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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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Pupil of the Royal Agricultural College of Cirencester, Gloucestershire, England,
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NOVEMBER, 1866.

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EDITORIAL DEPARTMENT.

TRIAL OF PLOUGHS AND PLOUGHING MATCH.

THIS grand trial, which has been so long looked forward to by "crack" ploughmen and agriculturists generally throughout the Province, came off yesterday on Logan's Farm, in presence of a large assemblage of farmers from all parts of the Province. The day was all that could be desired, and the ground, to our unsophisticated eye at least, in capital order. The field, during the operations of the various contestants, presented a beautiful sight, and must have delighted the hearts of the practical men present. The ploughing match was divided into two classes, viz:

1st Class—Open to all Ploughmen from all parts of the Province. Six Prizes. 1st, \$50; 2nd, \$40; 3rd, \$30; 4th, \$20; 5th, \$15; 6th, \$10.

2nd Class—Open to all Ploughmen from all parts of the Province under 21 years old. Six Prizes. 1st, \$40; 2nd, \$30; 3rd, \$20; 4th, \$15; 5th, \$10; 6th, \$5.

There were 34 entries for men, but only 25 came forward; of these two or three gave up soon. There were fifteen entries for young men under twenty-one, of whom two left on account of the unfavourable character of the ground on the ridges to which they were assigned by lot. The work done by both classes was very good, and some of it first-rate. There were entries from Chateauguay, St. Therese, St. Laurent, Pointe Claire, the vicinity of Granby, and other places far and near. Some of the teams were very heavy, others comparatively light, and others very unequal. The ploughs were all iron or steel, of the Scotch pattern, and one of them, belonging to Mr Logan, farmer, was furnished with a pair of wheels, a novelty in this part of the country, which attracted attention and remark. About a third of the entries were French Canadian names.

The following are the winners of the different prizes:

1ST CLASS.

- 1st Prize—Xavier Gauthier, Montreal.
- 2nd do A. Norman, Riviere St. Pierre.
- 3rd do J. Kennedy, Montreal.
- 4th do Thomas Hodge, St. Laurent.
- 5th do James Muir, St. Laurent.
- 6th do A. Vannier, Cote St. Paul.

2ND CLASS.

- 1st Prize—Geo. Miller, St. Eustache.
- 2nd do R. Muir, St. Laurent.
- 3rd do T. Smith, Montreal.
- 4th do Z. Prudhomme, Montreal.
- 5th do D. Smeall, St. Laurent.
- 6th do W. Scott, Cote St. Michel.

The trial of implements gave the following results:

Ploughs for Light Soils.

- 1st Prize—M. Gregoire, St. Ours.

Ploughs for Heavy Soils.

- 1st Prize—Frs. Irving, Montreal.
- 2nd do Wm. Martin, Lachine.
- 3rd do Wm. McGrath, Chateauguay.

Threshing Machines.

- 1st Prize—M. Moodie, Terrebonne.

Cultivator.

- 1st Prize—M. Moodie, Terrebonne.

ADVICE TO NEW BEGINNERS.

IN the first place, spare no pains to establish for yourself a good character for honesty, punctually, industry and economy. If a man's credit is good, and he is in want of the loan of a few dollars, to carry on his business to a better advantage, he can readily get it; but if otherwise, the lender will keep his money and the borrower may do as he can. Never make a positive promise to pay money, or do anything else on a certain day, without some proviso. Use all endeavors to meet every engagement punctually at the time. Avoid as much as possible all jarring or differences with others; if they do arise, compromise the matter, even at some sacrifice, if it can be done; if not, leave it to a reference, and there let it end. Be particularly careful to guard against being concerned in law-suits; in most cases it is better to give up the claim than to go to law about it. It is easy to get into law, but oftentimes very hard and expensive to get out of it.

If your capital is small, begin business on a moderate scale, and as your gains and experience increase, your business may also be increased. Let speculating very much alone, and be contented with the slower but more certain profits of regular business. Avoid entirely all visionary speculative schemes, that, like the *morus multicaulis*, hold out a prospect of rapid accumulations,

and making an independent fortune in a short time. But see the result; all a piece of deception, attended with the loss of much money and trouble.

If your business is farming, have your work so arranged as to change from one thing to another as little as possible in the same day; do one thing at a time and finish that before beginning another; and always remember, that if a thing is worth doing at all, it is worth doing well. Let there be no hurrying and driving of hired help, to get as much work as possible out of them in a day, nor pinch them down to work for less than common wages; there is nothing gained by it but the name of a close-fisted, hard master, and perhaps a little addition of ill-will.

Stay at home, and see to the work yourself, that it is done properly and in the right time. Deal fairly, and pay in cash or short credits; settle with all those you deal with at least once a year. Keep fair accounts of debt and credit, so that you may know at any time how your affairs are going up.

If you borrow anything of your neighbor, be careful that it is not injured, and return it as soon as you are done with it, and make the same terms with them when they borrow.

Be accommodating, for its costs but little, remembering that you may yourself be placed in difficulty.

Have a place to put all your tools and implements, when not in use, and then you will know where they are, when wanted to use again. How often do we see ploughs, harrows, etc., left in the corner of the fence where they were last used.

A man will never make a poor farm rich unless these small matters are attended to.

If there should be any new-fangled project got up, (and there is scarcely a year passed without,) for the purpose of improving land, or making money faster and easier; if you are disposed to try them all, do it on a small scale, and then if it should prove blank, as they most commonly do, there will not be much loss; but if it succeeds, try it again, as one experiment in farming operations does not establish a fact.

I approve of farmers trying experiments on a small scale, that looks likely to be beneficial in raising crops, or improving land. There have been valuable discoveries made thereby, and perhaps as many others the result of accident.

Such has been the experience of one who spent a long life devoted principally to the cultivation and improvement of the land; one who has practiced what he has laid down in the these essays, and whose observations of the practices of others, has confirmed his belief, that no man will ever make a good farmer, in any other way, save by his own experimental knowledge.—*German-town Telegraph*.

LIBERALITY IN FARMING.

IN this art, and almost in this art alone, "it is the liberal hand which maketh rich."

Liberality in providing utensils is the saving both of time and labor. the more perfect his instruments, the more profitable are they.

So also is it with his working cattle and his stock. The most perfect in their kinds are ever the most profitable.

Liberality in good barns and warm shelters is the source of health, strength and comfort to animals; causes them to thrive on less food; and secures from damage all sorts of crops.

Liberality also in the provision of food for domestic animals is the source of flesh, muscle and manure.

Liberality to the earth, in seed, culture, and compost, is the source of its beauty.

Thus it is in agriculture, as in every part of creation, a wise and paternal Providence has inseparably connected our duty and our happiness.

In cultivating the earth, the condition of man's success is his industry upon it.—*Josiah Quincy*.

FARMING DOES PAY.

I KNOW a farmer who, a short time ago, was not worth \$500, who now owns a farm worth \$1500, and has Government bonds to the amount of several hundred dollars. I know three brothers, who hired farms contiguous to the writer's who, within a few years, have from \$2000 to \$4000 each. I know a young man who, some two years ago, hired a farm and gave his note for \$500, for the stock and farming tools, who, the first year, cleared enough to pay the note, and had some hundred dollars left. I know another who has lived on hired farms, and brought up a large family of children, and educated them well, who last year bought him a farm, with the improvements since made which cost \$2500, and has money left. I know

another, who, when a boy, was poor, worked out at farming by the month, saved a little money, purchased a farm on credit, and by his own industry is now worth \$30,000. I know another who some years ago, bought a farm, paid for it by farming, built a house that cost \$2,500 or more, and is now out of debt and worth not less than \$7,000. He has a son of more than com-

mon intelligence who has done as his father did, purchased a farm, and is making money fast, and what is better, married a handsome, smart and intelligent Massachusetts "schoolmarm," for a wife, who will certainly insure his fortune. All of the above farmers live about one and a half miles from the writer, who also finds that farming does pay.—*Cor. Boston Cultivator.*

FARM OPERATIONS.

CULTURE OF BROOM CORN.



UCH depends for success on the character of the soil. It should be rich, friable, well-drained, and free from stone, so as to admit of easy cultivation. Alluvial flats frequently meet these requisitions—hence the success which has attended the culture of this crop along the borders of the Connecticut river, the Mohawk and the Genesee. It often succeeds well on the Western prairies, where the soil is not too porous in character. Fresh prairie, as well as newly reclaimed low ground, does not so well as after a few years cultivation with other crops. As the soil should be quite rich, the application of old manure answers an excellent purpose; or if fresh manure is used, it should be finely broken with the harrow before turning under. A dressing of unleached ashes, applied broadcast, at the rate of some twenty bushels per acre, or two or three times this amount of leached ashes, has a good effect on broom-corn. If the same crop has been planted the previous year, the stalks should be turned deeply in with the plow. Successive crops may be taken from the same land without injury, if the broom-corn is cut before the seed form, as is frequently practiced. The whole surface should be made fine and mellow, and the rows made straight, either by a good marker, or with the horse-drill, placed in hands of a workman who has an accurate eye and a steady hand.

The time of planting varies with the latitude and the nature of the soil. It is usually done about the time of common corn-planting; but on soils of mucky or porous character, like drained swamps, which are more liable to late frost than uplands, planting should be some days later. The seed is planted either in drills or in hills. If the soil has previously been kept perfect-

ly free from weeds, hand-hoeing will not be required, and drills may be adopted; but as most ground is more or less weedy, hills will be better. Broom-corn is usually planted two or three times as thick as common corn, or in rows about three feet apart, with hills twenty inches or two feet in the row, and about eight stalks in the hill. If planted more thinly, the stalks are coarser and the brush not so good. The seed being smaller than common corn, should not be planted as deep—one inch—except on very porous soils. One peck to the acre is about the usual quantity of seed used, which will leave some chance for thinning out the hills. Some cultivators use more seed and thin out more freely. This requires more labor, but gives a more even and perfect crop. Different varieties differ in size; the larger and taller sorts being cultivated in New-Jersey and farther south, and requiring more room than the smaller northern varieties.

It is usual to pass the cultivator about three times between the rows, and the hand-hoe two or three times, as weeds require. A better way is to keep the cultivator running every week or even days until the plants have grown so tall as to preclude it. If the soil is as clean as it should be, but little hand-hoeing will be needed, and cultivating with the horse will be cheaper and more efficient.


The crop is taken at two different periods—before the seed forms or while it is yet green, which gives the best brush: or when the seed is in the dough state, which is often most profitable when there is a good market for it—the price of which sometimes varies from half a dollar to three or four dollars a bushel. Two different modes are adopted in securing the crop—one is to break the stalks down horizontally some two or three feet from the ground, laying over two rows together, forming a sort of table, and

after a few days to cut the brush; and the other is to cut it without breaking down, throwing it on the ground for few days if the weather is dry. Different modes are adopted for the remainder of the process—sometimes the brush is piled in the field, well protected by stalks, while others draw it immediately under sheds, and lay it on poles or rails for drying, which is doubtless the best. Two poles placed horizontally at suitable distances apart, support a stratum of the brush spread evenly about two inches thick. A building, the size mentioned by our correspondent, economically filled, with sufficient spaces (or several inches,) between the layers for the free circulation of the air, would hold three to four tons of the brush, or what would be raised on six to twelve acres.

The seed is separated from the brush by a sort of comb or hatchel made of large elastic steel teeth. Where large quantities are raised it is done by horse-power.

The profits depend entirely on the management. If the soil is in excellent condition, and is kept so by thorough cultivation, and a good market is secured, the crop often sells for \$50, and sometimes \$100 per acre. Here, as in all cases where a rich soil and superior management are required, there is more profit with success, than in raising ordinary farm crops, while want of success is attended with greater failure. It is so, for example, in raising tobacco,—which however is an exhausting crop, while broomcorn is not at all so, if the seed does not form. Broom-corn has another advantage over tobacco,—namely, in being employed to render cleaner and neater every room as the dwelling, while the tendency of tobacco is to pollute and render offensive whatever it comes in contact with—*Country Gent.*

MAKING MANURE.

 It is one of the great mistakes of American farmers to neglect, in a great measure, the manufacture and use of manure. More attention ought to be paid to this branch of farming, for it is, in reality, the main point on which the farmer's permanent success or failure depends. The man who takes no pains to make or save manure, will not find farming a very profitable business. But it speaks well for a farmer, and I always regard it as an earnest of his full, complete success, if he has large and well worked compost heaps.

It is no use in these days of high prices of produce and labor, to follow the old fashioned method of cropping land without manure. You must put something on the land, in order to have it return you abundant and profitable crops. Instead of wearing out our land, we ought to be improving it. We ought to hasten, and not retard the time, when "the desert shall rejoice and blossom as the rose," And manure is the agent which, with well directed labor on the part of man, is to produce this state of fertility, where the land is now barren and unfruitful. In fact, its importance to the practical farmer can hardly be overestimated. There is no danger of manuring land too much, provided the weeds, which almost invariably spring up in rich soil, when it is plowed, are kept down by proper tillage. Very few farmers have stable manure enough to keep their land in good condition. Nearly all will be obliged either to buy manure, let their land degenerate, or by composting, manufacture a good fertilizer. The first is, as a general thing, altogether too expensive for the majority of farmers; the second is more unprofitable still, while the last will be found safe and profitable for every farmer to do; but some farmers may ask, what they shall use for this purpose? I answer, *everything* that can make manure. On farms where muck is plenty it should be freely used, as it is one of the very best materials with which to manufacture manure. Draw it into the the barnyard, and let it lie a year. It should be plowed two or three times during the summer, and thereby mixed with the droppings of the cattle. Put some also in the hog-yard, and the hogs will work it over, and in the course of a year make good manure. Muck is a good absorbent, and one of the best uses to which it can be put, is to use it instead of straw as bedding for cattle. Except in very cold weather, when it would freeze, it would absorb the liquid manure and furnish an excellent fertilizer. This is an important point, for the liquid manure which is so often wasted is very valuable.

