

THE  
**FARMER'S ADVOCATE.**

"PERSEVERE AND SUCCEED."

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Editor & Proprietor. }

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**Fall Plowing.**

A few words on plowing can seldom be unseasonable in an agricultural journal. In other countries the plow is kept at work during the whole year, with few days intermission. The plowman's labours are not so uninterrupted here. We are compelled to take our plow from the furrow for a season, and this necessity makes it the more imperative on us to make the most of our plowing seasons. We, too, have our fall and spring plowing, but our fall plowing does not run into our spring plowing. There is a pretty wide gap between them.

Plowing having from the earliest days of agriculture been in constant operation, it may seem strange it is even now the subject of such different opinions and never-ending controversies. Should plowing be deep or shallow?—Should we plow in fall for spring crops?—Would we not raise better crops if we were by some means to merely loosen the soil, without turning the surface under in the furrow? These and similar questions are still asked.

In considering these questions, or subjects, the question arises—Why do we plow? It is a work requiring the expenditure of much money and labour. We answer—the first object we desire to obtain by plowing is the loosening of the soil. To obtain this, plow, and spade, and hoe have been in continued use for thousands of years. It is necessary to loosen the soil to admit air. Without air there would be no germination of seed. But the germination is not all we require. The germ may die. It is necessary that the soil be loose that the roots may more easily go down into the soil. The plant requires not only to take and keep hold of the soil; from it, it must also take the greater portion of its food. The vegetable and mineral substances in the soil must be decomposed, and for this object air and moisture must have ready access to the soil. Day by day, during the growth of the plant, its roots descend deeper in search of the required food, so that not only is a loosening of the soil necessary, but also that the loosening extend to a sufficient depth. A deep soil—a deeply tilled soil—is sure to yield the heaviest crops, as in it the plant can obtain the most food, such as it requires to make luxuriant growth and abundant yield. There are exceptions to this rule. The surface soil may be rich in plant food. This fertility may be the effects of recent manuring or tillage, or it may be a virgin soil; or at the depth of a few inches there may be a poor, hungry soil, or a stiff, cold clay. It is unnecessary to say that in such instances it would be folly to turn the rich surface soil in a deep furrow, under a soil comparatively barren. Or beneath a shallow surface soil may be in the earth minerals injurious to plant life and growth, as the poisonous oxide of iron. If this soil be plowed deep, it will take years of good culture to remedy the ill done. Plowing deep in such exceptional cases has had the effect of raising up opponents of deep plowing as a general rule.

Fall plowing for spring crops is very beneficial to the soil, and consequently to the crops. The more fall plowing, then, the easier and more expeditiously can the farmer get through his spring work. And this, though a great gain itself, is not the only one. Land plowed in the fall profits to the fullest extent by the ameliorating influence of

the winter—the season designed not merely for rest, but also for improvement. Light soil is not so much improved by fall plowing as heavy clay soils. The frost breaks up their stiff, heavy clods, separating the components and rendering available for plant use the elements of fertility that otherwise would be of much less service. Even to light soils fall plowing does good service. For many years I tilled soils of various kinds, but the greater part strong light soil, which was plowed in the fall, and I always profited by it.

By merely loosening the soil, without turning down the surface, instead of the usual method, very little would be gained. It is claimed that the germ would thrive better in the immediate surface soil, but with proper tillage, the soil far deeper than the seed is the best tilth, and, after germinating, the surface or lateral roots extend throughout it, while the descending or tap roots go down to a greater depth and from it obtain other food than is imbibed by the lateral roots. Besides, plowing—turning down some and bringing up other soil—disturbs the organic parts of the soil to the depth plowed, and thereby provides a more nutritive food for the plants.

**Planting Trees.**

A subscriber asks for some directions for planting trees—when and how to plant them. Articles on this subject have already appeared in our journal, but as "Subscriber," and other subscribers as well may not have seen them, we will, as briefly as we can to be explicit, give the required information.

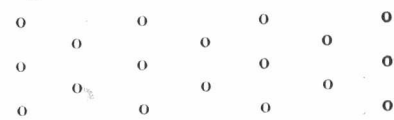
Shade or forest trees may be planted now in the fall, or the planting may be deferred till spring. The latter time is generally preferred. Each has its peculiar advantages. By not transplanting till spring, there is less danger of their being injured during the long winter. We prefer fall planting, if it is well done in land properly prepared, and if there be any shade to break off the winter storms so that they do not disturb the young trees, they having as yet but little hold in the ground, and being apter to be killed by disturbing the roots than from any other cause. The earlier in the fall you plant the better, once the sap has descended from the limbs. This is easily known by the leaves withering and falling.

The ground should be well prepared before planting. It will not do to dig a hole in the hard ground and plant a tree in it. The whole ground designed for trees should be in good tilth. A lot from which roots have been taken the same season is in good condition, or stubble ground plowed before planting, if it be not run out by cropping. Open holes so wide as to spread the roots to their full extent, and having partly covered, pull up the tree a little that the earth may the better settle between them. Fill up the hole and press down firmly with the foot. The same rule holds good in planting evergreens as in deciduous, though with evergreens there is oftener a failure; and there is a greater diversity of opinion as to the best time to plant. If raised in a nursery, there is less uncertainty of their doing well than if brought from the woods. The first transplanting from the seed bed makes the final transplanting safe. Some having had much experience in planting, say that the months of May and August are best for the purpose. I have planted for myself

on a small scale in May, June, August, September and October; of the May and June plantings, a greater proportion failed than in the autumn months, though this may have been in part from having planted more trees in the earlier season.

Of our native trees we can make a very good selection of the varieties to plant. The pine, common cedar, and Canadian balsam among our evergreens, are first in my estimation; the balsam I prefer of the three. I have been more unsuccessful in growing pine taken from the woods than any other tree. Of deciduous trees there are more varieties to choose from. Oak, maple, elm, ash, cherry, walnut and butternut are hardy and valuable for shade and future profit. This does not by any means exhaust the list of valuable trees in our woods, of different ages and sizes for transplanting.

The trees should be planted in straight lines, and each tree in a line be opposite the vacancy in the adjoining line. This planting in the quincunx form has great advantages, especially in plantations designed for shade. It is followed and recommended by modern planters, though it is of great antiquity, having been recommended by Virgil in his work on agriculture, written two thousand years ago. The quincunx form is shown in the figure:



It pleases us to have such queries from farmers. It shows that they see the necessity of transplanting, that farmers are not indifferent to the improvement of the country, and that they see the policy of planting for shade for their cattle and crops, and for beautifying their homes and enhancing their value. To stimulate property owners to engage more energetically in this very useful work, we take from our exchanges throughout the continent brief extracts showing that no branch of farm industry more engages the attention of all classes at the present day than the preservation of the remnants of the old forests, and the planting in towns and highways and on portions of every farm young trees for the present improvement of the country and the supply of timber in years and ages yet to come.

**Forest Tree Borers.**

In selecting varieties of trees to plant for shade, we should not overlook the question of their being hardy, or being liable to be injured or killed by blight or by borers. Hundreds of locust trees have been destroyed in this neighborhood by the borer, and bare stems and branches are to be seen instead of foliage and blossoms. The insect foes of farmers and gardeners undoubtedly are more destructive than in former years. Even the maple, the Canadian tree, is attacked by a borer, and the borers of each variety of tree, whether for shade or fruit, have characteristics distinct from the borers of other varieties.

From the roots of the destroyed locusts there are young suckers shooting up, but they are liable to be attacked at any time by the same foe. Let us select for planting such varieties as we know are hardiest, and best able to resist the attacks of blight and borer.

**Artificial Manure.**

Having heard of some most satisfactory results from the use of superphosphate, and being anxious to give more information about it, we paid a visit to Mr. Abbot's farm, near Brockville. Mr. Abbot is a real hard-working, industrious, saving man; he will not lay out a cent unless he feels sure of getting a good return for his money.

He purchases his superphosphate as other farmers do. He is highly satisfied with the beneficial results he has had. He commenced by trying a little; now he uses it extensively. He says he sees the most marked effect on poor land. Part of his farm is poor, hard and sour clay soil, and part is loamy clay.

We first visited a field of rye; the rye was cut and standing in the stook. Part of the field had been dressed with superphosphate at the rate of 500 lbs. per acre, and part had not been dressed; the part of the field on which the superphosphate had been used produced straw 12 inches longer and a grain of much better and heavier quality than the part which had none applied on it. We next visited a barley field, one part of which had received a dressing of superphosphate, and on this the barley showed a much more luxuriant growth than the part on which it had not been applied.

Oats and peas both looked more luxuriant where it had been used, but what appeared to us the most astonishing was a field of hay, part of which had been cut; on part of this field superphosphate had been used five years ago, and part had not been dressed with it. There was fully one-third more hay on the portion dressed with superphosphate. In another field the hay had been carried; in this field the aftermath was much closer and the stems of the cut grass much thicker on the part where the superphosphate had been used.

We saw potatoes raised from one dressing of superphosphate much larger than any we had seen this season. They were clean and smooth on the exterior, while some that were raised with barn-yard manure were badly scabbed on the exterior and not near as large. He weighed the potatoes from parts of the rows, and had 50 per cent. greater produce where the superphosphate was used.

Mr. A. considers the superphosphate will increase many of his crops one-third. We have heard of several other highly beneficial results.—It is a well known fact that superphosphate will aid us in restoring or giving fertility to much of our poor or worn out lands.

It is claimed for the superphosphate that we can enrich our land at a cheaper rate by its use than the cost of hauling our manure from our barns. We in the old settled parts of the country are under no dread of having to move our barns away from the manure heap, as formerly; we want all the manure of all kinds we can procure. Mr. Abbot informed us that he did not see so great an improvement on his crops on his rich or manured land as on his poor land. We would advise each one of our readers who has poor land that he wishes to enrich, to try one pound. Experiments should only be tried on a small scale either in seeds, manures or anything else.

We would suggest that you should practice a little chemical agriculture in this way this autumn: when you sow your wheat, apply one pound of superphosphate and two pounds of plaster mixed; put it on eight yards of land; sow it broadcast, and drag it in after the wheat is sown. To give it a fair trial you should leave a part of a ridge unmanured, and only sow part of the land with the superphosphate and plaster, and leave the other part of the land without any manure; also, a part of a ridge dress with barn-yard manure.

