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LOWER CANADA

AGRICULTURIST

MANUFACTURING, COMMERCIAL, AND COLONIZATION INTELLIGENCER;

OFFICIAL SERIES OF HE AGRICULURAL BOARD AND SOCIEIES.

PUBLISHED UNDER THE DIRECTION OF

M. J. PERRAULT,

Member of the Provincial Parliament for the County of Richelieu.
Pupil of the Royal Agricultural College of Cirencester, Gloucestershire, England,
and of the Imperial Agricultural School of Grignon, Seine and Oise, France,
Member of the Imperial Zoological Society of Paris, &c.

JANUARY 1866.

SPARGERE COLLECTA.

OFFICE—TOUPIN'S BUILDINGS, PLACE D'ARMES,
MONTREAL.

Official Dep'nt.

BOARD OF AGRICULTURE FOR LOWER CANADA.

To the Secretary of the County Agricultural Society.

SIR,—I have the honor to inform you that, in conformity with the law, the Annual Meeting of your Society must be held in December instead of January. At the said Meeting you will have to elect four persons, to be Members of the Board, in place of those who retire by rotation, viz; Hon. U. Archambault, B. Pomroy, Dr. J. C. Taché, and Dr. J. Beaubien. These gentlemen are nevertheless eligible to be re-elected. The report of election of the four Members to the Board is to be sent at once to the Hon. the Minister of Agriculture, at Ottawa.

I am also directed to remind you that your Society must be re-organized at the same time, and a copy of the proceedings of the re-organization, with the name of every office-bearer, must be sent early to this Board, to ensure publication in the Official Journal of the Board. I have the honor to be, Sir,

Your obdt. servant,

Montreal, November, 1865. GEORGES LECLERE.

EDITORIAL DEPARTMENT.

OUR AGRICULTURAL AGENCY.

WE have just established, in connection with the "Lower Canada *Agriculturist*," and "*Revue Agricole*," a general agency, for the purchase and sale of everything connected with farming. Already demands have been made for stock, implements, produce and property. To these we will attend, to the best of our abilities, having secured the aid of one of our successful produce merchants in Montreal, M. Rambeau, as a partner. His store, on Commissioners street, will receive the goods, when storage will be found necessary to secure a better market. All transactions will be made on commission at a general charge of 2½ per cent. Special agreements being entered into according to circumstances, and the commission being in no case less than 50 cents. Thus, farmers from all parts of the Province will have the opportunity of consigning to us their productions, without being put to the expense of coming to the market themselves, and with the certainty of obtaining the highest price; our connections in Canada and with the States enabling us to dispose of every article to the best advantage. We advise every farmer to avail himself of our agency at once, and to send us samples of the produce, or a detailed description of the stock for sale, for we are sure to find a ready buyer at a reasonable price. Also parties wishing to purchase thorough-bred animals, or farming property, will have the fullest information from our office with the utmost despatch. Please address the "*Lower Canada Agriculturist*," Montreal.

FARMER SLACK.

WE have a word to say to you, Farmer Slack—but so many of you answer to this name, that we shall have to speak quite loud to make you all hear. Well, we will talk to one of you, and the rest will then understand what we would say to all.

You say that it is hard times, and that you can't afford to subscribe for an agricultural paper. Now, you know, or ought to know, better than that. Money has never before been so plenty among farmers, since the landing of our forefathers at Plymouth Rock, and it is nothing but sheer *laziness* and *slackness* in your business that keeps you so poor. You are constantly behind time in all you attempt to do. Last spring, your neighbors' oat crops were growing fresh and green, before your oat land was plowed. It was about the same with your potatoes and corn; and how can you expect a good crop with such management?

But you are not only too late in planting—you don't half cultivate your crops, when they are up and growing. We took a look at your corn yesterday, and we found the weeds the tallest and the most thrifty. Your hired man was under the fence asleep, with his hoe by his side, and he said that you had gone off to a horse race!

Now, this wretched management is what makes "hard times" with *you;* and unless you amend your ways, you and your whole family will wind up in the country Poor House! Why, sir, you would have saved *three* dollars, at least, if you had stayed at home yesterday, attended to your corn, and kept your man at work, as you should have done.

We hear that you generally lose about half of your poor crops, in consequence of your not having good fences; and it is a wonder that you do not lose all of them, if the fence between your corn and pasture lot is a sample of your other fences. There is not a good, strong rail in the whole of it.

We also notice that your plows, cultivator, horserake and wagons are left in the road, to be ruined, the timber cracking in the hot sun, and the rains causing them to decay. Men who read agricultural papers don't manage their affairs in this way. They don't expect that all that is published in such papers will apply to every farmer's case; but they find a great deal of information in them that is useful, and they learn how the best, and most successful farmers, all over the country, cultivate their lands, and a single article is often worh the subscription price for many years, to progressive farmers.

Now, Mr. Slack, you say that you have been a farmer 30 years, and you think that you know a great deal about farming; and to be plain with you, *that is what's the matter.* You know *too much,* in your own estimation; and the country is full of just such men as you, who never become rich, or even *comfortable* in circumstances. Their wives drag out a miserable existence, and their children grow up ignorant, lousy and ragged, and the result is, that they become a disgrace to humanity, and all because their father was too wise to subscribe for a good rural paper, which would, if its precepts were acted upon, cause such families to live in opulence, while their sons would become, perhaps, members of Congress, and their daughters married to the best men of the land.

NEW YORK COLLEGE OF VETERINARY SURGEONS.

WE have much pleasure in learning that a college of Veterinary Surgeons has just been started in New York with all the guarantees of a great success. Already we have informed our readers of the progressive march of special education in the United States. Agriculture, Arts, Manufactures, and Commerce have their colleges inaugurated on that large scale which pertains to a powerful and free people. Veterinary medicine is now on a par with other branches of study, and as long as our Government will be unable to afford the same facilities for acquiring practical knowledge in those sciences, our young Canadians must avail themselves of the institutions now in full progress in the neighboring republic. To faciliate this we have much pleasure in giving all the information in our possession.

THE opening exercises of this institution were held at the College, No. 179 4th Avenue, on the 6th of November. The school opens with an encouraging number of students, and the public exercises on the occasion were attended by many of the prominent Physicians, Professors in the Medical Colleges, and the elite of New York, both gentlemen and ladies. An address was delivered by Prof. Copeman, from which we make a few brief extracts, after which the guests with the officers, the faculty and the founders of the institution, partook of a collation, enlivened by congratulatory speeches and toasts for the sucess of the college, and to the honor of its founders, first among whom is Prof. John Busteed, M. D., the President of the college.

Extract from the address of Prof. Copeman.

"The science of veterinary medicine, as it is now beginning to be understood, is a science that has a far wider application and a far nobler mission than the limited duty of leading the sick animal back to health. In the present day, more than at any previous period in the history of our country, domestic animals are brought together in immense numbers, under a variety of conditions powerfully and variously affecting their health. Hundreds of cattle and thousands of hogs are closely congregated at distilleries. Cows may be counted by the hundred in thousands of dairies. Armies of horses encamp and move about in enormous masses. The great problem of veterinary medicine is not so much how to cure a particular case of pneumonia or of fever, but how to prevent the outbreak of pestilence, to discover and to avert all the causes epizootic and enzootic disease; in a word, how to preserve the health of domestic animals and thereby increase the wealth of the nation. Regarded in this light, the veter-

inary profession acquires an importance which it has never yet challenged in America. There never was a period in the history of our country which so much required the establishment of veterinary schools as the present. Threatened from abroad with two diseases, the chalera, which is already said to be on our shores, and the rinderpest or cattle plague of Russia, a low form of typhus, which is now making such sad havoc among cattle on the European continent, and the milch cows of England. I regret to announce the reappearance amongst horses at Troy, in this State, and its rapid extension along the Erie, Chenango and Black River canals. of a highly contagious disease, commonly known as "black tongue." As one of the consequences of the war, we have also to contend against that most loathsome and incurable disease, glanders, the seeds of which have been sown broad-cast, by the public sale of diseased army horses. Surely, then, there never was a time when the aid of judicious advice of well-educated veterinarians was more needed. Sanitary commissioners and boards of health must ere long be organized or appointed by competent authority in every State, and by the general government to protect us from the pending epidemics, and epizooties. And this gives rise to the most important question, of whom or what class of persons should the board of health be composed. I answer without hesitation, of such professional gentlemen as I have the honor of being surrounded by, of our first physicians, of the best veterinarians in the country, of which there are, it is to be regretted, but very few to be found, owing, doubtless to our want of veterinary schools; the mayor and other executive officer of each city or town, and the police; a board composed of such material would not only be one of the surest, but the best means of protecting the public health, the public funds. I am not an alarmist; on the contrary, while I recommend care and prudence, I would guard against excitement and fear."

Faculty.

Anatomy and Operative Surgery, A. F. Liautard, M.D., V.S. Physiology and Surgical Pathology, A. Large, M.R.C.V.S.L. Pathology of the Horse and of other Domestic Animals, A. S. Copeman, V.S. Materia, Medica and Therapeutics, J. Busteed, M.D. Organic Chemistry and Practical Use of the Microscope, A. S. Copeman, V.S. Clinical Instruction, A. S. Copeman, A. F. Liautard, A. Large.

The Trustees of the New York College of Veterinary Surgeons, desirous of affording immediate means of Instruction to many gentlemen, who design making Veterinary Science a study, have purchased, for temporary use, the premises No. 179 Lexington Avenue, it being their intention, when a sufficient amount has been subscribed, to purchase a large plot of ground on which to erect a more extensive edifice.

The College opens a new field for the cultivation of a science equal in importance to that of human medicine. Veterinary Science is not without its attractions, and offers to the industrious student and educated man a future means of obtaining a highly respectable and remunerative practice in the agricultural districts, in our large cities and in the army; the Government having intimated that applications from graduates of this institution, with satisfactory recommendations, desirous of entering the army, will be respected to the extent of the wants of the service. It will also afford the Physician an opportunity to cultivate a knowledge of Comparative Anatomy.

The present building is located on one of the finest and most fashionable avenues of the city, and can be reached by Railroad Cars with great facility from all parts of the City and Country.

The Lecture-room is convenient, well-lighted and ventilated.

The Library has a well-selected supply of books and drawings pertaining to Veterinary Science and Medicine.

The Museum, although not very extensive, contains many valuable preparations and specimens of morbid and healthy anatomy, to which additions are being constantly made.

The Hospital contains stalls and box-stalls for the reception and medical treatment of patients, thereby affording a ready means of clinical instruction.

New York presents many incidental advantages for Veterinary Medical Students, which cannot be obtained elsewhere, viz., Medical Colleges, Hospitals, Dispensaries, Clinics, Public Libraries, &c.

The Trustees, having in view the advancement of Veterinary Education and exclusion of unworthy members, have deemed it advisable to select from the ablest Physicians and Surgeons of this City, and from the members of the Veterinary Profession a Board of Censors (who take no part in the medical instruction of the College) whose duties shall be to examine Candidates for

the degree of Doctor of Veterinary Medicine and Surgery. It may not be improper to add that the Trustees, in pursuing this course, are desirous of guarding against favouritism or partiality which some may imagine to exist between instructors and their pupils.

The Session for 1865-66 will commence on the first Monday in November, and will terminate the last of February.

Fees and Regulations.

Matriculation Fee,.....$	5 00
Lecture Fees,.....	100 00
Diploma,.....	25 00
Dissecting-room Fee,.....	5 00
Total,.....$	135 00

The requirements for Graduation are: Twenty one years of age, a certificate of study and attendance on two full courses of medical Lectures, the last being in this College, a thesis in the hand-writing of the Candidate, proper testimonials of character, and a satisfactory examination by the Censors in each of the Departments of instruction.

Two prizes will be awarded by the faculty for the best dissected preparations.