But if muck is not to be had, something else should be used to supply the deficiency. Turf-loam that is free from stones, and road scrapings should be put in the yards. Leaves should be gathered in the fall to be used as bedding. This can easily be done just after a rain, as they will then stick together so that they can be raked and pitched on a waggon. Straw is also a good ma-

terial to be used as bedding. Coarse grass will answer the same purpose, and may also be thrown into the yards where it will soon decay. It would pay to dig a large hole somewhere near the house, but of course out of sight, into which all refuse from the house could be thrown. Muck should occasionally be thrown in, soap-suds may be turned on, and plaster should be freely used. But I have neither time nor space to enumerate more. There are materials enough on every farm from which to make manure, and I advise every farmer to make the best use of them he can.

TOP-DRESSING LAWNS AND MEADOWS.

TOP-DRESSING lawns and meadows in spring seems still to be in vogue, when, to any thinking mind, it must be obvious that they lose three parts of the strength of it by strong sun and March winds. When top-dressing is to be done, fall is the proper time to do it. At that time all the strength of the manure (liquid) is washed into the ground. It also serves as a protection to the grass, and the sun will not burn it up, as is the case in spring; but in either case it is generally a waste of manure in the manner that it is applied. When top-dressing is necessary, it should be done from the compost heap. This compost heap retains all the ammonia from the decomposed vegetable matter and dung fresh from the stables. All this ammonia evaporates. When we use manure to plow in, we only spread as the plow proceeds. This in a great measure saves the ammonia. Those to whom manure is an object, (it should be to all,) should sprinkle it as they make it with charcoal dust. If they have not that, use ground plaster, which will absorb all the ammonia.

Those who use manure for top-dressing, should have a tank to receive all the water closet and suds. In the spring have a hogshead, and pump this into it, and have a box, of tin, three or four feet long and six inches wide at the end, and go over the lawns and meadows. This is much better than any barn-yard manure, and no expense. If they had to pay from two and half to three and a half dollars a load for manure, they would adopt it; but in nine cases out of ten this valuable manure is allowed to run into the common sewers—in fact, it is generally only thought of as getting rid of it in the easiest way. Try half an acre with stable manure, and you will find the credit side to the tank manure.

Another good top-dressing is this: Flour of bone—that is, bones, ground as fine as plaster. This on lawns is a fine fertilizer, and bone dust in any shape is one of our best manures for grass—flour of bone for lawns, as it will not interfere with the scythere or mowing machine. I speak of it as a top-dressing for immediate effect. Coarse bones are better when you are laying down your lawns or meadows, and it will pay to use either, as they last much longer in their effect. When applied they should be lightly harrowed in. The great drawback I fore see to this flour of bone is, that it so easily adulterated, which will be done, the temptation being so strong. There is no fertilizer that I should use so much (except guano) if it was not for that reason. To get it genuine will be the main object, and how long that will be is a question; even what is now called fine bone dust, it is impossible to get unadulterated. For that reason I always use the coarsest that I can get, as I can then see what I get, and if I want it fine I break it.

They cannot adulterate coarse bone, and to prove it you will always have to pay more for coarse bone dust than you will for fine. I would advise some manufacturer to make pure flour of bone and charge according to its worth, and not adulterate, and he will find that it will pay him and the consumer. Genuine will pay to use; adulterated, at no price.

I have tried all the specialties of the day in shape of manure and proved nine-tenths of them humbugs, which will be seen by referring to *Co. Gent.* Peruvian guano, when properly applied, is the only fertilizer that can be depended on. The others are generally what I term fertilizers to cheat the public and enrich the manufacturers.—*Country Gent.*

THOROUGH CULTIVATION.

THERE are some facts stated by Dr. Voelker in a lecture on the atmospheric nutrition of plants before the Royal Agricultural Society, as to the importance of aerating and pulverizing heavy soils, in this point of view. But one of the difficulties met in their cultivation is that of performing it exactly at the right time. If clayey land is plowed when too wet, it is next to impossible to reduce it to good order by after treatment; and if too dry, it is an exceedingly laborious task to do anything with it at all. The necessity of con-

stant watchfulness on the part of the farmer is never greater than in the exercise of due judgment as to the time, as well as of sufficient diligence in the amount, of the culture he gives his land.

Let us briefly state some of the advantages of thorough cultivation. It involves :

1. The mechanical pulverization of the soil, giving a better seed-bed, and making the particles more accessible to the action of the roots.

2. Better drainage, and at the same time better ability to withstand drouth, the soil being moist and mellow where it would otherwise be baked and hard.

3. The co-operation of the atmosphere in farther decomposing the comminuted particles of soil, and setting free the mineral elements of the growing plant.

4. The absorption from the atmosphere of a greater portion of its ammonia and carbonic acid for the direct nourishment of vegetable life.

5. The increased effect of manures, from their more complete intermixture and consequently more perfect action.

6. The cleansing of the land from weeds, which not only abstract the nourishment due to the growing crop, but also generate successors, continually multiplying themselves from year to year.

7. The better condition of the field for machine work ; it dulls the knives of a reaper or mower, and leads to frequent breakages, to cut through the clods on a roughly seeded field.

It should not be forgotten how efficient an agent in the pulverization of a heavy soil is the alternate freezing and thawing of winter. By autumn ploughing to effect this, more can be accomplished than by much labor otherwise applied. Under-draining also contributes greatly to the same end. And while much that has been said above applies especially to heavy lands, it must not be forgotten that it has a wider bearing. "Sandy loams," says Robert Russell, "are benefitted more than any other class of soils by tillage, which increases their absorbing powers.—These qualities fit them especially for turnip husbandry.

So also in America the sandy loams are well suited for maize and its culture in summer. Deep cultivation, more especially in dry climates, is a most important means of increasing the retentive and absorbent qualities of light soils. The benefits of cultivation are apparent from the fact that

grasses on sandy loams are liable to be scorched by the drouths of summer to a greater degree than the turnips in a well drilled field."

AN EXPERIMENT AT AN AGRICULTURAL COLLEGE.

BOOK FARMING, BY H. C. M.



We have, in some experiments made at the Michigan Agricultural College something better than a mere mathematical calculation of the exhaustion of the soil a given crop, based on uncertain chemical analysis, or a gossipy article on

hay, in the form of exact facts or science in the application of manure as a top dressing to mowing wands. The land was stocked down with oats, timothy and clover without manure, and in 1864 and 1865, four crops of hay were taken off the land and carefully weighed,—clover predominated in all the crops. The dressing is applied between the 5th and 10th of May, 1864, and the land divided into eight lots. Lot No. 1 received no manure, and yielded during the two years, 7354 pounds of hay. The 2d lot dressed with plaster, at the rate of two bushels to the acre, yielded 11,506 ; therefore, the application of two bushels of plaster, alone, increased the crop in two years, 4152 pounds. The result of the four crops on the eight lots was as follows :

- Lot No. 1. No manure 7354 pounds of hay.
- Lot No. 2. Two bushels plaster per acre, 11,509 pounds of hay.
- Lot No. 3. Five bushels of wood ashes per acre, 11,305 pounds of hay.
- Lot No. 4. Twenty loads pulverized muck per acre, 12,036 pounds of hay.
- Lot No. 5. Twenty do. do. do. and three do common salt, 12,671 pounds of hay
- Lot No. 6. Three bushels common salt, 11,538 pounds of hay.
- Lot No. 7. Twenty loads horse manure, 12,389 pounds of hay.
- Lot No. 8. Twenty loads cow manure, 12,231 pounds of hay.

The reader will observe that the plaster was applied in the interior, where the plaster is generally considered to be more beneficial than on the seaboard, and also to a crop in which clover predominated. How long plaster would continue thus to operate is a question unsettled. As plaster is mainly chemical in its action, and not strictly a fertilizer, it has been found that after having been applied for a series of years, its good effects cease, unless other manures are applied. Its effects on old dry pasture and and clover lays, and dry land, are often

wonderful. As to the ashes, all alkalies hasten the decomposition of the organic and inorganic elements of the soil and cause to be prepared more rapidly the food of plants, but they are not to be relied upon as permanent fertilizers, like animal and vegetable manures. They hasten the preparation of plant food and expose it to be more readily consumed by vegetation; therefore, unless adequate returns are made to the soil in other manures, the land in time becomes exhausted of its nutritive elements in proportion as the crops are increased.

Common salt, (chloride of sodium) entirely different in its elements from plaster, (the sulphate of lime) has long been known, when applied at the rate of not more than five bushels to the acre, to lands not dressed with salt by the spray or mist from salt water, or containing sufficient salt to increase the productiveness of a soil deficient in salt, and also to be destructive to insects. Experiments with salt are contradictory—but harmonize in one respect. When salt is applied in the interior beyond the influence of the salt spray or clouds of mist from the salt water, often carried by strong winds many miles inland, it is always beneficial—so it is with plaster. Its application on seaboard is not so beneficial as farther inland. During the great easterly storm, in 1816, the glass in the easterly windows of houses became encrusted over with salt twenty miles from the ocean.

Neither horse manure or muck used alone, are advisable as a top dressing. They lay too loose upon the surface, dry up, lose their strength and do not settle down soon enough about the grass roots—but the best method is to compost the horse and cow manure, when fresh, before any of their ammonia has escaped in the process of composition, and take one part horse manure, two parts peat and one part loam, thus the productive value of each will be increased—and spread just before the grass starts so that the manure may soon be protected by the grass from evaporation—therefore, the above experiment does not settle the true value of animal manures compared with the other substances used, but only their relative value as used in the manner they were.

If the excrements of the cow and horse are applied as a top dressing, in a green state, there must be necessarily a great waste of their strength by evaporation, and if not used, until they have rotted down to a fine condition, without being composted, suited to the purpose of top dressing, there must

have been a waste by the escape of those gases during decomposition, which gases, if saved by composition, the nitric acid, &c., would have made a treble bulk equally good, which constitute the value and strength of these manures,—therefore, these manures should either be composted when green and strongest, or be immediately applied to and mixed up with the soil, before any of their strength is lost, during fermentation and decomposition. The reason why old well-worked compost equals pure manure in its effects, is that nitric acid is accumulated according to its age and work, particularly in hot weather. The manure alone can neither absorb or fix the ammonia or nitric acid—more material is necessary to do it.

When our agricultural colleges get fairly into operation, we may hope to see agriculture become a more exact science. The application of science to practical agriculture, should be made with judgment and great discrimination, as great as the astute lawyer practices in applying the principles and science to the case before the court. Some farmers complain of the agricultural papers and scientific treatises on agriculture, because they cannot apply and practice upon every principal advanced; being unable to do this, they decry book farming, science and colleges,—when every man of common sense and observation, with a decent common school education, should know enough to know that in a whole volume of the soundest principles and maxims of the law, there may not be more than four lines applicable to the case in hand. The farmer in New England or Georgia, who expects that everything which he reads in a journal, or in an elaborate work on practical agriculture, must apply to his own case and circumstances, or be useless, is as unwise and indiscriminate as a lawyer would be who should attempt to enlighten the court about his case, by taking his whole library into court and reading it continuously, volume after volume, to settle the question, what is due notice to an endorser of a promissory note. The lawyer does not decry book learning, or the science of the law or denounce the schools, because every principle laid down in his thousands of volumes, does not apply to the case in hand or his general practice, but he studies his books and seeks to find such principles as do apply, and failing in this, he adopts general principles and reasons out from them the desired result. The physician does not burn his library and decry medical science, colleges, and the learning of

books, because but one, or none, of the ten thousand remedies and recipes found in his books apply to the case of his present patient—no, he is progressive, willing to be taught by the experience of the present and the past.

An abstract experiment in medicine, in agriculture or in mechanic arts, whether witnessed, narrated, published in a newspaper or printed in a book, is equally *practical* and far more instructive and useful when published—yet there are many of them very wise and violently practical men, who among farmers, decry book farming and agricultural science, and yet, are very eager and curious to learn how their neighbor has been so much more successful than themselves with a given crop, and when the method of his success is published, and desired information given, they shout book farming! book farming! and plod on again in their old slipshod ways just as if the farmer alone, while all other classes, the lawyer, the physician, carpenter, architect and engineer, find practical wisdom, aid, science and professional influence in books, journals and professional schools, can learn nothing from the experience of the past, or be enlightened by the more intelligent, enterprising and successful among agriculturists. A little learning is a dangerous thing to the farmer, while other classes outrank him from its ennobling influence—knowledge is power to the weak.

THEORY OF LAND DRAINAGE.



