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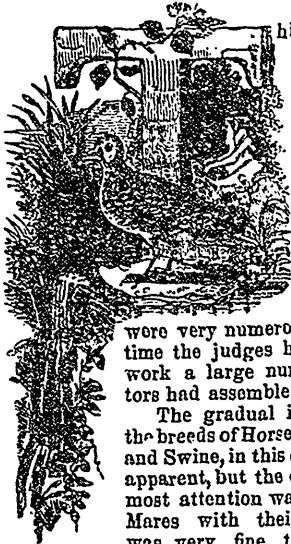
# AGRICULTURAL REVIEW.

NOVEMBER.

**CONTENTS:—Editorial Department.**—County of Beauharnois' Exhibition—Agricultural Improvement and Progress—Means of Agricultural Knowledge—Farmers' wives—Tenants and Landowners—Thirty-six Maxims for the Farmer—One cause of Drouchts and Prospects—Borrowing and Lending—Legislation on the Canada Thistle—Do Good and Commemorate—**Our Reminders.**—Where we went and what we saw—M. Globensky's Farm, of St. Eustache, County of Two Mountains—The Farm—Rotation—Composts—Stock—Cottage—Stable and Byre—Pigstyes—Conclusion—M. E. —'s green-house at Aurora, N. Y.—A Gigantic Dairy.—**Farm Operations.**—Suggestions for the Month—Fall or Spring Ploughing—Late Pasturing—Collection, preparation and application of Manure—Surface Draining—A Plea for Roots—Mixing Soils—Muck, Ashes and Lime on Grass Seeds—Cultivation of Winter Wheat—Drainage—Soils—Varieties—Time of Sowing—Mode of Sowing—Quality of Seed—Harrowing and Rolling—Harvesting—Thrashing, Gleaning and Marketing—Injurious Insects—Rust—**Breeders' Department.**—Protecting Animals from Storms—Value of Shelter for Sheep—In Breeding Horses do the Stock take more after the Sire or Dam—Why do we have poor Horses?—Rearing Calves on Milk and Linseed Meal—Breeding and Rearing Pigs—Prelims in keeping Poultry—How to make good Butter—Bees—A Chapter of well settled Facts—Sale of American Short Horns in England.—**Engineering Department.**—To keep Ice cheaply—Agricultural Implements and Machinery—White-washing Shingles—How deep should Drains be dug—A New Stump Extractor—Coal Tar for Fence Posts—The Great Reaper Trial at Dixot—The Weather—The Scale of Points—The Mowers—Where the tests were made—Dynamometer test—The race of the Mowers—Classification according to quality of work—The Mowers in Prairie Grass—Which is the best Mower?—The Reapers—The Self-Raking Reapers—The Hand Raking Reapers—The Heading Machine—A successful Ice-house—The Bread and Butter Machine.—**Horticultural Department.**—Gardens late in Summer—Monthly Suggestions—The Kitchen Garden—Fruit Garden and Orchard—Flower Garden—Hot beds—Hot houses—Manures—Ripening pears—On Protecting native grapes in Winter—Indoor Gardening—The Maranda for hanging Baskets—Keeping Grapes—**Domestic Economy.**—How to make Currant Wine—To Preserve Strawberries—Strawberries stewed for Tarts—Strawberry Jelly—To Preserve Strawberries or Raspberries, for Creams or Ices, without boiling—How to avoid a bad Husband.

## EDITORIAL DEPARTMENT.

### COUNTY OF BEAUHARNOIS EXHIBITION.



his Society's Fall Show was held at Beauharnois, on Wednesday the 24th September. Notwithstanding the very unfavourable state of the weather up to 12 o'clock, the entries for competition

were very numerous, and by the time the judges had commenced work a large number of spectators had assembled.

The gradual improvement in the breeds of Horses, Cattle, Sheep and Swine, in this county was very apparent, but the class attracting most attention was that of brood Mares with their foals, which was very fine, they being all by the Society's Imported Clyde Stallion "Briton." This horse which cost the Society something over one thousand dollars, was imported from Scotland in October 1860, and weighs at present 1620 lbs. He took the first prize at the Provincial Exhibition held last month at Sherbrooke, and was considered by competent judges there, to be the finest Clydesdale Stallion that has been imported into Canada.

There was also on the ground a very handsome year old Ayrshire Bull, just imported direct from Scotland by the Society for the use of the members, who have now imported Stock in their possession worth about \$1,500, consisting of the Clyde Stallion, Ayrshire Bull, and three Leicester Rams.

By five o'clock the awards having been received from all the judges, and the premiums paid to the successful competitors, the Officers, Directors, Judges, members of the Society and their friends proceeded to the "Beauharnois Hotel," where they sat down to a most excellent dinner prepared by Messrs. A. Roberts & Co, late of Chateauguy Corners, which was certainly amply sufficient to satisfy the most fastidious, and establish their reputation as first class caterers. The president of the Society, James Keith, Esq, occupied the chair, supported on the right by John McDonald, Esq., of Chateauguy. J. Bte. Scott, Esq, Vice President, acted as *croupier*.

After the usual loyal toasts had been drank and "prosperity to the Agricultural Society of the County of Beauharnois," "the Sister Societies," &c., &c., the meeting broke up, all parties expressing themselves highly pleased with the day's proceedings.

Subjoined is a list of the premiums awarded:

**Horses.**—*Draft Stallions*—1st, Neil Coney; 2nd, Remi Marchand; 3rd, Antoine Heneau; 4th, Christophe Daoust.

**Brood Mares.**—1st, Dugald Thomson; and, Felix Lauzon; 3rd, John Galbraith; 4th, Charles Cummings; Extra Prize, John Alexander, \$5.

**2 Year old entire Horse Colls.**—1st, Paul Daigneau; 2nd, John Chale; 3rd, Joseph Joson; 4th, Eustache Bergevin.

**2 Year old Fillies.**—1st, Dugald Thomson; 2nd, John Alexander; 3rd, John McQuaig; 4th, Neil Coney.

**Pair Draft Horses.**—1st, James Hunter; 2nd, Mrs. McEwen; 3rd, Thomas Watson; 4th, William Tennant.

**CATTLE.**—**Old Bulls.**—1st, William Saugster & Co; 2nd, John Brodie; 3rd, William Cross; 4th, John McQuaig.

**Young Bulls.**—1st, Dugald Thomson; 2nd, John Galbraith; 3rd, Pierre Lajambe.

**Milch Cows.**—1st, John Brodie; 2nd, John

McRae; 3rd, Pierre Lajambe; 4th, J. M. Browning.

2 *Year old Heifers*.—1st, John Brodie; 2nd, David Benning; 3rd, J. M. Browning; 4th, Pierre Lajambe.

1 *Year old Heifers*.—1st, John Brodie; 2nd, David Benning; 3rd, William Cross; 4th, Pierre Lajambe.

**SHEEP**.—*Aged Rams*.—1st, Duncan McMillan; 2nd, Hugh Symons; 3rd, Robert King; 4th, Nicol Porteous.

*Rams, one Shear*.—1st, John McCuaig; 2nd, Duncan McMillan.

*Ram Lambs*.—1st, Duncan Cumming; 2nd, Thomas Watson; 3rd, John McCuaig; 4th, John Brodie.

3 *aged Ewes*.—1st, John Brodie; 2nd, Dugald Thomson; 3rd, Arch. McCormack; 4th, George Howden.

3 *Ewes, one Shear*.—1st, John Brodie; 2nd, John McCuaig; 3rd, David Denning.

3 *Ewe Lambs*.—1st, Thomas Watson; 2nd, David Benning; 3rd, Arch. McCormack; 4th, Charles Tate.

**SWINE**.—*Boars one year old or over*.—1st, John Symons; 2nd, Amboise Julien.

*Boars under one year old*.—1st, Arch. McCormack; 2nd, John McNeil; 3rd, Celestin Bergevin.

*Broad Sows one year old or over*.—1st, William Sangster; 2nd, John McRae; 3rd, James Tate; 4th, John McNeil.

*Broad Sows under one year old*.—1st, James Hunter; 2nd, John McNeil; 3rd, Archibald McCormack.

**DAIRY PRODUCE**.—*Cheese*.—1st, Pierre Lajambe; 2nd, Hugh Symons; 3rd, James Carruthers; 4th, Nicol Porteous.

*Butter*.—1st, Ant. Couvillion; 2nd, James Carruthers; 3rd, James Hunter; 4th, John Brodie.

**FIELD PRODUCTIONS, VEGETABLES AND FRUIT**.—*Potatoes*.—1st, André Tellier; 2nd, James Hunter; 3rd, John Alexander.

*Turnips*.—1st, Robert Brown; 2nd, Hugh Symons; 3rd, Nicol Porteous.

*Carrots*.—1st, Francis Turner; 2nd, John Alexander; 3rd, Alex McCuaig.

*Mangold Wurtzel*.—1st, Coll McFee; 2nd, Ant. Couvillion; 3rd, Adrica Hebert.

*Onions*.—1st, Alex. McCuaig; 2nd, Remi Marchand; 3rd, Charles Leduc.

*Apples*.—1st, Thomas Watson; 2nd, John Gardner.

*Tobacco*.—1st, Antoine, Couvillion; 2nd, Celestin Bergevin; 3rd, André Roy.

**DOMESTIC MANUFACTURES**.—*Etoffe*.—1st, John McCuaig; 2nd, J. L. Leclaire; 3rd, Charles Tate.

*Flannel*.—1st, David Blondin; 2nd, James Carruthers; 3rd, John McNeil.

*Woolen Yarn*.—1st, Arch. McCormack; 2nd, John Anderson; 3rd, James Carruthers.

*Blankets*.—1st, Charles Leduc; 2nd, James Carruthers.

*Shawls*.—John Alexander.

*Counterpanes*.—John Carruthers.

*Table Cover*.—James Close.

*Stockings*.—Ambroise Julien.

*Embroidery, &c.*—1st, Celestin Bergevin; 2nd, F. X. Rapin; 3rd, Julien Broissoit; 4th,

Pierre Joson; 5th, Duncan Cumming.

**AGRICULTURAL IMPLEMENTS**.—J. Bte. Grenier, Double Waggon; ditto., Harrows, 1st; George Watt, do., 2nd; J. Bte. Grenier, Iron Plough; Benjamin Poitras, Wooden Plough; Louis Raymond, Moulder and Grubber; James Carruthers, Grubber; George Watt, 1 pair Bob-Sleighs, do., Cheese Press.

**SUNDRIES**.—William Kilgour, Washing Machine; Louis Beaneage, Leather; Francois Leduc, Soap; Nicol Porteous, Candles; Joseph Joson, Pumpkin.

#### AGRICULTURAL IMPROVEMENT AND PROGRESS.

The present is a time of agricultural improvement and progress without a parallel in this country. Improved implements, improved stock, better cultivation, better fences and buildings, meet us everywhere in the country; and farmers are growing "rich," in the common acceptance of that term. We rejoice at this, and so must every man who feels a lively interest in our national welfare, because agriculture is our main stay. If it fails to prosper we can have no prosperity. It is the produce of our farms—the fruits of farm industry—that animate trade and commerce, that build up cities and villages, construct railroads and canals, and cover our lakes and rivers and the broad seas with fleets of vessels. What a calamity—what an universal panic and prostration of business would the failure of even one crop over the whole country bring upon us!

Agricultural progress and prosperity, then, are subjects that no man, whatever may be his calling, can regard with indifference; and the agricultural classes themselves, as a body, by their intelligence, industry, energy and manly independence, command universal admiration and respect. These are our honest sentiments, not the fulsome flattery of a stump speech or holiday oration. Our sympathies are, and ever will be, with the tillers of the soil. Our own life, so far, has been spent in the country, and we have earned our bread by the cultivation of the soil. We can speak of both its toils and pleasures from actual experience. We know that some regard it as a vulgar and plodding pursuit, fit only for strong, rough, and uneducated men; but the number of those who think so is diminishing rapidly. Men of taste and intelligence are now ambitious of being agriculturists; and schools and colleges for training the sons of farmers are beginning to attract attention, and will soon work a change in public sentiment in regard to the respectability and importance of the agricultural profession.

This brings us to the point on which we proposed to make a few suggestions, when we took up our pen. We wish to see the farmer's home—the farmer's life—made more attractive. Hitherto, as a general thing, the improvements which have been made are of the *useful* kind, having reference mainly to the supply of man's physical wants. Most of our farms must be regarded as mere manufactories of food and clothing; very little has been done to gratify the intellect, taste, or feelings—the higher and nobler attributes of our nature. And this is one reason, beyond a doubt, why many young

persons who have, by means of education, reading, and society, acquired a certain degree of refinement, become dissatisfied with agricultural life, and have sought the city. Intelligent, educated men, can not surely remain satisfied with being mere growers of grain and breeders of stock,—they must love their home; and to merit their love and attachment, that home must possess something of beauty, for the love of the beautiful is an instinct of man's nature. A large portion of the population is continually on the move;—the old home has no hold on their affections—or at least not enough to overcome the novelty of a new one. We see the population diminishing in the very heart of the finest agricultural districts in America, where nothing is so much needed as human beings. It is at certain seasons impossible to procure laborers enough to do the work. This state of things is unfavorable to the perfect development of the country's resources, and equally unfavorable to the attainment of a higher and happier social condition.

It is not unreasonable, we trust, to expect, and even to urge, some reform on this point. Make home attractive; cultivate the taste, and feelings, and affections, as well as you do your fields. Why should a wealthy farmer, with his 50, 100, or 200 or 300 acres of land, content himself with a rod or two of a door-yard, and a dozen of shade trees, shaped and managed after the precise fashion of a village plot? Why can he not, just as well have a park and pleasure-ground of several acres around his house, broad glades of lawn, and groups of trees, separated from the cultivated portions of the farm by green hedges? This, with a well stocked orchard and good ample kitchen-garden, would come up to our ideas of a country home; and it would be impossible for children to grow up in such a home without becoming attached to it, and having their tastes expanded, their feelings refined, or without appreciating the comforts and blessings of a country life. A rod or two of a door-yard for a farm house!—what a mockery! There is something incongruous in the very look of it that cannot fail to strike every observing person.

But some careful farmer will ask us, "How can we afford to lay out parks and pleasure-grounds, and keep them in fine condition? It would cost us more than the whole labor of our farms. Only think of what an expenditure of money and labor this hedging, and planting, and mowing this pleasure-ground would involve. It would be all very well if we could afford it; but that we cannot, and we must leave it to retired gentlemen who have made their fortunes in town, and come out into the country to spend them."

But we reply, You can carry out our plan without incurring a heavy expense. Hundreds of farmers in our own county can make such a park as we propose, without feeling the cost. Fence off, with Osage Orange or Buckthorn, at a cost of about twenty to twenty-five cents a rod, five to ten acres of land immediately around your dwelling. Seed it down, and it will produce good crops of hay. You can get plenty of young Maples, Elms, Tulip trees, Basswoods, Ash, and other native trees, in the woods,

which can be taken up and planted at leisure intervals in the fall, when farm labour is over, and early in spring, before it commences, and even during winter, in mild weather. Until the trees are well-established, it will be necessary to cultivate the soil around them. It will not be necessary to cover the whole ground with trees, but merely to scatter them here and there in groups, and singly, to give it a park-like character which will distinguish it at once from the cultivated fields. A little can be done now, and a little again, as leisure affords; and in a few years the work will show. Meantime the land is cropped profitably; for hay is always a paying crop, and an indispensable one. The ground nearest the house may be planted with some rarer trees—a portion of them evergreens. A small portion of the ground near the house might be separated from the main body of the park by a wire fence, or moveable hurdle fence, and kept mowed; and if embellished with a few flowering shrubs, and a few beds of flowers, all the better. But these, for economy's sake, can very well be dispensed with. When the planting is finished, and the trees fairly established the park might be pastured with sheep, as many parks are in Europe; and thus it would always have a closely cut surface without the expense of mowing, and the sheep would be an interesting feature in its scenery. When forest trees are not within reach, we would recommend the raising of them from seed, or small plants can be purchased at the nurseries for \$2 or \$3 per 100, which, with a couple of years' growth in nursery rows, will be fit for final planting out. Only go about it, and the means will not be wanting.

#### MEANS OF AGRICULTURAL KNOWLEDGE.

What are our principal means of obtaining a knowledge of Agriculture here at the present time? I make this inquiry, because I wish to know whether or not we are employing sufficient means for the education of the rising generation who are to occupy the land of their fathers, and to cultivate its rugged soil. Canada, under skilful cultivation, is capable of producing all the necessaries and many of the luxuries of life in great abundance. Still, in order to compete successfully with other portions of the country where but little knowledge and effort are required in cultivating the earth, the Canadian farmer must possess superior knowledge of the business so as to be able to husband all his resources to the best advantage. It will not do for him to skim over the surface, to scratch the soil and cast in his seed, and expect an abundant harvest. No; what he most needs is practical knowledge or science; for it is this alone which can enable him to render the rough and rugged soil productive.

Let us briefly enumerate some of our principal means of acquiring agricultural knowledge, and endeavour to ascertain our real condition and prospects.

The first means of acquiring this knowledge is in the family, on the farm. This is very different on different farms, and in different towns and neighborhoods. On some farms it is good, very good; on others, it is tolerably

or indifferently good; on others, again, it is useless, or worse than nothing. It is nowhere uniform, methodical, systematic, or scientific. On one farm, the operations are all performed in a very careless, slovenly and unskilful manner; on another, they are all performed very differently, and are followed with very different results. Still, whatever may be the errors and defects of family instruction on the farm, it ought not to be underrated or held in disesteem, because in most families, and on most farms, it is doing an immense amount of good, and imparting a great amount of knowledge to the young.

The second means of knowledge consists of newspapers, periodicals, and books, professedly treating of science and practice of agriculture in all its departments. And it is greatly to be regretted, that these admirable means of knowledge intended for the benefit of all, should be approved by so few; that any unreasonable prejudice should prevent any one from receiving that instruction from books and newspapers which he would gladly and thankfully receive from the lips of a friend.

The third means of knowledge consists of the example, conversation, and advice of neighboring farmers. A good example, accompanied by gentle words and useful advice, will have a great effect on youthful practice. The influence of such farmers is very great. The young are naturally inclined to imitate their superiors and elders in every kind of business. This is peculiarly the case in farm operations, in which every improvement is readily adopted and reduced to practice.

The fourth means of knowledge consists of farmers' clubs and town agricultural societies. In every town where there is a farmers' club established for the discussion of agricultural subjects, there is generally an excellent school for young farmers. These farmers' clubs are generally made up of the best and most skilful farmers in the town; of men who read and think and reason, and in all their discussions aim to let their light shine for the benefit of each other. Mutual instruction is what they aim at, and not to astonish the world by an exhibition of some great monstrosity of nature or art. They have no premiums or state funds to bestow on unworthy objects. They see clearly that the state's money which is now annually distributed among the several county societies so liberally, ought to be so managed as to impart knowledge to the great mass of young farmers, instead of being squandered away in county towns upon trifling and doubtful objects.

Such are some of our principal means of acquiring agricultural knowledge. Are they adequate to the purpose of imparting a thorough knowledge of agriculture to the rising generation? If they are we ought to be satisfied with them, and endeavour to use them to the best advantage. But if these means are not sufficient, we should make use of additional means, so as to secure a greater amount of knowledge. It is obvious to every one, that the strongest man is not necessarily the best farmer. There is something which is better than physical strength, and which can accom-

plish more. It is knowledge which is able to overcome brute force, and subdue the ferocity of the tiger. The knowing farmer can always excel the ignorant farmer whatever be his physical strength, because his superior knowledge gives him additional skill in his business. Here the head as well as the hands must work. There cannot be much success in farming, where there is a lack of knowledge; for it is knowledge which enables the farmer to raise the largest crops at the smallest cost, and with the least effort. How to do this successfully, the science of agriculture alone can teach. At the present day, the farmer is placed in such close proximity with almost every department of science, that it is difficult to determine what should be the extent of his knowledge.

#### FARMERS WIVES.

The farmer's wife is, or at least should be, the most cheerful, happy being in existence. Surrounded as she is by everything beautiful in nature, wakened every morning by the joyful carolling of the birds in the trees around the house, soothed all day by the whispering winds and balmy breezes, laden with sweet perfumes stolen from clover field or apple blossoms, how can she be other wise than happy? O, how from my heart have I pitied poor pale, uneasy-minded women, living in large villages or cities, where every inch of ground was precious, and not a bird sang, but with a sort of wheezy, choked music, and the very trees looked dusty and dim!

How often in the morning, as throwing open my doors and windows to the cool morning air that came bustling in, filling every breath with pure, sweet odors from the budding trees and springing grass, have I wished my city friends could stand in the door by my side, and gaze upon the lovely scene spread out to my admiring view.

With everything so beautiful around her, woman can work hard, harder, perhaps, than she ought, but with willing hands. Everybody and everything works in the country. You cannot look even for a moment out of the open door without seeing some little bird very busy getting straws to build her nest, worms to feed her little fledgelings, or working industriously to teach them the use of their tiny wings, that scarce can bear their weight, or perhaps you see some merry, chirruping squirrel, adroitly stealing his stock of grain for the winter he knows must come, sooner or later, and hiding it wisely in the decayed trunk of a neighboring apple-tree.

The spirit of action is contagious. The hours glide by and so does the work, and when dinner-time arrives, instead of the pale, languid countenance you find in the city wife, as she sits down to her luxurious table, loaded with over-cooked meat, under-cooked vegetables, stale fruits and baker's bread, a brisk, cheerful face meets you at table, whereon you find ham and eggs, and Indian meal pudding and molasses, perhaps, but good, light, sweet wheat bread, and tempting dishes of fruit, fresh from the garden, that would completely upset the equanimity of the guests at the aforesaid city table.

A farmer's wife can concoct such dishes as city folks know nothing of. With plenty of milk and eggs, there is always something in the house to eat. You can never take her so much by surprise that she will give you no invitation to stop to tea, and she is never so full of apologies because that tea is not nice enough, as to render you uncomfortable.

With a mind evenly balanced, a home made happy by her presence, a contented disposition, wishing no change, a quiet, easy way of turning off work, the farmer's wife is a woman to be envied, and still some poor, foolish mortals presume to pity her! Pity, indeed; better bestow it where it is needed! The highest, noblest lot of woman is her home mission, and the most superior place for the exercise of her power is in the quiet home in the country, 'mid the soul stirring beauties of nature, the handiwork of nature's God.

#### TENANTS AND LANDOWNERS.

It is evident, that under very peculiar circumstances—improvements, such as building farm-offices, draining, and fencing, are, in the first instance, the proper business of the landlord. It would, *in ordinary cases*, be impossible to expect that a tenant, whose interest is comparatively temporary, could or would be at the expense of making permanent improvements of this nature, even if he had ample means at command; and if he has not the means, even supposing that the nature of his tenure is otherwise most favourable, he must remain content to labour under the disadvantages caused by the obstacles to improvement which his case presents, and even to adopt a course which he feels to be least profitable or satisfactory. We have known such cases, and when we have contrasted the results with those we might reasonably expect, were the occupying tenant placed in a more favourable position, we have felt astonished that any owner of land could have remained so blind to his own interests as refuse to assist in improving the capabilities, and thereby ultimately increasing the value of that from which his own income was derived.

The fact is, and there is no use mincing matters, many persons who are owners of landed property are utterly ignorant of what constitutes their interests, not to speak of their duties. They do not appear to understand that land-owning is a trade, or, if they like it better, a profession, and that it is quite impossible to carry it on successfully without being thoroughly and practically acquainted with it. They may, indeed, delegate their authority to a representative, and, if the person selected for this most responsible office understands his duty, the lack of knowledge on the part of the principal will, in some measure, be supplied. But even in such a case as this, it is, in reality, not less needful that the owner of the land should be fully conversant with his business; for if he is not familiar with it he may render the labours even of a thoroughly practical representative of little avail either to himself or the tenantry on his estates. He will not be able to appreciate the more enlightened views of his agent, he will likely be easily swayed by the opinions of others as ignorant as him-

self, and be led to withhold his consent from measures which, if put in execution, would materially benefit his own interests. But if such a state of matters is most deplorable, it is much more so when neither the owner of the land nor his representative understand what constitute the duties of their respective stations. And we need not say that instances of this are to be met with, not only in Ireland, but in Scotland and in England, where, as here, landowners can be found who consider that the whole duty of man, so far as they are concerned consists in spending the money transmitted to them by agents, factors, estate stewards, or by whatever designation their representatives are known, and where the latter are, in the truest sense of the word, only "receivers," whose knowledge of the tenantry is confined to the half-yearly rent days, and who do not care a farthing whether the tenantry sink or swim; nor does it trouble them although the estates under their charge should permanently decrease in value, in consequence of their own ignorance and shameful neglect of duty, so long as their income is secure.