Letters may be addressed to Dr. J. Busteed, President of the Faculty, College of Veterinary Surgeons, 179 Lexington Avenue, New York.

A. F. LIAUTARD, M.D.V.S.
Registrar.

THIRTY-SIX MAXIMS FOR THE FARMER.

NEVER get in debt when you cannot see your way out again; when you owe, pay as fast as you can, and promptly, according to your promise.

2. Never enlarge your farm, when half of what you own is not half cultivated.

3. If you own more land than you can till well, are in debt, or need funds to make necessary improvements, sell part of your farm, and use the money to pay your debts, and make your improvements.

4. Never borrow money to build a showy house, when a less pretensious one would answer better; and never lend money when you have undrained or poorly tilled land to improve.

5. Lay out a system of improvements for your farm and buildings, and as your means improve, carry these plans out.

6. Do not enter upon speculation with other people's money or your own, unless you see clearly that you will make profits; and even then do not do it to the neglect of your farming.

7. Do not mortgage your farm to buy goods; very few men can enter the mercantile business without training for it, and not become bankrupt.

8. Do not buy fancy stock and pay fabulous prices, on the spur of the moment, or without knowing why you want it, and how you are to make the investment profitable.

9. Do not keep poor stock, when you can keep good at the same expense, and with four times the profit.

10. Do not change your kind of farming because what you raise this year is low priced for that which is high; ten chances to one, your crop will be up next year, and that which is up now will then be down.

11. Do not try to grow those crops for which your farm is not well adapted.

12. If you have a good location, do not sell out expecting to better it, because you are offered a good price.

13. Do not change farms often, for by so doing you can carry out no definite system of improvement.

14. Do not begin to improve till you have a general plan of what you wish to do; to do so would be like commencing to get out timbers for a house before you know its length and breadth.

15. Unless your crops are good ones, sow less and plow better.

16. Be present with your hands as much as possible, otherwise little will be done, and that little poorly. No business requires the master's oversight more than farming.

17. Cultivate a little, well, rather than much poorly. Who does not remember the story of a farmer who had two daughters? When the first one married, he gave her one-third of his vineyard, and yet he had as many grapes as formerly; when the second married, she took half the remainder for her portion, and yet the yield of the father's share was not lessened.

18. Keep ahead of your work, or your work will keep ahead of you.

19. Resolve that your farm shall be a profitable one, if industry and good management will make it so.

20. Invest your surplus earnings in making such improvements as will add to the profit, appearance and convenience of your farm.

21. When you make experiments, see

that you keep within the laws of nature. These are the farmer's helps; make such experiments as appear to be reasonable, no matter what your neighbors say.

22. Be kind to those you employ, and to all the animals you work.

23. Sell your produce when prices are high, and if you do not need the money, keep it when they are very low, unless it is certain they will remain so.

24. Make yourself thoroughly acquainted with the principles of Agriculture, and be guided by them.

25. Perform all labor at the right season.

26. Do all jobs in the best manner.

27. When you begin one piece of work, finish it before you commence another.

28. Do not leave work half done, expecting to finish it the next year; finish as you go.

29. Take care of your tools when you get through using them, and do not work with poor ones, when you can afford good ones.

30. Do not buy old wagons, harness, ploughs, &c., at auction, because you can get them cheap. Better expend the money for books, travel, or some needed improvement.

31. Do not keep more stock on your farm than you have plenty pasture for.

32. If at forty-five you have a fair property, do not work your muscles so hard as formerly, but save the afternoon of each day for mental and social improvement.

33. Give the children a good education physically, intellectually, morally and socially.

34. Take an interest in all improvements that have a bearing on agriculture.

35. Use machinery and horse-power, where possible, instead of your own muscles.

36. In all you do, endeavour to get hold of the long end of the lever, instead of the short one, if you would work to advantage.

VETERINARY SCHOOL, IN CONNECTION WITH THE BOARD OF AGRICULTURE, U. C.

PROFESSOR Smith's Class for Anatomical Demonstration, including Dissection, for Professional Students, will commence November 2th, 1865. A Course of Familiar Instruction in the Science and Practice of Agriculture, and of the Veterinary Art, specially adapted to young men intended for, or engaged in, Canadian Farming, will commence January 16, 1866, and extend over six weeks. In this department Professor Buckland will receive assistance (in addition to the above, from Professors of Chemistry, Geology, Natural History, and Meteorology, in University College. This course is free.

It will be seen that arrangements are again made, under the auspices of the Board of Agriculture, for a familiar course of instruction in the various branches of science that relate to the principles and practice ef Agriculture and the Veterinary art. The object is as follows: To provide suitable instruction for young men preparing for the veterinary profession. Considering the constantly increasing number and value of our domesticated animals, the great expenses incurred by importation of superior stock from Europe, and the little professional skill at present available in the country to meet effectually serious dimensions; and the only way of preventing, or even mitigating them, is to diffuse among the rising generation of farmers sound and practical information on the various subjects treated of in the abovementioned course of instruction, and thoroughly to prepare individuals for the practice of the Veterinary art as a *profession*. Both these points may be readily attained by the scheme herein mentioned, at the least possible expenditure of time and money to the student.

The course, as regards *professional* students extends over three terms, and includes dissection anatomical demonstrations, with a certain amount of practice. We understand that some three or four pupils will present themselves for final examination next spring, when, if they succeed in passing, they will acquire the Diploma of the Board, certifying that they possess a necessary amount of scientific and partial knowledge to enter on their profession in Canada.

The facilities thus offered to young persons intended for, or actually engaged in the business of farming, for acquiring a competent knowledge of such branches of natural science as have important relations to their pursuits, ought to interest and attract no inconsiderable number. The course is purposely limited to six weeks, with the view of rendering it generally available. Many young men might conveniently spend that length of time in the depth of winter, and acquire an amount of information which they could turn to good account during the more active periods of the year. Many an agricultural

youth never rises to a perception even of the dignity of his vocation, from the fact that his mind has never been earnestly directed to observe and reason on the every-day phenomena of life.

The whole subject of Agricultural Education in this country, both as regards schools and societies, demands a much fuller attention than it has hitherto received. Our agricultural societies, spread over the length and breadth of the land, might do much more for the diffusion of light and knowledge, in relation to subjects having both a scientific and practical value, if suitable machinery were introduced adapted to the purpose. After all, however, but comparatively little can be done till the farming community, as a whole, is earnestly aroused, and made to feel and appreciate the vast importance of the subject. With this view we are glad to learn that Professor Buckland has made such arrangements with the authorities of University College, as will enable him to spend the greater portion of the year in visiting and lecturing throughout the Province.

BEET SUGAR.

IN the October number of these reports for 1863 we spoke of the experiment then making in Illinois, by the Gennert Brothers, in growing the sugar beet for sugar-making purposes. The amount invested in this experiment was stated to be about $50,000. It was supposed that the yield of sugar might be from 2,500 or 3,000 pounds per acre.

Arrangements were made by the department to have the results of this important experiment reported to it, whenever its success indicated a profitable result. But no report having been made, and as nothing was said of the experiment publicly, the inference was an unfavourable one ; but as we find the following notice of the experiment in the Chicago Prairie Farmer of the 22d of July, 1865, we transfer it to our reports, because the experiments of the Messrs. Gennert Brothers will, in all probability, determine the success or failure of beet sugar-making in our country for many years :

Beet Sugar.

The very successful experiments that have been made in sugar making from the beet, by the Messrs. Gennert Brothers, at Chatsworth, have attracted the attention of some of our largest capitalists who have been investigating the whole affair, and a stock company is being rapidly formed for the prosecution of the business. The sugar made last season, some 8,000 pounds, has been refined, and furnishes one of best samples of loaf sugar anywhere to be found. Every experiment necessary to prove that there is no impediment in the way of successfully prosecuting the enterprise seems to have been made by the Messrs. Gennert Brothers, who are entitled to the greatest praise for the energy and perseverance they have displayed, and we doubt not, in due time, they will reap a rich reward.

In this connexion we add an extract from a letter written to the Commissioner of Agriculture by Mr. Klippart, of Ohio, who is now travelling in Europe on business of the Department, of a beet-root sugar manufactory visited by him :

" From Leipsic I went to Magdeburg to see the sugar-beet culture, and to visit a sugar-beet manufactory. From Leipsic to Magdeburg a large proportion of the land is in beets. The soil is well prepared by plowing, harrowing, &c. The seeds are sown in drills about a foot apart, and then the plants stand from six to eight inches apart in the drill. A small corner is reserved in each field where the seeds are sown thickly for transplanting in the field where the original seed failed to grow or the plant died. When we passed through this region, they were transplanting, and an ' army' of men, women, and children, say forty persons, on a five-acre tract, were busy hoeing, weeding, and transplanting. (The Saxon acre is about equal to one and a third American acres, and yields from 91 to 120 hundred weight of beets.) The manufacturers say that the small beets, weighing one to three pounds, produce or yield a larger percentage of sugar than the larger ones. When I told the manufacturer that we grew the beet in Ohio, weighing 18 to 20 pounds, he smilingly said 'You could make no sugar from them.' I told him ' we did make sugar from them, but they yielded much less than we had expected.' He said, ' Never take large beets to make sugar; we can make more sugar in proportion from those weighing one pound than from any other. Our beets weighed ten, twelve, to fifteen pounds. The principal superintendent of the manufactory at Magdeburg assured me that there was no *secret* whatever connected with the manufacture of sugar from the beet root, but that success in manufacture

depended upon a thorough understanding of the business. He said that *now* they manufactured just as surely and as certainly as a distiller could surely and certainly manufacture whiskey from rye. The establishment I visited is owned by Mr. Böckelmann and the Brothers Köhne ; the director's name is W. Wiseman, and he seems rather anxious to have some *bright* young Americans, who understand chemistry, come and serve a year in the establishment to learn all about sugar-making and refining. He will take any young Germans. The establishment, with all the machinery and apparatus, cost about 250,000 thalers, or about $175,000. They were manufacturing at the rate of 20,000 pounds per day, and the refined sugar was then selling for nine cents per pound. The beet pomace is very highly relished by cattle ; it is said to increase the flow of milk, and is an excellent adjunct for fattening cattle. In fact the fattest oxen that I saw in the Hamburg and Berlin cattle markets were those said to be fatted on beet pomace at Magdeburg."

PENNSYLVANIA AGRICULTURAL COLLEGE.

IN his address before the Susquehanna Co. (Pa). Agricultural Society, at its late Fair, the President, Benj. Parke, LL.D., thus alludes to the history and present prospects of the Agricultural College of Pennsylvania :

The great interest felt by enlightened farmers in agricultural science, acting through the Pennsylvania State Agricultural Society, induced our Legislature of 1855, and the years following, to authorize the establishment of what is now the " Agricultural College of Pennsylvania," and to appropriate thereto, at different times, some $100,000. The spirit of the age proclaims the necessity of research in all the sciences which have a practical bearing upon the industrial pursuits of life. The prosperity of all countries depends on the skill and labor which draw treasures from the soil, or changes and fits them for use afterwards. One gentleman in England (Mr. Lawes) expends from $5,000 to $10,000 annually in agricultural investigations. A few liberal citizens of our own State have already given over $75,000 to our Agricultural College; and through their influence, was secured the passage of the act of Congress making a liberal grant of public lands to the several States for the endowment and support of Colleges for " Agriculture and the Mechanic Arts." This fund, if well secured and properly managed, will give an impetus and aid to agricultural education, not only for the present but future generations. The Agricultural College of Pennsylvania is undoubtedly the foremost institution of the kind in the United States; perhaps fully equal to any on the globe. It was opened in 1859, and in 1864 had 146 students. The faculty and board of instruction are competent men. For massive intellect, profound literary and scientific acquirements, with rare executive ability. the President, William H. Allen, LL.D., has few equals here or anywhere. The College farm contains 400 acres of excellent land, lying near the geographical centre of the State, in Penn Valley, Centre County. The College buildings already erected, costing $150,000, are large and commodious; intended to accommodate over 200 students. These students are required to work three hours every day, at such work as may be necessary, in the cultivation of the farm, attending to the orchard, garden, fences, &c., or, when the weather is unfavorable for outdoor work, in the barn or in the shop. This manual exercise will not only keep the student's body and blood in a healthy and vigorous state—enabling him to study harder and with more success—but it makes him experimentally acquainted with all kinds of farm work. He thus not only learns, in his studies from books and lectures, the principles of farming, the laws as to the growth of plants, the preparation of manures, the exhaustion or renovation and improvement of the soil; but he also learns by practice how to prepare the soil for seed, when and how to sow or plant the seed, how to tend the plant or crop so that it may come to perfection, how and what to apply as manure, what crop is adapted to the different kinds of soil, and how soil should be treated, by rotation of crops or by resting, so as to avoid exhaustion. He also learns all about farming tools—in which there has been within the past four years very great improvements—and the principles upon which they are constructed and act. In fine, if he is studious and industrious, he learns all about farming. He learns, also, that practical farm labor is not inconsistent with or beneath the highest literary qualifications and acquirements; that whatever is necessary for man

to *have* done, is honorable for any man *to do;* and he who does his work best is entitled to the highest honor. With our admirable system of Common Schools and our Agricultural College, there can be no excuse for the ignorance of the present or future generations of farmers' sons.

