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VOL. XI. No. XXIV.  
(NEW SERIES.)

TORONTO, CANADA, DECEMBER 15, 1874.

\$1.50 PER ANNUM.  
SINGLE COPIES 8 CTS.

## The Field.

### Wild Oats and Pigeon Weed

"A subscriber" inquires:—"Can you inform me whether wild oats and pigeon-weed will grow from manure, if made into a heap and thoroughly rotted, and how long a time is required to elapse before the said manure can be used with safety? Also, what is the best method of destroying wild oats and pigeon-weed in the land?"

Seeds of all kinds are deprived of their vitality by the processes of heating and fermentation which take place in a manure heap, and this is one strong argument for applying no manure to land which has not been thoroughly rotted. The length of time required to do this depends on a variety of circumstances, such as the nature of the manure, the season of the year, the quantity of moisture in the heap, and the labor expended in mixing and turning. But, whether a longer or shorter period is occupied in thoroughly rotting a manure heap, when the work is done, it is fatal to seed life.

In replying to the latter part of our correspondent's note, it may be observed that both of the weeds mentioned are very difficult of eradication when they once get a footing in the soil. They are alike remarkable for maintaining their vitality a very long time, when buried in the soil beyond the reach of germinating influence. Often, when it has been supposed that they were utterly exterminated, putting the plough a little more deeply down has brought a fresh supply of seed to the surface, rendering the land as foul as ever. It follows, therefore, that the work of eradication must be very thorough indeed. Hence, farmers determined to get rid of these pests, have resorted to hand-pulling, not only in Britain where labor is comparatively cheap, but even in this country where labor is costly. One farmer in the United States found it necessary to expend forty days' labor the first year in a hand to hand fight with pigeon-weed, but in a few years the nuisance was so far abated that three or four days were found sufficient, and perseverance in this course would, no doubt, result in the destruction of the last plant. But for general practice, a quicker and more wholesome method than that of hand-pulling must be adopted, at any rate for a while, until the enemy is comparatively suggested.

Of course a thorough summer fallowing will get rid of all the seeds which are so exposed to the air as to germinate, and plants of every description are easily destroyed, when in the seedling state. But these weeds do not germinate readily, and plough and cultivate as you will, some of the seeds are sure to be left in the soil. After the land has been well fallowed, it should be sown with fall or spring wheat, and seeded down to clover or grass. The wild oat

is an annual, and the pigeon-weed biennial, so that a few years mowing or close ploughing will destroy them. But whenever the land is broken up again, the process first suggested must be repeated, until all the seed remaining in the soil is grown and destroyed. A very careful seeding down with mixed grasses, and the use of the land for a term of years as meadow or pasturage, is to be recommended. By means of top-dressings with well-rotted manure and artificial fertilizers, land may be kept in grass for an indefinite period, and the half cultivation which is the occasion of so fruitful a weed-crop from year to year, to a great extent, dispensed with.

Another mode of procedure, varying somewhat from that just described, has been recommended. Plough the land the usual depth immediately after harvest. Let it lie in that state until the latter part of the month of May following, when it will generally be in good order; then plough again lightly, using the gang plough if the land will admit, and sow immediately with barley or an early variety of peas, sowing pretty thickly and covering with the harrow. This course will be found very successful with wild oats, for the grains recommended to be sown will spring up rapidly, and getting the start of the weeds, will ripen before they get to seed, so that cut in an immature state when the crop is harvested, the destruction of that season's growth is complete. A repetition of the process, or a seeding down of the land, will be necessary to make the work of extermination complete.

Besides the means of cure suggested, and others that may be resorted to, the importance of prevention must not be overlooked. This is, proverbially, better than cure. By purchasing only clean seed, and clean grain for feeding when that is necessary; and by taking care that the threshing-machine does not come from a weed-infested farm to your own, much may be done toward an avoidance of these evils. But we shall never have an effectual system of prevention until highways and railroads are put under legislation so rigorous that they shall cease being what they now are to a very great extent—weed nurseries from one end of the land to the other.

### Is Fish Culture Profitable?

This subject is attracting much attention just now, especially as the facilities are so good for obtaining eggs or young fish of several kinds with which to stock artificial ponds. In answer to an inquiry as to the profits of fish-culture for their flesh only, Mr. Fred. Mather, a noted pisciculturist, writes to the *Forest and Stream* as follows:—

Fish culture is a broad field, and after all the successes which are on record, there are still skeptics. Of course there are failures. So in all business. One party had not water enough, another could not get food, &c. But there are others who have succeeded by having every thing favorable in connection with the requisite amount of brains. One great drawback

on private fish culturists has been, in my opinion, the desire to confine then selves to what are called game fishes. They seem like boys who mingle work and play. The game fishes are more or less cannibals, and it is this that raises the graying in my estimation far above the brook trout, for the trout are piscivorous as well as insectivorous, while the graying cannot eat fish, but thrives on the refuse of the slaughter house as well as the trout does. There are but few places suitable for raising trout on a large scale, and it is only on a large scale that it will pay. An ordinary spring will suffice to furnish a few, but to turn out a ton or more a year, requires not only a large flow of water, but also a great quantity of food. There are those who have made it pay, but I do not feel at liberty to publish what little I know of their business. Fish culture for profit and fish culture for sport are distinct things, and the following gives my ideas on "game fish":

1. I have kept trout at a temperature above 60°, in fact as high as 75° where there was a good flow and consequently a rapid change.
2. Don't dam a ravine for a pond; the wind will blow leaves in, which with the leaves and drift brought down by rains, will clog the screens and the floods will carry everything away.
3. If you dam the ravine, do it high up, and lead the water in a ditch along the hillside into ponds, and let all floods and surface water go over the dam and down the old channel.
4. I find that trout kept at the head of my spring, where the temperature is 49°, do not grow much, while those kept below, where it is 60° and 65°, grow rapidly, and trout fry if left free will work down where the water is even warmer.
5. Black bass, pickerel and perch are recommended where the water is too warm for trout, but these fish are all cannibals; the first named is good for the table and the sportsman; the second is a gormandizing beast, unfit to associate with decent fishes, and only eatable when nothing better can be had; the third is a good little pan fish, but terribly destructive to other fish.
6. If I were asked for a list of fishes to be kept in waters not suitable for trout or grayling, it would comprise white fish, scucos, smelts, the large carp of Europe, and the square tailed variety of catfish that is known in the Eastern States as a bull-head, horn-pout, &c. The indiscriminate introduction of predacious fishes to please the sportsman has been carried too far, and many waters are filled with them that will be wanted for a more peaceable and prolific fish in a few years. If you wish to stock a hundred acres of land with animals, what kinds will you choose, lions, tigers, wolves, weasels, &c., or cattle, sheep, deer and rabbits? And from which class would you expect the greater number of pounds of meat?

Another correspondent of the same paper says on this subject:—

My experience of fish culture leads me to say that "raising for market" under correct business principles can be made "a profitable business" in ordinary years. The panic of last fall, and consequent necessity for economy the present year, has caused nearly all kinds of business to be depressed, and hardly any one has made much money. Of course luxuries were affected more than necessities. In August, 1873, I made engagements with two of the largest dealers in New York to supply them with one hundred pounds a week during the season, but owing to the depression they were unable to carry out their agreements. Yet I have had a large number of orders for five to twenty pounds, and also had a fair attendance of visitors and anglers.

In undertaking any new business, a man has to expect to pay something for education in the method

of carrying it on. Consequently I did not expect to do much more this year than pay expenses. The ponds have been established eight years, and therefore it was more favorable than it would otherwise have been. Notwithstanding the dull times, I have taken in just about enough to cover expenses, and had I dropped in prices, could have done a larger business. My experience warrants me in saying that in any ordinary business year it will pay well. Of course such extravagant figures as we find in Mr. Stone's book are calculated to mislead, but a man can do a good business, and make a reasonable profit yearly, with no very hard work, if he gives a proper amount of attention to it.

### Gardening and Farming.

Do they not mean one and the same thing—namely, abundant crops produced by ample manuring and by very deep and frequent cultivation? I can detect no difference; the object is to gain the most perfect and profitable development of the plant, whether in flowering or seeding, and this brings me to the consideration of deep cultivation. What should we say to our gardener who allowed his flower-pot, without a hole in the bottom of it, to be half filled with dense undisturbed stiff clay, and then to put into the upper half a few inches deep of friable, unmanured, and cultivated earth? When the rain from the clouds or his watering pot had saturated and passed through the friable surface soil, where would it then be found? Why, certainly, in or on the dense, undrained, un-moved subsoil its only mode of escape being upwards, as vapor through the surface soil, carrying with it to the air, as latent heat, the warmth that should invigorate and perfect the growing plant—the great British agricultural undrained flower-pot and its contents are thus clearly and undisputably described. There is no idealogy or guess-work about the matter; the naked facts stand out in bold and unmistakable relief. The 15,000,000 or more of acres of undrained agricultural flower-pots (for all farmer's crops bloom or flower) exist as a great national mistake and disgrace, and equally blameable is the miserable 5-inch agricultural pavement, for every one may learn by digging, and every farmer ought to know, that the roots of cereal and other farm crops, and especially autumn sown wheat, descend deeply, and much beyond the ploughed soil, in search of moisture and food; and it is because this subsoil is neither aerated and manured that the wheats "go off" in May. This is also often caused by too thick sowing and the confused competition of roots. Does not thin sowing and plant room form an essential principle in the gardener's practice? If he desires a full, modern perfect fruit, how carefully he thins out his fruit in its early stage to prevent undue competition and diminutive results. So does the farmer with his turnips—but why not with his corn, for wheat plants require space? The 20 rods of laborer's cottage garden, deeply cultivated and highly manured by one pig, or 500 lbs. of meat made per acre, is an example that may be safely followed on the largest farming scale, provided, of course the necessary capital can be found. Our country is still not half farmed. It is the maximum crop that diminishes, *pro rata*, the fixed charges of the farm, including manual labor, and, of course, thus increases the farmer's profit. "Where there's a will there's a way," so that when landlord and tenant believe that their capital will pay a larger return upon a diminished area, a re-culture will present a more agreeable and more fruitful appearance.—J. J. MERRI, in the *Farmer*.

### Large Potatoes from Small Seed

Mr. C. C. Holton, of Brighton, to satisfy himself whether large potatoes could be grown from the smallest seed possible, planted in his hot-bed potatoes the size of a pea, and when the plant was well started, transplanted into partially shaded ground where they received ordinary care until ripe. They were of the Early Goodrich variety, and produced tubers rather above the medium size of that kind.

The experiment demonstrates the possibility, with proper nursing, of raising good sized tubers from very small seed, but it hardly settles the mooted question whether it is the true policy for the farmer to practice planting his small potatoes year after year, or whether he should practice selecting good sized potatoes for seed, on the same principle that he selects the best ears of corn, and the best pumpkins, squashes, melons, cucumbers, &c., for seed.

Mr. Holton admits that when planting is followed by a severe drought, the nourishment contained in a large tuber will give the young plant a more vigorous start than it would receive from a small one, but

thinks that when the soil is moist enough, there will be but little difference in the result. Now, if this is true, can the farmer afford to risk a great deal on the probability of the weather's being sufficiently moist just after planting? We have not the statistics before us, but we have no doubt that of the last ten years at least three were too dry in May for potatoes to germinate to the best advantage; if then, the planting of large seed would have increased the yield of the crop to any considerable extent would it not have more than repaid the cost of seed?

The farmer is subject to too many unavoidable losses in the crops from the effects of droughts to hazard the loss of those that may be saved by proper precautionary measures. Those farmers who cultivate their soil, and their crops the best, and use the best seed, suffer the smallest losses from droughts, and certainly frequently recurring droughts are becoming the most potent of causes of short crops.

We have discussed, in former volumes, this question of large or small potatoes for seed, and while we are always ready to admit that in favorable seasons and under favorable conditions the yield from large may not greatly exceed that from small seed, the only principle upon which the farmer can rely to improve his vegetables, or to improve his animals, is to imitate nature, and select the best from which to propagate.—*Am. Rural Home*.

### Taking a Hint from Nature.

Even what are called poor lands are comparatively productive when fresh. The forest growth has drawn up from the depths of the subsoil the fertilizing element assimilated them, and finally, given them back largely to the land in the decayed leaves, branches, and trunks which have strewn the earth for centuries. Much that was originally buried in the subsoil now enriches the surface soil, where we also find a good supply of humus. Now what have we been accustomed to do with such fresh land? We have been wont to take from it a succession of crops, returning little or nothing to the soil, till it has become what we call "worn out," the available plant-food becoming so far exhausted that it no longer pays to cultivate it. What happens then? Another "old field" is added to the vast area of artificial barrenness which disgraces our country. Patient nature takes possession again, and by the same process by which she originally made it fertile, proceeds to restore its lost virtues. But "the mill of the gods grinds slow." It takes a long time for a new forest to grow up and decay. Nature needs not to take account of months and years, or even of centuries; but can we not take a hint from her, and gain the same end by a similar, but more rapid process? In other words, can we not make the land manure itself by a succession of quick growing crops, turned under—that is by green sowing? And is not this one of the essential processes of rational agriculture?—*Rural Carolinian for December*.

### Flax Management.

Flax culture is a subject which has excited at times considerable attention. It has been pronounced a "scourging crop," and in consequence in many places is prohibited. It was largely grown in Fife and Forfarshire at one time, but there is not now much acreage under cultivation in these counties. Probably the farmers who had the privilege of growing were not so well acquainted with the manipulation after it was cut or pulled as they are now, or might be. In a paper read before the British Association, Mr. Charley gave an interesting account of flax culture in Ireland. According to his statement the crop in Ireland was one of the largest in 1807, when it reached 213,922 acres. It was lowest in 1848 (the year it will be remembered, when unprecedented emigration took place, owing to the potato famine), viz., 53,803 acres. Ulster grows about twenty-five times more than any other county. Very little is grown in England, although we think there is plenty of land very suitable for producing it, which is now lying almost waste. Many of those who are leaving our shores might be profitably occupied in its cultivation. They would find it more easy work than that which they must perforce perform in Canadian wilds or in Queen-land plains.