It is for the interest of landlords that we thus speak. They cannot be in a thriving state if their tenants are labouring under disadvantages, and it is therefore, their interest to remove such sources of personal loss wherever they exist. Want of practical skill on the part of the occupying tenant is a source of much loss to the owner of the estate, and for this reason the latter should take steps to remove it. These are adopted by some landlords, and should be much more generally and earnestly put in practice. But it is of little use to do so, and even of little use to have a tenantry thoroughly acquainted with their business, if they are prevented by the operation of causes which it is the landlord's duty to remove from applying their knowledge effectively. We alluded last week to the increased value of farms in Scotland at the present time as compared with their value even twenty years ago—an increase in most cases arising from the improvement of previously cultivated and the reclamation of former wastes. How was this effected? By the landlords and the tenants going hand-in-hand. The landlords drained, fenced, and built steadings, for which outlay the tenants paid a certain percentage during the currency of the lease, this percentage becoming absorbed in the fixed rent at the commencement of a new lease. The landlords did their part; the tenants performed what appertained to them, and both were benefited.

We have also examples of similar co-operation in this part of the kingdom, although we are bound to say these are not so numerous as they should be. On the estates belonging to Lord Derby and Stafford O'Brien, Esq., for instance, the entire drainage and the erection of dwelling-houses, where such are required, are done by the landlords. Leases for 21 years are given, and all charges in the shape of interest are included in the rent. Where old leases exist, or other circumstances which place the tenant in a more than usually favourable position, five per cent. is charged on outlay of this kind, and where farms are held from

year to year, and let at the full value, no charge is made, and the improvements are effected at the sole expense of the landlord. Mr. Singleton, of Aclare, county Meath, erects buildings and fences, constructs drains and farm roads, and then lets his farms on leases of twenty-one years. In our last impression it was stated, on the authority of the *Western Star*, that Mr. Pollok, besides granting new leases to 311 tenants on his Creggs estates, "is engaged in draining their lands, improving their fences, and repairing their houses, charging them but a nominal percentage on the outlay." There are other instances where less or more has been done, but enough has been said to explain the nature of the landlord's duty—duty, because it is his interest—and we know that when this duty has been properly attended to, the results are such as to justify the shrewd remark made by a late writer, to wit, that "assuredly Allan Pollok, and capitalists of his spirit, will do more for the agriculture of Ireland in a single year than the Albert Farm, with all its collateral appliances of model and ordinary schools, can accomplish in a century."

Landlords and tenants are in one boat, and in some parts of the country the former are at present being painfully reminded of the fact. If, therefore, they are desirous of lessening the risk of such claims upon them arising in future, let them begin now to look to their own interests by attending more carefully to those of their fellow-voyagers; for this is the only course they can adopt with any hope of permanent success.

### THIRTY-SIX MAXIMS FOR THE FARMER.

1. Never get in debt when you cannot see your way out again; when you owe, pay as fast as you can, and promptly.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

25. Perform all labor at the right season.

26. Do all jobs in the best manner.

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

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

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

30. Do not buy old waggons, harness, plows, etc., at auction, because you can get them cheap. Better expend the money for books, travel, or some needed improvement.

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

32. If at forty-five you have a fair property, do not work with your muscles so hard as for-

merly, but save the afternoon of each day for mental and social improvement.

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

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

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

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

**ONE CAUSE OF DRAUGHTS AND FRESHETS.**

It is plain to every observer, that our country is now more subject to draughts than it was twenty or thirty years ago. Within the last five years, we have suffered in this respect seriously. The loss to the farming community, and through it the whole population, has been many millions of dollars. If they continue for several years more, in frequent succession, there is reason to fear that the "hard times" will pass away very slowly. Is there any natural cause for draughts, or are they sent on us solely as special visitations of Providence for our national sins. We would not speak lightly of such visitations, but we are inclined to think that our sufferings in this particular may be traced chiefly to our own bad management. The wide destruction of our forests doubtless has something to do with the production of draughts, and of these destructive floods or "freshets" which are becoming alarmingly frequent.

If the country is widely denuded of its trees, the land is more exposed to the burning rays of the sun, and to the winds which cause a very rapid evaporation. Then, too, forest trees are so many pumps to suck up moisture from the depths of the earth, and to diffuse it through their leaves into all the surrounding atmosphere. From thence it falls upon the surface of the ground. Perhaps some of our readers have amused themselves with making estimates of the amount of water evaporated from the leaves of a single tree, and then of a large forest, in a single day. To one who has never thought about it, the subject is one of great interest. All readers of history know that many of the rivers and streams of the Old World, which once were wide and deep have now shrunk into much smaller dimensions; from what can cause any one tell, if not that the hills and mountains are now almost entirely bereft of trees? Draughts prevail all over the Eastern continent, with increased severity; and scientific and observing men everywhere proclaim that this is owing chiefly to the cause of which we now speak.

Valleys and low-lands, and fertile plains, should of course be cleared of trees, and devoted to farms and gardens; but at least the rocky hills and mountains should not be shorn of their leafy honors. Let the trees stand sacred from the desolating axe, all along our heights, to break the fury of storms, and to condense and bring down the useful vapors of the clouds upon our fields, and into our springs and streams. It is high time that the government began to move in this matter, either regulating the destruction of our old forests, or encourag-

ing the growth of new. We believe that some wholesome laws touching this matter, would both secure our posterity a good supply of lumber, and a good degree of exception from draughts.

All that individuals can do in this matter, is to preserve their own forest land in just proportion, and by underdraining, thus deepening the soil and giving a porous, spongy character, render the land capable of absorbing and retaining as large a quantity as possible of the water that fall upon it, instead of allowing a large portion to flow off, as is now generally the case. Our Legislature might we think, with great propriety remit the taxes for 20 years on all land devoted to high forest, (not low woods for charcoal and hoop poles,) and tax land which might, but does not carry a good growth of high or low woods, at rate its value would warrant if properly improved.

**BORROWING AND LENDING.**

MR. EDITOR:—The practice of borrowing and lending may be well enough, sometimes—in fact, may be necessary, in some cases; but they should both be kept within bounds, and under proper regulations. This practice, I suppose, is nearly as old as the creation. Society could not well subsist if neighbors were not disposed to accommodate one another in this way. Let a man's business or wealth be what it may, he cannot be so independent, as at no time to stand in need of borrowing. Unforeseen accidents may happen at such a time, and in such manner, as to make it impossible for him to purchase the thing he immediately wants. The thing may not be for sale anywhere in the neighborhood, so that he is obliged to borrow, or stop the work.

But this practice may be carried too far. It may be carried so far as to be prejudicial both to the borrower and the lender. It ought to be kept under such limitations as to be mutually beneficial. "The borrower," says Solomon, "is a servant to the lender." This is sometimes the case. But it more frequently happens, that the lender is a servant to the borrower, and is obliged to serve him, not only in lending him what he wants to borrow, but in running after the things which have not been returned. If the borrower sets out with the determination to live by borrowing, without any intention of returning, or repaying in kind, his intention will soon be discovered, and he will find it impossible to borrow of any who are not slaves to his wishes. So, too, if he habitually neglects to return what he has borrowed, he will find that the lender will not endure the servitude of running after things which have not been returned.

They who lend household articles or mechanics' tools, or implements of husbandry, generally expect to receive their own again unhurt—the very thing, where it can be done; where this cannot be done, something equivalent. But if they find that what is lent is lost, or forgotten or broken, or wilfully retained, they will soon grow weary of obliging in this way; more especially if they be ill-treated when they go after and ask for what belongs to them. The longer a thing has been lent, the more



likely it is that it will never be returned, without being sought for by the lender, which is always very unpleasant business.

The lender ought always to be the judge of the property of lending, or withholding his hand let the borrower clamor as he may. For if the lender is obliged to lend whatever an unprincipled borrower wants, he can with propriety call nothing his own, let him possess what he may; for there will be borrowers enough to deprive him of all his property. Still it is always best to cultivate an obliging disposition. He who is altogether unmindful of his neighbor's interest, may expect to be paid down in his own coin; for his neighbor will be mindful of him. Men grow tired of lending to those who never think of returning. In such cases, the borrower is worse than the beggar. The beggar does not deceive, as in his case no return is expected. The borrower may do much injury to others; the beggar cannot do much harm, as he has no power.

Borrowing frequently occasions the loss of much time and labour to the lender. Besides, it tries his patience to be obliged to run over to neighbor Slack's after his tools he lent him three months ago, and after his arrival there, to be obliged to wait two long hours, while neighbor Slack and his boys are rummaging all over the farm to find the tools which were thrown down in the very place where they were last used. No person ought to borrow what he does not intend promptly to return. For if lenders are obliged to run after their own tools, every time they want to use them, they virtually become slaves to the borrower.

In money matters, they who lend money for the accommodation of others are entitled to a prompt return at a specified time, with interest thereon. It is not right for a person to borrow money and promise to pay what he knows is not in his power, and will never be. This is fraud, and in this many are ruined. It is wrong to make promises that cannot be performed, especially when there is no intention of performing them. Still, where unexpected losses and disappointments take place, allowances should be made. For there is no fencing against misfortunes. But where a man acts with fraudulent intentions, he ought to be condemned. For many have been deceived and ruined by fair promises and worthless securities when in fact the promisor had no intention of fulfilling his engagements.

The habit of borrowing and lending farm tools, and other articles, where there is no great necessity for it, and which a little prudent forethought might prevent, is a very bad one, because it leads to unpleasant results, and creates much ill-feeling in the neighborhood. It makes the lender a servant to the borrower. Whenever he misses any of his tools, he is obliged to run to neighbor Slack's or neighbor Esay's, or to neighbor Doolittle's and see if he can find them. He may have forgotten to which three he lent them. And after spending the whole forenoon in pursuit of his tools, he returns to his work with feelings better imagined than described. No one would be unwilling to lend any of the common articles in use, if he could have a reasonable assurance that they would

be promptly returned. But to be obliged to run after them every time they are wanted, is a great trial to one's patience.

#### LEGISLATION ON THE CANADA THISTLE.

At the last session of the Pennsylvania Legislature, a law was passed to prevent the spread of the Canada thistle. "Hereafter, any individual or corporation in that State, allowing the Canada thistle to ripen on his or on their premises, shall be liable to a fine of ten dollars, upon each complaint that is properly established; and any one who may fear the spread of the Canadian thistle upon his premises from the lands of his careless or thriftless neighbor, may, after five days' notice, enter upon any lands where the weed is found growing, cut it, and recover full costs for the labour and trouble."

#### THE AGRICULTURAL COLLEGE ACT.

*AN ACT* donating Public Lands to the several States and Territories which may provide Colleges for the benefit of Agricultural and the Mechanic Arts.

*Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled,* That there be granted to the several States, for the purpose hereinafter mentioned, an amount of public land, to be apportioned to each State, in quantity equal to 30,000 acres for each Senator and Representatives in Congress to which the States are respectively entitled by the apportionment under the census of 1860: *Provided,* That no Mineral Lands shall be selected or purchased under the provisions of this act.

#### DO GOOD AND COMMUNICATE.

We would say to farmers who are accustomed to committing the results of their observations to paper, that our columns are ever open to their contributions, for which we shall always be thankful. To those who are not in the habit of writing for the press, we would urge an attempt. They need not delay for want of literary ability; *fine* writing is not expected or desired; plain facts, such as occur in the experience of all, are wanted, and if they are only dressed in the homely, every-day garb in which farmers usually clothe their ideas in conversation, it is sufficient. A little practice will soon render it easy to write, and by habit it will even become a pleasure. One of the most distinguished contributors to the agricultural papers of the day, learned to write after he was forty years old, and while engaged in the practical labors of husbandry.

We invite inquiries on any subjects connected with agriculture, and trust that all will be free in proposing questions, which will be answered editorially or by contributors. The attention of our readers, generally, is particularly called to this, and those who are in possession of any information not shared by the public, are requested to remember the injunction—"Do Good and Communicate."

OUR RAMBLES.

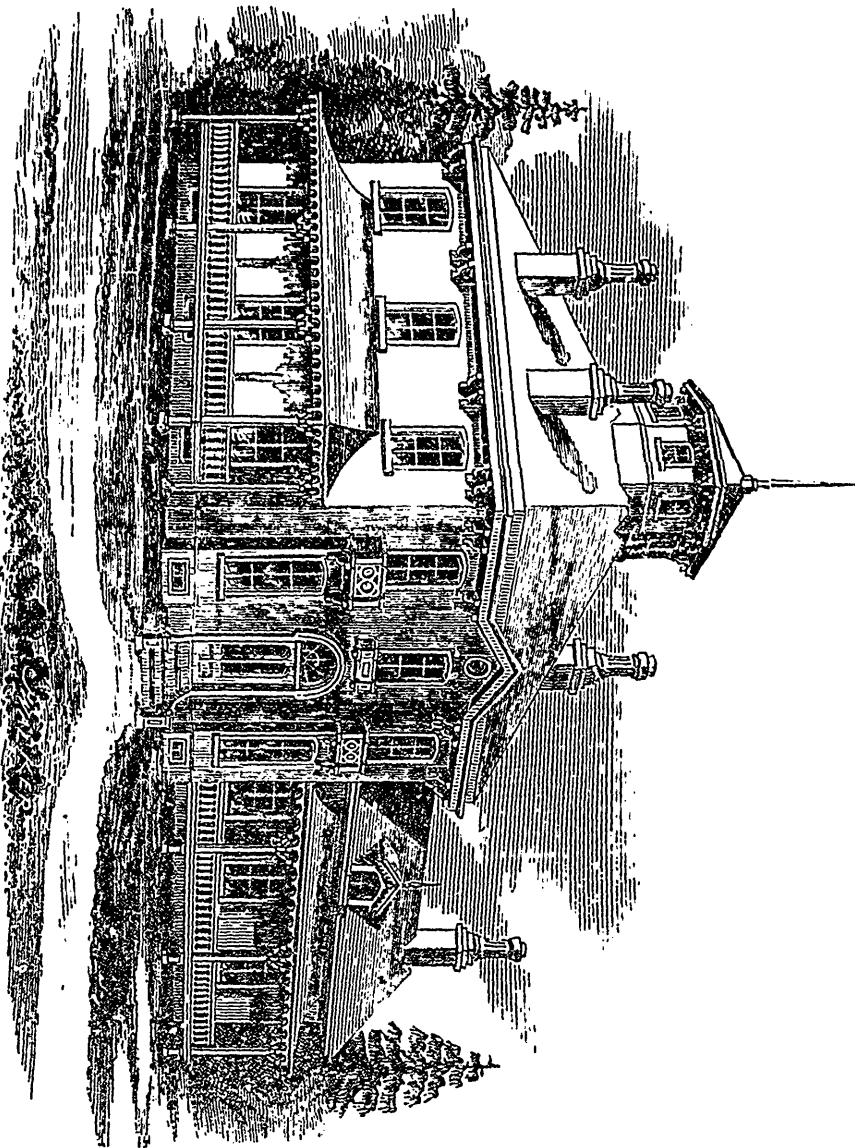
WHERE WE WANT AND WHAT WE SAW.

FOR five years have we been travelling through the best agricultural districts of the Continent of Europe, and, either North or South, East or West, we have met with the practical application of those principles, which theory had learnt us to be the only basis of

good farming. On the mountain slopes of Switzerland, where cheese and butter are the main productions, we found in the numerous herds pasturing the lofty heights of the Alps, all the points prominent in a good milker, and at the homestead dairy operation carried on the most simple and effective plan.

In the neighbourhood of Milano we crossed

Figure No. 1.—Perspective view of Mr. Giobensky's cottage at St. Emstache, county of Two Mountains.



those world-renowned irrigated meadows, yielding annually five heavy crops of hay, through a most favourable climate and particular management. Even during the cold days of winter, vegetation is protected and the growth of plants unchecked—Nay! often times when the highways are covered with heavy

snow, the sun shines bright on the green meadows, defying a few days frost under the protection of a light coating of streaming water.

In the Belgium, flax and hops growing districts where every farm is somewhat a large garden, we have been able to judge of the heavy crops raised on a limited surface, the

moment manure and proper tilling are given to the soil. Deep ploughing, draining, and liquid manure, applied in a soluble, highly concentrated state are the means of obtaining from the land the greatest returns.

In Holland, the draining of the Harlem sea is a wonderful achievement, well calculated to bring in one's mind the conviction of the mighty power of man, in assisting nature in the production of human food. We could not but feel deeply at the sight of the ploughman doing his peaceful work, close by the wrecks partly covered up with drifted sand. Thus this very spot, once the scene of a deadly struggle between man and the raging waves is now a productive field, where golden crops and peaceful homes are found. All this is the work of skill and capital devoted to agriculture.

In France we have seen the cultivation of rape, sugar beet and grain in the north ;

oranges, lemon, figs, olives, Indian corn, garance in the South. In no country is there a greater variety of productions than in France, and as a consequence a greater field for instruction to the farmer. It is a common occurrence to meet with 300 acres of sugar beet on the same farm, and we have visited M. Decumbeque's byres, where 400 fattening oxen are "box" fed all the year round, with the residue of his beet sugar manufactory. Thus on the one hand fat beef is produced, on the other sugar, which is put in the market in a refined state ; while the molasses are converted into rectified alcohol. All these operations are performed in the farm and require constant work of some hundred hands.

In England and Scotland we have visited the most renowned farmers and breeders, and we will be ever thankful that it should have been our lot to cast our eyes on those remarkably

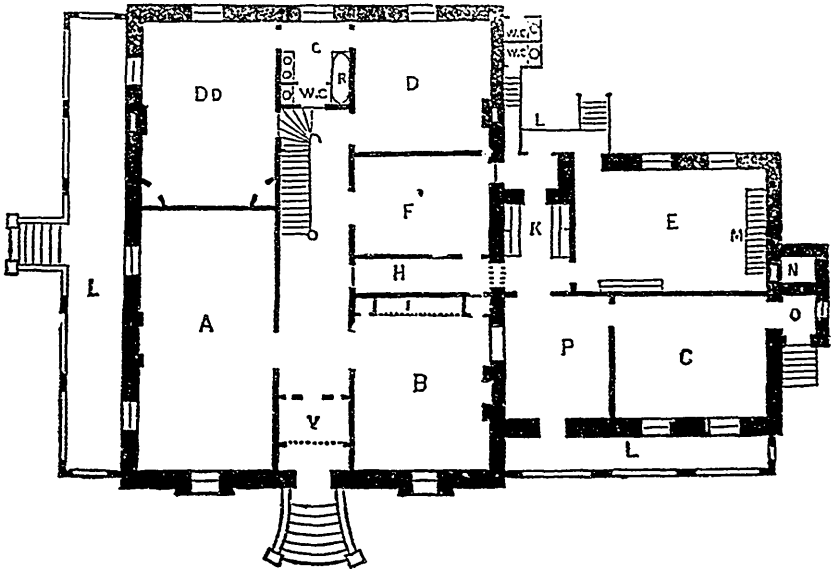


Figure. No. 2.— Plan of the first story of Mr. Globensky's cottage.

fine herds, the pride of the British Isles and the envy (jealous) of the agricultural world. The short horn and the steam plough are the most powerful expression of what has been done for agricultural improvement in the 19th century.

By thus going in the different countries, and by comparing notes on the systems of farming, we are able to take a broad view of the desirable improvements in each locality. It would be absurd to suppose, that one system, however good, should be adopted everywhere. Climate, soil, capital, and the market are very important considerations, not to be dealt with too lightly. If indeed in the neighbourhood of our principal cities, the same way of farming is possible, evidently it cannot be so far the distant farmer of the townships or of the back concessions. But owing to the particular configuration of our country and its division in

three distinct parts, the Valley, the North, and the South, it becomes possible to recommend for each of these three divisions, a given system of farming, which will suit most farmers, with very few alterations, according to their special circumstances. Our Rambles in the different parts of this province, afford ample proof that very little difference is to be found between the farms of two equally successful farmers placed in the same division ; and we might say almost in either of the three divisions. For in this country meadows seem to be the only basis of profitable agriculture, let the hay be sold on the market or turned into beef, butter or cheese. Still by reporting on the experience of our leading farmers, we are enabled to put before our agricultural readers those practical hints which we have gathered in the fields as well as in the byres of our most renowned breeders.

**MR. GLOBENSKY'S FARM, OF ST. EUSTACHE.**

Of all we have seen in our Province, Mr. Globensky's farm is undoubtedly the best, taken as a whole. It realises, in the rotation, the buildings and stock, most of the desirable improvements which we have repeatedly brought to the notice of our readers. Without the least hesitation, Mr. Globensky has made a practical application on his own farm of all the theory to be found in sound agricultural works, and has fairly adopted as his motto, "Practice with science." The result has been profitable farming, with fields well drained and well closed in stone walls, heavy crops of potatoes, mangolds, turnips, carrots and grain; a very good breed of Ayrshire stock, remarkably pure swine, all well housed in new buildings, made with the view to comfort and economy, realising in short all the details which we would most desire to see generally adopted.

It is therefore with the greatest pleasure that we will now put before our readers the result of our visit to Mr. Globensky. Nothing has been spared to make our journal as useful as can be with the encouragement we now receive. Judging of the importance of giving the plans of these buildings, we have gone to the expense of having them engraved, hoping that our efforts, to improve the Lower Canada Agriculturalist, would be understood at last, and would put an end to the hesitation of those Agricultural societies which have not yet contributed, by their subscription, to the welfare of our publication.

**The Farm.**

Situated at St. Eustache, in the County of Two Mountains, 24 miles from Montreal, it presents all the features of the Northern district. The soil, formed chiefly by the desintegration

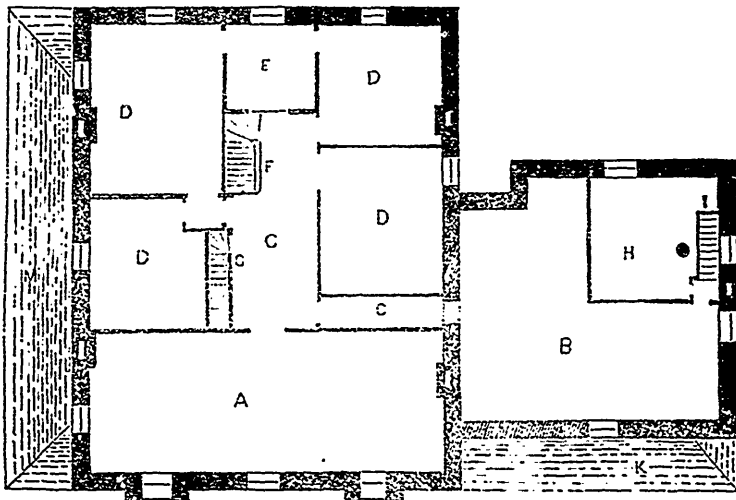


Figure No. 3.—Plan of the Second Story of M. Globensky's Cottage.

of the rocks on which it rests, is not so deep as that of the "Valley." The subsoil generally is composed of gravel, allowing an easy filtering of the water and thus naturally drains the soil. No doubt open drains are yet necessary to rid the fields of the surface water, in spring and fall, but these can be made with much less work and expense, than in the low flats of the river-side. Sufficient timber has been spared to provide for fuel in the winter, and shade in the summer when cattle could scarcely stand the scorching sun of July. Nothing adds so much to the general appearance than those green thickets, surrounded by the golden grain. A stream runs through the farm and provides for the watering of the cattle, when at pasture, during the summer months.

The total extent of the farm is 162 acres of which 38 are laid out in permanent pasture, with timber on three-fourths of the surface. These grounds are properly kept clear of bushes and undesirable shoots. Four acres besides are covered with swamp land, offering a ready

source of manure, which has already given an abundant supply of muck. Of the 120 acres remaining, twenty are put in pasture, affording ample food to the cattle, when out of doors. thus 100 acres of arable land are put to regular rotation.

**Rotation.**

We have already said that meadow was the only basis of profitable farming in this country, and Mr. Globensky's experience bears a new testimony to the fact. He has adopted the ten years course, which is very recommendable in most cases. It is very important here that meadows should last at least 5 years, so as to require from the farmer as little as possible of plowing, harrowing, and general tilling of the land, which called for much labour and considerable expense, without corresponding profits. The 10 years course is well adapted to meet the resources of most of our farmers.

1st year.—Green crops with heavy manurings.

2nd year.—Grain, with meadow seeds.

3rd year.—Meadow, and clover hay principally.

4th year.—Meadow with clover and timothy.

5th year.—Timothy with a coating of muck compost in the fall.

6th year.—Timothy hay.

7th year.—Timothy hay.

8th year.—Peas after meadow, on fall ploughing.

9th year.—Barley after Peas on fall ploughing.

10th year.—Oats after Barley finish the rotation.

The green crops consist of potatoes, man-golds, turnips and carrots according to the nature of the soil. And if a certain portion of the field is too poor, or lost with weeds, to give a green crop, it is ploughed in the fall so

as to expose the soil to the action of the atmosphere; then in the spring a heavy sowing of buckwheat is harrowed in. When in blossom this buckwheat is covered with a coating of farm yard manure, say 30 or 40 cart loads to the acre, and ploughed in. More seed is sowed and harrowed; and in the fall, more buckwheat is again ploughed in, and the soil is then considered in as good condition to be seeded down in clover and timothy after a grain crop, as the other parts of the field where green crops have been raised.