IMPORTATION OF STOCK IN NOVA SCOTIA.

IN accordance with a suggestion of the Board of Agriculture, and a recommendation of the Agriculture Committee of the House, the Legislature of this Province at its last session voted a sum of $10,000 for the importation of stock, with a view to improve the breeds of horses and cattle in the Province. The Journal of Agriculture, published at Halifax, states that after much consideration it has been determined to purchase both horses and cattle in England, and to defer the final arrangements for the importation till December. It is found that there will be facilities for having the animals brought out in a comfortable manner very early next spring, in time for use next season, so that the advantages of a fall importation will to a certain extent be secured, without the risk and expense of having to keep the animals over winter in the Province. It is probable also that the Board of Agriculture will add to the sum voted by the Legislature such surplus sums as can be spared, after providing for other requirements.

THE YOUNG MAN'S DELIBERATIONS.

IN a certain town at the West there was an intelligent young man of the age of twenty years. His parents were very respectable, but poor. They had exerted themselves to give him a good English education. He had a natural fondness for books, and he availed himself of vacant hours to improve his mind by the study of useful books. He had no inclination to waste his time in the many diversions and amusements so congenial to youth generally. He looked on life as a reality, a labor, a race, a conflict, a battle with various opposing powers. He was willing to embark in the competitions of business, in the strifes for mastery, in running his chance for final victory. But the question was repeatedly pressed on him, What could he do? What particular vocation should he choose? and what probability was there that his choice would be a happy one? He was fully aware that the occupation he should select would give complexion to his whole subsequent life. He, therefore, felt that calm and serious deliberation was eminently proper. He looked abroad over the town in which he lived, and over the land where he dwelt, and considered the various pursuits of mankind. He thought of the cultivator of the soil, and balanced in his mind the advantages and disadvantages of this occupation. He thought of the mechanic and the perplexities of his business. He now directed his attention to the merchant, and failed not to discern the uncertainties of success in his occupation. He then took into consideration the professions of law and medicine. His mind quickly perceived objections to these professional pursuits. And so in the range of his cogitations he brought before his mind various other pursuits in life; and he examined them with close attention; and none of them were free from objections. For a long time he could come to no certain conclusion what he should do or what course in life he should pursue.—Finally he was brought to decide for himself. "I will," says he, "be a farmer. With health and labor and economy I can get a living. If I once enter on this occupation, I will pursue it; I will make it the main business of life. I will adopt a few plain principles of action to be pursued in all my business. These are strict honesty, uniform kindness, a high regard for integrity, industry and frugality." And thus he began with small pecuniary means, carried out in practice the principles of action which he adopted at first, was successful in business, acquired a competency and became a man highly esteemed in society. Now let young farmers follow such an example.

A PATRIARCHAL FARMER.

BOWLES, of the Republican, wrote from Chico, Cal., of the farming operations of Gen. Bidwell, M. C.:—"Gen. Bidwell became the owner of one of the famous Spanish grants in the richest part of the valley, and has a farm of 20,000 acres; 18,000 are under cultivation. His crop of wheat in 1863 was 36,000 bushels from 900 acres of land, or an average of 40 bushels per acre. The general average of the valley is 52 bushels. Of barley and oats, his other principal crops, he usually harvests 50 bushels to the acre. His garden and orchard cover 200 acres.

INSURANCE OF FARM BUILDINGS.

WE are confident that too many farmers neglect to insure their buildings. In cities and towns the man who does not insure his property is the exception, and is generally considered improvident. It is true that farm buildings are less liable to be destroyed by fire than are those in cities, but it is equally true that when once on fire there is but very little hope of saving them. A careless smoker, throwing his unburned but fired tobacco upon a bunch of hay or straw, the dropping of a candle, the explosion of a lamp, have caused the destruction of many barns and sheds containing not only the hay and grain of a whole season's labor, but valuable animals, and the choicest of the farm machinery. Many a house has been burned from explosions of kerosene lamps, and from careless use of matches among children. It is useless to enumerate all the chances of disastrous fires, even in the country, where also incendiarism is not unknown.

It is the duty of the provident farmer to take all possible precautions against loss by the great devouring element, for he has no steam fire engines and finely organized fire department to work against its ravages. A few buckets of water thrown by his own hands, or, possibly, the aid of a few neighbors is all that he has to oppose it.

We have no particular Insurance Company to name in this connection, nor is this item suggested by any agent or person connected with an insurance company. We merely write it because we wish to awaken our readers, who have no insurance upon their property, to a realizing sense that it is better to pay a small tax, annually, to a reliable organization of this kind, which in case of fire will step in and bear the loss, than to withbold it from parsimonious motives, and, possibly, in a single night be stripped of one-half their worldly possessions. We will attend with pleasure to any communication on the subject from our subscribers.

LIVE UP TO YOUR IDEAL.

THIS should be the great aim of the farmer as of all men. Every one has in his mind, an ideal of what his farm, his home and its surroundings should be. In his quiet, thoughtful moments, he pictures to himself his farm laid out in convenient fields, his timber lot springing into existence under the stimulants of fertile soil and genial seasons, his orchard laden with choice fruits, his garden filled with the finest vegetables, his crops rightly chosen for profit and rotation,—all well tilled and weedless. He sees a comfortable house, comfortably furnished, in which his family is happy and contented; outbuildings neat, in good repair and conveniently located. In short, his homestead, he knows, should his ideal be carried out, would be a little paradise, yielding him profit and pleasure. And yet to actually realize this ideal how few efforts do most men put forth, though little by little, how much might be done in these years that roll on, bringing the end of all visions and of all efforts. Men dream and delve and drift, leaving no spot on earth the better, or more beautiful for their living, no example worthy of imitation. This need not be, were the attempt earnestly made to accomplish their owu ideal of farming and of farm life. True they may never be able to reach, completely, this ideal, but there is pleasure in its pursuit, when once commenced, and satisfaction in all progress toward it. Action is the simple tailsman that secures all success.

FARM OPERATIONS.

MANURE AND ITS APPLICATION.

JOHN Johnston, writes the Country Gent., recommending surface application in autumn, says, "a great change has come over you in the last 10 years, since you added a note to one of my articles, saying you were surprised that a farmer like me should apply manure in that way. I wish you would republish my letter of some 20 years ago, advocating the application of manure in early September or October, and ploughing it in the next April or May. I began in 1838 to apply manure only at that season, and on the surface, but had experimented for several years previously to see if I could not destroy pigeon weed by thus causing it to vegetate in au

tumn and then ploughing it under in spring. I found that if the dung was spread by the 8th of October or thereabouts, it answered this purpose; but I found also *that my crops were much better* than when the dung was immediately ploughed under. This was so contrary to what I was trained in my youth, that I was for some years afraid to give publicity to the fact, until I had made it the subject of repeated trials.

Judge Garnett, of Va., wrote the Albany Cultivator in 1839, says the Country Gent., bearing on the same point, as follows:— "I began penning my cattle late in the spring, and continued it until frost, in pens of the same size, moved at regular intervals of time, and containing the same number of cattle during the whole period. These pens were alternately ploughed and left unploughed, until the following spring, when all were planted with corn, immediately followed by wheat. The superiority of both crops on all the pens which had remained unploughed for so many months after the cattle had manured them, was just as distinctly marked, as if the dividing fences had continued standing: it was too plain to admit even of the slightest doubt. A near neighbor, a young farmer, made the same experiment on a somewhat different soil, the year before, with results precisely the same. Similar trials I made and saw made by others with dry straw, alternately ploughed in as soon as spread, and left on the surface until the next spring. In every case the last method proved best, as far as the following crop would prove it. The same experiment was made by myself and others of my acquaintance, with manure from the horse stables and winter farm-pens, consisting of much unrotted corn offal; and without a solitary exception, either seen by me, or heard of, the surface application, after the corn was planted, produced most manifestly, the best crop. Upon these numerous concurrent and undeniable facts, my opinion has been founded that *it is best to apply manures on the surface of land.* All these results undeniably prove that the surface application was best, although the kinds of manures differed considerably. That evaporation cannot thus act seems to me to be unquestionably proved;.... for, *if it did*, then the land of summer cow-pens, ploughed up as soon as removed, would, in every case, have produced better crops, than that of the unploughed, instead of *doing it in none.*" Believing the fertilizing elements of manures to be soluble in water, he maintained that they passed into the soil as well from their own gravity, as from its possessing a greater attraction than does the atmosphere, for every substance in solution which constitutes the food of plants. If a loss of plant food is the result of evaporation, he says,—this is a result always going on, and why does it not impoverish the soil, even without any cultivation whatever? Yet neither partial nor total barrenness is ever known to be produced by any other cause than incessant culture without manure. Even the gas escaping from exposed manures he thought to be utilized by the foliage of vegetable growth. Again, the rains disolve and carry down the valuable elements of the manure, from the surface, to a proper depth for the use of the plant roots; while if buried below the surface, these soluble elements are washed, to a great degree, beyond the reach of the plants.— And he quaintly adds that his observation of Nature had not brought to his knowledge a single exception to *her* practice of depositing on the earth's surface all the putrescent substances of every kind which appear designed to preserve her fecundity.

[Let these statements from experimental farmers be well considered, as they bear upon an important and highly practical subject, interesting to every tiller of the soil that applies manures.]

BREEDERS' DEPARTMENT.

WARNING AGAINST THE CATTLE PLAGUE.

MINISTER Clay has addressed a letter to the Secretary of State, dated St. Petersburg, Oct. 17, in which he says:

I deem it my duty to warn the United States against the importation of the cattle plague into our country. Being a farmer, and feeling a great interest in such subjects, I have read everything upon the subject which is accessible, and I will give you only the result of my conclusions and observations. The cattle plague is the Russian cattle pest in this country. It is always more or less prevalent, and generally

kills whole herds. Like cholera, it is both contagious and infectious. By these terms I mean to say it is communicated from one animal to another by the physical imposition of the virus upon any animal from any object containing the virus; and also that the virus may be carried in molecules in the air, and thus produce the disease. It evidently did not originate *de novo* in England, but was carried there by ship loads of cattle from the Russian Baltic ports. If this theory is correct, then all importation of cattle from abroad should at once he prohibited by Congress, if not otherwise possible to be prevented. And it would pay well to call Congress together for that purpose only. No ship having a cow or sheep on arrival from Europe, or countries having the pest, should be allowed to land in America without sufficient quarantine. Every disease must at some time have originated from a violent disregard of the natural laws, and this as others. But I am of the opinion that there is nothing in the management of cattle in Great Britain or America to generate the disease; so also no sanitary precautions can arrest it short of absolute non-intercourse. I believe it to be a species of bloody murrain, aggravated by the marshy nature of northern Russia and the utter disregard of all the laws of health which is known to man and beast, especially in regard to ventilation and cleanliness, which prevails in these cold climates, where great expenditure of heat is needed, and fuel and food scarce. The same causes are producing now the aggravated typhus fever here, which is ealled outside of Russia "the plague." England was warned long since of the danger of direct importation of cattle from Russia; but failed to heed the advice. I trust our country may be more wise, and more fortunate.