The preparation of flax requires considerable care. It cannot be satisfactorily prepared by what is called "dew-rotting." Nothing but the coarsest kind of flax can be so treated, and even that not with impunity, for the prices in consequence will be low (this is Mr. Charley's idea, and we quite concur with him). There is something in the process of steeping flax, or "rotting," which is necessary to

insure the attainment of high color when the prepared fibre is manufactured into cloth, and arrives at the bleaching department. "The fermentation," Mr. Charley says, "which seems of a putrefactive character, acts on the juices and gummy matters which cement the woody stem to the pure fibre of the plant, and also not only assists the after separation of these, which is the object of the subsequent scutching operation, but has such a powerful effect on the coloring matter of the fibre as to render the change required in bleaching much more safe and successful. But, though grassing alone is not sufficient to make a proper preparation of good flax, it is, after the steeping is over, a most useful and necessary addition." The best flax, unless properly watered and grassed will not be likely to prove remunerative to any one. Dew-rotting should never be applied to fine flax.

Brackish water is a dangerous element in the steeping process, and should be carefully avoided, as it injures the texture of the fibre and gives it a dull leaden hue. There have been recently few improvements in flax steeping. So long ago as 1803 Mr. O'Reilly, of Belfast, suggested the boiling of flax in hot water. More recently, observes Mr. Charley, Mr. Schack "patented a system of fermenting in large vats, in a covered building, with water heated to about 80 deg. or 90 deg.; and, no doubt, this plan worked pretty well. I think if this system could be extended, and grassing in the ordinary way added to it, some good might result; though I should not like to say positively it would be a financial success. The system proposed by Mr. Watt, and in operation for several years, is slightly different. The flax is placed in an iron steam-tight chamber, with a condenser on the top. The steam introduced at the bottom heats and softens the flax, and, being condensed in contact with the roof of the chamber, falls down in water through the flax, washing and cleansing it on its way. The flax is afterwards heavily rolled and dried. This plan may suit for coarse and strong flax intended for making strong threads and lines used in the heavy condition, but I think for the fine fabrics that the old method will be more successful in every respect. Mr. Andrews, the Secretary of the Flax Supply Association, informs me that he has successfully tested a plan of fermenting in covered vats, the temperature of the air in the building being increased by steam heat to the required point. If the agriculturist had no other cost and difficulty than the simple cultivation of the flax plant, the extension of the growth of flax would be comparatively easy to carry out. The trouble of steeping and after management renders the crop less popular than it should be. The advantage of producing on the farm a large quantity of flax seed, so well known for the nutritive qualities it contains, would of itself be an attraction to many intelligent farmers, for there is no doubt by a little skill and care the greater portion of the flax seeds can be taken off and preserved for feeding purposes without any injury to the fibre. The time may arrive when a regular and extensive business may be taken up in all flax-growing districts by enterprising individuals, with the object of buying the flax from the farmers in the green state, and treating it in an improved way on a large scale, combining probably the steeping of the flax and scutching operations in the same establishment. Meantime, let the farmers who wish to make profit in growing flax, attend as carefully to the water process as to the tick cultivation, and avoid as a general rule the imperfect dew-rotting system, or the use of brackish water in any of the pools intended for steeping this valuable plant."—*The Farmer*.

### How I Used Sawdust.

About six years ago I had a saw-mill set on my farm. At first they washed the dust, as the sawyers called it, by letting a stream of water run underneath the saw. As the water got low it would not work; then they had to wheel it out in a pile, and when they went away I had a big pile of sawdust on my lawn. As it was on a good piece of bottom land that I desired to plough, I wanted it out of the way. I tried to burn it, but it would not burn. I concluded at last to turn it to some account; so when I put my hogs up to fatten I hauled a load every few days and threw it in the pen. They mixed it up with their manure and the cobs, and in the spring I had about twenty wagon loads of the very best manure, besides keeping the hogs clean and dry. I used the sawdust for bedding the horses and cows; I put it around my grape vines to keep down grass and weeds, and the ground moist. The vines improved wonderfully. So my pile of sawdust is used up, and I have paid. It was to have a mill again I would make the bargain to have the sawdust left on the ground.—*Cor. Ohio Farmer*.

## Grasses and Forage Plants.

### Neglected Forage Crops.

It may, no doubt, be argued with too much truth, that all forage crops are too much neglected so far as the mode of their cultivation is concerned, but this is not what we are driving at in the caption of the present article. Neglect in the way of not attempting to cultivate them at all, is what we have in view, rather than negligent culture.

How many farms are wholly innocent of all forage crops but hay and straw. No fodder corn, no roots, no rape, no cabbages. Now that winter has set in, there is nothing to feed on that will supply the place of the succulent herbage of the summer time and early fall. Only dry hay and still dryer straw, and such grain as can be spared from the market, are offered to tempt the appetites which crave juicy plants for their full satisfaction. How much better provided for the wants of the stock in winters, is the farmer who has abundance of carrots for his horses, mangolds, cabbages, and turnips for his neat cattle and sheep, and succulent corn stalks for all, than he who has only dry forage in store.

These neglected forage crops are not hard to grow. Considering the effect they have upon land in smothering weed growth, and leaving the soil in the best possible condition for succeeding crops, there are other arguments for their cultivation, besides the all-sufficient one of providing a varied and attractive bill of fare for the animals kept on the farm.

Some of these crops from their special suitability for the use of sheep offer the further advantage that they go far to meet the grand practical difficulty in the way of good real farming, which arises out of the scarcity of manure, and the expense connected with working and hauling it. On light soils, especially, where sheep according to the old proverb, have golden feet, the benefit accruing from this plan of manuring, cannot be over-estimated. Grow vetches, rape, or kohl rabi upon a bit of ground you want to enrich, fold sheep on it, and when the crop is eaten off, the land will be left fit for any crop you may desire to put in. No foraging over of manure, no time and labor spent in hauling it out to the field, — there it is just as you want it, evenly distributed, free from liability to waste, every rain-fall washing its virtue into the soil. It may be argued that there is cost and trouble connected with the folding of sheep; but, beyond the preparation of hurdles in the first instance, the cost and trouble are very trifling. Hurdle-making is a nice winter job. Any man who cannot make a sheep-hurdle, is too stupid and useless to cumber the ground of a farmer. If you make them at odd times in the winter, the only expense will be that of the lumber, and that will not exceed twenty cents a-piece.

Now is the time to reflect on the oversights and errors of the past, and to form plans of better farming next year, and in all coming time. Let these forage crops be neglected no longer. Set apart the cleanest and best piece of land on the farm for turnips. Economize and eke out the manure all winter so as to have as much as possible to put on the turnip land next summer. If there is a bit of rich ground that is dirty with weeds, resolve to devote that to green forage, to be fed off by the sheep. Say not "I have only half-a-dozen or a dozen sheep," but consider how you can get more; for one might as well try to farm well without proper tools, as try to farm without a flock of sheep.

### Manure from Clover Hay or Wheat Straw.

We make the following extract from Mr. Harris' last paper in the *American Agriculturist*, headed "Walks and Talks":—

"Yesterday," said the Deacon, "a farmer took a load of clover hay to Rochester, and all he could get

for it was \$10 per ton. Another farmer took a load of wheat straw, and sold it readily for \$12 per ton. This does not look as though farmers had much faith in your chemical notion, that the manure from a ton of clover hay is worth three times as much as from a ton of straw. The facts seem to be against you." "So much the worse for the facts," I replied. "But I am not going to argue that matter with you. There are some things so well established, that it is no use listening to the objections of those who do not understand what they are talking about. A farmer who sells clover hay at the above prices, and keeps his straw, is not a wise man. When he can exchange a ton of straw for a half a ton of bran, he had better do it."

"You pretend to be able to tell," said the Deacon, "what a ton of manure is worth; but I notice that the chemists differ very much among themselves as to the value of the same identical manure, and I do not see how you can tell with any certainty how much good a ton of manure will do." No one pretends to do so. What we say is this: Here are two samples of barn-yard manure in about the same condition. One contains twice as much nitrogen, phosphoric acid and potash, as the other, and we say, if the one is worth \$1 per ton, the other is worth \$2 per ton. We do not say that if you put 20 tons of the former, or 10 tons of the latter upon an acre of land, the difference of the crops will be worth \$20. This may or may not be the case. The chemist's estimate of the value of different manures is based on their chemical composition and on the condition of the ingredients. The chemist does not undertake to tell a farmer, whether he can afford to buy sulphate of ammonia, or nitrate of soda, to sow on his wheat or barley crop. But if you are going to sow these manures, the chemist can tell you to a certainty which of two samples is the cheapest for you to buy. For instance, he finds that one sample contains 22 per cent. of ammonia, and the other 18 per cent. He tells you the latter is worth \$72 per ton, and the former \$83 per ton, he merely uses these figures in a comparative sense. If he should say the one was worth \$38, and the other \$44, he would be equally correct. He has nothing to do with the commercial value on the one hand, or the fertilizing value on the other. The latter must be determined by the experience of farmers themselves, and on repeated experiments. Where wheat is worth only 75 cents per bushel, and other crops on the same scale, ammonia is only worth half as much to a farmer as in a section where wheat is worth \$1.50 per bushel. When an agent for some artificial fertilizer shows me a whole string of testimonials as to the value of his fertilizer, I tell him that a good analysis would be more satisfactory to me than an actual trial on my own land and under my own eye. A man need not swallow a lot of Glauber salts to tell if they are pure. The chemist cannot tell him whether he needs a dose of the salts, but he can tell him whether the salts are genuine or not. Chemistry cannot tell us whether our land needs this or that manure, but it can tell us whether the manure is genuine or spurious. If farmers had clearer views on this subject, the sale of inferior or worthless fertilizers would soon cease.

### Rapid Method of Topping Roots.

"Carrots, beets, parsnips, and turnips are now very generally cultivated in rows, by those who raise any or all of the kinds enumerated, to any extent. When the time arrives for pulling, each man or boy takes two rows and pulls them, and as fast as pulled they are placed in one row, side by side, one deep, and in the same relative position. The next two rows are pulled and placed in the same way, with the roots of row number two facing those of number one. By following this plan with every four rows the labor of gathering the roots, when topped, will be found much less. The main point to be carried out, in pulling and placing turnips or other kinds of roots, is to be sure and keep the necks as near in a straight line as possible. With an hour's practice a man can pull and place the roots in this position about as fast as throwing them in heaps. One active man will cut off the tops as fast as two men can pull. Equipped with an ordinary table knife the boy follows the puller, covering each top in turn, and frequently two at once, without removing the roots from the position in which they are placed by the men pulling, so there is no time wasted in taking up or throwing down the turnips, beets, or carrots. The topper keeps constantly moving along the line of each row cutting off the tops as he walks along, being forced to make enough of motion to keep warm even on a cold day. I have topped sixty ruts bagas by this method in a minute, when trying hard to work against time. Of course this speed could not be kept up very long. But when ruts bagas have grown full size, say from one

to two pounds apiece, and the ground is evenly stocked, an active workman can without over exertion, pull and top in a working day of ten hours from 150 to 175 bushels. This I know to be the case, for a month ago I had the matter demonstrated in the open field, and therefore can vouch for these figures. By this method turnips grown to full size, can, without any doubt, be pulled, topped, and put in "pits" for an amount not to exceed two cents a bushel. When the ground is stony it is well for the toppers to carry with them a piece of whetstone, so as to keep a keen edge on their knives, which makes the work go easier, a fact soon found out in practice.

As soon as convenient after topping, a wagon or cart may be drawn alongside and the roots gathered therein into the cart and hauled to the root cellar or "pit" in some suitable spot. If intended for market, it will be a saving of time to sort such roots at the time of gathering. This is especially so with turnips. Toward the close of the season we tested for this method of topping turnips, knives of different shapes and sizes, and from these experiments I feel confident that another season I can have made a style of knife that will be a decided improvement on the ordinary table knives for this kind of work. This knife will be the shape of a carpenter's chisel, the edge three inches wide, beveled from both sides, a handle four inches long, with a cross piece on top to give full bearing for the hand. In topping turnips with a knife of this shape the weight of the body helps force the knife through, lessening the labor, while the work goes on much faster.—PATRICK QUINN, in *Tribune*.

### Turnips among Corn

A Westchester County, (N. Y.) farmer is in the habit of sowing Yellow Aberdeen turnips among his corn at the last passing of the cultivator, when the plants are about two feet in height. The turnips do not make much growth until the corn is cut, after which they swell rapidly. The cost is nothing except for seed and harvesting, and the corn being already cut is not injured when the turnips are gathered in. From one to four hundred bushels of turnips per acre have been thus obtained without lessening the corn crop. Weeds are not tolerated, and the whole strength of the land is devoted, as it should be, to useful crops.

**DESTRUCTION OF WIRE-WORM.**—Having been bothered with wire-worm more or less in my crop for some time, may I take the liberty of asking through your paper if there is any way of destroying them? I am advised to sow rape-dust, also salt, to destroy them. Could you, or any of your numerous readers, give me any practical knowledge regarding this pest? I may state that the field is only a few hundred yards from the sea, out of sea; in 1872 planted with potatoes, in 1873 wheat, one-half eaten up with wire-worm, in fact, some totally destroyed. The field is now ploughed from 10 to 12 inches deep for turnips, and in turning up the soil it is literally moving with wire-worm, and I am afraid there will be little chance of a turnip crop unless I get something to destroy the worm. I have tried lime with no effect, and will be glad if you can put me in the way of getting rid of such a pest.—A SUBSCRIBER. [A fortnight ago, in answer to another correspondent, we supplied, in considerable detail, the information which you desire, recommending broken rape cake in portions such as would be given to cattle or sheep to be broadcasted over the field. Lightly harrow the newly-ploughed surface, if it is dry enough, and apply about five cwt. of the cake. On these pieces the wire worms speedily fasten; a score may be found attached to one lump. The feast, however, does not agree with them; they seem to be weakened and sometimes poisoned by the rape cake; whilst myriads attracted to the surface after the food are picked up by gulls, rooks, or other enemies; or when thus exposed are more likely to be destroyed by frost.—N. D. *Agriculturist*.