Then notice the difference in the crops—one with barn-yard, one with superphosphate, and one without any manure. The poorer the land the greater may be the results. If your own land is already rich enough, just apply a pound on some neighbor's field that you know needs manure and who has no spirit or energy to expend \$1 for the ADVOCATE or 20 cts. for a trial on chemical agriculture. The result of the one pound trial may be that you will be enabled to add that poor, worn out, dilapidated farm that is an eye-sore to you, to your own estate, and make its surface smile again with such crops as it never had yet produced, and such as will pay a handsome interest for the money invested. Mr. Abbot procures his superphosphate at the Brockville Chemical Works, which are located about five miles from his farm. We paid a visit to the Works, and shall speak of them in some future number. We suggested to Mr. Cowan, the manager, that he should give a pound of it to any farmer wishing to try it. He at once consented to do so if the parties would pay the postage on it. There are two kinds of superphosphate made, one ammoniated and the other not; the latter is the cheapest. Mr. Abbot uses the cheapest kind, and finds it answers his purpose.

Send to Mr. A. Cowan, Chemical Works, Brockville, Ont., or to this office, 20 cts. for postage on the superphosphate; you will have it freely given you; or call, without money, and take it and try it.

**Visit to Scarboro' Township.**

Having given you a few brief remarks about our trip to Europe and to the States, further accounts of which must be treated on in future numbers, we determined to see what our Canadian seedsmen are about. We therefore went to Scarboro' to see the seed farm of Mr. Simpson Rennie. This farm is situated about two miles from Milliken's Corners, a station on the Nipissing R. R., about 16 miles from Toronto. The land is of excellent quality in this vicinity, being rich, loamy clay. The farmers vie with each other in cultivating their farms; no poor farmer need go to settle there; he would be ashamed out of the neighborhood. The bad ones already there are gradually clearing out, leaving the place to those who have more energy, spirit and ability. In this section are the best plowmen; one does not see many crooked furrows on these farms.

Mr. S. Rennie is brother to Mr. William Rennie, of Toronto, and raises seeds for him. From what we saw, we would class him among the best farmers in Canada; his land, fences and buildings were all in good order, and his entire farm is thoroughly underdrained with tiles; Mr. Rennie is a kid-gloved farmer, but the real, practical worker. We found him in his barley field cutting barley; when we entered the field it showed quite a great contrast to any field we had seen. The barley was all so closely cut to the ground that it would be hard to find a stubble, except in a furrow, that would come up to the ankle.

The ground was smooth enough for a cricket ground. Quite a pattern of work, we found Mr. Rennie on the reaper. He had a first-class span of horses; his reaper was the New Kirby, manufactured by Mr. Harris, of Brantford. Mr. Rennie's aim is to have the best implement of any kind, and few farmers so thoroughly understand the reaper as he does. He knows the advantages of each kind and its disadvantages; the cutting and dropping the grain must be cleanly done, without waste of grain or power. He would not have some of the reapers made as a present; in fact, we saw what is generally known as a first-class reaper lying in his driving shed, discarded. But to have the best and do the best work is his aim. His barley was a very fine crop; he has it bound and set up as wheat. In plowing he carries off

Provincial prizes. In his carriage house we noticed his buggy, with extra back attachments, extra work and even a carpet-padded step.

Go on, Rennie! The farmers or Government have a task to teach you practical agriculture.

Mr. Rennie took us to see his crops of Fife and Egyptian spring wheat, which both looked well. The Fife was clean and pure; the Egyptian was well headed, but slightly mixed; it was his first year of sowing it, and he will make it pure. He had no fall wheat. His oats were Black Tartar—clean and an excellent crop. Some of his hands were cutting, or, rather, pulling peas; they were the Tom Thumb variety; these are raised for supplying the American seedsmen, as well as the Canadian trade. Mr. W. Rennie has several kinds of peas grown for him on other farms in this vicinity. The men were cutting the peas with the hand pea harvester. On enquiring, we learned they had tried the scythe, but the Tom Thumb being so short, the scythe wasted and shelled the peas, and left pods and vines on the ground; the hand pea harvester took them off clean. We enquired why he had not the harvester for attaching to his reaper, but he did not consider it yet complete.

Mr. Rennie is trying several kinds of potatoes, turnips, carrots, &c., on his farm. We saw many of the vegetables and roots which are growing for the Exhibition. You will hear of the awards. Many of you would like to hear how they are raised, but we must not weary you this time; we promise in a future number to give you a little information about that part of the business. Perhaps Rennie may be as mad as a hatter if we do, but we promise it to you, and you may rival him in years to come in gaining prizes.

When in this neighborhood we visited the farms of Mr. Hood and Mr. Gibson. Perhaps for a series of years Mr. Gibson can show practical results from thorough cultivation, draining, &c., equal to any other farmer we have yet visited. His farm deserves special attention, but we must not dwell too long on this subject this time.

**Report of the Commissioner of Agriculture for the Province of Ontario, for the Year 1874.**

We have, only within a few days, received the Report of the Commissioner of Agriculture for this province. Had we been in possession of an authoritative report, such as this is, some months ago, we would have made more use of its contents than we do to-day. The analyses of the crop returns (Appendix 9), of which we give a brief summary, are in the main confirmatory of the report published some months since in the ADVOCATE.

Statistical reports, such as crop returns, are really valuable when disseminated as soon as possible, when obtained by the Agricultural Bureau; as on them farmers and commercial men desire to base many of their operations for the ensuing year. This is understood and acted upon in other countries.

From the Report we give the estimated average of grain per acre, made up from returns of Electoral Division Societies to the Bureau of Agriculture, for the years 1871, 1872, 1873 and 1874, as follows:

	1874.	1873.	1872.	1871.
Fall Wheat	18½ bush.	22 bush.	18 bush.	27½ bush.
Spring Wheat	16½ do	15½ do	19 do	17½ do
Oats	38½ do	39½ do	33 do	37½ do
Rye	17½ do	19½ do	17 do	19½ do
Barley	30½ do	37½ do	38 do	30 do
Peas	24½ do	26½ do	21 do	24½ do

This Report of the estimated average of grain is not very encouraging; the average of grain in each of the four years given is low. The highest average of wheat reported in any year (fall and spring included) is little over 22½ bushels. That

year (1871) was especially fine of fall wheat. The average whose Report is now before bushels. The Canadian farmer much to contend with in winter, spring and summer, overcoming such obstacles is the agriculturist, and the can be, at least, partially re-

The analysis given can not than an approximation to only returns from forty-three whereas we should have leaving nearly one-half from ports; and the returns are expect something more definite of uncertainty from the B.

The returns are as follows:

Fall Wheat—Hastings V. ton N., 30 bush. Three divisions seventeen divisions 20 each in the average. The light has brought the average Spring Wheat.—The high bushels per acre, from F. N. Waterloo respectively, ton, 24 bushels.

Barley.—We have returns from seven divisions the return is of each from twenty a yield is reported but less than 40 bushels.

Potatoes.—There are a yield from thirty-four divisions under 100 bushels, of fifteen six of 150. S. Huron and and N. Wellington 200 bush.

Turnips, Mangolds and the yield was various, produce in different counties being of mangolds 1000 bush. carrots, 700; of turnips 600 bushels.

A great advantage to turns is that farmers may tion of the country to be able returns as those from great difference must produce that most probably not could find the more southern heaviest crops. Of the yielding an average of 1 we not attribute the low to the farming? Many agriculture engage in it, earlier years in some other

Something may yet be of the past season. The "noteworthy that the "drier portions of fields "less from spring frosts, "tions, where the soil was "wetter, the crop was good "not a few instances ago the lower portion of field frost is owing in a great taining the water that slides by draining. Whenever be injured more by frost (drained than on dry soil, to injury in time of severe good in times of excessive and on such land, manure wasted. One of the first towards good farming is that lies stagnant in or moisture of the soil is suffering most from frost as that it is not the only

year (1871) was especially favourable to the growth of fall wheat. The average of 1874 (the year whose Report is now before us) is under 17½ bushels. The Canadian farmer has, we admit, much to contend with in the climate during the winter, spring and summer, but the best means of overcoming such obstacles is part of the study of the agriculturist, and their injurious tendencies can be, at least, partially resisted.

The analysis given can not be considered as more than an approximation to accuracy. There are only returns from forty-three Electoral Divisions, whereas we should have them from eighty-one, leaving nearly one-half from which we have no reports; and the returns are estimates. We might expect something more definite, and less a matter of uncertainty from the Bureau of Agriculture.

The returns are as follows:

Fall Wheat—Hastings W., 30 bush.; Wellington N., 30 bush. Three divisions, 22 bushels each; seventeen divisions 20 each, and twenty still lower in the average. The light yield of some divisions has brought the average as low as we see it.

Spring Wheat.—The highest yield returned is 25 bushels per acre, from Frontenac, N. Simcoe and N. Waterloo respectively, and from N. Wellington, 24 bushels.

Barley.—We have returns of a yield of 40 bushels from seven divisions; from thirteen divisions the return is of each under 30 bushels, and from twenty a yield is reported not lower than 30, but less than 40 bushels.

Potatoes.—There are estimates of the average yield from thirty-four divisions; of these, ten are under 100 bushels, of fifteen from 100 to 150, and six of 150. S. Huron and E. Middlesex 180 each, and N. Wellington 200 bushels.

Turnips, Mangolds and Carrots.—Of these crops the yield was various, presenting the greatest contrast in different counties, the heaviest produce being of mangolds 1000 bushels, in S. Grey, and carrots, 700; of turnips the highest returns are 600 bushels.

A great advantage to be derived from these returns is that farmers may be stimulated in a section of the country to be able to present as favourable returns as those from other sections. The great difference must proceed from some cause, and that most probably not climate or soil. We do not find the more southerly districts having the heaviest crops. Of the twenty Electoral Divisions yielding an average of less than 20 bushels, may we not attribute the low average in some instances to the farming? Many without any knowledge of agriculture engage in it, after having passed their earlier years in some other pursuit.

Something may yet be learned from the lessons of the past season. The Report tells us: "It is noteworthy that the higher, and consequently drier portions of fields, escaped injury more or less from spring frosts, while in the lower portions, where the soil was generally deeper and wetter, the crop was generally injured, and in not a few instances absolutely destroyed." That the lower portion of fields has suffered most from frost is owing in a great measure to the soil retaining the water that should have been drawn off by draining. Whatever the crop may be, it will be injured more by frost in ground wet and undrained than on dry soil. And not only is it liable to injury in time of severe frost; the same holds good in times of excessive drought or rain falls, and on such land, manure, if applied, is merely wasted. One of the first and most necessary steps towards good farming is the drawing off the water that lies stagnant in or on the soil. Excessive moisture of the soil is a cause of low lying land suffering most from frost, but experience teaches us that it is not the only one. We know that in

garden and field, that part that lies lowest, even if dry soil, is the first to suffer, and suffers most, and that is owing to atmospheric influences.

We would add that the season of 1874 has confirmed the opinion heretofore expressed in the *Advocate*, of the beneficial effects of the shade of woods, and even of screens and clumps of trees. In one instance, a crop planted directly south of a cleared opening in the woods, was severely injured, the sharp north-west winds having uninterrupted power to sweep over the field and seriously injure the growing plants.