THE CATTLE DISEASE.

THIS terrible scourge may not be altogether without beneficial results if it leads the farmers of Great Britain to a higher estimate of the value of agricultural statistics. We perceive from the Scottish Farmer of Nov. 1st, that the "Veterinary Department of the Privy Council Office" is collecting returns as to the progress and ravages of the disease, for the different census districts of England, Scotland and Wales. We have not space to give the table for the several districts, but the aggregates we condense below:

Number of cases for week ending Oct. 14th	1,054
do do Oct. 21st	1,729
Total cases from commencement of disease	14,083
Of which were killed	5,119
died	6,711
recovered	707

Our contemporary, however, thinks there are now "signs of an abatement of the plague; cases having become fewer and less virulent in some parts of the country where it has been very deadly. Mr. Gibbons stated at a recent meeting of the London Court of Common Council that the disease was abating in London. It has also been milder in Edinburgh, it is reported to have disappeared altogether from the Kelso district, and we believe it has become much more moderate in other parts of Scotland. At the same time, we must say that in England, as well as in some parts of Scotland, it is still continuing to make great ravages among stock."

VALUE OF PIGEONS AS FARM STOCK.

THE following article, published in Our Young Folks, suggests some truths worthy of the attention of a good many that are not young:

"No matter at what time of year a pigeon's crop may be opened, it will be found to contain at least eight times as much of the seeds of weeds as of wheat, or rye, or corn, or other grains. It is also very remarkable that the grains thus taken from the fields are the defective ones. They take only the worthless seeds. For these reasons these birds should be regarded as the best weeders that a man can employ; for while he merely chops up a weed, often when it is so well grown that it ripens its seeds on the ground where he may have left it, the pigeons come along and make clean work by eating them. The farmer removes merely the weeds, but the pigeons remove the cause of them.

Any one who has kept these birds on his premises must have noticed how fond they are of pecking among the rubbish which is thrown out from a barn floor after threshing wheat or other grain. They will search there for many days together, hunting out the shriveled grains, the poppy seeds, and cockle, and other pests of the farm, thus getting many a good meal from seeds that barnyard fowls never condescend to pick up. When the latter get into a garden they scratch and tear up everything, just as though they were scratching for a wager;

but a pigeon is better bred by nature—he never scratches; hence he disturbs no seeds the gardener may have planted. When he gets into the garden it is either to get a nibble at the pea-vines or the beans, as he is extravagantly fond of both, or to search for weeds.

This fondness of the pigeon tribe for seeds of plants injurious to the farm is much better known in Europe than with us. At one time, in certain districts of France, where large numbers of pigeons had been kept, they were nearly all killed off. These districts had been famous for the fine, clean and excellent quality of the wheat raised within them. But very soon after the number of pigeons had been reduced, the land became overgrown with weeds that choked the crops. The straw in consequence grew thin and weak, while the grain was so deficient in plumpness and weight as to render it unfit for seed. Every farmer remarked the difference when they had only a few. The people therefore returned to pigeon keeping. Every landlord, in renting his farm, required his tenants to build a pigeon-house or dove-cot, in order to insure crops. Many of these were very expensive structures. It has been further observed in other districts in France that where pigeons are most abundant there the wheat fields are most productive, and that they never touch seed which has been rolled in lime."

CURE FOR WOUNDS IN HORSES.

A R. H. S. Brown, of Butler Co., Pa., sends us the following recipe, for curing wounds in horses, and says: "I had a mare, which was stabbed very badly in the groin. I tried several remedies, which had no effect whatever: and her leg and groin were very much swollen. I then obtained some smartweed and mullen, and boiled them together, and applied it to the wound as hot as possible, without burning the animal.—This removed the swelling and inflammation; and I then applied a washing of strong soap-suds to heal the wound. I also applied a liniment made of one tablespoonful of spirits turpentine, and one tablespoonful of tar, with one half gill of hog's lard, melted together, which effected a cure; and in ten days my mare was able to go to work. I sent this recipe to the RURAL, thinking it may be of service to others, as it has been to me."

FATTENING ANIMALS IN TOO GREAT HASTE.

SOME suppose that poor animals may in a short time be changed into fat ones, by stuffing them with rich food. The more food they can make them take in a day or a week, the quicker, they suppose, they will become fat and fit for the market. But this is a false opinion, as experiments clearly show. The over-feeding is always wasteful; for after the animals gain but little fat, and the owners begin to think that the fattening of them for market is an unprofitable business. An owner may withhold the proper quantity of food from his hogs and cattle, and even half starve them for months; and then may change his mode of treating them, and glut them with excessive food, and thus hope rapidly to put them into a fat condition; but the attempt will prove abortive, as the growth of the animals from the earliest period of their existence, and their increasing in fat and flesh must continue on without interruption, till they are marketable. Careful observation proves that the profits of raising and fettening cattle and hogs *are realised only* when they are regularly fed from day to day with neither too *scant* nor too *heavy* feeding.

Every farmer who makes the feeding of animals an important part of his business, ought to know that their unremitting growth is the only true and successful way of treating them. This is the course which the most successful pork raisers pursue in feeding their hogs regularly and fully through winter and summer, till they are sufficiently fat in the autumn.

Some object to this mode of treating their animals. They wish to finish the whole fattening process in two or three months, and think it is too expensive to continue it for two or three years. This would be the case, if their way of feeding was the correct one; but it is not, for heavy feeding is not requisite to keep up the continued growing condition of the animals.

Mr. Chase, of Cayuga county, N. Y., carefully weighed every week all the animals he was fattening. To a fine steer he gave daily four quarts of barley meal; and he found the increase in its weight to be 18 lbs. per week. He then tried the experiment of giving it eight quarts per day; and he found the weekly increase of weight was less than when four quarts were given. Twelve quarts were now given daily, and at the end of the week there was no gain of flesh.

Another instance is mentioned where a fine animal is fed daily with more than a peck of meal. This process was continued for several weeks, when the animal was sold, and it was found that it was only a few pounds heavier than when the fattening first commenced. The bushels of food given it, and the labor of attendance were, therefore, gratuitous.

It has been ascertained by weighing that animals in good condition, with the same amount of food, will increase in flesh faster than those which are lean, when you begin to fatten these. Hence men of experience in the purchase of cattle, avoid buying the lean and raw-boned, if they wish to fatten them.

HORSES—DIRECTIONS TO PURCHASERS.

OF course every man wishes for a sound horse, without defect in wind, limb, or sight. The various imperfections which occur in each of these are here enumerated:

THE EYES.—When the animal about to be purchased is at the stable door, before he is brought out, examine his eyes; the light coming upon them in that situation, will enable you to discover any defect that may exist. Remember that both eyes must be in an equal degree of light; and, regarding this, observe that there is no difference in the eyes, for if they be not alike one must be diseased. If both eyes be clear, and hazel round the pupil, and the pupil itself be blue, and free from any white specks—if it contract in the light and dilate when in the shade, you may conclude the eyes are good. If the eyes be blue round the pupil, or the pupil itself be in the least degree affected with external specks, or deepseated pearly whiteness, termed contract; if it do not diminish or enlarge, as the light is more or less upon it—in all these cases it is a defective eye. All weeping, cloudy, dull-looking eyes are unsound; and if there be the least appearance in any way of disease in this very important organ, reject the animal. Imperfect vision is often the primary cause of shying.

THE AGE.—Next examine the mouth to ascertain the age.

Yearlings and two-year-olds are alike in mouth, and must be judged by general appearance. At three years old the horse has four *horse-teeth*, two above and two below, in front of the mouth, which supply the place of the sucking-teeth. At four he has eight horse teeth, four above and four below, the corner being only sucking teeth. At five years old, these are gone, and the *mouth is up*, at least with the exception of the inside of the backmost, which, especially in mares, sometimes do not rise until the sixth year; that is, all the teeth are horse-teeth, and the tusk is up on each side of the mouth. A dark mark, or hollow is generally observable in all the teeth of the bottom jaw at five years old; and the tusks are concave in their inner surface. At six, the two middle teeth have quite lost their mark, and the tusk is higher up, and longer, and not so concave. At seven the next two teeth have lost it, and the corner teeth only have the mark left in them. At eight it has grown out of these, and no mark is left at all. The tusks also become longer, and instead of being concave in their inner surface, become convex; the horse is then termed aged. There is, however, a great deal of difference in the mouths; some have lost their mark in all except the corner teeth, even as early as five years old; others have their front teeth in the top jaw projecting over their bottom teeth at the same age. You may form some idea of the age from the appearance of the mouth in general, when the marks are no longer visible. If the corner teeth do not appear long and running forward, as it were, to the front of the mouth; if they retain their square shape, and shut well together; if the tusks are blunt, and have the least concavity on the inner surface, you may conclude that the horse is not very old, particularly if his head be not gray, and not very hollow above the eyes; though this latter shape sometimes exists in young horses. A concave tusk is the most certain criterion of youth; and as mares have no tusk at all, they must be judged by what I have said about the corner teeth, except in some cases of what are called "shell teeth," from their resemblance to the plate-like cakes of shells, and horses with these preserve the appearance of youth till ten or twelve years old.

THE POSITION.—When the horse is brought out, allow him to be placed with his fore legs up hill—because if his joints be at all bent over, or his legs shaken, you will best discover it in such a position.

KNEES.—As the horse stands, examine his knees, and ascertain that no marks exist in front of them. These marks are generally the symptoms of having been down, and even were they occasioned by other means

than falling, the blemish is the same, and almost equally detracts from his value. Next look inside of the leg just under the knee, and if any scars be visible, or the hair sticks up, you may conclude that he cuts in his speedy or fast paces. Mark well that a similar scar does not exist at the ankle, or hair appear brushed; for such marks are solely produced by the act of cutting, which, as before observed, is generally a natural and therefore incurable defect in action.

THE LEGS.—Take notice that the legs be not tottering, and inclining forward, either at the knee or at the ankle; and that the ankle joints be large in front. The back sinews, also, should not appear bowed out behind, nor feel thick—the symptoms of their having sustained some injury. The legs should be flat, and not round; neither should they be soft and puffy, but wiry and hard. Both legs should be alike, for if one be larger than the other, it is an injured leg. Never buy a horse for a sound one with a big leg, even though he be warranted. You need not mind a splint, or a bony excrescence on the shank, unless it be so situated as to interfere with the suspensory ligament, or project so much as to hit the other leg in going. Ringbones, or enlargement on the pasterns and coronet, are easily perceived from a difference in the two legs; as it rarely occurs, even when both legs are affected, that they are affected equally. Incipient ringbones will sometimes produce lameness, even before they are observable.

THE FEET.—Be particularly attentive to the feet; for, according to the old saying —no foot, no horse. First of all, observe that one foot should not be less than the other; and that they should not be indented, or hollow around the crust. The crust itself should not be brittle, and broken where the nails have been driven; nor should there exist in it any circular cracks, nor longitudinal fissures from the coronet downward, which last are termed sand cracks. The heels should not be drawn together and contracted; nor should the frog be small and ragged, nor discharge fœtid matter, which is a disease called a thrush. The horn at the heel should be as high as the frog; for, if lower, the heels will be liable to corns; and the sole should neither be flat nor convex. It is obvious no horse can continue sound with these imperfections in the feet; and it frequently happens that horses with very finely formed feet, are very lame from a hidden cause within the hoof. Some veterinary surgeons consider such description of foot lameness hereditary. Lameness in the feet (often erroneously taken for and called lameness in the shoulder) frequently proceeds from a slight strain in the back tendon, which, on inflammation falling down to the sensible sole, produces navicular disease, only curable by an operation, and which fortunately is a simple one, in really scientific hands, seldom failing to give relief. If the legs and feet be smooth, you may imagine that all is right in the fore part of the horse.

