and who was never dead to a scientific hint, come from what quarter it might. Thus, then; we see the progress of the profession in both Scotland and England.

From these parent schools have emanated two other schools, viz: The New Veterinary College of Edinburgh, and the Glasgow Veterinary College. The former was presided over by Professor John Gamgee, a gentleman of considerable ability, fluent—nay, eloquent—in his address, but whose practical qualifications ill fitted him to oppose a man of such sound, practical skill as Professor Dick. Mr. Gamgee, however, succeeded in obtaining considerable support, and for a time the New Veterinary College seemed to flourish. Volume after volume issued from the pen of its active principal, advancing theories of the most alarming nature, especially with regard to pleuro-pneumonia in cattle; and who has not heard of Gamgee's great book on the cattle plague? Thus he soon brought himself into notoriety. However, facts were sure to outlive theory; and instead of injuring the Edinburgh Veterinary College, as was intended, it has served to prove the soundness of the views and practice of its distinguished head. Accordingly we find that the new Veterinary College proved a losing speculation to its supporters. Last year it was removed to London, where it is now in operation as the Royal Albert Veterinary College.

ENGINEERING DEPARTMENT.

A SHORT SERMON ON STABLES.

THE recent improvements in American architecture have not reached the stables, to the extent that could be desired. Brown stone fronts, high ceilings, marble mantel-pieces, costly furnaces for warming and ventilating the dwelling, may please the eye and promote the health and comfort of the occupants, while the valuable horses of the proprietor are suffering from a poorly constructed and poorly ventilated stable.

The fault often lies in two directions. The stable may be too tight, or too open. A horse needs light, as well as air and suitable warmth and food,—the vegetable structure hardly needs light more than he does. Pure air is essential. His blood cannot become purified while the air which inflates his lungs is full of foul gases from

fermenting manures. Nor is it enough to keep the stalls clean, if they are so tight that the horse is obliged to breathe his own breath over and over again. Digestion is interfered with, and all the functions of life are impeded. Lazy groomers declare that a close, warm stable helps to make a horse's coat fine and glossy in winter as well as in summer. But in winter, such a coat is not to be desired. Nature provides the animal with longer hair and more of it, to defend him from the cold. If the horse is well groomed and blanketed, his hair will be smooth and glossy enough all the year round. The indolent groom ought himself to be shut up for twenty-four hours in the hot, steaming air in which he would confine his master's horse, and see how he would like it. Open the doors of such a stable in a morning, where several horses

are kept, and the hot air and the hartshorn are almost sufficient to knock a man down. What wonder, then, that horses so used, should suffer from inflamed eyes, cough, glanders, and other ailments! The wonder is that they bear the abuse so long and so well.

Now, the "improvement" to our sermon is simply this: *ventilate the stables*. Ventilate, both in winter and summer. The outer air should be brought in at certain places near the floor, but not in the immediate neighborhood of the horse, so as to cause hurtful drafts of wind directly upon him. Impure air must be ejected, as well as pure air brought in. This can be done in summer very well by leaving several windows open in different parts of the barn. But a better way is to insert ventilators in the highest part of the building, into which ventilators. (square wooden tubes,) shall lead from the stalls, and which can be opened or closed at pleasure. These ventilators should be covered with a cap, to prevent downward currents and the beating in of rain. By this plan, the foul air is carried off directly from the stall without mixing with the hay in the loft.

OILING TOOLS.

I SHALL do your patrons good service if I can induce all who do not, to use painters' (linseed) oil on their tools. Every farmer should have a can of oil and a brush on hand, and whenever he buys a new tool, soak it well with the oil and dry it by the fire or in the sun, before using. The wood by this treatment is toughened and strengthened, and rendered impervious to water. Wet a new hay rake and dry it well, and it will begin to be loose in the joints. If well oiled

the wet will have but slight effect. Shovels and forks are preserved from checking and cracking in top of the handle, by oiling. The wood becomes smooth as glass by use, and is far less liable to blister the hand when long used. Axe and hammer handles often break off where the wood enters the iron. This part particularly should be toughened with oil to secure durability. Oiling the wood in the eye of the axe, will prevent its swelling and shrinking, and sometimes getting loose.

The tools on a large farm cost a large sum of money. They should be of the most approved kinds. It is poor economy at the present extravagant prices for labor, to set men at work with ordinary old-fashioned implements.

Labourers should be required to return their tools to the convenient place provided for them, after using. They should be put away clean and bright. The mould boards of ploughs are apt to get rusty from one season to another, even if sheltered. They should be brushed over with a few drops of oil when put away, and will then remain in good order till wanted.—*Massachusetts Ploughman.*

ASPINWALL'S POTATO DIGGER.