**THE WELL-KNOWN GRASS, *Zizania aquatica*,** is coming into use for making paper. This plant, which is known in this country as "Canada Rice," grows in enormous quantities on the shores of Lakes Erie, Ontario, St. Clair and others. Doubtless Rice Lake got its name in this way. It is stated that a supply from these sources of 100,000 tons annually may be looked on as certain. It grows in swamps, ponds, and shallow streams, where it attains a height of from 7 to 8, or even 12 to 14 feet. The structure is similar to that of rice except that the flowers are bisexual. The grain is largely used by the Indians for food, and is superior in flavor to most other cereals.

# Agricultural Implements.

## The Plough Mould-board.

One of the most prominent differences between good, medium and bad ploughs, results from the construction of the mould-board. A good mould-board must combine the properties of the wedge and the screw—of the wedge so as to cut the slices easily and gradually, without over-increasing the draught, and of the screw to raise the one side of the slice by degrees until the whole has been turned completely over.

A good idea of the furrow slice may be obtained by laying a strap of leather or other substance flat upon the table, and then, whilst holding one end of it firmly in its place, turning the other over until it has been completely inverted.

Now, if the office of the furrow slice were merely to turn over the sod and nothing more, the mould-board might be shaped just after the form of the strap-twist; but there are two objections in practice to this form. The first is that the sod would be laid over much too easily, that is, without sufficient shaking and consequently pulverization, which on hard soils would prove a most serious fault. The second is that the sod is elevated just as rapidly at the first movement, when it is of considerable weight, as it is when falling off again, thus adding materially to the draught. To remedy these, therefore, the mould-board should have a shorter twist towards the rear. This not only lightens draught, but contributes largely to that pulverization which is so essential to successful growth.

Mould-boards vary in form as do the caprices of their inventors. The great majority of these fashioned their implement after some notion obtained by experience. Thomas Jefferson was, we believe, the first who introduced something like a system into his method of formation, which was to shape mould-boards so that their curves took a mathematical turn fixed upon the basis of a series of straight lines. It is pretty generally understood that the draught of a short, blunt plough is greater than that of a long wedge-shaped one. This is undoubtedly correct, but only so far. If the plough be too long, as is often the case with those manufacturers who argue upon the principle that "If a hittle is good, more is better," remember the friction along the lengthened side will more than counterbalance what is gained by the elongated point. Again, the cutting part may erroneously be formed like the sharpened end of a chisel, so that the sod may slide back with a very slight turn until it is elevated to a considerable height before inversion, thus adding largely to the draught of the team. A plough of this kind may be known by examining the scratches on its mould-board after use. Instead of following the curve regularly they will be found to shoot upwards across the face of the mould-board and disappear at the top.

Instead of this form, the point should be long and acute, and the mould-board so shaped as to begin to raise the left side of the sod as soon as it is cut, and ere the right side has yet been reached by the cutting edge. This turning motion being continued, the sod is inverted by being scarcely lifted from its bed; and the pressure which turns it being opposite to the pressure of the landside, an equilibrium of these two pressures is maintained, and the ploughman is not compelled to bear constantly to the right to keep the plough in its place.

In deep trench or furrow ploughing, however, there is an exception to this rule, where it becomes necessary to throw the earth from the bottom of a furrow to the top of the inverted sod. Ploughs are made for this special purpose, with deep tillers, and so adjusted generally that the earth passes lengthwise over the mould-board. Shares, too, should be

so constructed as to cut at equal thicknesses on both sides. Some ploughs are made so as to cut deepest on the landside, forming a sort of saw-teeth section to the unmovd earth below, and leaving what is termed acute or crested ridges at the top. Such ploughing should be avoided, for it requires as much force in cutting the slice and nearly as much in turning it over, as when level furrows are made. The same result is produced when the plough is improperly ganged, and the operator is compelled to press the handles to the left, to keep his implement from running too much to land. It is sometimes necessary to place inverted sod in an inclined position in order to give more exposure to the crumbling action of the weather, and to effect better drainage beneath. In order that such furrows be equally inclined on both sides, their thickness must be precisely two-thirds their breadth, i.e. if the plough runs eight inches deep, the slices should be twelve inches wide. In order to effect this the cutter is placed very nearly upright. If, on the other hand, it be placed slanting, the slices will be flat, which is very desirable in loose soils.

## Way to Hoe Understandingly.

Let us study the course of that intelligent young farmer to whom farming is an art. He examines critically his tool before purchasing; for the quality of the steel he requires the lab of some respectable firms; for the rest he is his own judge. His selection is an implement not over wide, having fine and sharp angles, and so mounted on the handle as to require as little stooping as possible. He selects a handle of hard wood (the momentum gained by which being more than an offset to the extra weight), straight grained and rather longer than the average. The handle having been well oiled to prevent its cracking, our farmer is ready for the field.

Now study him at work. With many, hoeing is merely a using and falling of the implement, or what may be called a chopping stroke, with too sufficient to cut up weeds. Our farmer has not only an upward down stroke, but a swinging, half circular stroke, that from its effects may be called a cutting or hoeing stroke; and, moreover, his chopping strokes are made at an angle varying with the kind and size of the weeds.

Here is a capital axiom that he has adopted—that weed hoeing has two ends in view—viz., to kill the weeds then growing and to do this in such a manner as to prevent, so far as can be, the seed in the ground from germinating. "All tillage soil," he says, "has the seed of weeds scattered through it as deep as it is tilled, say for a foot in depth; some of them retain their vegetating powers many years—some only one year. Now, my object in weed hoeing should be, while destroying the weeds on the present surface, not to make a new surface from which a new crop may start."

He, therefore, disturbs the surface only enough to kill the weeds; his work presents none of the rogueness of the bungler, who wastes vast amounts of strength in rough chopping that takes up weeds by the roots in front of him, but to leave them rampant in the rear of him, while he so disturbs the under soil that the seeds therein are brought sufficiently near the surface to germinate. If some one should ask, is not our great object to loosen the soil? he replies, "certainly, at times; but we are now discussing hoeing as a mere weeding process." — *Agricola in New-York Herald*

## Old Ploughs

The following, extracted from a report of delegates sent by the Canadian Government to the Vienna Exhibition, will be read with interest, as showing how ludicrous and barbarous the implements of fifty or a hundred years ago, must look beside those of the present day:

A plough used by the Emperor Joseph II. of Austria, in 1763, was placed beside a modern plough, in a portion of the Austrian department set apart for the exhibition of the old ploughs of various nations. No better proof could be given of the great advance in the improvement of ploughs, which has marked

**BLUE GRASS.**—A correspondent of the *Iowa Fine Stock Gazette* says that it is a fact that many varieties of seed lose their vitality by drying, and blue grass is no exception. He says that in a dry state, by cutting and drying as soon as cut, it will generally prove successful, and from a variety of seeds of the next year's crop. It will be found more successful where it is sown on land that has been well tamped by cattle, and on very rich or muddy loiled out. Some of the best farms where the cultivated grasses have been largely killed out, is a very good plan for sowing blue grass seed, sowing on the ground with a scatterer, and then harrowing it in. The best time for sowing is in the fall, and the best soil is a rich, deep, loamy soil.

**SEWING FURROWS.**—The *Rev. Mr. Parker* says: We prefer fall sowing in this latitude. Would you sow from the 15th of August to the 15th of September, and not later, it would be well. Where well rooted, and having a good soil, we would scatter the seed over the surface of the ploughing, and would then harrow it in. If such manure cannot be obtained, it may be better to scatter coarse manure over the surface as winter sets in. This plan will be better to enrich the soil, but protect the seed from being killed by frost, or forty-five pounds of seed, will be sufficient for an acre. We omitted saying that the seed should be well mixed with the manure. Be careful about the sowing, and the seed will be likely to make a better stand. In sowing the sower should be over the seed at the proper time.

**WINTER WHEAT.**—On this subject a correspondent of the *Canada Farmer* writes:—Having tried the plan of sowing winter wheat, I can say with confidence that it is a plan to be commended. In 1847 and 1848, I sowed a field in which I sowed winter wheat, and before sowing I had a good deal of clover per acre with the best of the soil, and it was very high by frost; when I sowed the wheat and covered it with a light coat of manure, I never had a crop of grain or corn on the land since. It is good for grass. The winter wheat was the year in fields per acre. I have tried the extra amount of mulching with straw with good effect; but both in both the best and cheapest way, it is to mulch and sow the wheat in the best way, and to sow with straw. I would like to see you try the experience of others on the subject.

**THE LAYING DOWN OF PASTURE.**—I have some acres of light soil, and which have hitherto been cropped on the first year, and which I am desirous of laying down in permanent grass for grazing cows. As I have no farmy edging, I will thank you to inform me what description and quantity of manure I should apply to it per acre. Should the manure be put on before or after sowing? What are the best options and quantities of grass and clover seeds I should sow down per acre; and when I should sow them?—A STRANGER. [You should have no difficulty in securing a good permanent pasture on light soil, provided the soil is in good manurial condition and properly tamped, and the climate is not too dry. For like most other living things, grasses will not live and prosper, as some people appear to expect that they should do, without fitting food. Overland, overcropped and exhausted of plant food, is laid down to grass, or worse still, is sometimes allowed to run to weeds and rubbish, and a sad plant is made that the grass is light, poor, and without feeding properties. I can say respectable man you will find a mixture of the following is suitable for your climate and soil. A slight dressing is generally directed by ordering the seeds separately, and mixing them for yourself. An ordinary mixture for light soil is made with about 8 lbs. each of Italian and perennial rye grasses; 6 lbs. of white clover; 2 lbs. each of blue and cow grass (trifolium hybridum and pratense perenne); 1 lb. yellow clover; 3 lbs. each of meadow fox-tail, cocksfoot and meadow fescue; 2 lbs. each of pas pratense, poa trivialis, and poa nemoralis. For sheep pasturing, a couple pounds of parsley seed is a useful addition. Where the grass is to be used for hay, 1 lb. in addition may be added of the anthracinum-odoratum, or sweet vernal grass. Grass seeds for permanent pasture should be sown when sown without any crop crop. An early thin crop of wheat or oats they are, however, best to get overlaid with barley. On a mixed soil they should be sown in March or April and be well harrowed, and then rolled down. Before sowing the land should have a dressing of best, or a mixture of soda, guano, and crushed bones, and when the grasses are a year old this dressing may be advantageously repeated. — *N. B. Agriculturist*.

## Horticulture.

EDITOR—D. W. BEADLE, CORRESPONDING MEMBER OF THE  
ROYAL HORTICULTURAL SOCIETY, ENGLAND.

### Seasonable Notes.

**MICE.**—The season of great damage to trees from mice is approaching, therefore take all due precautions. If the earth is not frozen make a mound round the tree which will in a measure protect it. The snow should be well stamped down around the trunk. As many young orchards have been entirely ruined by these pests, it will pay to take pains.

**SURFACE WATER** should not be allowed to stand around the trees. See that it has an opportunity to run off.

**SEEDS** of stone fruits should be immediately bared.

**PRUNING** of small branches may be done any warm days which occur, but larger limbs had better be left until the spring.

**GRAPE VINES** should be all laid down and covered by this time. Even the hardier sorts are the better for it and will repay the trouble by abundant crops next year.

**STRAWBERRY BEDS** should be covered with leaves or straw before the ground freezes, but even now protection may not be too late. Pine boughs when they can be obtained are excellent for this purpose. Spent hops put on at the proper time are reported as best.

**CURRENT BUSHES** will be all the better in the spring for having some of the house ashes thrown around them during the winter.

**CLEAN UP.**—During the many open days when there is not a great quantity of snow on the ground, rake up all the rubbish and burn it; anything of this kind which you can do at this season of the year will be so much time saved in the spring, when the great hurry comes on.

**BEAN AND PEA STICKS** should be laid away where they will be handy for next year. Take a run out into the woods and procure an additional supply. All your garden peas should have bushes to run on, as they are so much easier picked and produce much more freely.

**SEEDS.**—If you have raised any seeds this is the time to clean up, assort, and label them. Keep them in a cool, dry place where the mice cannot reach them.

**PLAN** out your operations for next year, if you do this now it will save time in the spring, and you can do your work more systematically.

**SEEDS.**—All the seeds which you have saved during the year should be now cleaned, labelled and put away.

**THE WINDOW** must now be your garden unless you have a green-house.

**MUCH** pleasure may be derived from a few flowers in the house if properly attended to. Remember that you will not have good plants unless you give them proper attention.

**WATER** them not too frequently, but thoroughly when you do it.

**AIR.**—Give them all the air possible; plants derive greater part of their nutriment from the atmosphere, and therefore they continually require fresh air.

**WASH** the leaves frequently, especially if the plants are in a position in which they get very dusty. Remember that it is the *underside* of the leaf which contains the pores through which the plant breathes, and it must have its respirators open.

### New Roses for 1874.

According to the latest reports, the following seem among the most popular of new roses in England: *Alexander Dickson*, beautiful form, good petal, very full, color pure rose.

*Baronne Hottot*, flowers large, good form, rosy-flesh color.

*Etienne Dubois*, rich velvety crimson, large and full. *Etienne Dupuy*, a vigorous grower, fine form, color beautiful bright rose, the reverse of petals silvery.

*Francois Courtin*, very free bloomer, and very fragrant, rich purplish cerise, full and fine shape.

*Helvetia (Tea)*, vigorous grower, fine form, flowers large and full, salmon suffused with rosy peach towards the centre.

*Jean Dalmats*, very large flower of fine form, rich shaded rose.

*John Harrison*, flowers large and full, dark brilliant crimson; shaded with velvety black.

*Madame la Comtesse de Maussac*, fine form large and full, bright rose.

*Madame Louis Leveque*, growth vigorous, flowers large, full and globular, color bright clear rose.

*Madame Marie Duncan*, flowers large and full, color beautiful bright rose.

*Madame Marie Fuiger*, flowers large and globular, bright rosy-flesh color.