THE HOCKS.—Next examine the hocks; observe that as you stand on either side of them, there be no projection at the back of the joint, called a curb; and, as you stand behind them, that the inside of the joint down below be free from little knots, or bony excrescences, which are called bone spavins; and on looking at them in a slanting direction, that there be no tumor above, or blood-spavin. Look down between the horse's fore legs for these defects, as it frequently happens that they are better seen from that view. An enlargement of the cap of the hock does not often cause lameness, thought it is a blemish; but enlargements on each side of it, which upon pressure fluctuate from the inside of the joint to the outside, are termed thorough pins, which are in fact wind-galls, and often cause very obstimate lameness.

THE HIPS.—Look that both hips be of the same height, as horses are met with having the defect termed down of a hip.

SHOWING.—Having thus examined the horse as he stands, let him run down slowly on a rough or stony declivity, at the end of a halter, without any support to his head, or any whip near him. If he go boldly with his knees bent, and his foot flat and firm to the ground, without dropping his head, you may conclude that he is sound before; and if on running him up hill, he go with his hocks regularly together, and not dragging the toe, nor dropping from the hip, you may buy him as free from lameness. If he go pattering on the toe, and feeting, let him not be bought.

LAMENESS — *How discovered.* — Take notice that in examining a horse for lameness, you may often detect it by looking at his ears; for all horses that are lame before drop their heads when the throw their weight on to the sound leg; and those that are lame behind throw their heads up when the sound leg comes to the ground.

FENCING.—Whenever a horse stands in the stable fencing, that is with a foot under the manger, it is a sign that something exists uneasy to him, and may give you a just reason to suspect unsoundness.

WIND. — With regard to wind, some horses naturally possess greater freedom of breathing than others; for instance, a horse with large, open nostrils, a wide gullet, a short neck, and a deep, wide chest, has generally superior wind to one of the contrary shape. There are two kinds of disease injurious to the wind; one is an affection of the wind-pipe, which creates whistling and roaring; the other an affection of the lungs, which produces broken wind.

The usual way to discover the first of these imperfections, is to go up to the animal in the stall, and taking fast hold of his head, flourish a stick about him suddenly, or strike him. If he groan, he is a roarer. But this method will not detect a mere whistler; the surest way, therefore is to gallop the horse with a bridle tightly curbed, and at the same time agitate him as much as possible. If he makes a wheezing noise, or blow with the same kind of sound as is produced by blowing upon a knife, placed before one's mouth, he is not sound in his wind. The state of the wind is sometimes ascertained, and with great accuracy, by the sound of the cough, and in the following manner:—Grasp the wind-pipe at the throat tightly, and then immediately let go the hold; the horse is sure to cough. If he cough bullily, that is if the cough sounds like the lowing of a bull, the disease I just mentioned is in existence. But this cannot be often done with the same horse, or it would produce the very disease in question, and is, indeed, a method so delicate and difficult as not to be tried without express permission of the owner, nor with it if you possess any claim to humanity. If he cough short and hacking, the lungs are affected, and he is broken-winded; but if the cough be long and shrill, the wind is good. Be careful to leave hold of the wind-pipe the moment you have compressed it; for if you hold it long, the horse will cough shrill, even if he have imperfect wind.

Always gallop a horse as well as make him cough; a horse with the roaring or the short cough should be immediately rejected.

By making a horse cough, another advantage arises, viz., you may discover if he be affected with a cold; in which case, upon compressing the wind-pipe, he will cough repeatedly.—*Horse Tamer.*

ON THE CARE OF CATTLE.

TO begin at the beginning, this carelessness in the treatment of calves may be here taken up. Almost from the first stages of the animal's life many seem to consider more the saving of food or of trouble than the importance of having a first rate animal. Utterly forgetful are many of our farmers that the great object to be aimed at is the *progressive improvement of the animal.* The growth is a constant process, and every means should be taken to aid it in the healthiest way. That this cannot be done, is obvious enough, by lessening either the quality or quantity of its food, or by being careless as to the shelter provided for it and the healthy exercise which it is necessary it should have. There is, reasoning from analogy, some ground for the belief that there must be some system of management of young calves which affords the best practical results; and yet, amidst the diversity of opinion and of consequent difference in practice, it is difficult for any one desirous to adopt the best mode of management to know what that mode is. Doctors differ, as the proverb and our own experience tell us; no less do cattle breeders and feeders. One advocates the importance of allowing the calf to suckle its mother; the other as strongly opposes it; one, while not insisting upon the calf drawing its supply of milk directly from the mother, yet insists that the milk should be its principal food at the early stages of its life; another as vehemently maintains that milk may be good, but that artificial food is better. Yet, not at present to enter into a consideration of the circumstances which affect these various modes, and which go to decide which is the best of them, of one thing we may be certain, that the habit of stinting the food, of whatever kind that may be, and how given, is utterly vicious, and sure to result, as it does result, in a poor animal, poor both for breeding or other purposes. For it should never be forgotten that if the animal is once let down in condition—as let down it assuredly will be if food is sparingly given to it in its young days—that that condition will never be made up again; of the certain paces in the race, so to speak, which are lost, a few may be regained, the whole never. Let it be taken as an axiom in the art or science of feeding, that to gain the desired end, the best animal that can possibly be got out of the calf with which the feeder begins, is to keep up a progressive improvement; the ad-

vantages of to-day retained to be added to those of yesterday, to which end not only must the kind and the quality and quantity of the food be attended to, but the circumstances under which this food can best give out its good qualities to the animal. This will never be done if proper housing be not provided, in which ample room, pure air, and thorough cleanliness be attended to and secured. Good exercise ground in the shape of ample spaced yards should also be provided. One thing is essential in the housing of calves, and not seldom is it neglected, and that is good, clean, sweet bedding. It is really pitiable to see sometimes the damp, wet, nay, sloppy, bedding upon which poor calves are forced to lie. This induces, we believe, diseases which often puzzle the farmer; and there can be no doubt of this, that dirty breeding and pens do increase the plague of lice, to which calves are even under favorable circumstances too liable. Let, then, the pens and the bedding with which they are provided be clean and sweet, and the calves also be well curry-combed, or rubbed with rough and clean straw, and lice and some forms of skin complaints will be in a great measure kept down. And here, while on the subject of housing and bedding of calves, we may note that, important at all times to be attended to as it is, it is doubly important in wintry, cold, or damp weather. We know of no notion—and we regret to say that it is a very commonlyreceived one—that has done and does so much to keep in our stocks, so to speak, so many poor specimens of the bovine race as that which inculcates the necessity for what is called the "hardening" or "roughing" of young stock. The latter is a peculiarly suggestive term, for roughing it assuredly is. Yet, how often do we see young stock kept exposed for days to the bitter biting blasts of winter, to the chilling winds and rains, and the discomfort of these intensified by scanty supplies of food, and this, too, of the least nutritious nature, which are given to them; and all this done with the view to harden and so to improve them. In defiance of all good rules of breeding is this done, as, indeed, it is in defiance of of all rules of an elightened humanity. "This system of roughing," says an eminent authority on breeding and feeding, "has the effect of weakening their constitutions; and this system pursued towards the young stock for two or three generations will *ruin the best breed* of cattle in the country. The offspring after this time will have lost all the quality, early maturity, and propensity to fatten of their ancestors; and it will require years of the greatest care to recover what is thus lost." If, then, this be true, as indeed it will be difficult to prove it to be otherwise, in what condition must the stock be in some districts where the plan of roughing is kept up now as closely as it has been kept up for years, as the wisest and the best thing to do? Difficult, indeed, does it seem to be to persuade those who uphold this pernicious custom to give it up on account of its cruelty; but surely if they for a moment considered the whole bearings of the case they would give it up on account of its wastefulness.—*The Scottish Farmer.*

HIGH PRICES FOR SHEEP.

SHEEP breeders will be interested in the following paragraph which we clip from a Vermont paper:

E. R. Clay of Middlebury, recently sold to Jerome Cherbino, of Weybridge, and Milo Williamson, Cornwall, a ram lamb four months and a half old, for $1,000. This lamb was sired by Gold Drop, and from a ewe bred by Henry Lane of Cornwall. Milo Ellsworth of Cornwall sold to Aspah Drake of the same town, a yearling ram for $1,000. Col. Stowell of Cornwall, sold to Henry Huff, of Jonesville, Michigan, his yearling ram Searches for $3,000. A. N. Saxton of Waltham, sold to Messrs. Ainsworth & Twitchell of Middlebury, his stock ram for $1,500. Oscar Bacon of Waltham, sold two yearling rams to Ellis & Bingham for $2,500. S. S. Rockwell of Cornwall, sold to Judson Wright of Weybridge, a yearling ram for $2,500. Edgar Sandford sold to Ellis & Bingham, a yearling ram for $2,500.

ESTIMATING WEIGHT OF CATTLE BY MEASUREMENT.

THE Canada Farmer, in reply to a correspondent, says:

Many experiments have been made by graziers and salesmen to ascertain the net weight of cattle by measurement, and a number of rules and tables have been formed of the results obtained. None, however, can be regarded as absolutely correct. With the most accurate measuring is required a practical acquaintance with the points and forms of animals, and allowance must be made according to age, size, breed, mode and length of time of fattening, &c.; conditions which require a

practical eye and long experience to appreciate. We have found the following method to lead generally to trustworthy results:

"Measure carefully with a tape line from the top of the shoulder to where the tail is attached to the back; this will give the length. For the girth measure immediately behind the shoulder and fore legs. Multiply half the girth by itself in feet, and the sum by the length in feet, and the product will give the net weight in stones of eight pounds each.

TO START A BAULKY HORSE.

The Ohio *Farmer* says:—"Fill his mouth with dirt or gravel from the road, and he'll go. Now don't laugh at this, but try it. The plain philosophy of the thing is, it gives him some thing else to think about. We have seen it tried a hundred times, and it has never failed."

RESTIVE HORSES.

Some horses are very restive when a person is ready to get into a carriage. This is very annoying, especially to ladies. The best way we have ever found, (and we profess to be something on spirited horses), is to fumble about the harness, especially about the headstall, as though something was wrong, twitching one strap this way and they will almost always stand quietly long enough for others to enter a carriage. This bad habit is generally the result of bad training, and cannot be readily broken up after the horse has once contracted the habit.—*Maine Farmer.*

BEES.—A CHAPTER OF WELL SETTLED FACTS.

1. ALL stocks of bees should be kept strong in numbers.

A well garrisoned city may defy assault.

2. A moderate increase of swarms will keep them strong, and secure the largest yield of honey.

As the calves are raised at the cost of butter and cheese, so bees are multiplied at the expense of honey.

3. Bees filled with honey are not inclined to sting.

As the robber's knife is staid by your purse, so bees are bribed with proffered sweets.

4. In natural swarming, bees will fill themselves with honey.

Emigrants to a new country carry their treasures along as capital to begin with.

5. Bees alarmed at smoke or otherwise, instinctively seize their stores.

The householder, at the cry of fire, secures what he can.

6. There should be no communication between occupied hives, allowing the bees of one to pass directly into the other.

"No house is large enough for two families."

7. A swarm of bees destitute of a queen fast dwindles away; and unless supplied with one, soon perishes, either by robbers or moths.

A country without a government, a farm without an owner.

8. Swarms having combs insufficiently protected by bees, furnish a retreat for millers and food for worms.

Unguarded treasures invite thieves.

