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LOWER CANADA AGRICULTURIST

MANUFACTURING, COMMERCIAL, AND COLONIZATION INTELLIGENCER;

OFFICIAL SERIES OF THE AGRICULTURAL BOARD AND SOCIETIES

PUBLISHED UNDER THE DIRECTION OF

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JUNE 1864.



SPARGERE COLLECTA,

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

AGRICULTURAL REVIEW.

JUNE.

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Official Dep't.

SPECIAL COMMITTEE OF BOTH HOUSES OF PARLIAMENT.

QUESTIONS to which replies are requested by the joint committee of the Legislative Council and Assembly of Canada, appointed to inquire and report what measures can be adopted for the advancement of agriculture in the province.

Question I.

Can you make any suggestions for extending the functions of the Bureau of Agriculture calculated to promote the interests of agriculture.

1. Could the bureau be made serviceable in the importation of seeds from foreign countries, and in their distribution over the province. 2. Could it be made serviceable in inducing experiments advantageous to the agricultural interest, and in recording and communicating to the public the results of such experiments? 3. Could it be made serviceable by obtaining from month to month returns of the state of the crops, and annual returns of the farm products of the province, and by communicating these and other valuable statistics officially to the public? 4. Could it be made serviceable by offering premiums for essays on special subjects on which reliable information was needed or towards which it was deemed desirable to direct the public mind?

Question II.

Can you make any suggestion calculated to secure reliable agricultural statistics annually throughout the Province?

1. Could the municipality assessors obtain such reliable statistical returns while going their annual rounds in their several municipalities? 2. Would the assessors require additional payment beyond the

amounts now paid them for the discharge of their ordinary duties? and if so, what would be the probable extra cost of taking up annually such agricultural statistics in your municipality? 3. If you think the ordinary municipal machinery unfitted for securing the end in view, can you suggest any other?

Question III.

Can you suggest any measures that can be adopted by the Legislature or Government of the Province, for promoting a general system of drainage?

1. Are there portions of your municipality unsettled from the want of large municipality drains? and if so, to what extent? 2. Are there portions of the settled land untilled from want of general municipality drains? and if so, to what extent? 3. Are there portions of the tilled land the productiveness of which is seriously affected by the want of large general drains throughout the municipality? and if so, to what extent? 4. Has the existing system of local drainage under municipal authority been availed of? and if so, to what extent? 5. Can you make any suggestions for rendering the existing system more effective or more acceptable to the people? 6. Can you suggest a more effective system for securing general drainage throughout the municipality than that which now exists? 8. Has tile drainage by individual proprietors been introduced? and if so, to what extent? What has been the cost per acre? What has been the effect on the crops? Have the cash returns compensated for the outlay?

Question IV.

Do you think the time has arrived when

a special tax beyond all existing taxation should be imposed on non-resident wild lands, so as to promote their early settlement and cultivation?

1. How many acres of non-resident wild land are there in your municipality? 2. How many acres of resident wild land are there? 3. How many acres of cultivated land are there? 4. At what average value are the non-resident wild lands assessed?—and what is the average rate of assessment per dollar for all purposes? 5. At what average value are the resident wild lands assessed? 6. At what average value are the cultivated lands assessed—and what is the average rate per dollar of assessments for all purposes? 7. Do the non resident wild lands exercise an injurious influence on its progress?—and if so, in what manner and to what extent? 8. What amount of special tax per acre or per dollar on the valuation, on non-resident wild lands, would be just to the owners, and yet tend to the early settlement of such lands?

Question V.

Can measures be adopted to induce such a change in the husbandry of the country as would increase the fertility of the soil and largely augment the farm products of Canada?

1. What proportion of the cultivated land in your municipality is usually devoted to hay and pasture? 2. What proportion of it is usually devoted to wheat?—and how many bushels of wheat per acre is usually obtained? 3. What proportion if usually devoted to other grain crops? 4. What proportion of it is usually devoted to potatoes, turnips, caarots, and mangold wurzels? 5. Has the average product per acre of grain increased or diminished during the past five or ten years?—and if so to what do you ascribe this increase or diminution? 6. Is there much land in your municipality that has ceased to yield as large crops as in former years? and if so, how much? 7. Is there much land that has become so exhausted as to render it unprofitable to cultivate? and if so, from what cause has this exhaustion arisen? 8. Do your farmers adopt any systematic rotation of crops? and if so, what rotation? 9. What quantity of live stock would you say is kept on an average for one hundred acres of cleared land? 10. Would an increase of live stock tend to increase the fertility of the soil and augment the value of the annual farm products? 11. Is plaster (gypsum) much used as a fertilizer? and has its ap-

plication been found profitable? 12. Is lime much used as a fertilizer? and has its application been found profitable? 13. Are bones much used as a fertilizer? and have their application been found profitable? 14. Has superphosphate been much used? and has its application been found profitable? 15. Has guano been much used? and has its application been found profitable?

Question VI.

Would the extension of dairy farming more generally throughout the Province, and the improvement of the existing system, tend to increase the fertility of the soil and the profits of the farmer?

1. What number of milch cows are there in your municipality. 2. Have you many farms systematically conducted with a view to the production of butter and cheese? and what number of cows is usually kept on such farms? 3. Are butter and cheese manufactured beyond the consumption of the people residing in it? and if so, to what extent? 4. What quantity of pasture land is usually apportioned for the feed of a cow during the summer months? What quantities of hay, straw, grain and roots are usually apportioned to each cow during the winter months? and what is the average value in your municipality of the whole year's feed? 5. What number of Imperial gallons of milk is obtained annually, from a good ordinary cow, in your municipality? What weight of good cheese would that quantity of milk produce if all made into cheese? What weight of butter would that quantity of milk produce if all made into butter? 6. What is the average wholesale price of good cheese in your municipality? What is the average wholesale price of butter? 7. Are there any dairy-farmers in your municipality who keep their cows within doors throughout the year, and carry the green feed from the fields to the barn?—and if so, how is this system found to answer? 8. Is there a cheese factory in your municipality, the farmers carrying their milk night and morning to the factory to be made into cheese?—and if so, will you please state what success has attended its operations? 9. If a cheese factory were established in your municipality by responsible parties prepared to pay a fair price, in cash, for all the milk brought to their place throughout the season, would many farmers be induced to go extensively into the business? And if so, what would be a fair remunerative

price for the milk, per Imperial gallon? 10. If a cheese factory were established in your municipality by competent parties, agreeing to manufacture all the milk brought them into cheese of the best quality, for one cent, or one and a quarter cent per lb of cheese, would that induce many farmers to go extensively into the business? 11. What breed of cattle is in highest esteem in your municipality for dairy purposes?

Question VII.

Would the extension of sheep-farming, more generally throughout the province, tend to increase the fertility of the soil and the profits of the farmers?

1.—What number of sheep are there in your Municipality? 2.—Have you many Farmers who make sheep-raising the chief feature of their operations? What is the extent of the largest flocks kept? 3. Are sheep usually kept under cover during winter? What is their usual winter food? How many sheep are usually apportioned to an acre of ordinary pasture during the summer months?—and at what value per head do you estimate the keeping of an ordinary flock of sheep throughout the year? 4.—What weight of wool is usually clipped from yearling lambs? What from wethers? What from ewes? 5. What breed of sheep stands in highest repute?—and for what reason has it the preference?

Question VIII.

Are the soil and climate of Canada well adapted to the growth of flax? and would its extensive cultivation tend to the advantage of the farming interest?

1. Has flax been cultivated to any extent in your Municipality? Have any farmers engaged in its cultivation? To what extent have they grown it? Have they grown it for the seed, or the fibre, or for both? Have they found it profitable? How much does this crop usually yield per acre? 2. What kind of soil has been found best adapted for raising flax? Is it an expensive crop to raise? Does it require much skill or experience to raise it? Is it a precarious crop? Does it suffer from extreme heat or cold? Is it an exhausting crop? 3. If oil mills and scutching mills were established by responsible persons, so as to secure to the farmer a fair cash price for the article, would flax be much more extensively cultivated in your municipality than at present?

Question IX.

Would the interests of agriculture be

generally promoted were a sum of public money applied to the importation of thorough-bred domestic animals, to be sold for cash at public auction, under condition of their retention in Canada for a certain number of years?

1. How many thorough-bred cows and heifers are there in your municipality? 2. How many thorough-bred bulls? 3. How many thorough-bred mares? 4. How many thorough-bred stallions? 5. How many thorough-bred Leicester sheep? 6. How many thorough-bred South down sheep? 7. How many thorough-bred Cotswold sheep? 8. How many thorough-bred me-ino sheep? 9. How many thorough-bred sows? 10. How many thorough-bred hogs? 11. Has it been found as the almost certain result of a first cross between a thorough-bred male domestic animal and a native female that the progeny are greatly improved in quality and value, arrive sooner at maturity, and fatten easier? 12. Would not the annual profits of farming in Canada be greatly increased were the domestic animals on our farms of an improved class? Would not the increased remuneration from stock-raising induce a larger quantity to be kept? And would not the quantity of manure thereby obtained enable larger crops of grain to be raised and the fertility of the soil to be maintained? 13. Would not a vigorous movement to raise the character of the domestic animals on our farms, if successful, have a most salutary effect on every branch of farming industry in Canada? 14. Would the appropriation of a sum of public money—say \$100,000 to \$200,000—to be placed in the hands of commissioners for the purchase in other countries, and the importation into Canada of first-class thorough-bred stock, be attended with very desirable results? the animals on arrival to be sold for cash to the highest bidder, under bonds to be kept in the province for certain number of years, and the money so obtained to be applied and re-applied in the same manner, to the purchase and importation of more stock, until the money was exhausted? 15. Can you suggest any other mode of instituting a general and effective movement for the improvement of the farm stock of Canada?

Question X

Could the prize system of the Provincial County and Township Agricultural Societies be amended and improved?

1. Is it better to offer a large number of small prizes than a smaller number of large ones? 2. Would it have a beneficial effect

if large sums (such as is the instance of the Canada Company's Prize, or more,) were offered for the best 25 or 50, or even 100 bushels of our chief staple farm products, under the condition that the Provincial Association should retain, at a full rate, all the samples offered for competition, and offer them for sale by public auction for seed? 3. Would premiums for the best managed farms exercise a beneficial influence?

Question XI.

Would model farms, where agriculture and veterinary instruction could be obtained and where the best modes of agriculture, and the best breeds of stock, could be seen,

and where needful agricultural experiments could be conducted, be so sustained as to render them of public advantage?

Question XII.

Can you suggest any other direction in which the Government and Legislature of the Province can lend their aid towards the advancement of agriculture in the Province.

By order of the joint Committee,

GEORGE BROWN,
Chairman.

Answers to the foregoing queries to be addressed to the "Chairman of the Joint Committee on the Advancement of Agriculture, Quebec."

EDITORIAL DEPARTMENT.

THE FARMING INTEREST OF CANADA.



HE official census taken in January, 1861, furnishes reliable data for arriving at the agricultural condition of the country, and an official Report from the Bureau of Agriculture, issued in 1863, provides estimates of two years' later

date. From these returns it appears that the number of persons in actual occupation of land in Upper Canada, in the year 1860, was not less than 131,983, and in Lower Canada 105,671. The quantity of land held was as follows:

	U. Canada.	L. Canada.
10 acres and under.....	4,424	6,822
10 acres to 20.....	2,475	3,183
20 acres to 50.....	23,430	20,074
50 acres to 100.....	64,891	44,041
100 acres to 200.....	28,335	21,739
Above 200 acres.....	5,027	6,840
Total occupiers.	131,983	105,671

It thus appears that there were, three years ago, not fewer than 237,654 persons in Canada who cultivate their own land; and if the army of farm servants, choppers, carpenters, blacksmiths, waggon-makers, harness-makers, &c., directly employed in farm-work, be added, it will be seen at once how vast a proportion of the half million of male adults in Canada are directly employed in the cultivation of the soil.

Then as to the capital employed. The estimated cash value of the farms and farming implements was, in January, 1861, as follows:—

In Upper Canada.....	\$306,442,663
In Lower Canada.....	178,870,271
Total value.....	\$485,312,933

And this enormous sum does not include the live stock on crops on hand. The last census showed the live stock to have been then as follows:—

	U. Canada.	L. Canada.
Milch cows, No. of head.....	461,640	328,870
Oxen and steers.....	99,605	200,031
Young cattle.....	404,033	287,611
Horses, of all kinds.....	377,631	248,415
Sheep.....	1,110,225	682,825
Pigs.....	776,001	286,400

At present prices, these cannot be valued at much under \$100,000,000; and the amazing rapidity with which the live stock of the country is increasing in number and value can readily be seen by a comparison of the census returns of 1851 and 1861.

But perhaps a more satisfactory idea of the agricultural industry of the Province can be gained from a statement of the annual product of our farms. In the year 1860 the crop was as follows:—

	U. Canada.	L. Canada.	Total.
Wheat, bushels.....	24,620,425	2,054,354	27,274,779
Barley, ".....	2,821,962	2,281,674	5,103,636
Rye, ".....	973,181	844,192	1,817,373
Peas, ".....	9,601,398	2,648,777	12,250,175
Oats, ".....	21,220,874	17,551,296	38,772,170
Buckwheat, ".....	1,248,537	1,250,025	2,498,562
Indian Corn, ".....	2,556,290	239,861	2,591,151
Potatoes, ".....	15,325,290	12,770,471	28,095,761
Turmps, ".....	18,206,959	692,434	19,099,393
Man. Wurz., ".....	546,971	207,266	754,227
Carrots, ".....	1,905,698	293,967	2,198,665
Beans, bushels.....	49,143	21,334	70,527
Clover and Timothy Seeds, bushels.....	61,818	33,954	95,772
Hay, tons.....	861,644	689,977	1,551,621
Hops, do.....	247,052	53,387	300,439
Maple Sugar, lbs.....	6,970,05	9,325,147	16,295,763
Cider, gallons.....	1,607,831	21,011	1,628,842
Wool, lbs.....	3,959,766	1,967,398	5,627,164
Butter, lbs.....	26,828,264	15,906,949	42,735,213
Cheese, lbs.....	2,687,172	686,297	3,384,469
Flax and temp, lbs.....	1,225,934	976,827	2,202,761
Tobacco.....	777,426		777,426

The total value of these products of the farm in 1860 was close upon one hundred millions of dollars! And if we add the in-

crease of that same year on the live stock, the improvements made on old farms, and the new lands brought into cultivation, a pretty good estimate may be formed of the highly satisfactory condition of the farming interest in Canada.