*Madame Saison Lierval*, a free bloomer, color fine carmine, with brilliant centre.

*Mademoiselle Dumaine*, flowers large and globular, bright rose.

*Mademoiselle Philiberte Pellet*, flowers large, fine form, color bright red, free grower, and abundant bloomer.

*Marie Theresa*, flowers fine form, full and very sweet, pale rose.

*Miller Hayes*, flowers large and full, fine cup-shape, color crimson, shaded with velvety red.

*Olga Marie*, flowers fine form, medium size, color beautiful white flesh.

*Ophelia (Tea)*, a profuse bloomer, flowers medium, fine form, color clear yellow.

*Perfection des Blancs*, growth vigorous, flowers pure white, full, fine form.

*Paulin Talabot*, a very profuse bloomer, color dark reddish carmine.

*Prince Paul Demidoff*, flowers large and full, color fine clear carmine rose.

*Thomas Mills*, flowers extra large, a free bloomer, color bright rosy carmine, with whitish stripes.

*Theodore Butcher*, fine form, full and large, purple violet, with fiery centre.

*Triomphe des Rosomanes*, flowers excellent form, large and full, deep black velvety crimson, shaded with red towards the edges.—*Gardener's Monthly*.

### Hints to Amateur Florists.

There are many who are investing in plants who have had little or no experience, and to such a few hints may not come amiss.

1. Plants taken from the warm, moist air of a propagating house should be wrapped in thin, soft paper, left open at the top, until they have become acclimated to the change. The leaves should be sprinkled on the under and upper side with a wisp broom, studiously avoiding cold draughts of air.

2. The best time for watering plants is towards evening, as in the summer time the evaporation is not so rapid during the night; whereas, if watered only in the morning, they so soon dry off that they do not get the full benefit of the evaporation process which supplies the place of dew, and they will look more fresh and vigorous.

3. The idea entertained by almost every amateur flower grower that a large amount of earth is required for the health and vigor of the plant, is very erroneous, and is called by experienced florists over-potting, and is laden many times with serious results to plant life; for the soil in pots, boxes, tubs, &c., does not have the action of the elements to neutralize the acid or equalize the chemical compounds that are used up or generated to excess when thus confined, as the soil often becomes sour and sodden, and necessitates the speedy removal of the plant into fresh soil, to prevent decay of the roots. Soil best adapted to nearly every plant grown in pots, is good sandy loam. Good garden soil that has been enriched until it is soft and mellow, will answer every purpose; but if neither of these can be obtained, procure leaf-mould from the woods, swamp muck and sand, equal parts, thoroughly mixed, and this will make a most desirable compost. The addition of a small quantity of wood ashes or lime will destroy and prevent worms.

4. In repotting, care should be taken not to injure the roots. To prevent this, set the pot into a pan of

the 100 years which have elapsed since His Imperial Majesty worried himself and his mother earth with that plough. This venerable plough was composed of the root of a tree, with the stem for a beam, resting on an axle with wheels underneath it of about two and a half feet in diameter; the handles were secured to the knee by holes bored into it, into which the handles were secured; the share was a piece of iron about nine inches long secured to the point by the knee, and then a strip of board, about six inches wide, was secured near the share. This last contrivance was designed to answer the purpose of a mould-board. The old English ploughs, though much in advance of this Austrian one, were very awkward and weighty affairs, such as now would not be accepted as a gift by farmers in any civilized country. Spain exhibited an old plough with shafts, and a wooden share. South France, a plough constructed of wood, with the exception of the share, with wooden mould-boards five inches wide; this plough was about five hundred years old.

From Tyrol, in Morocco, Africa, a plough was sent which had only one handle; it was very similar to the Austrian plough, being composed of a wooden knee, but without wheels. There was a Scotch plough with wheels and three coulters, similar to a cultivator. An American plough, without mould-boards, one wheel and head 12 inches deep. A Poland plough had no wheels. A Chinese plough had one handle, without any head or mould-boards, and with the beam fastened to the handle; to the end of the handle was attached a share. East Russia exhibited a plough with beams, sixteen feet long, fastened to a yoke, in order to be drawn by oxen. From Poland there was a plough without any mould-board, and having a head sloping forward very much. West Russia exhibited a plough under an axle, raised and lowered with a screw running through the axle. A Norwegian plough had a handle almost perpendicular, with beam morticed into it; also a piece of wood morticed into the lower part of the handle, on which was placed an iron share about nine inches wide. A Dalmatian plough had a crooked handle, on the lower end of which was placed a share, with a wooden beam morticed through the handle.

### Can't You.

Before the winter fairly sets in can't you build a shed over the place where your manure heaps will be piled and thus save a third part of the value of the manure?

Can't you bank up the house a little better, or pile hemlock around it, or plaster up the cracks around the cellar windows so the potatoes won't freeze as they did last winter?

Can't you batten the barn, or contrive some other way, to make it a little warmer than out of doors?

Can't you clean and oil up the tools you are done using for this season, so they won't rust out before you want them again?

Can't you move the watering trough into the barn cellar or under a shed, so the cattle can and will drink without being choked to it?

Can't you fix a hen-roost somewhere, so the droppings won't all light on the cattle's backs or in the horse crib?

Can't you build a false entry over the outside door that will save wood and keep the children from getting cold?

Can't you arrange the corn barn some way so the rats won't eat half the grain in it?

Can't you bank up the pump and put cloths on to the water-pipe, so they won't freeze up before spring?

Can't you put in that light of glass that has been broken out of the window in the gable end of the barn for two years?

Can't you put a new floor in the place of the old one which has worn out in the cattle and horse stalls?

Can't you kill off twenty-five of the thirty doves that belong in your barn and must steal a living or starve this winter?

Can't you build over the hog pen, so the porkers won't have to shiver and grow poor for the next three months?

Can't you clear the barn of carts and carriages, so as to give you elbow room and a chance to feed your cattle?

Can't you put away what rakes and forks you will not need, and not have all you own around the barn to get broken and be in the way?

Can't you fix the sheep-pens and cribs so as to save fodder and make it better for both sheep and shepherd?

Of course you can, and if these things need doing about your premises it will be money in your purse to be up and doing them.—*Mirror and Farmer*.

water with the ball of earth around the roots is saturated; then place the hand over the top of the pot, then bottom upwards, rap the rim of the pot on the back of your seat, and the whole will fall out. Have a second pot, one or two sizes larger, and take care to be prompt in supplying water in soil to fill the gaps, or any shaking so that the roots next to the sides of the pot will be supplied. This process only needs repeating from once to twice a year; but if you want flowers, you must keep your plants root-bound in a measure. This your judgment must decide.

5. Plants kept in a sitting-room where frequent smoking has to be done, should be covered until the dust has settled, as dust on the foliage injures the plant by retarding its growth and bloom, as leaves are so much the more liable to animal life.

6. Water scale or red spider have accumulated, as they will in warm, dry atmosphere, or in dark situations where cool damp winds showered over the leaves, and some of the under side, or turning the leaves a top, and turning the whole down into the direction, will remove the pests. Where plants are crowded into too small space, they will generate the aphid or green fly, and the tarp and mealy bug. Washing or washing the plants thoroughly will destroy these also.

7. Above all, give your plants plenty of fresh air and all the sun and possible. But few plants will grow in the shade, and this class is mostly confined to the Begonia family and a few varieties of Vines; among them are the Smilax and Common Ivy.—O in *The Farmer* (Eng.)

**Pruning Trees.**

Let a green hand to prune trees where limbs of any size are to be removed, and the chances are, ten to one, that it will commence at the top, and saw to one edge of the limb, and it falls by its own weight, tearing down the bark and wood, inflicting a great injury, which may require years to heal, and which may be readily prevented from the weather, will cause the decay to destroy the tree. The method commonly recommended to prevent such injury is to begin at the bottom, and cut half-way to the top, and then finish from the top, or, with very large limbs, to have them supported by a crooked pole or pole held by an assistant below; but we are from a better plan, and quite as easy, viz., to make a notch in the limb at a convenient distance, say 1800, from the point where we wish the limb removed. This short stump can, except in the case of very large limbs, be easily held in one hand, while the limb is made with the other.

After a large limb is sawed off, the surface should be pared smooth; and, for this purpose, we have frequently found a common carpenter's chisel, about five inches in width, much more convenient than a pruning knife. To prevent decay, there is nothing better than one or two coats of good oil-paint; and it should be as near the color of the bark as possible, so as not to disfigure the tree. All tools used in pruning should be of the best quality, and kept as sharp as possible, it is poor economy to use any others. Limbs are sometimes cut too close; but for every year there are a hundred not cut close enough. Every cut, large or small, should be made in a smooth, clean, workmanlike manner. A poor workman is soon known by hacking off a limb with a dull knife, leaving so many facets as on a multiplying glass.—D. in *The Farmer*, (Eng.)

**Victoria's Gardens**

Colonel Torrey writes to the *Philadelphia Press*: "The royal gardens near Frogmore are thirty acres in extent, and enclosed within a wall twelve feet in height. It is a magnificent spot with its grand collection of plants and flowers. There are two splendid apartments for the use of the queen, out of which she proceeds to the conservatories, which cover a total range of glass of 920 feet. There is a vinery 102 feet long, two peach-houses 56 feet long, and pots for forcing melons, cucumbers, and asparagus, heated with hot water. These gardens are considered to be the most complete of any on earth, and are surrounded with 1800 acres of magnificent scenery, and stocked with several thousand fallow deer. 'Yonder,' said our guide, 'is the Long Walk, forty three miles in extent, shaded all the way by a double row of ancient oaks and larches planted in 1660. It was planted in the year 1370, and among its other advantages, is a salubrious and healthy effect in chronic diseases. In the south-eastern direction you will perceive a lodge, which was for a long time the residence of George IV. It was taken down by command of the king, with the exception of the golden dining-hall, where at present oc-

casional royal fetes are held. At the back of the lodge you will see a large building called Cumberland Lodge, formerly the seat of William, Duke of Cumberland, uncle to George IV. The queen's hunters are kept in the adjoining premises. Near Cumberland Lodge are the schools, finished in 1845 by the queen, for the education of the children of the employes on the royal domain. There on the other side of Cumberland Lodge is the broad approach to the celebrated lake called Virginia Water, of which you have heard so much, surrounded by a succession of delightful views, increased by artificial aid. It is about seven miles in circumference, one mile and a half in length, and in width one-third of a mile, and is one of the largest artificial sheets of water in England."

**Pruning Evergreens.**

In setting out small Arbor Vites and Hemlocks say those 10 or 15 inches high, I cut back side branches and leading shoots one-third; and this can be done very rapidly, by grasping the entire top in one hand, then with the other cut with one stroke of the pruning knife.

If the plants are smaller, say 6 or 10 inches high, a half dozen or more can be easily taken in hand at one time, and all pruned with one stroke. This cutting back of the tops is very beneficial to young plants from the seed beds, or when gathered from the woods. The roots are always more or less injured, and lessening of the amount of top will often be the means of saving life. In removing larger trees, and of different kinds, such as the Spruces and Pines, a shortening of the branches will not only assist in saving the life of the plants, but aid in giving them a good, symmetrical form. Evergreens grown in nursery rows are very likely to be distorted in form; the branches on the two sides adjoining the neighbouring plants in the row will be much shorter and less in number than on the other two sides; consequently, the shortening of the longer ones gives symmetry and uniformity of appearance.

It is a great mistake to suppose, as many persons do, that evergreens require no pruning. They may not need as much as deciduous trees; still, a little at the time of transplanting, and enough afterwards to keep them in proper shape, is certainly beneficial, if not positively necessary. If trees that have been set in nursery rows or hedges fail to make stocky specimens, the leading shoots should be annually shortened until the requisite form is secured.—*Ruralist*.

**The soil for Fruit Trees and Fruit Tree Borders—a Caution.**

At this season, doubtless, many of our readers will be engaged in or making preparations for fruit tree planting. A few words, therefore, with regard to a point in connection therewith, which does not often receive the attention it well deserves, may not be in-expedient or ill-timed. We allude to the soil in which it is intended the trees are to grow, and more especially to that for wall and house trees. We are strongly of opinion that many of the ills and failures of fruit trees—infertility, debility, decay, &c., so generally, and without due thought or careful investigation, attributed slipantly to atmospheric influences, blight, insects, and what not, would, if sought for, be found to have their origin in what was thought to be a matter of small or, indeed, no moment at the time of planting. We allude to the presence in the soil of leaves, leaf mould, stray bits of wood, fibre, or other vegetable matter calculated to promote the growth of the mycelium or spawm of various fungi.

This is an evil of the first magnitude, and so many instances of its baneful consequences have come under our notice, not alone in the matter of fruit trees, but also as regards specimens of choice Conifers, &c., that we cannot too strongly impress on our readers the exercise of the greatest caution when preparing borders for a number or even a supply of pabulum for a single tree. It is scarcely necessary to say that we altogether deprecate the use of manures in the composition of soils for fruit trees. When nourishment is required its proper and effective administration is in the way of surface mulchings or liquid. Good sound friable loam or maiden earth—simple, nutritious, and wholesome—contains all the elements for fruit tree requirements, and is the pabulum which, if possible, the fruit grower should, in the first instance, provide them with. Even in regard of fresh loam some caution is required, as if of a very turfy or fibrous character, the slowly decaying fibre, especially in dry seasons, is not unapt to generate the evil, and wrap the unhappy roots in the death folds of the fungoid winding-sheet.—*Irish Farmer's Gazette*.

