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LOWER CANADA AGRICULTURIST

MANUFACTURING, COMMERCIAL, AND COLONIZATION INTELLIGENCER

OFFICIAL SERIES OF THE AGRICULTURAL BOARD AND SOCIETIES.

PUBLISHED UNDER THE DIRECTION OF

M. J. PERRAULT,

*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.*

JULY 1866.

Official Department—Meeting of the Board of Agriculture, June 1st—Election of Officers—Montreal Veterinary School—A trial of Implements in August and September next.—**Editorial Department**—Trial of Implements—Montreal Veterinary School—Making a Poor Farm Rich, and how it was done—The Farm House and its Surroundings.—**Farm Operations**—Thin Seeding—Curing Hay—Lime—Cure of the Potato Disease, by W. Boa's Experiments since 1863—History of the Potato Experiments in the application of Manure.—**Breeder's Department**—On the Cure of Cattle—The Turkey, Brooding and Management—Abortion in Cows, Preventive.—**Engineering Department**—Wire Fences, the causes of Failure, and the Remedy—Wire Fence, the cost and how to build it—A Curiosity in the Plough Line—How to set and File a Saw—Underdraining Swamps.—**Horticultural Department**—Transplanting Fruit Trees—To Preserve Girdled Trees—Cabbage—Willow Pollards, White Willow do—Thinning out Plantations—Gardening for Ladies, &c—Old Orchards—A Plea for the Evergreen Tree—Plants for Hanging Baskets.—**Domestic Economy**—How to Keep Eggs—The Farmer's Wife—The Qualified Housekeeper—A few Hints to Young Ladies—The Laundry, Furniture for the Wash-House—Washing—Good Nature—Washing Day.—**Commercial Review**—Ready Markets and Good Prices—Dairy Farming, its Profits, the yield in Butter, Cheese, Milk, and Money per Cow.



SPARGERE COLLECTA

OFFICE AT JOHN LOVELL'S PRINTING ESTABLISHMENT, ST. NICHOLAS STREET,
MONTREAL.

Official  Dep't.

BOARD OF AGRICULTURE FOR LOWER CANADA.

Montreal, 29th May, 1866.

PRESENT:—Hon. U. Archambault, W. Boa, Dr. Beaubien, Major Campbell, Dr. Ross, Hon. U. J. Tessier, and Rev. F. Pilote.

The Secretary read the official notice of the election of the members of the Board for the year 1866.

Major T. E. Campbell is re-elected President and Hon. U. J. Tessier, Vice-President.

The Board sanction the permission given to the following Agricultural Societies to purchase seeds with part of their subscription money, namely: Drummond No. 1; Bagot; Charlevoix No. 1; Vercheres No. 1 and No. 2. It was resolved: That the Secretary be authorized to inform the Agricultural Society No. 1 of Charlevoix, that for the future, that Society must only spend the amount of its subscriptions for the purchase of seed, and it shall be bound to have exhibitions, with the government grant, according to law.

The President begs leave to be absent for an hour, and the Vice President takes the chair.

Reading of a petition from certain persons from Wotton and St. Camille, praying for permission to form a second Agricultural Society in the County of Wolfe.

Resolved,—That owing to the peculiar circumstances in which the petitioners are placed, they having also been organized before the 1st May, and the Board of Agriculture not having met before this day, and finally there being no opposition to this demand, the petition is granted.

Reading of certain resolutions from the Board of Directors of Agricultural Society of Vercheres No. 2, refusing to receive the Riga flag seed, imported by order of the Bureau of Agriculture, the seed being found of an inferior quality and very unclean.

Resolved,—The Secretary be directed to inform the Agricultural Society No. 2 of Vercheres that this Board has acted only as agent of the Bureau of Agriculture, and that the maker must be settled with government,

Reading of a letter from Mr. Danis, praying for help from this Board to establish an agricultural paper in certain counties.

Resolved,—That this Board regret that the present state of its funds will not permit it to give the said pecuniary encouragement.

The President resumes the chair.

Resolved,—That a sum of \$2,000 be voted by this Board for a general trial of agricultural implements, &c., and under the direction of this Board, who accept with kindness, the farm of Sir W. Logan, which was offered for this purpose, by the present tenant.

That a committee, composed of Messrs. Campbell, Archambault and W. Boa, be named to organize the said trial of implements, and that Mr. J. Perrault be invited to act as reporter, in his official capacity of editor of the official journal of this Board.

Resolved,—That a sum of \$300 be voted to establish a Veterinary School in Montreal, under the patronage of the Board of Agriculture of Lower Canada.

Resolved,—That D. McEachran, a graduate of the Veterinary College of Edinburgh and London be named professor of the said Veterinary School.

The Board adjourned to 2 o'clock, p. m.

2 o'clock, p. m.

Resolved,—That Messrs. Archambault and W. Boa be named auditors, to examine the accounts of the Secretary of this Board for the year ending on 1st May, 1866.

The Board adjourned, after having discussed several subjects bearing on agricultural interests.

By order,

GEORGES LECLERE,
Secretary B. A. L. C.

GENERAL TRIAL OF MACHINES AND AGRICULTURAL IMPLEMENTS. UNDER THE DIRECTION OF THE BOARD OF AGRICULTURE FOR LOWER CANADA.

THE Board of Agriculture for Lower Canada is of opinion that the daily progress taking place in the improvement of Agricultural Implements and Machines seems to call for a general Public Trial of their relative superiority, so as to enable the practical Agriculturists of the Country to do justice to the skill and ingenuity of the Inventors and Manufacturers. Impressed with many striking instances of the one and the other, the Board of Agriculture for Lower Canada has the honor to inform the Agricultural Public

and our Manufacturers and Mechanics in particular, that a Public Trial will take place about the end of August and of September next, on the well-known Farm of Sir W. Logan, which has been kindly offered for the purpose by the tenant, Mr. Irving.

The Board is too deeply sensible of the responsibility assumed in undertaking to decide as to the relative claims to superiority of all the implements and machines presented for trial, to neglect providing for the necessary completion of preliminary arrangements on a scale to ensure equitable decisions and a general result, satisfactory to all concerned.

Mr. Irving has obligingly consented to have the land in a proper state of preparation, and the crops necessary for the trial of the implements for ploughing, harrowing, rolling, scarifying, sowing, reaping, hay-making, harvesting, drilling, and preparation of products.

This programme is vast, and it cannot be realized and brought out by any other method than by classifying the implements under several distinct heads or series, assigning to each a Jury composed of five members, including the President, chosen from amongst the best known and most distinguished practical agriculturists of Upper and Lower Canada. A reporting Secretary will be attached to each Jury.

The trials will take place in the following order :

1st. SERIES.—PREPARATION OF FIELD PRODUCTION AND CATTLE FOOD.

1st. Day.—Threshing Machines for one horse—Threshing Machines for two horses or more—Horse Powers—Fan Mills—Separators—Corn Crushers—Straw cutters—Root cutters—Cooking apparatus—and other implements intended for the preparation of the products of the Farm and for Cattle food.

2nd SERIES.—HARVEST.

2nd Day.—Mowers—Mowers and Reapers combined—Hay Spreaders—Horse Rakes—Scythes—Sickles—Hand Rakes—Hay Forks and other implements for harvesting.

3rd SERIES.—PREPARATION OF THE SOIL.

1st Day.—Ploughs for light soils—Ploughs for all purposes—Ploughs for stiff soils—Ploughs for all purposes—Ploughs for deep soiling—Sod and sub-soil Ploughs—Sub-soil ploughs—Swivel ploughs—Gang

ploughs—Stubble ploughs—Flax scutchers.

2nd Day.—Heavy harrows for tenacious soils—Light harrows for gravelly or light soils—Clod crushers—Light rollers—Scarifiers—Root extractors—Double Mould board ploughs—Beet, Carrot, and Turnip Sowers—Bean and Maize Sowers—Grass seed Sowers—Horse Hoes—Potato, Carrot—and Beet Diggers—Spades—Shovels—Hand Hoes—Pitchforks—and other implements intended for the preparation of the soil.

The same Jury will be charged with Land Drainage, to be executed on the spot.

Each of these Trials will be made with all necessary care, in order to obtain a just estimate of the true value of each implement. The inventors and manufacturers will have free permission to make their own selection of men and horses. Measures are adopted whereby manufacturers and visitors will find on the spot every necessary accommodation for themselves at moderate charges, and the stabling, and provender will be provided for the horses engaged in the competition. In a word, the Board of Agriculture is resolved to ensure a thorough examination of the implements at present known, and to obtain for the adjudications made, the thorough confidence of agriculturists, and the individual assent of the manufacturers. In order to perpetuate the memory of their individual success on this occasion the Board of Agriculture for Lower Canada will award gold, silver and bronze medals according to the importance and value of the implements tried, and the number of competitors.

The Jury of the first series will award to the manufacturer of the best Threshing Machine for two or more horses, a gold medal; to the second best a silver medal, and third best a bronze medal; similar medals for the first, second and third best Horse-powers; a silver and bronze medal to the manufacturers of the first and second best one-horse Threshing Machines, with powers. To the manufacturers of the best implements of each kind other than those already enumerated in this series, first a silver medal, second a bronze medal.

The Jury of the second series will award to the manufacturer of the best Mower and Reaper combined, a gold medal; second best, a silver medal; third best, a bronze medal; to the manufacturer of the best Horse Rake and Hay Spreader, a silver medal; second best do., a bronze medal; to

the manufacturer of the best implement of each kind, a bronze medal.

The Jury of the third series will award to the manufacturer of the best implements of each kind, first, a silver medal, second a bronze medal. The hand implements of each kind will be entitled to a bronze medal.

Our manufacturers and agriculturists will appreciate at its just value, the admirable opportunity about to be presented to them of establishing, on their part, the superiority of rival implements of their own construction; others will be enabled to see for themselves, and to judge in the space of a few days, how the farmer of the present time is enabled to avail himself of improved machinery in the economical progress and completion of his labours. Never has such a favourable opportunity occurred for a personal inspection by our Farmers; and the Board is happy in having it in its power to afford it. The Board hopes that the Agriculturists and County societies will not only encourage their members to repair to this Public Trial, but that they will likewise name delegates, appointed to be present, and report. These delegates ought to present themselves at the office of the Secretary of the Board of Agriculture on their arrival on the ground, in order to receive the necessary facilities for reporting on the operations to be performed in their presence.

The Board of Agriculture is desirous to

do its utmost to favour the introduction into our country, of improved implements of Upper-Canadian and Foreign manufacture, and it specially invites the Manufacturers of Upper Canada and the United States, to assist, by their presence, in rendering this Public General Trial of Implements, &c., as widely beneficial as may be. Strangers may rely on receiving every attention from the officers of the Board. The Trial in the first and second series will take place about the end of August, and in the third series about the end of September. Official notice will be given ten days before the day appointed for the trial.

The entries for the first and second series must be made before the 15th of August on the Entrance Tickets, to be procured on application, by addressing to G. Leclere, Esq., Secretary of the Board of Agriculture for Lower Canada, Montreal. Entries for the third series must be made before the 15th of Sept.

In order to have this trial well known generally through our rural districts, the secretaries of Agricultural Societies are expected to attend to the distribution of the circular just sent them. The press will no doubt do its utmost on this occasion to aid this Board in its attempt to promote agricultural progress, by giving to this trial the desired publicity.

By order of the Board of Agriculture.

G. LECLERE,
Secretary.

EDITORIAL DEPARTMENT.

NEW PROSPECTS FOR THE VETERINARY PROFESSION IN MONTREAL.

YOUR readers are well aware that veterinary science has not kept pace with the rapid progress of other arts and sciences in this city, nor in a degree commensurate with the vast numbers and value of our horses, and improved stocks of the enterprising agriculturists in our midst. We do not wish to speak disparagingly of those who have been practicing here, but all are agreed that some improvement is needed.

We have long ago endeavored to urge upon the public in general, and the Board of Agriculture in particular, the necessity of doing something to encourage this branch of science in Montreal. However, our efforts have hitherto been unsuccessful,

yet our interest in the subject has not decreased on that account: we still looked forward to seeing this useful profession taking its proper place. We learn with pleasure that Mr. D. McEachran, who is well known to those of our readers who subscribe for the *Canada Farmer*, as one of the lecturers in the Upper Canada Veterinary School, under the patronage of the Board of Agriculture U. C., to which journal he was also an occasional contributor, having from time to time reported interesting cases occurring in his practice, particularly a case of lithotomy, or the successful removal of a stone from the bladder of a horse, which is the only case of this kind we are aware of being recorded in Canada. He is a pupil from the well-known Edinburgh College, having studied under the late distinguished Professor Dick, and is

also a Member of the Royal College of Veterinary Surgeons, England, &c., who has removed to Montreal, and is about to become a citizen among us, and follow the practice of his profession. The position which Mr. McEachran held in Western Canada augurs well for his success here. In Woodstock, where he resided for some time, he was entertained to a farewell dinner by most of the leading men of the district, and universal regret was expressed by the community at his departure. As to his position in Toronto, suffice it to remark that on the Board of Agriculture being informed of his intention to remove to Montreal, they at once passed a resolution regretting his removal, thanking him for his valuable services in promoting the Veterinary School, and recommending him as an able and indefatigable teacher of the art and science of veterinary surgery; they also directed the Secretary to write an official letter, recommending him to the Board of Agriculture here.

We are glad to learn that Mr. McEachran is about to open an infirmary for the treatment of horses in the city, which cannot but prove advantageous to the owners of horses in the city and neighbourhood. We hope the Board of Agriculture will not fail to embrace the opportunity thus afforded of establishing a school for veterinary instruction.

TRIAL OF IMPLEMENTS.