Made by Wheeler, Melick & Co., of Albany, N. Y., is said to do the work of digging potatoes perfectly, and faster than can be done by twenty men. It is drawn by two horses, which travel between the rows. A broad shovel plough runs under the potatoes,—the earth, tubers, and vines are thrown back on double vibrating separators, which riddle out the potatoes and leave them lying upon the surface. Nothing more is wanting but a machine to pick the potatoes up. Who will invent that?

HORTICULTURAL DEPARTMENT.

PINCHING TO PROMOTE FRUITFULNESS.

THOSE who have never practised this, or observed its results, may have seen, if experienced in tree growing, that a shoot, of which the point was broken, bruised or otherwise injured, thrives during the growing season; and this, especially if situated near the interior of the tree. The check given to the extension of the shoot concentrates the sap in the parts remaining; and, unless the check has been

given very early in the season, the growth very vigorous in the tree, so that the buds will break and form shoots, they are certain to prepare for the production of fruit. It is on this principle of checking the growth and concentrating the sap in the pinched shoots, that pinching to promote fruitfulness is performed; and its efficacy may be estimated from the fact that the trees on which it has been practised have borne fruit 4 or 5, and perhaps 7 years sooner than they would have done without it.

PREPARING TREES TO ENDURE THE WINTER.



S animals endure exposure to storm and cold, the better when well fed and clothed, so do trees. If their shoots and buds are full and plump, and well supplied with healthful material contributed from clean, healthy leaves, the chemical movements which attend growth, assist greatly in maintaining the tree against cold by heat which is developed. In a thin, weakly tree, this force is wanting. A great aid to the preservation of the tree is a mulch or covering of the surface during winter, with some vegetable material in a state of decomposition. This shelters the roots, and imparts warmth, evolved by its slow combustion, and the more, if nitrogenous matter is included, as in stable manure, the better for the purpose. This application is of vastly more usefulness when applied in the autumn than if left till spring, not only on account of the shelter it affords, but because of its advancing a strong growth early in the spring, which becomes well ripened before winter; whereas manure applied in the spring, especially if raw, does not become effective until late in the season, when the wood should be ripening instead of growing. For a ripe, ruddy, well varnished coat of bark, is to the tree what the coat is to the animal, and something more, and the effect of a very small break or rent in it shows how very important its perfect condition is, especially that of its outer skin or epiderm. It must be remembered that the bark only ripens well in full light. Trees, therefore, must have their wood both ripened and well fed.—*“W.” in Country Gentleman.*

HOUSE PLANTS.



S soon as severe frosts are expected, plants intended for the house should be taken up and potted. This should be done when the ground is moderately dry, though not so dry that it will all fall from the roots when they are lifted. Two or three days after a good rain will probably be a good time. All plants do not need to be potted at the same time. Geraniums, Heliotropes, Salvias, Begonias, and other tender plants must be taken up early; while roses, and such other plants as will bear a good degree of frost, may be left out until late in the season.

The soil for potting should be light and

moderately rich. If any proportion of clay should be present, it will pack in the pots, and plants will not remain in health; the water not having a chance to pass through the soil readily, will remain in it, and the roots being constantly saturated with water, will be in an unhealthy condition. For ordinary purposes a good compost can be made with equal quantities of well decayed leaf mould from the woods, and sandy loam, with a moderate quantity of thoroughly rotted manure mixed in.

The materials for draining may be pieces of broken flower pots, charcoal, broken oyster shells or any similar material.

In potting, the hole in the bottom should be covered with a piece of broken pot, convex side up, and the pot one-fifth filled with the drainage materials. The plant should be placed in the proper position, and the soil, as fast as put in, pressed down with a blunt stick or the fingers. After the soil is all in, it should be moderately watered, and the plants set in a shaded and sheltered place.

Care should be taken that the plants are not overtopped, that is, put in pots too large for the roots to fill. Plants will never be healthy in pots so large that the roots do not reach to the outside of the earth in abundance. It will be much better to put them in quite small pots at first, and when these are filled with roots, shift them into those a little larger (only a little) and so on.

Watering in winter should generally be done in the morning. Air should be given the plants whenever the temperature of the air is sufficiently mild to render it safe.—*Country Gentleman.*

HOT AND GREEN HOUSES.