**Keeping Grapes through the Winter.**

To preserve grapes successfully on the vines through the winter months, in the first place the crop should be rather on the light than the heavy side, the berries should be more severely thinned than in the case of summer grapes, and they should be thoroughly well ripened by the end of September. Large bunches should be even more severely thinned than smaller bunches, which latter generally keep better than larger ones, because the air circulates more freely through the heart of them, and consequently damp is not so likely to settle about them. It is also of much importance that the foliage should be kept healthy as long after the grapes are ripe as possible. Grapes grown in heavy, damp soils are not so likely to keep well as in drier borders; and in localities where the autumn rainfall is heavy, it is advisable to protect the outside borders from rain before the grapes are quite ripe; for grapes ripened under the influence of wet borders do not keep so well. The inside border should not be damped in any way after the grapes have commenced to color, but a slight top-dressing of dry, finely pulverized old mushroom bed dung should be spread over it, and allowed to become perfectly dry and remain so all winter. Not a pot plant requiring water should be allowed in the house. An equable temperature of from 45 to 50 degrees, according to the weather, should be kept up by means of the heat when necessary. Extra heat should be put into the pipes on fine days, and air put on at top and bottom to expel damp from the house. Avoid the practice of firing with a view of drying up damp on wet or foggy days. It has the effect of drawing a stream of moisture through the house, to be condensed on the surface of the berries, and cause them to damp. When such weather occurs, rather keep the ventilators shut, and keep a very slight warmth in the pipes. Grapes are now very successfully preserved by being cut before the dead of winter, after the vines have shed their leaves, with a portion of wood attached to the bunch, which is inserted in bottles of water having a few pieces of charcoal in them, and ranged in rows in racks made for the purpose, in a dry room where the temperature can be steadily kept at about 40 degrees. In this way they can be kept for many weeks; and where it is necessary to have plants stored in late vineries, it is much preferable to leaving the grapes to take their chance along with them. Of course the flavor of the grape is slightly deteriorated from imbibing part of the water; but it allows the vineries to be used for other purposes, and the vines being pruned before there is any chance of their bleeding.—D. THOMSON, in *The Gardener*.

**CUCUMBERS IN RUSSIA.**—On my way home from the fair of Nijni-Novgorod (says a correspondent of the *Daily News*), I was again struck with what I had often remarked before, viz., the profusion of water melons and cucumbers, which were being everywhere offered for sale. Pyramids of melons and water melons, like cannon-balls in an arsenal, were heaped up in every direction, and as for cucumbers, you couldn't help fancying that a plague of cucumbers, like locusts, had descended upon the earth. All along the Volga, from Astrakhan to Nijni, the whole population seemed engaged in eating water melons. Their price being three sopesks, equivalent to one penny, put them within the reach of even the moderately wealthy. At every wood station that we stopped at, the water melon and its rival, the sunflower, were the subject of a lively traffic. Saratoy seemed to be the head-quarters of this latter fruit, but we had outposts all along the line. But if the water melon and the sunflower are luxuries and pastimes, the cucumber is a law and a necessity. You never see a Russian peasant at dinner but you see the lump of black bread and the cucumber. A moujick's dinner may be said to consist of x plus cucumber. The x will consist of his favorite cabbage soup (schtehi), with or without meat in it, and sometimes in addition to it the equally famous grit porridge (kascha.) Sometimes the kascha is without schtehi, and sometimes the schtehi is without the kascha, but whether in separation or combination, the cucumber, at least, is always there; and should x equal zero, as I am afraid it sometimes does, then the ever-faithful cucumber does duty for all the rest. cucumber seems certainly a singular dish to be so national in a country with a climate like Russia's. It is the last that one would select *a priori* for the post; but this is only one of a great many singularities one meets with. The cucumber costs the thirtieth part of a penny about the Volga; perhaps this fact will explain the anomaly.

### The Origin of our Cultivated Fruits.

Prof. Asa Gray, in his paper read before the Pomological Society, asks: "Were the fruits made for man, or did man make the fruits?" We are sure that our readers will thank us for quoting his answer to the question, which is as follows:—

"These need not be taken as mutually exclusive propositions; for as 'God helps those who help themselves,' and man's work in this respect is mainly, if not wholly, in directing the course or tendency of nature, so there is a just sense in which we may say 'the art itself is nature,' by which the greatest triumphs in horticultural skill have been accomplished. Moreover, I am not one of those naturalists who would have you believe that nothing which comes by degrees, and in the course of nature, is to be attributed to Divine power. The answer I should give to the question is as we thus put it, is. 1. Some fruits were given to man as they are, and he has only gathered and consumed them. But these are all minor fruits, and such as have only lately come within the reach of civilized man, or are not worth his trouble. Cranberries, persimmons, and pawpaws are examples. Whether even such fruits have or not been under a course of improvement irrespective of man, is another question. 2. Others have come to man full flavored, and nearly all that he has done has been to increase their size and abundance, or extend their season. Currants and gooseberries, raspberries and blackberries, chestnuts, and above all, strawberries are of this class. 3. But most of the esteemed and important fruits, as well as the grains, have not so much been given to man as made by him. The gift outright was mainly plastic, raw material, time and opportunity. As to the cereal grains, it is only of the oat that we probably know the wild original; of wheat there has been an ingenious conjecture, partly but insufficiently confirmed by experiment; of the rest, no wild stock is known which is not most likely itself an escape from cultivation. Of some of them, such especially as maize, not only can no wild original be indicated, but in all probability none exists. So of the staple fruits; of some the wild original can be pretty well made out; of more they are merely conjectural; of some they are quite unknown, and perhaps long ago extinct."

**THE CHESNINE, Eng.** market gardeners preserve onions by nailing them in bundles on the outside of their houses; in this way, slightly protected from wet by the eaves, they keep on an average five weeks longer than those of the same varieties and of the same crop stored in the ordinary manner.

**ASSISTING THE GERMINATION OF SEEDS.**—According to Bottger, a moderately concentrated solution of caustic soda or potash seems to promote the germination of seeds even more than ammonia, especially of coffee beans, which germinate with difficulty. After soaking a few hours in diluted potash solution, they often put forth snow white radicles.

**THE LARGEST VINEYARD in the Southern States** is near Fayetteville, N. C. The *Eagle* of that place says that it contains 100 acres on which there are 7,000 vines. The vines are chiefly the superhanging, but also include the flowers, Catawba, and other varieties. It is supposed that the yield from these vines this year will be fully 40,000 gallons of wine.

**THE NEW SEEDLING strawberry** raised by Mr. Corbin, head gardener to the Marquis of Montemart, at Lachassagne, has been pronounced, by a horticultural commissioner sent to examine it in a growing state, to be the best variety yet produced. Notwithstanding the advanced season, the plants were found still covered with both fruit and flowers. It is said (*Garden*) to be a kind well suited for forcing.

IT IS STATED that more bouquets (not buttonhole) are made up in a single month in the City of New-York than in the course of a whole year in the city of London. This is, perhaps a trifling exaggeration, but Mr. Dickens said very much the same thing in writing of his American experience several years ago, so that it is evident that our love for flowers is sufficiently conspicuous to attract the attention of foreigners.

**PRESERVATION OF FRUIT.**—The following method for the preservation of fruit has been patented in England. The fruit is placed in a vertical vessel in layers, separated by layers of pulverized white sugar, and is then covered with alcohol of 60° Gay Lussac. After 12 hours the closed vessel is inverted and the maceration allowed to continue for 12 to 72 hours, according to the nature of the fruit, which is then removed and allowed to drain and dry. About two pounds of sugar and two pounds of alcohol are recommended for four pounds of fruit.

**A RECENT NUMBER of the Calaveras (Cal.) Chronicle** says: "An instance of the effect of heat upon fruit trees, exemplified by the recent great fire here, has been brought to our notice. The orchard of Judge Leavitt, situated in the suburbs of Mokelumne Hill, was subjected to a considerable degree of heat during the progress of the conflagration. Some of the trees were killed, while others were scorched just enough to partly wither the leaves. Shortly after the fire the trees but slightly burned put on the emerald liveliness of spring, blossomed, and are now bearing as thrifty a growth of young apples as we ever saw."

**A CORRESPONDENT of the Scientific American** says: "The seed of the common locust tree will not only stand the temperature of boiling water, but will always fail to grow unless boiled for eight or ten minutes. My father planted about 15,000 seeds of the common locust on four acres of land and only about fifty seeds germinated. We now boil them for ten minutes, or place them in cold water and allow it to come to a boil, and remove them three minutes afterward. These seeds will grow finely after a large brush pile has been burned over them. These are facts, occurring every year, to my personal knowledge."

**THE *Revue Horticole* for November** has a fine plate of three varieties of annual Chrysanthemums (*C. carinatum*) of the new double kinds—a white, a blush, and a pale orange variety, being figured. These new border flowers perfectly hardy, and of compact habit of growth, will become highly valuable during the early summer months, before German Asters appear; while later sowings will produce plants flowering at the same time as the Asters, among which no shades of yellow or orange are found; and, consequently, the double yellow annual Chrysanthemum will prove a great acquisition, and furnish a striking contrast to the blues, lilacs, and reds of the Asters.—*H. N. H. in The Garden.*

**PEAR SEEDLINGS.**—A Western paper says: "It is of little use to experiment with pear seedlings, as they are liable to leaf blight the first summer, which will destroy most if not all of them, unless they are treated by an experienced hand in the business." This in answer to a Nebraska's inquiry. How it may be in Nebraska we cannot say from either observation or experience; but we know Eastern farmers who every year or two sow a quantity of pear seed, raise seedlings from them as easily and cheaply as from apple seed, top-graft them and fill up their orchards with them; and they are no more likely to blight than pear trees from the most accomplished nurserymen.—*Rural New Yorker.*

**PEAR SYNONYMS.**—Since the publication of his history of pears, M. André Leroy has issued a notice to his subscribers to the effect that the thirteen pears named below are identical with those bearing the names cited:—

|                         |                |                       |
|-------------------------|----------------|-----------------------|
| 1. Abbé Péras           | is the same as | Vingoulouse           |
| 2. Angobert             | "              | Mausquette l'oubie.   |
| 3. Aube Courbé          | "              | Amiral.               |
| 4. Bergamote du Bugey   | "              | Bergamote de Paques.  |
| 5. Beurré Cady          | "              | Ophélie d'Enghien.    |
| 6. Bonne de Soulers     | "              | Bergamote de Paques.  |
| 7. Colmar Charml        | "              | Léon Leclerc Epineux. |
| 8. Doyenné              | "              | Doyenné de Saumur.    |
| 9. Doyenné Sentelet     | "              | Doyenné Commun.       |
| 10. Duc de la Force     | "              | Belleissime d'Ilver.  |
| 11. Duchesse de Brabant | "              | Soldat-Laboureur.     |
| 12. Henri Bonet         | "              | Doyenné Commun.       |
| 13. Salut Augustin      | "              | Vernusson.            |

**DIGGING GARDENS IN THE FALL.**—We have found considerable advantage in this, but it should be dug deep and laid up rough, not raked or pulverized on top. The frosts of winter, freezing and thawing alternately, tend to mellow it, and the rains and snows have freer access, while also great advantage results from destruction of insects, whose hiding places are thus disturbed and exposed. Salt spread over the garden late in the fall, at the rate of six bushels to the acre, will be found very advantageous. Soils thus dug in the fall, are drier and ready for work in spring sooner than those allowed to lay undisturbed.

If dug thoroughly and deeply in the fall, manure may be spread in spring and dug in shallow.—*Practical Farmer.*

**FRONCEA BONA-NOX.**—This is a plant of marvellous beauty when well and cleanly grown in a stove, and that may be done without trouble, and even without the choice of a good position. Plant it out and train it along a wire in any part of the stove; keep it clean by gentle and repeated syringings, the best of all methods for keeping stove plants nice and fresh, and wait for the result, which will appear in the form of very large white flowers banded with pale green outside, and of the most exquisite fragrance. It is especially valuable to the gardener from opening at night,

as he can then cut it and send it into the drawing-room, where a single flower placed in a slender glass will diffuse the most exquisite perfume through the room. An occasional rarity such as this could not but be appreciated.—*The Florist.*

**HANDLING WET SOIL.**—On this subject the *California Agriculturalist* says: Better not do it, because it is an injury to it—an injury that years of careful culture cannot remedy. Heavy soil, once puddled and packed when wet, remains so for a long time. Every step the horses take on wet soil, poaches it. The plough turns it over without pulverizing it, and leaves a stiff glaze on the furrows. Better lie idle a few days, or even sow the grain without ploughing, and scratch it in when the surface dries off, than ruin or seriously injure the soil by puddle-ploughing. This way that many farmers have of rushing through when they get started, rain or shine, mud or mellow, regardless of consequences, is not according to the dictates of common sense, and is not profitable either. Better pay your hired man to let it alone, than to plough the soil when too wet.

**PRESIDENT CLARK, of Amherst College,** is still experimenting upon the growth of plants. He has performed an operation on two small trees in the plant house (*Sabotus splendens* of India), cutting a ring of inside wood out of one, and nearly severing the other, leaving about a sixtieth of its diameter for a support. The latter tree has about six hundred square inches of evaporating surface, and the foliage is still fresh and green; while the other drooped and dried up from the roots in an hour. This, in common with other experiments, proves his theory in regard to a downward rather than an upward flow of sap. To carry on this series of experiments, the senior class have taken mathematical calculations of a large elm tree (one of the first settlers) which stands a short distance from the farm. Its height corresponds to the distance it sends its roots—about seventy-five feet—and twice the surface of a transverse section of the limbs seventeen feet from the ground is equal to that four and one-half feet from the ground. The circumference at the ground is more than twenty-one feet.

**UNFERMENTED WINE.**—Various churches in this country are introducing unfermented wine to take the place of the fermented, commonly in use for church purposes. The *Journal of Applied Chemistry* describes the method of manufacture as follows: In order to prepare it, the grapes should be allowed to thoroughly ripen. They are then picked and the stems and all green and rotten grapes removed. The grapes are then crushed and pressed in the usual manner. The juice may be put directly into bottles, or it may be first concentrated somewhat by boiling, and then bottled; in either case the bottles are put into hot water and brought to the boiling point, where they are maintained for half an hour. At the end of this time remove them from the fire and cork them tightly, while still hot, wiring in the corks. Then replace them and continue the boiling another hour. Glass bottles are better for this purpose than tin cans, though the latter may be used. An analysis of a specimen prepared in New Jersey gave the following result: Alcohol, none; sugar and extract, 23.00; ash, 40; water, 76.60—total 100.00. This had probably been concentrated somewhat before bottling. The flavor was fine. Some acid tartarate of potassium had crystallized out.