And then the work is but begun. The total number of acres that have passed from the Government into private hands is—

In Upper Canada.....	13,354,907
In Lower Canada.....	10,376,419
Total acres sold.....	23,730,325
Of this there are, in cultivation, acres :—	
In Upper Canada.....	6,051,619
In Lower Canada.....	4,804,235
	10,855,854
Leaving yet wild.....	12,874,471

Not one-half of the land already in private hands, therefore, is yet cultivated, to say nothing of the many millions of acres of wild lands still undisposed of by Government. The war on the wilderness has but begun, and assuredly the prospects before agriculturists is encouraging enough, and the field of exertion wide enough to stimulate the best and most ambitious to active and persevering exertion for the advancement of this greatest interest of the country.

CANADA AS A FIELD FOR EMIGRATION.



HEN on a visit to the United States and Canada, in 1858, I was so pleased with the appearance of Upper Canada, that I decided to remove thither with my family, from Ayrshire, Scotland. I visited various localities,

but preferred Oxford county; purchased a property near Woodstock, the county town, and in the following year removed.

This is a beautiful district of country, with fine rich undulating land, well wooded and watered, intersected by good gravel roads and centrally situated for access to the 'Great Western' the Buffalo and Lake Huron, and the 'Grand Trunk' railroads, where there are excellent cash markets for all sorts of farm produce.

There is a most industrious and energetic population, who make excellent and agreeable neighbors.

The appearance of the district, when the orchards are in full blossom, is really beautiful, as almost every homestead is adorned with a large orchard, there being a great demand for the produce. Delicious apples, pears, piums, cherries, native grapes, and small fruit of all sorts, grow most

luxuriantly; peaches and nectarines, do very well near the lake shores.

The field and cattle..

The soil of this district is generally of a rich alluvian loam—intermixed with particles of limestone—capable of raising most of the cereal and root crops to perfection; and as the farms are generally well watered, either by springs or running water, it is one of the best districts in Canada for dairy purposes or mixed husbandry.

In vegetable production I do not think we can be excelled, especially in bulbous roots, pumpkins, squashes, melons, citrons, cucumbers, tomatoes, tauliflowers, &c., &c.

By a judicious system of agriculture, the soil will produce good crops; I have seen wheat, peas, flax, clover, timothy, parsnips, carrots, potatoes and Swedish turnips, that would compare favorably with British produce on soil of similar quality; and the produce of dairy cows will compare favorably to that in Ayrshire.

The stock exhibited at the annual show of the Provincial Association of Upper Canada, really consists in great part of first class animals and would not disgrace any of the British exhibitions, especially in Durham, Devon, Hereford, Galloway and Ayrshire cattle, and in Cotswold, Leicester, Hampshire and South Down sheep, many of which are, in fact, imported prize animals. The swine, also, show good breeding, and some really fine animals are exhibited. The horses, as a class, are generally light and smart, and do not come up to the standard of the Clydesdale farm horse. but are, I believe, better suited for the country than many show horses.

Machinery and climate.

The machinery and farm implements have been much improved within the last few years, and now display excellent workmanship and great ingenuity. In reaping machines and hay rakes I think we are far ahead of the British farmer. The exhibition of grain, roots, vegetables, fruit, flowers, works of manufacture and art, shewn at 'The Provincial,' are really most interesting and creditable, and prove that the Province is capable of producing an exhibition worthy of attention and remark.

The climate of this district is very healthy, the situation being in about the highest portion of the peninsula, we have generally a cool breeze off the lakes in summer, and from the belts of forest still left uncut, we have ample screen from the win-

tor's cold blast. I infinitely prefer the climate here to that of Ayrshire.

Vegetation progresses most rapidly; it is surprising to see the progress made in a short time, and how soon the crop comes to perfection; the seeds must be got in early to secure good crops; the dry climate gives the farmer a great advantage in the harvesting, after which he has a long season of favorable weather for preparing the land for the ensuing crop. During winter he has little also to do, but marketing, providing fuel, and attending to the stock.

Investment for Capital.

Agriculturalists of moderate capital would do very well in this district, as plenty of farms are to be rented at 6 to 12 shillings sterling per acre; or land is to be purchased according to the state of improvement in clearing and buildings. for \$25 to \$60 per acre. Scarcely any wild land in this neighborhood is for sale; a farm of excellent soil, with good buildings and about four-fifths of it cleared, free from stumps and fenced, can be had for about \$30 to \$40 per acre. Lands of similar quality in Ayrshire would readily sell for as many pounds sterling, without even a fence or a house on it. To dairy farmers, especially, I can recommend this district.

Capitalists can invest safely in landed property, by judicious purchase of improved farms, which would readily let, yielding a clear rental of five per cent. On the money invested in the purchase, with a certainty of the farm annually increasing in value, if let to an enterprising agriculturalist; or their money could readily be lent on mortgage on first-class cleared farms of most unexceptionable security, to yield from 8 to 9 per cent.

Mechanics and farming.

Mechanics, as a class, succeed well here; skilled labor is always in demand; wages are high; provisions cheap; and education, in most of the country sections, is generally free.

The industrious laboring emigrant will do well here, as, during summer, he will find ample remunerative employment in the cleared districts, by hiring out his labor, to the best advantage; and by going to the back settlements in winter, he will get plenty willing to hire him to assist in clearing the forest and making new farms, or he may purchase from Government a farm which he can, during his winter months, clear for himself. There are thousands in this Province who landed in Que-

bec with only a few dollars, and are now owners of beautiful cleared farms, with most comfortable homesteads.

Manufacturers would find a fine field of operations here. Flax, beet, sugar, farina, and woollen manufactures could be beneficially established in this district, which is well adapted to produce the raw material at a low rate. Refineries of petroleum oil have been established, which are in successful operation; indications of the oil have also been found in this district, and trial bores have been commenced in search of the springs.

Annuitants or persons of limited income can live here in far more comfort on the same amount of income than in Britain, owing to the cheapness of the necessaries and luxuries of life. Could they invest their means here, thereby increasing their income, it would the more benefit them. Local taxation is very moderate; churches of every denomination abound; for educational purposes, the most ample provision is made, so that a classical education can be obtained at extremely low charges, and, in some instances, free.

EDUCATION FOR THE FARMER.



FEW years ago it was thought unnecessary for farmers to be educated. Any one who had been brought up on a farm, or who had even worked for a few months to some well-to-do farmer, was considered capable of managing a farm of his own. If he knew how to plow and reap, and the proper season in which such work should be done, it was all that was necessary. It mattered not whether he even knew how to read, and if he did, to take an agricultural paper was mere folly.

In travelling through different parts of the country, one cannot help noticing the difference in farms which lie along the railroad. We can tell at a glance whether that man takes an agricultural paper, and whether he has read the best works on agriculture and horticulture. Every part of his farm shows whether he is an educated man, or not.

I claim that the farmer needs the best general education of any class in the community. He should understand all kinds of business connected with the farm; in fact, he should have a thorough business education. He must be merchant, mechanic engineer and architect. In disposing of

his stock, or the products of his farm, he should be able to exercise that shrewdness in trade which characterizes the successful merchant. If his farm implements get out of repair, he should be able, in many instances to repair the damage with his own hands. When he lays out his farm into five, or ten acre lots, he should be able with the skill of an engineer, to arrange his fields in the most systematic order, and not have his lots in every conceivable shape, with fences as crooked as a ram's horn. In making his out buildings, he should be his own architect, and have them built in the most tasty economical manner. Very plain buildings may be made to look neat and tasty, by having them well proportioned, and pleasantly situated, without costing a cent more, than to set them down in the mud, and at all sorts of angles to each other. Every farmer should be his own bookkeeper, and should keep his books by double entry, so that he may know upon what crop he makes the largest profit. It is not necessary that he should spend a few months in some large mercantile establishment to acquire a knowledge of the science of double entry. No matter if he does not always have a corresponding credit for every debit. But any man with a reasonable amount of brains can keep his accounts in such a manner, that at the end of the year, he may tell at a glance whether he has made or lost upon the whole, or any part of his year's business.

I often meet with farmers who stick to the good old way, and pursue the same plans which their fathers laid down. They are perfectly contented with the old orchard of natural fruit; fruit which would cramp the stomach of an educated hog. (I mean a hog owned by an educated farmer.) They have an old native grape vine twenty years old, covering the gable end of their house, and which has never been pruned since the day it was first planted; and in return it perhaps gratifies the palate with a few miserable little, sour things, which the equally sour farmer calls grapes. Peaches, if he has any are the sprouts from some old trees long since dead, or else grown from the stones he got at one of the neighbor's from a delicious free stone, which he supposes, of course will produce the same kind of fruit. But he finds that all his care is rewarded by a few little shrivelled clings. He may have taken one more step, however, and purchased a few trees at the nursery for 4 cents each, selecting those which

failed to take the bud, when he might have bought a George IV. or Rare Ripe, for a shilling, and which in the end would have paid him tenfold. That pear tree at the corner of the wood-house which has borne little, dry, sour pears for half a century, and which, if you eat one, will draw your mouth into an expression beyond the range of imagination, might have been made to yield a fine crop of delicious Bartlett's. But he thinks it all foolishness to spend money for young trees at the nursery, or to graft what trees he has with choice fruit, and then it takes so long for them to grow, that he would never expect to get any benefit from them.

If we look at his stock we find it in the same condition. He never goes into fancy stock. No, not he. His cows are mean, raw-boned animals with broken ribs, showing the print of that three cornered milk stool, which always comes into requisition in case the cow does not stand still while the process of milking is going on.

His horses, kept on straw, show their numerous *fine points* to advantage, and whenever he leads them from their stall, call forth notes of delight from that beautiful bird, the crow.


Mr. Editor, I go in for book farming. Give us more works on agriculture and horticulture; give us more agricultural papers, and pass a law compelling every one who indulges in the name of farmer to read them.—*Rural American.*

BIRDS AND THE DESTRUCTION OF INSECTS.

HOW extensive are the injuries to vegetation caused by insects, few but those engaged in the cultivation of the soils can fully know. There is not a farmer or gardener who has not to tell of flowers destroyed, trees blighted, or crops ravaged by some of the varieties of insects. It is obvious that this must be more and more the case unless some efforts are made to destroy the destroyers. With the progress of civilization lands have been cleared of the wild vegetation which formerly covered them and which supplied an enormous number of insects with food. As a natural consequence, they are driven to prey on cultivated plants, and the cultivator suffers proportionately. Unfortunately, gross ignorance of natural history has helped to increase insects. A ruthless war has been waged upon those animals which obtain a large part of their sustenance from the in-

sects they devour. It is not very long since our attention was called by certain French savans to the folly of destroying small birds. It was shown that the food of these birds was largely insects and the eggs of insects, and that the increase of these minute pests was so rapid and so great that, unless assisted by the birds, we should have small chance of keeping them under. The subject was discussed in the newspapers at the time, but even yet there are sparrow clubs in some agricultural districts—clubs which offer prizes to the individual who shall at a given time bring up the largest number of heads of slain birds. It may be safely said that this is a description of suicide. To kill the birds which eat insects is to destroy our best friends; and it is much cheaper to allow them to take a little of the corn grown as wages for the good work they do for us, than by killing them to assist in the multiplication of insects which have no mercy on the vegetation they feed upon, but destroy it literally, root, stem, and branch.—*English Paper.*

FARMERS SHOULD STUDY MORE.


 **HAVE**, all my life, until a few late years, been a practical farmer, and while I have never been able to follow all scientific developments and conclusions, I have always believed that scientific research was invaluable to practical farmers, and that scientific agricultural and horticultural works should engross a large share of every farmer's attention. They would be to him a constant source of useful knowledge, whether he could apply successfully all the theories they contained or not. I regard practice without theory about as inefficient as theory without practice.

It is a thousand pities that farmers should suffer themselves to be so ignorant of their own profession, as is generally the case. There is no profession where real knowledge can be better or more profitably applied, and I know of no field of industry which embraces a wider range for thought and more intensely interesting developments or more sure to richly repay the care bestowed.

I wish farmers could see this as it really is, instead of looking upon agricultural and horticultural works, as book farming, unworthy their notice, and not worth half the money the cost. I love to see young farmers growing up under the highest respect for the views and opinions their fathers

and grandfathers entertained, but it is at the same time idle and senseless to conclude that all which their fathers practiced was the best, and good enough for them to follow, and that there is no need of their looking for a better way. My advice to them would be to become acquainted with all the proposed improvements, and compare them with the old way, and then be governed by their best judgment.—*C. Gent.*

ORNAMENTAL TREE PLANTING.