THE necessities of the age, and the scarcity and high price of farm labor, have given a great impetus to the invention and manufacture of farm implements and machines. Mowers and reapers alone, have, according to careful inquiry, taken the place of a million men. Manufactures of all kinds have become numerous, and purchasers are everywhere inquiring which are the best of the different kinds of farm machines everywhere offered to the public. There are no inquiries which are received more frequently than those which call for our opinion as to the best mowing machine, reaper, thresher, horsepower, horse-rake, horse-fork, feed-cutter, subsoil plow, corn-sheller, &c. Among the vast number everywhere offered to the public, it is of course impossible for us to recommend, from our own experience, the most valuable. If an organization or standing committee, fully competent in every respect, could be appointed to give their whole time, year

after year, to the business of testing by long trial, all the implements and machines manufactured throughout the country, they would have enough to do, and their reports, if carefully made, would be eagerly sought by every intelligent farmer from Gaspé to Sandwich. Such reports would be worth millions of dollars to the country, although manufacturers would complain bitterly of partiality and incompetency.

As we do not expect such an organisation to take the business in hand, the next best is a careful and deliberate trial, conducted by men of ability, under the appointment of agricultural societies. But in trials of this kind, limited to a few weeks at the utmost, it is difficult to arrive at complete conclusions. Some machines, especially those of a complex character, work finely and to great satisfaction, when new; but on the wearing of the many parts, or the bending or distortion of any one of them, it frequently becomes unmanageable, or of little efficiency. The employment for a week or two at a trial may therefore give a very different result from the use during a series of years on the farm.

Another difficulty is, the best made implements are often selected and sent, and the results which they give may be quite different from those which would be obtained from the thousands made for sale. Especial precaution ought to be taken in this direction, and machines selected promiscuously from those offered for sale. It is often difficult for a committee of judges to ascertain the nature of the material used. We have known at least one manufactory of reapers that furnished machines apparently of the best kind, on first using them, but nearly all of them gave out in a year or two.

Testing the ease of draft, by means of the dynamometer, is attended with some difficulties which is shown by the contradictory results obtained by some of the different trials we have already had for this purpose. A very sharp cutting blade in a mowing machine, would give a result quite different from a dull one. A series of knives might be made of the very finest, hardest and most expensive steel, and slipped in specially for such an occasion; or there might be an accidental difference in quality, where the competitors were men of strict integrity and honor. In an actual trial, not ten years ago, we accidentally learned that an adroit exhibitor slightly loosened the screw bolts on his machine,

just before the trial was to be made, and by this trick received the first prize. A continued use of his machine, in that condition, would, of course, have ruined it. Frequent instances have occurred where the same machine, with the same patterns, has succeeded and proved excellent and durable in one manufacturer's hands, and resulted in failure in another."

All these, and many more, are important points for examination at every trial of the kind. Should the Agricultural Board institute a series of trials in future years, the more free from every possible objection decisions can be made, the more satisfactory they will be to the makers, and the more useful to the community at large, and the more credit and honor they will reflect upon the Society.

IMPLEMENT TRIALS IN ILLINOIS AND NEW YORK.

OUR readers are already aware that there is to be a grand trial of earth-displacing and seeding implements in Illinois commencing on the 8th of September and continuing until a fair trial of all the classes of implements can be had. We hear that Bloomington, Jacksonville and Peoria are each making efforts to secure the trial. If there are other towns that would like it, now is the time to make application and set forth inducements to the Secretary of the Society.

The New York Agricultural Society is to have an extensive trial, the following programme of which we find in the Country Gentleman.

MOWERS AND REAPERS.—1. Mowing machines for two Horses; 2. Reaping Machines—hand rakers; 3. Combined Mowers and Reapers—hand rakers; 4. Combined Reapers, with self-raking or dropping attachment; 5. Combined Reapers for use as self-rakers, hand-rakers, as may be preferred; 6. One Horse Mowers.

OTHER IMPLEMENTS AND MACHINES.—7. Horse Powers on the endless chain principle; 8. Sweep Powers; 9. Thrashing Machines; 10. Combined Thrashers and Cleaners; 11. Hay Presses; 12. Fanning Mills; 13. Horse Rakes; 14. Hay Tedders; 15. Machines for Gathering and Loading Hay; 16. Horse Power Hay Forks; 17. Portable Steam Engines; 18. Hay and Straw Cutters; 19. Grain Separators.

ENTRIES to be made at the Secretary's

office, at least one week previous to the 10th of July.

ENTRANCE FEE.—The charge for Entries will be \$25 for each implement in each class.

PRIZES.—In each of the Nineteen classes above given, the Society's large GOLD MEDAL (costing \$75 or more,) is offered as the *First Premium* for the Best Machine. For the *Second Best*, a cash Prize of \$25. But—

IN ANY CLASS in which only a single machine is offered for competition, this machine may after trial, be recommended to the Executive Committee to receive the Gold Medal, if in their opinion worthy of the award. And, in no case, are awards to be made by the Judges, except upon machines in their opinion possessing adequate merit.

IMPLEMENTS NOT INCLUDED for Trial, in the above list may be placed on the Grounds for Exhibition only, if so desired, on payment of an entrance fee of \$5 on each implement. The trial is to be held at Auburn, N. Y., commencing on the 10th of July.

MAKING A POOR FARM RICH.

How it was done.

SOME 25 or 30 years ago I bought a farm containing about 120 acres of land. It had been managed badly for many years preceding the sale of it. Fence rows, where hundreds of loads of stone had been hauled off the adjacent fields, were from ten to twenty feet wide, and were filled with cedars, cherry trees, alders, sassafras, briars, rotten rails, &c. Gutters were washed in various places, exposing a stony, barren soil, that looked like anything else than desirable farm land. An old farmer, on the day of sale, remarked, in reference to the gullies in the fields, that it mattered but little if all such land was washed away.

The buildings were old and dilapidated and needed immediate repairs, to render them at all comfortable for man or beast. This property, however, had two redeeming traits: it was well wooded and well watered.

As was the farm, so was the farmer—poor. To better this state of things was the aim of the writer, which could not be accomplished without much hard work. This had to be done, and he had to do it. —Wood had to be cut and hauled to the

kiln ; lime to be burned, hauled and spread ; fence-rows cleaned out, fences made, &c.

I put 1000 bushels of lime on two ten acre fields, in the fall, before possession was given. These fields were ploughed in the following spring, and put in with corn, which yielded, when husked, not over 50 bushels of sound corn altogether. From one of them, however, I got 100 bushels of buckwheat, having sown some seed among the sparse and puny-looking stalks of corn about the middle of July.

The next season both fields were put in with oats, averaging 40 bushels per acre. I sowed clover and timothy on the oats, and rolled them all in together. The season was favourable ; the seed took well. I mowed these fields two summers in succession, and had a very good crop of hay.

I then put 500 bushels of lime on one of the fields, and in the spring planted it with corn, which yielded me 400 bushels, without the offal. No manure whatever was used for the crop in addition to the lime, excepting the corn was plastered in the hill. Oats, wheat, (manured from the barn-yard,) and two crops of grass followed. The ground was then limed again as before, and I gathered the ensuing season 60 bushels of corn per acre.

The other fields on the farm have been worked as this, with about the same result, excepting the corn, which I think has not been equalled since. There were but two acres of wheat on the place when I bought it, as all the manure made would not cover a greater extent than this, after sufficient was taken out for a potato patch and garden. Two horses and three cows constituted about all the stock. Now there are five horses, and upwards of 20 head of cattle are kept. The manure they make is sufficient for 20 acres of ground annually. By the increased production of my farm, I have been enabled to pay my debts, erect new buildings, and to give my children a good, sound, practical education.

So much for lime ; without this fertilizer I could not have lived. I have never sold more than three or four loads of hay, nor bought more than three or four loads of manure. Several times the wheat crop has yielded 30 bushels per acre. I paid \$31 per acre for my farm, and have refused \$110.

I have written this to show that poor land may be made good with lime, and the increased amount of manure obtained as the consequence of liberal application. Two good horses and a yoke of oxen were all

the working stock used on this farm for several years. Young farmers will do well to remember that oxen will do as much work as horses, eat less grain, require less expensive harness, can be geared in half the time, can be managed more safely by boys, and in fine are preferable in very many ways.

[Thus writes a Bucks Co., Pa. farmer to the Germantown Telegraph, surely a man of deeds.]

THE FARM HOUSE AND ITS SURROUNDINGS.

It is painful to see, as we often do, an utter want of taste manifested by the farmer in locating and constructing his house, and in making the surroundings pleasant and attractive to the eye. In travelling through any part of our country, one may often notice a lack of judgment on the part of the farmer in selecting a site for his house. In the selection he betrays an utter want of good taste. The site is not convenient in respect to the different parts of his farm, nor can the surroundings be made beautiful. Then the building itself is clumsy, ill-shapen and not adapted to convenience and comfort. He may have a fancy for high ground, and place his house on a barren hill, because the prospect thence is more extensive. Or he may locate it in a low valley, because a spring of water is near by. In either case he will transgress the laws of good taste.

Some farmers build very large houses, far exceeding their wants and their means.

Here again is a lack of judgment. Economy, beauty and utility are not consulted. In the structure of his house, and the arrangement of the different rooms, good taste, convenience, comfort and elegance are disregarded. The kitchen, perhaps, will be the front room, the buttery inconveniently separated from it, entrance to the cellar gained only by an outside door ; the woodhouse detached from the dwelling ; and the well dug in the front of the whole. Even the hog-pen sometimes is located by the roadside, and is the prominent object before the house.

Now, we protest against this transgression of the laws of good taste, order and beauty. This clumsiness and slovenliness are unpardonable, where the farmer has the opportunity of adorning his rural home, and rendering it an attractive object by its elegance, convenience and beauty. Let the surroundings of the house be indicative

of good taste, Let the woodbine and the honeysuckle climb the pillars of the piazza.

Let roses and flowers be cultivated in close proximity; and thus you will have objects pleasing to the eye, as you step out from your dwelling. So the fence in front of your dwelling should correspond in neatness with the home itself. The shade trees should be so arranged as to excite the admiration of the passer-by. But a similar good taste should be visible in the laying out of the walks, in the planting of the shrubbery, and the arranging of the flower beds.

Now, some may ridicule the idea of the farmer's consulting elegance of taste in the

structure of his house, and in preparing the grounds about it, and adorning these grounds with shrubbery, walks and shade trees; yet nothing is lost, but much is gained, if by a little labor and outlay of expense, you can make your home attractive and a source of pleasure to your family, and of admiration to your neighbors. Remember that a delightful home supposes a well regulated and harmonious family, the members of which are governed by the laws of kindness and benevolence. And yet we associate with such a family, not a mean rickety dwelling, but one that exhibits taste, convenience, elegance and comfort.

FARM OPERATIONS.

THIN SEEDING.

LAST week we endeavored to impress upon our readers the importance of conducting experiments in farm operations. We spoke of its importance in a general sense, particularizing no particular direction. We have been more impressed with the importance of such suggestions by reading, since that time, a letter upon "thin sowing" from that celebrated farmer, J. J. Mechi, of Tiptree farm.

He writes that in the midst of a wheat field sown in his usual method of four pecks per acre, he has one half-acre dibbled in at the rate of one peck per acre. The thickest sown is spoken of "as green as a grass field," while the half acre looks, at a distance, like a bare fallow, and did he not know from past experience that such would not be the case, he should condemn it as a failure. This past experience tells him that these seeds at intervals of six by 4½ inches will send out numerous shoots to radiate horizontally and afterward with a strengthening curve turning upward and bearing at their extremities large heads of plump, well developed kernels. There will be more straw (tested by weight,) he adds, and it will be free from mildew, and it will stand erect till cut with the reaper. In 1864, planted in the same manner, his yield was 58 bushels and 2½ tuns of fine quality of straw per acre. In 1865, the yield was 58 bushels per acre, (straw not weighed,) and in both years the yield exceeded the thickly sown portion of the field by two bushels per acre, together with a more abundant yield of straw.

In summing up the Alderman says:—

"I don't believe that farmers know how much they often lose by thick sowing. They would do so if they tested, as I have done for years, comparative qualities on a small scale. Every man should judge for himself, according to his soil, climate, and other circumstances of condition, &c. The frothy straw and light kernels of a thick-sown and early-laid ground crop are a losing affair. If ever we hear of an extraordinary yield, it is usually from a crop so thin in the spring, its owner thought of plowing it up; but after well harrowing, &c., it branched amazingly, and became the best crop on the farm. It is clear that there is some gross error in sowing when our average increase is only nine kernels for one. Mine is at least 40 to 58 for one."

Now of course it is not to be expected that our farmers who put in their hundreds of acres of small grains can possibly expend the time and labour to dibble in their crops, but will it not be well for them to see if they are not annually wasting a large amount of seed by sowing too thickly? There are many advocates of thin seeding in this country already, but we doubt if the majority of farmers have determined how far they may with profit reduce the amount of seed or whether thick seeding is not really best for the prairies. If there be such, it is not for them that these hints are thrown out. It has been some time since we have seen anything of our farmers upon this subject. Let such as have already carefully experimented in this direction give others the results of such experiments. We have as a general thing believed in tolerable thick seeding.—*Exchange.*

CURING HAY.—LIME.

IT has been affirmed by eminent agriculturists that hay could be safely deposited in the mow in a semigreen state, and come out green, fragrant and exceedingly palatable to stock, by sifting upon each load from four to six quarts of air-slacked lime. The philosophy of it lies in the chemical fact that lime is a powerful absorbent. The Rev. E. Willis, of this city, tested this process last season. It will be remembered that the weather was most unpropitious for making hay. Finding it would be impossible to save his hay by out-door exposure, he carted it into his barn in a heavy, green condition. He sifted the lime upon it, and it cured handsomely, and came out this spring as inviting as flowers pressed in a herbarium. His horses and stock devoured it greedily, and preferred it to the best sun-cured hay.