#### Lime as a Fertilizer.

Were the agricultural chemist asked—Is lime of value as a fertilizer? he would doubtless reply that inasmuch as lime is a constituent part of every plant, it must be necessary to apply it to the soil, wherever it is deficient; and that a chemical analysis discovers it in every soil not wholly barren.

The practical farmer, in reply to the same question, would refer to his experience and that of every successful tiller of the soil. He would tell you of facts too generally known to admit of doubt, demonstrating that a judicious application of lime increases the produce of cereals and improves their quality; that on ground that had before the application of lime produced sorrel and other weeds, denoting the poverty or inferior nature of the soil, the weeds have since given place to clover and most nutritious grasses. Both the man of science and the experienced farmer, judging from different reasons, arrive at the same conclusion—soil, to be fertile, must contain lime.

Plants, during the first period of their germination, receive from the soil the elements necessary to their growth; after this brief period, they draw the needed supplies from other sources—air, water and soil; but these must supply the nutriment required for the maintenance of vegetable life and for vegetable growth. Were the soil always provided with those substances necessary for vegetation, the application of manure would be unnecessary; but they are often wanting; the composition of the soil is variable, and what is wanting we must supply in order to obtain good crops. Whether the soil be naturally barren, or rendered unfruitful by injudicious cropping, we must enrich it by the application of those substances essential to its fertility.

In farm-yard manure we have, in greater or less proportions, those elements essential for fertilizing soil. It is largely, if not wholly, composed of substances containing nitrogen, as the excretions of animals and litter; and in it are also phosphate of lime, potassa and lime, besides other substances less necessary. Lime being a constituent of every plant, it must consequently exist in hay, straw and the excretions. It has been extracted from the soil by the plants in their growth, and it is necessary that it be restored. This farm-yard manure partially does.

It may be asked if lime be a component part of the soil, so that plants extract it from it, and also the stable manure, what need is there of an additional application of it? We reply—lime seldom, if ever, exists in available form in soil, in the desired proportion. Even in a limestone soil it is not in a state to be available. Hence the necessity for its application. And the quantity naturally in the soil is constantly being exhausted, and therefore needs not only to be restored, but also to be applied anew in much greater measure than it originally possessed. The value of lime as a fertilizer is further proved by the fact that land wanting it produces inferior crops. It is said, on good authority, that in a tract of country the produce of wheat decreased from twenty barrels to seven

in consequence of a discontinuance of the use of lime.

Lime, great as its value is as a fertilizer, is not a substitute for other fertilizers; it is but one of the substances essential to fertility. The writer has known instances where it was applied and produced no perceptible improvement in the soil or its crops. Its failure was easily accounted for—the soil possessed little or none of the other elements of fertility; there was in it nothing to supply nitrogen to the plants, and so the land continued barren, though lime had been applied.

It has also been urged against the use of lime as a fertilizer, that though it produces beneficial results for a time, the land, in some instances, after a number of applications, becomes impoverished instead of being benefited. Lime, it is true, not only is in itself an element of fertility, but it also, as a chemical agent, so acts upon other organic substances in the soil as to make them available for plant food. In the course of time these organic substances are exhausted. But this exhaustion is not waste; it is the using for a good purpose substances that had been of little service before the application; and though now exhausted, it is only necessary to apply a greater proportion of similar or of other fertilizing substances.

It remains to say something of the mode of application from the writer's own experience and observation. The system pursued by him was to lime each portion of the land in turn every seventh year. Lime has a tendency to sink in the soil, so that after a few years what still remains, after the yearly exhaustion by crops, is beyond the reach of the plants—part of it, though but little, has passed away with the drainage, natural or artificial. We therefore find it well that there should be a fresh application of lime every seventh year. By this means the soil is never deficient in it. To sow wheat in a soil not containing lime in some of its forms is sure to bring a poor return—the produce light, the grain of inferior quality, and not maturing or ripening so evenly or early as if containing lime. Its application is beneficial to every crop. The quantity applied was from thirty to forty bushels to the acre. Generally it was scattered over the field, fresh slaked from the kiln, at the time of sowing the seed. The harrowing mixed it sufficiently with the soil. Sometimes, instead of being so scattered, it was mixed with compost, heaps of earth, sods, &c., collected from headlands, clearing water courses and ditches. The compost having been turned once or twice, was used as a top-dressing for clover and grass fields. Lime scattered on clover land before plowing produced excellent results, the clover stems and roots decomposing faster, and forming, with the lime, a superior fertilizer and stimulant.

Lime is beneficial to heavy clay as well as to light soil, but if it needs draining, lime is quite useless. First drain the soil, if wet, and then apply lime; if the soil be light it will increase its density, if heavy clay it will lessen its tenacity.

#### The Self-Binding Reaper.

Wishing to see this implement at work in the field, we went to Dundas, near which place a trial took place. Three delegates, Messrs. Stock, Ryman and Weir, were appointed by the Board of Agriculture to attend the trial and report on the same. A large number of farmers were in attendance. We have not yet heard the Government report in regard to the trial.

We were much pleased with the work done by the machine. The grain was taken off the ground cleaner than we have seen it done by any other reaper. It also left a longer stubble on the ground; this was objected to by some, and considered advantageous by others, as by so doing it would save



yield of 180 bushels, and expenses \$28, the cost per bushel would be little over 15c. Rent or interest on purchase would add from 3c. to 5c. per bushel. The expenses charged might be reduced in some of the items, and it is to be observed that the potato grower, for his own labor and horses', is credited with these estimates.

As the expenses of growing a light crop are as great as of a heavier one, it is evident that as much as below a good yield, the expense per bushel increases in proportion. This is a profit from heavy crops. Of 150 bushels per acre, the expense would be over 18c. per bushel; of 100 bushels it would be 27c.

Bad farming, and consequent light crops, cannot leave profit.

#### Light Crops and High Prices.

Are high prices with light crops really beneficial to the farmer, or the reverse? Even were it a doubtful question, we hope there are few who would prefer the high prices with such an accompaniment. But there can be no doubt on the subject. Were the produce per acre 25 bushels, and the prices low, or were it 15 bushels, with the price so high that the amount would be the same as that of 25 bushels, the amount received by the producer in both instances would be the same, and so far both would be equal. But the enquiry must not end here.

With abundant produce there is plenty throughout the land. Food is abundant for the labourer, and the live stock on the farm fares better. It is the interest of the farmer in such seasons to bring to market none of his inferior produce, the light grains from his fanning-mill, or the straw that should be used in the farm yard. The *tailings* from the mill are for the stock; the large produce from the fields of heavy grain is all that is required for the merchant and miller, and the farmer, as he sees his granaries filled with the riches of his fields, is convinced that, even if accompanied by low prices, a luxuriant growth, with a good harvest, is a blessing for all.

#### Correspondence.

SIR,—It is perhaps fortunate that the bag of oats you sent me was so long on the road. They were not far advanced when the long wished for rain came on the 4th June, and consequently was in a state to be more benefited than those which were sown earlier. It tilled well, and has fine heads with drooping panicles. Please let me know the name of these oats, as I should like, when offering them for sale as seed oats, to have a name for them. The fall before last I procured some Scott wheat from a farmer in the township of Derby, and sowed that and some Treadwell wheat in adjacent fields. Both were partially winter killed, but the Scott wheat the least, and it ripened some days earlier. Last fall I sowed the Scott wheat only; it was again partially winter killed, and will be only half a crop, but it is of excellent quality, and was cut last week. The spring crops are looking well; even potatoes, wherever they are taken proper care of. But the Colorado potato beetles are more numerous than ever; however, the parasites which prey on them seem to be increasing, and in a few years more I trust these unwelcome visitors will have passed away. Hay is a very short crop, except in a few places where the land is low and moist. The sharp June frost was scarcely felt on my farm, or on those on either side which front on the Bay, although one of my neighbors told me he noticed its effects on some nettles near his house, but that was in a low sheltered situation. In the rear concessions much damage was done to the young timothy and early potatoes. Our immunity was probably owing to the latent heat from the Georgian Bay. To the same cause it is probably owing that our potatoes are generally untouched by the fall frost for a fortnight later than in the rear concessions, or in the townships to the south of Owen Sound. Too much protection is not always good. We had a sharp frost on the 1st June, 1864; the roof of my barn was white with the frost about 5 a.m., but a row of dwarf beans, a few inches high,

in my garden, were untouched, but some I had planted on a piece of high ground, but sheltered on two sides by trees, and on the other by fences, were killed. The cause I suppose to be that when anything is exposed to the wind the hoar frost does not form on it. A case in point occurred some years ago when I was residing in the township of Quebec: A patch of potatoes in a piece of low ground, sheltered by the bush and open only to the east, was cut down by the frost on the 27th July, whilst a field of potatoes on the opposite side of the concession road on high ground, sheltered from the east and south, but open to the west and north, was untouched by the frost until the month of October following. I have noticed potatoes growing on the high lands at Point Levi, on the south bank of the St. Lawrence, still green a fortnight after all the potatoes in the townships thirty miles further back were cut down by the frost, which I attribute to a full exposure to every breath of wind, and still more to the water. When the degree of cold is sufficient to form ice in any locality, the effect is felt by everything; but hoar frost does not appear to form on places exposed to the wind; it is generally on calm, clear nights that its effects are most severely felt. The soil also has something to do with it, as a black vegetable soil radiates the heat faster than soil of a lighter color, and if the frost goes off any vegetable before sunrise they escape injury.

CHARLES JULYAN.

I observe Mr. Bruce, of the Forest City Grange, justly complains of the destruction of insectivorous birds by persons holding licenses from the Government, to shoot birds for scientific purposes. Such licenses can give the parties holding them no right to trespass on a farmer's land without his leave, and consequently, so far as these parties are concerned, farmers have the remedy in their own hands, by warning them off their farms, and should they refuse to quit, apply to the nearest magistrate for a summons against them. But I fear too many of the farmers are indifferent to these matters, to their own loss.

C. J.

#### Blight on Apple Trees.

I should like to ask, through your columns, for information relative to the new blight which has attacked the apple trees within the last two years, both in this, and, I believe, other localities; as you are probably aware, the young shoots of the present year's growth are the only parts of the tree affected so far. In my orchard of some three hundred trees, the only ones blighted are the American Golden Russet and Transcendent Crab, and the only trees of these varieties touched are 5 or 6 standing at the north-west corner of the orchard. The rows of trees run east and west, probably twenty rods in length; five or six trees of each of the two named varieties at the west end are badly injured, while the remaining portion of the row containing the same kinds is not touched in one single shoot.

Unlike the pear blight which kills wood of one, two, three and four year's growth, this disease, so far as my observation goes, affects only the present season's wood. If it is the work of an insect, the said insect must be of such minute construction as to baffle detection by the eye alone. Probably the use of a microscope in the hands of an expert in these matters, has already solved the mystery. If so, and he will kindly give the results of his examination through the medium of your paper, with any suggestions as to its destruction or prevention, he would confer a favor on

ENQUIRER.