PLANT, though spreading its roots to a certain distance all around it in the soil, is stationary, and must have its food brought to it. That is the first main fact on which the need depends for a current of water through the land. Water, a powerful solvent, brings substances out of the air which the plant requires as food, and these substances increase its powers as a solvent of other matters in the soil which the plant also needs as food. Moreover, water brings from the air materials of use in the soil in manufacturing food for the use of plants. On all these grounds, then, it is of importance that waters should go through the soil after going through the air. It becomes laden with vegetable food by passing through the air, and it becomes still more laden with vegetable food by passing through the soil, till, when traversing the soil, it passes stationary roots, and enters them, and feeds the plants to which they belong. And

there are special reasons why rain water should be induced to pass through the soil rather than lie stagnant on it. In the latter case it is not only useless to the plant, but it is directly mischievous. By evaporation it cools the surface, whereas by percolation through the land it carries the warmer temperature of the surface into the subsoil; and of what value this is to the growth of crops may be gathered from the experience of the last autumn, which has been so productive of growth in our pastures to so unusually late a season—not so much from the increased temperature of the air during November and December, which has been only about two or three degrees above the average of the last thirty years, as from the increased temperature of the soil and subsoil at one and two feet deep, which has been five and six degrees above the average of the best thirteen years during which observations have been made near London.

And not only is it of importance that the rain, by passing through the land, should carry the temperature of the surface, warmed by the direct rays of the sun, downwards, rather than, by evaporating from the surface, it should carry the heat away and cool the soil; but the percolation rather than the stagnation of the water is desirable, because in the one case air is made to permeate the land, in the other it is excluded. The chemical changes which air produces on and in the soil are desirable, and result, in the preparation of useful food for plants; while, by its exclusion, substances of a poisonous nature, especially where iron and vegetable matter exist together in the soil, are formed.—*Morton's (Eng.) Farmer's Calendar.*

ESSENTIAL TO FERTILITY.

THE value of a soil does not depend so much on its actual, as its available fertility; not so much on the amount of plant food it contains, as in the manner in which it is combined and distributed in the soil. A soil, therefore, may be rich in all the elements of fertility, and yet fail in producing as large crops as it is susceptible of growing, until by tillage the relation of these elements to each other are so changed, and enabled to combine and act on each other as to become more evenly distributed in the soil, and made available for the wants of plants. No amount of manure, for instance, will sufficiently bene-



fit a clay soil, owing to its adhesiveness, by which the manure is baked up as it were, and prevented from exerting the fertilizing influence it otherwise ought, and would, until the soil is loosened up and made friable by deep cultivation. So, on the other hand, manure fails to benefit a sandy soil, as it otherwise might, because of its porous nature; here the reverse of the treatment required by a clay soil is demanded—compactness being what is needed; and plowing in of green crops, rolling, &c., help to produce this. An admixture of clay with such soils would seem to be the remedy indicated, and may be more sensible and profitable for the time being, than an application of manure.

It should be borne in mind, therefore, that a clayey soil should be made less, and a sandy soil more compact, before they will give the greatest return to the farmer for labor and manure expended. A little more attention given to this matter by farmers, would render soils of such natures much more productive than they usually are, and far more profitable; but it is not an easy matter to produce the proper changes in such soils. Plowing clayey soils in autumn, in ridges, produces excellent results, from the action of winter frosts; and the plowing in of green crops, as clover and buckwheat, freely, with the addition of an occasional dressing of manure, tend to give to sandy soils a firmer nature, and to render them much more fertile.

PREPARING FIREWOOD FOR WINTER.

I AM glad *The Farmer* has called for essays on this subject, as it is one that needs agitation, and has never been referred to as its importance demands.

I think I can say, without fear of contradiction, that not one farmer in ten takes pains to provide fuel in a suitable, or rather the best form for consumption during the cold of winter.

Every farmer who is not ambitious to be behind hand in his work, will be pretty sure to see that enough fuel for spring, summer and autumn use is prepared during the last of winter, or the leisure days of early spring, but the same provident man will in nine cases out of ten, burn green, wet wood all through the winter. He lets the supply run out, or thinks that winter being the natural wood-cutting season, to him, it is well enough to burn it as it comes from the forest. This should not be so, and it need not be so. Let him take as much

pains to see that his wood is cut and housed for winter as well as summer use, and he will thus rob winter of some of its cold by having the wherewith to heat up his house at any time, at short notice.

There is always a season in the fall and just before the early rains come on, when there is leisure for getting together enough wood to last through the coming cold term. Everything is dry at this time, and wood of poorer quality, which if wet would be valueless, can be drawn together and housed, making good fuel. This season is also a good time to go through the wood growth and pick up the fallen trees, limbs, and decaying trunks, and thus save much which could not be got after the snow falls.

This latter item is worthy of notice, for the time has to come to most of us when wood is becoming scarce, and we must economize, to be sure of having sufficient fuel, and nothing must be allowed to lie on the ground and decay, which can be put to a good use. If it is housed while dry, it will remain dry all winter, and even the smallest and comparatively poorest is good kindling.

So brother farmer, don't burn green, wet, wood, another winter. Fill up your woodsheds in the fall, and my word for it, you will be repaid by the added convenience and warmth, not to speak of the good temper of your cook and housekeeper. E. B.

MANURE FROM DIFFERENT KINDS OF FEED.

THE following table was prepared by Prof. Lawes, from actual experiments made in England, showing the comparative value of a ton of manure made from various kinds of food given to cattle:

Decorticated cotton	Indian corn....	\$6.65
seed cake... \$27.86	Malt.....	6.65
Rape cake.... 21.01	Barley.....	6.32
Linseed cake... 19.72	Clover hay....	6.64
Malt dust..... 18.21	Meadow hay....	6.43
Lentils..... 16.51	Oat straw.....	2.90
Linseed..... 16.65	Wheat straw....	2.68
Tares..... 15.75	Barley straw....	2.25
Brans..... 15.75	Potatoes.....	1.50
Peas..... 13.38	Mangolds.....	1.07
Locust beans... 4.81	Swedish turnips..	.91
Oats..... 7.40	Common turnips..	.86
Wheat..... 7.08	Carrots.....	.68

Barn yards should be well supplied with straw, if you have plenty. It will absorb the liquid, which would otherwise be lost. It will be a pleasure to know that your animals are comfortable.

HOW TO JUDGE THE WEATHER.

THE colors of the sky at different times are a wonderful guidance. Not only does a clear sunset portend fair weather, but there are other tints which speak with clearness and accuracy. A bright yellow in the evening indicates wind; a pale yellow wet; a neutral gray color constitutes a favorable sign in the evening—an unfavorable one in the mor-

ning. The clouds are full of meaning in themselves. If they are soft, undefined and feathery, the weather will be fine; if the edges are hard, sharp and definite, it will be foul. Generally speaking, any deep unusual hues betoken wind and rain; while more quiet and delicate tints bespeak fair weather. Simple as these maxims are, the British Board of Trade has thought fit to publish them for the use of sea-faring men.

BREEDERS' DEPARTMENT

SOILING CATTLE.

WHETHER soiling cattle would prove an advantage over the present almost universally followed system of pasturing, is a question which has not received as much attention as its importance deserves. In the mountainous parts of the country, where the soil is much better adapted to grazing than cultivation, the present system is doubtless the best; but on level land, while there are some objections to soiling, one of the principles of which is, the great amount of the labor necessary to make it successful, there are many advantages over the present method of pasturing. To a few of these I will briefly allude.

Farmers would not need as much land as they do now, and there would also be a great saving in the cost of fences, which is an important consideration. The cost of fences is very great, and it requires a great amount of time and labor to construct and repair them. Soiling would render the cattle more comfortable, and keep them in better condition than the common method of pasturing. Animals regularly fed with suitable food, and supplied with pure water, will be more valuable for milk, or for beef, than if obliged to run over large pastures to obtain their food and drink, from the muddy streams and ditches, which so often supply pastures with water. Soiling cattle seems to possess advantages for those who live near cities and large towns, and who sell milk. To them it is important to have a uniform quantity, in order to supply their customers regularly. In order to secure this, cows must have a uniform supply of proper food, and this in common pastures cannot be obtained.

But while there are other reasons for soiling cattle, which I have not time to

dwell on, the principal argument in favor of soiling is, I believe, the *great saving of manure*. When cattle are allowed to run at large, the manure is nearly all wasted, but if they are kept at the barn or yard, and properly bedded with straw, coarse hay, or, better still, dry muck, large quantities of manure can be made every summer. This is a point of the greatest practical importance. Without manure there can be no good farming. In order to succeed in his business, for any length of time, the farmer must have manure, and by soiling his cattle he can obtain it. "A word to the wise is sufficient."

South Amherst, Mass.

HORSE BREEDING.

THERE is evidently a great and increasing interest manifested by farmers and others, in improving the present breed of horses, which is shown, not only in the selection of superior animals to breed from, but also in a willingness to pay high prices for such services, that once would have seemed fabulous. Any facts, therefore, of value, calculated to throw light upon a subject so important to stock raisers, may be useful as well as interesting.

The present breed of horses in this country originated from stock imported from England, in which country the native breed of horses had been improved by successive crossings with those of German, Spanish and Arabian blood, in the order named, until England possessed, what she still claims to have, the finest breed of horses in the world.

The improvement thus effected is to be attributed to a number of causes, among which are, indirectly, the inventions of gunpowder and steam. Previous to the invention of gunpowder, the horses were large

and unwieldy, and suitable only for carrying the knights of those days with their heavy armor. The effects of gunpowder rendering the armor useless, both that and the kind of horses required to carry it fell into disuse, and a demand was created for a higher and more active breed of horses. The discovery of steam, a few centuries later, increased this demand by still further superseding the necessity for using horses of a large size. But it is to the introduction of the race-course, and to the preserving the pedigrees of such horses as were winners in the race, more than all else beside, that we are to attribute the production of a breed of horses, alike famous for possessing the qualities of strength, swiftness, beauty, docility, courage and durability, which are found in those that are thorough-bred.

It is not necessary for farm and road purposes, that horses should be of pure blood; but it is an advantage to them to have more or less of it, according to the work required of them, as it has been ascertained from actual experience, that for all purposes a mixture of the thorough-bred is beneficial even in the cart horse.

It is a very common, but mistaken idea which some farmers have, that the largest males are the best stock getters and large prices are accordingly paid for the services of large stallions, bulls and rams, which results in deterioration of the stock, and disappointment and loss to the farmer. There are certain well defined rules, that may be found in Youatt's work on the horse, which I will quote for the benefit of those engaged in breeding and improving stock, as follows:

1st. **MUSCLES.**—The muscles and tendons, which are their appendages should be large by which an animal is able to travel with greater facility.

2nd. **THE BONES.**—The strength of the animal does not depend upon the size of the bones, but upon that or the muscles. Animals imperfectly nourished during growth, have their bones disproportionately large. Large bones, therefore, generally indicate imperfect organs of nutrition.

3rd. **ON THE IMPROVEMENT OF THE FORM.**—When the male is much larger than the female, the offspring is generally of an imperfect form; if the female is proportionately larger, the offspring is of an improved form. The proper way to improve the form of animals, is to select a well formed female, proportionately larger than

the male. The improvement depends upon this principle—that the power of the female to supply her offspring with nourishment is in proportion to her size, and the power of nourishing herself thorough the excellence of her own constitution. The size of the foetus is generally in proportion to that of the male parent; and, therefore, when the female parent is disproportionately small, the quantity of nourishment will be deficient, and her offspring disproportioned accordingly; but when the female, from her size and good constitution, is more than adequate to the nourishment of the foetus of a male smaller than herself, the growth must be proportionately greater.

To produce the most perfect formed animal, abundant nourishment is necessary from the time of its birth until its growth is completed.

The power to prepare the greatest amount of nourishment depends upon the size of the lungs to which the organs of digestion are subservient.

To obtain animals with large lungs, females should be selected from a breed of large size to be put to a well formed male of a breed that is rather smaller.

New Brunswick, N. J.

WINTER CARE OF CATTLE.

HOW many farmers there are who towards the close of winter, complain of being short of fodder, and are compelled to purchase hay at high prices to carry their stock through until pasture time. I know from experience what this is and find it does not pay.

There are two causes and also two remedies for this state of things, namely, too heavy a stock, and to wasteful a feeding. For the former, the remedy is obvious; for the latter, a great many farmers have not yet discovered a preventive, but go in the old way of feeding, in commonsquare racks in the yard, either corn fodder, straw or hay. Herd is where the loss occurs; and did every farmer know the great gain there would be in cutting up every thing he feeds, instead of feeding it whole, there would be no more complaint of short fodder. I have tried it, and find that I can winter ten head of cattle, on cut fodder, now, where I only wintered five head, last year, and, what is more, keep them in better order. I use a fodder cutter (worked by hand or horse as the case may be) and feed in the feed in troughs six feet long, eighteen inches deep

and two feet wide at the top, sloping to one foot at the bottom. My cattle eat it up clean—hard butts, stalks and all; one ordinary bundle of fodder, such as would be generally given to a steer at one meal—lasts an animal a whole day.

Another advantage is that my manure is all short, easily handled in the spring, when I heap it under the sheds, and I am not bothered by the long cornstalks all through it. Cattle prefer their fodder cut, and will eat it more quietly.

The same saving may be accomplished in the stable by cutting the hay fed to the horses, cows, &c.

They soon learn to like it better than long hay, and then they can waste none.

Let every farmer who has not tried it, and who has been worried to know how to get his cattle rightly though the winter, without buying hay, try this plan, and, if he does it right, he will never regret the outlay for the cutter. My saving of fodder in one winter, will, I think, pay for the cutter. —*Cor. Germantown Telegraph.*

FATTENING POULTRY.