This is a valuable "chip" of knowledge for farmers. Necessity often compels hay-makers to choose between the alternatives of leaving out in a drenching rain, a few loads of half-cured hay, thereby spoiling it, or hurrying it into the barn with a "right smart chance" of its heating and moulding. Lime will absorb all the vegetable moisture and save the hay; while salt gathers moisture, and fails in many cases to preserve it. Persons desiring to inspect this hay can do so by calling on Mr. Willis and learn more fully his experiment. [*Rockford (Ill.) Register.*]

CURE OF THE POTATO DISEASE.

J. PERRAULT, Esq., M.P.P., *Editor of the Lower Canada Agriculturist.*

St. Laurent, July, 1866.

DEAR SIR,—About the time Professor Dawson published his Agriculture for Schools, I communicated to him some of my experience respecting that mysterious disease which has been developing itself for the last fifty years in the potato plant. Having perused Professor Dawson's theory on the subject, I find it to agree so closely with the conclusions which I had come to, under my observations and practice as also by experiments I have been making in the cultivation of the potato plant for the last three years, that I am becoming more and more confirmed that the predisposition of the plant and tubers to decay and rotteness has been brought about by

a want of conformity to the law of nature, in the cultivation of the plant.

If my memory serves me right, I think I informed you that a farmer in the County of Argenteuil, in the winter of 1863, told me he had got a kind of potatoes that produced the balls in such abundance that he had pulled them off the stalks and fed them to his swine in summer. It struck my mind at the moment this must be a young and vigorous variety, at least capable of containing the species by the natural seed. I have not seen a single ball on any of the old varieties for many years, an evidence that they are dying out of old age and debility, and I believe it is impossible to regenerate these old kinds. Within the last twenty years, over and over again, I have not been able to save from the whole crop the half of the quantity of the seed planted. The potato is one of the most perishable of all our cultivated crops. If exposed to a temperature a few degrees below the freezing point, for a few hours, there would be an everlasting end to the potato. Supposing such an event to take place, and that every potato tuber in the world should be frozen to death, I hope, before closing this paper, I shall be able to show that Infinite Wisdom and goodness has ordained that even in cold Canada the potato need not become extinct.

Experiments since 1863.

In the spring of 1863, I obtained twelve bushels of the above mentioned (supposed) new variety of the potato; I had them planted about the 20th of May, in the same field with the old kinds, and all cultivated in the same manner. The old kind was struck by the blight about the second week of August; the tops became black as if scorched or charred by fire, and the crop would not pay for seed and labour; it is true, there was still a remnant left that might have been planted again, which in more favourable circumstances might produce better results, but a thousand acres of such a crop would not produce one single grain of the natural seed. The new kind was not at all affected by the blight; they kept a rich green colour, were covered with beautiful flowers, and became loaded with balls or the natural seed; they also produced a number of over ground tubers. About the end of September the leaves became yellow, and the stalks fall down, completely covering the ground, indicating full maturity or ripeness. From 12 bushels planted we harvested 240 bushels of sound

potatoes; I did not see any signs of rot except in a row, contiguous to the old diseased kind—there I observed a few, not more than half a dozen, that showed symptoms of the disease.

I was so well satisfied with both quantity and quality of this crop, I thought it would only be doing a duty, that every farmer owes to his neighbour, to recommend any discovery he has made during his practice that is likely to become beneficial to all. I sent some of these potatoes to the person who provided the dinner at our Agricultural Exhibition; they were cooked and presented on the table, and by all present were pronounced good. In the spring of 1864, I sent them to many different parties, in different localities, who were kind enough to write and inform me how they succeeded with them.

Captain Raynes, Côte St. Antoine, says, "The white potatoes I got from you, last spring, have given me great satisfaction, they far exceed in yield any potato I have tried; and I have seen no rot among them. I considered them so good for the table that I use none else." (This is saying a great deal for this variety as I believe the captain has cultivated more varieties than any other person in the Province).

Mr. James Mairs, Ulverton, Eastern Townships, writes me a good letter, giving a detailed statement of his manner of cultivation, and the nature of the soil in which he planted a barrel of these potatoes, and the results. In answer to certain queries, he says, "The yield, with the same cultivation, is much in excess of any of the varieties grown in our section; and I consider the quality equal to the best kinds we have—they were not planted contiguous to any other kind. They produced and matured the seed balls in great abundance. I put them in pits through the winter, on the same ground on which they were grown, and opened them only yesterday, (the 17th March,) and found them perfectly free from rot, or any other disease; I have not found even one that has any appearance of rot. The common kind rotted considerably in the early winter after being put in the cellar. I have no hesitation in pronouncing your kind, *the potato*."

The late Mr. Charles Crawford, Petite Côte, wrote to me, and says.—"In reply to your inquiries respecting the potatoes, you sent me last spring, I beg to state that they will yield, with the same culture, fully as much as any other variety that I have plant-

ed. I consider them quite as good as any other variety that I know of for the table. I planted them on the 20th of May, in light sandy, land putting a small quantity of manure in the drills at the same time, and have found no rot among them, so far; amongst all the other varieties I have found the rot. I find them an excellent variety for cultivation."

Mr. C. McArthur, jr., Côte St. Paul, says. "The bag of potatoes I got from you yielded a cart load of sound potatoes. All the other kinds I planted rotted."

Mr. A. Macfarlane, Côte de Neiges, says: "The potatoes you gave me were planted in the same way, and at the same time as some others; but strange to tell, when taken up in the fall yours were all sound and the others all rotten."

I might multiply instances, but the above being taken from the East, West, North and South of Montreal, it should suffice to show that this variety, is capable of resisting the disease, while all the old varieties have fallen, or are falling before it; but my subject is not exhausted yet.

I got in exchange, from Captain Raynes, a bag of potatoes, in the spring of 1864, said to be a new variety, not more than 8 or 10 years old, and rot proof. They are known by the name of Garnet Chillies. I had then what I considered two new kinds: and I determined to put their powers of resisting the disease to the test, by exposing them to all the supposed causes of the disease which I had in my power to bring, to bear upon them. The spring of 1864 was very wet, and my field for green crop that year was a rich, heavy clayey loam. It was near the end of May before we could put a plow into it, and it was not in good order then. We prepared it the best way we could, and got them planted. With a view to make them rot, if rot they would, we put in the drills what I consider the strongest of manure, that taken from under an open floor or cellar, over which pigs had been fattened; both kinds were cut into sets, and planted amongst the manure, and covered with the plow, in the ordinary way. They came up quickly, and flourished to our heart's content. The Garnet Chillie blossomed while quite young, and continued to put forth large clusters of blossoms one after the other, during the whole summer, but I do not think they produced a single seed. The other kind put forth splendid flowers, and also matured an abundant crop of seed balls. There was a few sets of two old kinds drop-

ped amongst them, the one a red kind, and the other is known in this locality as the Early White.

This potato was brought from Scotland, and first planted at Côte de Neiges, over 20 years ago; from that day to this it never produced a single seed. I have planted it every year since. The time for to bring up was very wet—much resembling the spring time for planting; these being the first planted in this field, were the last to being taken up, and so were exposed to all kinds of bad weather—yet when gathered we did not find a single diseased potato in either of the new kinds, but of the old ones there was not a sound one to be found.

Who can reconcile the atmospheric, or insect theory, with these facts—all being alike exposed? It is true the atmosphere has a powerful effect on everything that lives, in certain conditions. It levels in death, frail and consumptive animals and men; while the the vigorous and sound of lung scarcely perceives the difference, and lives on. Why should not the atmosphere have an analogous effect on vegetable as well as animal life? The attacks of insects theory I believe to be rather an effect than the cause of the disease; and though a microscopic fungus is usually found in the diseased potato, yet it is not the less certain that an enfeebled condition of the plants must predispose to the ravages of the fungus. I had two other fields with potatoes—upon one of them I planted the new kind alone; it was only small, but from it we gathered 17 cart loads, and all sound. On the other field I planted a portion on one side with the new kind, and the rest of the field with the Early Whites, except except ten rows in the middle of those which were planted with the new kind. This I did with the intention of observing whether the disease would affect the sound kinds if they came in contact with those already infected. I had some suspicion that it might happen from the few I found in the first year's planting, as also from the way I have seen it always commence. It never strikes the whole field at once, but commences on a small spot, or spots, where the plants are perhaps more predisposed to the disease; and from thence it spreads like wildfire over the whole field, and kills where it goes, except there is something sound and strong to resist it. About the end of August the black spots made their appearance in the Early Whites, and the whole of them, in a few days, were black enough;

the other kind kept their green colour, untill nipped by frost. When taken up we found a few in the rows contiguous to the Whites that were evidently infected—but very few; perhaps not one in one hundred, out of 500 bushels of the White. We could not save over 36 bushels that were fit for planting. I have still a portion of the Early Whites which I intend to plant in spring; but I shall keep them apart from the others, or have them taken up at once should the disease show itself. In 1865, I planted very few of the early sort, and it was only in them that the rot has been seen; our general crop was Garnet Chillies, and the other new kind. We raised one hundred cart loads of them, or 2000 bushels, and have not seen the sign of rot in them as yet. I doubt not that the disease may be communicated by contact, just as cholera and other infectious diseases are communicated to men and animals.

The field in which my first crop of the new potatoes were planted was cleared of the tops, and plowed in the fall, and sown with barley. In the spring of 1864, I visited and examined that part of the field on which the potatoes grew that produced the balls, and found that the seed in the balls that were plowed down in the fall had vegetated, and come up in clusters all over the ground—many of the balls having produced from ten to twenty or thirty individual plants; of course these plants were very small—their leaves were not more than one-eighth of an inch broad, and the root and stem as fine as hairs. No person would have suspected they would produce potatoes except some one that was looking for them: I removed several of those from under the shade of the barley, and planted them on open ground, without separating the cluster, except a single plant which I set by itself. The stalks of those that grew in clusters were very slender, and produced tubers not much larger than beans—the separated plant produced several larger tubers, one of them fully as large as a pigeon's egg.

In the spring of 1865 I planted the seedlings all in one row—the small ones uncut, the largest one cut into seven sets; they were very small—but all come up, cut and uncut. About the same time they came through the ground very small but throve; by the 1st of September their tops covered a drill $3\frac{1}{2}$ feet wide. I never before saw such foliage on any potatoes whatever;

quite a number of them blossomed,—many of the tubers were as large as the medium size of the parent tubers; and one plant produced a cluster of balls—an event I did not expect until the next planting. I may here observe that on looking over the fields on which I have planted the parent stock of those seedlings, when cut into sets, every plant, almost without exception, blossoms; but all do not produce seed; but when a single large potato is planted in a hill without being cut, they invariably produced seed. When a large potato, containing 15 or 20 eyes is cut into as many sets, every eye produces a plant; but when a large potato, containing as many eyes as the one that was cut, is planted whole, I have seldom found, that more than three or four eyes put up stalks; these grow much more vigorously, and of course more capable of performing all the natural functions of the plant. It may be thought economy and wisdom to get twenty plants instead of four; but if we are violating an organic law in cutting the potato to pieces, before planting, and by that means rendering it incapable of continuing its species—which I think I see good reason to believe we have been doing—we may find after all that our economy is but waste, and our wisdom folly.

It was found by experience, in Scotland, that out of the same potato it was possible to take sets that will, and others that will not produce the curl. I saw several fields last season that were completely destroyed by this disease. The sets taken from the end of the tuber nearest to the cord by which it is fastened to the plant would produce the curl, while those taken from the top of the tuber would be free from the disease. When planted whole the eyes nearest the cord, or root end of the tuber remain dormant. The three or four stalks that grow from the top of the tuber, which always start first, rob the germs at the other end of the element necessary to start them into active life—the stronger germs having appropriated all the nutriment the tuber contained to themselves.

In the spring of 1865 I sowed seed saved from the crop of 1864; the balls were dried in the fall to keep through winter. They were steeped in water until the pulp became soft like jelly; the seeds were washed out, dried, and sown on the 24th of May. They came up, and produced a crop of small potatoes. On a portion of a field on which potatoes grew in 1864, and

on which carrots were sowed in 1865, I observed that potato seed had come up; I told the hands that thinned the carrots not to disturb the growth of any of the seedlings that were in the rows with the carrots. I gathered up those and showed them at the Provincial Exhibition, in September last, along with some of the parent stock, and seedlings of the second year, as also a quantity of seed balls. I was rather disappointed that the judges of the root crops did not notice them in their report—(I was perhaps silly in thinking they deserved attention more than any thing presented there)—convinced as I am that it is only by raising them in the natural way, that is, from the seed, that the potato can be regenerated and continued in cultivation for any great length of time, without weakening and breaking down its natural constitution.

History of the Potato Plant.

It would be interesting and instructive to know what is the natural age of the potato plant. It is evident that it is not intended to live for ever; if so, there was no necessity for the seed. It may be said they have only been recently brought into cultivation, and appears to have been introduced into almost every civilized country in Europe and America about the same time, — having been treated almost universally in the same way; disease and death also came upon them at the same time and in the same way. If there had been no regeneration by the seed, the cultivated varieties might have been, and certainly will become extinct.