Westminster, Aug., 1875.

[We have seen many trees affected as above described; some consider it proceeds from injury done by insects at the roots, others that it is a blight, others that it is from the sting of an insect. We are unable to decide. We hope the question will be answered by some one of our readers.—Ed.]

#### Utilizing Soakage of Barn-Yard and Privies.

SIR,—I have just put in a tank, 8 x 8, for the reception of the soakage from the barn-yard, stables, &c. I have moved the privies, putting them on the top of the tank. I have also put a chain pump in alongside. I do not intend to let any of the two manures go to waste any more. How does the arrangement suit you, Mr. Editor?

G. VAIR.

The Gardens, Chestnut Park, Toronto.

[Your arrangement for the soakage of barn-yard suits our ideas very well; not so that of the privies. We prefer a dry earth closet. You can keep it well deodorized by putting a little dry earth into it as often as necessary, and then re-

moving the product weekly or after ten days to the place prepared for it. By using it dry, as it will be from the dry earth, there will be less of the odors that are not only offensive, but also dangerous to health.—Ed.]

#### Wild Oats.

SIR,—I have been pulling wild oats now for about seven years, more or less every year, and this year I have to give up a field. Would you, or some of your subscribers, through your paper, tell me if they will grow in the fall when plowed light. I see almost in every paper how to kill almost every weed but wild oats, which is the hardest weed to contend with in this part of the country.

THOS. HAMILTON.

East Garafraxa, Aug. 5, 1875.

[In the FARMER'S ADVOCATE, Feb'y, 1874, are two prize essays, written for the ADVOCATE, on the subject of your inquiry. It is very desirable for subscribers to preserve the columns of their numbers unbroken; they will be of service for reference if occasion arises. In that number there is also a review of the other essays received on the subject, with a brief compendium of the whole matter. It is treated of under the following heads: Longevity of the Seed; Destroying of Wild Oats; Description of the Wild Oats; Soil most Suitable to its growth; Means to Exterminate; The Summing up of the Testimony. Besides the two prize essays published in full, the methods pursued and the recommendations given by ten other practical farmers, are referred to and examined in the brief review. The summing up is as follows: Four of the essayists recommend a thorough summer fallow. Two recommend a root crop after several plowings in fall and spring. Two recommend buckwheat to be sown and plowed under. Four recommend certain rotations of crops. In the words of the review we say: Of all the methods recommended, we believe the summer fallowing to be the most effectual remedy. The root crop after partial fallowing, it is true, has in its favour the advantage that no year's crop is lost, and if the summer cultivation of the root crop be thoroughly performed, we have no doubt the ground will be pretty free from wild oats and all other annual weeds.—Ed.]

#### Wheat.

SIR.—The Scott wheat I got from you last fall was the worst killed of any kind I had; I do not think much of it. The Seneca came out well, though it was not so much exposed as the Scott, and is a superior wheat. The Arnold wheat came out fair, and is a splendid sample. The Treadwell and Scott, grown alongside, were killed almost totally, both on summer fallow. Soules has done fair.

When should Sanfoin be sown, and should it be sown with or without other crops?

JAMES FORD, JR.

Bewdley, Aug. 7th, 1875.

[We paid a visit to Paris to find out the real state of the Arnold wheat. We do not consider it near as valuable as the varieties we speak of.—Ed.]

Westminster, July 19, 1875.

SIR,—Please let me know the best grass to sow for pasture, as I have two fields to sow. Timothy is the only kind sown here, and the best clover. I intend to mow them the first year. Weather and crops are just as you describe them yourself. Hay very light, but grain crops are growing well now.

Yours truly,

JOHN ROSS.

Before you determine what grasses to sow, the first consideration must be what will best endure the climate. Timothy grass and clover are the staple grasses of this country. No doubt in this selection farmers have been guided in a great measure by their observations of the climate, and part by the state of cultivation of their farms. It is time to make the enquiry, Can we not have a selection of grasses better for pasture, soiling and hay? To do this it will be necessary to make experiments, cautiously and on a small scale, at first. Were you to sow a small portion of orchard grass (cocksfoot) and red top (blue grass) mixed with the other grass, we believe it would improve the quality of your pasture. If orchard grass answers our expectations, it will be of great benefit to the country. It has done so in the States, and we know it is highly prized in the old country.

## Agricultural.

## Enriching Land by Clover.

From a report of remarks made in the Elmira Farmers' Club by Col. Brewer, we take the following:

"I beg leave to criticise remarks made by one of your members on the occasion of reading a letter I wrote your Club long ago. In treating of this subject of enriching land by the use of clover, I cited the case of a field too rich for wheat. Some one asked—'Can land be too rich for wheat?' I insist that it can; such land produces too great a growth of straw at the expense of the grain. I have brought land to this condition, and there is also the difficulty that on such land the crop is apt to lodge, and under the lodged straw the clover seed cannot grow, or if it has made a good start, it gets smothered out. I had a piece of three acres on which there was raised in one crop 110 bushels of wheat, but about half of the ground had no clover. I seeded the bare spot after harvest, scratching the surface slightly, and the next season there was no difference to be seen between the portions so seeded and that which came from the spring sowing, except that the late sowing remained green and fresh later in the season. For many years I have made it a point to attend to such bare spots after harvest, and with very certain success in most instances. I have an acquaintance, a young farmer in Hector, Tompkins County, who raises four crops in his course, all good. His clover is cut early for hay, then the second crop for seed, then barley and wheat and clover. If the wheat is rather thin it will do to use plaster on that. It is my opinion that none of us sow plaster early enough."

## The Thistle Law.

Canada thistles are spreading with such rapidity that unless the law regarding their destruction is put into force, they threaten to have a most injurious effect on our crops. The law in regard to this is very strict, if carried out. It says in the statute of 1865:

It shall be the duty of every occupant of land in Upper Canada, to cut, or cause to be cut down, all the Canada thistles growing thereon, so often in each and every year as to prevent them going to seed; if any owner, possessor or occupier of land shall knowingly suffer any Canada thistles to grow thereon, and the seed to ripen so as to cause or endanger the spread thereof, he shall, upon conviction, be liable to a fine of not less than two nor more than ten dollars for every such offence.

It shall be the duty of the overseers of highways in any municipality to see that the provisions of this act are carried out within their respective highway divisions, by cutting or causing to be cut all the Canada thistles growing on the highways or road allowances within their respective divisions, and every such overseer shall give notice in writing to the owner, possessor or occupier of any land within the said division whereon Canada thistles shall be growing and in danger of going to seed, requiring him to cause the same to be cut down within five days from the service of such notice; and in case the owner, possessor or occupier shall refuse or neglect to cut down the said Canada thistles within the period aforesaid, the said overseer of highways shall enter upon the land and cause such Canada thistles to be cut down, with as little damage to the growing crops as may be, and he shall not be liable to be sued in action of trespass therefor; provided that no such overseer of highways shall have power to enter upon or cut thistles on any land sown with grain; provided also that where such Canada thistles are growing upon non-resident lands, it shall not be necessary to give any notice before proceeding to cut down the same.

It shall be the duty of the clerk of any municipality in which railway property is situated to give notice in writing to the station master of said railway resident in or nearest to the said municipality, requiring him to cause all the Canada thistles growing upon the property of the said railway company within the limits of the said municipality to be cut down, as provided for in the first section of this Act, and in case such station master shall refuse or neglect to have the said Canada thistles cut down within ten days from the time of service of the said notice, then the overseer of highways of the said municipality shall enter upon the property of said railway company and cause such Canada

thistles to be cut down, and the expense incurred in carrying out the provisions of this section shall be provided for in the same manner as in the next following section of this Act.

The municipal council of the corporation shall cause all such sums as have been so paid under the provisions of this Act to be severally levied on the lands described in the statements of the overseers of highways, and to be collected in the same manner as other taxes; and the same, when collected, shall be paid into the treasury of the said corporation to reimburse the outlay therefrom aforesaid.

Any person who shall knowingly vend any grass or other seed among which there is any seed of the Canada thistle, shall for every such offence, upon conviction, be liable to a fine of not less than two nor more than ten dollars.

The latter part of the second clause, however, is obscure and contradictory. The law regarding their destruction on public highways is explicit, and there can be no excuse for allowing railways and public roads to be loaded with them, the way they are at present. Not only does this apply to country places, but in villages and cities they are just as bad. In many places they are fence high, and in some parts of our town they are growing almost on the sidewalks. It is to be hoped our municipal officials will look after this matter.

## Sunbury Farmer's League—Sunbury, N. B.

At the last meeting of the S. F. League, subjects of great importance to the agricultural interest of the Dominion at large were discussed by the members. We abridge from the *Colonial Farmer* the report:

The President, W. W. Parley, Esq., having opened the meeting, said there were several subjects he would like to hear discussed, such as How to Increase our Manure Heaps, and How to Regulate the Sale of Produce. These subjects were of immense importance to agriculture. Another topic he would here mention—the raising of different products by farmers, or, in other words, the division of crops as the best means to obtain fair prices. Canadians and Americans export beef to England at paying rates, and that is a lesson to us in New Brunswick. It proves that if we look to the proper feeding of our cattle the return would be advantageous.

He had communications from the Kings County League and others, looking to a general Convention of the County Leagues, for the formation of a Provincial League, and he hoped the meeting would take prompt action thereon.

Senator Wilnot said he looked on the movement as alike desirable and patriotic, holding the interests of the farmers to be not contrary to general interests, but conducive to the prosperity of the entire nation. He would not be willing to set up the interests of producers as opposed to consumers; he had never advocated the raising of such a question, and was glad to see that the League had confined its work to the upholding of their industry by the legitimate combination of their at present divided power.

The farmers, numbering about eight millions, as compared to eleven millions of the entire population of the Dominion, feel the necessity of having some organization, and when we consider what has been accomplished by the ship owners, mill owners, mechanics and artisans through association, there can be no just objection raised to this movement. The movement was not confined within the limits of our own province. He was aware that in the Eastern Townships of Quebec—a district without our facilities for raising cattle—a company with a large capital had been formed to ship beef to Great Britain without freezing, and it had perfected arrangements with the ocean steamers to deliver their beef in the old country as fresh as the day it was shipped. He intended, by invitation, to visit that establishment sometime in September next, after which he would be prepared to give a full description of its working; but what he would call their attention to at present was that New Brunswick could fatten beef for export as cheaply as Quebec, and if it paid the latter province to invest capital largely in this direction, we could engage successfully in the same enterprise. The fattening of beef calls into life all our efforts to increase the quality and quantity of suitable feed, and would promote the culture of turnips, a root eminently adapted to the soil of New Brunswick, and which we can raise just as profitably and abundantly as in Quebec.