 **N** taking a recent ride through the country, we were struck with a very marked illustration of the propensity of our people to reduce everything to dollar- and cents. Several beautiful spreading oaks, which grew by the roadside, and which for many years had afforded a great deal of pleasure from their rich handsome foliage and cooling shade, had just been reduced to the matter-of-fact condition of fence-posts. The trunks which supported the luxuriant heads of foliage were about seven or eight feet high—just enough to make one handsome cut for post saw-logs; and each tree would thus afford some ten or twelve valuable fence-posts, worth ten cents each. So much for the dollar-and-cent consideration of the subject.

We shall now take a more intellectual view of the subject, by quoting the following eulogy on trees, by the celebrated Prof. Wilson, who was their enthusiastic admirer, and who could well appreciate the endless intermixture of beauty, and richness and gracefulness everywhere existing, in the form and foliage of luxuriant trees: "In what one imaginable attribute," says he, "that it ought to possess, is a tree, privacy, deficient? Light, shade, shelter, coolness, freshness, music—all the colors of the rainbow, dew and dreams dropping through their umbrageous twilight at eve and morn—the grove, the coppice, the wood, the forest—dearly, and after a different fashion, do we love you all. And love you all we shall, while our dim eyes can catch the glimmer, our dull ears the murmur of the leaves—or our imagination hear at midnight the far-off swaying of old branches groaning in the tempest." What would Prof. Wilson have said, after writing this, if he had seen what we witnessed a few years ago—a beautiful natural grove of trees on the banks of Cayuga Lake, on a fine building-lot in the outskirts of the handsomest village on that truly pictu-

resque sheet of water—this grove, all levelled by the axe, reduced to firewood, and sold for the sum of eleven dollars cash, We had often admired, in another instance, a fine grove of oaks and other trees in front of a residence in Wayne county, which partly concealed a rich and extensive view of the surrounding country—the broad emerald green alluvial meadows, and the spires of the distant village. The owner, inspired with some unaccountable whim of utility, laid the whole grove prostrate—but possessing some lurking civilized taste, proceeded to place a single row of young maples where these fine trees had stood, and which might, if they happened to survive, afford a few fine shade trees half a century hence.

We do not believe that men are created with such an entire absence of all taste, which such examples as these, and a thousand others which might be cited, would indicate. But this half-latent taste which is born with them, and which, even in children, is more or less developed, is successfully smothered by the time that manhood is reached, by the propensity or determination to make everything yield to dollars and cents. It has been asserted that the Yankee character contains more of this dollar-and-cent propensity than that of any other nation; but there is not a word of truth in this assertion. We see it quite as much developed in the different Europeans who come among us; and Eastern travellers, who are annoyed at every turn with the inexorable "bucksheesh" from every man woman, and child, will confirm this statement. But it must be admitted that many of our countrymen have allowed it to choke down nearly every fine feeling and the inherent taste for the beauties of landscape scenery. We have known many of them positively to ridicule the practice of planting such trees as "bore nothing at all that was good to eat;" and we could only take them on their own ground, and satisfy them by showing that the shelter afforded by the trees against bleak winds effected a saving of ten or twenty dollars annually, in firewood for warming the dwelling.


In travelling through the States of the Union, we find that all other kinds of improvements take the lead of ornamental planting. The Eastern States afford many fine examples of perfected skill in landscape gardening, but as we go West, these instances become more and more rare. We

once drove many miles through different parts of a Western city, containing beautiful buildings and many thousand inhabitants, in order that we might be refreshed with the sight of a garden, but not a single one truly deserving the name could be found. No wonder that Lord Bacon should have remarked centuries ago, that "when ages arrive at civility and elegance, men come to build stately sooner than to garden finely, as if gardening were the greater perfection."

We should like to show some of our countrymen, who appear to hate or despise trees, what kind of an earth we should have without any, by placing them for a moment in the midst of the great Desert of Africa, where all they could see would be "a wild expanse of lifeless sand and sky." We think they could hardly avoid admitting that the coolness of a shady grove would be preferable.

The practical conclusion to which we arrive from these remarks is—1. Be extremely cautious in cutting down a tree. It has perhaps been a century in growing, and it will require another century to replace it. 2. Do not procrastinate in tree planting—put off any other kind of work, but do not neglect this, because every year lost is an equal loss in refreshing beauty to every man's life. Get the trees started, and then they will grow, while other matters may be attended to.—*Country Gentleman.*

SOME THOUGHTS ON AGRICULTURE.

 ADMIRE the style of your good-natured article in the May number, styled "Communications invited."—Knowing a little about farming, I felt I was one of that class alluded to, but never having written anything upon the subject, I was at a loss for a time what to say. A little reflection soon convinced me that everything in fact was to be said on such an important branch of science as the art of agriculture; and hastily garnering a few thoughts of a collective nature, which I thought would be necessary as a *début*, I have a strong hope that my subsequent efforts will be of a more pleasant nature than I had anticipated. I am an amateur in this beautiful art; and although within the last fifteen years have been more of a theoretical than a practical student, foolish indeed and worthy of all condemnation would I have been had I neglected to treasure at least a small share.

of that instruction of which we are all, more or less, the participators.

I also notice in your last number that my old friend, Mr. Buell, of Perth, is urging the farmers of Canada to write to each other through the journal. This is noble. Need I tell you, Mr. Editor, that it is some sixteen years since we (from sire to son) gave up the farm. 'Twas a nice little spot in the Western part of Canada. Most would call it but a small garden; but there in that wee bit of a paradise I received my idea of farming. Small indeed it was; but let me tell my Canadian confrères that no matter how small our lot of ground may be, it cannot be too insignificant for improvement. Experiment and observation are the great representatives of modern science; and, as has been truly said, "one simple, clear, and unequivocal experiment gives us the most complete confidence in the truth of a general conclusion from it to every similar case." Nature is so constant and so regular in all her operations, and so prolific in her endowments, that it must gladden the hearts of all intelligent men to know that agriculture is beginning at length to claim the sympathy and approval of all that science and application can do for its thorough development.

There is a great mistake prevalent among many of our Canadian farmers, that because they possess small farms, their field is not capacious enough for experiment; and with this fatal idea possessing their mind, they never introduce innovations through fear of discouragement. We must give up this foolish idea; and the sooner we do so, the better it will be for us in the eyes of the world. Whatever excellence Canada may acquire, and whatever way her resources may extend, let us not forget that agriculture should be the great object of Canadian foresight and industry. And should we not be proud of this gift? The soil of our country seems as if particularly fitted for this branch of business; and would we only enter into the work with the earnestness which it requires,—an earnestness which we hope soon to see about us,—events would prove that we have not labored in vain.

The celebrated Sully is said to have remarked, that "agriculture may be regarded as the breast from which the state derives its support and nourishment;" and that wise statesman impressed upon his people the importance of an agricultural know-

ledge. We are, or at least out to be, aware that manufactures and commerce are but dependants of this noble art—that without it all science and art would languish, for the staff of life would be wanting. The vast changes that have taken place in this science within the last few years cannot be comprehended. It has risen from a secondary branch of toil to a matter of the highest and most serious regard. The great researches of chemistry are applied to its advancement; the minds of statesmen and philosophers are bestowed on its proper prosecution; and the concerted labor of governments is working out a plan for a more economical and wide-spread action.

A correspondence between farmers is much needed for a proper dissemination of agricultural views. Most farmers object to this, on account of not possessing a literary taste. This is not required. All that is wanted is merely to note down events which bear upon interesting matters; and everything useful can be made interesting. You will excuse me here for transcribing a few lines from the "Book of Husbandry," written by Sir Anthony Fitzherbert, in 1534, and which is said to have been the first English book written on the art of agriculture: "And ouer and beside all this boke, I will advise him (the husbandman) to rise betime in the morning, and to go about his closes, pastures, fieldes, and specially by the hedges, and to have in his purse a payre of tables, and when he seeth anything that wolde be amended, to wryte it in his tables; as if he fynde any horses, mares, beastes, shepe, swyne, or geese, that be not his owne: and perauenture though they be his owne, he wolde not have them to go there, or to fynde a gap or a sherde in his hedge, or any water standynge in his pastures, upon his grasse, whereby he may take double hurt, bothe losse of his grasse and rotting of his shepe and calves. And also of standynge water in his corn fieldes, at the landes endes or sydes, and howe he wolde have his landes plowed, donged, sturred, or sowed, and his corn weded or shorne, or his cattell shifted out of one pasture to another; and to loke what dyching, quicsettyng, or planting, is necessary to be had; and to oversee his shepheard, how he handleth and ordreth his shepe, and his seruantes howe they plowe and do theyr workes; or if any gate be broken down, or want any staves, and go not lyghtly to open and tyne, and that it do not traice, and that the windes blow it not

open, with many more necessary thynges that are to be loked upon. For a man always wanderynge or goinge aboute somewhat, syndeth or seeth that is anysse, and wolde be amended. And as soon as he seeth any such defautes, then let him take oute his tables, and wryte the defautes." Sir Anthony goes on to say in what different ways a man should be employed about his farm, and use his observation to the greatest advantage.

Not to trespass much longer on your space, it seems to me that one of the greatest inducements to an agricultural life is


the proper cultivation of this talent—observation—a talent prostituted to the most ignoble purposes, and debased for the want of a keen perception in our everyday life. Let me beseech our farmers to cultivate this talent; and then, with good old Anthony Fitzherbert, we will find much to look after, and much worth recording.

I have many more important matters to write about, and of a far more practical nature than this. What say my readers, to an article on horticulture, or something of that stamp, in your next?

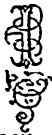
P. R.

FARM OPERATIONS.

HILLING INDIAN CORN.


 CORRESPONDENT of the Germantown Telegraph, speaking of the practice of hilling corn says: "Constructing large conical hills on land which is light and dry, must inevitably tend to increase the effects of drought, inasmuch as it exposes more surface to the atmosphere, and consequently increases ærification at times when all the moisture contained in the soil is required for the support and sustenance of the plants. When rain falls, the conical hill conducts the water from the roots to the centre of space between the rows and hills, very little of the fluid being retained about the plants, or within range of the small roots, by which the *pubulum* is taken up by the growing plants, and without which they would immediately languish and decay. On light soils hilling is always disadvantageous to the crop. Every fresh stratum of earth placed over the roots causes a protrusion of a new set of laterals, to the detriment of those previously formed. This exhausts the energy of the plant, without increasing in any great degree its powers of appropriating food from the surrounding soil, as the first-formed roots cease to grow as soon as those caused by the deposition of new soil are developed, and in a short time will be found to have lost their vitality and become mere worthless appendages."

CULTIVATION OF POTATOES.

 AVAIL myself of this season of the year to suggest the importance of planting potatoes in the following manner:—First, prepare the ground as usual. Then hole out a liberal hill eighteen inches from centre to centre

in each row; but make the bottom of the hill loose and mellow. Then drop one quart at least of good horse manure on the potato, and cover it with good soil about two and a half inches deep above the manure. Plant the rows about two feet nine inches from centre to centre, and select a good sized potato for each hill. Before covering, observe in all cases to let the manure lay at least from forty eight to sixty hours on the potato, which has a very salutary effect in giving the potato an early start. Then take great pains in covering, and if the crop fails it will not be because it has not been well planted. In hoeing, hoe lengthwise of the roots, so that the soil from the middle of the rows will be drawn up rather in the form of a slight ridge for the potatoes to branch in. One hundred bushels of horse manure used in this way will manure 3200 hills, and by a fair experiment in planting will not fall short, on good ground, of 300 bushels to the acre; and in common soil will reach 150 or more bushels. Strive by all means to obtain horse manure for the purpose of raising potatoes, especially on small lots, as everyone can avail himself of more or less of this kind of manure.—*B. Cultivator.*

MUCK, ASHES AND LIME ON GRASS SEEDS.

 HE *Rural New Yorker*, in answer to a correspondent making inquiries as to the sowing of lime, ashes and muck on grass seeds says: "Lime works a great change in muck, correcting the acidity hastening decomposition. In fact, muck is about the only material that lime can be composted with to advantage. The

put lime with stable 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 winter, it may be mixed with the lime as fast as procured, and applied to the land in the spring; or, it is almost 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 composted dressing of 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.

TOP DRESSING.



S the haying progresses let the subject of top dressing be kept in mind. Grass lands that begin to fail, and yet have plenty of grass, may be made almost as good as new by the application of compost. It will wake into newness of life the old roots, and cause new ones to form. It will wake up the slumbering energies of the soil. It is like oats to the old work horse. It gives him vigor. He must have them or falter in the harness. The soil must be fed or it makes but a feeble effort to respond to the demands of the farmer. Top dress those fields that just begin to fail. It will save plowing them so soon. Plowing is expensive. It takes muscle, both of man and beast. It should be avoided when another system pays better. The shortest route to a destined place is preferable, other things being equal. The shortest cut to a good grass crop is to feed it well all the time. Being the first-born of the family, it is entitled to extra care and attention. It being the corner stone of the whole fabric, it should be prized accordingly, and be kept continually in remembrance, and never suffered to become a matter of secondary consideration. This is the case with many persons at the present time. The corn and the potatoes must have the lion's share of the manure. The grass must take what is left, and a scanty pittance it often is. Now then what shall be done?

Let every farmer begin in the spring to save. His first care should be for the summer droppings of his cattle. If they are not stabled, they should be put into a good yard, or into the barn cellar—the latter is the better place, if it can be well ventilated—with a good supply of loam or muck under them. Once every week the whole should be plowed over. No better plan can possibly be devised for the manufacture of compost, than a barn cellar, with doors and windows so arranged that a good draught of air may pass through at all times. It is very comfortable for cattle and a large amount of saltpetre will be deposited, rendering the manure much more valuable than it would be if out of doors. By frequent plowing, or by the services of hogs' noses, the mass will be well mixed, and the manure completely divided, which is of much importance.