It appears that the name of the plant was known in Scotland in 1683, and perhaps planted in some of the gardens about Edinburgh as a curiosity. It was not made the object of useful culture, among the Scotch, until the year 1728: and they were then indebted to a cottager for first attempting its culture. This man's name was Thomas Prentice, a day laborer, living near Tilislyth, in Stirlingshire, and drawing his subsistence partly from his little plot of ground. This crop proved very valuable, and was almost instantly in demand for the propagation of other crops, first, among the cottagers, and then among the farmers. Prentice continued to cultivate this root very carefully, and to supply his neighbours with the produce of his crop. In a few years he found himself in possession of what he considered a fortune. He sank his capital in an annuity at good interest, upon which he lived independently

to an old age. He died in Edinburgh, in 1792, at the age of eighty-six, having thus been for 64 years a witness to the happy effects of the blessings which he had been instrumental in conferring on his country. Still the culture of the potato made slow progress; the year 1742, which was long remembered in Scotland as the dear year, gave an impulse to the cultivation of the potato. Previous to this general scarcity, in 1743, some potatoes which were growing in the county of Roxburgh (my own, my native land,) were so uncommon as to have been considered objects of curiosity; but immediately after the dear year, the farmers of Lothian began to make this a branch of field husbandry.

In England, with the exception of Lancashire, the culture of the potato made slow progress. It was known in Yorkshire only as garden produce down to 1760, and in Somersetshire it was rare to meet with a whole acre, under this culture, so late as 1770. Miller in his *Gardener's Dictionary*, published in 1771, names only two varieties, and distinguishes them only by their colour, red and white. Not many years after the potato began to from an important article of English husbandry; and in the year 1796 there was planted, in the county of Essex alone, 1700 acres with this root, for the supply of the London market. It (the potato) was known in Sweden in 1720, but did not come into general cultivation until 1764. The potato was still unknown to the agriculturists of Saxony so late as 1740 but with them it rapidly increased; the Swiss discovered the value of the potato about the same time in which it was introduced into Sweden. It makes a very prominent figure in the husbandry of Poland—in 1827, as much as eight million five hundred and seventy (8,576,370) cwt. of potatoes were produced in that country.

It is very difficult to say when the potato was first introduced into Ireland; but it is pretty certain that it was cultivated there much earlier than in any part of Europe. We may say it was cradled in America in the 17th century, and nursed to an estate of perfect manhood, in Ireland, during the 18th, and in the second quarter of the 19th it began to show signs of weakness and disease, and died, carrying with it to the grave somewhere about one million of its cultivators.

In Canada, until years after the commencement of the present century, the cultivation of the potato can scarcely be

said to have commenced, and then not by raising new potatoes, but by importing some of the best of the old kinds; and these became diseased and died at the same time with their English, Irish and Scotch relations. After all that has been said and written by scientific men on this subject, without producing anything conclusive, it would be presumption on my part to say that I have penetrated and laid open the mystery; but I will hold to the ideas set forth in this paper until I have proved, by experience, that they are wrong. I will close this paper by stating that I have been eagerly looking for some new variety amongst the seedlings I have raised. It is a generally received opinion that the seeds from any single ball will produce different kinds of potatoes. I have now raised seedlings from two successive crops, and from great numbers of balls, and find the progeny to possess in perfection all the characteristics of the parent plant. I now despair of getting any new variety, until I find another variety that can mature its seed. We may then get a new kind by crossing, or as horticulturists call it hybridication. I have only one kind that does mature the seed. I examined the Garnet Chillies, row by row, and found only one single ball, and that was on the row next to these that produce the seed; I gathered it and put it in my pocket, thinking that from it I might get a cross, but unfortunately I lost it. We are told that the seeds from any single apple will produce different kinds of trees; but I am convinced that any apple tree, raised from seed, and situated 50 miles from any other apple tree, that every seed taken from that tree and planted will produce trees exactly after their kind, just as my potatoes are doing. There must be two varieties at least, sufficiently near to each other to allow the pollen to be carried from one to the other, before a third can be produced, partaking of the nature of both.

WILLIAM BOA.

SEEDS AND TESTING THEM.

No farmer will deny the importance of sowing and planting good seed. Where there is doubt, let it be tested about three days in the chimney corner, in a box with earth in it moistened with water. Plant therein ten seeds, and observe how many germinate; this may save the labour of re-planting in case of bad seed thus detected, and, perchance, the loss of a seasonable and good crop.

BREEDERS' DEPARTMENT

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 the 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 however 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 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 advantages of to-day retained to be added to those of yesterday, to which end not only must the kind and the quality and the 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 bedding and pens do increase the plague of lice to which calves are, even under favourable circumstances, too liable.

Let, then, the pens and the bedding with which they are provided be clean and sweet, and let the calves 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 commonly received 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 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 them; and all this is done with the view to harden, and so to improve them. In defiance of all good rules of breeding is this done, as it

deed, it is in defiance of all rules of an enlightened 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 it 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.*

THE TURKEY—BROODING AND MANAGEMENT.

HE domestic turkey can scarcely be said to be divided, like the common fowl, into distinct breeds; although there is indeed considerable variation in color, and also in size. The finest and strongest turkeys are said to be those of a bronzed black, resembling as closely as possible the original stock; they are reared the most easily, are large, and fatten rapidly. Some turkeys are of a coppery tint, others of a delicate fawn color, others particularly gray and white. All these are considerably inferior to the black; their color indicates something like degeneracy of constitution, and they are seldom very large-sized.

To describe the domestic turkey is superfluous; the voice of the male, the changing colors of the skin of the head and neck; his proud strut, with expanded tail and lowered wings jarring on the ground; his irascibility, readily excited by red or scarlet colors, are characteristics with which all are conversant. Turkey-cocks are pugnacious and vindictive, and often ill-treat the hens; they have been known to attack children; and combats between them and the game-cock have taken place, in which the latter was more oppressed by the weight of his antagonist than by gla-

diatorial skill, in fact the bulky hero has usually been worsted, as he cannot use his spurs with the address exhibited by the game-cock, which moreover fights with method.

The adult turkey is extremely hardy, and bears the cold of our winter with impunity; during the severest weather, flocks will roost at night upon the branches of tall trees preferring such accommodation to indoor dormitory.

The impatience of restraint and restlessness of the turkey render it unfit company for fowls in their roosting-place; in fact, the fowl house is altogether an improper place for these large birds, which require open sheds and high perches, and, altogether, as much freedom as is consistent with their safety. Although turkeys will roost, even during the winter months, on trees, this should by no means be allowed; the feet of the birds are apt to become frozen from exposure to the air. It must be remembered that the domestic turkey, hardy as it is when adult, is not equal in point of endurance to its wild relative, bred in the woods and inured to the elements. Turkeys are fond of wandering about hedgerows and the borders of fields; they love to visit turnip fields, where besides the leaves of turnips, which they relish, they find insects, slugs, etc., which they greedily devour.

In the morning they should have a good supply of grain, and after their return from their peregrinations, another feed; by this plan not only will the due return home of the flock be insured, but the birds will be kept in good condition, and ready at any time to be put upon fattening diet.

In the choice of birds for stock, care is requisite. The cock should be vigorous, broad in the breast, clean in the legs, should be bright, and the carunculated skin of the neck full and rapid in its changes of color. The hen should be like the cock in plumage: those with white feathers appearing amidst the black should be rejected; her figure should be plump, and her action lively and animated. The hen breeds when a year old, or rather in the Spring succeeding that in which she herself left the egg; but she is not in her prime until the age of two or three years, and will continue for two or three years more in full constitutional vigor.

About the middle of March, generally speaking, the female commences laying; she indicates the coming event by a peculiar cry, by strutting about with an air of self-satisfaction, and often by prying into out-

of-the-way places evidently in quest of a secret spot for incubation ; for this instinctive dread of the male is not removed by domestication, nor has the male lost that antipathy to the eggs which is his characteristic in a state of nature. She should now be closely watched, and some management is required to induce her to lay in the nest assigned her. The nest should be made of straw and dried leaves ; it should be secluded ; and to excite her to adopt it, an egg, or a piece of chalk cut into the form of an egg, should be placed in it. When her uneasiness to lay is evident, and symptoms prove that she is ready, she should be confined in the shed, barn or place in which her nest (which should be in a wicker basket) is prepared, and let out as soon as the egg is laid. The turkey-hen is a steady sitter, nothing will induce her to leave her nest ; indeed, often she requires to be removed to her food, so overpowering is her instinctive affection. The hen should on no account be rashly disturbed, no one except the person to whom she is accustomed, and from whom she receives her food, should be allowed to go near her, and the eggs should not be meddled with. On about the twenty-sixth day, the chicks leave the eggs, and these like young fowls, do not require food for several hours. It is useless to cram them as some do, fearing lest they should starve. When the chicks feel an inclination for food, nature directs them how to pick it up. There is no occasion for alarm if for many hours they content themselves with the warmth of their parent and enjoy her care only. Yet some food must be provided for them, and this should be of course suited to their nature and appetite ; here, too, let the simplicity of nature be a guide.

The first diet offered to the turkey-chicks should consist of eggs boiled hard and finely mixed, or curd with bread crumbs and the green part of onions, parsley, etc., chopped very small and mixed together so as to form a loose crumby paste ; oatmeal mixed with a little water may also be given. They will require water ; but this should be put into a very shallow vessel, so as to insure against the danger of the chicks getting wet. Both the turkey-hen and her chickens should be housed for a few days ; they may then, if the weather be fine, be allowed a few hours' liberty during the day, but should a shower threaten, they must be put immediately under shelter. This system must be persevered in for three or

four weeks. By this time they will have acquired considerable strength, and will know how to take care of themselves. As they get older, meal or grain may be given more freely. They now begin to search for insects and to dust their growing plumage in the sand. At the age of about two months, or perhaps a little more, the males and females begin to develop their distinctive characteristics.

In the young males, the carunculated skin of the neck and throat, and the contractile horn-like comb on the forehead assumes a marked character. This is a critical period. The system requires a full supply of nutriment, and good housing at night is essential. Some recommend that a few grains of Cayenne pepper, or a little bruised hempseed be mixed with their food. The distinctive sexual marks once fairly established the young birds lose the name of "chicks," or "chickens," and are termed "turkey-pults." The time of danger is over, and they become independent, and every day stronger and more hardy. They now fare as the rest of the flock ; on good and sufficient food.

With respect to the disease of the turkey, with them as with all other poultry, prevention is better than cure. The most important rules are, let the chicks never get wet, and encourage them to eat heartily by giving a good variety of food ; yet to beware of injuring the appetite by too much pampering. Taking a pride in them is the great secret of success in the rearing of domestic poultry.—*Louder's Domestic Poultry.*

ABORTION IN COWS—PREVENTIVE.

THIS malady, disease, or whatever it may be termed, is manifest to an alarming extent in many localities. In many of the large cheese-dairying communities in the State of New York, its prevalence is such as to excite the deepest anxiety. The loss it has already caused has nearly doubled the price of dairy stock within the past five or six months, and unless stayed, must ere long affect the price of dairy products. We also see mention made of cases in other portions of the country. In fact, an unusual number have occurred within the range of our own acquaintance. So far, the cause seems inexplicable—involved in mystery and speculation. Any light, either as to cause or remedy, will be eagerly sought by the consumer as well as the producer. A correspondent of the *Rural American* gives some practica

advice upon the subject, which should receive attention. We have no great faith, however, in the efficacy of tail-splitting and blood-letting. Proper feeding, cleanliness, warm stabling, due exercise, &c., appear to us more reasonable. The writer says:

"Having had some experience as a cattle dealer, I think I can say something that will be of use to my brother dairymen. Keep from five to eight head of cattle in one stable, and always well bedded. Give them a peck each of roots every other morning, during the months of January and February. Feed them in the morning about half the quantity of hay each animal will need, and at eight or nine o'clock let them out and feed again. It is better for them to go a hundred rods for water than five or ten rods. About four o'clock put them up, having previously seen that the stables are well bedded and the racks filled with hay.

The stable floor should have a slant backward of about four inches, and the stalls should be so arranged that the animals will not be near enough to hook each other. Raise the bottom about eight inches from the floor, so that the animal will not be obliged to get upon his knees to eat.

About nine o'clock in the evening go out

and feed again, but about half the quantity which was given when the animal was put up for the night. Don't salt too much: once-a-week is often enough, and then give it in a bran mash.

If any of your cows fail to thrive, split their tails so as to have them bleed about a quart. Feed through the months of March and April with three quarts of corn and oatmeal to each every morning. A day or two before calving give each cow four quarts of dry oats, in the morning of each day, and the morning after calving give a peck of the same grain.

This has been my treatment for 15 years, and I have never had the slightest difficulty. In my opinion, the chief cause of abortion in cows is, that dairymen milk them too late in the fall, according to the feed given, consequently the cows become thin. Then, again, they are kept in the stable too much. Irregular feeding, and not enough, is very hurtful, as well as having too many in one stable, crowding too close together, and whipping over the head while tying up or feeding.

Keep your stables warm, yet well ventilated overhead, and your yard dry and well littered with straw.

ENGINEERING DEPARTMENT.

WIRE FENCES—THE CAUSES OF FAILURE—AND THE REMEDY.



R. EDDEN,—As you suggest, "the high price of lumber will drive many farmers to the use of wire." I am well aware of the prejudice that prevails against wire fences. I am well apprised at the same time, of the causes of this prejudice. Were I to take specimens of this kind of fence as you see it throughout the country, as an indication of what may be expected of wire, as a protection against farm stock, I say "deliver me from all such."

There is no form of fence so easily and rapidly put up, nor is there any other form of good secure fence that can be put up so cheaply.

One common cause of failure is in setting the posts too far apart, but by far the most common fault is in putting up the wire in a bungling and "slip shod" manner, and especially in not having it thoroughly straightened before putting it up, thus

enabling you to put it up taught, with a good guarantee that it will remain so.

The wire is generally put up from the original coil, abounding in short bends, and presenting the opposite of the straight taught wire that it should be, when "keyed up." The result is, that cattle insert their necks between the wires, reaching after corn or grass, and the pressure so applied, takes out these kinks for the time being, thus tempting cattle to become breachy.