Judge Peters, of Prince Edward Island, had raised 1200 bushels to the acre, and on his own farm, in Lincoln, the yield had been over four hundred bushels to the acre. Of course he had used bone dust as a fertilizer, for without it, ashes or some other special manure, the crops would be only ordinary, but the yield handsomely repaid the extra outlay. He considered turnip-raising, from long experience, to be profitable employment, and a large demand for good beef was created through the exportation; turnips, as the prime food for fattening, would be one of the best crops a farmer could raise.

Not that he would advise all farmers to go with beef fattening or turnip raising. To keep up remunerative prices it was necessary to have their labor as much divided as possible. Individually, he as a farmer would ever take great interest in the progress of this movement. He had been promised papers explanatory to the working of the Granges; if they came to hand, he would give the League his opinion on the advisability of introducing this order into New Brunswick.

John Covert, M. P. P., had full sympathy with the objects of the League. He felt certain New Brunswick could be an exporter of prime beef if her facilities for the fattening of stock were more widely understood. He knew that with less labor than in raising potatoes, there would be no difficulty in getting from eight hundred to one thousand bushels of turnips to the acre. This could not be done with barn-yard manure, as turnips required ashes, bone dust, &c., but then the cost was not much, and the manure was left to fertilize the other crops raised on the farm.

He had fed turnips to beef cattle and to milk cows, in all cases with grand results. For feeding to milk cows there was no trouble if the turnips were given immediately after milking, as the milk will not be flavored at all. The yield of milk is largely increased by turnips, as he knew by last winter's experience. Turnips are the only feed to lay beef on the ribs, and they will do it.

He said that last year he sowed his turnips on the 9th of July, and this year on the 8th, 9th and 10th of the same month. They look as well now as any he had ever grown.

He held that the agricultural resources of New Brunswick were almost unknown, and expressed a firm belief that the farmers could so successfully engage in the raising of wheat as to supply the country with bread, and that at good paying prices.

Not by the granting of large sums of money was this to be done, but by consulting the opinions of the farmers, to so frame legislation as to make it acceptable to their wishes, to the wishes of the mightiest power in the land. It was only through such associations as Farmer's Leagues could their voice be known, and to this end, as well as to all its expressed objects, was his cordial support and co-operation ever ready to help along the movement.

G. A. Sterling was pleased to hear the friendship expressed by the speakers towards the League.

The production of turnips as feed has been touched on by the speakers. This called for manure. Now he had raised good wheat with no other manure than fish pumice, four barrels to the acre, and if his experiment proved a success this year, it was valuable in that while he raised prime wheat, itself an acceptable crop, he left his barn-yard manure to be used for other crops.

The fish pumice was imported by their Agricultural Society, and cost \$15 a ton. His method of using was to mix one barrel of pumice with three of swamp muck, and after the mixture had thoroughly heated, it was sown on the land and cultivated in. On this ground the wheat was sown, and he would be happy to show any farmer the field of wheat, of which he felt justly proud.

With the objects of the Grange they were in accord, and if the time ever arrived when the union of the two orders was deemed advisable, he might advocate it.

Finally it was resolved that the Farmer's Leagues and Granges be invited by their delegates to meet at Sunbury on the fourth Tuesday in October, to organize a Provincial Farmer's League and take steps to carry out the objects set forth in the declaration of principles of the County Leagues.

Mr. W. B. Robinson, of Brougham, sold a pair of mares, four years old, and weighing 1,630 pounds each, for \$1,200, to Mr. Haskill, of Peoria, Illinois.

## Some F

A fact not generally known is that the finely pulverized droscopic water—single experiment in the fall will result in the spring the

Finely pulverized up moisture equal quantities of nitro soils, because of during the drought, contains, to be multiplied by plan

Soils throughout rest, become ho line occupied by as channels to c directly away. wanted, for th rain water do n the soil, and ar certain superficial supposing that drouth. If th depth of from s would be very e filter, passing t fast enough, an tility would be soil uniformly r

Again, under soaked, become not penetrate t soil holds water by the sun, ren and unferile. the washing aw continued rain passed down th along the surfac stream, carryin tion, but also t acquires and h quiescent.

There is a w tion here, and bestowed upon theory that soi come impoveri management th the conditions constantly re *Farm Journal*

## Grain Gro

In his "W American Ag statements of year's crop o marks shows produce grain ferior returns years' experie ized the large for manures, results on th prove:—

23½ bushels o 11½ cwt. of

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30 bushels b 13 3-8 cwt.

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3.—SUPER 58½ bushels 30½ cwt. of

Mr. Harri age results, By selecting stronger cas quoted abov gave over 7 later 77 bush

**Some Facts in Soil Culture.**

A fact not generally understood is that soil in a finely pulverized state holds more moisture—hydroscopic water—than when in a solid state. A single experiment will show this. A field plowed in the fall will retain a larger amount of moisture in the spring than if it were unplowed.

Finely pulverized soil, when in a dry state, takes up moisture equally from the air, and with it large quantities of nitrogen compounds. Thus porous soils, because cool, are constantly condensing water during the droughts, and hold the constituents it contains, to be taken up by the rootlets and assimilated by plants.

Soils thoroughly underdrained, when allowed to rest, become honey-combed by insects to the water line occupied by the drains, and hence these serve as channels to conduct the rain which falls immediately away. This, however, is not what is wanted, for thus the fertilizing properties in the rain water do not come intimately in contact with the soil, and are lost; thus the error into which certain superficial experimenters have been led in supposing that drained lands would not stand drouth. If the surface soil were pulverized to a depth of from six to ten inches or more, the case would be very different. It would then act as a filter, passing the water off more slowly, but still fast enough, and in addition, the elements of fertility would be retained, and the whole area of the soil uniformly moistened.

Again, underdrained soils liable to become water soaked, become hard and impacted. Insects do not penetrate to any considerable depth, and the soil holds water like a dish, to be slowly evaporated by the sun, rendering it, by this process, cold, sour and unfertile. So also till and drainage prevents the washing away of fertilizing properties during continued rains, the moisture is absorbed and passed down through the soil, instead of running along the surface, and thence into the nearest stream, carrying with it not only its own fertilization, but also the soil itself, which it mechanically acquires and holds until the water again becomes quiescent.

There is a wide field for thought and investigation here, and one that will well repay the study bestowed upon it. We do not believe in the theory that soils run out. They more often become impoverished and unfertile from gross mismanagement than from actual wearing out. For, the conditions being right, they have the power to constantly re-acquire what was lost.—*Western Farm Journal.*

**Grain Growing and Superphosphates**

In his "Walks and Talks on the Farm" in the *American Agriculturist*, Mr. Harris discusses the statements of Mr. Geddes in regard to his last year's crop of wheat, and in the course of his remarks shows that without we make the land fit to produce grain crops, we must be content with inferior returns. He says that Mr. Lawes, in his 20 years' experiments in the growing of barley, realized the largest profits when he laid out the most for manures, as the following figures, showing the results on three plots differently treated, go to prove:—

1.—NO MANURE.	
23½ bushels of barley, at \$1.25	\$29 37
11½ cwt. of straw, at 25c	2 93
	\$32 30
Expenses	25 00
Profit per acre	\$7 30
2.—SUPERPHOSPHATE.	
30 bushels barley, at \$1.25	\$37 50
13 3-8 cwt. of straw, at 25c	3 50
	\$41 00
Expenses—about	30 00
Profit per acre	\$11 00
3.—SUPERPHOSPHATE AND NITRATE OF SODA.	
58½ bushels of barley, at \$1.25	\$72 81
30½ cwt. of straw, at 25c	7 62
	\$80 43

Mr. Harris says still further:—"These are average results, extending over a period of 20 years. By selecting single years I could make out a still stronger case. One year the yield of the plot quoted above as averaging 58½ bushels per acre, gave over 74½ bushels per acre, and three years later 77 bushels per acre.

"I do not say that we can raise 77 bushels of barley per acre here; but I do say that we should furnish sufficient available plant food to approximate very closely to the limit of climatic productiveness. I have several times grown over 50 bushels of barley per acre, and have never yet had my land too rich. Had it been richer, I think I should have had a heavier crop.

"By referring to the *American Agriculturist* of January last, page 14, it will be seen that Mr. Geddes got 34 bushels of barley, and 27½ bushels of Clawson wheat afterwards. His wheat on the summer fallow, part Diehl and part Clawson, he thought, had it been all Clawson, would have been 50 bushels per acre. And he thinks this shows that it is better to grow barley than to summer-fallow. Perhaps it is, but it should be understood that I am not arguing in favor of summer-fallowing for wheat. I am simply desirous of showing that it is better to raise fewer grain crops until we get our land rich enough to produce a higher yield per acre. I have sown 15 acres of barley this spring on land manured last year for mangels. It would be very likely to grow 27½ bushels of Clawson wheat after the barley. But this does not satisfy me. And so, instead of sowing wheat after the barley, I have seeded it down with clover. I have another field of 17 acres, a clover sod, plowed last fall, and sown to barley this spring. This I have also seeded down with clover. My object is to get the land richer. I am practicing what I preach. I do not want, as a rule, to sow land to wheat that I do not think rich enough to produce, in a favorable season, 40 bushels of Diehl wheat per acre."

**Green Manuring**

It is rather surprising that in localities where manure is scarce, more attention is not given to green manuring. It is eminently a practical remedy. Those who teach but do not themselves hold the plow, nor ever did, make a point to deride it, and time and again we have had to read humorous essays on the use of "acidulated water," as green manures are termed. The value of green manure, indeed, is known chiefly to those who have tried it, and to no one else. That it is not as common as it might be, arises from the extra labor involved, as well as the loss of use in the land while the green manure is growing. All these are objections where manure is to be had tolerably easy, but it is not in these places that anyone would recommend the practice. Still the labor question is a serious one, though less so in light than in heavy soil. New Jersey, Maryland, Virginia and Delaware have many sandy tracts just suited to this way of manuring. The land is easily plowed, and indeed it is on the sandier soils that plowing under a green crop as a fertilizer has been found to have the best effect. At this season of the year there are many that have had a summer crop taken off that might very well be sown with buckwheat, or any other plant that would sprout at once, and make a rapid and thick growth before frost sets in, and just before this plowed down to remain all winter. Broken up again for spring sowing, it would be found that no other manure was necessary to a fair crop.

There would be a temptation, perhaps, to let the buckwheat remain for seed, but there is no crop that so robs the ground of its fertilizing qualities. Unless manure is put in before or after a crop of buckwheat, the ground is reduced to a miserable condition. Perhaps it is this fact which makes buckwheat so good as a green manure. It has the power of reducing the mineral constituents, and these returned to the soil by the plowing down process, gives back the elements in a form which other plants can take up better than if drawn from the earth direct by themselves.