It is no use to put up a skeleton and expect to make a fine, fat, tender meat fowl of it by feeding in confinement. Fattening is adding fat to lean. You must have the lean laid on while the bird is running at liberty. No amount of feeding will make a hard, old fowl tender. If a hen is over ten months old she may as well be ten years. She has passed the age for the table. She is old at ten months and ought not to be palmed off as a chicken.

Four months or at most five months is old enough to take chickens for the table, and if you take them at that age, in good fleshy condition, three or four weeks of confinement ought to bring them into first rate condition, for the table. If they are going to market they may be crowded to advantage, but for home consumption it is not needed. If you make a coop big enough for fifteen or twenty fowls and put but four or five into it, they will not readily fatten. They have too much room. To fatten rapidly they must not have room to move about freely, but simply enough to stand and shift their position. They ought to be fed three times a day. Indian meal or dough are one of the best articles of food to lay on fat. Oatmeal mixed with milk is also first rate. Either substance should be fresh mixed each time, and no more ought to be given than

will be eaten up at the time. If you give too much the bird will overfeed, or become cloyed, that is, the appetite is destroyed, and the food gets sour and if the fowl does not take a decided distaste to it, it will not thrive upon it.

Feed fattening fowls at daybreak in the morning. Cover them up warm at night and protect them from cold during the day. Feed regularly, never on stalk food. Never subject them to draughts of air. Never place them where they can see other fowls running about. In these circumstances they will fatten beautifully in three weeks and there is no known process by which they can be kept healthy after they are well fattened. Begin then three weeks before you want to kill. Calculate the number the coop will hold and fill it so full that the fowls can do but little more than stand comfortably. You can't expect to do more than put on flesh while fowls are running at large. You can't fatten. Putting on flesh is only preparatory to fattening. If you want to get the highest price in the market you must coop and feed three weeks in the manner indicated.

ON THE MANAGEMENT OF STOCK IN WINTER.

DO not pretend to say that what I may offer will be the best method of managing stock during the winter, but I give it as what has been found to be well adapted to a small farmer's situation.

The first thing in the morning after rising should be to visit the barns and see if the stock is all right and to give them a good foddering of hay. After breakfast feed again, and in half an hour turn them out, water them and cleanse the stables. If warm and sunny weather, and the yard is sheltered, let the stock remain in it, keeping cows, sheep and horses separate. If stormy or very cold, tie them up again. At noon feed with a good foddering of hay or some coarse fodder, if you have it, and water again just before sunset, feeding them with hay again to last for the night. Four times a day is sufficient to feed any stock except working oxen, which may well have an evening foddering. If possible, the barn work should be all closed up before dark to prevent the use of a lantern. Stock which is fed with provender of any kind should be fed at the second feeding in the morning.

The points to which we would call especial attention, is regularity in feeding, what-

ever number of times it may be. Stock accustomed to be fed at regular hours, are more quiet, and do better than those fed on the "just as it may happen" principle. Again, we call attention to the value and necessity of good water and plenty of it for stock. Every farm yard should have a well of water sufficient for all such purposes. He who drives his stock a half mile, or even a few rods to a brook to water, is far behind the times.

In conclusion, I will only remark, that the true stock raiser and feeder will see that his animals are treated with care and kindness. It is a disgrace to a farmer's yard to have an animal so wild as to be unapproachable, and not less so, to have poverty-stricken specimens. Feed generously, but never surfeit. Keep them in warm stables, well bedded, and perfectly ventilated, and you will have the satisfaction of knowing that you have done your best for the enjoyment and well-being of your share of the brute creation.

G. E. B., (Maine.)

MANAGEMENT OF POULTRY IN WINTER, TO SECURE A FULL SUPPLY OF EGGS.

FOWLS like most, if not all animals, yield returns according to the manner they are kept, though we will admit that a warm house and plenty of corn will not always secure a grateful return. It then becomes us to inquire what will. If we study the habits of fowls, we need not be long in coming to conclusions.

Like the human family, they like condiments with their food, and they like also a large, cheerful home or house. Give them a window or two, so that they can peer out at the snow and ice, enjoying their warm home more fully, and that the trusty patriarch may give timely notice of the approach of day, and that each hen may know her own nest, for which light is necessary.

Like the human family, their health is greatly promoted by change in their food, and this ensures a greater supply of eggs. For pepper and salt, give them lime, charcoal, gravel, &c. Boiled potatoes, buckwheat cakes, bones, and refuse meat, either boiled or raw, will not be refused. If their food is warm, it will tend to their laying. The ladies of a family can easily find amusement, if they wish, by feeding the chickens and poultry in winter, and then they will be entitled to the eggs. Besides, as we view those mute animals, dependent on our hands for sustenance, it awakens a sense of our

dependence on the great "I AM," who in wisdom has made all things,—who openeth the hand and satisfieth every living thing. Oh! that they would turn more to the study of nature and nature's works.

There is a source of amusement with it all, in observing their ways. Throw to them something that is peculiarly relished, and the chivalrous chanticleer will call his wives with great enthusiasm, and they in great haste get there just in time to see him eat it himself. Plenty of nests prepared with straw or litter, will often promote the laying in winter. Air is necessary, and the door of the henary should be left open, that they may go out and in at their pleasure on pleasant days. If any one wishes to pursue this study, many pages can be found devoted to it in *The Farmer*, by C. N. Bement, who has pursued it with much patience and intelligence. I have now passed my limits, and will only say that the study of obtaining fresh eggs in winter is worthy of more time and talent than has yet been given to it.

Aurora, N. Y.

M. S. B.

FALL-FEEDING LAMBS.

THE true secret of making sheep-raising profitable is to keep lambs growing steadily from the day of their birth until they reach full maturity. The crisis of most importance in the life of the lambs is weaning them.—They should be taken from the ewes when about four or four and a half months old, and there should always be provided for them a piece of new, fresh feed, and they should not be allowed to want for the best forage ground during the entire Autumn.

If not always convenient to provide a desirable lot for them, make up for the deficiency in fresh grass by a small daily allowance of meal, made from equal parts of corn and oats ground together. Much advantage may be derived from feeding the leaves from cabbages and turnips.

They should, if possible be, sheltered from all the heavy rains. It will take a flock of lambs much longer to recover from the effects of a drenching rain, than it will a flock of ewes. Their tender bodies have not a sufficient amount of stamina and vitality to keep up the degree of heat requisite to counteract the effects of rain, which weighs down their fleeces.

If lambs are cared for in the Autumn, so that they come to the barn in good condition, the question of wintering well is

more than half settled. *Fresh feed, a little, meal daily, and careful sheltering, will pay better now than at any other time in the life of these animals.—Mirror and Farmer.*

CRIB-BITING.

The Editor of the *Maine Farmer* records the following thoughts in regard to horses addicted to crib-biting:

“Cribbing is undoubtedly a habit rather than a disease. This it would seem, is proved by the fact that a young horse confined in a stable next to an old horse who is a cribber, will soon acquire the habit. It is very common among horses that are constantly kept in a stable, and may be caused by the animal seizing upon crib-biting as a solitary pastime, to while away the tiresome hours of stable life. Or the constant diet of hay and oats may derange the digestion, causing—as we ourselves well know—uneasiness. Or the long continued inhalation of close and impure air may disorder that part of the body which is the most sympathetic of the entire system, and thus give rise to the habit.

Crib-biting may be prevented if taken in hand during its early stages. First attend to the atmosphere of the stable, rendering it pure by careful ventilation. Place a lump of rock salt in the manger. This acts as a stimulant to the stomach, and will often enable the horse's digestion to recover its lost tone. If this does not effect a cure add to it a large piece of chalk. Should this prove to do no good, damp the food and at each time of feeding, sprinkle magnesia upon it. Maynew also recommends a large handful of ground oak back to be given with each feed of grain. Should none of the above measures prove beneficial, we should come to the conclusion that the disease was of a more obstinate nature and should treat as in chronic indigestion.”

RULES FOR MANAGEMENT OF COWS.

EVER buy a cow of a dairyman, for if he is a good manager he will sell only his poor animals.

To determine which cows are the best for keeping, try their milk separately, and weigh their butter—

—for sometimes a cow may give much milk and little butter, and *vice versa*. Cows should run dry six weeks before calving—if milked closely toward calving the calves will be poorer.

A cow newly come in should not drink cold water in cold weather, but moderately warm slop. Calves intended for raising should be taken from the cow within a few days, and they will be less liable to suck when old. Feed them first with new milk for a time, then skim milk, then sour milk, taking care that all the changes are gradual, by adding only a portion first; and gradually a little meal.

Calves well fed and taken care of, with a quart or two of meal daily in winter, will be double the size at two years they would have attained by common treatment.

Heifers thus treated may come in at two years old, and will be better than neglected animals at three, and one year of feeding saved.

Heartly eaters are desirable for cows, and they may usually be selected while calves. A dainty calf will be a dainty cow.

Heifers should become accustomed to be freely handled before calving, and drawing the teats.

They will then not be difficult to milk. Begin gradually, and never startle them.

In milking cows, divide the time as nearly as practicable between morning and evening, especially at time of early grass, that the udder may not suffer.

Persons who milk should keep the nails cut short—animals are sometimes hurt with sharp nails, and are unjustly charged with restlessness.

Old cows should be fattened at fifteen years. The dairyman, therefore, who has fifteen cows, should raise a heifer calf every year to supply the vacancy—if the herd is thirty cows, he should raise two calves, and so forth.

Heifers dried up too early after calving, will always run dry about the same time in after years—therefore be careful to milk closely the first year, until about six weeks before calving.

Spring cows should come in while they are yet fed on hay, and before they are turned to grass, which will be more likely to prevent caked bag and milk fever.—

FEEDING POULTRY.

MEALS are said to be an admirable food for fowls, or rather an adjunct food. If given regularly, it is said that they will prevent the attack of the more ordinary diseases of poultry.

Meat is said by some to be an essential food for poultry, especially in winter,

when they cannot get the worms they pick up in summer. Others, again, maintain that the habit of giving meat to poultry is productive of grave evils—the cause of many of the worst forms of disease which affect them. By these authorities it is called unnatural food, inasmuch as the digestive organs of the birds are not fitted to assimilate them. There must, we think, be some mistake in all this; for we know of a surety that fowls do eat, when they can get it, and entirely of their own accord, an enormous quantity of animal food; here it is not cooked; the game found in nature's garden is raw. If meat is an unnatural food for poultry, they certainly have a most unnatural appetite for it. Throw in one lump of meat among a lot of fowls; if not literally a bone of contention, it is something vastly like it, so eager are all to get a grab at it. We believe the habit of giving much food in a short space of time to poultry is a very bad one. If you notice their habits, you will perceive that the process of picking up their food under ordinary, or what we may call the natural condition, is a very slow one. Grain by grain does the meal get taken, and with the aggregate no small amount of sand, small pebbles, and the like, all of which, passing into the crop, assists digestion greatly. But in the "hen wife's" mode of feeding poultry, a great heap is thrown down and the birds allowed to "peg away" at such a rate that their crop is filled far too rapidly, and the process of assimilation is slow, painful and incomplete. No wonder that so many cases of choked craw are met with under this treatment.—*Mark Lane Exp.*

THE FOOD AND WINTER FEEDING OF SHEEP.



MOST kinds of farm stock can be confined all winter to one kind of food and not suffer materially from it, but such is not the case with the sheep. During their summer pasture they will tire of the best clover pasture and leave it for the bitter white weed, and if during the winter they are kept exclusively on good clover or timothy hay, they will soon gladly leave it for the coarsest wheat or rye straw, and eat the latter with an evident relish.

These facts should show us that of all our domestic animals, the sheep of all others requires a constant variation in the kind and quality of its food. There are few farmers so situated that they cannot give

their sheep the requisite change of food, and none should keep them if they cannot give them this necessary change.

Many of our practical men differ as to the amount of food required by sheep. As far as my own experience goes I am satisfied that one pound of good clover hay, half a pound of corn and two pounds of oat straw per day will keep a sheep in good breeding or stock order during the winter. With a flock averaging one hundred, I have found that during warm days in mid-winter they would not consume the above amount, but in very cold weather they would consume a little more. I often vary the feed, but give the above as the average daily feed, and sometimes feed two pounds of hay instead of one pound, and half a pound of corn, and sometimes substitute one pound of timothy hay for the two pounds of straw.—*German town Telegraph.*

WHY SCALDED MEAL IS MORE NUTRITIOUS THAN RAW.



THE nutriment afforded to animals by seeds and roots, depends upon the rupture of all the globules which constitute their meal or flour.—These globules vary in different roots, tubers and seeds. Those of potato starch for instance, are usually from fifteen ten-thousandths to the four-thousandth part of an inch; those of wheat rarely exceed the two-thousandth part of an inch, and so on. From experiments made on these globules by M. Rapsail, the author of "Organic Chemistry," and M. Biot, of the French Academy of Sciences, the following conclusions have been drawn.

1. That the globules constituting meal, flour and starch, whether contained in grain or roots, are incapable of affording any nourishments as animal food, until they are broken.
2. That no mechanical method of breaking or grinding, is more than partially efficient.
3. That the most efficient means of breaking the globules is by heat, by fermentation, or by the chemical agency of acids or alkalies.
4. That the dextrine, which is the kernel, as it were, of each globule, is alone soluble, and therefore alone nutritive.
5. That the shells of the globules, when reduced to fragments by mechanism or heat, are therefore not nutritive.
6. That though the fragments of these

shells are not nutritive, they are indispensable to digestion, either from their distending the stomach, or from some other cause not understood; it having been found by experiment that concentrated nourishment, such as sugar or essence of beef, cannot long sustain life, without some mixture of coarser or less nutritive food.