Thus, the whole question of insecurity or security in a wire fence, hinges upon this one thing, viz., a slack, poorly fastened wire, all kinds of farm stock soon learn not to fear; whereas, a well fastened wire, kept taught, is a thing dreaded by all dumb beasts, and they will never attempt to force it a second time.

Soon after moving to the West, foreseeing that timber and lumber of all kinds would become scarce, and wishing to adopt an economical first-class fence, one that would afford good security against swine, sheep, and the larger class of stock, we fenced in,

as an experiment an acre and a half, for a garden; posts six feet apart, two six inch boards at the bottom, five inches apart, and two wires above. This fence was in use three seasons. And the only animal that I now remember of ever having occasion to turn out of it, (and we had a large stock of cattle and horses at large, during the time,) was a mule belonging to a neighbor, (one of a pair that weighed each about 1200 cwt.) These mules were running at large, and the owner started them for home on a run, down hill toward the garden. The foremost mule, knowing nothing about the fence, came charging down at a furious rate, aiming for one of the six feet spaces between the posts. But, "presto," big mules may find their match, as well as the small fry, as was the case in this instance, for striking the top wire with his breast, he was "ended over" in a twinkling, alighting upon his back, inside of the enclosure. His mate, seeing that something "was up," braced himself and came to a sudden halt. This fence was ever after a terror to these mules, and the circumstance is related to show the great strength of a No. 7 wire, (the size used in that case;) as also the importance of having the wires well fastened, so that no ordinary or extraordinary force will cause them to loosen or slack. The only effect in the above case, was a very slight slacking of the wire, not enough to require attention, and the mule was not injured by the "trip up"

Being satisfied with this kind of a fence, in April, 1862, we enclosed a field of about ninety acres, posts eight feet apart, two sixteen feet pine boards, six inches in width, at the bottom, and two No. 8 wires above. Two wires would have answered for all honest, well, disposed cattle.

But this kind does not always prevail about you, and besides cattle may not always be allowed to roam where they would and by coming daily near a neighbor's corn, may not be equal to the temptation.

The following season I was compelled to add a third wire at a cost then of 15 cents per pound more than the cost of the two wires first put up. For hogs, sheep, and cattle stock, the fence as above described, *two boards and three wires*, is a *secure and satisfactory fence*.

The cost and how to build it.

Drive, or set your posts eight feet apart. For corner posts use round oak, 8 to 10 inches in diameter, or the equivalent to

this in the form of a quarter or half stick. Brace the corner post from its top down to the foot of each of the posts nearest to it securely. The corner posts should be eight feet in length, and full three feet in the ground. If boards are used on the fence, nail these on before the wire is put on. Unload at each corner of the field the amount of wire required for one side. Mount a boy ten or twelve years old upon one of your horses, with harness on, and a whiffletree ready for use. The coils of wire are made up of strans 100 to 120 feet in length, usually. Back your horse up to the corner post, with whiffletree close up to the post. Bend the end of a strand of wire eight or 10 inches from its extreme end through the eye of the whiffletrees, winding the end once around the body of the strand. Be prepared with a smooth, strong stick one and one-fourth inches in diameter and two feet in length. Uncoil a strand, and supposing you are at the northeast corner of the field, go west with your strand of wire as far as it will reach from the corner post. Attach the free end to the stick in the same manner as you fastened the other end to the whiffletree. Now take the stick in your hands as you would take the handle of an auger. Step back till you have drawn the wire tight, pulling the whiffletree close up to the corner post. Now signal your boy to start up, moving slow and steady along the east line of fence, you holding back on the wire, giving the horse about all he wants to pull. In this movement you will perceive that you are travelling *east*,—your horse *south*, thus the wire is in the form of a square, sliding around the round surface of the post, cutting into the wood an eighth to a quarter of an inch, and in passing through this groove it is made perfectly straight. As you come close up to the post, let go of the stick with your right hand, holding firm with the other, allowing the right hand end to go up against the post. This will stop your horse, and the boy being instructed to keep an eye upon you, keeps the horse quiet till you attach another stran to the one already straightened. This you do by bending the end through the eye previously formed for the stick, by a similar turn (8 or 10 inches) and in making this splice, wind the ends of the wire around the main strand two or three times, inserting a small stick or rod of iron through the eye formed by the bent wire, that by holding this in your hand, you may with the right, aid

by a pair of pincers, wind the end of the wire snugly around the main strand. This makes your *permanent splice*. Now go west with your strand, attaching the stick as before, straighten back on your wire and signal your boy to start up. Stop the horse the same as before, attach a third strand, and after this is straightened, signal the boy to dismount and unfasten the wire from the whiffletree, hitch the latter over the top of the harness and return to the corner post. Proceed as before, placing three strands alongside of the first three, and repeat the process, till you have straightened and spliced enough for the east side of your field. These spliced strands, in length 300 to 375 feet, can be drawn along to remote parts of the line of fence with the horse,—attaching the strans together as you proceed, till you have your strands forty rods in length. This is under the supposition that your line of fence is 80 rods, in which case you should divide the strand into two stretches of 40 rods each, by attaching to a post midway of the side of the field.

Cast keys may be purchased "to wind up on," or a very good key can be made of 2 by 4 oak, 15 inches in length, leaving a head upon one end to be turned by a wooden wrench, making a shank on the other to fit a two inch hole in the corner post. A three-quarter hole should be bored through the head of the key, into which insert a stiff seasoned pin, long enough to reach to the key above or below as the case may be, to prevent the key from turning. Key your wires up, measuring the spaces, first putting in a staple in every fourth or fifth post, then finish by fastening to the remaining posts, keeping your wire upon a true line if the ground be level, otherwise curving to suit the surface. Three wires will turn large stock, but four are required for calves and yearlings, and these should be placed about nine inches apart.

Objections answered.—1st. "Horses are said to be in danger of running against, or becoming entangled in the wires, to their injury." The instance cited above is the only one within my knowledge, and horses have run in the vicinity of my fence yearly.

2nd. "That the wires become taught in cold weather and break." I have strands of wire 70 rods in length, that were drawn tight in warm weather, and have passed through entire winters, the mercury at times down to 24° below zero, and no break has yet occurred, nor do we think it worth while to loosen the keys in cold weather.

Having sixty acres of corn inside of this wire fence I tightened the wires to the full capacity of the keys to bear, on my return home in August, as a safeguard against neighbor's cattle. These wires have not been loosened, and the mercury has been, and is to-day, as I write, far enough below zero to settle the question of capacity to stand contraction.

3rd. "That brachy animals do not fear wire." I have repeatedly asserted that a wire fence, four feet high, is a better security against jumping animals than a board or rail fence of four and a half feet.

I had a colt that was an adept at jumping, and would jump the bars (nearly five feet in height) to get into the field with the team while at work, but would turn from the wire fence four feet and four inches in height, after feeling of it with his neck, and he, nor any other animal has attempted to jump these wires to my knowledge. Nor will they, if the wires are secure and taught. Herein lies the whole secret.

The Cost—Number 8 wire weighs about one pound to the rod. Hence four strands at the price before the war would cost 25 cents per rod. At present price, about 40 cents; staples added at 16 cents per pound.

I believe a good fence can be made by planting the posts 16 or 20 feet apart, putting either two or three light strips of hard wood extending from the ground to the top wire, securely fastened to the wires by staples.

But the aim in this article has been to impress upon the minds of those not acquainted with the use and utility of wire for fencing, that the security in this kind of a fence depends mainly upon the unyielding barrier afforded by the wire. This condition is augmented by, and in a great measure depends upon the nearness of the posts to each other, hence I would advise that no risk be incurred unless you are forced to adopt spaces greater than eight or ten feet, on account of scarcity of timber for posts.

A CURIOSITY IN THE PLOUGH-LINE.

THE following somewhat sensational item of Agricultural intelligence is communicated to the *Iowa Homestead* by a correspondent:

"I have thought it would be interesting to your numerous readers, and especially the farming community, to learn of a late invention of L. B. Hoyt, of Cedar Falls, Iowa, which consists of a glass mould

board for a plough. Among the numerous inventions for the benefit of the farmer, and labor-saving machines, this plough promises to be a greatest blessing. This plough was patented Jan. 9th, 1856, and promises to effect a great reform in tilling the soil, as the experiment on its trial last fall is proven by many witnesses, and in soils of various conditions it exceeded the most sanguine expectations of its friends, and it is thought will supplant all other ploughs now in use, especially in the Western and Southern country. The inventor claims among other things for this plough, that it will scour under all circumstances and in all soils—it will run one-third easier, cost less money, never rust by the rain or dew, or other exposure; hence is adapted to all soils where metal boards will *not scour* or clean. It has been said that some farmers have left the Des Moines Valley, for the reason that they could not till the soil with such ploughs as were in use, and if so, this is just the plough for them, and all they can desire in a plough."

The idea is certainly a brilliant one!

HOW TO SET AND FILE A SAW.



of Westchester county, N. Y., sends the *Rural* the following timely and practical hints about the setting and filing of saws: "I believe some instruction in the the art of setting and filing a saw, will be of benefit to the farming community, as most the fire-wood is now-a-days prepared for the stove by the saw. Farmers generally live such a distance from a village that they will often use a saw so dull, that double the amount of labor is required to work it. After half a day's use, a saw should be filed; much hard labor will be saved thereby. By the way, you can always tell the quality of a mechanic by the condition of his saw. If the torn fibers close upon the blade and he can only get it through by dint of main strength, by tugging enough to pull the handle off, and with ejaculations more emphatic than pious, don't hire him. He is dear at any price.

With a little patience and perseverance, a man of any gumption," can soon learn, to put a saw in order. The first thing to do, is to "set" the saw. This consists in spreading the teeth so as to give free run for the blade, and is as essential as the filing. Some progress can be made with the dullest saw if it have sufficient set. All that is required to set a saw is a nail punch

and a smooth block of hard wood; they will do as well as any patent set ever invented. If you have not a nail punch use an old file with the end broken off and ground square. Lay the saw on the block, holding it down with the left arm, stand the punch on the tooth, inclining it a little from you so that it rests more on the end of the tooth, then a light blow with a hammer will bend the tooth into the block, or, in other words, set it. If you are fearful of missing the punch and hitting your thumb, you will strike just hard enough, otherwise you will be apt to strike too hard. It is essential that you set the teeth the *right way*. If there is no set already in the saw to guide you, it is enough to know that the points of the teeth are at the *outside*.

Now to file the saw. Get two strips of board two or three inches wide and a little longer than the saw. Place the edges between and put a nail through the ends. Now as a guide to the file, draw some pencil lines an inch or so apart across the edge of the clamp, in a diagonal direction. I have found by experience, that, for a coarse saw, the file should be used at an angle of forty-five degrees, or what carpenters call a "miter," to the saw.

The file must incline to the end of the saw. Put the saw in the vice and proceed, holding the file level and using it in the direction of the lines. File both sides without turning the saw around as mechanics do. It is possible even now, for you to file entirely wrong, as it is possible to grind the wrong side of a scythe, but I shall make no supposition so derogatory to your common sense. I am confident that with a little practice you will save many times the trouble it took to learn.

UNDERDRAINING SWAMPS.



HAVE had some considerable experience in muck or swamp ditching. Some time since I noticed in the *Farmer* some inquiries whether boards should be placed under or over the tile. Now my experience teaches me that tile should not be used at all in soft, mucky land—that it is not only unnecessary, but a nuisance, for the reason that it effectually prevents the assistance of that little friend of all owners of such land, one of the crustaceous family conveniently called *crawfish*, which is willing to work for the farmer at all seasons of the year if so be the farmers will give him a chance to do his work with efficiency.

I have ditches dug after the following manner, now ten or twelve years old, and they work admirably : Dig a ditch from 2½ to 3½ feet deep, as the case may be, as narrow as can well be done with a common spade. Then when this is done I go back to the starting point and dig eight inches deeper, with a spade made for the purpose, with the blade but four inches wide, the increased depth being in the middle of the original, leaves a shoulder on each side on which I lay good white oak inch plank, eight or ten inches wide, and then fill up. This is all very simple, but they are far the most effectual ditches I ever had dug. I have tried tile in such land, but I would not pay ten cents per rod for any more of that kind of ditching in that kind of land. Neither will mole ditching answer in this part of the country ; the muskrats soon destroy it.

In laying down the plank I commence at the head of the ditch so that the underlap of the plank may be down stream. The plank will not rot during at least one gene-

ration, except at the mouth of the ditch, and if they should the water has made its course and will continue to run. I have short blind or covered ditches made more than twenty years ago, with old rails too rotten to be put in the fence, and the water continues to flow from them to this day, although the rails doubtless were gone long ago. There is a perceptibly increased flow of water from the ditches, or the most of them, since they were first dug, and the ground is drying further and further from them each year. Some years ago I tried to drain two very similarly situated pieces of ground one with tile and the other with plank alone ; the latter is now a fine blue grass sod where wild grass only grew before ; the tile ditching has done but little good, only drying the ground but a few feet on each side, although I thought at the time that the tile ditch ground would be the easiest drained, as there was some fall, the other had no fall—indeed the fall was the other way and had to create a fall by depth of ditch.

HORTICULTURAL DEPARTMENT.

TRANSPLANTING FRUIT TREES.