PLANTS stored away for the winter in cold pits, require more care for the first month or so than at any other time through the winter season. Many of them have unripened shoots, or shed many of their leaves, and unless these be cut off and removed, gangrene and decay commit distressing havoc. Air should be given at every opportunity, and nothing omitted that will, in any way, tend to harden the plants, and send vegetation to rest. No more water should be given than just sufficient to prevent withering, and the temperature should be kept as near 40° as possible, and every chance taken to render the air about the plants dry. When frost

actually does come, no further care than protection from its embraces will then be required. Plants so hardened, may stay covered up for weeks, without any light or air, and secure from the slightest injury. Mice constitute the most troublesome enemy in a pit closed for any length of time; but we have, as yet, found nothing better than the recommendation given in back volumes, namely, to take peas and soak them twenty-four hours in water, then roll in arsenic and sow in a pot, as if in the regular way of seed-sowing. A few pots so prepared, should be placed in the pit before permanently closing up. The mice usually make for these pots at their first entrance to the pits. If placed on the soil, they seem to guess your secret, and will not "bite."

Plants in cellars need much the same care as those in pits. Avoid heat and dampness; frequently however, plants suffer in cellars through getting too dry. They should be looked over, at any rate, once a month, and a little water given, if likely to become entirely dry.

Plants in windows and rooms usually suffer from excessive waterings,—very dry air about them,—too great a heat, or too much shade. As much as possible, room plants should be selected for their indifference to these requirements. Succulents, such as Cactuses, Mesembryanthemums, Rocheas, Crassulas, Aloes, &c., care not how dry the room, but they demand all the sunlight possible. Camellias, Chinese Primroses, Azaleas, *Dicentra spectabilis*, Polyanthuses, Violets, Hyacinths, &c., do not mind a little shade; but they abhor a high temperature. Others again, while disliking heat, want light; of these, are Calceolarias, Cinerarias, Geraniums, Pelargoniums, Pansies, Daisies, Tree Carnations, perpetual blooming Pinks, Roses and the like. 'Leaf plants,' for the most part, like a close, moist atmosphere, and a moderate degree of heat to do well. For these, glass partitions and closely-glazed cases are usually employed. A great error in the growth of plants in these cases, is to suppose they require no air. The closeness is to secure a moist atmosphere, not to exclude the air. Whenever, therefore, the temperature is low, and little evaporation going on, the opportunity should be seized to air the cases; a few moments are sufficient. A very pretty plant arrangement may be made in parlors that have half windows; the whole window may be closed

off from the main part of the room by a sash, and filled with plants. Some on the floor,—some on shelves, and some pendent from the roof. A common oil lamp will be quite sufficient, with the usual window shutters, to keep out frost during the night or extra severe weather, while the regular day temperature of the room will suffice for that time. When the lamp is burning, provision should be made for the admission of fresh air from the room at the bottom of the case, and for the exit of consumed air at the top of the case. This is best accomplished by a tube to and from the lamp.

It must, however, be remarked that the fumes of burning gas is highly injurious to vegetation, and any adaptation of heating by it will fail, unless provision be made to lead the fumes away. With this precaution, gas-lights in towns and cities, where it can be had cheaply, would be very useful in heating small parlor plant cabinets.

To those who have larger plant cabinets or small conservatories, connections with heaters or hot water from kitchen ranges will suggest themselves. This is often done. The great error we have often noticed is, that the heat is led to the back only, when it should be continued right to the front or coldest part of the house. When heaters are employed, the oxygen of the air is usually defective, and, besides, the air is very dry and ungenial to healthy vegetation. Evaporating pans around the mouth of the air flues should be used in such cases,—syringing done at frequent intervals, and pure fresh air given whenever a warm out-door spell furnishes the opportunity.

The most critical season to these plants is fast approaching. A very common error, especially in houses heated by smoke flues, is, to keep the temperature too high. Unless the house be heated by hot water, a temperature of 55° will do perfectly well. The absorbent property of heated bricks, in flues, is so great, that the excessive waterings necessary to replace the moisture they absorb is more injurious to the plants than a moderately low temperature. In a house heated by hot water, a temperature of 65° may be maintained with advantage. The house will be very gay with *Habrothamnus*, *Cestrums*, *Begonias*, *Pentas*, *Plumbagoes*, and so on, and the syringe must be kept in daily requisition. It is highly advantageous to put a little sulphur, lime water, or soft soap into the syringing

water occasionally, as the red spider, mealy bug, or scale, respectively, may make their appearance; this, with a vigorous use of one's eyes and fingers at times will keep them pretty well in check. Orchidææ, those of them which bloom on finishing their growths, will begin to add considerably to the attractions of the hot-house. As any come into flower, they should have less water at each time, but be watered more frequently than they have been accustomed to: a very slight "dewing" with the syringe is all that is required. Heavy waterings and high temperature, together, destroy more orchids than many would dream of. Still atmosphere moisture must be retained for them in any case.

FLOWERING BULBS.