9. An excess of drones should be avoided by discouraging the construction of the cells that hold them.

Drones are the "dead heads" of the hive —the *useless males* in the farmer's herds.

10. The building of drone comb may to a great extent be prevented—first by securing the construction of new combs in hive, containing young queens; and second, by placing frames to be filled in other hives near the centre.

"An ounce of prevention is better than a pound of cure."

11. Queens are most economically reared in small swarms.

Who would employ ten men to do what one could do better?

12. Small swarms if united in the fall, winter more safely, and consume less honey.

"In union there is strength."

13. Bees of colonies containing fertile and unfertile queens, should not be put together without first "breaking them up," *i. e.*, inducing them to fill with honey, and destroying the unfertile queen.

14. Natural swarming, always uncertain and perplexing, exposes the bee-keeper to much loss of time and money; while artificial swarming, securing at all times the presence of a working lay queen, doing away with all watching, and loss by flight to the woods, is both sure and economical.

There is a poultry pestilence raging in the suburban hen coops round Paris. Fowls are found dead in scores, without any perceptible cause.

ENGINEERING DEPARTMENT

STONE AND GRAVEL ROADS.

We have urged on former occasions, the importance of constructing roads of uniformly hard materials, instead of soft earth or muck. The former if well made, will furnish a fine, smooth, hard track, in all weathers; the latter will be cut into mud-holes and ruts from six inches to two feet deep; and sometimes prove nearly impassable. When hard and soft materials are crudely mixed together, as we sometimes witness where large stones are thrown into heaps of muck, the mixture becomes intolerable.

Could we see the immense assemblage of broken and worn-out wagons, mud-splashed, injured and broken harness, and sprained and lame horses, (enough to fill any ten-acre lot), which the bad roads throughout the country annually occasion, a strong impetus would certainly be given towards improvement.

Where a uniform, solid hard-pan is found a few inches below the surface, or even at the depth of a foot or so, the cheapest way to make a good road is to scrape or cart the soft top-soil to manure the adjacent fields, and then make the denuded surface into a smooth track. But where this cannot be done, an artificial road made of broken stone or gravel, is usually resorted to. A very common practice is to draw the loose and scattered stones from the fields to form a bed of proper width, and then cover this with gravel; or if gravel cannot be had, with earth. The stones are heaped up and spread over the surface irregularly, and then a sufficient depth of gravel or earth is placed upon them, to make a uniform surface. This seems to promise well for a time, until the hard corners of the stones, gradually working through the soil or gravel, make it uneven. The jolting of the wheels then begins to loosen the stones more rapidly—many of them work upwards and become partly uncovered; the gravel falls below, and in the course of years the road becomes excessively rough.

Some years ago a road was carefully constructed at great expense, by first making the foundation of block stone or very thick flagging. On this a coating of gravel was placed, giving it a handsome finish. For a time it promised everything that was desired. But three combined causes soon began to operate to injure it. When the earth below became soaked with water, it was too soft to sustain the superstructure. The action of frost increased the difficulty, and the tumbling of heavy wheels above gradually jolted the blocks from their places. In the course of years the solid bed of block stone became entirely broken up, and some of them were turned on edge.

Now the question will at once arise, how are these formidable evils to be remedied? There are two ways—one is expensive, the other comparatively cheap. The first is the McAdam road—formed of a deep bed of small broken and angular stone—which, by the rolling of wheels, becomes compacted and cemented together, and forms a solid immovable mass. This road requires a large expenditure of money to construct properly. Many poor ones are made, which do not deserve the name. The other road is the Telford. By using the larger portion of the stones unbroken, much expense is saved. By arranging them, they are held to their places, and do not work to the surface. All the rounded and loose stone which are found scattered over farms, (which are better for their removal), may be used for constructing Telford roads. As none of them are absolutely spherical, and nearly all have a thin and a thick end, being somewhat wedge-shaped, the larger end is placed downward, and the smaller upward. By selecting them according to their size, the larger ones may be placed in the center of the road, and the smaller ones, by gradual diminution, towards the sides. Coarse gravel, or what is still better, small broken stone, is then rammed between them. The whole surface is then covered with similar but finer material, and the road is finished. When loaded vehicles are driven over this road, every successive wheel crowds the broken stone more firmly between the stone wedges, and the whole becomes a solid and immovable mass. It is impossible for the stones to work to the surface, the larger ends being down.

If those who employ stone for making road-beds, would take the additional care to select and place the stones in this way, instead of throwing them into a careless and promiscuous heap, it would ultimately result in great economy.

THE SEVERE PERIOD FOR MACHINERY.

AMONG the mistaken ideas that very generally prevail, is one that our farm machinery rapidly wears out. Now, although it is a very important fact, that farm implements and machinery go to destruction at an astonishing rate, we are inclined to attribute it more to intelligence than to use, though improper use is very destructive. We believe it to be true that winter is the severest season of the year upon the great bulk of farm machinery. Have our readers ever thought thus? If so, how easy is the remedy. Simply, proper housing and care. The average "life of a reaper" is but from four to five years, during which time 20 or 25 per cent of the original cost has been spent for repairs, while the farmer who carefully houses his machine will easily make it last double this time, and in the aggregate expend less for repairs.

Verily, if it is worse to "rust out than to wear out," it is also easier, with the expensive machinery of the farm. The reaper is but a single illustration, whereas many might be introduced.

TILE DRAINING—COST PER ACRE.

IN England the cost of tile draining is from $25 to $50 an acre. The average cost is calculated at $35, and it is thought to be the best expenditure that a farmer can make upon land. The same estimate cannot be made here, because the cost of labor is so much higher, but a calculation can be made from the following statement of the amount of ditching and the number of tiles required. It is from an English paper, and says:—

"An acre of land drained at four yards apart requires 3,000 tiles of 12 to 15 inches in length; at six yards distance, the number required is nearly 2,000; and at eight yards distance an acre will require between 1,400 and 1,500 tiles. A cubic yard of stones, of the size of road metal, will fill to the depth of twelve inches above two rods or perches of drain in the width of six to twelve inches, which constitutes in point of carriage an advantage of nearly six to one in favor of tiles against stones, as a cartload of the former will lay about 100 yards of drain, and as carriage is the most laborious part of draining, it is a most important particular for consideration in undertaking a drainage of wet lands. The future saving of labor in working the land may be fairly estimated against the expense of carriage that is incurred by the first performance.

"In an acre of land drained at four yards distance, there will be 200 rods of excavated cavities; at six yards apart the number of rods will be 150; and at eight yards distance there will be 100 rods in the drained acre. The average cost of digging drains two and a half feet deep, and two feet wide at the top, and six inches at bottom, by the rod of six or seven yards in length, is 5d. or 6d., as the soil may be soft or hard, and the average expense of cutting and filling the drains is 1s. or 1s. 2d., by the same rod of length. This last estimate includes every material and all the expense that is incurred. The number of rods in an acre being multiplied by the cost, gives the amount of the general expense."

POTATO-DIGGER.

THE Scottish *Farmer* notices a new potato-digging machine which has been successfully used the past season, made or invented by the firm of Law & Duncan. It is thus described:

"The machine has a set of revolving forks with flat prongs, which throw the potatoes and dirt against a strong netting stretched on a frame on the right hand side of the machine, and the bed of soil in the drill including the crop, is lifted and prepared for the forks by means of a long share which passes transversely underneath the drill, and can be lowered or raised to suit any depth at which the potatoes may have been planted. The frame in which the working parts are fixed is supported in front on a pair of wheels."

The farm on which the machine was used, was of very stiff land, and it required two sets of three horses—one set employed in digging and the other in carting—the sets changing work with each other at midday. It had dug 4¾ acres per day—thus saving the labor of many hands, while, aside from the other advantages which it possesses, the land is said to be "much more perfectly cleaned than it can be when the plow is used in lifting the crop."

The judges appointed at the great field trial of mowing machines, held at Hunt's Bridge, July 25 and 26, have awarded the gold medal of the society to the Buckeye mower, built by Adriance, Platt and Co., Poughkeepsie and New York.

HORTICULTURAL DEPARTMENT.

SHADE TREES.

A ROW of trees by the roadside is a source of pleasure to travellers and an ornament to a farm. The largest part of the farmers in this vicinity do not set shade tree. Some neglect it, some think they have not time, while others apprehend they will injure their land. To the last objection it may be replied, that while trees by shading and also by exhausting the soil, injure the crops planted near them, these evils may be remedied by setting the right kind of trees. It should be the aim of every farmer to combine beauty with *utility*. This may be done even in setting shade trees. For this purpose we consider the apple tree superior to any other class of trees. Not the old, decayed, untrimed ghosts of what were once trees, which are so often seen by the roadsides, but thrifty, well pruned trees. It is certainly some trouble to set and trim them, but they will well repay all the care bestowed upon them. They should be set a little inside the fence, and properly cared for, and in a very few years they will be a source of profit to the owner. I have often wondered that young trees for shade are set by the highway, that are not even ornamental and of no utility except perhaps for fuel. On the other hand, the apple or the pear tree may be planted by the roadside, and with proper culture may produce valuable fruits. In this case a real benefit results to the owner, to his family, or to others.

Trees should be set which bear the best kinds of apples; for it is as easy to raise good fruit as it is to raise cider apples, and of course, far more profitable. It will add to the beauty of the row of set trees which bear the same kind of apples, as each variety has a distinct and peculiar form of its own. You will thereby secure evenness, and a more perfect model of beauty than you can if you set different kind of trees, This will secure to the owner a profitable shade—profitable in a double sense; for it will return an income much greater than the injury done to the land, and at the same time add to the beauty, and therefore to the cash value of the farm.—The apple tree exhausts the land far less than the maple, the elm, and many other ornamental trees; and while it cannot take their place on commons and other public grounds, we hope its merits as a shade by the roadside will be considered, believing that it can supply that great desideratum of utility combined with beauty.

JOHN E. REED.

WINDOW GARDENING.

KNOW that the summer glory of flowers is over, window gardening will come in for a greater share of attention. It is certainly not an easy task to have fine window plants, yet the more the difficulty, the greater the glory to those who do succeed.

Of course a considerable difficulty in this country, or the northern parts of it, is the excessive cold to guard against. True, that has to be guarded against for other purposes; but then, the two want somewhat different degrees of atmospheric conditions. In the act of warming our dwellings we have to a serious extent (at least for vegetation, and to a certain extent for humanity) deprived the atmosphere of too much of its moisture. The effect of this is that the air robs the pot, the soil, and even the foliage of the plants exposed to its influences, faster than is consistent with a healthy development of vegetation, of this needful auxiliary.

There can be no doubt that by a judicious selection of plants much can be done to help overcome this trouble, and if plants only were grown that are natives of arid sands, or places where but little rain falls, at least for a portion of the year, excessive dryness would not be so severely felt. But then, again, it is not everybody that can see enough beauty in the tribe of plants Nature has fitted for these places, such as the cacti, aloes, and allied plants, to care to grow them to the exclusion of those fitted for a more humid atmosphere.

The former are oddities, or curiosities, not so different to the other accompaniments of the dwelling; while the latter, from their green luxuriance, even when not in flower, are pleasing, from the very fact of their animate form, as compared with the other inanimate objects. A lady who has been enjoying her monthly roses, geraniums, heliotropes, verbenas, and other similar plants, does not like to see the rude winds

despoil them of their beauty; and hence the plants in her window, which she hopes to winter safe through, knowing that if she succeeds she will be gladdened again in summer without having resort to the florists for her supply.

Those who keep their rooms at a medium heat will succeed the best, and if the pots are placed in a zinc or tin stand, and the space between filled with moss kept moist, much benefit will be experienced by the plants.