R. ELLIOTT, of Cleveland, O., furnished the Ohio State Agricultural Report the following instructions concerning the transplanting of Fruit Trees, which will be read will profit :—

Digging the Trees. When ready to transplant it is essential to the value of trees, their future growth and vigor, that in taking them up as much as possible of the root be left upon them. Some tree growers, in digging, run the spade straight down about four inches from the tree, cutting off all the strong roots, and almost all of the fibres, and then, with a twisting pull, take the tree from the earth with about one-fifteenth of its actual roots. Trees dug or rather grubbed in such a manner are hardly worth the labor of resetting, and he who pays for such throws away his money. The proper way to dig the tree from the nursery is to dig a trench each side of it and about a foot from it, holding the spade with its side edge, not its face, toward the tree. In this way the roots are little injured by the spade, and after the trench is dug as deep as the bottom of the tree, run the spade

underneath, and while one man raises upon it, another by setting a foot each side of the tree and beyond its roots, pulls steadily and evenly directly upward, thus raising the tree with all or nearly all of its principal roots, and many of its fibres entirely uninjured.

These remarks apply only to trees to be obtained from a commercial nursery. If a person has trees on his grounds, he should take a sharp spade, and cut down around them early in summer, cutting off all the large roots, and thus causing them to throw out at such points new layers of fibres or small roots, and, when about to dig them, he should dig his trench, just outside, say six to eight inches, of the circle or line at which he cuts the roots, and then work under the tree with the spade, so as to lift it from the earth with its roots entire.

Having the tree dug, the next thing is, first to examine its roots, and with a sharp knife cut upward from the under side, or so that when it is placed in position for the earth in replanting, not one of the cuts can be seen from above. In some trees, especially quince roots, masses of fibres sometimes form that need to be thinned out,

for when replanted every root should be completely surrounded with soil, and not lay one root upon another; if the latter is permitted, air gets in, the root dries, circulation of sap in the root is checked, affecting sometimes the whole tree.

Pruning the top of a tree should be regulated by the loss of its roots in digging, and also to the shaping of its future form. Some sorts, if well taken up, with little loss of roots, have naturally such slow, stocky open growth, as to require little or no pruning; others have a straggling, loose habit, with many little cross branches, and such must necessarily be cut away either entire, or so much that their aftergrowth will form a tree of the shape desired.—Regard must always be had to the keeping an even balance of top and root, that is, as many and as long and large roots as branches are of double the size, length and number of the roots they will produce leaves, but the absorption of the roots being so much less than the exhalation of the leaves, the juices contained in the tree, previously laid up, soon become exhausted, the leaves droop and wither, and the tree dies.

Setting Trees. Having the trees dug and pruned, and the ground prepared, the next thing is to plant the tree. The common practice is to dig a hole, crowd the roots in, and if any are too long for the size of the hole, bend and press them down with the foot, then fill on some dirt and press it down, and so keep filling and treading until the hole is filled. It is a wonder that so many trees live, and struggle to become something, when planted in this manner; and it is no wonder that repeatedly staking and setting the tree upright fails at last in creating a well-shaped orchard. Having said that a tree may be transplanted safely at any time from the fall of the leaf until the reopening of the buds, we must add that, in this connection, the soil should always be in such condition that it will work easily and crumble up finely, in order that it may be well mingled among and around the roots. Haste should never be used in setting a tree; for one tree set carefully and correctly will produce more and better fruit—after culture being the same—than four trees carelessly or hastily and incorrectly planted.

Depth. The depth at which a tree should be planted must depend, first, upon the stalk on which the tree is worked.

Standard pears and apples on their own roots should generally be planted about as they stood in the nursery, or with about four inches of soil over the upper large roots. If planted in clay ground that is not thoroughly drained, they should be placed on the surface, and the roots covered by forming a mound over them. If they are to be planted in dry or well-drained ground, their position in the earth should be such that when the work is completed, the surface of the ground will remain level. The roots of fruit trees should always be invited to keep near the surface, and no hole should be dug underneath them at any greater depth than the surrounding soil has been ploughed or spaded.

Summer Transplanting. If necessary to move a tree in summer, or when it is in full leaf, select a cloudy, misty day; dig a trench well out beyond the area of the branches, and work down below the roots, say 2½ feet: then dig underneath, and as you proceed the earth will, much of it, fall from the roots, when one person should hold them back while another digs. Having got the tree completely undermined, run underneath a plank, and with one man to steady the tree, others may lift it and set it, if large, upon a stone boat or sled, to be transported to its new position. The hole for its reception being prepared, of size at least one foot diameter greater than its roots, set the tree in place, and while filling in, as directed, a third person should be constantly watering both roots and top from a sprinkler. After the earth is all in, finish by a thorough saturation of the ground wherein it is planted, and some two or three feet beyond, covering all with a mulch of sawdust, tan bark, or other like material, three inches deep.

TO PRESERVE GIRDLED TREES.



VERY Winter large numbers of trees are girdled by mice, which burrow beneath the snow, and gnaw away the bark from the stems near the ground. If not properly attended to, these girdled trees die, thus entailing a heavy loss on the orchardist. It is said that a few years ago, the losses of trees from this cause alone, amounted in the State of New York to \$200,000. It is evident that too much attention cannot be paid to this subject, in order to prevent the ravages referred to, and to preserve the trees, in cases where the damage cannot be prevented. It is a

good plan to tramp the snow about the stems of the trees, as by this means it is rendered hard and impervious to the ingress of mice. Dead leaves, grass, and rubbish should be cleaned away from about the stems, as such things are a good protection to the pests while they are eating away the bark.

A correspondent of the *Rural New Yorker* says, that he has been successful in preserving girdled trees by trimming off the bark with a knife, above and below the girdle; then cutting from the tree scions, sufficient when they are placed perpendicularly around the girdle, to stand one inch apart. The ends of the scions should be flattened, and one end of each inserted under the bark above, and beneath the girdle. He says it may be well to cover the whole completely with wax, but he has never covered more than both ends of the scions. As the sap passes from the root upward, it is conveyed across the gap, caused by the girdle, through the bark of the scions, and in this manner, the life of the tree may be preserved until new bark is formed, and the obstruction to the circulation removed.

CABBAGE.

FROM the numerous useful qualities of this plant, it deserves to be more extensively cultivated as a fodder crop than it is at the present. From the fact of its being richer in oil and nitrogenous matter than most other kinds of green food, and at the same time very succulent, its nutritive qualities are not to be wondered at. Cabbage is most valuable for milch cows; it increases the quantity and quality of the milk, and the butter made from it is free from any unpleasant flavour. For other purposes a more extended use of the plant is to be recommended.

WILLOW POLLARDS, WHITE WILLOW DO.

FOTWITHSTANDING the objections to the white, gray, or tree willow as a hedging or fencing plant, it is still the willow for timber growing in suitable localities; and by suitable situations is meant by the sides of rills or streams, or in places where there is generally an excess of moisture, as in springy grounds that are too moist for arable culture. In such situations the white willow, or tree willow, will not only grow well but will pay well for the labour necessary to

grow it, and if properly managed, it will yield a large and quick return, in comparison with most soft wooded trees.

The plan generally most successful, according to my observation, is to obtain small poles of one and a half to two and a half inches through and from five to nine or ten feet long. These are let thirteen to fourteen inches into the ground with a small bar or wooden pin, so as not to make the holes larger than the poles, close to the sides of streams or close to fences in moist ground. The bottoms of the poles are cut angling or tapering, to admit of their being thrust down without turning the bark back around the bottom edges; but the top end should be cut off nearly level, and the bark pared smooth with a sharp knife. Put in to the depth stated when freshly taken from the tree, or within a few days. If properly packed and taken care of like other valuable trees such poles or sapling branches will give a good pollard stem, which will soon throw out a large spreading head.

If, at the end of the first year, only two or three branches be thrown out, I would take a sharp knife and pare all off nearly level, so as to make a wide surface at the top around the outside hedges of which the next crop of new shoots will appear. If now there are four or more thrifty shoots from the head, they can be left to grow into poles for riders, fence bars, hurdle bars, fuel, &c., and in six or seven years they will be large enough for these purposes and many others.

Every time a crop is taken from the pollard head the crop of poles must be cut off nearly level, leaving the centre of the head a little the highest to throw off wet, &c., and care must be taken not to split the sides from which the next crop is to grow. All the edges should be pared smooth. After three or four crops have been taken from a white willow pollard in this way the head of the pollard will be two to three feet across, nearly level; and if long enough when first put out, will be always out of the reach of stock. Most kinds of animals being fond of the young sprouts when they can reach them, all pollard sets should be guarded for three or four years with briars. Rochelle blackberry trimmings, or in some other efficient manner, to prevent animals rubbing or injuring them. After three to five years no such protection will be needed, if the heads are high enough to be out of harm's way.

Managed in this way we know the tree willow is productive and profitable; and as it will be profitable as a good colt on the open prairie, it should hardly be expected to pay with much less labor or without time to give a chance, and of course a lot of pollards in rows can be grown in any suitable ground; but stock must be kept from them or they will be spoiled.

J. W. C.

THINNING OUT PLANTATIONS.

THERE are very few owners of ornamental grounds who do not plant trees more thickly at first, than they should stand when they become older and larger. Very few seem able to comprehend how a neat little tree three feet high,

of Norway Spruce for example, is going to sweep the ground with its branches, over an area fifty feet in diameter. Some plant young trees thickly and understandingly, so as to cover the baldness of the ground for a time, with the full intention of thinning out as the trees advance. But when the critical time approaches they cannot summon courage to cut down or remove their favorites, and in the course of time they form a dense growth, and lose all their beauty and symmetry. A gentleman of skill and taste in one of the western counties of this State, possessed one of the finest landscape gardens in the country, while the trees remained only about ten or twelve years of age. But he could not bear to thin them out, and it afterwards became a common remark among his friends, "Mr. —'s grounds are a perfect brush heap!"

Much of this evil may be remedied where owners can remove, without destroying, such trees as may have grown to a height of twenty feet or more. We are not in favor of transplanting large trees, but there may be instances where they may be carried for a short distance with large balls of earth upon the roots, and form new ornaments, shade, or screens, on other portions of the grounds not yet planted.

One of the easiest and simplest modes for taking up trees that are several inches in diameter, is shown in the accompanying figures. The work may be done in autumn or in winter, whenever the earth may be dug around them. By this contrivance half a ton of earth may be carried at a time on the roots of the tree, by two men, with the assistance of a single horse—thus almost entirely preventing the check in growth

which results from cutting the roots short and carrying but little earth upon them. The tree is first dug and completely loosened. Thick sacking or a piece of carpet is then wound around the trunk to prevent chafing. An iron ring, five or six inches longest diameter, is then fastened to the foot of the trunk, by passing through it and around the tree a number of times, a strip of stout sacking, strong enough to sustain the weight of the tree. The hinder wheels of a common farm wagon are then detached with the axletree from the wagon, and the whiffletree, for the horse to draw, is attached to the axle by means of a chain. A long pole or lever, with a chain and hook at one end, is then placed upon the axle, and the hook passed into the ring upon the tree, the pole having been raised perpendicularly in order to lower the hook enough for this purpose. By bringing down the end of the lever, by the assistance of a rope tied to its upper end, the tree is hoisted out of its hole. The heavy ball of earth keeps it in an upright position; and one man holding the pole, and the other driving the horse, it is carried to the exact spot desired, and lowered into the new hole previously made for the purpose, with the same ease that it was lifted from the ground. Where trees stand thickly together, it is sometimes found most convenient to set the pole first up against the tree, and tying both together, bring the tree down horizontally, and draw it off in this position.

GARDENING FOR LADIES, &c.

ANY a humble home could be made pleasant and cheerful, by wives and daughters, if they would spend a portion of their leisure moments in "fixing up" the yard, and attending somewhat to the garden. If nothing more than a flower garden, the beneficial effects of the out door exercise in attending to it, would amply repay all the care and labor bestowed, in the increased circulation of the blood, the improved freshness of the cheek, and the brighter lustre of the eye. These are the physical benefits to be derived; in addition to these are gained, an improved appearance of the home, while the feelings of enjoyment and self-complacence in knowing that these added beauties are the result of your own hands and labor, will doubly repay you in the end.

The habits of many a family can be well foretold, by the appearance of their gardens,

door-yards, and out-buildings, &c. How necessary, then, it is for every family to have, at least, a cheerful *outside* look to their home, and this can be effected, in a good degree, by the female portion of the family.

Adorn the front grounds to your houses with your favorite flowers; to do this does not require riches, nor any great amount of knowledge, while your minds will be elevated and refined in so doing, and your husbands and fathers benefited thereby in the increased attraction of their homes.

OLD ORCHARDS.



If there is anything upon a farm that calls forth an anathema on its owner, it is an old orchard going to decay, and no young trees to supply the places of those about to be consigned to oblivion. Here in Oneida county we see scores of such orchards, that were planted 50 years ago, and now show unmistakable signs of soon passing to that pomological bourne, whence no fruit tree ever returns.

The owners of such orchards generally profess to be of ordinary common sense; and some of them are considered rather "sharp" in their dealings, saving every penny that can be secured on honest principles; yet they are so blind to their own interests, to the interest of their children—to posterity, as to go down to their graves, with scarcely a sound apple tree upon their farms! Such men are not *compos mentis*—not of sound mind, or they would not throw away the opportunity to produce a young orchard of good grafted fruit, to come into bearing when the old one should fail, through age, to produce its golden harvest.

Farmers of this class for what do you live? Is it for wealth? Then why were the young orchards neglected to be planted, in these days of choice, high-priced fruit? Do you live for the enjoyment of the good things of this world? Then how could you suffer your families to be deprived of an ample store of Baldwins, Greenings, Spitzenburgs, &c.? We tell you plainly you are a *lazy, improvident* class, and only allowed to exist, as tares among wheat. But

"While this poor lamp holds out to burn,
The poorest farmer may return,"—

Return to his duty to himself, his family,

and to posterity that shall come after he shall "be known no more forever."