HESE are so easily grown, and form such desirable objects of floral decoration, both in the out-door garden and in the sitting-room parlor, that it is really wonderful they are not more widely cultivated.

What more beautiful than a collection of hyacinths or a bed of tulips in the open grounds? What more enlivening and lovely, than a few glasses or pots of such flowers in the house during mid-winter? The attention they require is mere child's play, for no vegetable is more simple of culture, than are these bulbs. Their cost too is comparatively trifling, especially tulips. The outlay of half a dollar or a dollar will secure a beginning from which, multiplying year by year, a very large supply may soon be obtained. Haycinths are somewhat more expensive, and the worst about them is that they deteriorate, and at length fizzle out in the hands of ordinary flower-growers. Their course is akin to that of a splendid rocket, which, after displaying its magnificence for a little while, breaks into a number of beautiful fragments, and then disappears. The second year of a hyacinth, it is less beautiful than the first, and in another season or so, it dwindles away in a few little spikelets of bloom. If some me-

thod of treatment could be found by means of which its career could be made like that of the tulip, it would be a great boon to the lovers of fine flowers. But still the small outlay required to purchase an assortment from year to year is well repaid in the beauty, elegance, fragrance, cheerfulness, and education and gratification of taste thereby secured.

Those who wish bulbous flowers for winter and early spring flowering, must select, buy, and plant in the autumn. Any good garden soil will grow them well. It should however be drained, because if the ground is too moist the bulbs will be likely to rot. A poor soil may be enriched with well rotted stable dung, or with surface earth from the woods. Cow manure is excellent for bulbs. The dung should be well mixed with the soil, and it is a good plan to put a little sand round the bulb at planting. A good deep soil is best. If it is too clayey, it may be improved by a little leaf mould from the woods, or by the addition of some sand. Liberal doses of cow dung will fit any soil for the growth of bulbs. After planting, and before winter sets in, the beds should be covered with a few inches of leaves, loose litter, or coarse stable dung. This covering should be raked off in the spring, as soon as hard frosts are over.

So much for the out-door culture of bulbs. In-doors they may be grown either in pots or in glasses. Pot culture is similar to out-door culture so far as the preparation of the soil is concerned. After planting, they should be kept in a moderately cool, dark place until the roots have time to form, when they may be brought into a lighter and warmer place. Hyacinths may be grown in glasses filled with water, which should just touch the root of the bulb. They should be kept from the light, until the roots have struck well. The single hyacinths do best in glasses, and the double ones in pots. Tulips can only be grown to advantage in soil, but they do exceedingly well in-doors, and greatly enliven a room in the winter time.

DOMESTIC ECONOMY.

HOW TO RAISE A CALF WITHOUT MILK.

As it may prove beneficial to some of the readers of your valuable paper, I will give you the experience of a friend in raising a calf. The mother of the calf died when it was a week old, and not having milk to

give it, my friend made a paste of water and flour, to which he added a little salt, an egg, and molasses enough to sweeten the whole, which he then boiled, and when cold fed to the calf. It grew finely on this diet, was fat and sleek all the time.

MAKING YELLOW BUTTER IN WINTER.

COWS that are required to subsist on straw, in which no green thing can be discovered, cannot furnish milk that will make yellow butter. Hay, whether it were made of clover, timothy, or any other grass that was allowed to stand until dead ripe before cutting, will not be suitable feed for producing yellow butter. White turnips, buckwheat bran, or even wheat bran and shorts will not furnish material for yellow butter. Many persons, aware of this fact, have mingled otter, or other coloring matter into the butter, to give it a golden color. But this is not the correct way to make yellow butter. Better by far feed carrots to the cows than to mingle them with the cream.

No difficulty is ever experienced in making yellow butter when cows have access to grass. If the grass were cut and cured properly, little if any of the butter-producing material will be lost during the process of curing. Therefore, if grass be cut at the most proper time of making the best quality of hay, it will produce yellow butter, quite as well as if consumed before it was made into hay. It is the quality of feed that makes butter yellow or white, more than the cow; though it is not denied that the milk of some cows will make much whiter butter than others, when they all subsist on the same kind of feed. The management of the milk and cream, also, will exert nearly as much influence in producing yellow butter as the quality and kind of feed.

If a good cow having a yellowish skin be fed with first quality of red clover hay, that appears as green and fragrant as when it came from the meadow, and on corn-stalks that have not been bleached to a light brown color, and with a few quarts of yellow Indian corn daily, with some carrots or turnips, and potatoes or cabbage-leaves, and if proper cleanliness be observed in milking, and in the management of the cream, yellow butter can be produced in winter almost as well as during the grazing season. Still-slops, dish-water, and swill, which will increase the quantity of milk, will make yellow butter.