Clover is often used for a green manure crop, but it seems to us too slow a grower to be very profitable. The best things are those which make a dense growth in a short time, and for this purpose there are many rough things, even weeds, that no doubt would be found much better than many things now commonly employed.

**Oh, Spare the Birds!**

From an article under the above heading in the *Monitor*, Bridgetown, N. S., we extract the following:—

We turn from the contemplation of the birds as objects of beauty and sources of pleasures, and consider them in the light of utility. In farming districts they are vastly useful. No sooner do buds swell and seeds vegetate, than they are assailed by innumerable insects, worms and grubs.

Every species of the farmer's growing crops, whether in gardens or fields, are exposed to the ravages of insects and the smaller kinds of reptiles. These noxious animals are the natural food of many of the feathered tribes; and it is inconceivable what numbers of these pests to vegetation are daily devoured by hungry birds. We see the swallow darting through the air in all directions, and some may suppose that he is only flying about in mere sportiveness; but he is in eager pursuit of insects. In a similar way most other birds are on the wing, or hopping about the fields, in search of animal food, which they voraciously devour. In a well-birded area of country, countless myriads of flying insects, crawling worms and burrowing bugs, all of which are destructive to vegetation, are thus greedily captured for food in a single day.

Birds cannot be too highly prized by farmers. It is admitted that they, in this part of the country, are far less numerous than they were a few years ago. The swallow families have greatly decreased in numbers, and the same may be said of robins. The cause of this diminution is, no doubt, in no small measure, attributable to their wanton destruction by boys, who rob their nests and kill them with stones or other missiles. It is no unusual sight to see some do-nothing member of the community, with a gun in hand, rambling about the fields to shoot robins, or even smaller kinds of the feathered families. This wanton destruction of birds is not only a perpetration of cruelty, but it is an outrage against the interests of whole communities. The law should stamp it as a grievous public wrong. It should be punishable by fine or imprisonment.

If anything can be done to retain the birds, or multiply their number, it should be attempted. As already intimated, they are valuable (though unconsciously) agents in the economy of nature, to aid the farmer in his warfare with the insects, grubs, worms and bugs innumerable, which infest his fields and prey upon his crops. Oh, spare the birds!

**The More Grass the More Profit.**

How shall the fertility of the soil be restored? is the great problem which it is our duty to solve. It can be solved by introducing a proper system of rotation of crops, and by growing more grass and less grain. Our salvation consists in the practical recognition of the old Belgian proverb: No grass, no cattle; no cattle, no manure; no manure, no crops. A district of country which is exclusively or mainly a natural grass growing section, has within itself all the elements of successful agriculture, provided its operations are conducted with system and economy. A country having a soil naturally adapted to grass, is, in a great measure, able to live within itself, and not be dependent upon a change of commodities with other districts. Upon such a soil as this the farmer has at hand the means to secure whatever he desires; or, to apply the proverb already quoted, he has corn, cattle and manure. In fact, grass and stock husbandry is almost the only branch of farming which seems to render man more independent.

The preservation of the fertility of our soils, and the profitable and increased production of our cereals, can be best secured by growing grass extensively. The question has been asked, why is it that France, which has three acres to one under cultivation when compared with England, produces in the aggregate no more than the latter? It is accounted for in this way: Every acre of English grain land receives the manure from three acres of grass, while in France the manure from each acre of grass must be diffused over two and a half acres of grain. Such a system as is adopted in England is in accordance with nature's laws, and it is the one which must eventually be adopted by intelligent American farmers. Such a system constitutes good tillage, and there is no more limit to the capability of the rich prairie lands that stretch away in almost endless perspective, than there is to the atoms which exist in the atmosphere, in the ocean, and in the solid earth. It does require, however, both study and applied science to change a pound of air into a pound of wheat, corn, cotton, meat or wool to the best advantage.—*Col. Farmer.*

The "Lord Palmerston" peach is the largest variety known in England.

Mr. Vick says in his invaluable Floral Guide, that ten drops of carbolic acid, to be obtained from any of our druggists, put in a pint of water and poured on the earth in flower pots, will destroy all earth worms, which do so much damage to the plants. A trial will satisfy all of its beneficial effects.

**Manitoba.**

The grain country of North America is far greater than many have supposed. The district of Manitoba, so called from a lake of that name in British America, which lies south-west of Lake Winnipeg, and is connected with it by the Dauphin River, has peculiar claims in this respect. It will soon be

familiar by use. The included grain growing country scarcely yet entered upon is nearly 600 miles in width, by 1000 or more in length, full of prairies, navigable streams, great lakes and countless small ones, too numerous to designate on the maps of the country, and mineral wealth as yet unknown.

others. Who would not like to please the ladies as the old gardener has done by a present of a rose, or a pink, or some other flower or bouquet? How many of you have referred to the language of flowers we published in a previous number? How many of the ladies have presented a rose or a pink to gen-

**The Old Gardener.**

open for settlement. Its magnitude can be understood when we mention that the distance from the point where the Pacific Railroad will cross the Red River of the North to Lake Manitoba, is 360 miles, or about 600 from St. Paul, Minn. It is divided into thirty-two stations or places, the most of which are mostly new to the world, but will soon grow

All are pleased with flowers. We hope you have a good display around your house. You cannot all afford to keep a regular gardener, but some of the family may take a greater interest in them than

men and have not known the language of flowers? Quite a pretty flirtation is often brought to a happy issue, in which the flowers play their part. Ladies! understand the meaning of every flower before presenting them.

**Notes of**

The reports general through Black currants be had at all, sects have in instances dest has come thro and spring f How has it e jured is owing shaded on the from it by th to be welcom they are inde Our "feathe make their pines, and r the morning ing war on Second, our are never left unprotected, they grow o unmanured. tilizer we kn compost. A sods, weeds, —all compo and further and so fort more than best manure orchard, as general tilla Fruit trees application in the fall w want of pla ashes—a su an excell against ins tried on borders an the applica plur in the tempting to pith devou

BARLEY is almost sowed crop States. I be sowed win'er, an enough t summer d barley rip spring w vary as w rarely inju bug, but v casionally the most any grain badly if c wagons n with shee tent of th bundles when the with grea use of bar the shea ion." with fall experime chance o rich, and acre, or l rowed b soil; fou We find fall barle from abri Tribune.

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Notes of the Garden and Farm.

ORIGINAL AND SELECTED.

The reports of failure of the currant crop are general throughout the country this season. Black currants especially are scarcer, and, when to be had at all, dearer than we remember them. Insects have injured the currant bushes—in many instances destroyed them. One garden we know has come through unscathed, safe from the winter and spring frosts, and the insects of summer. How has it escaped? Well—what has been uninjured is owing mainly to two causes; first, it is shaded on the north by a screen of pines, separated from it by the width of a street, yet near enough to be a welcome and most desirable shade. And they are indebted to them for more than shade. Our "feathered friends" make their home in the pines, and right early in the morning they are making war on insect foes.—Second, our currant bushes are never left for a season unprotected, nor the ground they grow on untilled and unmanured. The best fertilizer we know of is a good compost. Ashes, lime, salt, sods, weeds, stable manure—all composted in a heap and further enriched by suds and so forth, and turned more than once, form the best manure for garden and orchard, as well as for the general tillage of the field. Fruit trees having a liberal application of such compost in the fall will not fail from want of plant food. Coal ashes—a summer mulch—is an excellent safeguard against insects. It was tried on these currant borders and paid well for the application. The sulphur in them was not very tempting to currant leaf or pith devourers.

**BARLEY CORNS.**—Barley is almost always a spring sowed crop in the United States. It may, however, be sowed in the fall or winter, and thus be early enough to escape early summer drouths. Spring barley ripens about with spring wheat; varieties vary as with wheat. It is rarely injured by the chinch bug, but we believe is occasionally attacked. It is the most liable to shell of any grain, and shrinks badly if cut too soon. The wagons need to be lined with sheets to the full extent of the racks, and the bundles to be handled when the dew is on, and with great care; hence the use of barley forks for lifting the sheaves "spoon fashion." Whatever you do with fall barley must be an experiment. Give it a good chance on a good unmanured loamy soil, not too rich, and drill it in at the rate of 1½ bushels to the acre, or broadcast, 1½ to 2 bushels. The two-rowed barley is regarded as best adapted to poor soil; four-rowed would probably be best for you. We find our seedsmen occasionally have calls for fall barley, and that which they sell is obtained from abroad and considered four-rowed.—*N. Y. Tribune.*

Chimney soot is said to be a valuable stimulant and fertilizer for garden flowers. A lady who had tried in vain to train a climbing rose and grapevine over her windows was despairing over the stunted plants, when some one recommended "soot tea." Forthwith she made some "tea," taking a tea-cupful of soot to a quart of water. Two or three doses administered to both rose and vine effectually revived them. They grew rapidly.

**LIQUID MANURE FOR STRAWBERRIES.**—An English gardener has been very successful with his strawberry crop for several years on the same bed, and attributes the abundance and size of his fruit to the use of liquid manure, composed of one pound each of Epsom salts, Glauber's salt, pearl ash and carbonate of soda, and one-half pound of muriate of ammonia to 60 gallons of water. He applies this manure as soon as the plants show signs of growth in spring, watering them pretty freely without a hose, three times, at intervals of about a week, so as to finish before they come into flower; and, if the season be dry, he finds it absolutely necessary to supply them liberally with common water afterwards during the whole time of growth, or their increased activity, he thinks, would quickly kill them.—*Horticulturist.*

**WHEN TO CUT FENCE POSTS.**—The best time to cut hard-wood for durability is early winter, before the sap has a thought of moving. December is far better than February, and November, or even October, often better than later. During the latter part of the growing season those substances which, with access of water, form and enrich the sap, are produced in the wood. They gradually become soluble as the winter advances, and before spring fairly opens (trees varying considerably in time) are in a soluble condition, and taxing the soil for water to carry them to every twig and swelling bud. If cut thus, when filled with water or when full of soluble substances, the durability of the timber is much less than when these substances are in a chiefly insoluble condition, as they are in the autumn. The above indicates a general principle. It may, however, be considerably modified in practice, for many trees may be cut in full leaf even shortly after midsummer to good advantage. For fire-wood it is important to cut soon after the leaves fall.

**MIXED GRASSES.**—At the annual meeting of the Agricultural Association a paper was read upon growing grass. In the discussion which followed it was remarked that farmers should be careful to sow together only those grasses which ripen at the same time.—This is a mistaken idea. The chief reason why a variety of grasses should be sown is that there may be a constant succession of growth. The weakest point of our meadows is that the grass ripens, fades and suspends growth for the season, leaving a brown, withered or bare surface. If there were a succession of consecutively ripening grasses there would be a continued greenness and verdure, and if the pastures were only not overstocked, this would be as great an approach as we can make with our peculiar climate toward a permanently green meadow or pasture. But if all grasses ripen at once, we may as well continue to grow one single good grass as several good and bad ones.