This way of improving the land is certainly very simple and requires no great capital to be adopted. We would therefore insist on our farmers trying on a small scale what it can do to double their crops and clear their farm from all noxious weeds. An acre of ground thus tilled will bring conviction to any farmer.

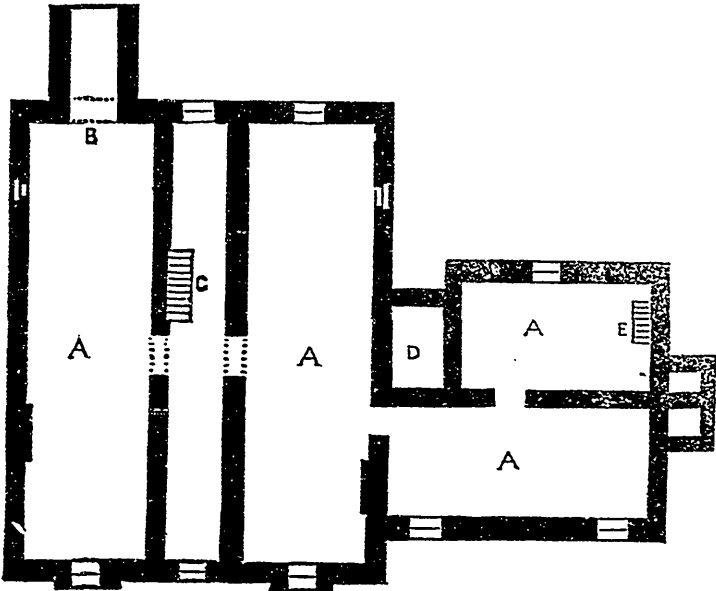


Figure No. 4.—Plan of the Cellar of M. Globensky's Cottage.

#### The composts.

Manure in all its shapes is the most powerful means of obtaining from the soil heavy crops of every description. Mr. Globensky having a swamp on his farm has turned it to profit and makes composts every year to a large extent.

#### The Stock.

Mr. Globensky, being favored with a productive farm and ample capital, has adopted the breeding of thorough-bred cattle, and rightly too. It is the duty of our leading agriculturists to provide their neighborhood with pure blooded animals, so that the improvement of our native breeds can be brought about by proper crossings. We most decidedly oppose the foreign breeds as the only stock of the general farmers, because we do believe that these imported animals, not meeting with that climate and food with which they were born and

raised, will not give as profitable return in milk or beef, as their crosses with the natives. But, on the other hand, to obtain crosses, we require a few herds of thorough bred cattle, and we thus far approve of Mr. Globensky's course from which great benefit will arise for his district. We will only remind our readers that Mr. Globensky took the first prize in the Ayrshire bulls, at the last Provincial Exhibition, as well as the first prize for the large breed boars, and that his herd is one of the most remarkable in the Province.

#### The Cottage.

We give several cuts of the very remarkable buildings of Mr. Globensky's farm, with the hope that some of our farmers will adopt these plans, which are well worth careful attention. The cottage Fig. 1, is the best for a farmer we have yet seen. The design, drawn by Mr. Perreault, Architect, from Montreal, is both elegant

and economical, recommending itself without further explanation. The interior distribution is, we believe, calculated to meet comfort and all the requirements of a farmer's home, from the cellar to the garret. Fig. 2 gives the plan of the first story. Coming through the principal entrance, the vestibule V leads us to the passage, having on the left the drawing room A, and on the right the dining room B, where we notice an alcove I. Further in the passage we meet with two bedrooms, D and DD, both having access to the washing room C, where we notice a bath R, and other desirable fittings. Returning in the passage we have on the left the children's bed room F, and next to it a passage leading to the pantry K, on the left and

to the breakfast room P on the right, through which we enter the office G. An office door O is quite necessary for any one having a certain amount of business. The kitchen E has a private door, an oven N, and a staircase M, leading to the servant's bed rooms.

A wide staircase in the main passage leads to the second story, Fig. No. 3, occupied mainly with bed rooms D. D. D. D. with the exception of the billiard room A, which can be used as a ball room. O is a stair case to the belvedere, where an excellent view can be had of the neighbouring scenery for several mile off. A washing room E. is to be found on the second story. The passage F. leads to the garret B. next to the servants room H.

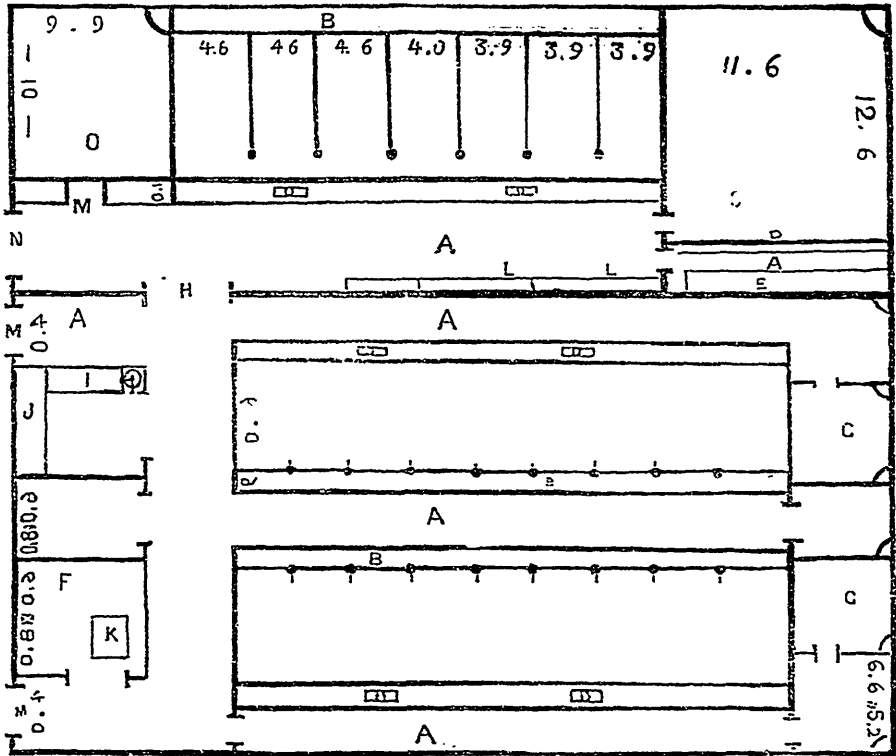


Figure No. 5.—Plan of Mr. Globensky's Byre and Stable.

The cellar, Fig. No. 4, is admirably constructed for the storing of root crops. The main door B allows the carts in the different parts of the cellar A A A A. A good system of ventilation is obtained by the chimnies opening from the cellar. Two staircases F and C communicate with the first flat. D is a reservoir of rain water supplying the kitchen by a pump.

**Stable and Byre.**

The construction of this building is calculated so as to secure the greatest quantity possible of good manure. The stable is built over a cellar receiving the litters, by traps, opening behind the cattle. Taking advantage of the hollow ground in the farm yard the building has been so placed that in front the stable is on a

level with the pound, while in the rear the opening of the cellar is equally on a level so as to allow the carts to enter and load directly from the heap, to carry the manure in the fields early in spring.

Fig. No 5 gives us the plan of the stable and byre, both under the same roof. In entering the stable by the door N we find on the left a box O, for mares in foal, followed by seven stalls and another box C. Behind the horses are compartments L L to keep the harnesses from humidity. Harnesses which are not required immediately are stored in a room A where are also kept the oats. Two traps behind the horses allow the passage of the manure from the stable in the cellar.

The communication door **H** opens on the byre as well as the doors **M M**. Passing through the door **H**, we have on the right three apartments: the first contains the meal-chest **J**, and a water reservoir **I**, fed with a pump plunging in a deep well. The second is a fodder store, communicating with the hay-loft by a trap. The third **F** is used for cutting roots, and underneath is a small root-cellar corresponding to the trap **K**. The cattle are tied up in two rows, facing one another, on each side of the middle passage **A**. The mangers **BB** are fed by the same passage. At the other end of the byre are five boxes **CC** for the calves. Four traps behind the cattle allow the passage of the litters into the cellar.

Fig. No. 6 gives the plan of the cellar of the byre. The root-cellar **A** is filled once a week by the door **C**. The well **D** receives numerous springs. **E** is the stone-work.

Fig. No. 7 gives a view of the front. The cellar wall **A** is in common stone, and that of the byre is in wood. **B** is the door of the stable, and **CC** those of the byre. **I** is the door of the hay-loft.

Fig. No. 8 gives a side view. On the stone foundation rests the wood frame **B**. The side view **E** shows the disposition of the windows.

Fig. No. 9 gives a section of the stable and byre from top to bottom. The ventilation arrangement is well shown here. The stable is ventilated by the tube **C**, the byre by the tube

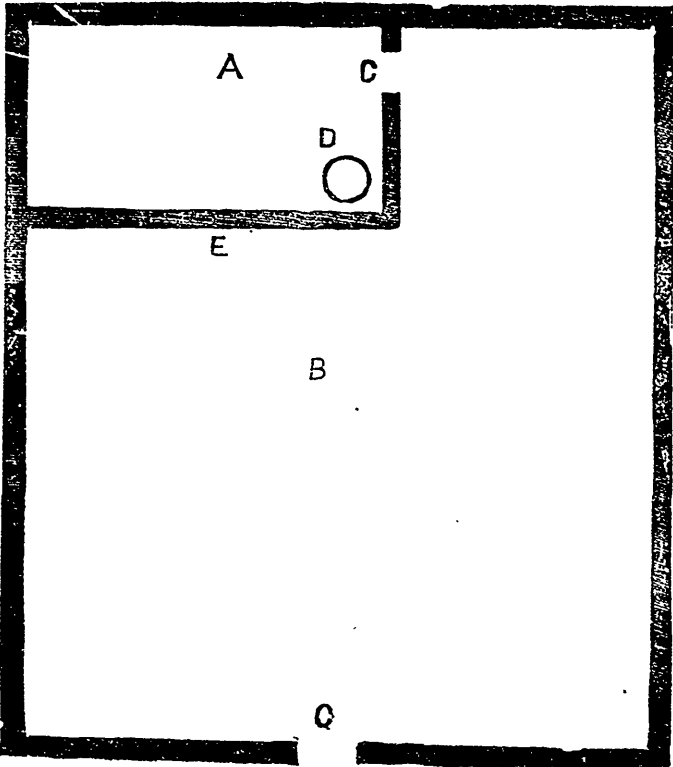


Figure 6.—Plan of the Cellar of Mr. Globensky's Byre and Stable.

**E**, and the cellar by the tube **D**, which all open in the main tube **B**. The floor, 4 inches thick, rests on the timbers **A** strengthened by pillars **F**.

#### Pigstyes.

They are built on the same principle as the byre with regard to the manure arrangement. Fig. 12 gives the interior division, in which nothing is wanting. Two passages lead to the main passage **A**, on both sides of which are ten compartments of different dimensions with troughs opening in front. Traps **I** allow the litters to be thrown in the cellar. In one corner is the cooking room, with the chimney **F** and the boilers **E**. A root store **D**, and ce-

mented troughs **C**, and floor **L** complete the arrangement. Ventilation of the cellar is carried on by means of the chimneys **H H**.

Fig. No 11 shows the Pigstyes in wood, resting on stone work **A**. The doors **C C** lead both to the main passage. The ventilation chennies open on the top of the straw store **B**.

Fig. No. 10 give a very good view of a carriage shed on the first story, grain store on the second, and pigeon room on the third. Here everything has a place, and also is in its place.

#### Conclusion.

We cannot close with this account of Mr. Globensky's farm without expressing the hope

that the board of Agriculture will at last adopt the awarding of gold medals to our most successful farmers. The country is indebted to them for the important improvements which have been carried on for the last few years through their example, and it is but just that their worthy services should be acknowledged. In France where this system of awards has been adopted, the competition among the leading farmers is wonderful, millions of dollars are yearly involved in agricultural improvements, so as to win the valuable "cup" given as a prize. Gold medals in this country would undoubtedly have the same result and greatly contribute to the general improvement of our system of Agriculture.

Of all places on earth, certainly none is remembered like home. The scenes of childhood leave a strong, an eternal impression on the mind, which not only time, but, we doubt not, the endless ages of eternity will not be able to blot out. Then how important it is that home should be pleasant; that, when the

child leaves home, that home will ever stand an ideal of earthly beauty—a second Eden, on the pages of "enduring memory." The more beautiful home is, the stronger will be its magnet which makes it the centre of attraction to the human heart; and the stronger the power of this magnet, the stronger will the teachings and influences received at home impress themselves on the thoughts, and affect the actions of the man in after life. Parents, if you would have your instructions remembered—recollect that the memory of them will always be associated with the spot where they are received. But, besides this, how much better it is for yourselves, how much more can be enjoyed, to have, as you may—if it be only a wood colored cottage—a pleasant home. Man, it is said, "is made by his surroundings," and it is true to a great extent; they do make a vast difference with man, as is demonstrated by the different appearances of individuals of the same race in different locations. Among the lofty mountains, where the scenery is rug-

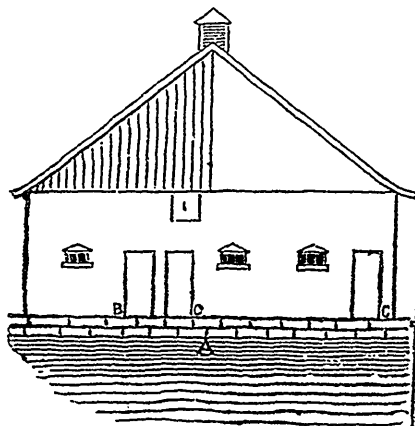


Figure 7.—Front of the Byre and Stable.

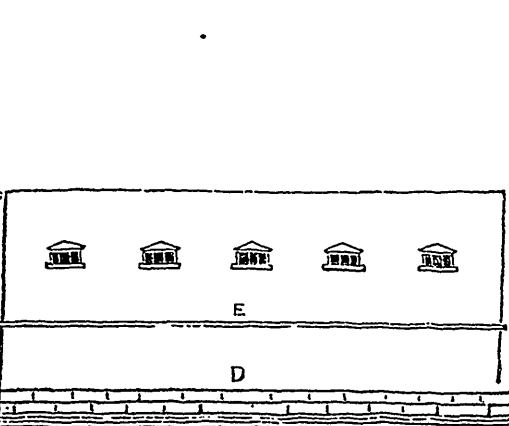


Fig. 8.—Side-view of the Byre and Stable.

ged and grand, the child grows up through youth, and becomes a very different man, physically and mentally, from the child of the level plains below. Nature loves her children. On them she impresses her beauties, and it is in vain that the hand of art tries to rival her; she makes ample provisions, which we may draw from her bounty, for our comfort. She provides us with vegetation, adapted to all climates, and fertilizers for the desert, which we must "make to blossom like the rose," if that is to be our home.

What blessings man receives! Cultivation and artificial fertilization take the place of natural richness of soil, and the vegetation of the climate springs forth with renewed vigor and unrestrained luxuriance and beauty.

But to be more practical; many men will say they are "too poor, they have neither time nor money to spend in embellishing their grounds." This is common everywhere. To all such I would say, you can beautify your

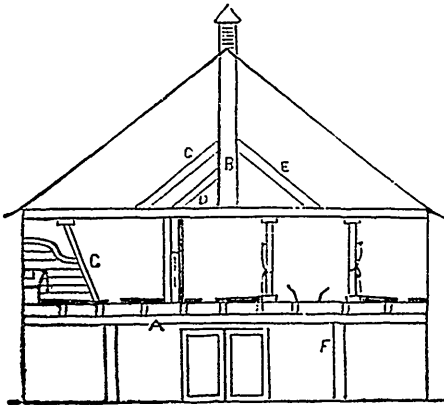
surroundings not only without cost, but with profit. Set out fruit trees on your grounds. The best of apple trees of any variety may be obtained for twenty-five cents each. Between, and under these, such fruit as strawberries, currants, raspberries, &c., all of which will pay a good profit in two years—can be grown to advantage, and can be started with a small capital. Let those old walls be laid up a little better, and fix up a frame, and plant grape vines, letting them run over the frame and wall; also plant vines to run over your immovable rocks. In this way, room now lost, will be profitably occupied, as well as beautified. Flowers, too, should not be forgotten, as they cost but little labor and make home attractive. Luxuriant grass and crimson clover, or any other luxuriant vegetation, add much to the looks in their season, but nothing like trees add to the beauty at all times of the year. Nothing like vegetation in its different forms, springing from the earth in all its varied beauty, filled



with odors unapproached by those of man's invention, and yielding fruit and food for man and beast; there is nothing, I say, like vegetation, to make the surroundings of home attractive, and increase the value of the farm.

**Henry Well's Grape House at Aurora, N. Y.**

Much interest has been induced among grape-growers in the new mode of constructing vineries, described and recommended by William Bright of Philadelphia, in his recently published work on this subject. Without wishing to discuss the merits of this mode at present, we think our readers will be interested in a brief notice of the very successful experiment made by HENRY WELLS, Esq., of Aurora, N. Y., under the careful management of James H. Cruise, his gardener. He has erected a small structure, 25 by 50 feet, with a curvilinear roof, and octagonal ends, surmounted by a ventilating top, the whole forming a neat and beautiful building. It contains fifty vines, now twenty-one months since they were transplanted into the vinery, and having already ripened early in summer, many bunches of excellent fruit.

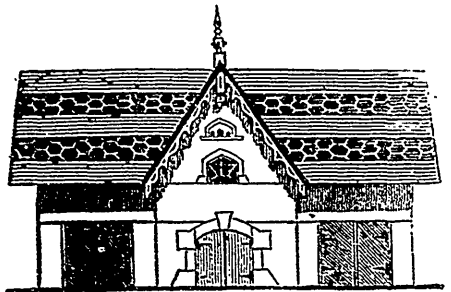


**Section of the Byre and Stable.**

water apparatus for heating the vinery and the adjacent small green-house, consumes about 12 tons of coal annually. During the period of most rapid growth, early in the season, each vine evaporated about two gallons of water each 24 hours. The time required in attendance has not exceeded more than one or two hours daily, the pinching, training, &c. being done chiefly on rainy days when work could not be performed without doors. The soil for the brick boxes is a mixture of manure, bone-dust, and old decayed animal matter, all in compost several years. A large share needs annual renewing, and the labor and care are greater than that required for a common vinery; but for early productiveness and abundant supply, this far exceeds them.

The vines were planted in November 1860, and commenced their growth in February following; they are now stout and vigorous, and cover the whole interior of the glass. Each has borne and ripened several fine bunches of grapes the present season. The gardener thinks

In constructing the house, a cellar was first dug and walled, about three feet deep. A floor was then laid of hard burnt brick, and brick placed on edge supporting another brick floor, with a space of air between the two, equal to the breadth of the brick supporting the upper one. On this upper floor, compartments were made of brick, around the whole interior, each compartment for its vine being  $2\frac{1}{2}$  feet square, and holding half a cubic yard of soil. Next within this row of compartments, a walk or lattice passes around the house. The interior portion is occupied with grapes in posts, and also with early vegetables, this space being about 10 feet by 40. A good supply of string beans was obtained the present season fit for use about the time that gardeners usually plant in open ground. Grapes in pots, four feet high, were loaded with about ten luxuriant bunches each, the vines being three years old. Some beautiful ornamental plants in pots, placed in the centre, added to the interior appearance of the graperly. A cistern beneath furnishes an abundant supply of water. Hitching's hot



**Figure 10—View of the Coach House.**

he can raise a thousand pounds next year, and the proprietor gave it as his opinion, that as a matter of dollars and cents, a good profit might be derived from such a graperly. He expects to obtain an abundant family supply, immediately following early strawberries.

**A Gigantic Dairy.**

Perhaps, however, one of the most extraordinary establishments in the island, in which liquid manuring is adopted as part of the regular system of management, is that of Mr. Harvey or Port Dundas, on the outskirts of Glasgow. There are several distilleries, Mr. Harvey's among the number, and spent malt (draff) and spent liquor of the stills, (pot ale,) are good cow food. There has thus gradually grown up in this locality, under Mr. Harvey's energetic management, one of the largest dairies in the kingdom—probably in the world. Cow byres some 56 yards long, and from 12 to 24 wide, according as one or two rows of cows are to be accommodated, stand closely packed, the whole surface of the ground being thus

covered by a roof. And from 900 to 1000 cows are pretty constantly in milk. They are fed during the winter partly on steamed turnips, 7 tons being steamed daily in order to give one meal daily to 900 cows; also on coarse hay, of

in receive their spent malt and still liquor, and hay in addition. They are managed, cleaned and fed by two men to a byre, holding about 100 cows; the milking is done three times a day by women, who take charge of 13 cows in full milk, or double that number in half milk, a piece. Between 4 and 5, (taking the winter management,) the byres are cleaned out, and the cows receive a "big shovelful" of draff apiece, and have their steamed turnips and meal, and a "half stoupful," probably 2 gallons of pot-ale. They are also milked thus early. At 7 they receive their fodder-straw or hay. At 10 they get a full "stoupful," (probably 3 or 4 gallons) of pot-ale. They are milked at noon. At 2 p. m., or thereabouts, they are foddered again, and at 4 p. m., receive the same food as at the morning meal. They are again milked at 5 to 6, cleaned out and left till morning. The loss by pleuro-pneumonia in so large an establishment, thickly housed together has been very great. Mr. Harvey has, however, at length got rid of it, by never going to market for cows. He buys yearlings, rears them on farms near Port Dundas; does not bring them into his byres until fully satisfied that they are free from all infection; keeps them for a couple of years, bringing them to the pail at 3 and 3½ years old. They are chiefly Ayrshire

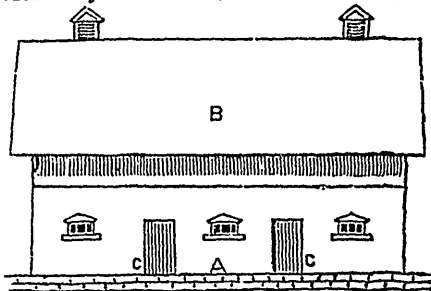
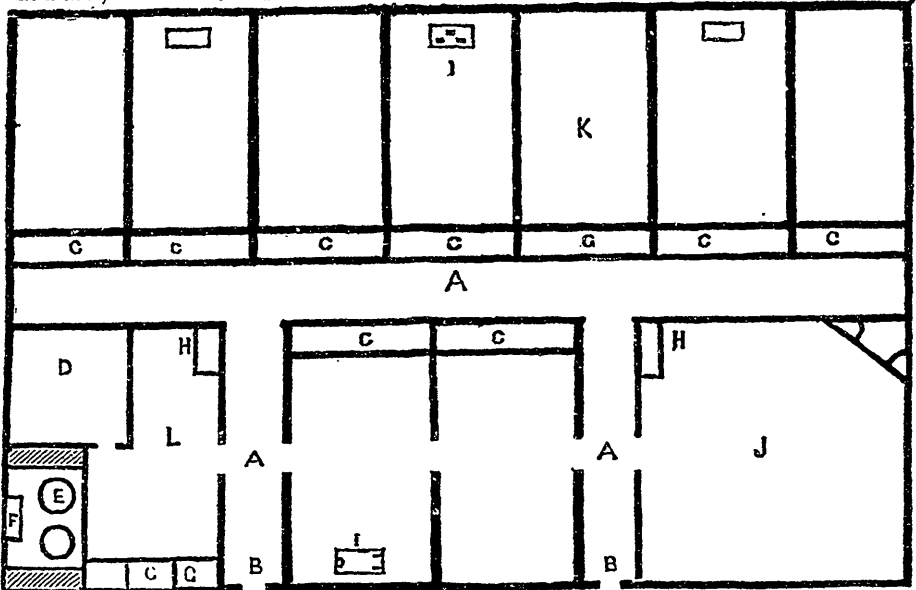


Fig. 11.—View of the Pig-Stye.

which, as of straw, they get between 20 and 30 pounds a day a piece; also on draff, of which they receive half a bushel daily each; also on Indian corn meal, of which they have 3 pounds daily each; also on pot ale, of which they receive three times a day nearly as much as they will take—i. e., from 6 to 10 gallons daily. During the summer they are let out, a byre full at a time, for half a day to grass, and in coming



Plan of Mr. Globensky's Pig-Stye.

and Short Horns, and being worth from £14 to £20 a piece, an enormous capital is thus invested. Some 1,500 acres of land are held close by, and a large extent of grassland is watered from the byres. The whole waste of every kind, of the establishment is pumped into a large wooden tank on the highest ground at hand, and thence by underground piping, extending in some instances for a mile and more, it is conveyed over about 500 acres of land. It is thus conveyed to one outlet in each field, and thence, by pieces of metal piping fitting together, and by India-rubber hose at the end of

this, it is conveyed over the whole surface of the field, receiving one good dressing at least twice a year. There are no means of giving an exact account of the resultant produce—for the fields are all grazed—every cow being turned out, as we have said, for half the day, during the summer months. But Mr. Harvey is satisfied with this part of the large system, which as a whole proves profitable. As to the produce of the byre under the management thus roughly described, it is stated never quite to have come up to two gallons per day throughout the year for the whole number of cows.