A good way to set a young orchard is to plow up the old one, and plant it to potatoes, and the next spring set young trees between the old ones, and keep the land cultivated for several years, till the trees get a good growth, and when the old trees cease to bear fruit profitably, cut them down as cumberers of the ground.

A PLEA FOR THE EVERGREEN TREE.



NOT only for its beauty, but its intrinsic value, would we call the attention of all in possession of homes in those parts where the evergreen does not spontaneously grow, to that prince of ornamental trees, which, in the vicinity of a dwelling, may be said to be useful alike for its refreshing shade in the sultry months of our summers, and as a barrier and protection against the piercing winds and driving storms of our almost arctic winters.

Indeed the change of temperature which even a few trees of unchanging foliage, will effect in an exposed locality, would almost surprise one who had not previously observed it. And now, by way of suggestions, would it not be greatly to our advantage to plant upon the exposed sides of our orchards and stocks yards, screens of *Arbor Vitae*, or, in its absence, spruce or fir? Our answer would be a decided, Yes, where they can be procured conveniently and in sufficient abundance from their native groves. But to abandon this idea as impracticable to many, we would return to the dooryard, and there urge the proprietor, for the sake of his better nature, at least, to plant two or three Balsam Firs, Norway Spruces or Hemlock; and, once fairly growing, if he is ever tempted to cut them down, we are avowedly ignorant of human nature.

Perhaps our driving, money-making farmer, makes the observation, that, besides the first cost of the tree, it must be set out, protected from the familiarities of horned cattle and otherwise cared for only to impoverish the ground without producing fruit. Very well, to admit all this and continue our argument, the tree once growing, yearly increases in beauty; its increasing beauty yearly adds to the value of the homestead. And as its comeliness puts to shame its slovenly surroundings, the dilapidated dooryard fence usually assumes a more creditable appearance; and perhaps a stray rose or dahlia supplants the weeds and bur-

docks which heretofore bordered the walks. Thus, through almost unperceivable little improvements, the place assumes a well-to-do, orderly, and homelike aspect, which as a general thing is an example not lost upon the neighbors, who rather than suffer from a comparison, will go to work and make like improvement.

But to return. Perhaps the influence of our tree goes deeper than we first supposed. When the vegetable kingdom has doffed its gala dress and the earth is wrapt in its winding sheet of snow, there stands the evergreen, a lovely emblem of immortality to soften the hard natures or cheer the hearts of our farmer and his family! Who can doubt but that if under such influences, any of the family were tempted to wander forth in this turbulent and unfeeling world, the memories which clustered around

"The time-stricken cottage, the evergreen tree
That waved o'er his head in his juvenile glee,"

would tend to draw him back to that quiet old home and check that wandering disposition too common to our farmer's boys?

PLANTS FOR HANGING BASKETS.

WHAT plants are most suitable for *Hanging Baskets* is an enquiry we have before us. We have no special love for *Hanging Baskets*, unless they are well got up and kept in good condition. Most of the *Baskets* we see around are unsightly things, and look as though *hanging* wasn't much better for *Baskets* than for other folks. In forming *Ornamental Baskets*, it is well to remember in the first place that they will not bear neglect. A quart or two of earth placed in a basket will very soon become as dry as powder, even if not exposed to the sun. Watering must, therefore, be attended to frequently and regularly. The amount of water and the frequency of application depend a good deal upon the plants grown. A basket of *Portulacas* will endure drouth without suffering, that would be sufficient to destroy many other plants.

What we want in *Hanging Baskets* are plants of fine foliage and a constant supply of flowers. For graceful foliage there is nothing better than the trailing *Money Wort*, *Tysimachi Mummularia*, with dark, glossy leaves and plenty of yellow flowers at blossoming time.

The *Thunbergias* are not excelled by any

plants we are acquainted with for baskets and all like decorative purposes. They are trailing plants, foliage good, flowers abundant, white, yellow and orange, with a dark eye. There is only one difficulty with them, and this is not serious—the seeds germinate rather slowly, and always best in warm places.

Abronia Umbellata is a beautiful plant, with clusters of sweet scented flowers, rosy lilac, in clusters like the *Verbena*, which the plant in its habit resembles very much. Flowers freely for a long season. The only difficulty with it is a lack of foliage, but this defect is easily remedied by other plants that abound more in leaves and less in flowers.

The *Lobelias*, all the trailing varieties, are splendid for basket work, and in fact all in-doors ornamentation. They will not bear the sun, but this is not expected of basket flowers, and require a good deal of moisture. When well treated they give a profusion of flowers.

All the *Ipomeas* and *Convolvulus* are desirable for baskets, and as they are not exposed to the sun or usually to a bright light, the common *Morning Glory* will have expanded blossoms nearly the whole day. All such strong running plants can be pinched back, and thus made dwarf in their habit for basket and other ornamental work. The *Tropeolums* may also be treated in the same manner, and will give good satisfaction.

The *Loasas* are very curious plants with singular and pretty flowers, but the branches are armed with stinging hairs that will speak more emphatically to intruders than any sign, "hands off."

The above are all trailing plants, and sufficient to suit all tastes, though others could be added. Many no doubt would prefer the *Verbena* to some mentioned, and the *Madeira* vine may be made to run up the wires by which the basket is suspended, with fine effect. For the centre of the basket, plants of more erect habit will be needed to give a full rounded appearance. These should be depended upon mainly for show of brilliant flowers, while the trailing plants furnish the drapery.

The *Nemophilas* are very desirable; prevailing colours, white and blue. *Petunias* and *Phlox Drummondii* are unequalled for brilliant show. *Fenylia Dianthiflora*, a most delicate free-flowering little plant six inches in height. Flowers reddish lilac with crimson centre. *Leptoriphous* are

excellent. For fragrance a little Mignionette or Sweet Alyssum will be necessary. Although we have given a pretty long

list to select from, we would not advise crowding plants. Plenty of room should be given for development.

DOMESTIC ECONOMY.

HOW TO KEEP EGGS.



R. G. Kennedy Geyelin in his work entitled "Poultry Breeding in a Commercial Point of View," gives the following directions for the preservation of eggs:—"Now the most effective, simple, and economical plan for truly preserving eggs, or rendering them unfit for hatching purposes, is to use the patent stoppered glass jars with vulcanised indian rubber joints, and proceed thus:—Immediately after daily collecting the eggs, put the jar in hot water, and when thoroughly warm, so as to rarify the air, place the eggs in the jar the pointed end uppermost, and pack and line with paper shavings or cocoa fibres to prevent them from breaking; then close the jar before taking it out of the water, and it will be found that eggs preserved by this method will be fit for hatching twelve months after, and that those intended for the break-fast table will be fresh as on the day when laid." The work from which this passage is extracted, details the plan of breeding and management carried out by the National Poultry Company, at Bromley, Kent.

THE FARMER'S WIFE.



R. HALL says, "What adds to the better appearance of the person elevates; what adds to the better appearance of a farm increases its value and the respectability of its occupant; so that it is always a good investment, morally and pecuniarily, for a farmer to supply his wife generously and cheerfully, according to his ability, with the means of making her family and home neat, tasteful and tidy. A bunch of flowers or a shilling ribbon for the dress, or a few pennies' worth of lime or a dollar's worth of paint for the house, may be so used as to give an impression of life, of cheerfulness, and of thrift about a home altogether beyond the value of the means employed for the purpose.

It is perhaps safe to say, that on three farms out of four the wife works harder, endures more than any other on the place;

more than the husband, more than the 'farm-hand,' more than the 'hired help' of the kitchen. Many a farmer speaks to his wife habitually in terms more imperious, impatient, and petulant than he would use to the scullion of the kitchen or to his hired man.

Many a farmer's wife is literally worked to death in an inadvertent manner, from want of reflection or consideration on the part of the husband. None can understand better than he, in plowing, or sowing, or harvest time, that if a horse gets sick, or runs away, or is stolen, another must be procured that very day, or the work will inevitably go behindhand. He does not carry the same practical sense into the kitchen when the hired help leaves without warning or becomes disabled, although he knows as well as any man can know that 'the hands' will expect their meals with the same regularity, with the same promptness, and with the same proper mode of preparation; but instead of procuring other 'help' on the instant, he allows himself to be persuaded, if the 'help' is sick, she will get well in a day or two, or a week at furthest, and it is hardly worth while to get another for so short a time. If the 'help' has taken 'French leave,' his mind fixes on the fact that it is a very busy time, and neither he nor a single hand can be spared, or that, in the course of the week, some one will have to go to town for some other purpose, and both these matters can be attended to at the same time. Meanwhile the wife is expected not only to attend to her ordinary duties as usual, but somehow or other to spare the time to do all the cook or washerwoman was accustomed to; that is, to do the full work of two persons, each one of whom had already quite as much labor to perform as she could possibly attend to. The wife attempts it. By herculean efforts all goes on well. The farmer perceives no jar, no hitch in the working of the machinery, and because no complaint is uttered, thinks that everything is going on without an effort. Meanwhile time passes, and (infinite shame on some of them) they begin to calculate how much has been saved from servants'

wages, and how much less food has been eaten, and still because no complaint has been made, the resolution quietly forms in the mind to do nothing until she does complain; but, before that takes place, she falls a victim to her over-exertions, in having laid the foundation for weeks and months of illness, if not of a premature decline and death."

THE QUALIFIED HOUSEKEEPER.



ANY parents expect their daughters to marry and thus be provided for; the daughters themselves expect it. But it may be well for both parent and child to consider the chances against the provision. Marriage may come, and a life of pecuniary adversity, or a widowhood of penury may follow; or marriage may not come at all. As civilization (so called) goes on, multiplying wants, and converting luxuries into necessities, the number of single women fearfully increases, and is in greater proportion where there is most refinement, whereby women are least qualified to take care of themselves.

In the simple lives of our ancestors, men were not deterred from marriage by the difficulty of meeting the expense of their families. Their wives were helpmates. If they could not earn bread they could make it. If they could not comprehend the "rights of women," they practiced their duties. If they did not study political economy and algebra, they knew the calculation by which "the penny saved is the penny gained." Instead of waiting to be served by costly and wasteful Milesians, they "looked well to the ways of their husbands, and ate not the bread of idleness." The puritan wife did not ask her husband to be decked in French gauds, but was truly

"The gentle wife who decks his board,
And makes the day to have no night."

In giving the reasons that restrain men from marrying at the present day, and thereby diminish the chances of this absolute provision for women, we beg not to, restrict women to the humble offices of material existence. The best instructed and most thoroughly accomplished women we have ever known have best understood and practiced the saving arts of domestic life.

If parents, from pride, or prejudice, or

honest judgment, refuse to provide their daughters with a profession or trade, by which their independence may be secured; if they persist in throwing them on one chance; if daughters themselves persevere in trusting to this "neck-or-nothing" fate, then let them be qualified in that act and craft in which their grandmothers excelled, and which is now, more than at any preceding time, the necessary and bounden duty of every wife, whatever be her condition.

Never by women in any civilization was this art so needed; for never, we believe, were there such obstructions to prosperity and comfort as exist in our domestic service. And how are the young women of the luxurious classes prepared to meet them? How are the women of the middle classes fitted to overcome them? And how are the poorer classes trained to rejoice in their exemption from them?

If a parent look forward to provision by marriage for her daughter, she should at least qualify her for that condition, and be ashamed to give her to her husband unless she is able to manage her house, to educate her children, to nurse her sick, and to train her servants—the inevitable destiny of our housewives. If she can do all this well, she is a productive partner, and, as Madame Bodicon says, does as much for the support of her household as her husband.

It may or may not be the duty of a mother to educate her children in a technical sense. But if her husband is straining every nerve to support his family, it would be both relief and help if she could save him the immense expense of our first-rate schools, or the cost of a governess. If she be skilled in the art of nursing, she may stave off the fearful bill of the physician.

If she knew the cost and necessary consumption of provision, the keeping of accounts, and, in short, the whole art and mystery of domestic economy, she will not only preserve her husband from an immense amount of harassing care, but secure to him the safety, blessing, and honor of living within his means.

If she be a *qualified housewife*, the great burden, perplexity, and misery of housekeeping, from the rising to the setting sun, from our Canadian frontiers to far South of Mason & Dixon's line, will be—we will not say overcome, but most certainly greatly diminished.—*C. M. Sedgwick.*

A FEW HINTS FOR YOUNG LADIES.

THE following hints, spoken in the very plainest terms, are respectfully submitted by one of the sex:—Don't make a confidant of the first interesting young lady you meet. A woman can't keep a secret any more than a sieve can hold water; and ten to one she'll tell the story to the sister of a nice young man of her acquaintance. Then you can imagine the consequence! Don't sit down to your crochet work or embroidery unless you have first mended the hole in your stocking. No use crowding it under the heel of your shoe. Rags, like murder, will out; and they speak with terribly loud voices and at inconvenient seasons, sometimes. Don't undertake to write skim-milk poetry whenever you feel a little disposed toward enthusiasm. Go and do a kind action, or speak an encouraging word to somebody, if the "poetic impulse" must have vent. Depend upon it, you'll be better satisfied afterwards. Don't pretend to be angry because gentlemen have the audacity to look at you when you promenade the streets in your best bonnet. What do you go there for if not to be seen? The more you affect indignation, the more the offending wretches won't believe it. Don't pay thirty or forty dollars for the aforesaid bonnet, and then complain that "pa" is in such narrow circumstances that you cannot afford to give twenty-five cents in charity. Don't cat blue and yellow candies the whole time, like a mouse nibbling at the pineapple cheese, and then lament because you haven't any appetite for dinner. Don't keep a gentleman waiting half an hour, when he calls, while you put on lace and ribbons, and arrange curls; he isn't a fool, whatever you may think on the subject, and will probably form his own ideas upon your original appearance. Don't run and hide like a frightened rabbit when a gentleman puts his head into the room where you are sweeping or dusting. If there is anything to be ashamed of in the business, why do you do it? Don't proclaim to the world that you can't exist without six Paris bonnets in the year, and that life would be a burden without jewelry and diamonds, and then wonder that the young men "shy off." And above all, when some one *does* propose, don't say no when you mean yes! He may take you at your word! If you follow all these precepts, you may one day succeed in getting married, and that, you know, is the summ it of all earthly ambition! JANE.