**THE TREES IN HYDE PARK AND KENSINGTON GARDENS.**—The fine arboreal features of Hyde Park and Kensington are, it appears, soon to be remembered among the things of the past. The *Gardeners' Chronicle* says:—There is, however, no glossing over the truth—there is no shutting our eyes to the painful fact that the trees in Hyde Park and Kensington Gardens are in an exceedingly unfavorable condition. Their glory is departing, and that in a very rapid manner. The most casual visitor, if at all observant, cannot but have wondered at the enormous and ever-increasing number of dead and dying trees to be seen almost everywhere. Hundreds, ay, thousands of the trees in Kensington Gardens are dying annually, and are being cut down. We counted not a month ago, lying in one groupe, some 300 dead trunks of all sizes, some having been majestic patriarchs with boles 3 feet and more in diameter; and the woodmen with their axes were as busy there as in a great timber-yard. Being curious to know if all had actually died before being cut down, we were informed on inquiry that it was so. And pointing to the standing trees, our informant added, "They're all dead." Over draining, by means of deep railway and other cuttings, our contemporary regards as the immediate cause. Some of the trees in the Phoenix in proximity to the new railway cutting which crosses a portion of it will probably soon show symptoms of distress.



## Poultry Yard.

### Poultry Notes—No. 24.

#### Disposing of and Selecting Breeding Stock

The season of the year has now arrived when breeders ought to dispose of their surplus stock; no doubt many have already done much in this way; our fall shows are excellent markets, and although all birds sent there cannot take prizes, the exhibitor may be rewarded by the sales made and the attention drawn to their stock being placed in the show-pen. Every year produces a certain number of new fanciers who naturally resort to the exhibitions to procure their breeding stock, or take other means of communicating with exhibitors for that purpose; besides, brother fanciers may find it necessary to occasionally introduce fresh blood into their yards, and no more fitting place than exhibition at which to make the selections, and many a show pen passed over by the judges will contain fowls suitable to the wants of other breeders. The number of those who commence poultry keeping and continue it for a few years and then give it up is very great, and leads to the opinion that instead of being profitable it is a costly business and is thus deferred from engaging in it themselves. But such is far from being a correct conclusion to arrive at, many of such fanciers as we are describing engage in the pursuit of poultry-raising, not from any love of fowls, or even a moderate acquaintance with the principles of breeding, but merely from a feeling of pride of having in their possession birds which take first prizes at the exhibitions; too careless to attend to their own fowls, they are generally left to be looked after by servants, who know little and care less for the birds, and the result is that they soon get out of condition and die, and the so-called fancier gives up the pursuit which he really never entered into. It is, however, to these and others of a similar turn of mind that surplus stock must be sold, and thus it is that poultry men may be divided into breeders and buyers. There are, however, another class of beginners who enter into the business with a desire to succeed, and to such we have a few words to say regarding the purchase of breeding stock.

First then let us suppose he has determined on the breed he will keep, and let it be understood the failure of many amateurs in the first instance is the keeping of too many breeds. Each variety demands not only judgment and care, but to some extent a trained eye. By attempting more than one or two varieties, the practical business of breeding, hatching and rearing, as well as selecting for the show pen, is tremendously increased, and what might otherwise be a pleasure becomes a painful anxiety, burdensome alike to the body and the mind. In England the very best and most successful breeders and exhibitors, with a few exceptions, are those who confine their attention to a few breeds only, and this lesson should be well regarded by the fancier here. The first thought then of our fancier will be to secure a pair or trio of first prize fowls regardless of cost, to be used by him as breeding stock, with the hope of next year producing chickens which will carry off all the prizes in their class next season. In this he will in all probability be mistaken; this is not the way to begin, and it will seldom answer. Very rarely indeed will birds matched for the show-pen be properly adapted for breeding together, and their progeny will therefore from a fancier's stand point be nothing but mere trash, and should he, as not unfrequently is the case, advertise eggs for sale from these prize birds, very likely he may receive a not very satisfactory hint about dishonesty in the fall from his purchasers. It is just this sort of thing which causes so many to give up the fancy altogether, saying to their friends that it must be a fraud on the public, quoting their

own experience in support of the argument. To procure birds for breeding stock the fancier requires not only a knowledge of the points and colors necessary to produce exhibition chickens, but also if possible some knowledge of the pedigree of each bird, the points in his birds must not be the result of accident, but the result of careful breeding for generations. It must not be forgotten that every desired quality in a fowl is the result of repeated and continuous selection year after year of those birds for breeding stock which exhibit that particular point in the greatest perfection. To illustrate the point we are considering, we will quote the following from *Wright's Practical Poultry Keeper*. "The grey dorking is a breed which assumes within certain limits almost every variety of color, and occasionally amongst others that are now known as silver grey. By breeding from these birds, and selecting from the progeny, only the silver greys, that color was established, as any other might be, as a permanent variety which breeds true to feather with very little variation. Now a pen of birds precisely similar in color and appearance may as at first be produced from ordinary colored dorkings, and shown as silver greys, and the most severe test may fail to discover any apparent difference between them and the purest bred pen in the same show. But breeding would show the distinction instantly, for whilst one pen would breed true to itself, and produce silver-grey chickens, the accidental pen would chiefly produce ordinary dorkings, with very few silver greys amongst them; and though in time, by continuing to select them, a pure strain would be established, for immediate purposes the pen, as silvers, would be worthless." From this it may be seen that a thoroughly good strain of fowls can only be the result of art, care, study, and even time, neither can it be attained all at once as some people imagine, but requires a real and steady interest and perseverance. By far the better plan for the amateur to pursue in the first instance is to purchase a few inferior specimens, as regards color or other matter, from good stock of the variety to which the preference inclines, and with them commence to breed; he will in this way obtain both the needful experience in management and some practical knowledge of the breed itself at the same time. He might also procure some eggs from first class breeders of the same varieties he possesses, and rear some chickens of both which will be advantageous as to comparison as well as to form a beginning for successful breeding next season. By thus judiciously employing one season, any one who has a genuine interest in the subject ought at the end of it to have acquired a very useful and sound knowledge of the variety he has adopted. He will have learnt practically its qualities and management, its points, its commonest defects from an exhibition point of view, and also how these manifest themselves as the chickens grow, and therefore can estimate for himself the real value of a bird. At the next exhibition he can in all probability procure some very good breeding stock at moderate prices, by considering what points are indispensable in both sexes, and what faults, though fatal in a show-pen, are capable of being compensated by mating them with defects of an opposite character, but even from these birds the breeding must of necessity be somewhat uncertain in the first year, but each season will mend matters, by carefully mating as already mentioned, and it is a pleasure in seeing year after year the chief faults disappear in your birds, while their beauties become more developed, and the proportion of show chickens steadily increase. To win a prize with a bought bird affords but little satisfaction; but to create a new strain and carry off the first prizes with birds bred from it is not only a real benefit, but a gratification and pleasure which only a real poultry fancier can thoroughly appreciate. It is one's own work and not the result of a money investment, but that of skill and patience.

A few of our succeeding papers will be devoted to the details necessary to the proper mating of different breeds with a view to compensating in one the defects in the other, of the stock selected for breeding, the knowledge of which must be treated scientifically, otherwise it will prove of little avail.

### Non-sitting Fowls.

The *Buffalo Live Stock Journal* gives the following instructions to breeders in producing fowls that have no desire to sit:—

The non-sitters comprise all the different kinds of Hamburgs, Spanish, Leghorns, and Polands, and also some of the French fowls. To eradicate the instinct, which is so inherent in wild birds and so necessary to their existence, poultry keepers have taken the least constant sitters for many generations, to lay eggs for hatching. This is a curious instance of what can be done by the breeder's art, and is quite valuable, as division of labor works as economically in the poultry-yard as in human society. Non-sitters, if well-bred, will not give one confirmed case of sitting among fifty birds, though they sometimes sit for a few hours or a day, but soon leave off. They often have periods of leaving off laying for several days or a week. These correspond to the sitting fever of the incubating breeds. The instances of fowls sitting steadily, although belonging to a breed of pure non-sitters, show reversion to the primitive type when incubation was universal.

If you wish your stock fully up to the mark, do not breed from such. A cross between two different breeds of non-sitters produces a race that sits as regularly and persistently as any fowls. Some crosses between breeds are very desirable, but non-sitters should be kept pure of the trait which constitutes their principal value, is lost. Where many fowls are kept it is better to have the larger part consist of some non-sitting breed. A great saving may be made in a sitting breed to produce a few good mothers, and the rest, say three-quarters of the whole of your stock, of some breed of non-sitters. Labor is so high in this country, that the time of man, woman and child, capable of managing poultry, is worth saving. It is as easy to take care of two hundred non-sitting hens during the warm season as one hundred of a sitting variety. Suppose the non-sitters are kept in eight yards, each yard having twenty-five layers, with no trouble from obstinate, clucking hens; also the latter in four yards, of twenty-five each. It being well known among managers of poultry that fowls must be kept quiet to do well, and therefore must not be mixed with strangers, the sitters from a yard must be confined in a particular goal pen, to cure incubating inclinations and then returned to their own friends in the same yard. Now, four yards each with its goal pen, make eight in all to be supplied with food, water and dust-bath, to be cleaned often, and also to be whitewashed or to be treated with carbolic acid, the work being about the same as that required by the eight yards of non-sitters in the first case; and if we make any account of time spent in looking after and removing sitters, which is considerable, where there are a great number of fowls, the sitters compare at a still great disadvantage.

ENGLAND is importing Black Cochins from this country.

FEED only meal to fattening fowls, for at least two days before killing, and feed nothing for a few hours before killing.

CHICKENS cannot be raised profitably alone, but in connection with other farm operations, nothing pays better.

NON SITTERS comprise the different varieties of Hamburgs, Spanish, Leghorns, Polands, and some French fowls.

A CLEAR CASE OF ADOPTION.—They are noted for queer things on the Pacific slope, and the following is a curious instance of a strange mother: "Alexander Harmon, who resides on his farm in Green Valley, a few miles from Watsonville, owns twenty-four ducks, which were hatched in June last. The ducks were left motherless five or six weeks ago, and after a day or two a wild hen quail appeared in the yard and immediately took charge of the ducklings. The quail attends them in the most careful manner, scratching for them, calling for them when food is found, and fills a stepmother's place, seemingly, to the perfect satisfaction of her numerous family.

# THE CANADA FARMER

IS PUBLISHED

ON THE 1st AND 15th OF EACH MONTH,

AT

One Dollar and Fifty Cents Per ANNUM,  
FREE OF POSTAGE.

It is sent to Great Britain and Ireland by mail, for six shillings sterling, per annum.

No subscription received for a less term than one year, commencing from the month of January.

THE CANADA FARMER is stereotyped, so that copies of back numbers can always be had.

A limited number of advertisements are inserted at twenty cents per line for each insertion. There are twelve lines in one inch of space. Advertisements under ten lines are charged as ten line advertisements.

All letters and money orders are addressed to

THE GLOBE PRINTING CO.,

TORONTO.

Agents wanted in every town and village in the Dominion to canvass for subscribers. Liberal commission allowed. Send for circular stating terms.

## The Canada Farmer.

TORONTO, CANADA, DECEMBER 15, 1874.

1875.

The present number of THE CANADA FARMER completes the volume for 1874, and, as announced else where in these pages, the first issue of the new monthly series will appear on the 1st January.

In reviewing our labors of the past two years and the number of subjects dealt with in the volume now closed and the one immediately preceding, we cannot help congratulating ourselves and our readers on the fact that the promises made at the commencement of the series have been more than redeemed.

No pains will be spared to make the CANADA FARMER for 1875 in advance of the previous volumes. Our arrangements for this purpose are complete, and all that is wanted is the hearty co-operation of our outside friends and subscribers. Let all who have the interests of the farmer at heart lend a helping hand to roll up a large subscription list; let our correspondence department be kept constantly filled with the suggestions of practical experience, and we will guarantee a paper for 1875 second to none published on the continent.

### Farm Ladders.

There is probably nothing that can be found more useful about farm buildings of every description than from three to half a dozen good ladders. If the dwelling house chimney takes fire, one should always be handy on that account. If shingles are loose or off, high stable or barn doors dislocated from broken or damaged hinges, boards loosened and flapping about with the wind, the ladder is indispensable. One may answer all purposes outside, provided it is long enough, but in case of fire for instance the time lost in conveying it from one place to another may prove sufficient to ruin the burning building or whatever it is:—so that it is always best to have a number, and have them handy when required. Now no farmer need be without an assortment of ladders. It is not at all necessary to have a carpenter make them and charge a good profit on his labor. Every man may be his own carpenter here. Indeed we have seen specimens of home-made ladders much better

than anything turned out of regular shops. One great mistake that nearly every one has fallen into in constructing this article is to have the sides taper from bottom to top. The weight on a ladder, be it remembered, always bears heaviest on the middle, hence the middle should be the stoutest part, and the taper should take place from the central point towards both ends. The *modus operandi* for constructing a good ladder is therefore as follows:

Get a good long pole of elm or whatever other wood you may think better:—from 6 to 8 inches in diameter at the butt, and from 3 to 4 at the top, and, whilst it is yet green, lay it along the barn or stable floor, and by means of pins stuck in the floor, bring it to a straight position. Leave it thus until it is thoroughly seasoned, when it will remain straight. Next find the central point and, beginning at it, taper your pole off towards both ends so that when done it will measure about 6 inches in the centre and say 3 or 4 at each end. Take then a good rip-saw and rip the pole from end to end; you will thus have the two sides of your ladder. Next take them and lay them together, flat side uppermost; mark one of them off into spaces 14 inches apart; lay a straight edge across both and mark the second to correspond with the first. Take say an 1½ inch auger then and bore holes through them both as marked out. And now for your rounds. They also must be tapered from the centre both ways, and, as for length, if the ladder is to be 20 or more feet in length let the bottom round be from 30 to 36 inches, and the top one from 18 to 20. Having got them all ready, drive them tightly into one side of your ladder—all of them. Wedge them tightly from the rounded side, and then insert the other ends into their corresponding places on the other side, and complete the rounding process. Smooth off the ends on both sides, and cover all with a good coat of paint. Be particular about the paint if you desire an enduring article. It prevents the absorption of moisture which would soon rot the ends of the rounds. On a precisely similar plan, but with a jointed support behind, can step-ladders be made for the purpose of fruit gathering and also for in-door uses where a long ladder would be impracticable.