Before the fall rains, this compost should be evenly spread upon the surface. The better way is to spread it from the cart. Some apply a brush harrow and brush it in.—*Jour. of Agriculture.*

HOW FARMERS MAY SAVE MANURE.



I N reply to the question, How shall farmers get more manure? I would say the main secret is, to improve every opportunity to save manure. If you do not wish to begin larger, try it on a small scale. For instance if you have a sheep that wont own her lamb, as frequently the case among young sheep; make a small pen on a tight floor, shut your sheep in it, and make her own her lamb. Feed her well, of course, and give her what water she wants to drink. Give her bedding sufficient to keep her dry and clean. In a little while, when you have accomplished your object in shutting up the sheep take her out, clean out the pen, and you will be astonished at the quantity of manure one sheep has made in so short a time. By this you will readily see that a large quantity of manure will be made from a herd of cattle, in the course of the year.

I design not my remarks for men who are able to build such barns as they want, but for poor men like myself, who are obliged to use such as they have. In the first place have your floors under and behind your cattle tight, which is easily done. Instead of running your poor straw and barn chaff, which will accumulate, out doors, save it all, and bed your cattle with

it; it will absorb a large quantity of liquid manure. In the foddering season, instead of having your cattle prowling round in the road and lots,—both doing and receiving damage, scattering and wasting manure,—keep them in the barn, except when they need to be put out to drink. Commence stabling your cows nights, as soon as the middle or twentieth September, or as soon as the weather is sufficiently cool, so that they will be as comfortable as out of doors. By this method of management, having good floors, and giving your cattle a good supply of fine, dry litter, a large supply of manure will accumulate.

Crops will begin to increase, both in quantity and quality, and the facilities for increasing the manure-heaps and also the farm crops, will increase yearly. Keep your manure under cover until you want to use it. I know a number of men who are able to supply themselves with buildings of the right kind, who have recently built barns, and still throw their manure out doors; their stable floors leak, so that the urine runs off out of the way, and they boast how nice they have got things fixed. I think some men would do well to save the manure and devote the proceeds to benevolent purposes.

A. W. P.

BROOM CORN—ITS CULTURE, &c.

THE constantly increasing demand for broom corn has made it one of the staple articles of produce in many parts of the United States. It is used for the manufacture of coarse carpets for the legislative halls, court houses, hotels, &c., and mats for carriages, doorsteps and stairs, as well as in making brooms. Its chief use, however, is in the manufacture of brooms, for which purpose it will probably never have a successful rival, and its demand for that purpose will be limited only by the demand for brooms; a broom is an article of universal consumption. Every family in the whole country must consume from two to two dozen brooms per year. Every broom that is worn out must be replaced by a new one. Housekeepers can no more do without them than they can do without shoes, or any other article of universal consumption. To supply this ever-returning demand is the proper business of the broom-maker, and to supply him with broom corn is the business of the broom corn grower. Now, there is no good reason why a man may not enter into the manu-

facture of brooms or the culture of broom corn with as reasonable a prospect of success as into any other business, provided that he understands it, and that he does not greatly overdo the thing.

These two points should be constantly borne in mind, in order to be successful in raising broom corn; and I think I may digress long enough from my subject to say the same thing of every other kind of business men engage in: first, understand the business; and second, never overdo it. The reason men often fail in the broom corn business is because they neglect one or both of these main points. Having said so much about the broom corn business generally, I will now give my method of cultivating it.

Soil.

Any soil that will bring good Indian corn will produce good broom corn, and that which will bring but poor Indian corn will also bring but poor broom corn.

Preparation of the Soil.

This may be done the same as for Indian corn, with this remark, that it should not be ploughed too long before planting, and that it should be thoroughly harrowed.

Seed.

Great care should be taken to get the best seed to be had. There are a great many kinds of broom corn, perhaps as many as of any other kinds of grain. The main points to be aimed at are, fineness of brush and evenness of length. Fine brush, from 14 to 16 inches in length, is the best for making brooms. The best seed to plant is that which will produce that kind of brush, and can be had at the seed stores under the name of "Best Seed from the Mohawk Valley, New York." It is a crop that deteriorates very quickly in point of fineness of brush by planting the same seed on the same place, hence the necessity of changing seed often; seed should be changed every other year at least, to insure a good crop of fine brush. There are some kinds it would be best to discard altogether; Large English is one, as it is too coarse, except for special purposes, and Dwarf Broom Corn is another, it being too small for general use. Always test your seed by sprouting some before planting, otherwise you may lose your crop; I neglected this precaution last year, and failed in raising a crop in consequence of it.

Time of Planting.

The best time to plant in is from the 15th to the 25th of May, but from the 10th of May to the 10th of June will do.

If a large crop is to be planted, put some in early and some in late, so as to lengthen the season of harvesting; I saw one crop put in the 4th of July in Illinois, which matured the brush but not the seed; that was a chance crop, however, and would not do to be governed by.

Planting.

The best way to plant is to lay off the field in rows both ways, say three and a half feet or four one way, and sixteen to eighteen inches the other, and drop by hand eight or ten seeds in a hill at each cross row and cover with a hoe to the depth of one to one and a half inch with fine moist earth. But where a large field is to be planted, my plan is to get a two-horse corn planter, and stop up the holes through which the corn drops with a piece of wood or leather, so as to leave room for eight or ten seeds to pass through in the same way that the corn does. Make sure work of this by moving the lever a good many times before you commence to plant, and see that the seed drops regularly every time you move the lever. When you are satisfied that the machine will throw the right number of seeds every time, you can drive to the field and begin to plant. Don't put much seed in the planter, at once, as you will be the more certain that it is dropping right. Run all your seeds through a sieve, the meshes of which are at least as small as they are in the planter.—*Prairie Farmer.*

DESTROYING CANADA THISTLES.

AMONG the thousand and one matters upon which advice is always applicable, because not always followed, is the advice we always take pains to give, at least once a year, regarding the destruction of the terrible farm pest, the Canada thistle. In a myriad of little patches along our railroads and highways, this noxious weed may be found. Each season adds to the number, and nothing in a few years can check its spread. But now, where but a few rods of ground are infested in a locality, it is comparatively an easy matter to eradicate them, and it is a duty that this generation owes to the next that a permanent foothold be not granted to the Canada thistle.

Frequent mowing off of the tops so as to prevent seeding, and, if possible, feeding of the plants by means of the leaves, or a free use of salt, applied after mowing off or bruising the stalks, will accomplish the desired purpose.

CULTIVATION OF ONIONS.

SUBSCRIBER in the *Ohio Farmer* wants to be informed about the cultivation of the Onion:

Soil.

The best soil for the onion is a black and dry sandy loam, with an eastern or southern exposure. If it was well manured last year from the stable or barnyard all the better. If not, apply well rotted manure bountifully. Land cannot be too rich for onions.

Preparing the Ground.

We prepare our land and plant as follows: Strike out lands sixteen steps or forty-eight feet wide; throw three furrows together in the centre, thus forming a ridge. Next rake (with common garden rake) the surface of this ridge smooth and nice, allowing the clods and other rubbish to remain in the furrow. Go two or more rounds, or "bouts," as the Yankees say, raking as before; so continue till all your land is plowed and raked finely. You now have a nice mellow surface without the mark of a hoof or foot upon it.

Laying out and Planting.

We now use a marker with iron or wooden pins $1\frac{1}{2}$ inches broad set in head of marker fourteen inches asunder, and containing four pins or teeth. Stretch a line across it, thus making four rows. Draw it back and forth with one end tooth or pin in the last mark, and so continue till you have gone over the bed. Now plant your seeds or small onions in these marks, from three to five inches apart. If you want a large crop, plant closely, if fine specimens, give more room.

Cultivate Thoroughly.

Suffer not a weed to grow. To do this don't wait for the weeds to show themselves; they are just as effectually killed by stirring the land when only sprouted, as after they make their appearance, and with about one-fourth of the labor. A top dressing of wood ashes after the last hoeing will often increase the crop from one-fourth to one-half.

Onions should be gathered, dried and spread under shelter, not more than twelve inches thick, as soon as they are well ripened.

Take time by the forelock. Manure well; plant early as the land can be worked; tend well; gather as soon as ripe, and you cannot well fail of having a good crop,—nay a large crop.

AN OLD MARKET GARDENER.

BREEDERS' DEPARTMENT.

LAMBS—TREATMENT, DISEASES, PREVENTIVES.

THE lambing season just beginning, it is necessary in order to be successful in rearing them, that the attention of the farmer be individually given. One hundred and fifty-two days after the ram has been admitted to the flock in the fall, the lambing season begins. The treatment of the ewe before and at this time is one of importance, for upon this depends the health of the lamb. Well kept ewes require no particular food before lambing, save a few roots, for from their food they have gained a sufficient amount of nourishment for their lamb at birth. If having been poorly kept, milk-producing food is best for them. Feeding too freely of this kind of food is injurious to both ewe and lamb. In the ewe, it tends to increase inflammation, and often makes the food too nutritious for the weak organs of the lamb. The ewe at this time should be carefully caught, and the wool and hair removed with the shears from the inside of the thighs, under the tail, and around the udder. This treatment prevents the lamb from getting the dirt and filth generally accumulated there, which often destroys its life.

If a ewe has lost her lamb, one that is disowned may be successfully placed upon her, by taking the skin of the dead lamb and wrapping it around the one disowned. This imposition will soon create in her an affection as strong for the strange lamb as for the one she gave birth to, and she will nourish it as if her own. If the flock is large the young ewes should be selected and kept in a separate pasture, for they require double attention. There is a strong tendency for them to leave their lambs. Frequently from this cause the lamb dies. If the young ewe be held a few times to allow her lamb to suck, she will soon become attached to it.

Lambs often die from what is termed scouring, which is often caused by a diseased tea, or from having the ewe changed from poor pasturage to luxuriant. Great care should be taken in this particular, for so great a change, instead of being a benefit, creates a degree of inflammatory fever which no means will destroy, and creates in the lamb a diarrhoea which cannot be checked. The lamb thus affected is called a *Gull-lamb*. The liver being the seat of

inflammation, a great amount of gall is found in the intestines. This disease is very fatal, and can only be cured in its very earliest stages, by bleeding the lamb a little, and giving it some Epsom salts with a small portion of ginger. Its presence may be easily found out by the yellow tinge of the skin.

At the time the lamb begins grazing, the condition of the stomach being somewhat deranged, gives rise to another form of disease, not unfrequently called constipation. Its cause may be traced to an increased flow of milk caused by rich and nutritious food. The milk on entering the stomach of the lamb is first converted by the gastric juice into a curd; that portion of it resembling liquid is changed into whey. If the stomach of the lamb is not in a healthy state this curd accumulates to a great extent, which after a time becomes extremely hard, and the lamb labors under what appears to be a severe purging. This hardening or coagulation has often been observed to weigh three or four pounds. This disease may be suspected when the lamb, becoming stupid, heaves at the flanks, and has its belly very much distended; the lamb may be either costive or having a discharge of whey-like faeces. In order to effect a cure it is only necessary to dissolve the hardened mass of curd. This may be accomplished by mixing a small quantity of magnesia with thin gruel, a small portion of Epsom salts and a little ginger to agitate the stomach to more powerful contraction.


Costiveness and fever are produced by similar causes, and in each case a cure may be effected by giving about one-half ounce of salts every six hours.

There is also an importance attached to castrating and docking lambs in regard to the time when it should be done. It perhaps is most successfully performed when the lamb is a few days old and to all appearances healthy. There are often cases when the operation of docking is quite necessary, as in cases of fever and gall-lamb. These operations should be performed when the weather is cool, as it is not well for the lamb when very warm, as there is too great tendency to inflammation.

In the selection of lambs for stock farms great care should be exercised. As it is usually done when the lamb has but few marks of value, reference should be made

to sire and dam. Each should have compact fleeces, well built frames, and short legs. Attention should be given to the head. As compared with its size it should be small, and not wide between the eyes, but thin and short, yet not too much so, for it indicates delicacy of constitution. If the head be small there is less danger of trouble at the lambing season, which often proves of great importance. Quite as much care should be exercised in the selection of breeding ewes. Every loose, hairy fleeced one should be given to the market, while those of compact form and fleece should by all means be selected. By this attention the flock may be increased in value a very great per cent. every year, and will in a short time be of great value. F. M. G.

WATERING STOOK.

 CORRESPONDENT of yours has said something on the subject of watering cattle. Thinking that, perhaps a few words from one who has had the opportunity for the past few years of seeing cattle watered in different ways might be useful. I send the following:—

1. Driving them to a brook. This mode of watering was soon found to be attended with loss. It was ascertained that it required too much time, and caused too great a loss of manure, which would be dropped on the way.

2. Drawing water from the well with a bucket. This was something of an improvement over the previous way; yet this was a slow process for watering a large herd of cattle, especially in stormy or very cold weather for in such weather they not be so much inclined to drink. In the spring of the year the water would be so brackish that the cattle would go all day without drinking. This was not according to nature, for they needed water to nourish their systems, and give moisture to their food that it might be more easily digested. In this case the cattle had to suffer, and their owner was the loser.

Again, in place of the bucket a chain pump was used, to see if this would not do the required work at a less expense of labor; but this was found to be no better.

Finally, a spring was looked for, which was found at the distance of 65 rods from the barn, with 15 feet fall. This spring was dug to the depth of six feet, that a


greater supply of water might be obtained; after stoning, there was a trench dug, 2½ feet deep by 1½ wide for the pipe, this being half an inch in diameter. The total expense of getting the water to the barn was \$52, or 80 cents per rod.