## FARM OPERATIONS.



## SUGGESTIONS FOR THE MONTH.

Make compost industriously; use that made in August on your clayey lands, ridging and back-furrowing them, running the subsoil plow in the bottom of the open furrows. By this system the manure will occupy the centre of the ridges, and thus their gases during decomposition will be absorbed, instead of passing off in the atmosphere. The sub-soiling between ridges will prevent the soil from compacting by rains; and the subsoil will be rendered fit for sustaining plants another year, by receiving the atmosphere and the carbonic acid and ammonia carried in by the rains. The frequent freezings and thawings during winter, will render the ridges pulverulent by spring, and suitable for early culture. Do not plow sandy lands in the fall.

Rake up leaves from the woods as they fall, and put them in the compost heaps. Cart head-lands to the manure shed. Have a good supply of materials suitable for bedding, near the stables. Do not attempt to fatten more cattle than you can fully furnish with food, or they will not afterwards flourish well even if fully supplied. Young cattle, if neglected early, cannot be brought up in flesh, except by an unprofitable outlay.

Skin old woods of the surface soil, and replace half its value as a manure with lime and ashes in the woods, and both farm and wood-land will gain by the exchange. Get all the night-soil you can, and mix it with head-land, &c., for the compost heaps. Wet the compost heaps with spent lye from the soap-boilers, if you can get it. Use half a bushel of refuse salt to every cord of compost, to prevent regermination of seeds, grubs, &c., &c. Compost wood scrapings and old hot-bed earth with fresh barn-yard manure, and put it aside for spring use in making hot-beds. If you have not sufficient cellar room, make piles of your root crops, beets, turnips, carrots, &c., on high places, and cover them with twelve inches of dry soil; leave small openings at the top for escape of air, and dig a trench around the

heap with a gutter leading off to a lower spot, to insure the dryness of the pile.

Potatoes, if necessary, can be treated in the same way, and will keep as well as if stored in a cellar. Dry straw is sometimes placed over the potatoes, beets, etc., before they are covered with soil, but experience has proved that the latter method is apt to cause heating, etc.

Do not forget that corn is more valuable when changed to fat, than when found in the hog manure; and to secure the first condition, cook it before feeding to hogs, or your manure will be very rich at too high a cost. It has been satisfactorily proved that one pound

of cooked corn will make more pork than two pounds fed in the raw state. Hogs should be fattened in small pens, as exercise of any kind wastes carbon, and materially interferes with fat-making.

Stables should be now put in perfect order, painted or whitewashed, and means taken, if necessary, to secure thorough ventilation for the winter. See that doors are tight and that windows can be readily let down. Lofts should be regulated, sleighs made ready for winter use, etc.

Those tools which are not to be used until spring should be carefully cleaned and stored away in a dry place. It will pay to paint handles and all wooden portions, or to coat them with a solution of gum shellac; the iron or steel portion should be carefully oiled. Assort small tools and place them together.

Mowing and other large machines should be carefully attended to, and when they are taken apart, the smaller portions should be wrapped up in stout paper and labelled.

Seeds should be put in strong bags and placed in a dry garret or loft. These bags should be hung up to protect the seeds from the attacks of mice. Each kind should be accurately labelled.

## PLOWING—FALL OR SPRING.

This question is discussed every year, yet remains more or less unsettled. We do not now expect to dispose of it effectually, but simply to suggest a few hints worthy of consideration.

No one can deny that fall-plowing saves time for doing other work in the busy season of Spring. Moreover, the soil is drier in Fall than in Spring, and so is in a better condition for working. He who has waited week after week for the spring rains to pass over and the ground to settle, will feel the force of this consideration. Again, if a piece of land is infested with grubs or other vermin, or with the roots of weeds, there is hardly a better way to subdue these pests than by throwing them up to the surface just before the winter frosts set in,

Grasshoppers, the midge, and weevil, cannot thrive much after turning their houses topsy-turvy in October and November. They cannot re-build in Winter, and many of them will be killed outright. For light, sandy soils, apt to blow about in open Winters, or those which are quite gravelly and porous, we question the expediency of fall-plowing. But for stiff clays, which need the action of frost to pulverise them, this is the best treatment that they can receive.

A friend in Wisconsin writes us, that in all his region the farmers do as much fall-plowing as they can, finishing up the balance in Spring. That then, they sow and harrow all together at the same time, and that in the Summer no one can see any difference between the growth and yield of the several fields; at harvest time, perhaps, the spring-plowed land is more mellow than the fall-plowed, but the grain is worse lodged. A correspondent of a western journal claims that for spring wheat and barley, fall-plowing is much preferable. He thinks that spring wheat grown on fall-plowed land, yields a better and surer crop than winter wheat sown in October. "The exposure to atmospheric influences during the winter, mellows and enriches the seed-bed to such a degree, that whenever the grain is sown, it has the elements which it needs at hand ready for assimilation. . . . . The soil newly turned up, has first to be prepared or mellowed, oxidised, as the chemists would call it, before it becomes fit to yield nourishment; and while the process is going on (in Spring,) much precious time is lost, and the growth of the plant is abbreviated in proportion, its time for tillering is cut short, and the yield cannot be as large as when it has the whole length of the season which nature seems to have set apart as that in which the plant shall make stems and leaves, previous to the formation of the seed-vessels."

This certainly can be said in favour of the fall-plowing of sward land intended for corn. If it is done early in the Autumn, the sod becomes partially rotted before the time comes for planting, and so is sooner prepared to act as a fertilizer for the crop than it would have been if plowed in the Spring. If ever the plant wants the food of the decayed sod, it is early in the season, to give it a quick and vigorous start.

Late planting is a frequent cause of the failure of crops. After they are got into the ground, a drouth often sets in which retards the germination of the seed. We plant late because the cold rains put us back, and because of the pressure of other work. Now, if we could do much of our plowing in the Fall, we could take advantage of the first favorable weather to get our seeds in, and so gain considerable time in their growth. If we postpone all our plowing until Spring, we often do the work when the land is too wet: the consequence is that it becomes lumpy and stiff-baked—a condition unfavorable for the growth of any crop, and from which the land does not fully recover in a season or two.—*Am. Ag.*

#### LATE PASTURING.

Some farmers keep their cattle out as late as

possible in the fall, and even into winter. The pastures are gnawed very close, and even the after-math of mowing fields, as if they never expected to get another crop of grass from them. This is very bad husbandry upon any land, and especially upon that recently seeded with herds-grass. This grass, as is well known to all careful observers, has a bulbous root, and the fine roots that shoot out from the bottom are not as strong as the roots of most other grasses. It is, therefore exceedingly liable to be torn out by the roots by grazing cattle, especially if the grass is short. In a close cropped meadow where this grass has been sown, nothing is more common than to see thousands of these dried bulbs lying upon the surface. We doubt the economy of grazing a herds-grass meadow at any time. But if done at all, it should not be cropped after the first of November in this latitude.

The roots of all the grasses are designed to be covered with their own leaves and stalks during the winter. These, and the snow, protect them from the alternate freezings and thawings, and bring them out in good condition in the spring. The farmer who undertakes to thwart the designs of Nature in this respect, will find it a very expensive business. The little that he saves in feed now, he loses next season in the diminished yield of the pasture or the meadow. We ought always to manage so as to have Nature working with us, instead, of against us. This is one of the evils of overstocking farms. The farmer is afraid that he has not quite fodder enough for winter, so he pastures till the ground is frozen. He cuts less hay for the next season, and he is still more sorely tempted to pasture.

It is quite as bad for the cattle as it is for the land. If they have no fodder in the month of November, they lose, rather than gain upon pasture, unless it is much better than the average. Every animal ought to go into the stable in a thriving condition—if not fat, at least in full flesh. They are then easily kept thriving upon good hay, or upon hay and roots, straw and meal. After several years' close observation directed to this particular point, we do not think any thing is gained by pasturing in this latitude, and north of it, after the first of this month. All the grasses must have time to cover their roots in order to make flush feed next season. Cattle foddered through a part of October, and brought to the stable about the first of November, in good flesh, are easily wintered. It is better management to buy hay or to sell stock, than to pinch the pastures by close feeding.

#### MANURES.

Next to a systematic and energetic application of the powers of both mind and body to his profession, the collection, preparation and application of manure to the soil is of importance to the farmer. These must supply the basis of all profitable culture, and collected in suitable quantity, skilfully prepared and judiciously applied, they will certainly lead to thrift and independence. These will follow, even in this cold and variable climate, and on any of our lands that are managed by an intelligent industry.

The difficulty presented to the farmer in this matter, is the want of the materials themselves to swell his heaps. He naturally argues that he has so much hay, which, when fed out, will produce about so much manure, and in thousands of cases, little effort is made to change this state of things. Evidently, the first step towards improvement must be to change this condition by increasing the materials that are to increase our crops. This cannot be done without an outlay of labor, and it is this item of cost that deters so many persons from securing the necessary materials for large and valuable heaps of manure. This is an important omission, because this work forms the basis of all the future operations of the farmer, and absolutely prevents that progress and profit which would certainly flow from a more intelligent practice.

All farms furnish resources for these supplies, in a greater or less degree. On some there are leaves and ferns; on others head lands and balks, where the finest portions of the soil have been accumulating for a generation, in oversight and inconvenient quantity—another has sea-weed thrown upon its margin or shells of various kinds that may be converted into rich materials; while some of them have marl, and a large proportion ample beds of meadow or swamp muck. There are various other resources, also, beside these and the usual products of the fodder crops of which the farmer should avail himself, such as the waste of every kind from the house, hassocks from the meadows, small brush, tan bark, sawdust, shavings, &c., all of which are valuable materials when properly wrought up and tempered with lime, salt and ashes, or some other quickening agent. No labor on the farm can be more profitably expended than that devoted to this work, although a too common practice will scarcely verify our statement. Too little capital, either of labour or money, invested in this primary part of farm management, embarrasses all the succeeding operations of the farmer and cause a great amount of labour to be performed that brings no productive results. It is as though the manufacturer should erect his mill, and supply the necessary material of cotton and wool, but provide no power to propel his machinery.

#### SURFACE DRAINING.

The practice of top-dressing, or of surface manuring, has long been the favourite method employed by all intelligent gardeners within the circle of my acquaintance. We have long ago learned that masses of rich, nitrogenous manures are not what plants require about their roots, but that manures are applied much more successfully (and less injuriously) by top-dressing, either in solid or liquid form. Nature never manures her plants with crude masses of concentrated fertilizing substances, but imparts her stimulating and mineral food in a state of the most minute division—almost infinitesimal—chiefly from the surface of the earth. No wonder so many fruit trees have been killed, so many grape vines destroyed or rendered barren by excess of wood, in consequence of the heavy manuring at the roots so

universally recommended by writers on gardening and horticulture.

The great objection to surface manuring is founded upon the probable loss of ammonia caused by the exposure of decaying manures upon the surface of the earth. But this loss has been shown, by sound reasoning and by facts deduced from practical experience, to be much less than is commonly apprehended; while the benefits arising from surface manuring in other respects, more than counterbalance any possible loss of ammonia from this practice.

In the first place, when manures are exposed upon the surface of the earth, even in hot weather, decomposition no longer goes on so rapidly as when the same manures are kept in a heap, and the ammonia that is produced is gradually carried into the soil by rains. The other soluble substances as potash, lime, the phosphates, &c., are of course not lost, because they are not volatile.

Nor are these soluble and valuable substances lost to plants by being carried in the soil before they are needed by growing plants. It has been conclusively shown by eminent scientific authorities that any good soil, containing a fair proportion of clay and carbon, is capable of taking up and retaining effectually ammonia, lime, potash, soda, &c., in a soluble form, so that little, if any, passes off in the under-drainage water of such soils. These substances, it is true, may wash from the surface, but they cannot pass through a good soil and go off in the drainage water.

By surface manuring we mulch the ground, and render it cooler in summer and warmer in winter. More shade is an important element in [culture—so important that some writers have thought shade alone to be equivalent to manure. A piece of soil heavily shaded by surface manuring actually decomposes like a manure heap—that is, it undergoes a sort of putrefaction or chemical change, which sets free its chemical constituents, unlocks, as it were, its locked-up manurial treasures, and fits its natural elements to become the food of plants. Darkness, moisture and air are the conditions required for vegetable and mineral decomposition. These conditions are produced in the soil by surface manuring.

Then, again, when the surface manure decomposes, its elements are washed into the soil in a state of solution precisely fitted to meet the wants of plants, and they become themselves active agents in promoting further decomposition and chemical changes in the entire body of the soil.

Manure, then, I say, chiefly upon the surface. Do not waste your manures by mixing them deeply with the soil. Plant shallow. Keep roots of all trees plants and vines as near the surface as possible. There are weighty reasons for the position assumed in the last sentence, which I have not space now to enumerate. I say again, plant shallow. Let your soil be deep and dry, but plant near the surface as much as possible. Top-dress your grass, after mowing in July or August, under a burning summer sun; top-dress in the fall before and during the autumn rains; manure

the surface while snow is on the ground, while the March wind blows, and while the April rains fall. Manure the grass, instead of your corn and wheat, broadcast, at any time when you have manure and leisure, and I will guarantee that you will be abundantly satisfied with the result.

To fruit-growers I would say; Do not fill your soil with manure before you plant trees, grape-vines, &c. Plant in good natural soil and manure from the surface, spring and fall, liberally and properly, and I will guarantee you success far greater than if you plant in holes and trenches filled with manures, as the custom is. Surface manuring and mulching are the true doctrines, I am sure of it.—*Mr. BRIGUT in Gardeners' Monthly.*

**A PLEA FOR ROOTS.**

A correspondent of the *Rural New Yorker*, thus urges farmers to cultivate roots :—A few acres of roots for home consumption should be raised on every farm. In behalf of horses, cattle, sheep and swine, I plead earnestly for roots. Fed as cattle are in winter, with hay and straw only, who, I ask, would not call it dry fodder? A peck of turnips, beets or carrots to each animal would be pleasant to them and profitable to their owner. Horses should by all means, have carrots. They eat them without cutting, grow fat and sleek. Turnips cut up fine and given to sheep in spring when they get tired of hay, are of great benefit. Piggy, too, likes roots, though like some other folks prefers to have them cooked. As a means of promoting the health of stock they are unsurpassed, and at the risk of incurring the displeasure of the M. D.'s, I assert that they are far superior to pills or physic. A strong argument in favour of roots is the great quantity that may be grown upon an acre as compared with other crops. True, it is some work to get down on the hands to weed them when small, but then it tends highly to promote that almost extinct virtue, humility. Savages and barbarians live without cultivating the soil let us resemble them in this respect no longer."

**MIXING SOILS.**

All past experience has proven that there is a certain species or state of soil which, other things being equal, will produce better crops than any other state. To bring his soil into this state is, or should be the object of the farmer, and thus he is deeply interested in ascertaining the most economical mode of doing it. Analysis has demonstrated that the basis of all soils consists of silica or sand and clay, and the marked difference in soils is caused by the different proportions of these substances: alumina or clay and silica or sand. Soils may be divided into six kinds, viz: 1st, "pure clay," or 60 of silica and 40 of alumina. Such a soil when mixed with water will precipitate no sediment. Second clay soil (brick clay,) consisting of 25 of alumina, and 75 of silica. Such a soil, when washed, will precipitate some 15 per cent. of sand. Third, clay loam, containing 80 of sand and 20 of alumina or clay, and will by washing precipitate some 25 per cent. of sand. Fourth, a loamy or common soil, consisting of silica 85 and alumina 15; this, other things being equal, constitutes the most

productive soil. Fifth, a sandy loam, which precipitates some 90 per cent. of sand, and sixth, a sandy soil, containing not more than 5 per cent. of clay.

Here we have a standard, in the fourth kind, at which we should all aim. We know that some sandy soils, even with liberal manuring, will not produce good crops, because the soil is too loose; the same may be said of a stiff, clay soil, but for a different reason, for in this case the soil is so compact that the roots cannot force their way through.

Here we have the two extremes, and know that a medium is best; the course of which is plain to even a "common farmer."

I do not wish to be understood as advocating the hauling of clay or sand from a considerable distance, but wish my remarks to apply to clayey or sandy spots in the same field, or adjoining fields, for they are never far apart. On almost every farm there are sandy spots in the fields which do not produce as good crops as the remainder of the field. Such things are best when done on a small scale and during leisure time. A few inches of sand spread on a stiff clay soil will produce a change which will surprise any one not acquainted with the theory of mixing soils. For a clay soil which extends over the whole or a large portion of the field, the best plan is to haul sand into the barnyard in the fall, after the manure is out. If the washings or scrapings of the road can be obtained, so much the better. With the economical farmer there are many ways in which sand may be used to great benefit. If it is hauled during the fall and placed under, the stables may be filled up and cleaned out several times during the winter.

Too many of our barnyards slope towards one side, and the liquid is allowed to run off and waste. Now, if at the edge of the yard a pit be dug and filled with sand, it will save all this waste of the best portion of the manure, and will form the very best manure for stiff and clayey land. Where there is no such land, it will form an excellent top-dressing for meadows or pasture lands. With good management a farmer may in this manner add thirty or forty loads to his manure heap at a very slight cost, as all the labor may be performed at "odd times." Sand mixed with pig manure will improve its quality for any purpose, and especially so for clay land.

Clay, not being as good an absorbent, is best applied directly to sandy land, without going through the barnyard or pig pen, and may be put on in lumps and then harrowed, or be plowed up and well harrowed before hauling. Of the two I prefer the latter, especially if applied to land already in grass or pasture. If applied on the surface, the clay will soon work itself into the sand, in the same manner I hope I have worked into you, good reader; that is, by weight.

**MUCK, ASHES AND LIME ON GRASS SEEDS.**

The *Rural New Yorker*, in answer to a correspondent making inquiries as to the plowing of muck, ashes and lime on grass seeds, says:

Lime works a great change in muck, correcting the acidity and hastening decomposition. In fact, muck is about the only material that

lime can be composted with to advantage. To put lime with staple manure, as is sometimes done, is a bad practice, often resulting in a loss of one-half of the value of the manure. Unleached ashes should never be composted with manure. If the muck is got out in the winter, it may be mixed with the lime as fast as procured, and applied to the land in the spring: or, it is about as well, and less trouble, to spread it as fast as taken out, and apply the dressing of lime and ashes early in the spring. About the best crop of hay we ever saw, was obtained by a dressing of composted lime, ashes and muck, in the autumn, and a light coat of well rotted manure in the spring, brushed in. This, if anything, will renew an old pasture, though if very mossy, it is best to give it a good harrowing before brushing. It is somewhat difficult to destroy sorrel without breaking up and thorough culture. Enriching the soil, liming, and deep cultivation, will soon subdue it.

#### CULTIVATION OF WINTER WHEAT.

The writer's experience in the cultivation of winter wheat extends over sixteen years upon loamy clay, and four years upon sandy land. I shall give it just as I would *talk* it.

**DRAINAGE:**—It is absolutely necessary to ensure a good crop that the land be thoroughly drained—underdraining, if done properly, is without doubt the best; but open or surface draining is the most common, and is that upon which my experience has been formed. I think that a field cannot be too well drained, not only after it is sown, but previously—and that extra labor in clearing out and keeping clear every ditch, and digging large outlets, is amply rewarded by the extra yield.

**SOIL:**—A loamy clay I consider the best for wheat. I would prefer four or five inches of loam, with clay subsoil. This I always summer fallow—plow in May, deep as I can, putting on two teams if one will not turn it deep enough, harrow well, cross plough in June, in July cultivate with a two-horse *cultivator* or *scrabblor*. The latter part of August manure well, and immediately plow again in 11-foot ridges, cutting narrow, deep furrows.

If the soil be light and sandy, I would summer fallow only in case of a new or weedy piece of land, which I intended to seed down. My way is to turn under a good crop of clover about the middle of June. The clover may be fed off until nearly the first of June, at which time sow about two bushels of gypsum (plaster) per acre. This will give the clover a good growth, and will be of service to the coming wheat. Plow in the clover deeply; a piece of chain about 3 feet long fastened to the coulter of the plow so as to drag in the furrow, will be found of service in helping to turn under the clover. Manure well, and use the two-horse cultivator thoroughly about the last of August, and you have a good seed-bed.

**VARIETIES:**—My favorite kind of wheat is a bearded variety, known as the "Kentucky White," or "Hutchinson's." I know that bald varieties, such as "Blue Stem," "Soule's" and "White Flint" will, not damaged by insects

or rust, yield the most per acre, but owing to the midge (*see Insects*), I much prefer bearded varieties. Take the earliest, best and cleanest wheat you can get for seed. Depend upon it, dirty seed will bring a dirty crop—I don't believe that wheat will turn to chaff.

If anything should prevent early sowing, I would then sow "Mediterranean," because it will mature here quicker than any other variety, which is quite an item in late sowing. Treatment of seed is the same upon either clayey or sandy soils.

**TIME OF SOWING:**—The last week in August and first week in September I have found the best time for sowing. In this section sowing later is useless, unless you sow "Mediterranean." Should the weather be very growing, and the wheat getting too much top to stand the deep snows, turn on your stock and feed it off. There is no danger in pasturing wheat moderately, if your land is well drained. In fact, I think it does it good by enriching the soil. The plants should not be nipped close to the ground—but moderately pastured, so as to reduce the tops of the plants to enable them to winter safely.

**MODE OF SOWING:**—I sow "broadcast," and use a half bushel measure to sow out of. Take a strap, pass it through one of the handles of the measure, (or a hole made for the purpose), and unite the two ends so that when it goes over the neck the measure will be convenient to dip the right hand into. You can thus always know exactly how much seed you are using per acre. On a ridge 11 feet wide, I go and return upon the same ridge. Place the seed in bags in the most convenient places upon the field. A little practice will enable any person to sow quickly and evenly.

**QUALITY OF SEED, ETC.:**—I have found 1½ bushels per acre enough, when sown early; if sown late, (Mediterranean) I would sow two bushels per acre. I have tried brining the seed, liming it, and various highly recommended decoctions, but never realized any benefit from their use. Sow good clean seed, and it need only to be covered with good earth. Dibbling and drilling in the seed does very well when only a small quantity is sown, and you wish to obtain as much from the amount of seed sown as possible; but when much ground is sown I decidedly prefer broadcast sowing, notwithstanding a larger amount of seed is used. Drilling in wheat and then hoeing it afterwards, does exceedingly well in theory, but does not succeed so well in practice; everything must be done nearly right to enable you to hoe without hoeing up your wheat. In fact, when the wheat crop is the main crop of the farm, and much has to depend upon hired labor, the simpler and the stronger the working implements are, the better. We raise wheat *to pay*, and if we do not raise as much per acre, if the *profit* is more, the better for us.

**HARROWING AND ROLLING:**—After sowing, harrow thoroughly—you cannot harrow too much,—and put on a good heavy roller. The land is then ready for furrowing for surface draining. I have found it a good plan to roll wheat also in the Spring, as soon as the frost is out of the ground—particularly upon land that

the frost has hoven much. It presses many roots into the ground, which would otherwise be killed by the sun. I have also found it a good plan upon a piece of wheat that has suffered much from the action of Jack Frost, but has clumps of wheat still left to run over it twice in the Spring with a light harrow, and then roll with a heavy roller. It divides the remaining roots, and although *hard looking* at first, the growing crop will soon astonish you with a change for the better. I do not believe in sowing "plaster" in the Spring upon wheat. Plaster should be used, if at all, upon the crop which precedes the wheat. If I thought my land was not rich enough in the Spring, I would top-dress with either stable manure or guano; but I prefer to have the land rich enough before the wheat is sown.

**HARVESTING:**—I always let wheat intended for seed get *dead ripe*; the rest I would commence cutting before the grain is quite hard. If too green, it makes dirty and heavy work; but when you have a good deal to cut, you had better cut some of it a little green, than lose by its getting too ripe. Bearded varieties always shell very much when dead ripe. If care is used however, in handling, not so much is lost by shelling as one would at first suppose. When wheat ripens from the *head downwards*, you can cut very green without danger of shrinking. I do not, like some wheat-growers, say that wheat is better and plumper cut green, for it is my belief that every crop should come to maturity before harvesting.

Never bind too large. Have the sheaves of moderate and uniform size. Rake thoroughly, as it is very easy to leave enough to pay for cutting and binding upon the ground. In *getting up or shocking*, I always set 10 or 12 sheaves together in a row, 5 or 6 on each side; I never cap my shocks. If carefully set up, they will stand; and in case of rain, will dry quicker without caps. We often have what is here called *catching weather*—and often grain is damaged. It is therefore the safest to house or stack as the grain is fit.