We are pleased to see the English ivy much sought after for window culture, as, apart from its associations, and beauty of foliage, it has the capacity to adapt itself to different conditions much better than many plants; in fact we know no running plant that does so well in rooms as this, growing and flourishing in even rather dark places. We have seen some windows quite prettily draped with living running ivy.

To others a living screen or blind being formed, on wire work, movable at pleasure. Plants are much benefitted by exposure, even for a short time, to a warm rain, which should always be taken advantage of when it does come, as it rids the foliage of dust and filth that settles on the leaves.

In potting plants for the room it is best not to have them in too large pots, as the continuous watering is very apt to sour the soil, which takes place only where the roots are not plentiful as compared with the mass of soil.

There is no better soil for almost any window plant than the top soil from the woods, particularly where the natural soil is a sandy loam, or clay with sand added.

Some may like to try their hands at propagating. With many plants this is not very difficult. But the atmosphere, for this purpose, must be moist about the cutting. To secure this, place a tumble over the cuttings; or, what is better, make a miniature propagating bed, with a box and piece of glass to fit over the top. Better yet if the sides also are of glass, which is easily done by taking four pieces of glass the size of the box to form the sides; thrust them in the soil to steady them; then take another piece for the top. Put three or four inches of nearly all sand into your box, water enough to soak all through, insert the cuttings, place on the top glass, and they have a moist atmosphere of their own, whatever the outside may be. Most of the plants grown in the garden in the summer will root here quite readily. When well rooted each plant may be transferred into a three-inch ot.

PRESERVING APPLES IN BARRELS.—VARIOUS KINDS OF FILLING, OR ABSORBENTS.

SALT barrels are of course out of the question as entirely unfit for packing apples in, it being impossible to dry them, and thus in some degree a taste of salt is sure to be imparted to most of the fruit in contact with the barrel. Still it is desirable to use *old* barrels when they can be obtained sweet and in good order, on account of their being drier or well seasoned. If new barrels are obtained early in the summer and well seasoned, of course they would be preferable. But as it cannot be known what number will be required till apple-picking season approaches, the barrels are not perhaps usually made in time to season before being required for use. My limited experience in packing, however, suggests the propriety of leaving this part of the barrel question to others.

Tobacco barrels are of course unfit to pack fruit in. Old flour barrels, and dry sugar and rice barrels, are good. But best of all, are barrels in which *lime* has been drawn or kept, or which have been dried and to some extent coated with lime over their interior surface. The most beautiful appearing apples I have ever seen, are a barrel of Yellow Bellflowers, now keeping in an old lime barrel in my cellar. In uniformity of color no improvement can be made in them.

The cause of apples keeping so well in lime barrels, is most probably the absorbtive and drying influence of the lime. The ripening process with apples results from loss of water, as with old grain, seasoned wood, dried apples, &c., &c. And as the moisture escaping from apples in barrels remains in the barrel unless absorbed, it becomes an object of the first importance to get rid of this moisture as fast as it exudes from the fruit. A *very dry* cellar answers a good purpose in attaining this object, because the air in the cellar is drier than that in contact with the fruit, and the latter escapes into and mixes with the former by the simple process of infusion, till equal humidity pervade the whole. In a dry and well ventilated cellar the air is constantly *renewed* and *kept dry*, thus carrying the vapor damp from the fruit as regularly as it escapes by sweating or otherwise.

But there are very many cellars, even such as are dry, that are called always damp in a gteater or less degree, and a large number that might be much better ventilated if the subject was better understood. In such cases local absorbents or filling—of which lime dust is an illustration in principle—may be made useful. Some persons use sawdust, others bran, others chaff or forest leaves, &c. Taken in their ordinary condition, I should prefer chaff or forest leaves, and, I think, plain shavings, to either bran or sawdust. The latter would be chosen because they are usually drier, and because they have more absorbtive power or capacity from being in a drier condition. And this brings us to the pith and marrow of this question of the comparative influence and difference in results, from the use of various substances for filling in packing apples, or, the same being a matter of general principles, amongst pears, grapes, or other sorts of fruit.

Bran is ordinarily by no means dry, and therefore a poor absorber, if we may purify the process of absorption. The same may be said of sawdust, as usually kept or found. It is already damp from having absorbed vapor or water, or from retained sap of the wood it was cut from. Its power or capacity to absorb watery vapor is very limited, therefore; indeed may be already saturated. Leaves are drier, and if gathered quite dry, make a good packing to put amongst apples or pears. Chaff that has never been watered is good, for it will absorb considerable water vapor, such as apples sweat out in the process of ripening, which is but another term for the process of natural, though slow, instead of rapid and more apparent decay. Shavings from planes and lathes are the best filling, because they are usually not only not wetted, but shaved from seasoned wood, and dried to a very considerable extent by stoves and other heat in the shops and factories where they are procurable.

It is clearly the fact that the value of filling depends upon absorbtive capacity or of power to absorb moisture. The dry shavings will absorb, bulk for bulk, much more moisture than leaves, and are therefore as much more valuable. In fact any sort of filling that is damp in any perceptible measure, is not only of no value at all, but must be decidedly injurious if used for such purpose. Absorbtive capacity results first from porosity primarily, and secondly from the substance being in a dry condition when packed in with the fruit. And as our sensory powers are not all allike, nor as acute at all times, it is a safe rule, and probably the only safe one, *to dry all substances* used for filing, by artifical heat in some manner, but to make them dry.

Charcoal, as is well known, is the greatest absorber in use, meats being preserved in it, fresh and without salt, for many consecutive months even in warm weather. Charcoal being simply woody fibre desiccated by fire, it follows that woody substances deprived of their moisture by heating and drying, must approximate this charred wood in capacity, effect, and value. In burning wood it may be said to be derived of all its sap or water; in drying, of a part only, and this more or less in proportion to the degree of heat applied, and the continuance of it. Or in other words, sawdust, shavings, leaves, and other woody substances are of similar natural structure and capacity with the wood of charcoal, and each and all may have their absortive power much improved or increased by the application of more or less heat, or by more or less *thorough* drying before being employed in filling or packing.

Bran I should consider unfit for such a purpose. Dry chaff may be a tolerable substitute where leaves cannot be obtained; but in all cases where they can be got, it is evident shavings, sawdust, and leaves, will make not only good but the best packing—charcoal only excepted—obtainable, as auxiliaries in preserving fruit in barrels and boxes; and either and each of them will be more effective, and the result of using them more satisfactory, according to the thoroughness with which they are dried, as in kilns, in sacks, or otherwise, but made dry by some means, before being placed in contact with the fruit, the preservation of which they are *designed* to promote.—*Country Gentleman.*

J. W. CLARKE.

CAMELIA FANNY SANCHIOLI.—This charming white Camelia has been produced in Italy, from whence it has been received by the establishment of M. Verschaffelt. The flowers are of the purest white, slightly tinged with rose in the centre, while some pretty rose spots are visible here and there. The petals are large, round, bi-lobed at the summit, and are placed with the most perfect regularity. The plant is of excellent habit, the foliage ample and of a fine green, and the flowers are produced in abundance.

DOMESTIC ECONOMY.

FARMER'S DAUGHTERS.

WE desire to say a few words to this numerous and interesting class of young ladies. In this we are prompted, our young friends, by no spirit of flattery, but because we really believe that, as a class, you excel in the solid and more important, characteristics of womanhood. We have sometimes met with young ladies so delicately reared, as to know nothing of household matters, profoundly ignorant of the process of manufacturing bread, butter, or cheese; and who seemed to pride themselves on their ignorance. And we are not without our fears in reference to some of yon. When sent to the boarding school, you would rather conceal the fact that your father is a farmer, or if concealed, endeavour to make it appear, that he is quite wealthy, and that you have nothing to do with the kitchen.

This appears quite surprising, indeed, to those who take a more sensible view of things, and argues a weakness, which charity would prompt us to pass slightly over. But we desire to speak to that class who are proud of the appellation. Who, when it necessary, find a pleasure in visiting the kitchen, not for the purpose of superintending affairs, but to render maaterial aid; who cheerfully engage in preparing the morning meal, or plunge to their elbows in the foaming suds, and who are not mortified by the glow of health and the rosy cheek, produced by this kind of exercise? How many privileges have fallen to your lot to which your city cousins are strangers? Let these privileges be appreciated and improved. Make the most of your daily and intimate acquaintance with Nature. Your household duties performed, sally forth into the woods, build your cloud castles, and dream of romance at will. It will do you no harm to be a little romantic. Surrounded by influence so healthful, and by cares so numerous, there is little danger of becoming misanthropic. Besides, these reveries are not only pleasant, but impart an additional charm to character, which otherwise might become entirely monopolized by the pratical of life. Do not think because some of you are deprived of the privileges of the boarding school, that therefore you must remain in ignorance. The facilities for education are quite too numerous to justify such a conclusion. Who of you have not some friend to whom you can in confidence apply, and who would esteem if a pleasure to advise you in regard to a course of study? Your progress would be somewhat slower, but none the less certain in its results. Whatever difficultics may lie in your pathway, they will one by one disappear, and success, in the end, crown your efforts. The period of youth should be mainly devoted to the acquisition of knowledge, and its fruit in coming years will be all the sweeter, for the sacrifice required in its attainment.

WASTE AND WANT.

MUCH waste often occurs in the boiling of meats. The cook will throw out the water without letting it cool to take off the fat, or scrape the dripping-pan into the swill-pail. The grease is useful in many ways. It can be burned in lamps, mixed with lard, or, when no pork has been boiled with it, made into candles. Bits of meat are thrown out which would make hash. The flour is sifted in a wasteful manner, or the bread-pan left with dough sticking to it. Pie-crust is laid by to sour instead of making a few tarts for tea. Cold puddings are considered good for nothing, when oftentimes they might be steamed for the next day. Vegetables are thrown away that would warm for breakfast nicely. Dish-cloths are thrown where mice can detroy them. Soap is left in water to dissolve. If Bath brick, whiting, rotten-stone, etc., are used, much is wasted uselessly. The scrub-brush is left in water, pails scorched by the fire, tubs left in the sun to dry and fall apart, chamber-pails allowed to rust, tins not dried, and iron-ware rusted; nice knives used for cooking in the kitchen, silver spoons used to scrape kettles, or forks to toast bread. Cream is allowed to mold and spoil, mustard to dry in the pot, and vinegar to corrode the caster; tea, roasted coffee, pepper, and spices to stand open and lose their strength. The molasses jug loses its cork, and the flies take possession. Sweetmeats are opened and forgotten. Vinegar is drawn in a basin and allowed to stand till both basin and vinegar are spoiled. Potatoes in the cellar grow, and the sprouts

are not removed until they become worthless. Apples decay for want of looking over. Pork spoils for want of salt, and the beef because the brine wants scalding. Hams become tainted or filled with vermin for want of the right protection. Dried beef becomes so hard it cannot be cut; cheese molds, and is eaten by mice. Bones are burned that would make soup: ashes are thrown out carelessly, endangering the premises and being wasted. Servants leave a light burning in the kitchen when they are all out of an evening. Clothes are whipped to pieces in the wind, fine cambrics rubbed on the board, and laces torn in starching. Carpets are swept with stumps hardly fit to scrub the kitchen, and good new brooms used for scrubbing. Towels are used in place of holders, and good sheets to iron on, taking a fresh one every week, thus scorching nearly all in the house. Table-linen is thrown carelessly down and eaten by mice, or put away damp and is mildewed, or the fruit-stains are forgotten and the stains washed in. Table cloths and napkins are used as dish-wipers; mats forgotten to be put under hot dishes; tea-pots melted by the stove; water forgotten in pitchers and allowed to freeze in winter; and china used to feed cats and dogs on. In many other ways a careless and inexperienced housekeeper will waste her husband's wages, while she thinks, because she buys no fine clothes and cooks plainly, that she is a "most superior housekeeper."—*Haskell's House Encyclopædia.*

WORKING AND PACKING BUTTER.