This pipe was laid ten years ago the present season, and all the expense that it has required to keep it in order is only 50 cents, and it has always furnished abundance of water for a large herd of cattle at all seasons of the year.

Often we see the watering trough under the shed, or in some other place where the cattle like to stand. If the person who has charge of the stock is not careful, there will be some of the younger animals which will not get an opportunity to drink as often as necessary, consequently I consider it best to have the trough in the most remote part of the yard, as by so doing the cattle will drink and then walk away to see if they cannot find some more suitable place to stand or lay down. In this way all get what water they require without any extra labor from the person who has the charge of the stock. I consider that running water at the barn well pays the interest of a thousand dollars annually.

A YOUNG FARMER.

TREATMENT OF COWS.

 E have received from S. F. Perley, of Nayles, Me., "Rules for the treatment and Milking of Dairy Cows." The "rules" are very good, and substantially as follows:—

Cows should be driven from pasture as leisurely as they will walk; never harrassed or irritated by man, boy, or dog, because harsh driving or harsh treatment of any kind injures the quality and lessens the quantity of milk. The milk of cows in heat is unfit both for human food and for dairy use.

Milking should be at regular intervals, say at five o'clock in the morning and at five o'clock in the afternoon. Those milked first in the morning to be milked first at night.

When cows are in the barn, treat them gently in every respect. Let them understand that they are approached only with friendly intentions. Loud and harsh language, or anything that would excite the animal or cause fear, is decidedly injurious.

Filth may add value to the dung heap, but it spoils milk. Let the udder and teats be thoroughly cleansed—washed, if necessary—and beginning slowly, let the milking soon be as rapid as consists with gentleness. To draw milk gently, quickly and completely, is the highest accomplishment in a milker. The strippings are from five to fifteen times richer than the milk first drawn. No one can afford to lose this; and, besides, leaving any in the udder tends to diminish secretion. Poor milkers dry up cows.

No talking should be allowed while milking is going on. Besides irritating the cow by noise, the milker, every now and then, suspends his labor to listen and reply to conversation, and hence the work is imperfectly performed and the loss is very considerable.

TREATMENT OF KICKING COWS.

J. C., of Norfolk, Ct., says in a letter to the Agriculturalist: "The following treatment, which I have tried for some years has never failed to stop the evil. Put a strap round the cow just in front of the bag, and buckle it rather tight. If the cow tries to kick, draw the strap a little tighter. She will never get used to it, and it never does any injury. She will keep on eating as usual, but has no inclination to lift her feet even to walk about." This may answer the purpose; the experiment was easily tried.

In witness whereof, we hereby testify to having tried the above, successfully years ago, upon a three year old heifer. It is a sure "pop" every time.—*Editor of N. H. Journal of Agriculture.*

We tried it this fall upon a two-year old heifer, and it worked like a charm.—*Ed. of Plowman.*

PRODUCT OF TEN COWS.

Mr. J. W. Greenleaf, of Charlestown, in this county, has kept a dairy of ten cows this season, and foots up the result of his operations at six hundred and eighteen dollars and fifty-three cents, thus:

Cheese made, 5,490 lbs sold for	\$491 60
Butter " 330 $\frac{3}{4}$ "	63 63
Hogs kept on whey, valued at	52 55
Calves valued at	10 75

Total \$618 53

There is a table of figures that reveals a story of a good summer's work. Other dairymen are invited to "compare notes" with the foregoing. We incline to the

opinion, however, that the number who will foot up similar proceeds from the same number of cows will not be very large—but let us have the figures.—*Portage County Democrat.*

THE AYRSHIRES.

For purely dairy purposes, the Ayrshire cow deserves the first place. They may not afford so large a quantity of milk as many other breeds, but for the amount of food consumed it is generally conceded that they will give a larger return of milk than a cow of any other breed. In remarking upon the characteristics of the Ayrshires for dairy purposes, Sandford Howard of the Boston *Cultivator* says: "Whether the Ayrshires are judged by their actual produce, or by the external points, which by experience and observation are acknowledged to denote dairy qualities, it must be admitted that they take a high rank. From a fair consideration of their merits, it is believed that their adoption for the dairy would secure the following advantages over the stock commonly kept to that purpose in this country.

"1st. A greater quantity of milk, butter and cheese for the food consumed.

"2nd. Greater uniformity in the general character of the stock from its inherent or hereditary qualities.

"3d. Better symmetry and constitution, and greater tendency to gain flesh when not giving milk."

In consequence of her small, symmetrical and compact body, combined with a well-formed chest, and a capacious stomach, there is little waste comparatively speaking, through the respiratory system, while at the same time there is very complete assimilation of the food, and thus she converts a large proportion of her food into milk.—*Ex.*

The Doctor said he had a cow last year that beat her. He keeps but one cow. He buys a new milch cow every spring, and sells the old one for beef the day he gets the new one.

POPULAR ERRORS.

It is astonishing to witness the degree of ignorance that prevails in this country upon the diseases of domestic animals, and the consequent barbarity that is too often practiced upon them, with a view of alleviating their aches and pains. If we take for instance, what is termed "horn-ail," or

"hollow-horn," we venture that more than one-half of those who own cattle regard this as a disease, when in fact it is but a symptom of the same.

If the base of the horns is either too hot or too cold it is only an evidence of a loss of equilibrium in the circulation of the blood, caused by a disease elsewhere located: which disturbs the natural circulation; and suitable remedies should be administered for the treatment of the real malady, and not resort to the cruel practice of thrusting a gimblet into the horns, and cramming their interior with pepper and turpentine; for such treatment is surely calculated to excite or produce disease in the membrane which lines the interior of the horns and frontal sinuses.

Another practice no less barbarous, also the result of ignorance of the anatomy of the animal, is that of splitting open the extremity of a cow's tail, and then cramming the orifice with salt, &c., to cure some imaginary disease! At the point of incision, for a space of about three inches, the tail is lacking of bone; and this is a feature of every cow's tail, in its natural state, and it thus serves as a weapon of defence—a living, flexible whip—for the chastisement of annoying insects, and for the protection of the sides and posterior parts of the body.

No less barbarous is the splitting of the ears of swine, when suffering from well marked forms of internal disease; cutting out the "hooks" from horses' eyes; pouring into their ears scalding mixtures for the cure of poll-evil; squirting tobacco juice into eyes of domestic animals for the cure of ophthalmia: and last but not least, bleeding a horse almost to death, with the insane notion of restoring him to health.

Such errors, and many others which I might name, will continue until the rays of veterinary science lighten up the dark dark halo which now hovers about the stable and barn yard.—*Prairie Farmer*.

SHELTER FOR SHEEP WHILE AT PASTURE.

OLOMON GREEN, of Townsend, Mass., who says he has kept sheep thirty years, advises to have small buildings erected in sheep-pastures, and that they should be dark, so that the sheep by going into them may avoid flies. He says the sheep will go in at eight o'clock in the forenoon and remain till four o'clock in the afternoon. "The house," he says, "should be built on runners, so that it can be moved, and this will

enrich the land. A house twelve feet square is sufficient to hold a dozen sheep and their lambs. Move it its length once in two or three weeks." He sends the following, which he says is a "sure cure for grub in the head and belly of sheep:" For six sheep, mix two quarts of oats with a large teaspoonful of yellow snuff, and give to the sheep once a week for a few weeks, and then once a month.—*Boston Cultivator*.

TO KEEP FLIES FROM WORKING CATTLE.

H. SHERWOOD, Fairfield Co., Conn., communicates to the American Agriculturist his plan for repelling flies from cattle when at work. Take a piece of scantling 3 x 4 inches, and a few inches longer than the yoke. Through this bore four holes to correspond with the bow holes in the yoke. Have bows long enough to extend five inches above the yoke. After the oxen are yoked, put this piece on the top of the yoke, letting the bows come through the holes. Bore several small holes in the sides of the above piece, and fasten in a brush long enough to reach the oxen's hips. The brush should be of some tough wood with the leaves on. When it is worn out put in more. Some use blankets for their cattle while working, but it makes them unnecessarily warm, and costs something at present prices. The motion of the oxen while walking will keep the brush waving about enough to keep the flies away.

DOCTORING SICK ANIMALS.

ONE of the best systems of medical practice ever known, and which will probably stand at the head of the list for all coming time, is nursing. Good care will do more than all the medicine in the world without it. Medicine is sometimes very good, but the most skillful physicians have found they could do but little with serious cases without that intelligent and careful watching at all times required for the removal or prevention of irritating causes, and known as good nursing.

The writer once owned a horse suffering from an excessive cough. Numerous remedies were prescribed by kind neighbors, enough, doubtless, to have killed him at once. It was concluded to discard all, to give the best attention to his wants, and avoid anything which causes or prolongs a cold. This was during the changeable weather of autumn—and he was blanketed whenever a

chilly air was apprehended; he was worked very moderately, always avoiding perspiration, and he was fed on succulent food which was supposed to favor expectoration, and especially young clover. In a few weeks nature had performed a perfect cure; and if any one of the nostrums had accidentally been employed, and had not proved very prejudicial, it would unquestionably have received high praise for its efficacy. It is of the utmost importance to discriminate between a recovery by virtue of a medicine and in spite of it.

To keep animals in health, is more important than to cure sick ones, and for this purpose a few leading rules should be always observed, and which cannot be out of place here.

1. Always feed regularly, as to time and quantity. Many animals are made sick by starving at one time, and stuffing at another. Especially, never overfeed.

2. The same rule must be observed with watering—and let the water be pure.

3. Never overwork an animal—regular and moderate exercise will enable a working animal to do more the year through, by all odds, than any hurried driving at one time and resting and overfeeding at another; and be infinitely less liable to disease.

4. Allow a regular supply of salt—it is useful, but an observance of the preceding rules without salt, will be incomparably better than their infraction with it.

5. Never feed musty or bad food. If musty fodder must be used, pass it through a rapid cutter, and moisten, salt and meal it.

6. Avoid unwholesome or poisonous plants in pastures and in hay.

7. Guard all animals against cold rain and snow falling on them, and against lying on cold wet ground.

8. All changes of food must be gradual. If from hay to grass, let the grazing be but an hour the first day, two hours the next, three the next, &c. The same caution must be carefully observed, in beginning to feed with roots, grain, &c.

9. Be careful that animals always have enough of exercise—and plenty of pure, fresh air. Stables must be well ventilated—animals often become sick from breathing foul air.

10. Lastly, and by no means least, let strict cleanliness be observed. All animals even pigs, kept clean curried, are found to maintain their flesh better, or fatten faster, than when dirty and neglected—and cleanliness is more important to health than for flesh.

We do not propose to go into a long discourse on diseases and their remedies, but they are a few of the more common diseases, and some simple remedies for them, a knowledge of which may be useful to the inexperienced.

Horses.

Colic and inflammation of the bowels are two very common diseases, often confounded together. With colic the pulse is natural, not fifty a minute, the animal often rolls, the disease intermits, and there is usually not much fever. With inflammation there is much fever, the pulse sometimes rising to nearly a hundred a minute, the attack is gradual, and the disease does not intermit.

The remedies proposed are of the simplest character, and not those often used by professional men.

For Colic.

If from badly digested food, give a pint or more of a solution of saleratus; or a mixture of half a pound or upwards of fresh powdered charcoal with thrice its bulk of water, is still safer. Spasmodic colic may be treated with the charcoal internally, and brisk friction externally, and a quart of peppermint tea with a spoonful of powdered cinnamon may be given. Ginger tea is also useful.

For Inflammation of the Bowels.

This is a difficult disease to cure, and horses generally are killed by the amount of irritating medicines administered, which only add to the disease, such as whisky, gin and molasses, salts, castor oil, gunpowder, &c. Give a drink of slippery elm every hour, to allay irritation—keep the animal quiet—let him have but little food, and let that be weak gruel. Avoid bleeding.

-Scours and Diarrhea.

Sometimes this arises from irritating matter, in which case it must not be checked too soon. When it proceeds from exposure after over exertion, let all the drink the animal takes be slippery elm water, with occasional doses of a spoonful of charcoal. The food should be dry. Raspberry leaf tea is a good drink after the symptoms begin to subside. In severe cases, twenty or thirty grains of kino may be given in a quart of thin flour gruel, twice a day.

Cold or Catarrh.

This is a common and well known disease. Medicines generally are of little use, except to allay attending symptoms. Good nursing and careful management are best, avoiding any exciting cause calculated to increase

the disease, or retard the gradual cure that nature commonly effects. If followed or accompanied by a hard cough, green food should be given—if in winter, turnips or ruta bagas with warm wet meal are useful. A moderate feeding of fresh apples two or three times a day operates as an expectorant, and relieves the cough.

Heaves.

When a horse is fed on musty hay, and his cough begins to assume symptoms of heaves, immediately procure good hay if possible, or else cut the hay fine, and always feed it wet, to which add a spoonful of ginger daily until the symptoms disappear. A horse which has heaves once established, cannot be cured, but the disease may be kept so latent as to be of no inconvenience by always feeding wet chopped food.

Scratches.

A cutaneous and troublesome disease just above the hoof.) Keep the affected parts clean, by washing with soap and water, and then apply a solution of chloride of lime.

Distemper of Horse Ail.

Attended with thickened discharges from the nose, and sore throat, often a tumor under the jaws, and weakness. Rub and curry often to promote warmth and circulation, keep warm and comfortable, and if the animal refuses to eat, withhold all drink, but place before him warm mashes which he will swallow when he finds his water is not given. He will often eat wet hay, slightly salted, if given him morsel after morsel by the hand. Scraped carrots are excellent. The principal object is to keep up his strength and flesh, until the disease runs its course. A seton is often advisable, diverting the disease.