The cream requires excellent care in cold weather, and should be churned at least twice every week. When cream is exposed to changes of heat and cold for several days, the butter is apt to be white as lard.—*Independent.*

THE BIG CANADIAN CHEESE.

ANY of our town-readers have heard of the big cheese being manufactured at the Ingersoll Cheese Factory by Messrs. Ranney and Harris. It is the largest cheese ever made. It measures six feet eight inches in breadth, and three feet in thickness; the milk used in its manufacture weighed 35 tons, and was furnished by 800 cows; the weight of the cheese itself is three and a half tons. For the sole use of this cheese a house has been built sixteen feet by eighteen, very substantial and so constructed that the cheese can be turned over in three and a half minutes. We had the pleasure of inspecting the monster on Tuesday. Those of our readers who can make it convenient should visit the Ingersoll Cheese Factory and inspect this "wonder of the age." The proprietors, we learn, exhibited this biggest of all "big things," at the Provincial Exhibition held in Toronto, and at the New York State Fair at Saratoga last month. The cheese will afterwards be sent to England, and will probably be exhibited at the Paris Exhibition next year.—*Ingersoll (Canada) Chronicle.*

Our Canadian neighbors are some on cheese to say the least, and have beaten the Oswego big cheese a long way, but that was not in the days of cheese factories but then it gives the idea, out of which we see valuable results.—*American Paper.*

SAVE THE PIECES.

THE amount of time and money saved in a single year by laying away pieces that at one time are considered of no value, cannot be duly estimated. How many times a year does a farmer want a strip of board, a stick for a pin, and handle for a maul, or a piece of scantling, which cannot be obtained without sawing a valuable board or cutting up a fence rail, or going to some wagon shop; while, perhaps a hired man is waiting for the broken tool to be put in order? Now how easy it would be to select some corner in the wood-house or barn in which to lay away pieces of tough timber and small strips of boards that are generally considered worthless, and are used for fuel. A little bit of board, not more than two inches wide, will be wanted some time in a great hurry for a cleat upon the wagon box, or some other place, or a piece less than a

foot square will be needed for some particular place, and if not at hand the saw must be applied to a whole board.

It is not only essential to lay up bits of timber and boards, but pieces of iron such as screws, bolts, nails, hinges, and in fact all kinds of scrap iron. Hundreds of pieces of this kind of old iron are cast away or sold for one cent per pound, when they might at some particular time be worth dollars. We do not intend to advocate by this, that old and inferior pieces of iron should be used in the place of new for permanent repairs upon farm implements, for they should always be kept in the best of order; but there are very many times in the year that some breakage will occur at a very busy season. When a scrap of iron is at hand would save removing the team from the plow or hay wagon for a half a day, while the broken implement is taken to a shop.

A place also, should be kept for the storage of parts of old harness, straps, buckles, rings, &c., for frequently a hame is broken, or some part of the harness, that might be easily repaired if these articles were at hand. If the good wives had destroyed the odds and ends, after the manner of many of the thoughtless husbandmen, those nicely repaired garments they wear to-day would have long ago been in the carpet or paper mill.

KILLING AND SCALDING HOGS.



CORRESPONDENT from Cumberland Co., Pennsylvania, to the *American Agriculturist*, gives his process of killing and scalding hogs, which has much to recommend it, as follows:—

“I have frequently thought of writing a word on the easiest, quickest and most humane manner of slaughtering hogs.

“I take any kind of gun that will go loose, load with, say one-third charge of powder, and a *plug of hard wood* about an inch long and the thickness of the ramrod. This I shoot directly into the centre of the forehead of the hog, and he drops at once. The head is not *injured*, as to meat; there is no danger of the hog biting you. You have no hard tugging and lifting to catch and throw them, both of which are hard and dangerous work, and the hogs will bleed out better, as the nervous system receives so sudden a shock, that they are not able to draw the blood into the lungs, in case the wind-pipe should be cut in sticking. It is easy to picture laying hogs on their backs,

but try it one year and try shooting next, and my word for it, your pen will ever afterwards be free from squealing on butchering day.

“Now, as to our method of scalding hogs. We set two posts about twelve feet long, including two feet in the ground, and about twelve feet apart, and connect them by a beam on the top. Under this beam, near one post, I sink an ordinary half-hogs-head in the ground, and place a pulley on the beam directly over it, and another on the side and near the bottom of the adjacent post. A rope is passed through these and attached to the hog's hind leg, and then he may be easily hauled up and dropped into the tub, then taken out to air and clean; and lastly he may be hoisted up and hooked on to the beam by chains to hang. Such beams may be arranged to hang as many hogs as you may wish to slay. A common barrel kettle kept boiling will keep the water in the scalding tub hot enough, by adding hot and taking out cold, to continue scalding an indefinite time, all with little cost, little fuel, little lifting, and the killing with little suffering to the animal. All things considered, this is the best mode I ever saw or used for killing and scalding hogs.”