**THRASHING, CLEANING, AND MARKETING:**—Now that horse power thrashing machines are so easily obtained, the old-fashioned way of thrashing with the "flail," or with horses upon a large floor, is mostly done away with, and the new-fashioned machines are a great advantage to the farmer. I think, however, that wheat for seed is better if thrashed with the flail, and would always prefer it to that thrashed with a cylinder at great speed, which I believe injures many of the grains; perhaps not enough to prevent their growing, but enough to prevent the plant from being as hardy as though the grain were perfectly sound. It is a farmer's duty to clean not only his wheat for seed and bread, but every bushel he sells, thoroughly. On account of the carelessness of too many farmers in this respect, our market for wheat is injured very much. In marketing as a general rule for at least this section of the country, it is better to sell in the Fall: you save all that would be lost during the Winter, by mice, rats, etc., and have the use of the proceeds sooner. Much, however, depends upon circumstances, and a man must use his judgment in the matter;

for it often happens that wheat is low in the Fall, with every prospect of being much higher in the Spring. In such cases hold on to the grain; but if a good price is offered in the Fall, sell it.

**INJURIOUS INSECTS, RUST, ETC.:**—Under this head I shall be very brief, for learned men have written much upon this subject, which every farmer ought to read. To those who have not, I would say, by all means read the works of Dr. Fitch, of New York, upon the insects injurious to vegetation. The Wheat fly or "midge" does a great deal of damage to late-sown wheat, and is much worse upon bald than upon bearded varieties. For this reason I always sow bearded varieties. In my opinion the only remedy for the midge is—to *drain well—manure well*, sow early, and sow an early kind of hardy, bearded wheat. In every case where I have done this, I have escaped the ravages of the "midge,"—while my neighbors who have done otherwise have suffered very much. I examined this season a field sown very late, with "Mediterranean," the seed of which was mixed with old "red-chaff" (wald). Every head of the bald was completely destroyed by the midge, while the bearded was but little injured; and I firmly believe that in sowing late, mixing in a portion of bald wheat seed would preserve the bearded variety from the "midge." If the wolf (or grain weevil) attacks the wheat, (which it seldom does here, to any extent,) I would thrash out as soon as possible. If any insects survive the thrashing cylinder, I would spread out the grain to the sun, when they will all vanish.

The wire worm is the curse of wheat-growing here. As yet I think no certain remedy for this pest has been found. The best remedy I have tried is frequent plowing and harrowing, both in Spring and Fall, disturbing them as much as possible, never allowing a field to remain too long in sod. Old pastures or meadows are complete nurseries for wire worms. But above all things, cultivate an intimacy with birds. Not only wire worms and "midge," but all kinds of insects injurious to the farmer, are destroyed in countless numbers by the birds; and until we encourage in every practicable way the presence of birds, we may expect to suffer.

I believe rust, like mildew, is caused by exhalations which arise from the ground, with damp fogs, and stimulates the growth of the plant to such an extent as to cause the rust to appear; and I further believe that thorough draining, good cultivation, with the use of hardy varieties, early sown, are the best preventives. Where lands are rich in ammonia, the straw will be ranker and much later. I should in such cases sow about two bushels of salt per acre just before any danger of rust.

In conclusion I would say that I consider 35 bushels per acre a fair crop. If everything is right, more per acre will grow; and I have no doubt that the day is not far distant, when, wheat-growing having become more of a science, 50 and 60 bushels per acre will be called an average crop. In spite of all known injurious insects, wheat can under proper management, be grown to pay the farmer.



## BREEDER'S DEPARTMENT.



## PROTECTING ANIMALS FROM STORMS.

I believe that farmers, generally, are not aware how much loss they sustain in the flesh of their domestic animals, and how much they suffer during cold storms of rain in the summer or at any other season of the year. Warm showers never injure animals; indeed they appear to have a good relish for such a sprinkling as they frequently get, providing it is not as cold as ice. Most animals will endure pretty severe cold as long as they can keep dry; but as soon as their bodies have been wet and kept wet, evaporation commences. And as evaporation is a cooling process, the heat of their bodies is carried away very rapidly; and the sudden transition from heat to cold chills them in a very short time, and injures them more than a severe storm in winter.

Animals will endure a very sudden change from cold to heat, with impunity; but sudden changes from heat to cold are often attended with very injurious consequences. We are apt to think, because it is summer, or not freezing weather, that a storm of rain will not hurt our animals. But could they communicate to us their feelings during a storm of cold rain, there would not be so much negligence about protecting them, especially during the cold and stormy days and nights of autumn.

I well remember, that about twenty years ago, there was a severe rain storm in the month of June; and although our sheep had been shorn more than two weeks we thought they ought to be brought home to the barn. But many of them were so cold and feeble in consequence of the rain that it was necessary to go after them with a waggon.

About the first of July, 1861, there was another very cold storm of rain, which swept away hundreds of sheep in the town where I reside. One farmer lost about sixty of his choicest sheep, although they had been sheared several days before the storm came on. I have heard of more than three hundred lost during the storm.

It is infinitely better for animals to keep them in a stable or shed, where they cannot get a mouthful of food for twelve successive hours, than to allow them to be exposed for only two hours to a storm of cold rain.

When I was accustomed to keep sheep, I was

always careful to let them have a benefit of a shed, if they needed it, not only in winter, but during the summer; and it was very unusual that our horses and neat cattle were left for one hour in the field during a cold storm. Cold storms not only make horses look bad, but they do really injure them, by rendering them stiff and dull; and they often contract severe colds, which in many cases, will superinduce catarrh and glanders.

Young calves and colts often suffer extremely from exposure to cold storms, even in summer, and to shelter them, will be time and money well appropriated. "A merciful man regardeth the life of his beast."

## VALUE OF SHELTER FOR SHEEP.

WM. H. LADD, one of the best farmers of the State of Ohio, who has given especial attention sheep, gives the following careful estimate in the Ohio Farmer of the value of shelter to sheep, suggested by the remark of a neighbour that "it won't pay to build shelter for sheep." This neighbour kept 1,000 head, and lost many animals, and it is from his losses that a part of this estimate is made:

Let me make some very low estimates in reference to the loss occasioned by this treatment in thirty years. First, if the sheep sheered two pound of wool per head under this treatment, they would have shorn three pounds had they received good care. Second, one pound difference per head on 1,000 sheep makes 1,000 pounds in 30 years, at 40 cents per pound, \$12,000. It is a very low estimate, counting sheep at the lowest common price, that a flock of 1,000 sheep should yield \$500 worth of surplus stock to sell each year; this in 30 years amounts to \$15,000 Feed saved by shelter say \$200 each year, worth in 30 years \$6,000; simple interest at 6 per cent. on amount saved in 30 years, \$30,690; difference of the value of stock on hand at the end of 30 years, \$1,000; value of shelters to the proprietor at the close of 30 years, \$1,000; amount saved, \$65,690. Per contra—shelters cost say \$3,000; additional grain fed, say \$400 each year, in 30 years; \$12,000; interest as above, \$16,560; for keeping shelters in repair, \$1,000—total, \$32,560. Difference in favour of shelters and good care, \$33,130. Don't look at this as a fancy sketch; it is a reality, and the only incorrectness about it is, that the estimated difference in favor of good keeping is in every particular below the reality.

## IN BREEDING HORSES DO THE STOCK TAKE MORE AFTER THE SIRE OR DAM?

So important is it that agriculturists should have definite ideas on this interesting subject, that we this week place at the head of our column, a query addressed to us by a correspondent from Kinross. Judging from prevailing practice, we can scarcely avoid the conclusion, that farmers generally deny that the mare has much or any influence on the development and growth of the progeny. How else can we explain the notorious fact that an immense proportion of the breeding mares throughout the country are selected not on ac-

count of their superior appearance and qualities, but because age, accident, or hereditary defects have rendered them less valuable for work. How opposite is this to the more rational practice of those keen horsemen the Arabs. Money fails to purchase their best mares. According to the view first distinctly set forth several years ago, by Mr. Orton of Sunderland, and concurred in by most good judges, the progeny appears especially to resemble the dam in the head, carcass, internal organs and temper, whilst the influence of the sire is more especially noticeable in the color, and the form and style of the limbs. Thus the powers of endurance depending upon the deep chest, arched ribs, and well developed lungs, are the valuable qualities of many a priceless mare, and descend with great certainty to her offspring by various horses. On the other hand, the colts got by particular stallions usually exhibit great similarity in colour, in the style of their action, and also in the defects of their limbs. If the horse has been subject to splints, spavins, or such other bony deposits, a large proportion of the colts will exhibit a similar tendency. This view, must not, however, be carried too far. It must not thence be presumed that the sire exercises no influence upon the development of the internal organs or temper, or that a mare's weak or mis-shapen limbs will not reappear in her progeny. It only justifies us in saying, that whilst the male and female appear to impress their characters tolerably equally upon the offspring, the characters, peculiarities, and even the diseases of the internal organs, are in the majority of cases those of the female parent, whilst the skin and organs of locomotion usually indicate the preponderating influence of the sire. From this law, however, two important practical deductions may be safely drawn—1st, never to breed from mares with narrow contracted chests, or weak loins, or delicate constitution; and 2nd, to eschew as decidedly entire horses with weak, badly shaped, or diseased limbs.

But other influences are also at work affecting the share which the two parents have on the offspring. The parent in the highest state of health and vigor always imparts more than its own share of character. Thus the progeny will more resemble the active vigorous young stallion than the old worn-out mare to which they may be put. Hence the importance of maintaining in a healthy and natural state all animals intended for breeding purposes. It is further most interesting, that of the two parents, the best bred or highest descended is most strikingly reproduced in the offspring; and this is so notorious, and applies so constantly to all the higher animals, that breeders should avoid all half-bred sires, and use only such as have, in addition to fair shapes, a fair unblemished pedigree. The character and qualities of such parents being transmitted through many generations, are more permanently and indelibly fixed, and are greatly more likely to be impressed upon the progeny. Thus a well-bred Short Horn bull will produce from a lot of ordinary cows, calves resembling their sire and each other in colour, heavy flesh, superior quality, and all other good points.

The strong capability of such well-bred animals to reproduce their good qualities may be judged of by the frequency and persistence in their stock of certain slight markings. How frequently, for example, do well-bred bulls, with a strong infusion of Duchess blood, get their calves out of cows of all sorts and colours distinctively marked with the white spot on the loin, and frequently also on the tail!

To obtain a tolerably certain result in breeding, parents must be selected possessing tolerably similar characters. Uncertainty and disappointment are sure to follow from the attempt to breed from unlike or very dissimilar parents. Thus failure generally follows the union of the draught mare and thorough-bred horse, or *vice versa*. The dissimilar characters of such unlike animals cannot be properly blended in the offspring, and nondescript horses with big heads, deficient action, weak limbs and bad feet, are the usual results. All this, we thought, was already sufficiently well known to every farmer and breeder, and yet we this week met an intelligent gentleman returned home from the Cape, and purchasing to take out with him a number of cart fillies to be put to an Arab, and from this violent and unsuitable union a good stamp of riding horse is expected. Time and money would be greatly better spent on strong, active, half-bred mares, which should, in our opinion, be put, not to an Arab, but to a stout, strong, well-actioned, short-legged, English thorough-bred.—*North British Agriculturist*.

#### WHY DO WE HAVE POOR HORSES?

A person who loves the horse, who studies both his wonderful construction and adaptation to the wants of man, and who feels a new dignity and power when he sits upon a noble charger or has a pair of mettlesome steeds in hand, can alone appreciate a good horse, or knows how very few there are worthy of the term. Few persons are aware of the difficulties they must encounter, before they can secure a horse that is of the right size, of the right temperament, one that is elegant in form and action, and capable of great endurance, if a cause of necessity should arise to test his power. Unless occupied with some thought or care that is all-engrossing, we never pass a horse without giving him a critical notice, however brief that notice may be—and we sincerely believe that nine out of ten of them—both in this city and the country—are only remarkable for some physical defect, or some dangerous habit alike perilous both to man and beast. They are mean, beyond description, compared with what they might be under a proper course of breeding and treatment; they are knock-kneed, have corns, splint, albugo, bots, broken wind, canker in the foot, colic, horse distemper, farcy, diabetes, curb, contraction of the foot, flastula, pollevil, glanders, founders, heaves, mange, rheumatism, ringbone, sandcrack, roaring, get bone, bog and blood spavin, blind staggers, strangury and lockjaw, trush, wind-galls and warts, and forty other diseases, that oppress and torment the poor animals a thousand times more than all the labour they ought to perform!—What a

frightful catalogue of diseases, to be visited upon one of the noblest animals—both in structure and disposition—which God has placed in our care, to subserve our wants or gratify our pleasures. Poor brute! Never was another so beset with evil, or treated with so much inhumanity.

There are two principal causes for all this, viz.:

1. Breeding from old and diseased animals;
2. The injudicious and harsh treatment which they receive.

It has long been a practice, and is a widespread one, to breed from aged and imperfect mares—mares that have been excellent animals, but are full of age and the imperfections that a large proportion of all horses acquire before arriving at the age of twenty years. One, for instance, has had crooked knees for ten years, another the spring-halt, another a capped-hock or the heaves. She is past serviceable labour in the field or on the road, and as the kind master is still desirous of making her profitable to him he turns her over in her old age to the pains of parturition, and just work enough in the plow or cart to pay for her hay and grain. This is done by thousands, who never think that these defects may be entailed upon the progeny of those mares, and thus a race of ill-formed, ill-mannered and comparatively worthless horses is perpetuated. For the purpose of breeding, the young or middle-aged of both sexes should be selected—and these should be of the best form, and possessing as many of the best qualities as can be found in a single animal. When these precautions are observed we shall have a race of young horses to start with that will produce the finest animals, under a proper course of management.

The next prolific source of poor horses, is the injudicious, harsh, and very often cruel treatment which they receive. Colts are put to work too young; pressed to the utmost of their power, both in speed and draft, too frequently; and when fatigued or heated, are left in the storm or cold, or a draft, where agues and cramps are contracted that continue with them through life. They are often urged to turn suddenly and rapidly, which strains or breaks some of the nice organism, as in the case of splint or spavin. They are hampered with unnecessary and injurious harness, such as tight check rein and blinders, which leave them with imperfect vision, and their supple limbs tied and tormented into every shape but a natural one.

#### REARING CALVES ON MILK & LINSEED MEAL.

No doubt but the best and most proper food for the calf is its own dam's milk; for it is a true food, in which the components of nutrition are so nicely balanced by the all-wise and beneficent Creator as to set at nought all human compositions; but it is of so much value for human consumption that it becomes necessary to economise it, and make imitations of it, though at a very humble distance; and thus it is that science comes to our aid. Professor Johnston says, in his "Lectures on Agricultural Chemistry," that "while the calf is young, during the first two or three weeks, its bones

and muscles chiefly grow. It requires the materials of these, therefore, more than fat, and hence half the milk it gets at first may be skimmed, and a little bean meal may be mixed with it to add more of the casein or curd, out of which the muscles are formed. The costive effects of the bean meal are to be guarded against by occasional medicine if required. In the next stage more fat is necessary; and in the third week, at latest, full milk should be given, and more milk than the mother supplies if the calf requires it; or, instead of the cream, a less costly kind of fat may be used. Oilcake finely crushed, or linseed meal, or even linseed oil, may supply at a cheap rate the fat which in the form of cream, sells for much money; and instead of additional milk, bean meal in large quantities may be tried, and if cautiously and skilfully used, the best effects on the size of the calf and the firmness of the veal may be anticipated."

The scientific note from Professor Johnston has engaged the attention of many stockmasters in Ireland, and among the rest, Mr. C. Beamish, of Cork, who adopted it and brought it to a regular system on an extensive scale. His formula for compounding the muscles is as follows: 30 quarts of boiling water are poured or three quarts of linseed meal and four quarts of bean meal. It is then covered up close; and in twenty-four hours added to thirty-one quarts of boiling water, then put on the fire, pouring it in slowly, and stirring it constantly to prevent lumps, with a perforated wooden paddle, so as to produce perfect incorporation. After boiling thirty minutes, the prepared mucilage or gruel is put by for use, and should be given blood or luke warm to the calves, mixing it in small quantities at first with milk, say one-fourth mucilage with three-fourths milk, progressively increasing it, so that by the end of a fortnight it will be in equal parts; by the end of the third week, one and a half mucilage to one part milk; by the end of the fourth week the mucilage may be given in double the quantity of milk, and skim milk substituted for new milk; and by the end of the sixth week, the mucilage will be gradually increased in the proportion of two and a half to one of milk; and from that on till the tenth week the milk may be gradually reduced, so that by that time they may be fed wholly on mucilage till they are fifteen or sixteen weeks old, when they may be weaned.

During all this time, if too early in the season to put out the calves, they should be comfortably housed, well ventilated, and kept perfectly sweet and clean; a little sweet hay tied in bundles and suspended, so that they may play with it and learn to nibble and eat it; and a little pounded chalk, mixed with salt, given in troughs to lick at pleasure, which prevents acidity in the stomach, and the undue formation of cud. Small lumps of linseed cake should also be given in other troughs, which they will soon learn to suck, if a little pains are taken to put a bit in their mouths after they have taken their meals of milk and mucilage. When housed it will be advisable to have a separate pen for each calf of sufficient size to walk about, so that they do not get into the

habit of sucking each other and swallowing the air, which, uniting with the curd by the regurgitating process going on in the stomach, forms round balls which are indigestible, and is the fertile cause of the deaths of many promising animals. The following scale of quantity of milk or milk and mucilage combined for each calf may be useful, but should be altered according to circumstances; for the first week the calf may get from three to four quarts daily; for the second week, four to five quarts; the third and fourth week, five to seven quarts; fifth and sixth weeks, eight to ten quarts; six or eight weeks, ten to twelve quarts per day; and so on, increasing the quantity about one quart per week per calf till weaning time.

Some parties do not give so much liquid food per day, but make it up by giving them finely cut roots, dry oatmeal, etc.; but the animals are much too young for such food, though they may get the mined roots so as to train them into their use. Hay tea is an admirable thing also to mix with the mucilage and milk, as it contains a large amount of nutriment in a soluble form.

In the summer time the calves may be left out on the grass, both day and night, in a fortnight after they are calved (and fed as already described they should be in the house;) but a warm sheltered paddock should be provided for them, and in wet weather they should have access to a covered shed.

#### BREEDING AND BEARING PIGS.

We condense the following hints on this subject from an article contributed to the American Agriculturist by a subscriber in Schuykill county, Pa.:

In selecting my breeding hogs I always pick out the best shaped, most thriving boar pig to keep over for a breeder. For a sow I select a healthy shoat, well shaped, but thin and lank, in preference to a fat and sleek one; my reasons for this are, that the lean sow will produce more pigs, and raise them better than one in high order—the sleek one converts all her food into fat and flesh for her own sides and back, while in the lean one it is converted into food for the young. This rule is applicable to all animals. A cow which shows every rib when in milk, will bring forth larger and better calves, and give more and better milk than the one which always looks fat enough for the slaughter. My experience fully sustains my theory. My mode of raising hogs which are intended to be kept over, is to have them pigged about the latter part of August, or first of September, and after allowing them to run with the sow from four to six weeks, confine them in a separate pen. When first taken from the sow they should be fed from six to eight times a day, or else they will fall off in flesh, and it will take them weeks to recruit. Their usual allowance at first should be about a pint of milk to each pig, and in order to facilitate the properly attending to them, the milk barrel should be kept standing very near the pen, from which it can be dipped with a pail with very little trouble, being replenished night and morning with fresh skimmed milk from the dairy. The quantity of

each pig should be gradually increased each day according to the growth of the pigs, until they have attained to the age of three or four months, when a regular allowance should be made them; and the number of times of feeding may be diminished. At this time in the pig's life a little grain fed night and morning, will not be thrown away upon him; a little oats or rye, if the pig is in a healthy condition, followed by about a pint of corn, which may be subsequently increased to a quart. This addition of grain will tell amazingly in the growth of the animal, as well as have a tendency to keep him in such a condition that when "fattening time" arrives he will be ready for the knife much sooner than a hog fed only on slops without the daily quota of corn, to say nothing of the saving of a good deal more corn than has been used up to this time in the feeding. The milk from the dairy, when weakened by the slops from the kitchen, should occasionally through the week be enriched by the addition of rye bran.

*Sty and Bedding.*—The pen in which hogs are kept should consist of two apartments—a covered and an uncovered one. An excellent manner in which to construct a pig-sty, is to erect a two-story frame building, having a part of the under story, boarded off for a place in which to keep the slop barrel, reserving the rest for a dry pen for the hogs, and have a pen constructed outside, and communicating with this covered one. The feeding trough should be in the outside pen. In this manner, if the pigs are given a sufficiency of rye straw in the inside pen, and the outside one is kept well supplied with the butts of corn stalks, they will not only make an immense amount of manure, but will keep themselves white and clean, thus refuting the assertion of the filthiness which is continually flung at them. In the upper part of this pen should be kept litter for the bedding of the hogs; or a part of it may be partitioned off for a hennery.

I have adopted what I consider a very good as well as economical plan of getting the upper part of my hog building filled with good littering material. It is this: When hauling in my corn fodder I cut off about two feet of the hard, dry butts, which the cattle cannot eat, and have them bound into small bundles and stowed away in the upper portion of the hog house, to be used as required. These corn butts when thrown into the outside pen are so torn and trampled up, that they are converted into good lasting manure, which has not its superior on the farm, and which would be almost entirely lost if fed to the cattle in the fields, etc.

*Fattening.*—When fattening time comes, I generally commence by feeding the "nubbins," and after two or three weeks, follow them with shelled corn. This I always feed boiled, boiling in the morning what is required during the day, and at night what is necessary for the morning. Feeding thus, brings my work nearly all in daylight. In this way I can make my hogs fat enough for all practical purposes, by feeding them from fifteen to twenty bushels of corn, each, and in slaughtering at sixteen months old, they weigh from four to five hundred pounds. I never like them to exceed the

latter figure in weight, for I have no fancy for this overgrown and spongy pork of forced hogs.

#### PROFITS IN KEEPING POULTRY, &c.

The profits in keeping poultry depend wholly upon the way in which the business is managed. It can be made profitable or unprofitable.

Poultry fanciers have been known to make considerable sums by shrewd management; and how often have boys, and old ladies even, gone into the business of keeping hens, commencing operations early in the spring and winding up at thanksgiving-time, with complete success. The way it was done was simple enough, and almost anybody possessed of patience and good nature—the latter principle quite essential—could do as well if he or she, as the case may be, would make the trial and persevere.

It is not necessary to have a fine poultry house, or any house at all; on the contrary, the most common shed will often times serve all the purposes for a shelter.

But when I took up my pen to write, it was to say something of my own experience in the hen business, rather than to discuss the somewhat philosophical question of "profits," a subject, by the by, which has of late occupied some portion of the COUNTRY GENTLEMAN, greatly to the edification of its numerous readers, and especially those of them particularly interested in the science of "henology."

Early in the spring I was afflicted with the hen fever. How it was brought on I cannot say, unless it was by "exposure" during an examination of a hen-house attached to my out-buildings—a very nice sort of an edifice, erected several years ago by a gentleman of both taste and means, and well suited to the business for which it was originally designed. However that may be, I clearly remember this fact, that while I was making the examination referred to my mind was considerably agitated, (from what cause I could not tell,) and I resolved upon the spot to put the hennery to its legitimate use, and the very next day I bargained with a "select" dealer, and paid down \$10.50 for one cock and six hens, catalogued "Brahma fowls." Very large and very nice looking fowls they were. They proved to be moderate eaters, that is to say the quantity of food devoured by them was quite small, and their *litter* was less than birds of the common sort of smaller feather.

At the go-off two of the hens kicked the bucket, and were tossed unceremoniously into the piggery, where I have reason to know they were interred after the manner usually practised by the whole swinish race. But I soon had reason to rejoice over my investment, notwithstanding this seemingly unfortunate beginning. The other four hens commenced to lay, and in the course of a week or so, "averaged" an egg a day apiece. I had the eggs carefully put aside, and as circumstances favored, the process of incubation was intrusted to hens of the common sort. Three of this class hatched from thirty-three eggs just thirty chickens, all within the same week. I now confined both hens and chickens in a roost 15 by 20, in my horse stable, feeding them regularly twice each

day, upon cracked corn. They were supplied with fresh water as often as was necessary; and in this manner they were kept till the fourth week, when they were suffered to run out during the day in fair weather. The chickens are now nearly three months old, and of the thirty, twenty-seven lived. The other three died, one by paralysis, two by accident. The living are elegant specimens of their kind, and some of them will weigh four pounds and more. The cost of feeding this flock at the present time is just one quart of corn per day. That they would sell for several times what it has cost to raise them, I have not the least doubt. As layers the Brahmas are no "improvement," but in other respects I deem them the most profitable of the fowls now in vogue.

#### HOW TO MAKE GOOD BUTTER.

To make the *best* of butter, requires many prerequisites; but for all practical purposes, two main points cover the whole ground, viz, 1st, Neatness; 2d, Skill. If any dairy-woman expects to make nice butter without the most *scrupulous neatness*, she will find herself greatly disappointed. From the moment when the rich and luscious fluid is first drawn from the cow's udder, to the time when the butter is reapp for the table of the connoisseur, the least dirt, the least must or unpleasant flavour in the atmosphere of the room, and the least speck of foreign matter of any kind, must be absolutely and perfectly kept from it, during all its stages of manufacture. In fact, neatness is the *sine qua non* of the butter-maker's art. As well may we suppose that any of the laws that regulate the physical world will be reversed, as to suppose that good butter can be made without the most *scrupulous neatness in every particular*.