The British agricultural returns for 1874 tell us that during last year there were 47,143,000 acres under crop, and in Great Britain 2,187,000 acres were under wood, and in Ireland 225,000 acres. The acreage under cultivation is every year increasing. Within the last six years, 970,000 acres in England have been added to that under crop; 175,000 in Wales, and 166,000 in Scotland. The acreage of land under wheat last year exceeded that of 1873 by 140,000 acres. For green crops including potatoes, 4,957,000 acres were employed. The number of horses returned was 367,000, an increase on the year of 35,000. The increase of cattle since 1871 had been 788,000. The number of foreign imported stock has not increased for the last ten years, being about 200,000 per annum. Sheep increased over previous years by 886,000. Pigs decreased very markedly. Agricultural laborers decreased between 1861-71 by about 17 per cent. in England, and by about 12 per cent. in Scotland.

**DOUBLE DAISIES.**—The English daisy has been improved from time to time. Just now the "Victoria" strain is becoming popular in Europe. They are very beautiful, but are somewhat difficult to get through our hot, dry summers. The succeed best under the moisture of a hot-bed sash.

Birds and Grain

In England, many little girls and boys are employed to frighten away the birds from the ripening grain. The accompanying cut represents a little girl who is faithfully doing her duty. Birds in England were at one time so numerous that rewards were offered for their destruction. The result was an alarming decrease in the grain crop, and now, instead of destroying them, their presence is encouraged. Birds destroy considerable grain as it is ripening, but the countless millions of insects they devour more than counterbalances the loss. There are farmers who still continue to drive the feathered tribe from their fields, little knowing that, by so doing, they are losing their best friends. There is no doubt if we had more birds we would have more fruit and more grain.



### Stock and Dairy.

#### Diseases of Farm Horses.

##### INTESTINAL SPASM (GRIPES.)

Every carter is acquainted with the disease common among working horses, and known locally as the "fret," or more generally under the term "gripes" or "colic." The disease is really spasmodic contraction of the muscular structure of the intestines, and is always attended with intense pain, which continues while the spasm lasts, and then suddenly ceases, to recur after a short interval. This peculiarity is deserving of more attention than it usually meets with among practical men, because it at once separates colic from other diseases of the abdominal organs which are painful, and therefore to some extent give rise to the same kind of symptoms. The distinction between the different forms of disease is most essential, as the remedies which are effective in one case may be injurious in another; especially is this true when inflammation of the intestines is mistaken for colic, the latter disease being often treated with success by means of such powerful domestic remedies as gin and sugar, or full doses of turpentine, medicines which would operate injuriously in inflammation.

Causes of spasm of the intestines are, like those which produce acute indigestion, incidental to the ordinary daily management of the animal. Large draughts of cold water are of all things likely to cause an attack, particularly when the animal is heated after exertion. Coarse provender is similarly, but less frequently, injurious, and the disease, in many instances, can be traced to exposure to inclement weather.

An attack of colic is always indicated by the sudden manifestations of signs of severe pain.—There is no preliminary dullness, or other sign of derangement; the horse is well one moment and the next he is rolling about in a state of violent suffering. At this period the symptoms are indicative of abdominal pain, without being sufficiently defined to make the nature of the disease evident; but in the course of a few moments there will occur one of those intermissions which are so characteristic of colic; the horse will get up, shift about in the stall uneasily, whisk his tail, and perhaps attempt to strike the belly with one of the hind feet, and then suddenly he becomes quiet, probably looks about for food, and will eat if supplied with provender. A return of the pain soon occurs, and all the previous symptoms again appear, the paroxysms continue for a longer time as they recur, and the intervals of rest are shorter, until the pain at last becomes continuous, and the disease becomes complicated with inflammation, or strangulation of a portion of the intestine.

The veterinary surgeon will distinguish between colic and the more serious disease—inflammation of the intestines, by the difference in the character of the pulse, the state of the visible mucous membranes, and the internal temperature; the non-professional attendant, who is often compelled to act in the absence of the veterinary surgeon, must be content to judge by the general symptoms which of the two diseases is present, and he will be guided chiefly by the violent expression of pain, alternating with periods of freedom from suffering, which distinguish spasm or colic.

Treatment will usually be commenced by the administration of some anti-spasmodic drench, of which there are many forms, most of them containing pungent agents, which act as powerful local and general stimulants, and in most cases quickly cure the spasms, but do considerable mischief if inflammation happens to have set in.

To avoid any risk of doing harm by medicines, the best plan is to have at hand a few small bottles containing two ounces of nitric ether and half the quantity of laudanum. This mixture, added to half a pint of water, forms a very effective colic drench, and no harm will be done if inflammation exists.

After the draught has been given, the horse should be walked about for half an hour, and if at the end of that time another attack of pain occurs, the dose should be repeated. In many cases, in fact in the majority of instances of colic, the attack yields to one or two doses of medicine, and the horse is fit for work in a few hours, but now and then the spasm continues and becomes more severe, and fatal exhaustion from the violent pain is to be apprehended. These severe forms of the disease require all the knowledge and skill of an experienced veterinary surgeon for their successful treatment.—*Agricultural Gazette.*

#### Some Hints to Farmers.

A correspondent of the *Ohio Farmer*, who is a farmer himself, writes as follows:—

"A farmer in good circumstances, residing in a neighboring township, purchased a thoroughbred Shorthorn bull, well built, of good pedigree, and, what rendered him still more valuable in this dairy region, he descended from a family of superior milkers. One would suppose that the money was invested to excellent advantage, but aside from the improvement of the owner's stock, he never half paid for the food he ate. The owner charged the enormous sum of three dollars to insure, and though I have known many of his grades to sell for more at one year of age than three-year-old natives would bring, yet the neighboring farmers would not pay three dollars for a calf. The trifling amount to be invested would have doubled the value of their cattle at one year of age, and yet they grow about 'hard times,' 'low price of stock,' etc. Their stock ought to be low. I can find an abundance of native yearling steers throughout the country that would hardly make a back-load for a good strong man. The large, mellow, meaty grades which drovers so delight to handle, are not to be found here, but in their place (or in the place that should be occupied by such), are to be seen little skinny scrubs, which at three years old average eight or nine hundred weight. Every native steer that is brought to maturity on our farms is raised at a dead loss of the amount which it costs to keep him for one year, which at a low estimate may be set at twenty-five dollars. Talk about hard times being caused by middlemen, when in the case under consideration, an outlay of three dollars would have yielded more than seven hundred per cent. interest. And I can point to examples where a similar outlay in the improvement of different flocks of sheep would have returned a proportionate profit upon the investment.

"And these very prejudiced, one-sided, envious men, who would not pay three dollars for a calf from a thoroughbred bull or half a dollar for a lamb from a Cotswold buck, are the men who are continually snivelling about high taxes, exorbitant tariffs and like nonsense. Hard times, indeed! You deserve to be made to squeal when you pinch yourselves, pinch each other and try to pinch those who would delight in seeing a better class of stock upon every farm in the country. You ought not to complain, for if you don't get more than forty-five cents for your wool when your neighbors all about you are selling for fifty-five cents, or two dollars per head, while others can sell readily at twice that amount. You may have the consolation of knowing that the middleman makes the most on that he has paid the most for. Let it be hard times for such men. They are a damage in any community where those who would like to see progress and improvement are in the minority. Of course they do not see it in the light that others see it, and they never will—and why? For the simple reason that they stand just where their fathers left them. They never read agricultural journals or books because it costs a few cents to pay the subscription price, and if anybody is so silly as to advise them to try some other plan, they believe nothing in it, and are ready to tell you so. Let them alone."

#### Bots in Horses

In the last issue we gave an article on this subject from the *London Agricultural Gazette*. The following item has been published by the American Department of Agriculture, and the remedy prescribed is said to have proved quite successful:—

"About thirty years ago a friend lost by bots a very fine horse. He took from the stomach of the dead horse about a gill of bots, and brought them to my office to experiment upon. He made preparations of every remedy he had heard of, and put some of them into each. Most had no effect, a few effected them slightly, but sage tea more than anything else; that killed them in fifteen hours. "He concluded he would kill them by putting them in nitric acid, but it had no more effect on them than water; the third day they were as lively as when put in. A bunch of tanzey was growing by my office. He took a handful of that, bruised it, added a little water, squeezed out the juice, and put some bots in; they were dead in one minute. Since then I have had it given to every horse. I have never known it to fail of giving entire relief. My friend had another horse effected with the bots several years later. He gave him the tanzey in the morning and a dose of salts in the evening, the next morning he took up from the excretions three half pints of bots."

#### Shall the Vat be Covered?

The claim that an advantage accrues from covering the vat during the cooking process is not new. That there should better results ensue from a better equalization of temperature which is thus secured, seems reasonable. If we are not mistaken, Professor Arnold has made some experiments in this direction which yielded very satisfactory results. From his experiments he has been led to advocate a uniform temperature, that is, the holding of the vat at the same temperature from the setting to the finish. In such a process the covering is, of course, indispensable. A Vermont dairyman, A. B. Armstrong, now publishes some very interesting results, which he claims were reached by covering. Whether his cue was taken from Mr. Arnold's effort or not we do not know. At any rate, Mr. Armstrong has patented a vat cover, which he has exhibited in the presence of witnesses, and a report of the results has been made public. But we speak rather of the principle involved in covering than of any patent apparatus, and for this purpose we describe Mr. Armstrong's experiments. The trial was made at the Steven's factory, in Granville, Washington Co. The result was as follows:—

"Vat No. 1 was worked by Mr. Robinson in the usual way of working the curd fine in the vat without cover. Two thousand, three hundred and seven pounds of milk were put into the vat, and 236½ pounds of cheese produced from this, and weighed when taken from the press, or 9.75 pounds of milk for a pound of cheese.

"Vat No. 2 was worked by A. B. Armstrong with his patent vat cover, and 'cheddared,' and curd ground out by one of Moseley and Stottard's Slicer curd mills. Two thousand two hundred and seventy-four pounds of milk were put into the vat, and produced 294½ pounds of cheese, weighed when taken from the press, or 9.31 pounds of milk for a pound of cheese.

"Vat No. 3 was worked by Mrs. Robinson, without cover and cheddared, 3,096 pounds of milk were put into the vat, and produced 313½ pounds of cheese, weighed when taken from the press, or 9.86 pounds of milk for a pound of cheese."