HOW TO KEEP EGGS. &c.



THE following is the conclusion of an article from our sailor correspondent:

But going in stays on the port tack, I want to tell you of my latest egg observations made during this last four months' voyage.

The week before going to sea, I gathered in 60 dozen eggs for cabin sea-stores, taking especial pains to prove every egg of the lot a good one; besides I got them from my farmer friends, and know they were all fresh laid: Then I fixed them for keeping, by taking five or six dozen at a time in a basket, and dipping them, for about five seconds, into the cook's "copper" of boiling water. After scalding, I passed the eggs through a bath made by dissolving about five pounds of the cheapest brown sugar in a gallon of water, and laid them out on the galley floor to dry. There I had my 60 dozen eggs sugar coated.

I packed them in charcoal dust instead of salt—I tried salt ten years, and I don't believe it preserves eggs a mite. It would, perhaps, if we were to chowder them all up in salt. But just stowing the stuff around

the shells—"tell that to marines; sailors won't believe it."

The steward had strict orders to bring aft, and report every bad egg he should find. During the voyage he brought three—not absolutely spoiled; but a little old like. All the others, or what was left of them, were as fresh when we came in the Capes, the other day, as they were when I packed them away on New Year's day.

I made a discovery—new to me, however. Perhaps it may be to others—possibly worth something. *Quien sabe?*

Ever since we began to have fancy fowls and buff eggs, I had noticed that the first to fail were the new color, and finally that where an egg was spoiled, the yolk has settled through the albumen, and adhered to the shell. So, on this voyage, I have been experimenting. The result is, I have found the density of the albumen in the white shelled egg always considerably greater than in the buff ones, while the specific gravity of the yolk was several per cent. less.—So the conclusion was, and is, that the yolk of a yellow egg settles soonest through the albumen, comes in contact with the shell, and consequently the air, and the buff egg soonest spoils.—*Country Gentleman.*

RECREATION AND AMUSEMENT OF FARMERS AND THEIR FAMILIES IN WINTER.

FARMERS, as a general thing, labor more, with less relaxation, than is for their own comfort. Many of them toil early and late, summer and winter, and by a proper arrangement of their work, have as much to do on a rainy day as any other. As a bow always bent, loses its elasticity, so a laborer whose system is always exerted to its utmost capacity will become prematurely old, and will be worn out with toil when he should be in his prime. If a man is dependent for his living on the work of each particular day, if he is compelled to work one day to procure food for the next, he *must* labor more unremittingly than he who has enough of property to be comfortable, and labors more to increase it than to enjoy it.

But what recreation shall the farmer take? In the summer, when his fields require his attention, little time can be spared for amusement, although a day's relaxation occasionally is refreshing. But in the winter, when his crops are gathered, and comparatively but little to do, he should relax his exertions, and recruit for the next

season's work. A change of employment is oftentimes a relief, and so the farmer will find after a few days' hard work, to take a few tools and make a feeding trough, or a cattle rack, or other useful and ornamental articles, will afford as much pleasure as to spend the day in total idleness. Let him keep a record of his operations during the summer of his crops and the labor bestowed on them, and study it over during the winter evenings, and arrange it in a form convenient for preservation and future reference. Let him write his experience to his agricultural paper, and meet and discuss his views with his neighbors. A farmer's club should be established in every neighborhood, and should have meetings at least weekly during the winter evenings. Let each one prepare a paper to read at the meeting, on any particular subject. It will afford both pleasure and profit. Let the relative profits of the different productions of the farm, the best modes of culture, the best manner of keeping fodder, fencing, draining, and a dozen other topics be discussed.

The writer derived much satisfaction from attending the meetings of a debating society the past winter. Such a one might be established almost anywhere. It gives those who are unaccustomed to speak in public a chance to overcome a natural diffidence, and to all an opportunity to improve in oratory. Let plain questions be selected, such as any farmer can advance something for or against; and every one connected with it do the best he can, and some benefit will accrue.

The family of the farmer should also have some provision made for their pleasure. If the horses are put to the sleigh, and a ride taken occasionally, they will be none the worse for it. Let them visit their neighbor, and spend an evening in cheerful conversation, or a few amusing games, or other amusements; have their neighbors visit them, and thus by friendly intercourse keep up a spirit of mutual friendship throughout the neighborhood. Take a load of the young folks to the singing school at the neighboring church or school-house; it does one good to hear and take part in such exercises.