7. That the economical preparation of all food containing globules or fecula, consists in perfectly breaking the shells, and rendering the dextrine contained in them soluble and digestible, while the fragments of the shells are at the same time rendered more bulky, so as the more readily to fill the stomach.—*Selected.*

DOCKING LAMBES.

IN his *American Shepherd*, Mr. Morrill gives the following reasons for this practice :

“ But the evil consequences of a moderate length of dock, or indeed any at all, I have seen too often manifested to induce me to swerve from this practice; humanity, indeed, sanctions it. The sheep which carries a natural tail, or only half a one, is very certain not to take that care of it, in regard to cleanliness, which it ought; on the contrary, it is often seen with large accumulations of dung attached to it, and presenting anything but a tasteful aspect. But the sheep is not to be blamed for this, for, unlike all other domestic animals, it can and does void its excrements in a lying posture, and a huge tail will not be removed on such occasions without an extraordinary effort. Hence it is, concretions of dung are formed, which attract the maggot-fly, and unless a timely discovery is made by the master, the sheep dies a horrible death. Thus the life of an animal is often jeopardized, and therefore is it not humane to deprive it of so poisonous an appendage ?”

Dr. Randall says:—“ It may occur to some unused to keeping sheep, that it is unnecessary to cut off the tail. If left on it is apt to collect filth, and, if the sheep purges, it becomes an intolerable nuisance.”

ROOTS AS GREEN FEED.

A sane person would think of confining himself to a diet of one or two articles, and those of a dry nature; but would seek a variety, not only of the dry, but also green or succulent food. The brute creation, if left to their own selection, would also seek for variety.

This desire should be gratified by their owners, by providing and feeding with the dry hay, which must necessarily form a staple diet, a few roots, such as carrots, beets, turnips, etc. Being confined as they necessarily are to dry feed, an occasional feed of roots promotes appetite, gives relish and pleasure to the animal palate. A frequent feed of roots is also no small help to the grain bin and hay mow. If a given weight of grain will add more weight of flesh than the same amount of roots, a larger quantity of food per acre can be grown from the latter. Fifty bushels of corn is about the average yield; with the same cultivation, five to eight hundred bushels of mangel wurtzels may be produced. Corn and other grain having advanced, so that even at the far West (where it has often been a drug on the market) it is an object to substitute some other feed, we may hope that the longing which cattle and other stock have for green food may, in a measure, be gratified, by the raising and feeding of roots. In the Eastern States there is a greater incentive to increase the substitution of roots for grain, on account of the greatly enhanced price of the latter. Beets and carrots being better keepers than turnips, should be kept to feed later in winter, or spring. If none have been cultivated heretofore a desire for them should lead to preparation of the ground the latter part of April, or early in May, for beets and carrots, by manuring and deep plowing; sow in drills one half to two feet apart, according to the crop. In hoeing, the beets and carrots should be thinned, the former to ten or twelve inches, and the latter four or six inches apart. Most of the culture may be performed with the horse hoe. About four pounds of beet seed, or two of carrot seed per acre, will be required. All roots need rich, mellow, deep soil.

TO JUDGE THE QUALITY OF COWS.

IN order to judge of the qualities of a good milch cow, the shape and size of the animal in whole and detail should be considered, the temperament and disposition, also the strength of the constitution. If these points are well developed, the cow will generally prove to be a first class milker. Cows that “*handle well*” are always to be preferred for the dairy, as it indicates a good milker in a cow, whose skin is somewhat loose, and that will spring when pinched with the fore finger and thumb. The thigh veins should

be large, easily felt with the hand, and the udder should be capacious. It makes a great deal of difference in a milch cow, whether she be mild and gentle or not, for the milder a cow is the more milk will she give; therefore, in judging a cow, look out for a mild eye, and a placid expression of face.

BEST BREEDS OF CATTLE FOR DAIRY PURPOSES.



writer on dairy stock, in the *Mark Lane Express*, thus alludes to the breeds most in esteem in Great Britain:

"Of breeds in general use and of acknowledged merit for dairy purposes, are the Dutch, Short Horns Crosses, and the Ayrshire. Dutch cattle are of large size; prevailing color black, with sometimes a white patch over the back resembling a sheet, and are, from this, distinguished by the name of sheeted cows—They are heavy milkers, but the milk is of rather poor quality, and not very productive of butter. For this reason they are more suitable for parties who have large contracts, and supply work-houses, prisons, hospitals and other public institutions with milk, than for the ordinary farmer who has to manufacture his produce into butter and cheese. Another very serious objection to Dutch cattle is the difficulty of fattening them when past their prime, and the large quantity of food they consume in the endeavor to prepare them for the butcher. On account of these two faults in the character of this, at one time rather popular breed, they have of late years been going down in public estimation.

Of all other descriptions of cattle, Short Horn Crosses are now the most popular, where dairy business and rearing and feeding are carried on simultaneously. They are, for the most part, admirable milkers: their calves, both heifers and bullocks, can be fed-off at an early age, and, coming to heavy weights, bring large and remunerative prices; while the cows themselves, when no longer useful for the dairy, are easily fattened, and can be quickly got rid of. In the three kingdoms, but more particularly England and Ireland, this variety of cattle is to be found in every country, and on every kind of land, varying in size of course, according to the quality of the land. The same distinctive features are, however, always retained, and they attain an immense size, and give extraordinary quantities

of milk, where the soil is rich and the climate congenial to their habits and constitution.

The Ayrshire next claims attention; and it may be concluded with safety that when dairy produce is the sole object, and where the land is light and of indifferent quality, this breed is the most valuable of any. Mere size in this case is not much of an object, as the small Ayrshire is considered a better dairy cow than the larger or medium sized variety. To keep them small in size, and partly to adapt them to the inferior pastures of Ayrshire and neighboring counties, they are very moderately kept in the earlier stages of their growth, particularly in the second year.

This is supposed to add to their milking properties, and as they are generally made to produce at the age of two years, an Ayrshire cow on her native pasture is usually very small indeed. When removed to other countries, and placed upon richer pasture, they grow larger; but by doing so, the milking powers are unquestionably injured. So marked is this principle, that the Ayrshire cow is seldom found in the same perfection, as a milker, as she is to be seen on her native soil, which may be said to comprise the county from which she derives her name, and the adjacent counties of Lanark, Renfrew and Dumbarton.

There she takes her position as the dairy cow *par excellence*, and is highly and deservedly prized."

FATTENING HOGS.



FOR feeding purposes I prefer the breed known here as the "Chester County White," and to them my experience is mainly confined. I usually have my stock pigs dropped some time in the 10th month (October,) and wean them at four weeks old, after which I feed on milk and corn meal, as much as they will eat up clean, fed at different times throughout the day, say every three or four hours. My experience convinces me that it is best to feed all my young stock "little at a time, but that little often," and that with this manner of feeding they will show a much greater rate of improvement than when they consume the same amount of food in three feeds per day.

My opinion is that corn well ground and mixed with water into a thick slop, will go fully one-third farther (that is, four bushels fed in the form of a thick slop will go

as far as five fed dry,) and as I only forfeit one-tenth by having it ground (and not that when I use my own mill and horse-power) I still have fifteen per cent, clear gain.

During cold weather I mix the meal with warm or *hot* water, and in just such quantities as will form one feed; as soon as done feeding I mix that for the next feed, which when the next feeding time comes, will be found to be a thick mush, and in order to furnish enough moisture will have to be thinned with warm water.

Of course this mode of feeding only applies to the pigs when they are small and during cold weather; as soon as the weather is warm enough, the feed can be mixed with cold water and in larger quantities; but I am not sure whether it would not pay to continue the hot water all the time.


During the summer, and when fattening in the fall, I use two barrels or half hogsheads, and in this way I am able to keep the slop mixed for three or four days before I use it, and allow it to become a little sour; if the weather is cool, a little may be left in the hogsheads to assist in the souring of the next batch. I am well satisfied that four bushels of ground corn fed in this way will make as much pork as ten bushels of *unshelled* ears fed by throwing it on the ground, or too often on the manure in the pen.

I cannot pretend to account for the above by *chemical* reasoning, but no doubt some of your correspondents can, and would oblige us; for chemistry, when applied to agriculture and agricultural affairs, will go hand in hand with practice.


With regard to the amount of pork which I would reasonably expect to make from a bushel of corn, the answer would of course vary very much with the pig or breed, as also with the manner of feeding, but suppose you apply the question to me and my pigs.

Fed in the above manner, I think one bushel of meal (one bushel of corn will make one bushel of meal *after* the miller's toll is taken out) should make six to seven pounds of pork, which at present prices would cost from ten to eleven cents per pound. I have fed pigs which I thought made ten pounds of pork to the bushel of corn; but I have also fed those which did not make four, so that I would feel safe in naming from five to six pounds as the average weight of pork which should be made from one bushel of shelled corn.

THE WAY TO CATCH SWINE.

 wine of all ages and conditions, are, commonly, averse to being handled; and they manifest their disapprobation of it by squealing, kicking and fighting; and, when a number are together, of certain breeds, the pugnacity of the whole herd is aroused when we attempt to handle one of their number.—Pigs and hogs that one man can handle, should be caught by one hind leg with yne man can handle, should be other hand and arms, is around the body, and they are taken up in the arms, with thiiir back against the catcher. Large hogs should be caught, first by the hind legs, when two other hands seize hand by the ears and bristles. Now he opens his mouth, and like a stentor cries, "*murderation!*" Now have a noose on the end of a rope ready, and slip it around his snout. (Sows with pig should seldom be noosed.) In order to get the rope on the hind leg, when they are feeding at the trough go up carefully behind them and lay the noose on the floor, close to the foot, holding it with one hand, and touch the leg with a little stick, and the hog will take up his foot, when the noose must be instantly moved so that he will step in it. Now raise it above the hoof, nearly to the hock joint, and draw it tight, and he is fast. After we have succeeded in raising his leg, he is easily managed. If he is a large, strong animal, crowd him into a corner with a handspike, after his leg is noosed, then it will be easy to noose his snout.

HOW TO SADDLE A COLT.

 ET the stirrup-strap be tied up in loose knots to make them short, and prevent them from plying about and hitting him. Double up the skirts and take the saddle under your right arm. When you get to him, rub him gently with the hand, then raise the saddle slowly until he can see and smell it. Now let down the skirts and rub them gently against his neck, the way the hair lies, getting it a little further back each time, until you can slip the saddle over his shoulders on his back. Shake it with your hand moderately at first, and in a few minutes you can move it about over his back as much as you please, and take it off, and throw it on again, without his paying much attention to it. Having accustomed him to the saddle, you may fasten the girth. This requires caution at first, as the colt is often frightened when he feels

the girth drawing the saddle and making it a tight fit on his back. On this account the girth should be drawn only so tight at first as to just hold the saddle. After moving him with the saddle in this condition, the girth should be drawn as tight as you choose. The animal may now be walked

about the stable a few times, your arm resting on the saddle, and your left holding the reins on each side of the neck, and guiding him as you wish. In this way he will become accustomed to the saddle and the bridle, and you can turn him about or stop him at pleasure.

ENGINEERING DEPARTMENT.

HOW TO RAISE A LONG LADDER.



HOEVER, in fruit-picking time has had occasion to raise a 35 or 40 foot ladder, knows how difficult the operation is. Now, to obviate this difficulty, prepare a wooden pulley block, with a wheel of sufficient groove

to allow the easy passage of a half inch rope, and through the end of the block bore a hole five-eighths of an inch in diameter. Next pass a half inch rope, 50 feet or more in length, around the pulley; put a piece of the same, one foot and a half in length, through the end of the block; then, with a short ladder, mount the tree and fasten the block to a strong and convenient limb, at least twelve feet from the ground. Having done this, tie one end of the long rope by a double half hitch knot to a round of the ladder to be raised, and about two-thirds its length from the foot. Now all is ready. One person takes the unattached end of the long rope, another raises the top of the long ladder a few feet, then goes to its foot and holds it in place, while the first, with the aid of the rope and pulley, raises the ladder to the position required. Once up, it can readily be moved to other parts of the tree without danger of falling, through this simple contrivance.

Clinton, N. Y.

AGRICULTURAL MACHINERY.

The farmers of our Eastern States, compelled to till rocky and uneven lands, and used to small holdings, do not know, by experience, all of the changes which improved machinery has wrought in agricultural operations on the great western prairies. There machines do the labor of men to such a degree that the farmer's heaviest toils are lightened; and one man is enabled to achieve, with ease, the work of half a dozen.

We saw, recently, corn-field of 160 acres, on the "Grand Prairie" in the

plowing, planting and cultivation of which no man walked a step. A rotary spader, drawn by four horses, and a man upon the box, plowed the field to a uniform depth of eight inches, and gave such thorough tilth that it was not necessary to use a harrow at all. A corn-planter, drawn by two mules, one walking upon each side of the knee high corn, and driven by a man upon the box, completed the cultivation of a row at a single operation; and in the tool-house lay another machine, also to be drawn by horses, which will cut down the corn when it is ripe and lay it in regular rows, to be finally gathered by hand. But it is expected that by next year this machine will be so improved as so gather up the corn also.