The second indispensable qualification of the perfect butter-maker, is *SKILL*—a word of quite extensive signification when applied to this subject. To acquire that skill requires a clear and discriminating judgment, a well educated and experienced mind, and a minute and accurate observance of the physical laws which regulate the various conditions of the milk and the cream, while undergoing the transformation into butter. To be a successful butter-maker, therefore, requires no inconsiderable degree of education, intellect, and ingenuity. Let us, then, analyze this skill of the butter manufacturer, and see what are its most important elements.

To begin, then, we must first have good milk and to have good milk, we must have good cows, and to have good cows, requires a selection of the best breeds and of the best milkers from the best breeds, for that purpose. But that carries us into another department of agriculture which we have no time here to discuss.

Assuming then, that we have good milk, the next thing is to place it in shallow pans, (tin is usually preferred,) and a degree of temperature neither very warm nor very cold. About 62 degrees of Fahrenheit is supposed to be the state of the air in which cream will rise most perfectly. And here let us remark, that every housewife who aims to make the *best* of butter, should have a thermometer constantly at hand

and should be a frequent observer of its condition.

If milk is kept in a temperature much below 62 degrees, the cream will not rise so rapidly and so perfectly. If kept in a state of the air much above 62 degrees, the milk will become acidulated too quickly, and the quality of the cream will thus be injured. Equalization of temperature and free circulation of pure air, are important elements of the butter-maker's skill. The time requisite for cream to rise naturally and perfectly, varies with the temperature, from 24 to 40 hours. As soon as the cream has all risen to the surface, it should be separated from the milk, with much care; for the less milk that is taken up with the cream, the better will be the butter.

Churning is the next operation, and it is one that determines in no small degree the quality of the butter. If cream is put into the churn much colder than 62 degrees of the thermometer, it will require much more time and labour to convert it into butter, and the butter will never be of as good quality. Let the cream be brought to an even temperature of 62 degrees, and the often laborious operation of churning, especially in the winter, will become comparatively easy. If the cream is much warmer than 62 degrees, the butter will be too soft, too white, and in most particulars, quite poor.

As soon as there is a perfect separation of the particles of the cream which make the butter, from the more watery parts of the milk, let the butter be taken from the churn, and then comes the quite difficult and delicate operation of working over and salting it, both of which require great accuracy and judgment. For if the milk is left and mixed in with the butter, one thing is sure—the butter, will never have that compact and smooth appearance that is one of the sure indications of good butter; and what is yet more important, butter left in that condition will not keep long without becoming musty or frowy. Every one that aims at making the best of butter, must separate entirely the particles of the milk from the butter, immediately after churning. Washing the butter with cold water is practised by some, but the most skilful butter-makers complete the separation of the solid from the fluid portions by manipular labour alone.

The form in which butter is prepared for the table or for market, is one indication of the skill of the maker. Butter put in small cakes oval form, and stamped with a device of flowers leaves, or diamond figures, is the most beautiful, and seemingly adds to the good flavour of the article. In order to sell for the highest price, it should always be put up in that form, or in oblong pieces of about a pound each.

Such are the main requisites of the skilful manufacture of good butter, without which we venture to assert with great confidence, that the best of butter cannot be made.

Does any good housewife, when she has read this report, say "I knew all that before?" If she does then we ask her with no small degree of assurance, Madam, do you *practise* all these rules for making good butter? If you do, why is it that so large a proportion of the butter that is sent to our markets is so very poor?

**BEES—A CHAPTER OF WELL SETTLED FACTS.**

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

A well garrisoned city may defy assault.

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

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

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

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

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

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

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

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

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

"No house is large enough for two families."

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

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

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

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

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

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

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

11. Queens are most economically reared in small swarms.

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

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

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

14. Natural swarming, always uncertain and perplexing, exposes the bee-keeper to much loss of time and money; while artificial swarming, securing at all times the presence of a worker-layer queen, doing away with all watching, and loss by flight to the woods, is both sure and economical.—*Metcalf's Key to Bee-keeping.*

**SALE OF AMERICAN SHORT-HORNS IN ENGLAND.**

In our late notice of the catalogue of the Thorndale Herd, allusion was made to several specimens from it having been sent to England. Late English papers give an account of the

sale of the four animals which comprised the last shipment. "Duke of Geneva," two years old, was sold to Col. Pennant, M. P., Bangor, for 600 guineas. "Lord Oxford," four years old, sold to the Duke of Devonshire, for 400 guineas. "Second Lord Oxford," about eighteen months old, sold to Mr. Atherton, of

Speke, near Liverpool, for 250 guineas. "Oxford," one year old, sold to Mr. Slye, of Lancaster, for 150 guineas. It thus appears that they brought on an average prices equivalent to about \$1750 each. The average of those previously sent was about \$1275 each.

## INGENEERING DEPARTMENT.

### TO KEEP ICE CHEAPLY.



SUPPLY of ice to use through the heat of summer contributes to profit as well as luxury, and a receptacle in which it may be kept is not necessarily expensive. The main essentials are: 1st,

an outside shell, with from eight to twelve inches of clean sawdust, or other dry porous material; 2nd, protection from the direct rays of the sun; and 3rd, a pipe through which to drain off or pump out any water that may collect at the bottom. Ice has been kept through the season in an enclosure

made by notching long rails and laying them up like the outer walls of a log house, in a position entirely protected from the sun. The ice was cut in large solid blocks, packed closely, and water turned on to each layer, and allowed to freeze solid. A space of ten or twelve inches between the ice and rails was filled with sawdust, and the whole was roofed with boards, with plenty of sawdust between the roof and ice. This was entirely above ground. Ice has also been kept in a similar structure one-half underground. One who tried this four years failed at first because he used straw instead of sawdust for filling in around the ice. When he relied upon six inches of sawdust he had perfect success. The walls of his ice-house were made by setting common studding upright and boarding each side of the studs, filling the space between with sawdust. Another has succeeded well by excavating—including the embankment made by the soil thrown out—about twelve feet in depth, then laying up a stone wall, dry to the top of the ground, and in mortar the remaining distance to the top of the embankment, covering the whole with a good roof. All that is necessary to success in keeping ice is fully stated in the first part of this article, and each can best judge for himself as to what particular style of structure will suit his individual circumstances.

### AGRICULTURAL IMPLEMENTS & MACHINERY.

There are many farmers now in the daily use of approved agricultural implements and machinery, who begun their business with the use of the most limited, heavy, and awkward tools.

The *shovels* were made of wood, with the exception of a strip of iron across the bottom, split, so as to admit the thin, wedge-like wood, and then the iron hammered down and fastened. The extra labor required to use them must have been equal to one-third of the effort necessary to accomplish a fair day's work.

When the material to be removed was wet, it would cling to the wooden blade with such tenacity as to make the work of separating it a heavy and laborious task, and frequently would entirely prevent the operator from separating it from the shovel. In consequence of this, he was not able to throw the loam or manure several feet into the cart or upon a bank, as he can with one of the smooth and light steel shovels of the present day.

The *iron-tooth rakes* were made by the village blacksmith, and were cumbersome and unwieldy things, rather better calculated for harrowing than for raking.

The *pitchforks* were made at the same forge; they had two tines, with material enough in them for four—were without proper pitch or symmetry, and did not impart that cheerfulness and elasticity to the mind which a light well-balanced implement never fails to do in the hands of an ambitious workman. The handles to both rake and fork were wrought out at the wheelwright's shop, or on the farm itself, and in their proportions corresponded with the iron parts.

The *hoe*, also, was many ounces too heavy, was uncouth in form and pitch, and so rough as to cause the soil always to cling to it when wet. This implement was also made at the village forge. The blade was formed, and then the eye hammered out on the horn of the anvil—instead of being pressed in a "die," as we believe is now done—and then welded to the blade. The work was probably as well done as ought to be expected under the circumstances. But when done the best, the implement was anything but a convenient and pleasant tool. Its great objection, however, was its weight. A middling sized hoe, made of light and tough materials, will weigh two and a half pounds, handle and all; and such a hoe has all the strength that is necessary for use on common soils. On stony, clayey, and compact land, a half pound, or even a pound more weight, might be required.

Now suppose that *two ounces* extra be added to the two and a half pound hoe, and the person using it works twelve hours a day. Standing by a man hoeing on old land, we found that he averaged 50 strokes per minute, where there were no weeds to be taken out by hand. That would give 3000 strokes per hour, and 36,000 in a day of 12 hours, making an aggregate of 72,000 ounces moved during the time. Dividing this by 16—the number of ounces in a pound—we find that the man using the hoe that weighs *two ounces too much*, that is, more than is necessary, raises about 18 inches from the ground *four thousand and five hundred pounds, or two and one quarter tons* per day!

It may be said that the superior weight, when once raised, will fall with more power, and cause the hoe to penetrate the soil more than if it were lighter. This may be so, but it requires greater care and strength to direct the motions of a heavy body than a light one, and this will offset this claim. To test the advantage of having a hoe possess just the weight and strength to perform the work required of it, let the operator attach a piece of iron to his hoe, weighing two ounces, and work with it one day. Before night he will probably feel it affecting him as does the grasshopper the tottering steps of the aged and infirm.

And so it is with all other agricultural implements and machinery. Great advances have been made in this particular. The mechanic has been into the field and tested his work there, and ascertained what was lacking and what redundant. In this way we now, undoubtedly, have the best farm implements and machinery that can be found in any nation of the world. They have so commended themselves, by their own excellence, as to break down the stern prejudices of the most exacting and fastidious. We have spoken of the hoe, only to illustrate our views of the matter; what we have said applies equally to other implements and to machinery.

Several others among the smaller tools might be mentioned, if enough had not already been said, to show the great contrast between those used by our fathers and those which we handle with so much pleasure and alacrity at the present time.

The most important *improvements*, perhaps—not “inventions”—have been in the *plow*. On many of our farms men may be heard relating their experience with the *old Dutch plow*, as it is called, over which they stood and subdued the stubborn glebe in their youth. We have known them to grow eloquent, even, in describing its processes in rocky land, as to how it would throw them across its handles, first on the land side and then on the plowed—until their very bones ached with the concussions. If it were on level land, free from stones, its movements would be disturbed by every pebble or variation in the compactness of the soil, so that it was forever poking its nose out of the ground when its proprietor least desired to see it.

Place it side by side, now, with one of our modern iron plows, with the same power to draw them, and we think it will be found that twice as much work will be accomplished in a given time by the iron plow as can be got out of the old Dutch. The mould-boards of the old plow were of wood—but sometimes in the hands of a progressive farmer, who meant to have everything in the “top of the mode,” the mould-board would be strapped with hoop-iron, running longitudinally with the mould-board itself. This was a step in advance, allowing the plow to pass with greater ease through the soil, and requiring much less team to draw it.

The prejudices which have so long existed against the use of *machinery*, especially on the farm, have greatly abated. Indeed, they seem to be almost gone, for the manufacturer finds

it impossible to answer the demand upon him for several articles of established excellence.

#### WHITEWASHING SHINGLES.

Fresh or caustic lime, applied during the heat of summer, and after the wood has become thoroughly dried, enters the pores and tends strongly to prevent decay. We have recently examined a board fence, which had been white-washed in successive coats about 18 years ago. The boards were hard and sound, and had not become covered with moss, as was the case with another fence near, built at the same time. There is no doubt that a great advantage would result from whitewashing shingles before laying them. We have, on a former occasion, given some instances of the durability thus imparted to them. A late number of the *Boston Cultivator* gives some additional examples. J. Mears, of South Abington, performed the experiment in substance as follows:—He procured a vat, (a lime vat or a tannery does well,) and applied salt with a small portion of potash to the lime, and immersed the shingles for four hours. The wash was afterwards brushed over the shingles when laid. This made a fire-proof roof on a blacksmith shop, now eleven years. Silas Brown, another correspondent, says that 25 years ago, he dipped shingles in a large kettle of lime wash to which salt had been added, and the whole kept boiling. A few shingles were dipped in all over at a time, long enough to soak them well, and then thrown aside to dry. In a short time all the shingles were thus prepared. Although what are termed “sap shingles,” they have now lasted twenty-five years, and “may do so for years to come.” Several experiments of a similar character have been made since, with very successful results.

#### HOW DEEP SHOULD DRAINS BE DUG ?

This is a question upon which there always has been and perhaps always will be a difference of opinion. The depth required must depend on the kind of soil, for if the soil is a hard one, on top of a hard, gravelly one, I do not find that there is much advantage in going far into the hard pan. If, on the other hand, the subsoil is loose and more easily dug, there is an advantage to be derived from going deeper.

My rule is, to gauge the drains by their distance apart. Let the depth be one-seventh of their distance asunder, and it will secure a thorough drainage. If the subsoil is hard, and the digging expensive, then do not sink the drains so deep, but place them closer together but hold on to the above rule.

In many cases, especially where tile are used, it will be more economical to sink the drain one foot deeper, and by so doing save one-seventh of the tile; but where tile can be cheaply procured this is not always the case.

For a farm drain I prefer them about four feet deep, with an opening, formed of flat stone, in the bottom, and this covered with small stone to within twenty inches of the top; the latter are not necessary if those forming the opening are covered with reversed sods.

#### A NEW STUMP EXTRACTOR.

A correspondent of the *Rural Register* reports that a person having a large stump near



his house, was desirous of removing it. Last fall he bored a hole in its centre with an inch auger, some ten inches deep, and poured in one half pound of sulphuric acid (oil of vitriol), and corked the hole up tight. This spring the whole stump and the roots extending through all their ramifications were so rotten that they were easily removed with a hoe. If this would always be the result, it would be a very cheap and desirable way to remove stumps and prevent the large excavations that are often made in removing them.

The same quantity of salpêtre, used similarly, will permeate through a stump, and on being set on fire in dry weather will burn it entirely out.

#### COAL TAR FOR FENCE POSTS.

A correspondent of the Country Gentleman, having recommended the mixing of rosin with coal tar for fence posts, another correspondent writes on the subject as follows:—

"I believe that the rosin is superfluous. Enclosed you will find a chip which was taken from a fence post set five years ago, smeared with coal tar aloë; it was taken out about three or four inches below the surface, where a post usually commences to decay. The adjoining post, split from the same log, (and I should think the two lay side by side,) set at the same time, but not coal-tarred, has decayed so that you can kick into it more than an inch. This, in my estimation, proves the efficiency of coal tar. In applying the tar, I think that the timber should be well seasoned; heat the tar, letting it boil a few minutes, then apply hot. An old paint brush is the best thing that I have ever used for putting it on. Cover the whole surface of the post that is to remain in the ground, and from eight to ten inches of that above. After it has dried, which is usually in one or two weeks, tar again as before, and as soon as dry the posts are ready to set. If Mr. Rogers will try the experiment, I think he will find that coal tar alone will be as efficient as though rosin were mixed with it."

#### THE GREAT REAPER TRIAL AT DIXON.

I've been thinking, the last ten minutes, how I should tell the Rural reader the story of the trial of Reapers and Mowers, of Headers and Binders, &c. &c., at Dixon, under the auspices of the Illinois State Agricultural Society—its Executive Committee being the awarding committee. What to say is the question. I question the profit of occupying space with the mass of details my note-book contains, inasmuch as they are, necessarily, incomplete. I have therefore resolved to condense the matter at my disposal as much as may be.

**THE WEATHER:**—Was all that could have been desired. The week before, an unprecedented amount of rain had fallen in almost all parts of the State. At least fifty miles of Railway on the line from Chicago to Dixon and Fulton city was more or less damaged by the flood, and trains had ceased running for a time. The breaks had not all been repaired on the day the Trial commenced. Passengers and freight were delayed, and several machines had not arrived the first day of the trial.

**THE SCALE OF POINTS:**—I arrived at Dixon in company with other Chicago reporters late the P.M. of the 22d of July—the first day of the trial. Reporters very soon discovered an air of dignified reticence pervading the presence of members of the Board—that said Board had resolved to run the machines without the assistance of any other man, or class of men, not even reporters—that not only were all data acquired by them, as the trial progressed, to be withheld, but the scale of points, to which the members were to direct their attention in gathering these data, upon which to base their decision, was also withheld. This caused considerable comment among both exhibitors and reporters. No valid reason was given for this course—only one plausible one was proffered, and that, analyzed, amounted to nothing. One rampant reporter for a daily paper asserted that he had come to a conclusion, which was, that the reason why the scale of points, was withheld, was because the *Committee had not fixed upon any*. I do not endorse this conclusion, however, for the reason that, contrary to its declared intention, the Board permitted the scale of points to be published immediately after the trial. This was done, I suppose, in order to overthrow the "conclusion" referred to. While I am charitable enough to believe that some scale had been fixed upon, I do not think the Board succeeded in convincing said reporter that the scale, as published, was not gotten up after the trial had progressed, in order to overthrow his "conclusion." But enough. It is a simple matter to generalise the essentials to a good reaper and mower. They are simplicity, durability, adaptability and efficiency.

1. Simplicity of design and construction.
2. Durability of parts and of the whole combined.
3. Adaptability of parts to each other, and of the whole to the perfect performance of the work to be executed.
4. Efficiency to do the work required, in all conditions of grain and grass, of soil and surface.

In the absence of the well digested scale the Committee was supposed to possess, and of facilities for acquiring data, except in a general way, I am compelled to make my record refer to these general requirements.

**The Mowers:**—The following is a list of the machines entered in competition for the premiums offered for the best mower, and tested as mowers in competition for the premium offered for the best combined reaper and mower:—

1. Wood's Two-wheel Mower, by W. A. Wood, Hoosick Falls, New York.
2. Wood's Jointed-bar Mower, by same.
3. The Ohio Mower, by E. Bull, Canton, Ohio.
4. The "Excelsior," by Cline Seiberling & Hower, Doylestown, Ohio.
5. Kirby's Mower, by D. M. Osborne & Co., Auburn, N. Y.
6. Curtis' Cam Mower, by Geo. S. Curtis, Chicago.
7. "Cayuga Chief, Sen.," by Sheldon & Co., Auburn N. Y.
8. "Cayuga Chief, Jr.," by same.
9. John P. Manny's Senior Mower, by John P. Manny, Rockford, Ill.
10. J. P. Manny's Junior Mower, by same.
11. "Buckeye, Sen.," by H. H. Taylor, Freeport, Ill.
12. "Buckeye, Jr.," by same.

13. Rugg's Mower, by G. H. Rugg, Ottawa Ill. 14. Esterley's Mower, by Geo. Esterley, White-water Wis. 15. Coggswell's Patent, by Thos. H. Medell, Ottawa Ill. 16. Seymour, Morgan, & Allen's Brockport N. Y. 17. McCormick's by C. H. McCormick & Bro., Chicago.

WHERE THE TESTS WERE MADE:—The trial of Mowers was commenced the 22d, continued the 23d, and completed Saturday, the 26th, the 24th and 25th having been employed in testing reapers, headers, and binders in the grain. The mowers were all first tried in a fine field of timothy, which would yield from a tun and a half to two and a half tuns of hay per acre. A portion of this grass was lodged—the greater proportion stood up nicely. The surface was all that could be desired—smooth and dry. It was sufficiently rolling. The meadow was divided into lots of an acre each, with appropriate numbers and guides. Each machine drew for a number, which determined what field it should cut. The headlands had been cut, the machines took their position, and it was announced by the committee that the draft of the machines would first be tested.

THE DYNAMOMETER TEST:—To fix the relative draft of each machine, Gibb's Dynamometer was used. It was put on the machines at starting to cut out their lands, when each machine must necessarily gather all it could and cut all it could gather. No one could take exception to this application of the test. But contrary to former precedent, each driver rode his respective machine and drove his own team, instead of walking and driving from the ground. By the careful oversight of the Committee this fact need not affect the draft materially either way. The heavier the driver, the greater the draft. The more ambitious and hard-bitted the team, the lighter the draft. Again, some of these machines were put into grass for the first time—were entirely new, and the parts had not been worn. They therefore worked heavier than the machines taken from the field where they had been used for some time. But these considerations are of no use to me, inasmuch as I could not obtain the figures showing the relative draft as given by the dynamometer. They are only important as points not to be overlooked by the Committee in arriving at the true, or at least the approximate result of this test. Dynamometer tests are necessarily imperfect, and only possess a relative value.

THE RACE OF THE MOWERS:—The test of draft having been completed, the different fields cut out, the teams were again put in position to complete the cutting of the acre on time. At a given signal each team started. The time test was magnified too greatly by some of the competitors, as entering largely into the ultimate result. Some teams walked and some trotted—most of them were hurried. Some ambitious drivers sought to gather too much, and the sickle or knife left broad, ragged, unseemly fringes,—such as are left by the old-time mowers when they neglect to "toe out." These drivers doubtless regretted their ambition after their fields had been raked. Machines that did good cutting, to their full capacity,

had their work condemned by the unthinking, because of this careless way of driving.

The Committee gave the drivers no directions—no rules for driving. They were directed, each to cut his acre in his own way—as quick or slow as he chose. The Committee required that in case a machine was stopped for any cause, it should remain still until some member of the Committee had visited it and learned the cause of the stoppage. The timer for each machine was directed to keep the aggregate time consumed in cutting the acre, including the time of stoppages, and separately, the time the machine might stand still from any cause.

The result of the trials of the mowers in this manner, in point of time, character of the work done, apparent ease with which it was done, was various of course, and without figures, which could be obtained only by the Committee, must necessarily be judged of superficially.

The race was exciting—too exciting between certain machines, to be profitable. Time was made by some machines without in the least demonstrating the adaptability of the machine to different kinds of work, and to cutting grass in its different positions in the field. While some of the machines that have a good reputation among farmers did very poor work, others gathered up the lodged grass, shaving it off smoothly and leaving a clean stubble when raked off, which the ambitious racers certainly envied.

CLASSIFICATIONS OF MOWERS ACCORDING TO THE QUALITY OF THEIR WORK:—I propose, for the purpose of brevity, to divide the above named machines into three classes.

1. The first class comprises those machines (and in the order named,) which did the best work, with the greatest apparent ease of draft and adaptability to the work to be performed. 1. The Cayuga Chief, Sen., and Jr. 2. John P. Manny's Sen., and Jr. 3. Wood's Two-wheeled and Jointed-bar Mowers. 4. Buckeye, Sen., and Jr. 5. Kirby's mower. 6. Ball's Ohio Mower. 7. Seymour, Morgan & Allen's Mower. 8. Curtis' Cam Mower.

2. The second class comprises those machines which have a pretty good reputation as Mowers, but which did second class work, and did not seem so well adapted for mowing as those named in the first class. 1. "Excelsoir." 2. Rugg's Mower. 3. McCormick's Mower. 4. Esterley's Mower.

3. The third class includes machines which could not be regarded as having done work of a character nor in a manner to commend it to favor. I have but one machine to name here—that is Coggswell's Patent.

THE MOWERS IN PRAIRIE GRASS:—Thus far I have referred to the work of the mowers in the field of timothy above described. No one regarded the test thus given the machines as a severe one. "Can your machine cut prairie grass?" we heard scores of farmers ask the garrulous agents of the different machines; "for, if it will, it will cut anything, and no mistake." Most agents answered affirmatively; some with positive emphasis. Others coolly waved the question, asserting that they sup-

posed the matter would be tested before the trial was over.

On Saturday P.M., 26th of July, it was announced that the trial in the field would close by a grand demonstration on the part of such mowers as chose, in a field of prairie grass. This field embraced all kinds of surface, and the different species of wild grass usually found on the upland prairie, along the borders of the sloughs, and in the sloughs. The surface was smooth and rough on the upland, boggy and soft in the sloughs and along the slough borders. The matted blue grass, lodged and twisted, and bedded close to the ground, mingled with the wiry sedge, which will resist almost anything but sharp steel; the dry bottom grass of last years growth, rapidly becoming a part of the soil,—and very useful to the Committee as an aid in clogging the mowers,—and the bogs and hummocks, and roots which must be cut off because it was impossible to cut over them, combined to render this test of strength and capacity of the machines a very severe one. But it was just what the farmers and the Committee wanted to see, and precisely what the competitors, who had confidence in their machines, desired to exhibit.

Of the machines enumerated above, the following were absent from the field during this test. "Excelsoir," Rugg's Mower, Esterley's Mower, and Cogswell's Patent. All the machines which appeared in the field did good work. Some of them did better work and with greater ease than others. Some of them clogged when stopped in the matted blue grass, and were directed to start without first backing, and without a sudden jerk. This test was of no great practical value, except that it determined the relative motion of the knives and the relative efficiency of the smooth edge knife and the serrated sickle in grass. No lots were assigned the machines in this field. Each followed the other around the entire field, up the rolls, down the slopes, through the sloughs, and over the bogs, shaving the grass off closely and nicely. Some of the lighter machines failed to do as even work as the heavier ones, and the jointed-bar machines accommodated themselves to surfaces better than the stiff side-draft machines.