The lot of the farmer, if he chooses so to make it, is the most delightful of all pursuits, while on the other hand it may be made the most tiresome, and almost disgusting to the unfortunate agriculturist. By a proper use of the faculties with which

nature has endowed us, we may make ourselves and others comfortable, and farming a pleasing occupation, while many a youth has turned his back to the farm to seek his fortune in the crowded city, at the expense of his health and his morals, when he would gladly have staid at home, had he had proper relaxation, and home had been

more than merely a place to eat and sleep. And how many citizens retire to spend their evening of life upon a farm. They have found out the value of occasional relaxation from toil, and hence we find them envying the farmer's lot, not knowing how often the farmer makes his lot burdensome by unceasing toil. G. F.

COMMERCIAL DEPARTMENT.

THE GREAT CORN FIELD OF THE WEST.

A WRITER in the Cincinnati *Gazette* gives the statistics of the production of corn in the United States for the last twenty-five years as follows :

In 1840, total crop.....	377,531,875
In 1850, total crop.....	592,671,104
In 1860, total crop.....	830,441,707
In 1866, total crop, (estimated).....	1,039,000,000

The increase being at the rate of four per cent per annum, the aggregate crop of 1866 will be over one thousand millions of bushels. The following are the portions of the United States where Indian corn is the staple, in comparison with other grains :

New England, New York, and New Jersey, 38,948,890 bushels.

Pennsylvania, Maryland, Delaware, Virginia, North and South Carolina, 128,998,249 bushels.

Georgia, Florida, Alabama, Mississippi, Louisiana, Arkansas, and Texas, 147,425,726 bushels.

Ohio, Indiana, Illinois, Kentucky, Tennessee, Missouri, Michigan, Wisconsin, Minnesota, Iowa, and Kansas, 550,627,943 bushels.

This shows that half the immense crop of Indian corn grown in the United States is produced in the valley of Ohio and Missouri. He estimates the crop of this year in Ohio at 91,000,000 bushels.

WEBSTER IN CANADA.

WE ought to say in all justice, that this new dictionary of Webster is a *chef-d'œuvre* of typography, and above all, the production of the most ingenious things that the fertile brain of our neighbors could invent. It is more, a little grammatical, literary, and scientific encyclopedia, which teaches as much by images as by words.—*Montreal Journal of Public Instruction.*

THE CROPS IN THE UNITED STATES.

HE returns to the Department of Agriculture state that the corn crop has deteriorated from early frosts and excessive rains, but the quantity of the crop is larger than was ever before produced in this country. The yield of wheat will not vary much from 143,000,000 bushels, showing a small percentage of decrease, which is fully compensated, by the comparatively superior quality of the grain. This is 10,000,000 bushels more than the crop of 1859, and within 5,000,000 bushels of a product in proportion to the increased population. The diminution in the South is more apparent. The estimates point to less than 17,000,000 bushels in 11 States heretofore unreported, a fraction less than $\frac{1}{2}$ of the crop of 1859.

The California wheat harvest, of which little note has been publicly made in connection with the present crop, is excessive. In 1860 the product of that young State was nearly 6,000,000 bushels. Now it is seriously claimed by leading California agriculturists that the surplus for export will nearly double that quantity. It is evident the entire wheat crop will exceed by several millions that of 1859, when the yield was reported at 173,104,924 bushels. Then there were $5\frac{1}{2}$ bushels to every individual. In 1866 the estimates point to 5 bushels to each inhabitant. There is, no ground, then, for apprehensions of a scarcity, and little excuse in the amount of the crop for the starvation prices.

The yield of oats is extraordinary and the quality excellent. The indications point to an increase of from 171,497,072 bushels in 1859 to 271,912,695 in 1866. It is the only crop in the South that maintains an equality with the last census exhibit.—Hay is less in quantity than the previous year by from one to two-tenths, but is better in quality.—An analysis of Southern returns to Oct. 1st does not war-

rant a reduction of the former cotton estimate much, 1,750,000 bales, though it is too early for a final estimate. The severity of the damage from insects is reported as increasing.

THE EFFECT OF THE REPEAL OF THE RECIPROCIITY TREATY.

THE Montreal *Witness* gives the following amusing illustration of the way by which an excessive duty keeps money out of the Treasury of the United States.