THE LAUNDRY.

Furniture for the Wash-House

HERE should be one or more large kettles. Copper is best, as it precludes the possibility of iron-mould. Buckets and tubs with wooden handles are best, as careless washers often let clothes be ruined by coming in contact with iron hoops and handles of the vessels they use.

A stout bench on which to set the tub, to prevent the fatigue of stooping while washing.

Each washer should have a cup of soap and a grooved wash-board—those of zinc are best, because more springy, and consequently making the work of the washer easier.

There should be wings on opposite sides of the wash-house through which to fasten clothes-lines, or enough of clothes-horses, on which to hang clothes for drying in winter.

There should also be posts in some sunny grass spots for the same use in fair weather.

There should be always ready for use, barrels for soap, clothes-pins, starch canister, a kettle for making starch, clothes baskets, ironing table, skirt and bosom board, irons of several sizes, stout blankets and sheets, iron-stands and holders, not omitting soft old towels for wiping the irons.

There should be always ready a supply of first rate soap, starch, gum Arabic or spermaceti, indigo, and bees wax, as likewise materials for any washing fluid you use. These things should be kept in some secure place, subject neither to waste or misplacement.

Washing.

The evening previous to washing, all the clothes should be gathered up and assorted; woolens, colored clothes, unbleached cottons, and linens and fine clothes into their separate bundles. Except woolens and colored clothes, all other kinds should be put to soak over night, the very dirty parts having soap rubbed on them. If you use a washing fluid, it is usually mixed in the soaking water; if you use no wash mixture, the next morning wring out the clothes, and proceed to wash them carefully through two warm lathers; then boil them in clean lather briskly, but not longer than a half hour. Wash them out of boil, rinse through two waters. The last rinsing-water should have a delicate tinge of blue, likewise a small quantity of starch for all cottons or

linens; reserve those you wish stiffer for the last, and mix more starch in the water. Shirt bosoms and collars, skirts, in short anything you wish very stiff should be dipped in starch while dry. Swiss and other thin muslins and laces are dipped in starch while dry, and then clapped with the hands until in the right condition to iron.

Calicoes, brilliants, and lawns of white grounds, are washed like any other white material, omitting boiling, until the yellow tinge they acquire makes it absolutely necessary. Unbleached cottons and linens follow the white clothes, through the same waters, but must in no case be boiled or washed with them, as they continually discharge a portion of their color, and so discolor the white clothes.

In directing the preparations for washing fluids, we give the process employed with them; but colored clothes, in our experience, can be washed in none of them, without injury to the color.

Calicoes, colored lawns and colored cottons, and linens generally, are washed through two suds, and two rinsing waters, starch being used in the last, as all clothes look better and keep clean longer, if a little stiffened.

Many calicoes will spot if soap is rubbed on them; they should be washed in a lather, simply: A spoonful of ox-gall to a gallon of water, will set the colors of most any goods, soaked in it previous to washing. A teacup of ley in a bucket of water, will improve the color of black goods.

Nankeen should lay in ley awhile before being washed; the ley sets the color.

A strong, clean tea of common hay will preserve the color of those French linens so much used in summer by both sexes.

If the water in which potatoes are cooked is saved and boiled down, it stiffens black calicoes as well as starch, and saves them from the dusty and smeared look they so often have.

Vinegar in the rinsing water, for pink or green calicoes, will brighten them. Pearlash answers the same end for purples and blue.

Flannels should be washed through two suds and one rinsing water; each water should be as hot as the hand can bear, unless you wish to thicken the flannel. Flannels washed in luke-warm water, will soon become like felled cloth. Colored and white flannels must be washed separately; and by no means wash after cotton or linen, as the lint from these goods adheres

to the flannel. There should be a little blue in the rinsing water for white flannel. Allow your flannels to freeze after washing in winter; it bleaches them.—*Cor. Country Gentleman.*

GOOD NATURE.

GOOD nature is one of the best things in the possession of man. When it is constitutional it is invaluable. How many evils it bears—and hence avoids them and their consequences. But good nature may be cultivated. The most is to begin. Perseverance will soon get up a habit—and then the thing is easy. A good-natured man has few enemies from necessity; and to have enemies is not only dangerous but very uncomfortable. Good nature is, next to Christianity, the best of things among men, as all the wise men of the world and the greatest of them have advocated. To cultivate good nature is to cultivate Christianity. Ah! how unwise we are not to heed this thing. Not that we do not know it; but it is so hard to mortify self; it is so hard to suffer in order to get good. It is however the way.

WASHING DAY.

TO how many housekeepers, husbands, and indeed whole families, is this a *dreaded* day. Everything is "up in arms," as the saying is, the kitchen floor is so covered with slops, that overshoes are a positive necessity, to any one who ventures in. The children are cross, and even mother is not pleasant-faced as usual. No dinner but fragments, cold perhaps besides, can be had to-day.

Now, the sad influences of all this does not pass entirely away with the day, but it so often recurs that a permanent *injury* is inflicted on the *temper* of every one concerned. Let me tell you how to avoid it—Take one pound of salsoda, three quarts of soft soap, two and a half gallons of soft water, and dissolve them together, and thoroughly mix, by stirring often till nearly or quite boiling hot, then put away for use.—Let a clothes basket be put in some place convenient for access to all the family, on Saturday night, and let each one be required to deposit in it on Sabbath morning all articles designed for the wash, from his or her wardrobe, and then an hour will not be needed on Monday morning to run about over the house to pick up the dirty clothes. I say on *Sabbath* morning, because it is taken for granted that every member of the

family performs a thorough ablution, either then or the night previous, and change their garments—so *that* is the more convenient time, and prevents the air of their rooms from becoming contaminated with soiled garments around all day. The first thing then on Monday morning, put them soaking in some *clear, warm, soft* water. Let them remain one hour, or more, according to convenience, or till after breakfast is over. In two pailsful of water for boiling, put in one pint of the prepared soap, and if necessary, rub a very little on places badly soiled. Wring out the clothes, and put them into the water immediately, before it gets warmed. Of course, you have a patent wringer, and if you run the garments through it several times before boiling, especially the dirtiest ones, so much the better. Let them boil an hour or more, and if streaks of dirt remain, rub in the sudsing water, and the clothes will look nice, and keep white without trouble. The *boiling*

water is excellent for grape vines, currants, or any garden vegetables, used cold and in small quantities, and that in which the clothes, are sudsed can be used for mopping washing calicoes, &c.


I have practiced this method for eight or nine years, and the remark is often made, "It don't seem as though we had any washing days." A little *care* will prevent sloping water over the floor, or upon one's clothing, and it is almost surprising how much trouble, labor and temper, *ill* temper of course, may be prevented by a careful attention to little things. Indeed, the greater part of domestic enjoyment depends upon carefulness in little things; and that not only in respect to mother and daughters but the father and sons as well. Let us remember how much, how *very* much depends upon

"Little deeds of kindness,
"Little words of love,"

and act accordingly.

COMMERCIAL REVIEW.


READY MARKETS AND GOOD PRICES.

 ACCOUNTS from Ireland tell of an estimated deficiency in the home supply of flax for the spindles of the Ulster flax mills. In England and Scotland there is always far more raw material used in the factories than there is grown in the fields. The intelligence from Ireland, therefore, goes to show that there will be an increased demand in the United Kingdom for flax grown abroad, and should afford encouragement to the Canadian farmer to extend this branch of cultivation. Canadian flax has already made a reputation among British spinners, and there need be little doubt that the highest prices would be realized for all that could be grown the coming season in Canada on its shipment to Belfast or Liverpool.

We find the above paragraph going the rounds of the press, and we copy it to endorse its recommendation that, during next season, our farmers should enter more largely into the growth of flax than they have ever done before. We believe the above statement about the shortness of the last crop in Ireland to be quite correct, and we do not doubt that Canadian flax might be profitably sent to Great Britain for sale. But it is quite unnecessary to go so far from home for a market. The large flax establishments now in operation in several parts of Canada will buy all the flax that

our farmers can raise—in fact, we believe the demand, during the past season, has far exceeded the supply. We know of some of our flax manufacturers having had to go to the United States to make purchases of flax seed, and that others have not obtained as much flax as they required. The United States is also a market for our flax, and would more than buy all our crop. Let our farmers, then, increase their breadth of land devoted to flax culture. They have a market at their own doors for all they can grow, and they can procure prices which render it one of the best paying crops. Having ready markets and good prices, what more could be desired?

DAIRY FARMING—ITS PROFITS—THE YIELD IN BUTTER, CHEESE, MILK, AND MONEY PER COW.

 HE following report of H. Brown's Cheese Factory, Columbus, Chenango County, N. Y., is very instructive, and is worthy of the study of all farmers. It should be preserved for future reference. It states:—

We commenced making cheese the 10th day of April, 1865. The average number of cows was about 500. The Factory closed the 24th day of November. The whole number lbs. of milk was 1,732,150, from which 179,206 lbs. of cured cheese was

manufactured, taking 9 lbs. 66-100'ths for one of cured cheese.

The whole amount of money received for cheese delivered on the railroad was \$28,611.50, being about 16 cents per lb. The expense of manufacturing was \$1 per hundred lbs. The expenses for boxes, bandage, rennets, salt, &c., was seventy-three cents and four mills per 100 lbs.

We will now give the amount of milk received each month, and the amount of cheese made from it:

Month.	Lbs. milk.	Lbs. cheese.	Lbs. milk to 1 of cheese.
April.....	98,306	10,041	9 lbs. 7-19
May.....	280,923	28,636	9 lbs. 8-10
June.....	337,335	34,390	9 lbs. 8-10
July.....	316,647	31,752	9 lbs. 9-10
Aug. to Sept. } 16..... }	375,683	38,129	9 lbs. 8-10
Sept'r. 16 to } Oct. 1st... }	112,422	12,679	8 lbs. 8-10
Oct., skimmed.	153,393	17,665	8 lbs. 6-10
Nov., do	57,441	5,914	9 lbs. 7-10

Total amt'.. 1,732,150 179,206 9 lbs. 66-100

It has become a question of great interest to the farmer whether the product of the dairy after the 1st of October be made into cheese, butter, or cheese and butter both. We submit to the public the following figures, showing the amount realized by my patrons for the month, the cream being taken from the night milk, previous to delivery at the Factory:

Whole number lbs. of milk was 153,393, from which was manufactured 17,665 lbs. of cheese, and about 2,600 lbs. of butter. This cheese sold at 18 cents per lb. at

Sherburne..... \$3,179 70
Butter sold at 45 cents... 1,210 50

Total amount..... \$4,390 20
Being \$2.90 for each hundred pounds of milk, or .05-7 mills per quart.

We will now proceed to give a statement of the gross receipts realized by some of the principal dairies delivering milk at my Factory:

Edwin Cady, from 21 cows, delivered 92,415 lbs. of milk, from which was manufactured 9,566 lbs. cheese.

Cheese sold for \$1,530 56
600 lbs. butter at 45 cents. 370 00
Deacon skins and rennets . 26 25

Total \$1,826 81
Being nearly \$87 per cow.

Orson Lottridge, from 16 cows, delivered 73,377 lbs. of milk, from which was manufactured 7,595 lbs. cheese.

Amount received for cheese was. \$1,215 20
125 lbs. butter, made in spring,
at 20c..... 25 00
129½ lbs., in the month of Oct.,
at 46c..... 59 57
170½ lbs., in Nov. and Dec., at
45c..... 76 72
Deacon skins and rennets..... 22 25
Sold 300 qts. milk at 4c. per qt. 12 00

Total amount..... \$1,410 74
Being \$88.17 per cow. Three of these cows were two-year old heifers.

L. Beebe & Brother, from 12 cows, delivered 55,938 lbs. of milk, from which was manufactured 5,790 lbs. of cheese.

Received for cheese..... \$926 40
40 lbs. butter, in spring, at 20c. 8 00
In Oct., 114 lbs., at 46c..... 62 44
Nov. and Dec., 147 lbs., at 45c. 66 15
Deacon skins and rennets..... 15 00

Total amount..... \$1,067 99
Being \$88.99 per cow.

Lyman Hardy, from one cow, delivered 5,442 lbs. milk, from which was made 563 lbs. cheese. The milk of this cow was retained at home each Sunday through the season—this addition to the butter made after the 1st of Oct.—making 87 lbs.

Received for cheese..... \$90 08
87 lbs. of butter, at 45c. 39 15
Deacon skin and rennet. 1 25

Total amount..... \$130 48
We challenge Chenango County to beat this.

In order to show the benefit of manufacturing both butter and cheese in October, we will give the receipts of O. Lottridge and L. Beebe & Brother's dairies, the butter being correctly weighed as fast as made:

O. Lottridge—
Lbs. of milk..... 7,696
Lbs. of cheese..... 886
Lbs. of butter..... 129½

Receipts on cheese. \$159 48
Receipts on butter. 59 57

Total amount... \$219 05
Being \$14.60 per cow for the month.

L. Beebe & Brother—
Lbs. milk. 6,310
Lbs. cheese..... 731
Received for cheese. \$131 58
Received for butter. 52 44

Total amount... \$184 02
Being \$15.33 per cow, for that month.