Let the plan here suggested only be followed, and we venture to say, that after one or two trials, no farmer will give out his ladders to be made, but will manufacture them himself.

### Industrial Education in the United States.

The United States Department of Agriculture report for 1873, just received, contains a comprehensive and interesting article upon the Progress of Industrial Education in that country. From it we learn that all the land-scrip granted by congress, under the act of July 2, 1862, for the benefit of industrial colleges, has been delivered by the government to the several states, Arkansas and Florida having received theirs a short time ago. Twenty-six states have sold all the land which they received; Illinois, Iowa, Kansas, Michigan, Minnesota, Missouri, New York and Wisconsin have sold only a part; and Nebraska, Nevada and Oregon still retain theirs intact. The number of acres sold by the colleges of the states thus far is 7,868,473, and the number remaining unsold is 1,237,844. No land has been sold recently for less than 90 cents per acre, and sales have been made by Kansas and Minnesota at an average of \$4.33 and \$5.45 per acre, respectively. In one instance New York sold 100,000 acres at \$4 per acre, and 12,000 at \$4.70 per acre. The amount already received by the colleges of the several states from the sales of the congressional land-scrip is \$10,560,264; and the estimated value of the lands remaining unsold, reckoning them at their present market value, is \$4,239,133.

Large additions have been made by many of the colleges to the endowment fund derived from the congressional land grant. Arkansas, Illinois, Indiana,

Massachusetts Agricultural College, New Jersey, Ohio and Pennsylvania have more than doubled, and Connecticut and New Hampshire have tripled theirs. Massachusetts Institute of Technology has increased its endowment fourteenfold, having added to it \$900,000. New York and Ohio have added to theirs more than half a million dollars each; and Connecticut, Illinois and Pennsylvania nearly the same sum, respectively. All the states, with the exception of a very few, have added something to the congressional land-scrip grant. These additions have generally been made in buildings, lands and apparatus, yet several of the states have contributed largely in money. In some instances scholarships have been endowed by private donations, covering the tuition of students, and in others paying their entire expenses. In many of the colleges tuition and room rent are free to all. Besides all these donations large sums have been given annually by many of the states to defray the current expenses of conducting the colleges. The amount which these colleges have received as donations from the states, counties, towns, and individuals is \$7,292,541, not including the appropriations made for current expenses. A large part of this money has been given by individuals. Cornell university has received more than \$1,500,000 from this source. By comparing the value of the property derived from the land-scrip received from the national government with that derived from other sources it will be seen that for every \$100 given to these colleges by the government the people have contributed \$69, or more than two-thirds as much. The entire property of all the colleges is valued at \$17,535,475.

Colleges have been established in all the states except Louisiana and Nevada. In thirty-five states there are thirty-eight distinct colleges, and if we count two additional for the states of Georgia and Missouri, which have each two colleges in different parts of the state, but connected with one university and under one government, the number will be increased to forty. All the colleges are in operation except in Florida, Indiana, North Carolina, and Texas. The number of professors and assistants at present employed in them is 339, and the number of students in attendance is 3,917. In fifteen of the colleges students occupy a portion of the time each day in manual labor on the farm or in the workshop. Attention is given by twenty-one of the colleges to raising thoroughbred stock for the purpose of giving practical instruction to students in this department of study, and also for aiding farmers in the several states in supplying themselves with the most approved breeds.

The stock is composed of cattle, horses, sheep, and swine, and numbers in all 1,618, valued at \$82,146. The farm implements on the same are valued at \$47,017.

### The Immigration Scheme.

The following is the memorandum drawn up by the representatives of the Provinces of Ontario and Quebec, New Brunswick, and Nova Scotia, to the Government of the Dominion, for securing united and harmonious action in Europe, for promotion emigration to Canada, which they have submitted for the approval and confirmation of the Governor-General:—

In order to secure united and harmonious action in promoting emigration from the United Kingdom and Continent of Europe to Canada, the following proposals have been agreed to by the Representatives of the Provincial Government now present:—

1. The control and direction of all matters connected with promoting emigration from the United Kingdom and Continent of Europe to Canada, shall be vested in and exercised by the Minister of Agriculture at Ottawa.
2. Independent agencies for any of the Provinces shall be discontinued.
3. Each Province shall be authorized to appoint a sub-agent and obtain office accommodation for him in

the Canadian Government offices in London, and such sub-agent shall represent the special interests of the Province by which he is appointed in emigration matters and generally.

4. Each Province may employ any special agent or agents, or other means, for the encouragement of emigration, subject to the direction hereinafter stated.

5. The sub-agents placed by the Provinces in the London offices, or the special agents employed by them for promoting emigration, shall be under the direction of the Agent General acting under instructions from the Minister of Agriculture.

6. The salaries of sub-agents and special agents appointed by the Provinces, shall be paid by the Provinces appointing them.

7. The Dominion Government shall take every means to promote immigration, and shall afford facilities for the transport of immigrants by partial payments in reduction of ocean passage by arrangements with steamship companies and their agents, and by such other means as may be deemed expedient for the purpose of introducing immigrants to each Province according to its requirements.

8. The Dominion Government shall afford all facilities at its offices in London for giving information to the public respecting the Dominion generally, and the several Provinces and their resources in particular.

9. For more effectually carrying out this object, all the Provincial Governments shall furnish to the London office the Statistics of the several Provinces, together with all printed public documents and maps since Confederation.

10. The London offices shall be accessible to, and a place of reference for all persons from any of the Provinces.

11. The Provinces shall respectively contribute towards the increased office expenses in London, arising from the proposed arrangements, the annual sums following:—

|                     |            |
|---------------------|------------|
| Province of Ontario | \$1,600 00 |
| Quebec              | 2,000 00   |
| New Brunswick       | 1,000 00   |
| Nova Scotia         | 1,000 00   |

In case the two last named Provinces unite in appointing one sub-agent, their joint contribution shall be \$1,500.

And in case British Columbia and Prince Edward Island choose also to avail themselves of the Canadian offices in London, each shall pay to the Dominion Government such sums as may be agreed upon with the Minister of Agriculture.

12. A liberal policy is to be maintained by the Dominion Government for the settlement and colonization of Crown lands in Manitoba and the North-west Territories, and it shall disseminate such information with reference to Canada generally, and to Manitoba and the North-west Territory in particular, as may be deemed necessary for the advancement of immigration.

13. The arrangement now made shall last for five years, and afterwards continue for a further term of five years, unless notice is given to discontinue during the first term.

14. These proposals to be binding on the several Governments of the Provinces, which may confirm the same, but till then they are to be deemed only provisional.

### Water.

Should nature become wrapped up in the arms of Jack Frost at this season; in other words, should the winter have fairly set in upon us, many throughout the Province will have to put up with a great scarcity of water. From nearly all parts we learn that drouth is such that wells, never before known to give out, are quite dry. In many instances farmers have to drive their stock twice or thrice daily a distance of from half a mile to three and four miles to the nearest running stream or river. The emergency, or rather the future remembrances of it will, we trust, form an extra inducement for the utilization of such water privileges as are already on the farm. We have already in these columns given some valuable suggestions regarding the use of the water-ram. It is not very costly at all; indeed, in most cases the piping is more so than the ram itself. But however expensive it may be, we venture to say that all those who have had it erected will not grudge their outlay this winter. Another suggestion that might be offered is that of deepening wells already dug. Whenever they run dry is the proper time. Let their depth then be increased by a few feet, and you may possibly

be saved all further trouble with them. Then again what about cisterns? There should not only be one at the dwelling-house, but also one at each of the out buildings, and your roofs, all of them, should be properly troughed so as to catch the eaves-droppings; and piped, to carry these into cisterns adjacent.

### Straw for Lightning Conductors.

It is stated in a French Agricultural paper that straw forms an excellent lightning conductor, a purpose for which has been lately employed with success. It had been observed that the material in question possessed the property of discharging Leyden jars without spark or explosion, and somebody at Tarbes conceived the idea of employing it as a lightning conductor. A wisp or rope of straw is fastened to an upright deal lath with brass wire, the conductor being finished off with a pointed copper cap. The experiment, it is said, has been tried on an extensive scale in the neighborhood of Tarbes, eighteen communes having already been provided with such conductors in the proportion of one to every sixty arpents, or 750 acres English. It is said that the whole neighborhood has benefited by the arrangement, having been protected not only from lightning, but from hail storms. In reference to this interesting subject, our esteemed correspondent, H M. Chechester, Esq., writes as follows: "Many years ago, when in one of our colonies, where the storms were very severe and always very partial, certain spots were noted for the constant recurrence of fatal accidents; a peculiarity due, I think, in part to the existence of strong currents of damp air at such spots on each recurrence of a storm. I suggested the use of small wire conductors, to be set up in rows, at equal distances, on cultivated ground which it might be thought desirable to protect. The idea was never fairly tried, as the wires were constantly stolen. Has this notion ever been tried near home? I think I have read of it somewhere for vineyard protection."

### A New Kind of Stock Raising.

A correspondent of *Massachusetts Ploughman*, S. G. T. Works, Ossipee, N. H., thus discourses on raising minks. It is a new industry and shows how even enemies to the farm and poultry yard may be utilized:

"There appears to be some things not well understood by the reading public, one of which may be named as the science of Mink Culture, on the subject of which I am receiving many letters of inquiry. To answer all by mail would take too much of my time as well as quite a revenue in postage stamps. I have thought that perhaps an article or two might be of interest to many of your readers.

It has been found by long and persistent effort that the mink cannot be made to breed in confinement when caught in a wild state but will breed after being fully domesticated. By procuring the young before their eyes were open and rearing by hand, or perhaps on a cat, when one can be found that will mother them, success is easier.

After some pretty expensive experiments I have succeeded in breeding them, affording a fair profit for the outlay. The profits this year average about \$145 to the pair, no mink being killed for their fur, as a ready sale is made of all that I can raise at \$40 per pair, sold alive. But for their fur alone no branch of industry in this country will pay better. Minks are very prolific, seldom losing any of their young, and they rear from six to nine at a litter, and in one case fourteen.

They will eat any kind of lean meat, birds, fish, frogs, woodchucks, in fact, anything of a game kind, and appear especially fond of beef liver and poultry.

I shall probably winter ten pairs of old mink this year, and another year propose to enlarge my works. Their appears to be a prevailing idea that they cannot be kept in large numbers together. This is a mistake, for if properly cared for during the breeding season—at which time it is not safe to have more than two females to one male in the same pen, they do well."

AN AVERAGE sized egg weighs a thousand grains, and six large eggs weigh a pound. A dozen eggs therefore may be considered a full equivalent to two pounds of beef.

A MAN in Reno country, Kansas, last winter pastured 10,000 geese on his winter wheat, and yet it yielded twenty-one bushels to the acre.

THE "National Agricultural Laborer's Union," of England, are contemplating very seriously the emigration of 500,000 farm laborers to the Mississippi Valley.

PARIS-GREEN AND THE POTATO BUG.—At a meeting of the Academy of Sciences, held at Philadelphia, in the beginning of last month, Dr. Le Conte showed that the use of Paris-green for destroying insects injures the soil, and poisons growing vegetables. This confirms the suggestions we recently threw out regarding the effects of this poison, besides the danger of its accidentally killing cattle.

THE *Moniteur Industriel Belge* states that German manufacturers are purchasing the fish bones gathered along the Norwegian shores, which result from the extensive fish-curing stations there located. These bones make a fine fertilizer, and, when pulverized by suitable machinery at the points of collection, are readily transported. The same journal suggests the more extended utilization of the bones from the establishments in Newfoundland, and estimates the products from American fisheries at £20,000,000 a year.

ENGLISH SHORT-HORNS FOR KENTUCKY.—A most select lot of nine Short-horns were shipped from Liverpool on Wednesday, 28th October, per National steamship "Egypt," for Lehigh Combs, jun., The Pines, Lexington, Kentucky. They included Anna 5th, Linness, and her calf; Lady Farley, bought at Mr. Thoms, Burgh Hall, Chorley, Lancashire; Rosy Morn, Dairymaid, Duchess of Knightly, Cold Cream Gth, Cold Cream 8th, bought at the dispersion of Mr. Fisher's herd at Mains, of Keithock; Rosary Monk, red and white two-year-old bull, bred by Mr. Torr, Aylesby Manor, Lincolnshire.

INTERCOLONIAL EXHIBITION AT SIDNEY, NEW SOUTH WALES.—The Agricultural Society of New South Wales will hold an exhibition at Sidney in April, 1875. There is a long list of premiums to be awarded for merit in all branches of agriculture and manufactures, the prizes for wines, sugar and silk, indicating the growth of three important industries in the Australian colonies. Agricultural implements are much required in Australia, and competition by American manufacturers is especially invited, communication via San Francisco being rapid and convenient. The Agricultural Society and the Chamber of Commerce of Sidney are together making liberal arrangements for an adequate representation of Australian products at our Centennial Exhibition of 1876.

A "SQUEZZE" IN BARLEY.—The latest corner at Chicago is a corner in barley. The story is thus told by the *Times* there:—"The manager of the October corner gave the shorts who had postponed the settlement of their contracts to the last moment a surprise on Saturday. The market for No. 2—the speculative grade—was promptly placed at the opening of business at \$1.30, and was maintained at or around that figure the balance of the day. Some few settlements and sales were made by traders outside of the corner at \$1.25 to \$1.28, and some frightened individuals paid as high as \$1.25 for round lots, but the parties in the deal were apparently well satisfied with their profits at \$1.30. The deliveries to and purchases by the corner were quite liberal, and at the close last evening Mr. Geddes either owned or controlled about all the stock in store, some 185,000 bushels. All the outstanding trades due the corner, save 15,000 or 20,000 bushels, were settled during the day."