"One day last week a Hemmingford farmer, residing near the frontier, took over to the Mooers starch factory, on the other side of the line, a load of fifteen bushels of potatoes, somewhat damaged. On arriving at Mooers, he saw the United States Custom-House officer, Mr. Sheddon, and asked what was the duty on potatos. Mr. Sheddon told him that the tariff was so voluminous and complicated that he could not carry all the details in his memory, and that he really did not know what was the rate on the article in question, but he would let him know, after consulting the tariff. The farmer went on to the starch-factory, sold his potatoes for 20c. a bushel, American currency, and returned to Mr. Sheddon, who, having meanwhile posted himself on the subject, informed him that the duty was 25c. a bushel, in silver currency, The Canadian had therefore to pay \$3.75 in specie, besides \$1.20 currency, as entry fee—altogether about \$4.50 to the American government, for the privilege of selling the potatoes for an equivalent of about \$2 in silver. He returned *minus* his potatoes, and with \$2.50 less money in his pocket than when he left home. The result of his venture has not been of a nature to encourage his neighbors to sell their potatoes to Uncle Sam while the American tariff remains as it is."

WHOLESALE PRODUCE MARKET.

Flour, per barrel of 196 lbs.—Superior Extra purely nominal, \$8; Extra nominal, \$7.50 to \$7.75; Fancy, \$7.30 to \$7.45; Superfine from Canada Wheat, \$7.05 to \$7.05; Strong Superfino from Canada wheat \$7.05 to \$7.15; Super from western wheat nominal \$7.05 to \$7.15; City Brands of Super, nominal, \$7.10 to \$7.15,

Super No. 2, \$6.75 to \$6.90; fine, \$6.25; Middlings, \$5.75 to \$6.00; Pollards, \$3.50 to \$4; Bag Flour, \$3.85 to \$3.90 per 112 lbs., according to quality.

OATMEAL, per brl. of 200 lbs.—No sales: worth \$5 to \$5.10.

WHEAT, per bush, of 60 lbs.—Worth about \$1.55.

PEAS, per 60 lbs.—A cargo sale on p. t., worth 90 to 92½c per 66 lbs.

OATS, per bushel of 32 lbs.—Nominal at 32 to 34c.

BARLEY, per 48 lbs.—Car-loads worth 60 to 62½c. No business done.

RYE, per 55 lbs.—Nominal at 66c. No business done.

RETAIL MARKET PRICES.

November 24, 1866.

	s	d	s	d
Flour, country, per quintal.....	20	0	to	22 0
Oatmeal, do do	12	0	to	13 0
Indian Meal do	9	0	to	9 6
Wheat, per min., for seed.....	6	0	to	6 0
Barley (new) per minot.....	2	6	to	3 0
Peas	4	3	to	4 9
Oats, per 40 lbs.....	2	0	to	2 2
Buckwheat.....	2	6	to	3 0
Indian Corn (Ohio).....	4	6	to	5 0
Rye.....	0	0	to	0 0
Flax Seed	8	6	to	9 0
Timothy Seed	8	0	to	8 6
Turkeys (old) per couple.....	7	0	to	7 6
Turkeys (young) per couple.....	7	0	to	8 0
Geese (young) per couple.....	5	0	to	6 0
Ducks do	3	6	to	4 0
do wild, do	2	6	to	3 0
Fowls do	2	6	to	2 0
Chickens do	3	0	to	3 6
Pigeons (tame) per pair.....	1	0	to	1 3
Partridges do	2	9	to	3 0
Hares do	0	6	to	0 9
Woodcock do	3	9	to	5 0
Snipe do	0	0	to	0 0
Flower, per doz do	0	0	to	0 0
Beef, per lb.....	0	5	to	0 8
Pork, per lb.....	0	7	to	0 8
Mutton, per lb.....	0	5	to	0 6
Lamb, do	0	5	to	0 6
Veal, do	0	6	to	0 7
Butter, fresh, per lb.....	1	3	to	1 6
do salt, do	0	8	to	0 9
Cheese, do	0	0	to	0 0
Beans, American, per minot.....	0	0	to	0 0
Beans, Canadian, do	0	0	to	0 0
Potatoes, per bag.....	4	0	to	5 0
Turnips do	3	0	to	0 0
Onions, per minot.....	0	0	to	4 0
Sugar, Maple, per lb.....	0	5½	to	0 6
Honey, do	0	8	to	0 9
Lard do	0	8	to	1 0
Eggs, fresh, per doz.....	0	10	to	1 0
Halibut, per lb.....	0	0	to	0 0
Haddock do	0	4	to	0 0
Beef, per 100 lbs.....	\$6.50	to	\$8.00	
Pork, fresh, per 100 lbs.....	\$7.75	to	\$8.75	
Apples, per brl.....	\$2.50	to	\$6.00	
Hay, per 100 bals.....	\$7.00	to	\$9.00	
Straw, do	\$3.00	to	\$5.00	

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