When it is remembered that the farmer who follows the common plow or cultivator during a long summer's day, performs a march of from ten to fifteen miles, it will be seen what a boon is machinery which relieves him from this toil. And when we remember how scarce were men during the last four years in the West, we shall see that but for such labor-saving implements our vast crops of cereals could have been neither planted nor gathered.

The farm of which the corn-field we speak of was a part, has seven hundred acres in a single field of timothy. Of what use would this be if it had to be cut by hand? But a half dozen harvesting machines sufficed to cut it all in good time; and it will do, without "groaning," the work of half a regiment of men; patent horse rakes gather it up, and two hay-presses upon the place press it into bales fit for shipping. Seventeen and a half miles of board fence inclose a little more than half of this farm which has, as part of its furniture, comfortable sheds for 10,000 sheep, a rat-proof corn-crib, holding 15,000 bushels of corn, and extensive stabling for horses.

What machinery has thus done for the West it will do for South, now that free labour is substituted for that of slaves. We see no reason why the cotton and sugar

fields of a great part of the South should not be tilled by machinery. These fields are—in Louisiana, Mississippi, and indeed in almost the whole of the cotton and sugar region—level and devoid of rocks; and these are the only conditions necessary to the successful use of the most valuable farm machinery. The slaves, ignorant and careless, because they had no interest in the work, used only the rudest and clumsiest tools; but in the hands of intelligent freemen the rotary spader, or steam plow, or cultivator, can be used as well on the immense level cotton-lands of Louisiana, where sugar is grown, as on the prairies for corn and wheat.

Yankee ingenuity, too, will presently set itself to work to devise new implements for the more economical and rapid prosecution of such labor as cotton-picking and cane-cutting. The next ten years will witness an immense revolution in the methods of cultivating the great staples of the South, and the fruits of that change will be a greatly increased production of cotton and sugar by the help of free labor, and—what the use of machinery always brings with it—such increased rewards for intelligent labor as will prove, even to the most ignorant population, the importance of schools and the pecuniary value of education.

A CHEAP AND GOOD SMOKE HOUSE.



WESTERN New York farmer publishes his plan of a small, cheap and good smoke-house, which, as it may contain some practical hints for our own readers, we append:

No farmer should be without a good smoke-house, and such a one as will be fire-proof and tolerably secure from thieves. Fifty hams can be smoked at one time in a smoke-house seven by eight feet square. Mine is six by seven, and is large enough for most farmers. I first dug all the ground out below where the frost would reach, and filled it up to the surface with small stones. On this I laid my brick floor, with lime mortar. The walls are brick, eight inches thick, and seven feet high, with a door on one side two feet wide. The door should be made of wood and lined with sheet iron. For the top I put on joists, two by four, set up edgewise, and eight and half inches from centre to centre, covered with brick, and put on a heavy coat of mortar. I built a small chimney on the top in the centre, arching it over and covering it with a single roof in the usual way. An arch should be

built on the outside, with a small iron door to shut it up, similar to a stove door, with a hole from the arch through the wall of the smoke-house, and an iron grate over it. This arch is much more convenient and better to put the fire in, than to build a fire inside the smoke-house. Good corn cobs or hickory wood are the best materials to make a smoke for hams. The cost of such a smoke-house as I have described is about \$20.

HEIGHT OF WATER-TROUGHS FOR ANIMALS.



HE natural mode animals drinking is to hold their heads down on a level with the stream, which may be lower, but always as low as the ground: anatomists will approve the saying, that the throat of a horse is so formed that the position

is necessary, in order that the water should lave those parts of the throat which particularly need such refreshment. It may be urged that it is more convenient for a horse in harness to have the water brought up to him, instead of his having to lower his head to the water; but such is not the case. When the bearing-rein, that relic of barbarism, is unloosed, a horse has no difficulty in putting his head to the ground—witness horses taking their bait as proof; and the heap and pressure of the collar in drawing render the thorough washing and cooling of the throat more than ever acceptable. Besides the benefit conferred on horses and cattle by cutting down the cisterns to a reasonable proportion, they would thus be made available for the lesser animals, and the continual flow of the water would keep them well replenished.

ICE HOUSES.



N ice-house is no very difficult thing to build, nor need it be very expensive. It requires but little mechanical skill and we are surprised that so few farmers provide themselves with the means of preserving so important a luxury, we might almost say so indispensable a necessity, as ice.

The cheapest and most easily constructed ice-house is one built of wood. Put it on dry elevated ground near the house, first removing the soil and putting coarse gravel or sand in its place. Fix drains so as to lead away from the eaves and so constructed that it will not be possible for water to stand around the building. For sills, two inch

plank, six inches wide will be sufficient, and they should be imbedded to the depth of their thickness in the sand or gravel. A convenient size would be thirteen feet long and ten feet wide. Cut the studs off square, say about eight feet long and of any convenient size or width. You can find stuff that will answer the purpose in almost any refuse heap at any lumber yard. What you want is one straight side. Set them up face side in, and nail them to the sill, with an inch board on top on which the joists are to rest. Nail up through this board to hold them in place. Board these studs on the inside, and batten the cracks with rough boards or strips, and also treat the under side of the joists in the same way. This makes, you see, a tight boarded room, eight feet wide, eight feet high and twelve feet long. Lay the floor on timber bedded in gravel or charcoal to cut off any currents of air, but so that all the water from melting ice can run off immediately. You may divide off four feet of the end in which you are to have the door, for a cooling room, and this will leave room for a cube of ice eight feet, less the straw or sawdust all around between the ice and boards. This will give enough to last a family through the hot weather and allow a very liberal supply at that.

To protect the ice and prevent it from melting, set up another frame outside of the first, and a foot from it or even more. The wider the space the better, and board it perpendicularly with rough boards battened up tight. The top of this outer frame should be fastened to the inner one by strips of boards nailed from one top board or plate to the plate on the other frame, and the space between the walls filled in with sawdust or charcoal or straw, leaving a narrow doorway in the end, to be closed with shutters inside or out, made to shut tight, and if they are lined two inches thick with straw, nailed on with laths, so much the better.

The roof may be made the same as the sides, with two sets of rafters filled in between with straw in the same way as the sides. It ought to be shingled or otherwise made tight. You may make a trap in the roof or fix a door in the gable end for the means of filling in handily, and there ought to be a ventilating chimney about six inches square leading from the ice up through the roof. It may be closed with straw, a part of the time. The space between the joists and the rafters, if filled in with straw, will

help preserve the ice, and the filling need never be removed.

Now where lumber is cheap, the simple structure will cost but very little, and it will last for years. Two men could build it in about four days. It might cost about \$50, but it would be worth \$50 every year to any farmer's family.

We think ice keeps better above than below the surface of the ground. The earth gets heated and melts the ice. The ventilator is designed simply to allow any heated air to pass off and not to expose the ice to the warm air from without. It is a good plan to put straw at the bottom to lay the ice on, and some put down slats.

Some prefer to put the ice in on the edges, but we think it keeps better put in flat and as compactly as possible.

We shall probably take occasion to allude to different modes of constructing an ice house, before cold weather comes. In the meantime don't fail to make calculations to have one anyhow. It is a great institution.

—[Ed.]

GAS TAR FOR POSTS.




WE have often had occasion to recommend the use of gas tar as a protection from moisture and decay. We have known an instance where acrid substances induced the complete rotting of pine boards in less than two years; when replaced with new boards, thoroughly coated with hot gas tar, they lasted fifteen years, and appeared then to be perfectly sound. The last number of the *Horticulturalist* gives a communication from Mrs. Shimer, of Carrol county, Illinois, who describes an excellent contrivance for applying gas tar to posts. She had previously used a brush, but found this mode too imperfect and inefficient. A tank was made of the best sheet iron, forty inches high and over two feet in diameter. A grate of oak sticks covered the bottom inside, to support the posts and protect from accidental blows. This tank was set on an old cook stove placed out doors. It was then filled with posts placed on end, supported by a frame to prevent tipping the tank. It was filled with gas tar until well saturated—the time not stated. We may add that the wood should be thoroughly seasoned before the application, in order that the tar may enter the pores. We have no doubt that, were this work well done, (the gas coating extending some inches

above the earth,) that posts of white oak or other good timber, would last at least fifty years, and perhaps considerably longer.

—*Co. Gent.*

HOW TO MAKE STONE WALLS.

 NOTHER very excellent method to rid the land of stone is to put them into walls—not the nondescript, disjointed apologies that too often greet our sight in passing through the country, which look as if dumped out of a cart in zig-zag form—the owners of which deserve to be indicted by a grand jury and sentenced to spend their days wandering upon “John Brown’s Tract,” without benefit of clergy—but straight, firm, trim-built ones, such as farmers, worthy of the name, adorn their premises with. There is a right and a wrong way to build walls, as well as to do other things, and if we commence right we shall be quite sure to end right. In soft and loose soil there should be a ditch dug the width of the bottom of the wall and from one to two feet in depth, and filled in with such small stone as are unfit to put in the body of the wall. This serves to drain off the water from the surface and prevent the ground from heaving, which is the usual cause of walls falling down. If they pass over ridges and across hollows, there should be outlets at right angles with the ditch at the bottom of the ridges to convey away the water; otherwise the ditch will remain full, and in cold weather freeze and gradually force out the stone from their position, when the wall, of course, will tumble down.

When the small stone are filled in the ditch, draw and roll on them the large ones to form the bottom of the wall; they should be well secured in their places and made perfectly solid, as the whole structure rests upon them. The base of the wall should not be more than two and a half feet wide, unless the stones are very large, when they may project beyond the average width. Do not lay more than one course of stone without binding them by others that reach through the entire width; never suffer the sides to be laid up and the centre filled in with small stone. Pay off such a workman and send him away without his dinner—he deserves to fast for the wall imposition. It is cheaper to build the wall when the stone are drawn and finish the work up at once, leaving nothing behind to be cleared up; but this is not always practicable nor very essen-

tial. A wall is strongest that has a gradual slope on both sides from the bottom upwards; four feet is sufficient height, but they may be built four and a half feet if preferred. There should be a course of large stone laid upon the top to prevent the displacement of the smaller ones by animals and bipeds, and to give it a more finished appearance: some place the earth taken from the ditch against the wall, forming a slight bank, but this should not be done, as the action of frost upon it has a tendency to loosen the stone.

I have said nothing about putting sticks in the wall; they are an advantage, and when walls are built of cobble stone, sticks should invariably be used. They add somewhat to the expense, but supposing that farmers act on the principle that whatever is worth doing is worth doing well, the increased cost should not prevent their use. They are easily and quickly made, either by being rived out of any free-grained wood, or by sawing that which is tough or cross-grained into half-inch boards and cutting them the desired length; by this last method, if laid in regular courses, a beautiful and permanent wall is made. The sticks or boards, on account of the dry state they are kept in by the stone, last a long time. Some object to walls as being expensive to build, and often needing repairs, and as being cumbersome and unsightly; but I think those who keep a correct account of the cost of construction and material, will find the balance in their favor when compared with the cost of a rail or board fence. Besides, the material of the former is indestructible, while that composing the latter is very perishable, and each year is becoming more scarce and expensive.

Walls also answer the double purpose of ridding the land of stone and as a safeguard for its productions. As to repairs, a good wall will need none for the first dozen years; after that time an occasional spot may need some attention, but much of it will stand firm one-half of the three score and ten years of man’s allotted life, while a rail or board fence will often be prostrated almost its entire length, and must as often be rebuilt, with a loss of material. A rail is also found thrown off, or a board loose, frequently during the season. As regards beauty, &c., I think a well-finished, systematical wall, when constructed, with the irregular, dilapidated worm fence of the country, will not suffer in comparison. A nice board or picket fence may be as ornamental. I

am inclined to think that some farmers suppose walls to be a sort of half hardy production, and they need protection, from the manner they screen them from the element, and observation, by means of the elders, brambles, thistles, weeds, &c., that are suffered to grow up around them. This would seem to be the only conclusion to be arrived at, unless they are thus suffered to grow as ornaments. One would suppose that, did they desire ornamental trees, shrubs, flowers &c., they would place them around their dwellings; but, on the contrary, such forms are almost invariably destitute of these surroundings. Farmers, make at least your outside fences of walls, and do not longer attempt to till the soil while it is encumbered with stone.—*Ex.*

HORSE STABLES.

IT is a fault with most stables that they are built for men rather than for horses. We wish to point out two common errors into which not a few builders are liable to fall in constructing stables, especially those upon farms. The first is in having the doors and upper floor so low as they generally are. On account of these low doors horses instinctively learn to fear them, and they shy, rear or prance whenever lead toward them. They are, also, among the most frequent cases of poll-evil. The horse, when passing through them, is either surprised by something it beholds outside the building, or checked by the voice or gesture of the person leading him, when up goes the head and crash comes the poll against the beam of the doorway. A violent bruise often results therefrom, and a deep-seated abscess follows. Low hay floors also produce the same trouble. The sudden elevation of the head is, in the horse, expressive of very unexpected emotion. This effect is always noticed whenever you enter the stable rapidly or at an unusual hour. A sudden noise will also cause the same upward motion of the head. With low stables an injury to the horse is almost invariably sure to follow.