THE discovery of petroleum springs on the Lunenburg Heaths in Northern Germany, promises, says *The Academy*, to convert this once barren and apparently unavailing tract into what might by comparison be designated as an El Dorado. Borings were made at Oberg by Hanoverian and French surveyors as early as 1863, but then the measures taken failed to confirm the opinion which had been previously advanced of the presence of oil. Since then the heath has been drained and rendered fit for cultivation, and recently it has been shown that petroleum can be obtained by simple borings, and that at some spots, as at the village of Wicx, the sand is saturated with rock-oil. In this part of the heath since 1852, when the owner of the land caused a shaft to be sunk, petroleum has been obtained without intermission, although the process adopted for its extraction has consisted in little more than a mere washing of the sand, through which the oil was suffered to run into vessels prepared for its reception. In clearness, purity and specific weight the Lunenburg oil is said to be identical with the American rock-oil, and it is almost without smell of any kind.

## Breeder and Grazier.

### Profits of Sheep.

A correspondent of the *Practical Farmer*, residing within twenty-five miles of Philadelphia, states that one of his most certain and reliable sources of profits from year to year is keeping sheep. When I first began farming, twenty years ago, he writes, I depended entirely on Southdowns. They have always proved with me prolific breeders, capital nurses, hardy and good feeders, and my Southdown mutton ranks in the market with "gilt-edge" butter. I inform my regular customers when I am going to have a fine leg or loin of pure Southdown, and they go off fat at three to five cents above the market price. In fact, Southdown mutton is the best mutton in the world.

If quality of meat was the only desideratum I would make no change, but as coarser wools now bring the highest price, and as, perhaps, I gain a little in weight, (of which I am not altogether certain, but at least do not lose any,) I have made one cross on my flock of 100 ewes with the Cotswold. The best results and the finest carcass have resulted where the Southdown buck was used on the Cotswold ewe. I do not want any finer sheep than this makes, and I try to keep them for my purposes one-half Southdown and one-half Cotswold. What lambs I have to spare are all sold in advance to your butchers for eight dollars per head. I raise roots, which I consider indispensable in the sheep business, and with good shelter and good management, I have the lambs in the market in March and April. I consider the roots make a good substitute for early pasture. It promotes the flow of milk in the ewes, keeps them in good heart and with fine appetites. I have always followed the advice in your paper, to keep all my animals healthy and thriving. If they once go down or become stunted, much of one's feed is thrown away. Two-thirds of my ewes usually have twins. With lambs at eight dollars to nine dollars each and wool at fifty cents per pound, your readers can figure up my profits on 100 ewes.

I will close with one remark: that without a root crop of about 1,000 bushels, I would not keep sheep. Not that these are all fed to the sheep, as cows and horses all are benefited by them, but for sheep they are indispensable.

### Good and Poor Hogs.

Did our farmer readers ever take a slate and pencil in an evening, and estimate the true difference between a good and poor breed of hogs? All have seen and acknowledged there is a difference, yet the larger portion of farmers do not fully realize the ample margin in favor of the best hog. The increasing demand for lard and lard in all parts of the world, shows that hogs that yield largely of these profitable parts are in demand. The consequence is, there is a range in the market at this time at St. Louis from \$4 50 to \$7 50 and at Chicago from \$4 to \$7, showing a difference of 3 per cent in favor of the good hog. Nor is this all. While the improved breeds of hogs can be made as easily and with equal food to average at fifteen months old 350 pounds as the "greaser" hog will 175 pounds, or a little better hog will 225 pounds; if a farmer has fifty head of the latter class to sell now he will get \$5 per cwt., \$1,125. If he has fifty "greasers," which are too numerous in the country yet, he will get \$700. But if he has fifty of the best: Poland, China, Suffolk, Berkshire, &c., which have cost no more and which rendered a large amount of satisfaction, he will receive \$2,450. These are figures that cannot be disputed, and are within the reach of every farmer who has one hundred acres of land in cultivation. The number, weight or price is not over-estimated, and in raising them there is no \$3 per day to be paid to harvest hands, nor that ever-dreaded season called threshing. We would not urge any one to go into wild speculation in hogs. But raise your pigs and corn, and then there is no debt to meet when they are sold. Fifty hogs are a reasonable lot for a small farmer who proposes to feed all his grain on his farm. Now let any one carefully look over these figures, and if we are wrong give a better statement through these columns. Any man who raises fifty acres of corn can have fifty hogs to sell every year, and still have grain enough for his other stock. —  *Iowa Register.*

### Stubble-Shearing.

At a recent meeting of the Southeastern Wisconsin wool-growers association, resolutions were passed strongly condemning stubble-shearing; that is, the practice of leaving the wool half an inch or more long at shearing; the wool, of course, retaining that extra length through the ensuing year. The resolutions were:

*Resolved*, That we discard all stubble-shearing at fairs, and that a committee be appointed by the chair to draft rules to govern committees at fairs, said committee to report at next meeting.

*Resolved*, That any member of this association who shall be found practicing stubble-shearing, shall be excluded from our exhibitions.

*Resolved*, That the managers of all societies, at whose exhibitions sheep are shown for premiums, be required to instruct their examining committee to require exhibitors to state age of sheep, age of fleece manner of feeding and to give evidence of their breeding, and that all sheep that give evidence of stubble-shearing, or any dishonest practice, shall be excluded from the exhibition.

**LUSTER SHEEP, A NEW BREED.**—At a recent exhibition in Bremen, a fleece was exhibited from South Australia of a yearling ram, which was so remarkable for its fine silky luster and softness, and the unusual length (over five inches) of the smooth, fine wool, as well as for its beautiful, almost dazzling whiteness, that all were satisfied that a fine, firm yarn, and very superior cloth, could be made from it. It was stated that it was a result of in and in breeding of Negretti sheep with Leicester (lancoln) rams; the number of generations required was not stated, however.

**JAMES GAINES**, of Ridge Farm, Ill., has twelve Short-horn yearlings, exact age not stated, which average 1,154 pounds, and twenty-two head of calves averaging 650 pounds. The weighing was apparently done in October. H. B. Karr, Shirley, Ill., has a seven-eighths Short horn calf which weighed 580 pounds when 127 days old. A pair of grade Short-horn calves in Michigan weighed 1,000 pounds when six months old—the lightest weighing 432 R. Carrol, of Sheldon, Ill., has a grade Short-horn bull calf which weighed 590 pounds at five months old. — *Western Farmer.*

**KEEP HOGS OUT OF THE WATER.**—A correspondent of the *Colonial Farmer*, whom the editor declares to be a practical breeder, writes that to handle hogs to the best advantage, a pasture is needed of grasses, clover, blue grass and timothy—and it is best if there is no running water or stock ponds in the lot. Hogs do better where there are no branches or stock ponds to wallow in. In place thereof, have well-water pumped for them. Have troughs made, and nail strips across, eight inches apart, to keep the hogs from lying down in the water, and let these troughs be placed on floors, to keep them from digging up wallowing holes. If feed be given, it should be soaked in swill barrels for twelve hours before feeding—no longer—and fed to them as drink.

**WOLF TEETH IN HORSES.**—A correspondent of the *Rural World* says:—"William Horne, a veterinary surgeon of Janesville, Wisconsin, has recently made an examination of one thousand and seventy-three horses, with a view of settling the question as to whether the so-called wolf teeth are injurious to the eye. Out of 1,073 animals examined, he found thirteen blind in both eyes, seven blind in one eye only, thirty-seven having affection of one or both eyes, six of that number being nearly blind. The whole number of wolf teeth found was 216; only one of the number had a false molar, and only one animal with a wolf tooth showed any symptoms of disease of the eye. Dr. Horne regards this as settling the question positively that these teeth do not do any injury whatever to the eyes, and this conclusion is certainly justified by his statement of facts."

**HOW SHEEP GOT INTO AUSTRALIA.**—In 1797 three Merino rams and five ewes were carried to Australia; but so slow did wool-growing increase, that it was not until 1807, ten years later, that the first bale of wool was shipped thence to England. But the flocks of Australia did not originate from that source. Mr. Hayes tells us that the development of fine-wool husbandry in these colonies was the result of an accident. Some English whalers captured in the South Seas, about the beginning of the present century, a vessel proceeding to Peru from Spain, in which there were some 300 Merino rams and ewes. These sheep were carried to Australia, and originated the fine Merino wool husbandry which to-day plays so important a part in the fine-wool supply of the world. — *National Live Stock Journal.*

**TO PREVENT HORSES JUMPING.**—In response to an inquiry, W. H., of *The Western Farmer*, says: To prevent jumping, I have found just two ways effective. Buckle a surcingle around the body, then the halter strap through the fore legs to this; tie so that the horse cannot get his head above the point of the shoulder. Second, place upon the horse a common halter with forehead strap, sew to this a piece of sheepskin, the wool side next the head, and hanging low enough to compel him to hold up his head too high for a spring to enable him to see the top of the fence. This latter suggestion we value as applicable to colts to which the temptation to jump is liable to be presented.

**ABSURDITIES.**—Under the above heading the *Rural New Yorker* gives a list of popular impressions, from which we extract the following:—"Frosted grass does not tend to dry up cows. Apples in moderate quantities have no such tendency, but, on the contrary, may be fed to advantage, especially sweet apples. Potatoes are said to dry up cows also; nothing is more absurd, for they are eminently a mild-producing food, and when small potatoes are not fed to the pigs, the cows ought to have them." Absurd though it may be, says a correspondent of the *Buffalo Express*, I must contend that cows turned out upon frosted or frozen grass will fall off in their milk just as they will when fed any kind of cold or frozen food. Grass once thoroughly frosted and frozen loses much of its nourishment, and unless kept up by other food, a falling off in the yield is inevitable. Potato skins, either boiled or raw, are strongly diuretic, as also the water in which they are boiled. I would consider the potato skins worse than the seeds of pumpkins. If potatoes are fed raw to cows, it should be in moderate amounts; and even then, an increase in the yield of milk will not be accompanied by any corresponding increase in the amount of butter.

**NARCOTIC HORSES.**—We learn from the *Gazette Medicale de Bordeaux* that an eminent veterinary surgeon has informed the Medical and Surgical Society of that city that the coachmen of certain families had been for some time in the habit of administering chloral to the horses in their charge, so as to make them easier to ride or drive. It appears that the drug acted like a charm, for horses that had previously been so spirited as to give much trouble to their drivers became as quiet as lambs after a few days of this hypohetic treatment. This great change naturally attracted the attention of the owners of the animals, and they sent for the veterinary surgeon to ascertain the cause of this sudden gentleness. That functionary noticed a certain tendency to sleep in the animals; but scarcely knew to what to refer this unusual condition, when in one of his visits he chanced to find a bottle half full of chloral. Here, then, was the *corpus delicti*, and when the veterinary surgeon questioned the delinquent coachman as to the use he made of the drug, the latter, after much hesitation, owned that, following the advice of a brother whip, he gave his horses a dose of chloral every morning to make them go quietly, and further, that many of the fraternity in Bordeaux followed the same plan. — *London Medical Record.*

**A PERFECT CURE.**—The efficacy of the cat-o-nine tails in repressing crime has been lately much extolled, but the result of an experiment just reported in an American journal, made with a real cat upon a refractory steer, suggested the possibility that we have all this while been neglecting the substance for the shadow, and entirely overlooking the unusual qualifications for corrective purposes of a most respectable animal. A young farmer in Onondaga County, United States, lately went out to try a yoke of oxen. The near steer lay down in front of the house of one Jones. All the appliances usual in such cases were tried, and Mr. Jones helped to get the ox out of the yoke, but he should strangle himself, after which relief he lay down flatter than ever. "Hang him," said his angry owner. "I'd like to drag a cat across him!" "The very thing," said Jones, darting into the house and reappearing with a splendid tom. The cat was put on at the shoulders of the steer, and drawn steadily and carefully backward and downward. "The steer kicked some," says an eye-witness, but he did not get up, though the cat seemed to understand what was expected of it. Again the intelligent animal was planted well forward and drawn aft, but without effect; this, no doubt, piqued the cat, which, just as it was putting its claws in for a third drag, uttered a few notes of that wild melody for which the cat is adored by the neighborhood. The effect was instantaneous; the steer sprang up, ran home at full speed, and has ever since broken into a sharp trot whenever those sweet sounds are simulated by his drive. — *Pull Mall Gazette.*

Miscellaneous.

QUALITY OF FLESH OF FOWLS.—The principal points by which to discern the quality of the flesh in a fowl are the color of the feet and the kind of skin.

THRASHING BEANS.—Beans may be threshed without difficulty as in the case of buckwheat, by removing teeth enough so that the beans will not be broken and graduating the speed of the machine properly.

DIRT AND SUPERSTITION.—The increased longevity of later times is less owing to improved therapeutics than improved hygiene. Dr. Lyon Playfair says, in a late paper on the subject...

WATERED BUTTER.—In the course of some investigations by Profs. Angell and Hehner, England, out of analyses of fifteen samples of butter which were determined by them, twelve of the samples, which were undoubtedly good butter, contained six to thirteen per cent. of water.

A STRIKING SUN-DIAL.—A sun-dial that strikes the hours has lately been invented and constructed by the Abbé Allegret. It is simply a modification of what is known as the solar counter for registering the times at which the sun shines or is obscured.

turbs the equilibrium of the system, and in so doing liberates a weight, giving motion to a c'ock-work attachment. In the sun-dial here referred to a pair of these balls are fixed at every hour mark.

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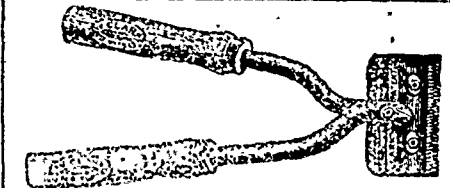
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THE CANADA FARMER is printed and published by the GLOBE PRINTING COMPANY, at 26 & 28 King Street East, TORONTO, CANADA, on the 1st and 15th of each month. Price one dollar and fifty cents per annum, free of postage.