My Notes upon the different machines tested here, taken at the time, are as follows:—Curtis' Cam machine was driven down the centre of a boggy slough, doing most excellent work with great ease apparently. Superintendent Capron led the way, and remarked, as the machine followed him, that "any machine that could follow him and cut a swath, could cut any kind of grass, in any spot a farmer would be likely to require it to work." When the test of stopping and starting in a difficult place was applied to this machine, it started with ease, while the McCormick machine clogged repeatedly, and could not start without backing to get up motion.

John P. Manny's Senior machine did most excellent work, drawing light, cutting wide, and accomplishing everything required of it, in good style. It did better work and is a better mower, for the farmer, than his Junior machine, although the latter acquitted itself well

in all tests. Seymour & Morgan's, for some reason, did better work, comparatively in the prairie grass than it did in the timothy. It is a good mower, and did not fail to do the work required of it, surely and well. The Kirby machine did good work. Wood's Self-Raker,—a very light machine—is not so good a mower, in all respects, as his Hand-Raker. It failed to start when stopped in the blue grass. The hand-raker went through in good style and did good work. Ball's Ohio Mower is a popular and a good machine. It did good work. The "Cayuga Chief, Sen., and Jr.," did not fail to do capital work wherever placed. The "Buck-eye, Sen., and Jun.," both cut well in tame and prairie grass; but clogged when stopped and started in the blue grass. Backing the machine a few inches, it went through without difficulty.

WHICH IS THE BEST MOWER?—I cannot tell. It is rarely the case that so many good machines are found competing with each other. Each of the machines enumerated above has its peculiar merits. Some of them doubtless combine more good qualities than some others. The reader, with the writer, must look to the report of the Committee for the data necessary to render a comparison valuable. Individual opinion or judgment without the sustaining power of figures and facts might be declared invidious, as it certainly might be unjust. I shall therefore reserve my own opinion until I may have opportunity to review the report of the Committee.

THE REAPERS:—A fine field of wheat of about two hundred acres had been secured for the trial of Reapers. Some of the grain was pretty badly lodged. It would yield from twelve to twenty bushels of grain per acre—the field would hardly average more than fifteen bushels. The same machines enumerated above as competing for the premium offered for the best mower, with the exception of two or three of the Junior mowers, were put on trial as reapers, either in competition for the premium offered for the best reaper, or for that offered for the best combined reaper and mower. Here the surveys had been made as in the grass. The field allotted to each machine was nearly two acres. The same method of testing the draft was adopted. Fewer machines were put in the field at once, in order that each member of the Committee might witness the working of each machine.

THE SELF-RAKING REAPERS:—Were first started. These attracted great attention, and were watched, and their work critically examined, by the hundreds of farmers present, attesting the vital interest Western farmers have in every thing that saves manual labor—that supplies the place of the muscles and nerves gone to defend the country.

Wood's, McCormick's, Seymour & Morgan's, and Cline Sieberling & Hower's, "Excelsoir," were the competing machines as self-rakers. The grain they were tested in was the lightest and stood up the best of any in the field. The cutting was equally well done by each machine, with a difference in time. McCormick's machine was drawn by four horses. Its

raker is attached to the reelbar, and, with each revolution of the reel, sweeps the grain from the platform, leaving it on one side, in long gavels. The grain is laid off evenly and in a position relative to the following binder, convenient for him to gather and tie. But this sweeping rake is an awkward concern. The driver has no control over it at all. It revolves, with the reel, and with each revolution a gavel is laid off, whether the grain be light or heavy.

Seymour & Morgan's machine delivers the grain at the side, in much the same shape as McCormick's. Its rake revolves and sweeps the platform of the grain in much the same way. But, unlike McCormick's, the driver can easily regulate the size of the gavels. In all respects it is a much better raker than McCormick's and the machine, as a combined machine is an excellent one. It did good work in all places, is adjustable of draft, well built, and efficient.

Wood's Self-Raker was the rival of the last named machine. Its raking attachment is ingenious, and can be applied to almost any machine, I am told. The grain is delivered at the side in a compact gavel. The only fault that can be found with this raker, is that the gavels are delivered so that the binder, in following the reaper, comes directly to the tops of the grain, or end of the gavel, instead of the side; and the raker invariably draws the top grain of the gavel after it a little. Compared with the work of hand-rakers, these faults (if they may be called faults) are of little importance. The compactness of the gavel, and the perfect control the driver has over the rake, regulating the size of and depositing the bundles when he chooses, combined with the ease of draft, and efficiency in cutting, render this machine a very valuable one for the farmer. I apprehend the premium to the self-rakers will be given to either the Wood or Seymour & Morgan machine. In either case it will be worthily bestowed.

"The Excelsior" has a skeleton platform, on which the grain falls, and from which it is dropped at the will of the driver. This machine did excellent work, and delivered its grain in good order. But there are two important objections to its mode of delivery that will throw it out of the field of competition. They are, that it delivers the grain directly in the rear, rendering it necessary to bind it before the team can go another round. This objection is an important one; because it involves the necessity of employing a large gang of hands to follow it, and the grain must be bound whether wet or dry—whether in condition to bind or not. The second objection is the position in which the grain is left in its relation to the following binder. It is laid at right angles to the uncut grain, in gavels as long as the platform of the machine. This involves extra steps, and consumes extra time.

Thus much about self-rakers. Their importance just now is apparent—is self-evident. Hand-Rakers will be ignored comparatively. They have but one resort for safety. Their refuge is the employment of self-binders, of which, more hereafter.

THE HAND-RAKING REAPERS:—Under the

guidance of Superintendent Capron, in company with other members of the press, I went over the different fields cut by the machines, to look at the stubble, and examine the gavels and the manner in which they were laid. The data of draft and time are not in my possession. I have given above all I choose to say of the work of the self-rakers. I now speak of the appearance of the work of the hand-rakers.

Kirby's machine cut its field pretty well. Portions of it were badly lodged, and too great haste to make time prevented the care in gathering which a tidy farmer would desire. The raking was poorly done. There was too much grain scattered over the field.

Wood's Hand-Raker did good cutting but the delivery was not good; the gavels were not well laid.

Coggswell's Patent did better cutting in grain than in grass, but the gavels were badly laid—the grain very much scattered.

Ball's machine did not do near as good cutting as a reaper as it did as a mower, and the grain was poorly delivered.

Curtis cut one-half of his field well, the other half poorly, and the gavels were no gavels at all—badly scattered and poorly laid.

The Buckeye did capital work in all respects and was one of the only two machines from which the grain was delivered as well by hand as it was by the self-rakers.

Esterly cut his field very well indeed, but the grain was badly raked. This is a popular machine in Wisconsin and Northern Illinois. Its draft is light, and I have seen it do much better work in the harvest field in the hands of farmers than it did here.

Rugg's machine was badly guided. The cutting apparatus is driven before the team like a header, and it is guided by a helm-wheel. It is a good machine; but both in reaping and mowing, fringes were left where none should have been seen. And the gavels delivered from this machine seemed doubled and twisted. I have seen grain delivered from it in much better shape than I found it here. The Cayuga Chief did the best cutting and raking combined of any machine on the ground. This little, compact, unique, iron machine, is in my opinion the machine *par excellence* among the hand-rakers, whether as a single reaper or mower, or as a combined machine. It seems to me to combine more desirable points in less space and for less cost than any other machine on trial. And I detract nothing from any of them by the publication of this opinion.

John P. Manny's Reaper, in its adjustability, efficiency, lightness of draft and width of cut, combined, is a most excellent machine. It did good work, but failed to deliver the grain in as good shape as either the Buckeye or Cayuga Chief. It is one of the very best of the Western machines.

The failure of these machines to do good work was not always due to any defect in their construction or design, but to the effort of the operators to make time. They seemed in several instances to have got the idea that time was the only test, and the rivalry and racing was exciting, but deplorable in the character of the work resulting. I speak relatively. I

do not wish to be understood as asserting that there was reckless driving or great waste of grain; but the work was not in all cases done as well as it should or might have been had it been done with the deliberation and care with which the farmer proceeds to reap his harvest.

#### The Heading Machine.

There were three entries—Hains', Mayberry's, and Rugg's headers. I saw the two first-named work. The last was compelled to wait for waggons to receive its grain, until Mayberry had completed cutting his field. I was in another place then.

The grain in which Haines operated was light. He cut it nearly as low as the reapers, for some reason. But the work was well done with a raw team and unskilled hands to help. The width of cut was ten feet. The machine seemed to be less easily guided and handled than Mayberry's. It was apparent that both teams and hands attached to the Mayberry machine were thoroughly trained to their work. It is a point I shall not undertake to decide, which did the best work.

These headers are useful on large grain farms. They require a good deal of attendant help. It requires four horses to drive them, one man on the machine, three teams with a driver and loader each, to receive the grain and convey it to the stack, and at least two men on the stack—in all, ten horses and eight or nine men. But the advantages are, that the harvest may be delayed until the grain is ripe, that a large area may be cut per day, with no waste of grain, and no risk from exposure, if proper ricks are prepared to receive the grain. The bulk of the straw is left on the ground to be plowed under, not only saving the repeated handling, but leaving the straw right where it is wanted, and where it belongs, as a manure.

There are some risks attending this mode of harvesting, but that they are more numerous than those incident to other modes, is doubted, if the same care and judgment are exercised in commencing and prosecuting the work. But these machines are not suited to the wants of small farmers. A good, compact, combined reaper and mower, with a self raking or self binding attachment, is much more desirable for the snug farmer with his quarter or half section farm.

#### A SUCCESSFUL ICE HOUSE.

C. B. of Chester, Pennsylvania, communicates the following to the *Gardener's Monthly*:

Ten years since I built an ice house. After inquiry and reflection, I adopted the following details of construction, which has proved a complete success, the supply rarely failing until ice forms again.

I chose as a location, a north-lying bank of sandy formation, made the excavation a cube of thirteen feet, or so that the earth removed would bank up that height, put in an eighteen inch dry wall, except the top foot, which was mortared; inserted on each side three pieces of 3 by 4 inch scantling, to which perpendicular 1 inch pine boards were nailed as lining; put on a light shingle roof of double pitch, left the spaces at the eaves between the rafters open for a draft of air to enter, and placed a small

Venetian window near the top of the north gable for its escape. Before putting on the shingles, and after nailing lath on the underside of the rafters, the intervening space was tightly packed with straight straw; the roof is kept whitewashed. The south gable consists of two doors, one of which answers for general use, but when filling, the ground being level on that side, both are opened, a small platform placed in front of them, and the ice is shot directly in from the cart. The bottom was made about one foot deeper in the middle than at the sides, and 8 to 10 inch chestnut logs laid across it close together; the ice is thrown on these.

I fill only to the square with ice, and the remaining space with wheat straw, which I am careful always to keep covered over the ice and packed down the sides a foot or two as it melts, leaving a space of about one foot between the ice and the lining. The bank was well sodded up to the wall, so as to throw off rain water falling on the roof and prevent its ingress to the house. Free daily use is made of the ice during all the warm season, for a family of nine, and there is usually about a load or two over. The capacity of the house is about twenty well filled ox-cart loads, with side boards. Almost any farmer can erect such an ice house at but little expense.

#### THE BREAD AND BUTTER MACHINE.

"It has come mother! It's come, Etty! The machine has come! The express man is taking it out of his waggon, hurrah! Now we'll have some bread in a trice!" and the excited boy swung his cap in the air as he bounded down the steps.

Excuse me, dear reader, for introducing the respectable family of Mr. James Franklin Allen in such and unceremonious manner; but really to the parties concerned, the occasion was a most exciting one, which must be my apology.

Now that the machine has been safely deposited on the kitchen table, and the express man having received his pay, has turned his weary horses from the door, allow me to explain that the aforesaid Mr. Allen was what may be called a merchant farmer; that is, he made money easily at his store in the city, and spent it laboriously on a few acres of land, which he was trying to rescue from the imputation of having run out. Certain it was that whatever else did not grow on the farm, the yield of sorrel was very abundant, enough to furnish cures for all the sore throats in the State. Mr. Allen, however, was a man who, having put his hand to the plow, did not look back. Not he. The third year a peat meadow was added to his acres, the mud from which he was well assured would assimilate with his gravelly soil, and thus produce rich bottom land. In a few years his predictions began to be verified. He now added the *Ploughman* and the *New England Farmer* to his list of periodicals, read with interest notices of all the county and state fairs, and even aspired to some of the best premiums.

Noticing one day an advertisement of the prize offered for the best bread at the coming fairs, he instantly determined that his daugh-

ter Etta should contest it with her neighbours, from flour made of his own wheat. To stimulate her ambition still further, he offered an additional premium of ten dollars, if she would win the silver cup from all competitors.

From this time forth there was a vigorous collection of receipts for making yeast and mixing bread, the excitement reaching its culminating point when, one evening, Mr. Allen returned from the city with the news of a bread and butter machine, the latest production of the genius of our American inventor, THOMAS BLANCHARD, Esq., of Boston. After the announcement of this new aid to her plans, it could not, of course, be expected that Miss Etta would give herself or her father a moment's rest until he had promised to purchase one immediately for her use.

The arrival of this wonderful machine was, therefore, the occasion of Master Walter's excitement at the commencement of this story. In justice to its merits, it ought to be described without further preamble.

On tearing off the coarse matting which enveloped it, a small tub was found, fastened by a large iron pin into an iron stand by means of a groove in which it turned with great ease. The stand could be fastened by wooden screws upon any table, and thus rendered firm for the work of a kneading. Running up from one end of the stand or supporter, to the tub, was a bar of iron into which a lever was attached, which was the propelling power for the business.

About midway of the lever was a wooden, concave shovel just fitting to the size of the tub, which when worked horizontally by the lever, carried the dough from one side of the vessel to the other, mixing, kneading and making into loaves ready for the pans. If it was more convenient to allow the bread to rise without moving it from the tub, the lever was raised and turned back out of the way, and the dough left without any waste of materials, ready when risen, for the second and third kneading.

Having heard her father's explanation, Etta was all eagerness to give her machine a trial. Putting on a large apron, therefore, she ran to scift her flour, measured it and poured it into the new tub, which her mother had carefully cleansed; then adding her light, frothy yeast and luke warmwater, she proceeded to work the lever to mix the dough, the entire family standing around to watch the experiment.

"Shove it back and forth," said her father "in this manner; you are not ready for the kneading, yet."

"You will need more flour," suggested the experienced mother. "It is a good rule to mix in flour until it has done sticking."

"O, see how nicely the shovel clears it from the sides of the tub!" cried the laughing girl. "I'm sure, for one, I thank Mr. Blanchard. It does work beautifully!"

"Yes, it is a complete success," remarked the merchant farmer, "and if not so remarkable as his machine for turning, marble or plaster busts, or his patent for making gun stocks, yet I prophesy that Mr. Blanchard's name will long be remembered in connection with his bread and butter machine."

"Can it churn, too, father?" cried Walter his eyes growing large with astonishment.

"No, not churn, my boy, but you can see by the motion of your sister, in making the bread, that the butter when churned, could be thoroughly worked or separated from the milk, by pressing it up against the sides. You, or any one, could do that under the direction of your mother."

Walter gave a scream of joy. "Can you churn to day mother?" he asked.

"No, not to-day. We must not disturb Etty's bread until it is ready for the oven. Now, turn it over, Etty, and leave the top smooth."

"I feel quite sure that I shall win the prize," exclaimed the young girl, gazing with evident pride at the nice, white, well-mixed dough in the tub; "and only see, not even a dust of flour on my hands."

"But mother threw in the flour from the scoup, for you, cried Walter.

"Yes, but another day I could do it quite as well myself. I can't expect to have such an admiring audience every time I mix bread."

"Here is another convenience," said Mr. Allen, smilingly untying a paper bundle which he had quietly withdrawn from their notice. He held up a flat, round piece of hard wood, which he assured them fitted exactly into the bottom of the tub, and then a sharp knife which could be fastened to the wooden shovel, thus acting as an extensive cutter for mince meat or saussages.

"Well really, Mrs. Allen!" exclaimed Hannah, the girl of all work, who had been gazing at the group, and reflecting in amazement at the progress of art, "I do believe the millennium day is a-coming? Don't the Bible say knowledge will be a-running to and fro through the earth, and hasn't it run out to our farm in the shape of a bread and butter and sausage machine? It does seem to my mind that we oughter be setting our houses in order, when the work it took our mothers, hours to accomplish, is done without hands. I'm free to say, ma'am, it makes me, solemn."

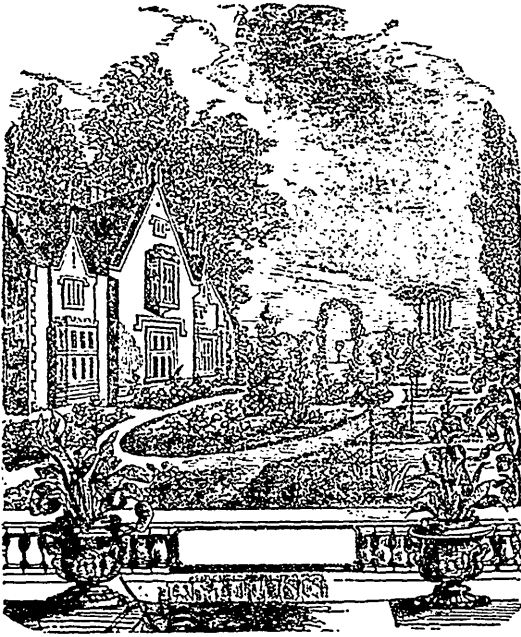
At tea, the family had an opportunity to test the excellence of the new bread, which, without a dissenting voice, was pronounced "first-rate."

Walter, in his zeal, went so far as to shout, "Hurrah for the bread made without hands!" but instantly blushed crimson on receiving a gentle reproof from his father.

"What a blessing remarked Mrs. Allen, "this invention will prove in large boarding-houses, where a third of a barrel of flour is mixed at once."

"Progress" is the word, in everything that is good—everything, especially, that makes lighter and cheaper the labour of the kitchen, that must of necessity continually occur. Bread-making, we believe is work that women do not particularly like. They do not dread it, perhaps, but it is not an attractive labour, so that if bread can be well prepared, as would seem by the glowing language of our correspondent, it is certainly an important step in the right direction. We shall endeavour to find the machine, and test its merits.

## HORTICULTURAL DEPARTMENT.



## GARDENS LATE IN SUMMER.

Farmers who raise kitchen vegetables, and who do not keep a regular gardener, are apt to neglect their grounds towards the end of summer and early in autumn, and allow weeds to ripen their seeds. Nothing reduces the current expenses of a family, for the outlay, more than a good kitchen garden; but the complaint with many is the labor of keeping it clean—the constant fight with weeds, weeds. Some have adopted the opinion that a quarter-acre garden will grow more weeds than ten acres of farm land, and there is ground for the belief, as some are managed. A few weeds, allowed to perfect seeds, will produce an abundant crop next year; and thus, year after year, the earth becomes filled with them, till the soil of a garden consists of three main ingredients, namely, a soil, naturally; a large amount of manure, artificially; and an immense supply of foul seeds, spontaneously.

Is it not practicable to clear out entirely and totally, the last of the three? Are weeds a necessity? If a garden contains a hundred thousand of them, and ninety-nine thousand are killed by the hoe, why not the remaining thousand? If nine hundred and ninety of this thousand, why not the remaining ten? *The soil of a garden may be completely purified of weeds and their seeds, greatly reducing the labor of keeping it in order, and largely contributing to a fine growth of the crops. It is easier to keep a garden perfectly clean, than to be engaged in a constant warfare with the weeds. The labor is far less. The reason that it is not done, is the want of care and attention. Nearly all farmers are satisfied if a garden is nearly*

clean. This is the origin of all the trouble,—namely, leaving a few weeds to seed the whole ground. The remedy is, begin now—eradicate every thing—and then, in three days go over again, and eradicate any thing that may have shown its head, and so continue the examination every week, weeds or no weeds. One morning every week should be set apart for this special purpose. Unless something of this kind is adopted, the thing will certainly be neglected. And after they are out, continue the process to keep them out. It is easier to spend a half hour in a morning once a week in this way, and have good crops, than to spend three days in each week fighting the intruders, and as a consequence getting bad crops.

A muskrat made a hole in a dam embankment, and the water was washing it larger. The owner applied to one skilled in such things, to close the dangerous orifice. He would charge a dollar, which was more than the owner would give. The next day it had increased, and then the offer was accepted. But the price had increased to two dollars, and was again declined. From

this time the breach increased enormously, and the next day the owner had to give the fifty dollars required, or lose his whole dam. It is so in destroying weeds. A little labor at the start would save an immense increase. When a building is in flames, it will not do to suppress merely nineteenth of the flames, but the last spark must be extinguished. Let every owner of a garden be sure that the last weed is killed, if there is such a one, as often once a week.

## MONTHLY SUGGESTIONS.

In taking up roots and restoring them, begin with the most tender, and take advantage of dry weather while you have it.

Expose pumpkins and winter squashes to the sun and wind, placing them on a dry board before storing them. Pack beets in sand in cellar, or put them in pits. Horse-radish may now be dug for use as wanted, leaving the old stools for future production.

Weeding at this time should not be considered as useless, and indeed the removal of parasites cannot receive too much attention in late fall. Mulching soils intended for early gardening, will add materially to their profitable culture and earlier products.

## Fruit Garden and Orchard.

Pear, and other fruit trees that are to be moved should be transplanted as soon as the leaves fall off. Fall planting is generally more successful than spring planting, as in the former season the soil is in better condition, and farmers being less busy, the work is apt to be more thoroughly done. Newly transplanted trees should be mulched at once with refuse

straw or long manure. Manure unthrifty trees with mineral manures. Top-dress strawberry beds. Bank up trees to prevent the attack of mice. Lay down and protect tender grapes. Grape layers may be removed from the vine. Grafts may be cut and preserved.

Raspberries, blackberries, gooseberries, currants, etc., should be transplanted.

Winter fruits should be placed in a dark place, with dry even temperature at about from 60° to 65°. Where the object is to retard ripening, the temperature should be reduced accordingly.

In gathering fruit, that intended for winter use should be gathered by hand, and on no account shaken from the tree, as is too often the process. Each bruised portion of an apple or pear speedily becomes decayed, and delicate handling is therefore indispensable. Parties sending fruit to market will realize better prices on such as are assorted of even size. One-half of the fruit that is taken to market is injured by bad picking and careless packing.

Numerous methods have been suggested and tried for saving grapes, and with variable success. The best plan, however, with which we are familiar, is to seal with wax the cut end of the stems, carefully remove all imperfect grapes, and when the branches are free from any moisture, place them in dry bran. Cotton, sand, and other substances are also used, and, by some persons, successfully. We have known of grapes being well kept by being simply placed in ordinary clay flower-pots, with paper tied over each end of the pot. A perfectly successful method of preserving grapes is yet a much looked for desideratum.

**Flower Garden.**

Bulbs, corns, and tubers, should be planted this month, in well prepared soil. Those who garden from profit, need not expect it from *anemone hortensis*, as the quality of the bulbs usually received from Holland is so inferior and decayed, that they seldom produce a tuber worthy of another year's planting.

*Crocus*.—There are upwards of one hundred varieties of this vernal flower in cultivation, attended with universal success. They flourish best in rich soils, and may either be planted in beds or rows, at least two inches deep and six inches from row to row. They seldom require removal; every three or four years will be sufficient. When they are done blooming, the foliage should not be removed till perfectly decayed.

*Hyacinths* may now be planted; they should be covered with sandy soil four inches above the crowns, rounding off the tops of the beds so as to lead off water.

*Iris* or *Fleur de Lis*, should be planted in the same manner as tulips.

*Jonquils* should only be lifted every third year, as their flowering the first year is not equal to the other two. Soil, such as is recommended for tulips, six inches apart and three inches deep.

*Lilium*.—The beautiful and varied family of lilies are all easy of culture, requiring merely a good, deep, dry loamy soil. They are all hardy, except *L. Japonicum* and *L. Longiflorum*, which should be lifted early in November, and

again planted about April, keeping them through the winter in dry sand, in a cellar, free from frost. The hardy kinds, deserving most attention, are *L. Candidum*, (the double variety of it is not worth growing), *L. Chalcedonicum*, and its varieties, *L. Tigrinum*, *L. Concolor*, and *L. Martagon*; these with the species indigenous to this country, are superb kinds. They should be planted from three to five inches deep, according to the size of the bulb, and need not be taken up oftener than once in every three or four years; none of the species can be transplanted after they have grown, without injuring their flowering.

*Narcissus* require similar treatment to the lily, but a much richer soil. When first imported, they bloom more finely than afterwards.

*Paeonies* are among the most magnificent of flowers, and well repay cultivation; there are very many choice kinds.