Again, the easiest position in which the horse can stand, is when the hind feet are the highest portion of the body, or when the flooring of the stall slants in exactly the opposite direction to what it does in most stables. This is the other error in constructing stables, to which we alluded. Horses at liberty in a pasture invariably stand, when at ease, with their hind feet

elevated somewhat, and it is almost a wonder that builders of stables have not improved upon this fact before, and adapted floors to the wants of the horse. The moisture from the horse, if the floor slanted toward the forward feet, would help to keep the forward feet moist, cool and healthy; whereas they are now generally hot, full of fever, and require washing with cool soap suds at least once a day, in order to be kept in a healthy condition. This is not all. Where the floor slants back, the horse not unfrequently attempts to ease the heavy strain upon the flexor tendons of the hind legs by hanging back upon the halter. The pressure upon the seat of the poll stops natural circulation, and in time it develops itself into a deep seated abscess. We would like to see a stable in which the two errors in building we have pointed out did not occur. If the builder was not satisfied with it, we are sure the occupant would be, and would repay him by long years of good service with unstrained limbs and a healthy system.—*Maine Farmer.*

UNDERDRAINING SWAMPS.



R. Wm. Renick writes as follows to the *Ohio Farmer and Cultivator*, of his experience in muck or swamp draining:

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

“I have ditches dug after the following manner, now ten or twelve years old, and they work admirably: dig a ditch from 2½ to 3½ feet deep, as the case may be, as narrow as can well be done with a common spade. Then when this is done, I go back to the starting point and dig eight inches deeper, with a spade made for that purpose, with a blade but four inches wide, the increased depth being in the middle of the original, leaves a shoulder on each side, on which I lay good white oak inch plank, eight or ten inches wide, and then fill up. This is all very simple, but they are far the


most effectual ditches I ever had dug. I have tried tile in such land, but I would not pay ten cents per rod for any more of that kind of ditching in that kind of land. Neither will mole ditching answer in this part of the country—the muskrats soon destroy it.

“ In laying down the plank, I commenced at the head of the ditch so that the under lap of the plank may be down stream. The plank will not rot during at least one generation, except at the mouth of the ditch, and if they should, the water has made its course and will continue to run. I have short blind or covered ditches, made more than twenty years ago, with rails too rotten to put in the fence, and the water continues to flow from them to this day, although the

rails doubtless were gone long ago. There is a perceptibly increased flow of water from the ditches, or the most of them, since they were first dug, and the ground is drying further and further from them each year. Some years ago I tried to drain two very similarly situated pieces of ground, one with the tile and the other with plank alone; the latter is now a fine blue grass sod where wild grass only grew before; the tile ditching has done but little good, only drying the ground but a few feet on each side, although I thought at the time that the tile ditch ground would be the easiest drained, as there was some fall, the other had no fall—indeed, the fall was the other way and had to create a fall by depth of ditch.”

HORTICULTURAL DEPARTMENT.


TREE PLANTING.

HEN you are notified that the trees ordered are ready for delivery, lose no time in bringing them home, and before you take them from the agent, see that you have what you ordered, and that they are healthy and thrifty, and properly labeled; if not, take only such as are, and leave him to do the best he can with those left. He may not like it, but cannot make you pay for a worthless article. When taken home, bury the roots at once, and plant them at your leisure, taking care that the job is properly done.

Strawberries are best planted in spring; but if they come in the fall, too late, or after the first of September, they can be kept over winter by being planted close in boxes of moist earth in the cellar; or in the garden, and covered with six inches of straw. Grapes, roses, currants, gooseberries, and the like, are best to be heeled in in a dry, sheltered spot in the garden till spring, well covered, nearly to the tops, with earth or straw; the latter, however, attracts the mice. If you are wise, you will have your ground ready, and the holes dug before the trees come, and then you have only to throw in a little fresh earth. Place the trees in their proper position, and hold them straight while the roots are covered in with loose earth, which should be settled among them by the application of half a pail of water to each tree just before the hole is quite filled; then cover with more earth, and heap up

around the tree a foot high. That will keep it from heaving out with the frost, and keep the mice away. If it is settled too much, heap up a little more just before the first hard frost comes. If you want to do the business first rate, have a heap of composted muck, leaves, scrapings of the road, &c., with a few bushels of slacked lime added, and put a barrowfull to each tree, when filling up the hole in planting. It should be made some time beforehand, and well composted by turning over two or three times. *No barn yard manure should ever be placed among the roots of trees*, but it is a good plan to mulch them afterwards with a little of it. Trees should not be planted deeper than an inch from the crown of the roots.

“WELL-ROTTED MANURE.”

HE phrase “well-rotted manure” has been a costly one to the farmers of the country.


About half the substance of trees and other vegetables is carbon, and this is obtained principally from the atmosphere through the leaves in the form of carbonic acid. The underside of every leaf is filled with innumerable mouths (called *stomata* by botanists) through which carbonic acid is absorbed from the air. Each molecule of carbonic acid is made up of one atom of carbon and two atoms of oxygen, the proportion of weight being six pounds of carbon to sixteen of oxygen. In the leaf the molecule

is broken up into its constituent elements—the oxygen is returned to the atmosphere, and the carbon is carried by the sap and deposited to help build up the structure of the plant. Exact experiments have shown that this decomposition does not go on in the night, and there is no doubt that it is effected by the actinic or chemical rays of the sunbeam.

The burning of charcoal is simply the recombining of its carbon with the oxygen of the air, forming again carbonic acid—an invisible gas which floats away in the atmosphere. All chemical actions are accompanied by a change of the temperature, and in this case the change is so great as to produce the heat and light of combustion. Frequently carbon and oxygen combine more slowly than in the act of burning, and then, though the quantity of heat produced is exactly the same as in the case of combustion, it is not so intense—the intensity being in proportion to the rapidity of combustion. One instance of the slow combination of carbon and oxygen is fermentation. In some forms of fermentation the oxygen is absorbed from the atmosphere, and in others it is obtained from combination with other organic elements.


When manure is piled up in large heaps and allowed to ferment, one of the principal products of the fermentation is carbonic acid. If the manure is about the roots of growing rye, wheat, or other crop, as the carbonic acid rises among the leaves, a large portion is caught by their *stomata*, and the carbon is appropriated to build up the plant. On the other hand, if the fermentation takes place where there are no leaves, the carbonic acid is blown away by the wind, and is wasted. It is not uncommon for farmers in their desire for "well-rotted manure," to burn up one-half of their most valuable fertilizer. If a man wants to utilize the whole of his manure, the place to have it rot is beneath the thick clustering leaves of his growing crops.—*Scientific American*.

MANURING TREES.

 NOW is a good time to put some manure round your fruit trees. The fall and early spring rains will carry the soluble elements into the soil and cause them to start with fresh vigor in early spring and summer. Apple trees will send out their roots a great distance for food. We recently cut off roots a distance

of forty feet from an apple tree. Thus a simple tree may extend its roots across the diameter of a circle two hundred and fifty feet in circumference. We are inclined to the belief that manure should not be placed close to the trunks of the trees, but at a distance of a few feet from them.—*Maine Farmer*.

THE FRUIT GARDEN.

 N planting fall fruit trees, the pear, apple and cherry, invariably do better fall planted than when deferred till spring. All fruit trees, when set out, should be vigorously shortened in. Trees should not be planted deep—no deeper than they grew before removal. It is better to draw a mound of soil about them for the winter, to be removed early in the spring; it preserves from frost and throws off superabundant moisture. Dwarf pears must be set below the quince stock—and in selecting these, choose those that are budded near the ground—where a long legged quince stock has to be buried so deep, the tree makes but a poor growth for some seasons afterward, and is in other respects injured. In severe climates, cherries of very luxuriant growth are liable to be winter killed. To obviate this, the weaker growing kinds, as the Duke and Morello, and the Mahableb, are used for stocks to graft them on. This checks their vigor, and renders them hardier. It however always keep them dwarf—and superior sized fruit is not so probable. Where danger of winter-killing exists, these strong growing kinds should not have a highly manured soil, and where they yet grow vigorous when young, they may be root pruned as already described. If they can be got through the first ten years of their life, till they lose their youthful vigor, they will not suffer in severe winters afterwards.

Sometimes fruit trees are unproductive from other causes than poverty of the soil, or neglect of the orchardist. They often grow too luxuriant to bear well. In this case root pruning is very effectual, and is performed by digging a circle round the tree. A fifteen year old tree, for instance, may be encircled at five feet from the trunk. No rules can be laid down for this; judgment must be exercised. If cut too close the tree may be stunted for years, and if too far it will not be effective. The aim should be to reduce the root about one-third.

Currants, gooseberries, raspberries, strawberries, and blackberries can generally be depended on—and near a large city they are always a source of profit. The three first named like a moist subsoil, and warmer situation. The blackberry has now become an important fruit, but should not be planted where its creeping roots will be an objection. There are always “odd corners,” where such plants become just the required thing to fill in with.

The strawberry, blackberry, and raspberry should be protected in winter, most kinds are hardy enough to stand without this care, but it is better to employ it nevertheless. Strawberries may have leaves or straw litter thrown over them, and a little soil thrown over to keep the wind from blowing them away. Raspberries and blackberries should have their last season's bearing shoots taken out, the young canes pruned so that three or four of the strongest only are left, and then laid down and covered with soil. To do this without breaking them, dig out a spade full of earth on one side of the hill, and with the heel press the stock over. The inclination will be sufficient to prevent the breakage.—*Gard. Monthly.*

RULES FOR ROSE MANAGEMENT.



R. PAUL, in the London *Gardener's Chronicle*, gives the following:

1. The best soil for rose is a strong loam well enriched with decayed stable manure; if the soil is not of this nature, it should be improved by the addition of such as far as possible.

2. For light soils use cow-dung and poudrette instead of stable manure, merely mulching with the latter early in May.

3. Prune at two seasons; thin out the supernumerary shoots in November, and shorten those that are left in March.

4. Remember that the summer roses should be thinned more freely, and shortened less than the autumnals.

5. Always cut back to a bud which has a tendency to grow outwards, rubbing out those buds which are directed inwards.

6. Destroy aphides as soon as seen, by brushing them off or washing the shoots with tobacco water, out of doors; and by fumigating with tobacco under glass.

7. Check mildew by dusting sulphur on the leaves while moist with rain or dew.

8. Water freely during the growing season, if very dry.

9. Never buy old roses on the Manetti stock until you have proved that they will not flourish in your soil either on the dog rose, or on their own roots. The new roots you *must* buy on the Manetti, or wait till they are raised by the slower process of budding or by cuttings.

10. Avoid plants that have been “coddled.” by raising and growing in heat during their early stages of existence. Thousands of roses are annually sold which have the seeds of disease and early death previously sown by the forcing process. Such, if they live, do not grow vigorously, and often remain stationary or feeble for a length of time.

11. At whatever season roses on their own roots are purchased, they should be planted in the open ground in spring and summer only, (May, June and July;) once established, they may remain permanently there.

12. Roses in pots should be repotted, removing a portion of the old soil early every autumn; they require closer pruning than the same sorts growing in the ground; they should be watered with weak liquid manure as soon as the young leaves expand, and until the flowering is over.

13. Roses intended for forcing should be brought into a state of rest in August or September, and be pruned shortly afterwards.

14. Roses under glass should be shaded when coming into bloom, but with a light shading only, such as Tiffany No 1, or Scrim.

15. Most tea-scented roses thrive best under glass, and are worthy of this especial care. They may be grown in pots, in a cold pit or house, or be planted out in a house, standards or dwarfs, with or without heat.

16. Buy only such new roses as are recommended from trustworthy sources. A new rose that is not at the least equal to or different from all its predecessors, is not worth growing; and to grow such is almost as disappointing as to read a new book that is not worth reading.

17. When growing for exhibition, look to form and color, as well as size; the day has gone by for mere bulk to triumph over symmetry of form, and variety and brilliancy of color, whether in pot roses or others.

MUSHROOM GROWING.

By Mr. Lamont, gardener, to C. Zug, Esq., Pittsburg, Pa.



SI am a lover of Mushroom growing, I am always trying to find out all I can about them, and in the reports of the Pennsylvania Horticultural Society, for the month of April, 1866, Mr. F. O. Keefe, gardener to J. B. Heyl, Esq., had on exhibition a fine display of Mushrooms, &c. Mr. Meehan, we wish you would let us know through the *Monthly* where Mr. F. O. Keefe purchased his spawn, and whether it was made in England or in America, for we have difficulty in finding it good.

Mushroom growing does not require so much skill as one would think. After the bed is made and the spawn planted, the watering is the only skill required. I believe in most beds that do not yield, the spawn is killed with too much water.

Here I would like to give your readers my experience with spawn for three winters. The first winter I lived with C. Zug, Esq., we had American made spawn, and I can assure you that it yielded splendidly; but the second winter we had English made spawn, and I am sure it run beautifully, for I could see by removing a little of the ground that it would extend itself through the ground; but alas, we lost nearly all of the bed. We had made a change in the house, and the first snow we had the house leaked in a little of the melting snow: I saw the danger but could do nothing at that time. Still we had a third of a crop. The third winter we had our house in good order, and we made a new bed, planted it with American made spawn, and all went on nicely till the Mushrooms came up, and here my hopes were blasted—instead of Mushrooms we had a great crop of Fungi, and that a deadly poison.

[*Rhind*, in his vegetable kingdom in plate 3, page 197, here gives us a list of 27 varieties of Fungi and Mushrooms. The one I had last winter, by *Rhind's* description, was *Agaricus virasus*, the most poisonous of all the tribe, he says.]