ONE of the causes of bad butter is the habit which some dairywomen indulge in of leaving their butter unworked for a considerable time after churning. Every hour that the buttermilk remains in contact with the butter, after churning, is an injury; it cannot be freed from it too soon.

The grain of butter is often spoiled by too much working; on the other hand, if it is not worked enough, it will be spoiled; the process therefore requires much attention.

It is hard to define with accuracy what we mean by the *grain* of butter, but every one knows whether butter looks or feels greasy or waxy. When it has the appearance of wax, we say the grain is good, and the more it resembles wax in its consistency, the better is the grain. The more greasy it is in appearance, the more we say the grain has been injured. In order to free butter from the milk with the least injury to the grain, it should be gathered into an egg-shaped form with a butter ladle, without touching it with the naked hand; it should then be gashed longitudinally around the whole circumference, making the channels lowest at either end of the transverse axis, so that the milk can run readily away. Pressing the mass together, so that the particles are compelled to slide over each other laterally, as when putty is worked, and mortar is tempered, must be carefully avoided, under penalty of spoiling the grain.

Butter machine workers have failed of success chiefly because of the pressure which causes a rubbing motion of the particles upon each other; they mash the butter without properly working it. I have no doubt, however, that the mechanical ingenuity of our country will yet supply a form of this much needed instrument, which will relieve dairywomen of the heavy labor of working it by hand, without injuring the grain.

It is not easy to work out all the buttermilk at once; it is, therefore, better to set it aside after the first working in a cool place for twelve hours, during which the action of the salt will liberate more of the buttermilk; the first process should then be repeated, with the same precautions against the injury to the grain; it is then ready for packing. I need not tell the dairymen of this country that no packages save oaken tubs are fit for butter, nor that the wood from which they are made should be thoroughly seasoned. They should be prepared by pouring boiling water into them, in which they should soak for twenty-four hours; they are then to be filled with strong brine for two or three days, after which they should be well rubbed with fine salt, when they are ready to receive the butter.—*J. S. Gould's Address.*

PREPARING POULTRY FOR MARKET.

IT is too often done thus: The birds are caught, their necks are wrung by holding them by the head and swinging them around once or twice, they are then thrown on the ground to "flop" and bruise themselves until dead; then are plunged into hot water and the feathers stripped off, the skin being often torn, the fat scalded and looking oily, and the whole bird presenting a very uninviting appearance. They are some-

times drawn and mangled in the operation; and there are parties who give them a good feeding just before killing, so as to sell a little corn at 15 to 20 cents per pound. They are not bled; they are often packed warm: come to the market in poor condition, and sell at the lowest prices. The fowls should be plump and fat, with empty crops. Catch them quietly; hold a bird by both wings and tie them: then tie the legs together and hang them one after another on a pole. As soon as hung up in this way, take a sharp knife and cut the heads off, cutting close to the head, and let them hang until the blood is out of them. While still warm pluck them *dry*, removing all the feathers, a few at a time, pulling with a slight jerk the way the feathers lie. Thus the skin will not be torn. The birds should now be hung till cold, and be wiped off with a damp cloth and packed in tight boxes, with clean brght straw next the box all round. If the lot is extra fine, pull the skin back, cut off an inch of the neck, tie the skin over it, trim off the edges and wash off the blood. If the poultry is not to be packed, and shipped to market by rail or otherwise, they may be dipped in scalding water for not over 5 seconds. This shrinks the skin a little, and makes them look plumper; it melts the fat on the surface and gives the birds a clean, yellow look which is attractive. Fowls thus *plumped*, will not keep nor bear packing so well as those plucked kry.

EGG SAUCE.

GET a saucepan over the fire, with a pint of fresh milk in it, seasoned with a little pepper and salt. When it boils stir it in a lump of butter and four half beaten eggs. Allow the eggs to clot if you like, by only occasionally stirring, scraping the eggs from the sides and bottom of the saucepan in the operation—or you may make the sauce smooth like custard, and cut up hard boiled egg around the foul after the sauce is poured over it. Egg sauce is oftner made by stirring hard boiled eggs finely minced, into drawn butter or cream.

COMMERCIAL DEPARTMENT.

PROSPECTS OF THE PORK CROP.

ON this subject the Prairie Farmer remarks:

An exceedingly favorable fall has given the West the most abundant corn crop ever known. The great question among farmers is, what shall be done with it? The days of ten cent corn seem staring them in the face. With the present high prices of beef and pork, the answer is easily given. So far as it is possible, turn it into meat. Do not let the high prices induce sending stock too early to market, but feed all the corn possible first. Good pork will always bring a higher price than that half fattened, and there is little excuse for a second rate article this year. In our own opinion there is not a sufficient supply of hogs in the country to render very great the danger of a low late market. In ordinary times the most advantageous way to market grain in the West, is generally in the form of meat; it is much more so now, when the relative value of corn to beef and pork is taken into consideration, so that even if these commodities suffer a decline there will be an advantage over paying the railroads so great a share of the crop in the form of freights.

We look upon the high rates of the opening pork market as evidence that packers are aware of the limited supply, and that they think that by starting high they can secure the bulk of the hog crop before any great advance is necessary. Returns to the Department of Agriculture from every State show a decrease in the number of hogs, and a great many correspondents state that the hogs are smaller than last year, while almost all report the quality as better. Incomplete returns show that the number of hogs packed last season was about 1,000,000 head less than the year before, while all are aware that good prices caused all available animals to be sent to market, so that we shall look for a still greater falling off this year from the returns of year before last. The abundant corn crop cannot increase the number of hogs, though it may the quality and amount of pork; but if, as the Department returns say, the hogs are smaller than usual, the real amount will not be changed. Again, Henry Milward & Co., publish in a recent circular, statement from 74 packing points in Illinois, Iowa and Indiana, in reply to the question as to the number of marketable hogs, some of which give a larger number than last year; which at one point was

reckoned at double that number, at another 25 per cent larger, and at another 20 per cent larger. At the remaining seven points, the statement was that it was, in general, larger and rather longer. Fourteen points returned about the same number. Fifty-two points returned a less number, stating it in general terms as less. At two points it is stated at one-fifth less; at one point one-fourth less; at nine points one-third less; at five points one-half less, and at one point two-thirds less. It may be remarked here that in the Iowa returns (13 in all) there were no statements of an increase.

To the question as to the amount on hand of old stock of pork, lard and cut meats, 28 points return none; 2 points very little; one 3,000 brls., and one plenty of bacon in the country. From Indiana, 23 points return none; 4 very little; 1, stock light; another, fair, and another, 400,000 lbs. shoulders and sides. From Iowa, 11 places report none, and 4 very little. Returns were received from 28 points in Illinois, 33 in Indiana, and 13 in Iowa—in all 74.

Twenty-one points in Illinois and Iowa and 8 in Indiana return hogs farther advanced than last year, and 16 points less advanced.

The majority (though not a large one) of the number report that farmers will market their hogs late. Sixty-five points out of the 75 report no contracts yet made where the contract price varies from $8 to $10 per hundred.

We may be wrong in our advice to hold on to the hogs, and so feed the corn to them, but give our reasons for the position, and leave our intelligent readers to judge for themselves. In the meantime we intend to watch affairs pretty closely, and give our observations from time to time.

THE EXPORTATION OF CANADIAN STOCK.

FOR some weeks past, herds of cattle have been making their way to the various railroad depots throughout the country, and freight trains have largely consisted of cattle-trucks. There has been a regular bovine exodus from all parts of the land. Hogs, too, have been on the tramp. If our American neighbours were a mutton eating people, we should have to record the fact that the sheep also were fast leaving us; but they eat mutton so sparingly that our flocks are not much affected by the present eager demand for meat in the United States market.

Some people are greatly alarmed at the wholesale exportation of cattle and hogs which is now going on. They think the country is being drained of live stock, and look with gloomy foreboding at the prospect of scarcity, with its attendant high price of meat. But this is a very superficial view of the matter. The live stock which is being sent out of the country, bears a very small proportion to the number of animals owned by our farming population. It requires a large annual sale of stock to work off the natural increase of the herds; and although there has been unusual demand for live produce this fall, there is no lack of young stock left. Our farmers are not so foolish as to leave themselves without breeding and growing animals. The meat market will be rather higher than usual this winter, but our brisk commerce has put a good deal of money in circulation, the consequence of which will naturally be the invigoration of business generally, and consequent ability to pay higher prices for the necessaries and luxuries of life.

The state of things just noticed will have a beneficial tendency, by encouraging our farmers to pay more attention to stock raising. Neglect of this is one of the weak points of Canadian agriculture. The plea in defence of neglect has been that it did not pay to raise live stock. Especially has the idea been prevalent that it was a losing game to raise pigs. The peas and corn required to fatten them were more profitable sold in the bag, than sold in the form of meat. Stock must be kept on a farm if there is to be a proper supply of manure. No stock, no manure—no manure, no crops—are axioms that ought to be as familiar as household words to every agricultural community. In weighing the question of stock-raising, we incline to thank our farmers have not been accustomed properly to take into account the value of the manure thereby obtained. This is, however, a most important item in the profit and loss account of cattle-keeping. Another trouble has been the neglect of root culture. It is impossible to keep stock advantageously without roots. This fact, and the fact also, that roots play such an important part in a judicious rotation, ought to induce more attention to them. Turnip culture has been pronounced the sheet anchor of British agriculture. It has wrought little short of a revolution in farming matters in the old

country, and it will do the same here, if it can be made general. Turnips do not require to be sown until the hurry of spring work is over, and thus a season of comparative leisure may be appropriated to this important crop. They are a pretty sure crop, and, on good land, highly productive and remunerative. In this country they cannot, as in Britain, be fed on ground, but require storage. They, however, stand a considerable degree of cold, and keep well either in pits or moderately well-protected cellars.

Many circumstances point to increased attention to stock raising, as the direction in which the agriculture of this country needs to undergo improvement. The exhaustion of numerous farms by too many white crops,—the necessity of placing less dependence on wheat, and more on other products, the better demand and higher price for stock, all give promise of a change in this respect. The immense mortality among the cattle in Great Britain and other European countries, will have a tendency to keep up the price of stock in this country for some time to come, and should we be spared the visitation, which has wrought such havoc among the herds of the old world, our farmers may confidently expect that stock-raising will be more remunerative than it has been. We trust that the precautions taken by our own and the United States governments, will prevent the infection finding its way across the Atlantic, and that this branch of agricultural industry may receive no check from that source.

The present is not only a good time to raise more stock but to improve its quality. Our farmers, by selling off inferior animals and keeping their choicer ones,—and now that money is a little more plentiful, purchasing improved stock, and driving their females to well-bred animals, may do much toward getting their farms better stocked. It is a golden opportunity which they will do well to make the most of. It costs no more to keep a good animal than a poor one,—in most cases it costs less, and it should be the aim of every one to keep up with the age in respect to improvement. We say to our agricultural readers most earnestly: "RAISE BETTER STOCK AND MORE OF IT."

MONTREAL MARKETS.

ASHES.—The market remains unchanged for both Pots and Pearls.

BUTTER ranges from 21c to 22c for good dairy, but the market is very dull.

OATMEAL, per brl. of 200 lbs.—$4.75 to 5.10, according to quality.

WHEAT, per bu of 60 lbs—Market very dull; no sales reported.

PEAS., per 60 lbs—Dull; no recent sales.

CORN, per 56 lbs.—Latest sale at 57c.

BARLEY, per bushel of 48 lbs.—Farmers loads 60c to 67c per 50 lbs, according to quality.

OATS, per bushel of 32 lbs—No sales reported.

DRESSED HOGS, per 100 lbs.—Inquiry is chiefly for retail purposes; $8 to 8.25 being paid for choice small lots; the market otherwise is dull, a round lot of good carcases bringing $7.87½.

CHEESE, per lb.—Good Dairy 12½c, and Factory 13c.