*Tulips*, always a favorite, and imported in such large quantities that the bulbs may be had at a very low price. They will grow always in any soil, but less perfectly in those not adapted to it. The soil best suited to their culture is a good fresh loam, mixed with a portion of well-rotted stable manure, at least two years old, and the mixture of soil and manure should have been incorporated some months before planting the bulbs, the soil and manure being not less than sixteen inches deep, the bed raised in the middle, and three to three and a half feet wide. Plant in rows seven inches apart, and six inches between the bulbs. Plant with a dibble four inches deep, and protect with branches in severe weather.

The *Pyrus Japonica*, or *Cydonia Japonica*, can be planted now. This very beautiful plant is the earliest and the latest flowering shrub in the garden. It bears flowers in aggravated clusters along the branches, of a rich scarlet hue, is almost "an evergreen," though a deciduous plant, and being bushy and fine green, is well adapted for low ornamental hedges. The *Cydonia Jalba* is another variety, of a fine blush color, and is also hardy and suitable for grouping, hedging, &c.

*Double Primroses, Polyanthus, Daisies, &c.*—Any of these that were planted in shaded situations in spring, and have been preserved through the summer, should have for their further protection a bed well sheltered from the northwest, in which they should be planted four inches apart. Give them a few sprinklings of water in the morning, and have a temporary frame of rough boards to place over them during the severity of winter. The frame may be covered with boards in place of glass, which must be kept over them while they are in a frozen state.

Box borders may be set out this month, but should be mulched or protected in some way, until the plants have formed roots.

**Hot-House.**

This month is one of comparative leisure in the hot-house, as all the tropical plants are now in a dormant state. Airing at all proper times is now very essential to harden plants, never permitting the temperature to be less than 50°. After airing, close early in the afternoon, so as to put off the necessity of fire



as long as possible, and when found necessary, use it with great caution.

Sweep, brush, and clean, at every convenient opportunity, so that bad odors, &c., may not be annoying after more permanent closing.

#### Green House.

As the plants are now all in, cleanliness and proper arrangement constitute a material part of the work of the month. Wash and clean pavement, benches, &c. Let the waterings be done in the mornings, and admit free circulation of air during mild weather. Be careful to remove all the decayed leaves and insects.

The plants of *Lagerstræmia*, *Stevculia*, *Hydrangea*, *Pomegranate*, and others equally hardy, that are deciduous, may be kept perfectly, in a dry, light, airy cellar. Give frequent admission of air, and one or two waterings during winter. Re-potting such plants as require it, should be attended to in season. Plant camellia seed, for, as they ripen about this time, they should be replanted as soon as ripe.

**Room and Parlor Plants.**—Before taking in the plants, remove all dead leaves and insects, wash and dust those plants requiring it, and tie up straggling branches. Sponge every leaf of the camellias, pick off the flower buds if too crowded, and let them have the full sun, but do not place them in room with fluctuating heat, as they require a steady, even temperature.

Place bulbous roots in glasses this month.—All cape bulbs that are unplanted and show an inclination to grow should be potted at once.—*Working Farmer.*

#### Hot-Beds—Hot-Houses—Manures.

A hot-bed, merely to answer the purposes of a common family, may be constructed of two old house windows and a few pieces of unplanned boards, and the plants will be just as thrifty as under one that cost \$20. But if you wish to engage to a more ample extent in producing early plants, it would be better to construct a hot-bed of considerable size, and of good materials,—and even then the process of constructing the frame and sash is exceedingly simple. It consists in nailing four boards together, the width being about four feet, or just wide enough to reach across to tend the plants, and the length extending as far as is desired. The back board should be as much higher than the front as will give a proper pitch to the sash for conducting off the water. Pieces of two inch stuff should be placed in the corners, and the boards nailed to them, to keep the whole stiff. The sash should be narrow, so as to be easily moved, and run up and down, not crosswise, the glass lapping, so as not to leak. This is all that is necessary, with regard to construction, preparing the hot-bed, and managing it, require constant and careful attention.

We can give you but little aid, we fear, about "a small hot-house." All houses for the purpose of starting and growing plants, are rather expensive. A good one—not an extravagant one—will cost from six to ten dollars for each running foot, built of the ordinary dimensions, say 12 by 32 feet, or in about that proportion. A gentleman who is interested in such houses recently informed us that he can construct a good house for less than

five dollars per running foot,—one that will well answer all ordinary purposes.

Your question in regard to the management of manure so as to kill the seeds is an important one, as living seeds, spread with manure, not only perpetuate a useless labor, but greatly exhaust the resources of the soil, in the millions of weeds which they produce. We know of only one way to prevent their germinating, and that is through the agency of fermentation. If this process is properly conducted, we think it would not only destroy the vitality of seeds, but vastly increase the value of the manure. But it is a nice process, and few perhaps will be willing to give it the necessary time and attention.

The manure should be thrown into large heaps, and a lower place than the heap stands on be made near it, so as to catch all the drainage that escapes, which should be taken up and thrown over the pile two or three times each day. In throwing up the pile, place two or three smooth poles in an upright position, and throw the manure round them, so that when the pile is finished these poles will stand in the midst of it. The heap must stand out doors, as the barn cellar would probably be too cool for the fermentative process to go on. After the pile has been set up for two or three days, and repeatedly saturated with its own drainage water, by drawing up one of the stakes and grasping it with the hand, the state of temperature may be ascertained. If it is found to be quite warm in some places and cooler in others, it will become necessary to overhaul the heap, and break up and thoroughly mingle the whole. In a day or two apply the test again, occasionally drawing out a small portion to learn what its condition is. Great care must be observed not to allow fermentation to proceed too far, as "fire-fang," as it is called would ensue, and the heap be greatly injured. If fermentation is kept within proper limits—and the heat of the poles and examinations of the manure itself will always determine this—the manure will become nearly black and quite fine, and we believe the vitality of the seeds will be destroyed. In addition to this the manure is rendered more valuable in every respect by the process; it can be more easily handled and applied to the soil or crops, and it is thought by intelligent farmers that one cord of it will produce more crops the first year than two cords in the crude form in which manure is generally applied.

#### Ripening Pears.

At a late meeting of the Farmers' Club the subject of "Ripening Pears" was discussed, and while all agreed that the later sorts should be removed from the trees when early, to be ripened in fruit rooms at their proper seasons, some preferred the summer and fall pears when ripened on the trees. Several admitted that the Seckel would ripen perfectly on the tree; but J. W. Hayes, Esq., of Newark, claimed that many, if not all the summer and fall pears, were better when so ripened, while Dr. Carpenter, and many others, stated, that with the exception of the Seckel, none of the summer or fall pears were so good when not gathered in a green state; that they became mealy,

losing much of their juice by evaporation, etc.; while, if removed from the tree before losing their hardness, and ripened in proper localities, the pears were more delicious, and every way preferable. Our experience coincides with the latter opinion, for we have found that even the Bartlett is materially improved in quality by being ripened in the dark.

**ON PROTECTING NATIVE GRAPES IN WINTER.**

It is our duty to profit by experience. The results of the past year have taught a lesson to be improved by vineyardists, as a matter of pleasure as well as profit. Among those who laid down their grape-vines in the fall of 1860 are, at the fruit-ripening season, to be seen many cheerful countenances, the owners pointing with glowing satisfaction to well-loaded vines, bearing ripe, delicious grapes, produced, as they firmly believe, by their discretion in protecting the vines a year ago, some of whom I am happy to say, have realized a money value for their products which enables them to say that grape culture is profitable, as well as pleasurable. The protection of vines in this Northern climate is a necessity; they may escape five years out of six, and yet, if the crop is lost once in that time, the grower not only loses his crop, but very often loses his confidence, so that he neglects to prune, cultivate, and train, and perhaps, through carelessness and neglect, loses his crop of future years, and ultimately the cost of his vineyard. When one sees a neglected vineyard, and inquires the reason why it is not cared for, he is often told "It won't pay." Why not? "Because it is so much trouble to cover the vines in winter." Let us look at this, and see if it is so. The writer, who is an enthusiast on grape culture, desirous to try experiments, lost many of his vines by a neglect to cover them, by leaving them tied to the stalks and trellis, to see what would happen to them, while the other portion covered with earth, or laid on the ground and covered with leaves and snow, were not only in good order in the spring, but have borne abundantly of good ripe fruit, and have already ripened wood for another season, ripening both fruit and wood many days earlier for their protection. A neighbor, with a large vineyard, producing annually many tons of grapes, covered a part of his vines, which have yielded bountiful crops this season; he has lost by his estimate, from two to three thousand dollars on those left exposed, the expense of covering which would have amounted to a trifle less than two hundred dollars. Omitting this small expenditure, his unprotected vines have barely paid the expense of cultivating the past summer; indeed, a part of his vineyard has not even been plowed this season, showing that he was discouraged. I could cite many more instances, if necessary, but a word to the wise is sufficient. It must be remarked, that the winter of 1860-61 was the severest upon many fruits that has been experienced during the present century, either on this continent or in Europe. The cold was intense for perhaps twenty-four hours at a time, and was preceded and followed by moderate weather, with a clear winter sun. There is good reason to be-

lieve that native grapes would bear the severest cold if they were not suddenly exposed to a bright sunshine, after being congealed into solid ice; it may not, therefore, be necessary to bury them in the ground, but it is undoubtedly, the most economical mode of protecting them, is found to be effectual in every instance heard of, and is doubtless attended with less trouble than any other method of covering and protecting known. It can be done rapidly; with an hour's practice, a man becomes very expert. First, let the vines be pruned and trimmed ready for tying in the spring; then run a plow two or three times between the rows, near the middle, say about three or four feet from the stakes or trellis, and so far from the vines as to lay no roots bare; then let two men work together, one of whom gathers the canes, and holding them together, lays them on the ground lengthwise of the rows, while the other throws two or three shovelfuls of earth to anchor them, and continues to throw on more earth, where needed, until the first is ready with more canes from the next vine. They proceed thus through the row. Returning, they each use the shovel to complete the covering. It may all be done in less time than the two men would dig a row of potatoes. This is much easier and less expensive than the covering with straw; besides, straw beds become harboring-places for mice, which often damage the canes when short of food. Another method is to construct hurdles to lay over the vines, but it is both troublesome and costly, except on a small scale. Vines are sometimes well protected by laying on the ground, with stones upon them, to prevent swaying about in the wind. There are some hardy varieties which have withstood the vicissitudes of our climate, and which may be said not to need any protection; but they may live in one location and be winter-killed in another; or, under varying circumstances, the wood of one may be more perfectly ripened, and thus be able to stand severer tests. *It is better to cover them all:* they are then sure to come out all right, and will bear their fruit three to five days earlier for it, which is an item of great importance, adding more value to the crop than all the labor and expense of protection. In the spring, the canes may be lifted with a garden fork, and allowed to lie on the ground until the proper time for tying to the stake or trellis.

**INDOOE GARDENING.**

One of the prettiest ways of having flowers in rooms is perhaps the fashion of little hanging baskets. In flower stands and on tables, and even in boxes, it is often difficult to arrange climbers nicely; they either require height in the way of trellises, which we find it hard to give, or they droop down in an ungraceful fashion. In the use of hanging baskets neither of these things happen. The climbers may if they like twine up the wires or cord, or they may still more prettily droop down over the basket. One of the prettiest things for this is the little Campanula, its bright blue flowers trail down neatly and yet closely into a lovely carpet, and if in the midst we place a pretty fern, its fronds wave over and make quite a perfect centre. I was told the other day that

the *Adiantum cucuzatum*, one of the very loveliest sorts of Maiden Hair, did well for such a purpose, and this would be, I think, the prettiest kind to try; although it is a stove fern it has been kept for years in a room window, and, in fact, it seems one of the most easy of its class to manage.

The wild pink geranium is another delightful and very aromatic basket plant, and the little blue *Lobelia* and the beautiful *Torenia asiatica* are also amongst those which droop down gracefully and show their beautiful blue flowers.

In arranging these baskets the grand thing, I think, is to give enough drainage. I always put broken charcoal, covered with a thin layer of moss, adding afterwards the soil that the plants require, and the charcoal occupying a space of perhaps 2 inches, a little water generally collects there. Any one used to watering these baskets soon comes to know by weight if they are dry or wet; and if by any chance one morning the soil should seem still moist, the daily watering ought to be then omitted.

Common black hair-pins are excellent pegs to use for fastening down the runners of creeping things, when we want not to show a quantity of sticks, and for tying up window plants the narrow dark green ribbon often used for book marks is the best and neatest substitute for bass when a thin stripe of it is not found suitable. I have often tried tying up plants with worsted, but that holds water too much and is also untidy looking, and threads of netting silk, though invaluable for trainers (on which the plants twine themselves), are too apt to cut the stems to be safe for tying.

Any baskets that are to be hung up ought to be fitted with an inner lining to contain the roots, and this should be surrounded by something calculated to prevent over dryness to it. I do not generally like wire stands for plants; but when they are used, and when some means is found of protecting the pots sufficiently, they may be made really beautiful by pink and white and blue *Ipomœas* climbing all about them. The different varieties of *Quomoclit* I think are the best to use for this, with the exceedingly pretty "rubro-cœrulea," which I have often grown, and consider a charming annual. It will not, however, bear a great deal of sun, and is especially injured by the hot summer rays striking upon the stem or collar when it is exposed. In placing it in a window box I therefore always manage to have some plant in front of it to give a little shelter. *Mignonette* thus proves a capital foster nurse to a great many plants.

The wire stand that I had last year was one of those in shape—three on each side, and a wide shelf beneath. Very green and spreading *Ipomœas* were placed in the lower steps, roses, or geraniums, or fuchsias, in the others, and two or three more *Ipomœas* with *mignonette* below. The leaves and tendrils entwined themselves most gracefully round every wire, and ran round every edge, while the varied flowers that opened every morning and closed up at night looked extremely gay. Each of these pots of climbers contained several plants,—the pots were 32's and the soil lea mould.

They required generally very abundant watering at the roots; indeed, a day's dryness at any time caused some of the leaves to assume a yellow and faded look.

#### The *Maurandia* for Hanging Baskets.

Mrs. S. E. B. — I have a hanging basket which is so cheap that most of your readers can afford to have at least one. It is made thus—take a cocoanut (one costs eight cents,) and saw off with a common handsaw the end where the eyes are; then dig out the inside, and cut off the husk carefully from the outside until you have a smooth and neat looking shell; then mark with chalk three places for holes, one in the bottom for the water to come out, and the other near the top, to admit strings by which to hang up the shell or basket. Take your cocoanut to the blacksmith, who can easily burn the holes with a red hot iron. Then fill your shell with dirt, and plant in it any running vine you please—in mine I have the common moneywort or running myrtle, which falls down around the shell. I suppose it would be pretty to have another kind of vine to run up and twine about the strings. What vine would be good for that purpose?

The *maurandia* would probably be as pretty a vine for the purpose as any. The foliage is delicate and handsome, it clings readily to strings and bears beautiful flowers. We would recommend that three holes be made around the edge of the shell to receive the cords, as it would be difficult to keep it evenly suspended with only two cords.

#### KEEPING GRAPES.

Last fall, I instituted a series of experiments to ascertain the best method of keeping *Isabella* grapes through the winter; the result of which, no doubt, would be of interest to that portion of your readers who are lovers of this delicious fruit. They were all packed in boxes, one foot square and six inches deep, admitting three layers of clusters, and kept in a cool, dry cellar; in fact, so cool during the winter that water standing in a pail would freeze one-half an inch thick. I am satisfied that the nearer the freezing point grapes, and in fact all other fruits, can be kept without actually freezing, the longer and better they will keep.

Box No. 1 was packed with alternate layers of grapes and fresh grape leaves. Box No. 2 with alternate layers and colored sheet wadding. Box No. 3 with alternate layers of newspapers and grapes.

Now for results. No. 1 kept fresh and nice until about the last of December, the fruit seemingly improving in flavor, and greenish clusters ripening up; when the leaves and stems of the fruit began to mould quite badly.

No. 2 kept tolerably well until about the middle of December, when I found the cotton sticking to the grapes where they came in contact, and the berries rotting and the stems mouldy.

No. 3 kept the best of the three by all odds. By changing the papers and repacking, I kept grapes until the 15th of March perfectly plump and fresh, and most of the stems fresh and green. I know not how much longer they would have kept had I not used up the last of them at that time.

## DOMESTIC ECONOMY.



## HOW TO MAKE CURRANT WINE.

We have lately had many inquiries in regard, to making currant wine. "One who has tried it" sends us the following. The receipt is a very good one, and if followed out will insure a good article of its kind, as we know from having tasted it. Our own method differs but little from it. If a sweet wine is desired, a little more sugar must be added, and the process of fermentation stopped before it is completed; but this we do not advise. In regard to adding spirits, the sugar will furnish enough of that; none should be added.

*First*.—The currants should be fully ripe.

*Second*.—Have everything prepared before hand—all the currants picked and ready, as when one commences the process of making the wine, he has no time look about for materials of any kind. The work must be done speedily, and with cleanliness.

*Third*.—Have ready a small press, a tub, a pounder, a pan to receive and ferment the juice, a measure, a dipper a funnel, and the vessel to receive.

*Fourth*.—To make five gallons of wine, use twenty pounds currants, and nine pounds double refined loaf sugar, to be dissolved in some of the wine over the fire in a preserve kettle. To make a barrel of wine requires about 165 pounds currants. Sixteen pounds yield one gallon of juice in a press: two and a quarter pounds sugar to each gallon of wine, which consists of currant juice and water, as hereafter described. This does not make a sweet or syrup wine. If sweet wine is desired, it may be made at any time after the wine is fermented, by adding sugar to suit the taste. If more sugar is added than stated above, and well fermented, it adds strength and not sweetness to the wine. If the wine is not well fermented, it remains sweet, and is a syrup not wine.

*Fifth*.—Take twenty pounds currants; mash them well in the tub with a pounder; have ready a bag of light bagging with a dipper put the pomace in the bag; lay this in the receiver, (mine is made of a half bushel measure fitted with a follower, with a wooden screw

such as is used on a carpenter's bench, but placed perpendicularly.) The bag need not be tied only doubled over in the receiver; then press gently at first, afterwards more severely; when the juice is all pressed out, strain and measure it. I find it yields five quarts. Then take the pomace from the bag; place it the tub, and pour on to it five quarts pure rain water, (hard water will not do; pound it well, mixing with the water and breaking such currants as did not get cracked before; then press as before. The yield will be something over five quarts. Take the same pomace from the bag; place it again in the tub; [add five quarts pure rain water, (the rule is to add as much water each time as there was currant juice obtained from the first pressing;)] pound this well and press, placing the wine each time in the fermenting vessel. Having thus obtained all the liquid, let the vessel be soaked in water, preparatory to cleaning. Take some of the wine to dissolve the sugar, which should be in the proportion of two and a quarter pounds to each gallon of liquor thus obtained. For twenty pounds currants the sugar required is nine pounds. When the sugar is dissolved, mix all together, and let it ferment in a moderately cool place. It is better that the fermentation should be slow; at first it will be rapid. The vessel should be full, and must not be closed tight, especially if it is a glass vessel. The carbonic acid gas evolved will break any vessel if tightly closed. A small aperture may be left for its escape. I prefer the tube bung, letting the gas escape into a cup of water. I let it ferment about six weeks.

*Sixth*.—Sugar added to the wine increases its bulk or measure, in the proportion of twelve pounds to one gallon. In making a barrel of wine it is better to have a larger amount of currants on hand, than a less quantity.

*Seventh*.—Alcohol barrels are often used for this purpose, but are not suitable. Alcohol barrels are prepared inside with glue, which is not dissolved by it, but wine will dissolve this glue, and becomes impregnated with its flavor. The best casks are those that have been used as wine barrels, with iron hoops, and may be bought for one dollar each. Wooden hoops in a cellar, after a year or so, burst off and cause leakage.

*Eighth*.—The wine, after fermentation, should be bunged up tightly, and left to stand in a cool, dry place until it is clear, when it may be bottled if intended to be used within two years. When first made, and for two years, it is a bright ruby color. In three years this color is precipitated gradually, and the wine assumes a color resembling brown sherry. If kept in bottles until this deposit takes place, it is liable to be again mixed with the wine, when the cork is drawn, and this makes it muddy. The Scriptural injunction, "Look not upon the wine when it is red," is especially applicable to currant wine. This wine, carefully made, will keep without the addition of spirits, and is worthy of any prince's banquet after it is old enough to precipitate its red color, and continues good, if well kept, for the next six years.

Mr. Downing says,—“ Currant wine is very popular among farmers, but which we hope to see displaced by that afforded by—grapes.” I advise to try this while we are cultivating the grapes, and then give us good grape wine too.—*The Horticulturist.*

**To Preserve Strawberries.**

Take two pounds of fine large strawberries, add two pounds of powdered sugar, and put them in a preserving kettle over a slow fire, till the sugar is melted: then boil them precisely twenty minutes, as fast as possible; have ready a number of *small* jars, and put the fruit in boiling hot. Cork and seal the jars immediately, and keep them through the summer in a cold dry cellar. The jars must be heated before the hot fruit is poured in, otherwise they will break.

**To preserve Strawberries or Raspberries, for Creams or Ices, without boiling.**

Let the fruit be gathered in the middle of a warm day, in very dry weather; strip it from the stalks directly, weigh it, turn it into a bowl or dec. pan, and bruise it gently; mix with an equal weight of fine, dry sifted sugar, and put it immediately into small wide-necked bottles; cork these firmly without delay, and tie bladders over the tops. Keep them in a cool place, or the fruit will ferment. The mixture should be stirred softly and only just sufficiently to blend the sugar and the fruit. The bottles must be perfectly dry, and the bladders, after having been cleaned in the usual way, and allowed to become nearly so, should be moistened with a little spirit on the side which is to be next the cork.

**Strawberries stewed for Tarts.**

Make a syrup of one pound of sugar and a teacup of water; and a little white of eggs; let it boil, and skim it until a foam rises; then put in a quart of berries free from stems and hulls; let them boil till they look clear, and the syrup is quite thick. Finish with fine puff paste.

**Strawberry Jelly.**

Express the juice from the fruit through a cloth, strain it clear, weigh and stir to it an equal proportion of the finest sugar dried and

reduced to powder; when this is dissolved, place the preserving pan over a very clear fire, and stir the jelly often until it boils; clear it carefully from scum, and boil it quickly from fifteen to twenty-five minutes. This receipt is for a moderate quantity of the preserve; a very small portion will require much less time.

**How to avoid a Bad Husband.**

1. Never marry for wealth. A woman's life consisteth not in these things that she possesseth.
  2. Never marry a fop, or one who struts about dandy-like, in his silk gloves and ruffles, with silvered cane, and rings on his fingers. Beware! there is a trap.
  3. Never marry a niggard, or close-fisted, mean, sordid man, who saves every penny, or spends it grudgingly. Take care, lest he stint you to death.
  4. Never marry a stranger, or one whose character is not known, or tested. Some females jump right into the fire, with their eyes right open.
  5. Never marry a mope or drone, one who draws and draggles through life, one foot after another, and let things take their chance.
  6. Never marry a man who treats his mother and sister unkindly, or indifferently. Such treatment is a sure indication of meanness and wickedness.
  7. Never, on any account, marry a gambler, a profane person, one who in the least speaks lightly of God, or religion. Such a man can never make a good husband.
  8. Never marry a sloven, a man who is negligent of his person or dress, and is filthy in his habits. The external appearance is an index to the heart.
  9. Shun the rake as a snake, a viper, a very demon.
  10. Finally, never marry a man who is addicted to the use of ardent spirits. Depend upon it, you are better off alone than you would be were you tied to a man whose breath is polluted, and whose vitals are being gnawed out by alcohol.
- In the choice of a wife, take the obedient daughter of a good mother.

# COMMERCIAL REVIEW.

## NOVEMBER.

### CONTENTS:—Foreign and Home Markets.

By the news from Foreign Markets, we learn that a considerable demand for grain in England will bring advanced prices in our home markets. New arrivals from the West are shipped from the port of Montreal, now busily engaged in discharging the last orders, before the close of navigation. Prices are as follows:—

Potash, per cwt., . . . . .	\$6.65 to 6.70	Wheat, U.C. White, per 60 lbs.,	\$1.05 to 1.10
Pearlash, " . . . . .	6.40 to 6.50	" U.C. Red, " . . . . .	0.92 to 0.97
Flour, Fine, per 196 lbs. . . . .	3.75 to 4.00	Peas, per 66 lbs. . . . .	0.72 to 0.75
No. 2 Superfine, . . . . .	4.30 to 4.40	Indian Corn, per 56 lbs., . . . . .	0.45 to 0.47
No. 1 " . . . . .	4.55 to 4.60	Barley, per 50 lbs., . . . . .	0.80 to 0.85
Fancy " . . . . .	4.75 to 4.80	Oats, per 40 lbs., . . . . .	0.35 to 0.40
Extra " . . . . .	4.95 to 5.00	Butter, per lb., . . . . .	0.15 to 0.17
S. Extra Superfine . . . . .	5.20 to 5.30	Cheese, per lb., . . . . .	0.07 to 0.08

The price for Barley is remarkably higher, and our farmers would be wise to sell off before winter sets in.