Now I am led to believe the spawn I had last winter was impregnated with the debris of Corn, instead of Oats. How often will you see a substance about the ear or tassel of Corn, that looks very like a Fungi, and I believe from the smell of it, it contains poison—perhaps deadly. I believe we are indebted to the Oats, for our

Mushrooms; I think when the debris is deprived of the light, air and moisture which would bring a yield of itself, say thirty fold, it is turned round by man's wisdom and can be made to yield forth fifty fold of this elegant vegetable, commonly called Mushroom. For myself I like to be gathering a nice dish of Mushrooms of my own raising, and I am sure the most of people are very fond of them at the table. Often I have wondered that there was not more of them growing in the United States; but we are progressing in Horticulture, and in a few years we will see more of them growing. Mr. Editor, I would like to see an article from your pen, I am sure it would do good to a great many, and promote the growth of this great vegetable. In *Rhind's* History of the Vegetable Kingdom, page 196, he describes the *Amanita Muscaria* or fly *Amanita*, plate 3, fig. 1, he says this splendid species is a native of Britain and very abundant in Scotland. It has a large cap sometimes six inches in diameter of a brilliant pink or crimson color, beset with angular warts and growing on a tall well proportioned stalk, it is very conspicuous even at a distance. In shaded recesses of its native woods, in the highlands of Scotland, says Dr. Greville, it is impossible not to admire it as seen in long perspective between the trunks of the straight Fir trees; and should a sunbeam penetrate through the dark and dense foliage, and rest on its vivid surface an effect is produced by this chief of an humble race, which might lower the pride of many a patrician vegetable. This Mushroom is used by the inhabitants of the north-eastern parts of Asia, in the same manner as ardent spirits or wine to promote intoxication; it is the favorite drug mancho-mare of the Russians, Kamchadales and Korians, who use it to promote intoxication. These fungi are collected in the hottest months and hung up by a string in the air to dry; some dry of themselves on the ground and are said to be far more narcotic than those artificially preserved. Small deep colored specimens thickly covered with warts are also said to be more powerful than those which attain to a larger size, and are of a paler color. The usual mode of taking this fungus is to roll it up like a bolus and swallow it without chewing, which the Kamchadales say would disorder the stomach. It is sometimes eaten fresh, in soups, sauces and there loses much of its intoxicating proper-

ty; when steeped in the juice of the berries of *Vaccinium uliginosum* its effects are the same as those of strong wine. One large or two small fungi is a common dose to produce a pleasant intoxication for a whole day, particularly if water be drank after it, which augments the narcotic excitement; the desired effect comes on one or two hours after taking the Fungus; giddiness and drunkenness results from the Fungus in the same manner as from wine or spirits. Cheerful emotions of the mind are first produced, involuntary words and actions follow, and sometimes an entire loss of consciousness; it renders some persons remarkably active, and proves highly stimulant to muscular exertion; with too large a dose, violent spasmodic effects are produced; so very exciting to the nervous system in some individuals is this Fungus, that the effects are often very ludicrous. If a person under its influence wishes to step over a straw or small stick, they take a stride or a jump sufficient to clear the trunk of a tree; a talkative person cannot keep secrets or silence, and one fond of music is perpetually singing,—this is *Rhind's* description of this wonderful Fungus.

John Abercrombie, in his pocket journal, thus describes the spawn. The peculiar delicate nature of the spawn requires great precaution in the early state of the Mushroom bed to prevent its having too great a heat, which would prove its destruction, and likewise keep it from wet and cold: and in five or six weeks after spawning the bed, if it works kindly, it will begin to produce Mushrooms, and if kept in good order, dry and warm, it will continue several months in production.

CULTIVATING FLOWERS.

EVERY day we see in the streets of the city, bouquets of rare and choice flowers, of exquisite beauty, offered for sale, by those who obtain a portion of their livelihood by trafficking in these ephemeral day stars, and our thoughts always leave the contemplation of the beautiful flowers to study the faces of those cheerful and pleasant floral hucksters. We can always read in them something good and noble. We have our mind on one that we often see with her large basket of bouquets. Not a wrinkle or a scowl was ever seen on her face. Her mild and gentle look and her pleasant voice, all told, as plainly as the noonday, what a wonderful influence the cultivation of flowers exerts on the thoughts and the affections. If people would cultivate flowers and work over them every day, and many times a day, it would prove to be the most perfect antidote for the "blues," and for a crabbed, ungenial and repulsive state of mind that they could employ. Flowers luxuriate in an atmosphere where love inspires the breast. What wonderful lessons we and our children may learn of the pretty flowers, if we will only sit, passive, at the feet of such living teachers, and let them bear our fancy and all our aspirations, far above unhappiness, disquietude and grief. It every man, woman and child would cultivate a plot of choice flowers, and go every day and look at them long, dwelling with delightful emotions on their beauty and loveliness, how much wiser and better we all would be. Now is the time to save the seeds.—*AMARANTH*, in *N. Y. Observer*.

DOMESTIC ECONOMY.

UTILITY OF A WIFE.

DOUTBLESS you have remarked, with satisfaction, how the little oddities of men who marry rather late in life are pruned away speedily after their marriage. You have found a man who used to be shabbily and carelessly dressed, with a huge shirt collar frayed at the edges, and a glaring yellow silk pocket-handkerchief, broken of these things, and become a pattern of neatness. You have seen a man whose hair and whiskers were ridiculously cut, speedily become like other human beings. You have seen a clergy-

man who wore a long beard, in a little while appear without one. You have seen a man who used to sing ridiculous sentimental songs, leave them off. You have seen a man who took snuff copiously, and who generally had his breast covered with snuff, abandon the vile habit. A wife is the grand wielder of the moral pruning-knife. If *Johnson's* wife had lived, there would have been no hoarding up of bits of orange-peel; no touching all the posts in walking along the street; no eating and drinking with a disgusting voracity. If *Oliver Goldsmith* had been married, he would never have worn that memorable

and ridiculous coat. Whenever you find a man whom you know little about, oddly dressed, or talking ridiculously, or exhibiting any eccentricity of manner, you may be tolerably sure that he is not a married man. For the little corners are rounded off, the little shoots are pruned away in married men. Wives generally have much more sense than their husbands, especially when their husbands are clever men. The wife's advices are like the ballast that keeps the ship steady. They are like the wholesome though painful shears, snipping off little growths of self-conceit and folly.

So you may see that it is not good for man to be alone. For he will put out various shoots at his own sour will, which will grow into monstrous ugly and absurd branches unless they are pruned away while they are young. But it is quite as bad, perhaps it is worse, to live among people with whom you are an oracle.

Probably among the class of old bachelors you may find the most signal instances of the evil consequence of going through life with nobody to prune one. I could easily record such manifestations of silliness and absurdity, in the case of such men, as would be incredible. Of course I am not going to do so. An old bachelor of some standing, living in a solitary house, with servants who dare not prune him, and with acquaintances who will not take the trouble to prune him, must necessarily, unless he be a very wise and good man, grow into a most amorphous shape. I beg the reader to mark the exception I make; for I presume he will agree with me when I say, that in the class of old bachelors and old maids may be found some of the noblest specimens of the human race. A judicious wife is always snipping off from her husband's moral nature little twigs that are growing in wrong directions. She keeps him in shape by continual pruning. If you declare that you will do some absurd thing, she will find means of preventing your doing it. And by far the chief part of all the common sense there is in this world, belongs unquestionably to women. The wisest things a man commonly does are those which his wife counsels him to do. It is not always so. You may have known a man to do, at the instigation of his wife, things so malicious, petty, and stupid, that it is inconceivable any man should ever do them at all. But such cases are exceptional.

B. C.

NEEDLE-WORK.



HERE is something extremely pleasant and even touching—at least, of very sweet, soft, winning effect—in this peculiarity of needle-work, distinguishing women from men. Our own sex is incapable of any such by-play, aside from the main business of life; but the women—be they what earthly rank they may, however gifted with intellect or genius, or endowed with awful beauty,—have always some little handiwork ready to fill the tiny gap of every vacant moment. A needle is familiar to them all. A queen, no doubt, plies it on occasions; the woman poet can use it as adroitly as her pen; the woman's eye that has discovered a new star, turns from its glory to send the polished little instrument gleaming along the hem of her kerchief, or to darn a casual fray in her dress. And they have greatly the advantage of us in this respect. The slender thread of silk or cotton, keeps them united with the small, familiar, gentle interests of life, the continual operating influences of which do so much for the health of character, and carry off what would otherwise be a dangerous accumulation of morbid sensibility. A vast deal of human sympathy runs along this electric line, stretching from the throne to the wicker chair of the humblest seamstress, keeping high and low in a species of communion with their kindred beings. Methinks it is a token of healthy and gentle characteristics, when women of high thoughts and accomplishments love to sew, especially as they are never more at home with their own hearts than while so occupied.

s.


GIRLS LEARNING TO KEEP HOUSE.



NO young lady can be too well instructed in anything that can affect the comforts of a family. Whatever position in society she occupies, she needs a practical knowledge of household duties. She may be placed in such circumstances that it will not be necessary for her to perform much domestic labor; but on this account she needs no less knowledge than if she was obliged to preside personally over the cooking-stove and pantry. Indeed, I have often thought it more difficult to direct others, and requires more experience, than to do the same work with our own hands.

Mothers are frequently so nice and particular that they do not like to give up any part of their care to their children. This is a great mistake in their management, for they are often burdened with labor, and need relief. Children should be early taught to make themselves useful; to assist their parents every way in their power, and to consider it a privilege to do so.

DRESSING POULTRY FOR MARKET.

 OULTRY venders in our large cities are constantly urging country producers to dress their poultry in the best manner, as that properly dressed commands several cents per pound more than that which is poorly dressed. The following directions are from an experienced source :

1st. Food in the crop injures the appearance and sale ; therefore keep from food twenty-four hours before killing.

2d. Opening the veins in the neck is the best mode of killing. If the head be taken off at first, the skin will recede from the neck bone, presenting a repulsive spectacle.

3d. Most of the poultry in market is "scalded," or "wet picked;" "dry picked" is preferred by a few, and sells, to a limited extent only, at full prices. Poultry may be picked dry, without difficulty if done with out delay after killing. For scalding poultry the water should be as near to the boiling point as possible, without actually boiling. The bird, held by the legs, should be immersed and lifted up and down in the water three times. Continue to hold the bird by the legs with one hand without a moment's delay after taking out. If skillfully handled in this way, the feathers and pin-feathers may all be removed without breaking the skin. A torn or broken skin greatly injures the appearance.


4th. The intestines should not be "drawn." After removing the feathers, the head may be taken off and the skin drawn over the neck bone and tied. This is the best method, though much comes to the market with the head on.

6th- It should next be "plunged," by being dipped about two seconds into water nearly, or quite, boiling hot, and then at once into cold water the same length of time. It should be entirely cold, but not frozen, before being packed.

6th. In packing, use clean hand thrashed rye straw. If this cannot be had, wheat

or oat straw will answer, but be sure that it is clean and free from dust. Place a layer of straw at the bottom, then alternate layers of poultry and straw, taking care to stow snugly, back upwards, legs under the body, filling vacancies with straw, and filling the package so that the cover will drive down very closely upon the contents, to prevent shifting on the way. Boxes are the best packages, and should contain from 150 to 300 pounds.

DESTROYING RATS.

 T this season of the year, when cellars are crowded with fruits, vegetables and all kinds of winter stores, rats often become an intolerable nuisance, which must be abated. Poisoning may afford a temporary relief, but in the end the remedy is worse than the disease, for the rats, after eating the poison, crawl into inaccessible corners to die, and the house is soon filled with their unwholesome and offensive odor. They may be driven from a dwelling infested by them, by setting, in a measure of meal a steel trap and covering it lightly with the meal, affixing to it a small chain attached to a spring-pole, with the trap so arranged that when the rat pulls the trap will be drawn up by the pole. The rat thus caught, will warn his fellows by piercing squeals of the terrible punishment awaiting them, and the premises will be vacated for a season, but they are liable to return, and the last state of that house is usually worse than the first.

When a boy, my father sent me into the cellar to get some apples from a bin which had not been opened, as the fruit being an extra keeping variety, had been reserved for spring use. On returning, I set the family into a burst of laughter, by reporting that "the hogs had gone up the drain and chewed the apples all to pieces." The apples were destroyed, but rats instead of hogs had been the depredators. A large kettle was immediately carried into the cellar, and half filled with water, then a thick covering of oats poured over the surface, and a short board placed with one end on the ground and the other against the side of the kettle, and another narrow strip laid across the top of the kettle in close proximity to the end of the board running from the ground to the kettle. In the morning twelve quarts of rats, by actual measurement, were taken from the kettle, and not even a Noahian rat escaped from the flood to disturb the serenity of our repose.

COMMERCIAL REVIEW.

RETURN OF TRAFFIC PER G. T. RAILWAY

For week ending Oct. 20, 1866.

Passengers.....	\$61,444
Express Freight, Mails and Sundries.....	6,100
Freight and Live Stock.....	85,063
Total.....	\$151,604
Corresponding week, 1865.....	147,107
Increase.....	\$ 4,497

JOSEPH HICKSON,
Sec. and Treas

ENGLISH MARKETS.

LONDON, Oct. 20.—Money market unchanged. Consols 89½ : U. S., 5.20's, 68½.

LIVERPOOL, Oct. 30.—Cotton Market quiet, but steady. Pork Market declining. Breadstuffs market firm. Mixed Western Corn, 33s. 9d. Produce Market. Sales of refined Petroleum at 1s. 9d., per gallon.

MANCHESTER.—Markets for goods and yarns flat.

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