Cattle.

If the ten rules already given are carefully observed, cattle will scarcely ever become diseased; and if they do, immediately examine to see if some of these rules are not broken. The following remedies may be applied, in case of a few of the more common diseases.

Horn Ail.

The symptoms are dullness, failure of appetite, giddiness, failure of flesh, the horn generally feels cold. The head and not the horn merely is diseased. Boring is generally of no use, and can only give temporary relief where there is a pressure of matter in the horns. Hornless cows have it sometimes. It generally occurs to animals in low condition, with deranged digestive

organs. The best remedies are to keep them in a warm shelter, and give warm, nourishing, and stimulating food. If the animal should happen to be in high condition, feed lightly. Most of the remedies have their reputation because they did not prevent natural recovery.

Garget or Caking of the Bag.

Let the calf suck, after having drawn off a part of the milk; and if there is danger of matter forming, rub the udder with a liniment of equal parts of goose oil and hot drops. If painful, wash with weak lye. It is very important always afterwards to milk very clean. Avoid high or stimulating food.

Hoven.

Occasioned by eating too much fresh clover or green food. The preventive is caution in turning into fresh pastures, allowing but a short time at first. In mild cases, a cure may be effected by a quart of saleratus water; in severe and threatening ones, a penknife must be thrust into the paunch through the skin, two or three inches forward of the hip bone.

Foul in the Foot.

Caused by the standing long in filth—may be cured by removal to a dry clean place, washing with soap, then with chloride of lime, and applying carriers' oil. Washing with salt and water is useful.

Lice.

Wash the skin, night and morning, with a decoction of 2 ounces of lobelia seeds in one quart of boiling water; after standing 2 hours, apply with a sponge.

Sore Teats.

Always wash with water before milking, or after calf-sucking—this is often sufficient. If much sore, apply equal parts of lime-water and linseed oil.

Choked cattle may be relieved, when the obstruction is high, by thrusting the arm at full length down and seizing it with the fingers. To prevent the animal biting dangerously, pass the arm through a wheel-box or clevis, held firmly in the mouth; or still better, through a wooden box made on purpose, with projecting ends to hold by. If far down, the obstruction may be pushed down with a flexible stick with a round soft knob.

To prevent a Cow Sucking herself.

Thrust a hickory stick, 8 inches long, and half an inch in diameter, through a slit made in the nose, so that the stick may project each way horizontally. If the stick is a little smaller at the centre it will not come out.

Colic, inflammation of the bowels, and diarrhoea, require nearly the same treatment as with horses.—*Tuckers' An. Reg.*

BUTTER MAKING.

ONE of the best dairy farmers in Massachusetts has the following rules, the observance of which, he says, can only ensure the making of good butter:

1. Keep the very best description of cows for your dairy stock.
2. Feed them on the best pastures and hay, (when confined to the cattle barns) using no roots in feeding, with the exception of carrots, as all others impart a disagreeable taste to the milk and butter.
3. Observe the strictest cleanliness in the dairy rooms, and in respect to the dishes and machinery of creaming and churning the milk and working the butter.
4. The milk room must be kept always at an even temperature, not less than 52° nor more than 55°.
5. Use only half an ounce of salt to a pound of butter.

Another authority says that the largest quantity of cream rises, and consequently the greatest quantity of butter is made, when the milk is one and a quarter inches in depth in hot weather, and an inch and a half in cold weather—seven or eight quart pans thus containing but two and a half quarts for the first named in depth, and three quarts for the latter.—*Boston Journal.*

FOOD OF THE CHICKS PREVIOUS TO WEANING.

AS to the food of the young brood, let them have anything that is not absolutely poisonous. Sloppy matters are better avoided till the little things are old enough to eat a few grains of good wheat, of the best sample, which will then not be thrown away upon them. Meat and insect diet are almost necessary; but raw vegetables chopped small, or Indian meal dough, containing no salt, so grateful to young turkeys, are *caviare* to young chickens. But whatever be the bill of fare, the meals must be given at short intervals; as much as they can swallow, as often as they can eat. The reader will please to remember that when he came into the world, all that was expected of him was to grow and be good natured. He had not to provide his long clothes out of his mother's

milk, nor to elaborate pinafores from a basin of soaked biscuit; but for poor little chickens, the only known baby linen warehouse is situated in their own stomachs. And with all their industry, they are only half clad, till flesh and blood stop growing for a while and allow down and feathers to overtake them.

The period at which they are left to shift for themselves depends upon the disposition of the hen. Some will continue their attentions to their chicks till they are nearly full grown, others will cast them off much earlier. In the latter case, it may be as well to keep an eye upon them for a few days, till they have established themselves as independent members of the gallinaceous community. For chickens, in this half grown state, are at the most critical period of their lives. They are now much more liable to disease than when they were apparently tender little weaklings crowded under their mother's wings. It is just before arriving at this point of growth, that artificially hatched chickens are so sure to fail, whether hot air, hot water, or sheepskin, be the substitute for the mother's care.—*American Poultry Yard.*

THE ART OF RAISING TURKEYS.

AS the season of the year admits of some suggestions with respect to raising turkeys for the market, I offer the following:—

First, place barrels horizontally, for the turkeys to lay in, and train them to their nest by feeding them there. Take care of the eggs until setting time; then set each turkey on from 17 to 21 eggs. Second, keep them quiet, and as gentle as possible. Never allow any one to frighten them, or other fowls about the premises. The turkeys will hatch *every* egg that they are set on, if well managed and set in tight barrels, or nearly tight—such as lime casks, flour barrels, &c. The barrel serves as a good house and covering, not only in laying time, but especially during the time of setting. Always set the front, or mouth of the barrel to the sun. This will make the turkeys and the inside comparatively warm in the open yard, or garden. If the turkey leaves her nest before the last chicks are out, place the unhatched eggs immediately in front of the house in the sun, or if at an unfavorable time enclose them in flannel cloth and place them near the fire or in a hot-house, and thus finish the hatching, and return the young to the mother.

Twenty-nine days, 12 hours, 43 minutes, and about 52 seconds is the turkey's natural time to sit. When the hatching is over, the turkeys should have daily attention, and be kept as dry as possible until well grown.

In conclusion, every farmer can raise from 100 to 300 turkeys a year without any detriment to his crops, as they devour many insects of various kinds, but especially grasshoppers.

A. C.

South Kingston, R. I., April 16.

ENGINEERING DEPARTMENT.

IRRIGATION ON A LARGE SCALE.

THE Edinburgh Review, in giving an account of the great improvements which the British are making in India, notices the system of works for irrigation. These works, it is said, are vast in extent and benefit. The Ganges canal, one of the principal, has no less than 898½ miles of main channel, with 1852 miles of distributing water courses, besides many hundred miles of minor channels. It irrigates an area of 1,471,500 acres, and its beneficent waters will protect from the risk of famine a tract of country containing a population of 6,500,000 souls. It is estimated that in the famine of 1860-1, 339,243,840 pounds of grain were grown by the irrigations which it afforded. Other canals are from 100 to 500 miles in length, and render fertile vast tracts of land that would otherwise remain almost barren wastes. In the Presidency of Madras nearly all the great rivers have been intersected by weirs, which retain for irrigation the flood of fructifying waters that would else else flow out to sea. The benefits that have resulted have been enormous. The increased production is reckoned by millions of pounds in value. These works were constructed at a great outlay, and are justly regarded as triumphs of engineering skill and wise statesmanship.

HOW TO BUILD A CHEAP VINERY.

By Dr. Norris, Wilmington, Del.

VINERY may be lean-to or span-roofed, of any length, and may be built of wood, brick, or stone, although, when the latter is abundant, we think it most desirable. Suppose a moderate sized house to be required, say a lean-to 50 by 13. Twelve feet for the back wall and three for the front will be suitable heights. Foundations at least three feet below the surface, and the largest stones in the bottom. The front wall should only be one foot of stone above the surface, the other two feet being

made up of glass sash hung on hinges to the front wall plate frame. Iron rods should be built in front and back walls to secure the wall plates firmly. The mason work may generally be done by the perch. Seventy cents a perch is the working rate, the employer finding sand and lime. The carpenter work can be done cheapest by contract, and for a house of the above dimensions should not be over seventy-five dollars, the contractor finding the lumber. This includes a door in one end, and a run of movable sash hung to the back wall plates to open and shut at pleasure for ventilation.

A good trellis may be made by building in and firmly bracing in each end wall an iron bar perforated with holes, through which the wires may pass. Slight iron supports in the rafters are used to steady the wire. This form of trellis will present an equal stress on both sides of the house, and prevent any disposition to swag.

Borders may be made all inside, partly inside, and partly outside, or all outside. Entire inside borders are well adapted to forcing houses. For cold vineries, where no forcing is done, partly inside and partly outside are most in favor. The entire border outside, with vines planted out and not inside, would seem only adapted to our southern latitudes. Whichever way the border is made, good drainage is indispensable. Three feet of soil to be removed and carted off, except the top spit. At the bottom all the old spalls from the building, broken brick bats, and small stones come well in play. They should be arranged so as to have a gentle descent from the back wall of the vinery. A good compost to fill up should be prepared some time previous to erecting the house, by getting old sods from a rich pasture, and suffering them to lie inverted in a heap, among which is sprinkled well decomposed stable manure, wood ashes, bone dust, leaf mould, sand, etc., and giving the whole pile an occasional turning. Now, on top of your drainage,

place a row of inverted sods, then fill up from your compost heap. When the vines are planted, have at hand a barrow of leaf mould, with which to surround the fine fibrous roots.

No grapery should be without a heating apparatus. Although some of the finest specimens have been produced without any fire heat, yet there is too much risk; and the cost of a heater may be made so small, that no one building a grapery will begrudge it. Hot water apparatus is the best, but most costly, besides requiring a fireman to manage. The old-fashioned brick flue is as good as any, although an air-tight stove will answer very well in a small house.

The unsightliness of the flue may be remedied by putting it entirely beneath the ground, directly under the walk if liked. The old Black Hamburg should be the main dependance in the cold vinery. It will bear more exposure than almost any of the other foreigners. A vine or two of the Frontignans will not be out of place. They will mature considerably earlier than the Hamburgs. For late varieties, select West Saint Peter's. The Barbarossa, although prominent among the late keeping varieties, is said to require a longer period to mature its fruit than obtainable without an earlier start than a house without artificial heat will get. A vine of the Muscat of Alexandria may, with propriety, be introduced, although requiring more artificial heat than the other varieties to bring it to the highest perfection. It is later than the Hamburg, and an excellent keeper.

WHITEWASHING.

WHILE painting, papering, &c., is as expensive as at present, whitewashing can be resorted to with good effect, both as regards looks and preservation. Outbuildings well whitewashed afford a pleasing contrast to the old weather-beaten rookeries that too often find place about the farmer's premises.

To be durable, whitewashing must be well done, and first in importance is the proper slacking of lime. The lime for the purpose should be fresh unslaked or stone lime, and placed in a suitable vessel, and immediately covered with water, and never be allowed to appear above it during the slaking. The life of the lime is thus not destroyed by burning. If cold water is used, it will take from thirty to sixty minutes to thoroughly slake the lime; if warm water, from twenty to forty-five minutes.

In using for out-buildings, it should be of the consistency of thin cream; for indoor plastering, &c., thin, with discretion, to make smooth work.

Good tools are necessary to do good work, for unless you have a good brush, you cannot put it on smooth and even on plastering. For rough outbuildings, it is of course not so necessary.

Various tints can be produced that will be very good for outbuildings, to tone down the glaring white. For buff, cream, or fawn color, yellow ochre is used until the desired tint is obtained. For brown, Spanish brown or Venetian red is used—with the latter a large variety of tints can be obtained, according to the quantity used. For inside work, coloring walls, Venetian red or yellow ochre can be used to give the buff or brown color. For blue, use ultramarine blue.

The various devices of adding glue, salt, &c., to make the wash stick, are useless if the lime has been properly slaked. For outside work, where smooth, it is sometimes desirable to add salsoda or alum to the wash.—*Prairie Farmer.*

FARM BUILDINGS—MORE SYSTEM WANTED.

IN answer to "Subscriber," on the barn question, permit me to say in the beginning, that I am surprised that so little attention is paid to saving labor in the planning of most of the barns of the country. It is a subject I have paid much attention to, and have planned many. But no two men agree as to what they want in, or of a barn, and therefore in planning a barn a man must determine what he wants, and then the plan can be made to suit. Three-fourths of all the barns can be made to suit the purse of the owner, and he makes shelter to suit the dollars he can spare without much regard to plan.

Now I contend that all our houses, barns, out-buildings, house yards, garden, stable lots, and fields, should be planned first, and if your head will not convey the plan, put it down on paper, and then work up to it as your purse will permit, and when you are done you will be satisfied, and much money, time, and labor will have been saved.

The house and barn site should be the first thing to settle or select, in opening a new farm, and every other part of your plan made to suit. Then you should settle how large a barn your purse will stand, (or

how large you intend to work up to,) which should aim to suit, first, the size of your farm, second, the kind or kinds of stock you intend to handle, or the kind of farming you intend to carry on. This every man must settle for himself. Then the first use of a barn is shelter, and the first idea should be to suit your plan to your particular kind of farming, bearing in mind all the time the saving of labor both in filling and emptying, and in using the barn and stables, and then plan your stable lots in the same way in order to save labor in handling your stock, and bear in mind to keep each kind of stock by itself, so far as possible.—*Prairie Farmer.*

SETTING FENCE POSTS.

S in many parts of the fields are yet too wet to plow or work in any manner, the spare time for a few days may be well employed in digging post holes and settling posts, even if you cannot finish up the fence before summer or fall. The earth is wet to a considerable depth now, and there can be but little difficulty even in the hardest soil, in doing the work.

Post holes should be large and deep. Forty inches is none too deep to set them in this country, and if driven a few inches below the bottom of the excavation, all the better. Dig the holes large enough to admit of filling in well around the posts by means of a "rammer." Make the bottom of the posts firm and fill in but little dirt at a time, ramming it down firmly upon all sides so as to keep them in position. In very many localities now, posts may be driven sufficiently deep without much difficulty. This is much the more expeditious way, and perhaps the better of the two.

COMSTOCK'S SPADER AT WORK.

I AM now using, on my farm, three of Comstock's Rotary Spaders—two drawn by horses and one by oxen—and I am so fully convinced of their utility as labor saving machines and thorough tillers of the soil, that I believe from the interest you take in all matters pertaining to the welfare and progress of the farming community, you would enjoy witnessing them in operation side by side, turning up and pulverizing the soil to the width of three feet each, and the depth of eight inches, and I have thought that this would be a good time for you to fulfil your oft-repeated promise to pay me a visit. I

therefore take great pleasure in extending to you an invitation to visit me for that purpose, and to partake of such hospitalities as my place will afford. It has been raining here for the last forty-eight hours, consequently the soil will not be in a condition for working for several days. You might time your visit to suit your convenience, having in view the state of the weather. My railroad station is Homer, on the G. W. Railroad, seventeen miles east of Tolono.

Respectfully yours,

M. L. SULLIVAN.

By the same mail, we also received a very kind invitation from Mr. Comstock to visit "Broadlands" for the purpose of witnessing the workings of these implements. We accept the invitations with much pleasure. You may expect one of us with you as soon as the weather seems at all favorable.—[EDS.]

GANG PLOWS—TWO-HORSE CULTIVATORS, ETC.

I AM getting old and cannot follow a plow all day without very great fatigue, and looked anxiously for reports from Decatur about gang-plows and riding cultivators for corn—farm hands being almost impossible to procure—and I was greatly rejoiced to hear the report. And seeing the flaming advertisements, I resolved to have one of each. But this did not long continue, for very soon I read an article in the "Tribune" from "Rural," an authority that with me stands very high, in which he pronounced the present make of gang plows to be horse killers, and away went my pleasant dreams of riding while the plow turned the furrow.

But one of my enterprising neighbors, who could not walk all day, nor obtain help at two prices, seeing an advertisement in the *Farmer*, and having plenty of good stout horses, determined to risk a gang plow; got it, worked it, was delighted and sent for me to see it work. I was convinced, got one, and now with four small horses I can break four acres a day, seven inches deep, seated and holding the reins, and the horses are no more fatigued than when plowing with a common two-horse plow.

How it is with riding corn cultivators, I would like to hear from my brother farmers; some say they are a very heavy draft; one was returned from my vicinity last summer, because the seat was over the

plows and the man could not see the horses and forward plows at the same time, which I think he must do, to do good work.

Why do not the wool-growers of the North West unite with those of the East in seeking protection from Congress, in an increased duty on foreign wools? A few articles in the *Farmer* from Mr. McConnell, or "Wool-grower," would arouse the whole country and put the ball, here in the West, fully in motion.

I am glad "Wool-grower" has been to Ohio, and hope it has raised his spirits since the first of January. I always like to read his articles, and who does not? But why he and the most of other sheep men go in for Merino, to the exclusion of those fine mutton and large wool-bearing sheep, the Leicester, Cotswold, and Southdowns, I am anxious to know.

I am anxious to get a Horse Pitch fork, but do not know whether it is worked in the barn only, or if it can be used out in the meadow for stacking. The advertisements do not say, and I wish some one would tell us about them.

I think it is very sure cattle do not have the "Mad Lch" only where they are permitted to eat the corn stalks previously chewed by hogs, and any cure is very uncertain.

A man told Dr. Dadd, he had given his cow, that did not "clean," half a bushel of oats, and did not know what more to do; it was a wonder it did not kill her. Next time let him give her a pailful of cold catnip tea. If the placenta is not expelled in twenty-four hours repeat the dose. Green or dry catnip will do. If she refuses to drink it, keep her from water. Or take two quarts of oats and burn it over the fire, stirring it all the time until it is quite black; when cool mix it with a little bran and salt; repeat the dose every day until she is better; allow her no other feed than bran mash and hay.

W. H. W.

Riding Corn Cultivators, as our correspondent terms them, are now thought almost indispensable where best known.

The Horse Pitch fork can be used at the stack as well as in the barn.—[Eds.]

HORTICULTURAL DEPARTMENT.

MONTHLY OPERATIONS.

THE season, as was anticipated, is so backward, that most of the observations in last month's Calendar will apply to this.

Orchard, Fruit Garden, &c.—

Everything in the way of plowing, pruning, cleaning up, &c., should be finished without delay. Grafting may be done up to the middle, or even latter part of the month, if the grafts are in good condition. On grape vines, rub off all eyes that are not wanted, and see that arms, &c., are tied in their places. The planting of vines should not be longer delayed. Provide suitable stakes when they are put in the ground, and cut to three eyes. Cutting may still be planted in the open ground. Make new Strawberry beds, and clean up old ones. Look over fruit trees of all kinds.

The Grapery.—As soon as the vines in the *Cold Grapery* are well broken, tie them up. Keep the house rather warm and moist, and ventilate carefully. Rub off such buds as are not needed. Keep the borders loose on the surface, and free from weeds. Be careful not to sodden the borders. In the *Hot Grapery*, the first crop will now be

ready to cut; too often, however, the bunches are cut when only colored, and not ripe. Other crops will be coloring, and some only just set. In these cases, attend to pinching in, thinning out, &c., as before directed. Be on the lookout for mildew at all times, and dust with lime and sulphur. Ventilate carefully, and avoid cold currents blowing on the vines.

Green-House.—It will now be time to think of putting plants out of doors, except such as are to be kept for ornamenting the house during the summer, such as Fuchsias, Gloxinias, Achimenes, Begonias, Caladiums, &c., the latter of which ought now to be encouraged to grow by repotting, &c. For such plants as are to go out, select a sheltered place with a south-eastern or eastern exposure. Many can be turned into the flower border. Azaleas that have been retarded will keep their bloom longer by being lightly shaded.

Plants in Rooms.—During this month all room plants should be removed to the open air, and sheltered from high winds. Put some boards or coal ashes on the ground to prevent the worms from entering the pots. Geraniums, Verbenas, and plants of

similar kind may be put in the flower border. Callas may be allowed to dry up gradually, as may also Ixias, Babianas, Lachenalias, and similar bulbs.

Ornamental Grounds.

It is to be supposed that every thing in the way of planting, pruning, raking, &c., has been done, except, it may be, planting evergreens. Bedding plants may now be put in their places. Annuals may be used for bedding purposes, such as Phlox, Candytuft, Alyssum, Ten Week Stock, &c. Annuals may also be used freely in the borders. They are among the most beautiful of summer blooming plants, and do not receive half the attention they deserve. Dahlias may be planted up to the last of the month. They are all the better for being planted late. A few bedding plants should always be kept in reserve, to fill up any vacancies that may accidentally occur.

Vegetable Garden.

There is still much to do in this department; indeed, the succession of crops required and the battling with weeds make the whole season a very busy one. In addition to the seeds named last month, Corn, Bush, Beans, Cucumbers, Melons, Okra, Peppers, &c., may now be sown. Bush Beans and Sweet Corn must be sown at shorts intervals to keep up a constant supply. Read remarks of last month, which will mostly apply to this.

FLOWER FARMING.

UNDER this head a correspondent of an Australian paper describes certain farms visited by him in the South of France and along other portions of the Mediterranean shore, where the cultivation of flowers is extensively carried on. The cultivators occupy from two to forty acres of land. He gives from a work published by Piesse, the London perfumer, the following facts:—In 1852 the value of essential oils and ottoes imported into Great Britain was £195,346, and in 1860 the value of imported perfumery was £274,350. Mr. Herman, a perfume manufacturer in Cannes, uses annually 140,000 lbs. of orange flowers, 12,000 lbs. of cassia flowers, 140,000 lbs of rose leaves, 32,000 lbs. jasmine flowers, 20,000 lbs. of violets, 8,000 lbs. of tuberose, besides rosemary, mints, lemon, citron, thyme, and other odorous plants. The market value of these flowers and leaves is given, running from 6d to 2s. a pound.

HINTS ON TREE PLANTING.

THERE are few operations in our husbandry in which so much want of reflection, not to say gross and willful neglect is displayed as in the transplanting of trees, whether for fruit or ornament. It must, however, be admitted that in this, as in all other branches of rural industry, great improvement has taken place within the last 30 or 40 years, since agriculturists commenced to read and reason on the principles that are involved and brought into action and practice of every branch of their business, as well as in the manufacturing of leather, iron or any other article.

The former practice was to dig a hole for a young and tender tree as for a fence post, just large enough to jam it down, oftentimes doubling up the roots, throw back the dirt to fill up the hole, ramming it with the handle of the spade, and then leave this tender plant without care or attention to take care of itself. Is it any wonder then, under such treatment, that disappointment and mortification should ensue—any wonder that if the tree lives at all its growth should be stunted, its existence sickly, and its death premature?

Now is your time to transplant trees. If your premises are not ornamented by a reasonable number—not an over-dose to cut off the prospect and dampen the buildings—of shade trees, do not let this spring pass without providing for the beauty and the comfort they afford. It will be but little hindrance to your more important business to set out a dozen or more shade trees. The cost to a resolute farmer would be but a trifle; with a hired man and boy, and a horse and wagon to bring the trees from the field, he would almost do it before breakfast in the morning, or after an early supper in the afternoon. The trees would benefit his place as much as they would the fancy man's, but would not cost him one-tenth as much—an important advantage that the farmer has over others for ornamenting his grounds about, doing efficiently and economically.

The season best adapted for transplanting trees is a matter open to much difference of opinion among horticulturists, a difference founded mainly in experience but without taking into account variation of climate and soils, two very important circumstances in all operations of this kind.

It is generally admitted, we believe, that the best season for transplanting deciduous

trees is early in the autumn and in spring before the buds begin to expand, may, as a general rule be considered the best season for transplanting. Spring planting should always be performed as soon as possible, that the roots may have the benefit of the great rains of the season, and get well started before the heat of summer commences. In this section therefore the best periods are from the fall of the leaf to the middle of November, in the autumn, and from the close of March to the middle of April in the spring; though commonly the seasons of removal are frequently extended a month beyond the limits.

Trees planted in autumn, are then in a completely dormant state. Transplanted at this season, whatever wounds may have been made in the roots commence healing at once, as a deposit directly takes place of granulous matter from the wound, and when the spring arrives the tree is already somewhat established, and ready to commence its growth. Autumn planting is for this reason greatly to be preferred in all mild climates and dry soils, and even for very hardy trees, as the apple, maple and elm, in colder latitudes, as the fixed position in the ground which trees planted then get by the autumnal and early spring rains, give them an advantage at the next season of growth over the newly moved tree.

On the other hand, in northern portions of the country, where the winters commence early, and are severe, spring planting is generally preferred. These autumns and winters are not mild enough to allow this gradual process of healing and establishing the roots to go on; for when the ground is frozen to the depth of the roots of a tree, all the slow growth and the collection of nutriment by the roots is necessarily at an end. And the more tender sorts of fruits trees, the peach and apricot, which are less hardy when newly planted than when their roots are entire and well fixed in the soil, are liable to injury in their branches by the cold. The proper time in such a climate is as early as the ground is in a fit condition in the spring.

Taking up the Trees.

This is an important part of the operation. Take up the trees with a good many but not very long roots. If any of the roots are badly mutilated, cut them off with a sharp knife. New rootlets will very soon start if you set them well, filling in carefully with a fine top soil. No strong manure should be added. If the soil is decidedly

poor, a few shovelfuls of garden soil, or what is better, leafmould taken from the woods, would be a valuable addition. Let the tree at least stand as high as it did before and in order to keep it firm in its position, place large stones on the roots, or secure it to stakes until the root gets a firm hold. Apply very little water at the time of setting—none unless the ground is quite dry. More trees are injured by over watering than by the want of water in transplanting. What the tree wants the first summer is a moderate rich soil and an equal degree of moisture. It should be neither baked nor drowned, and to secure it against either it should be set quite as high as it stood before; the ground should be loosened a foot below its roots, that the water of heavy rains may freely percolate through, and the surface should by all means be mulched to prevent evaporation.

Preparing the Places.

Here is the fatal stumbling block of all novices and ignorant persons in transplanting. No tree should be planted in a hole of less size than three feet in diameter, and eighteen inches to two feet in depth. To this size and depth the soil should be removed and well pulverized, and it should, if necessary, be properly enriched by the application of well rotted manure or leafmould, which is preferred, which should be thoroughly mixed with the whole mass of the prepared soil, by repeated turnings with the spade. This preparation will answer, but the most skilful tree planters make their spaces four or five feet in diameter, or three times the size of the roots, and it is incredible how much the luxuriance and vigor of growth, even in a poor soil, is promoted by this. Its effects on the growth and health of the tree are permanent, and the little expense and care necessary in this preparation is a source of early and constant pleasure to a planter.

The whole art of transplanting after this consists in placing the roots as they were before. Begin by filling the hole with the prepared soil, within as many inches of the top as will allow the tree to stand exactly as deep as it previously stood. With the spade shape this soil for the roots in the form of a little hillock on which to place the tree roots—not as is commonly done, in the form of a little hollow; the roots will then extend in their natural position, not being forced to turn up at the ends. Next examine the roots and cut off all wounded points and pare the wounded

smooth. Hold the tree upright on its little mound in the hole or the prepared soil; extend the roots and cover them carefully with the remaining soil. As much of the success of transplanting depends on bringing the soil in contact with every fibre, so as to leave no hollow to cause the decay of the roots, not only must this be secured by patiently filling in the cavities among and under the roots, but where the trees are not quite so small it is customary to pour in a pail of water when the roots are nearly covered with the soil. This carries the liquid mould to every hidden part. After the water has settled away, fill up the hole, pressing the earth gently about the tree with the foot. In windy situations it will be necessary to place a stake each side of the tree to hold it upright, or if large stones are at hand, place a layer of them around the tree, which will not only secure the tree from moving, but prevent the evaporation, and keep the soil from becoming dry, and maintain it in that moisture and equable condition of temperature most favorable to the growth of young roots. Very many trees in a dry season fail at midsummer, after having made a fine start, from a parched and variable condition of the earth about the roots. If trees are well watered in the holes while transplanting is going on, they will rarely need it again, and we may say never, if they are mulched directly after planting.—*Country Gentleman*.

A TALK ABOUT VASES, GARDENS, ETC.



THE few remarks I shall make are not intended for professional gardeners or experienced amateurs, but rather for that large class who have gardens, but who can not afford to keep a gardener, merely keeping a "man of all work," who does not profess to know any thing about flower gardening. The lady of the house, also, upon whom the responsibility of this branch of the garden generally devolves, is in the same fix as Patrick, i. e., knows very little about it.

Vases, when properly filled, properly placed, and well taken care of, are useful and ornamental. Useful, in spots near and under trees, where it is desirable to have a bed of flowers, but where flowers will not grow in consequence not of the shade so much as the absorption of the moisture by the roots of the trees in the summer months, which leaves the ground as dry as powder.

In such a spot a vase or vases may be placed, and, being partially shaded, will not require so much labor in watering, and will keep in bloom a long time.

A moderate sized vase, if not too densely shaded, may be filled thus: A good shaped plant of *Souvenir de Chiswick* or *Sir Colin Campbell Fuchsia* in the center, edged round with three plants of variegated *Sweet Alyssum* and three of *Lobelia speciosa*.

If the location is more exposed to the sun and wind, put a *Tom Thumb* or *Punch Geranium* in the center, with the broad-leaved *Periwinkle*, both the plain and variegated variety, on the outside, with the *Ivy-leaved Geranium*. A vase filled with the new bloated *Petunias* also looks well. Another elegant and graceful plant for a vase is *Rusellia juncea*. Be sure there are holes in the bottom to let the superfluous water out; and be sure also to put stones or oyster shells over the holes to prevent them being choked with the soil. Two thirds good loam, the other third fine decayed manure and sand, will be a suitable compost.

In planting circular or oval beds, it is often difficult to find suitable plant for the center. A vase, in some cases, answers the purpose very well; a good standard monthly *Rose*, a *Fuchsia Corallina*, also will do, if it is a strong plant. For a large figure on a lawn, a *Norway Spruce* looks well, till it gets too large; the bed may then be turfed over. A circular bed, say 12 or 14 feet in diameter, on a lawn, planted thus, would be showy and effective. A good shaped *Norway Spruce*, 7 or 8 feet high, in the center; next to his round, 18 inches apart, some of the new *French Gladiolus*; next to this alternate the dark leaf *Coleus Verschaffeltii* with variegated *Geranium*, or *Cineraria maritima*, (*Powdered burn*), or the new *Centaurea candidissima*, with one or two plants of *Ageratum Mexicanum*. Finish the outside with *Phlox Drummondii*, variegated *Sweet Alyssum*, *Verbenas*, and *Gaillardia picta*.

Attempts are sometimes made to copy the English flower-garden style, in having each kind of plant in separate beds; but in this climate it is, and will be, a failure in nine cases out of ten, unless in the hands of an intelligent and experienced gardener, who understands what plants to use, the harmony and contrast of colors, etc., with plenty of green-house room to grow his plants in. Of course, a person of moderate

means may have a bed of Petunias and a bed of Verbenas, etc., but not sufficient to give the shadow of effect they produce there with their thousands of plants of scarlet Geraniums, yellow Calceolarias, and blue Lobelias. Such plants, in our arid climate, are perfectly worthless.

Plainly speaking, too many people make a wilderness where they intend, no doubt, to make a paradise. The picture of the wilderness I mean is this: Perhaps there are ten or a dozen beds around the house and on the lawn with nothing in them. About the first fine day in May, the lady spies her neighbor over the fence at work "Making garden." Well, she must do the same; so off she goes to the market or the florist, and purchases a lot of plants in full bloom. They *must* be in bloom, or she will not have them. Some of them may be good plants for summer blooming, and some may be worthless for such a purpose. By the time they arrive home it is likely they are as dry as dust; but they are turned out of the pots into the beds, dry as they are, and left to take care of themselves. But there is not half enough to fill the bed, and she does not feel able or willing to buy any more plants; and, as seeds are cheaper, the seed store is patronized, and annuals purchased to fill up the blanks. These are sown, some too deep and some too shallow; and perhaps the contents of some of the papers all in one heap. Perhaps not more than half of them come up; then the poor seedsman is blamed for selling worthless seeds.

Let a person visit such a place about the 1st of July. He will probably find the grass around the house a foot high, weeds in the walks, and the beds full of weeds, and half-starved, scraggy, bloomless plants, some not tied up at all, and those that are perhaps tied to small bean poles with pieces of old rags, instead of twine or matting.

Now this, I am sorry to say, is not an exaggerated or overdrawn picture. There are plenty of such places to be found in the country every year.

Now it was not intended, I know, by the occupants of these places, in the spring, that their garden should run riot in this way, and assume such a desolate aspect; but so it is. But as no beneficial results emanate from condemning and pointing out the errors of others, unless we are prepared and willing to suggest or substitute something better, I will endeavour to give a few hints, which possibly may be of some

little service to beginners. In the first place, I would say, *do not attempt too much*; what you undertake to do, do it *intelligently* and *thoroughly*. If your means will not permit you to employ a competent person to attend it, or you are not willing or able to work yourself, why, do not waste your money in making half a score of flower-beds, and half a mile of paths to be kept clean; but purchase a few good flowering shrubs and evergreens, and have them judiciously placed around the house and on the lawn, and keep the grass closely cut, the edges of the walks neatly trimmed, and kept free of weeds. Such a place always looks respectable and inviting, even without a bed of flowers to be seen. By no means would I propose to banish the flowers; but have no more than what you are willing and able to take care of; they will not take care of themselves.

A family of well-bred, well-trained, and well-educated children are a source of pride and pleasure to their parents, and also to their friends; it is so with a well-planted and well-kept flower garden. The amount and degree of pleasure derived in both cases, depend upon the care and attention bestowed on them.

It is surprising what satisfactory results can be obtained with a very small outlay of money, when judiciously expended and applied. I know places where the occupants of a small place have expended \$100 in the season for plants, labor, etc.; another party in the same place would not spend \$50, and yet the place would be more attractive in every way. The effect produced in a flower garden depends very much on the way the plants are arranged as regards height, color, etc. For instance: take a circular bed that will hold 50 plants, suitable plants for show in summer; give these to a novice in gardening to plant; then duplicate them, and put them in the hands of an experienced gardener of good taste to plant in another bed of the same size, and the contrast and results will astonish you.

For the benefit of those whose inexperience does not qualify them to select for themselves, I will give a list of a few good standard varieties of plants from different classes or sections:

12 DAHLIAS.—Belle de St. Lawrence, Baron Alderson, Cossack, Roy de Pontille, Summit of Perfection, Vesta, Triumph de Pecq, Triumph de Roubaix, La Phare, Yellow Beauty, Duchess of Cambridge, Mrs. Edwards.

12 HARDY HERBACEOUS PLANTS.—*Aconitum versicolor*, *Achillea ptarmica*, *Anchusa Italica*, *Campanula carpatica*, *Chelone barbata*, *Clematis erecta*, *Delphinium formosum*, *Dicentra spectabilis*, *Ænothera fruticosa*, *Iberis sempervirens*, *Phlox subulata*, *Phlox Madame Rendatlen*.

12 FRENCH GLADIOLUS.—Comte de Moray, Princes de Mont Rouge, Ophir, Neptune, Madame Souchet, Brenehleyensis, Clemens, Imperatrice, Vulcain, Victor Verdier, Le Puisseon, Napoleon.

12 ANNUALS.—*Phlox Drummondii*,

Candytuft, *Mignonette*, *Zinnia elegans*, *Hunnemania*, *Callirhoe China Aster*, *Japan Pink*, *Globe Amaranthus*, *Sweet Alyssum*, *Balsam*, *Malope grandiflora*.

12 HARDY SHRUBS.—*Althea frutex*, *Chionanthus Virginica*, *Calycanthus floridus*, *Deutzia gracilis*, *D. scabra*, *Forsythia viridissima*, *Rhus cotinus*, *Pyrus Japonica*, *Spiræa prunifolia*, *S. Reevesiana*, *S. callosa*, *Weigela rosea*.

Of course, *Verbenas*, *Petunias*, *Chrysanthemums*, etc, etc., etc., must not be forgotten.

DOMESTIC ECONOMY.

FARMERS' DAUGHTERS.



WILL you allow me, through your columns, to say a few words to that most interesting class of our young ladies, farmers' daughters?

I say this, my young friends, not in the spirit of flattery, but because I really believe you to be, as a class, in real stamina and completeness of character, superior to any other. Some of you, it is true, when you are sent into the city to attend school are very foolishly ashamed to have it known that your father is a farmer, unless you can make it appear that he is a wealthy one, so that you have not been obliged to assist in the daily labors of the farm. This appears very surprising to those who take a sensible view of things, and argues so little sense in this class of our young folks that I will pass directly to those who are in the habit of helping to milk the cows, when it is necessary, and who find it a pleasure rather than a task, to be foremost in the preparation of that most delightful meal—a farmer's breakfast. To such as daily lend a cheerful hand to the duties of their daily lives, and who are not mortified at the rosy cheeks they bring into the homes of their village cousins, I would say: Improve to the utmost all the privileges that have fallen to your lot, and make the most of your daily and intimate acquaintance with Nature.

I will say to you, what I would not say to your city sisters, that it will do you no harm to spend an hour, now and then, in the woods, building cloud-castles, dreaming, romancing, or what you will. It does not hurt a true farmer's daughter to be a little romantic. Among the healthful in-

fluences that surround her, and the busy cares of her life, there will be little danger of her becoming either "lackadaisical" or morbid, and such reveries, besides being very pleasant, will add a nameless charm to a character which might otherwise, from the force of circumstances, become too entirely practical.

Above all, do not think, those of you who are deprived of the facilities for education that others enjoy, that you are justified in remaining ignorant. There is scarcely one of you who has not some friend whom you could apply to mark out a course of reading and study suited to your age and attainments. Such a system, though sometimes wearisome and discouraging, like a tedious journey on foot and alone, will in the end, if perseveringly carried out, compensate you as richly as the delights of home and friends repay the way-worn traveller for all the hardships he has endured. You will feel yourselves at home among cultivated and educated people, and the fruits of knowledge will be all the sweeter for the exertion that has been necessary to attain them.—E. P., in *Wisconsin Farmer*.

CARE OF WINTER GARMENTS.




POSSIBLY, by the first of this month, flannels and woollens not wanted during the summer, may be packed away. By proper care, moth will never trouble you; we can vouch for this from long housekeeping experience. All woollens not in use should be put away in bags, old pillow cases or papers, and have a place by themselves, where plenty of tobacco leaves should be laid among them. If you are in the vicinity of a tobacconist, you can procure the

rough leaves and stalks at a trifling cost, or you can raise from seed what you need. One lot, if put up every fall, will last a number of years. Put it into your yarn bag, stocking bag, and your bags where you keep woollen pieces distinct from others. It is well to have a large chest or box for putting away woollens, then in an old pillow case or bag, fold each individual's garments by themselves— with the tobacco between the folds. Overcoats and cloaks should be folded neatly and pinned in any piece of old cotton cloth. Furs, too, may be put up in tobacco; a more sure way for these is to take brown paper or strong newspaper, in which there are no breaks, and paste the edges together firmly, slip the furs and tobacco in, and then put them in bags and hang up or lay on shelves where they will not be crushed.

If moth once get into a house it is difficult to eradicate them; therefore keep them out. Don't allow woollen pieces or bits of fur to be tucked away or lie tossing about closets or garrets. If they are of no account, so much the better reason for taking care of them, unless you wish to propagate a crop of moth to perforate your best cloak and your husband's Sunday coat. Have an especial bag for them, well perfumed with the fragrant weed, or else send them right out to the compost heap; they will help make the peas grow. Have plenty of tobacco leaves in your bag of carpet rags, and if you have a carpet not in use, put the leaves between and pin in an old sheet. Blankets, too, should be thus carefully put away. To destroy vermin is the only possible good use to which this weed can be put.

In the fall, take out your woollens—save your tobacco, no matter how fine it crumbles, for next time—and hang the garments out on the line to ventilate.

TO WASH FLANNEL WITHOUT SHRINKING.

 TAKE a strong suds and put in your flannel or white woollen stockings, while the water is boiling hot. Then squeeze and pound them with a pestle till the water is cool enough to put your hands to the work. You will find that there is little need of rubbing. Rinse in water as hot as the hands will bear. If there is a little soap remaining in the rinsing water, it is all the better. The sooner they are dried the less they will shrink. This method, from an old house-keeper, is sure to prove just the right way, if strictly followed.—*Plowman.*

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