It is stated that the vats were all set at 80 degrees. Nos. 2 and 3 were worked exactly alike, except that No. 2 was covered. The inference is that No. 3 would have produced 17.25 pounds more cheese if it had been covered. This is a result worthy of attention, and should be subjected to a much fuller experiment. There should be a series of experiments, day after day, with milk under different conditions. Vats should be worked side by side for some time, and then the aggregate would be trustworthy evidence. There are some times errors in single experiments which a series would eliminate. There should be also strict examination of the product, for there are some conditions of milk which would not yield satisfactory results under cover. We should be pleased to hear from our cheese-making readers any considerations which this matter may suggest, or of any experiments which they may make to test the claim here advanced.—*Utica Herald.*

#### Horse Breeding.

Probably there is no subject under the sun on which so much nonsense has been written and spoken of as horse breeding. Everybody professes to know something about it, and it is generally regarded as the one subject amenable to no law, human or divine. "Like produces like," is a very true maxim so long as you do not apply it to the horse. The law of reversion is found correct with regard to other animals, but of course has nothing to do with the breeding of horses. The female parent with Shorthorn breeders is considered of so much importance that at the great sales as much money is given for the cow as for the bull. With horses we are told it is of no consequence. One authority says the veriest hack is as likely to produce a Derby winner as the mare that has scored her thousands. Another tells us that it is stud horses that are wanted, not mares; in proof of which there are plenty of blood hunters at the Islington show, and half of them are mares! What is a blood hunter? If it means anything, it means neither more nor less than a thoroughbred animal used for hunting. And so, to breed a weight-carrying hunter or trooper, we must take a mare of this class and put her to a thoroughbred sire, and then, in process of time, we may, as hundreds have done before, express our astonishment at the result, when we find that we have only a weed for our pains. Thousands have played at this game

of all blanks and no prizes, and thousands have been lost in the amusement. Thoroughbred horses were probably never better or more numerous than they are at the present time. Their legs are longer, and they cover more ground, and they are faster than ever; and I doubt not, speaking of the really good horses, they are as enduring. And so they ought, for it takes 1,000 mares to produce 10 really first-class horses, and something like 40,000 qrs. of oats, for it is necessary to corn-feed from birth the 1,000, should they have them, in order to eliminate the upper ten. Unfortunately, although they have got higher and higher they have not got wider; and so this is the system that is recommended to be generally adopted in order to supply the army with troopers, and the trade of the country with useful horses. It is lamented by many that we have allowed the foreigners to buy up our best thoroughbred horses and weight-carrying mares. The former could readily be spared, but the loss of the latter makes us really poorer, provided they would have been devoted to breeding purposes at home, which is somewhat doubtful. By using the thoroughbred sire for successive generations, their produce have become almost thoroughbred, have lost their bone and substance and rendered unfit for the stud. Where would our Short-horns and Herefords, our Leicesters and Cotswold and Oxford sheep have been if we had adopted and continued such a system? A scheme is proposed of raising a voluntary fund of a large amount for the providing and distributing stud horses throughout the country. But if this fund is to be employed in purchasing thoroughbred good stud horses, that would in any case be used for breeding, how will the country be the gainer? It will simply be to divert the stream instead of finding out a new spring. If, however, such an establishment as Hampton Court, instead of breeding second rate racers, could be devoted to the breeding of weight-carrying stud horses and mares of the proper type for stud purposes, the new spring would be tapped from which the country might get a perennial flow of useful animals.—*W. C. S., in Ag. Gazette.*

**Character of Milk from Diseased Cows.**

We have referred, heretofore, in these columns to the importance of selecting healthy animals from which to raise our dairy stock, and the consequences likely to result in breeding from weakly or diseased animals. The subject is again brought to notice from a recent paragraph in the *New York Tribune*, giving the result of some experiments made by the French investigator, M. Chauveau. According to the statement referred to, "M. Chauveau has recently made several observations of the action upon healthy calves of milk from cows suffering from tuberculosis phthisis. The calves were perfectly healthy, and after sixty days' feeding they were slaughtered. They were then found seriously diseased; numerous tubercles were found throughout the lymphatic system, and the lungs were full of caseous deposits. Similar investigations by Dr. Klebs, a German physician, resulted similarly, and he concludes that the infection first attacks the intestines, then the liver and the spleen, and finally the lungs. Vigorous organisms may resist the infection or overcome its effects, but the virus is contained in the milk of diseased cows in proportion to their condition. Scrofula is thus communicated to a healthy animal by a diseased nurse. The virus is contained in the serum of the milk, and is not destroyed by boiling."

In raising stock for our own dairy, we long since observed that constitutional defects and a tendency to disease in the parent animal were very liable to be transmitted to the offspring; and particularly was this the case in animals disposed to scrofulous affections. Cows that have a "milky habit" are not unfrequently taxed to their utmost capacity of strength and endurance in the production of milk, and they not unfrequently break down early, unable to meet the drain on their vitality, unless of robust constitution and free from a hereditary tendency to disease. But apart from the losses liable to be sustained by raising stock tainted with scrofula and other diseases, there are considerations of a sanitary character which cannot be overlooked when the milk of such cows is employed for human consumption.

If the statements be true concerning the effect which this description of milk has upon calves, is it not reasonable to suppose that it would be injurious as an article of human food? Again, if the virus is not destroyed by boiling, is there not a

reasonable supposition that it is carried into the dairy products made from such milk, and thus may become a fruitful source of disease? We have long held the opinion that this is the case, and have therefore urged upon dairymen the necessity of weeding from the herds all weakly or sickly disposed animals. The question is a very important one for the consideration of dairymen, and one which demands earnest attention from all thoughtful men, since milk, butter and cheese enters so largely into consumption.

We are convinced that a large number of dairymen are entirely acquainted with the facts here detailed. They should be generally known, so that faults now common in practice may be avoided; and, with this view, we urge the subject upon the attention of dairymen now, at the commencement of the dairying season, that action may be taken accordingly, both as to the selection of calves to be reared and the employment of un-healthy milk for the manufacture of dairy products.—*Rural New Yorker.*



**The Free Milker.**

However freely the above cow may be milked, we would strongly advise all patrons of cheese factories and milkmen who supply milk to towns and cities, not to mix the product of the above cow with that of the more sensitive or higher bred class of animals.

**How to Milk.**

At the suggestion of Warbeck I will state briefly the best method of milking. The first requisite to good milking is that the cow be kept where her sides, teats and udder shall be clean and dry. In the summer, when cows are grazing, this is easy, but in the winter, when they are stabled, it requires some attention and effort to keep them clean. But it can, and always should be done with cows which are milked. Some advise washing the udder before every milking. This is all nonsense, except in accidental cases. A cow's bag has no business to be, at every milking, in a condition to require washing, whether stabled or not. The man who keeps his cows so filthy as to be habitually subject to this necessity, has failed, not only in the initial step to good milking, but in the first essential to neatness in dairying. The udder of a cow is not likely to become filthy without involving other portions of her body. If it were necessary to wash her bag it would be equally so to wash her sides also. Milk is a very powerful absorbent, and if there is filth upon or near her, the scent from it will infect the milk, to say nothing of the danger of getting filth into the pail.

The next requisite is that she shall be where she will be comfortable and free from any annoyance or excitement. This is essential to her "giving down" perfectly. A cow's bag is interspersed with delicate muscles so much under the control of her will that she can easily contract them and hold back a portion of her milk. There are but few cows which can long "hold back" the milk of a full udder, but it is very easy for them to hold back whenever there is but little in the bag, as at the last end of a milking; and this they are very sure to do if there is anything unusual to disturb or excite them, as loud-talking, being milked by a stranger, or even his presence. I had my dairy of twenty cows fall short in their yield a pailful of milk several times one summer, simply from a neighbor's dog following into the milking barn when I was milking, my cows not being accustomed to the sight of a dog.

Assuming that the cow and her bag are clean and dry, and that she is comfortable and quiet, the milker should sit down gently on a firm stool, and with a light and careful motion brush the teats, udder and side of the cow next to him, to free them from any specks of dust or dirt or hairs that would be liable to fall into his pail. A tin-pail with the

top wider than the bottom is the best vessel to milk in. Let this be held firmly between the knees, with the bottom resting on the ankles, as this is the safest and best way to hold a pail to protect it against any sudden motion of the cow. If the bag is much pendant, and the cow is very gentle, there is no objection to setting the pail on the ground. Let the milker now grasp the teats with his whole hand, and by a firm and rapid but steady pressure crowd the milk out by closing the fingers next to the udder a little in advance of those below, being careful not to hurt the cow by pinching her teat between the ends of his fingers and his hand, or by pressing his finger-nails into the teat as his hand is closed. Milk the left hand teat with the right forward one, and the right hind with the left forward, always holding the left wrist firmly so as to be ready instantly to crowd the cow's leg back if she should attempt to kick suddenly forward. The milking should always be done with dry hands, both on account of cleanliness and for the sake of keeping the teats in good order. If the teats are too dry and inclined to crack, they may be wet after milking with a little of the strippings, or with a little linseed oil or other soft grease. The hands should press alternately and not both at once; and when milking is once begun it should go on as rapidly as it can consistently with the comfort of the cow and the strength of the operator, and without any cessation until the milk is all drawn, otherwise the cow will get out of patience and hold back the last part of her milk.

The milk in the udder is contained in branching tubes and numerous small cavities distributed through it, the tubes coming together just at the upper end of the teat, and forming a single constricted channel, which is inclined to keep closed, and is nearly equivalent to a valve. Toward the close of the milking a little pulling down as the teat is pressed works the milk out of the little cavities by stretching and flattening them, and at the same time pulls open the constricted channel to let it flow through. This pulling down must be gentle and moderate. As done by the calf in sucking it is just right. If the teats are pulled too hard, the severe stretching of the walls of the passage at the upper end of the teat causes them to pull up and thicken, so much as to impede the flow into the teat, and often to stop it entirely. For this reason the practice of stripping the milk out by pulling down with the thumb and fingers, and letting the teat slip between them as the milk is driven out, is not a good practice. It often causes the passage at the top of the teat to pull up and close, as just described, and to make the thickening of the walls apparent by a hard bunch, which feels like a kernel of corn. The stripping method pulls too hard.

To get out the last drop of milk is an important means of keeping up and prolonging the flow. Nothing will dry up a cow faster than to leave a part of her milk in her bag at each milking. It will often aid in getting that important drop to clasp the lower part of the udder, or so much of it as can be taken in, and slide the hand down, gently pressing so as to help crowd the milk forward, till the hand comes to the position for grasping the teat, and pressing the milk out. All this should be done as expeditiously as possible, as the quicker the milk is got out the more perfectly it can be drawn.—*L. B. Arnold.*

**The Canadian Wool Market.**

From Canadian Exchanges it appears that the Dominion wool growers are generally marketing their wool at current rates offered by dealers—mainly 35 to 37 cents, gold—instead of holding it back for higher values. As to the clip, the *Monetary Times*, of Toronto, estimates it to be above an average yield, and to be equal to that of 1870, which by the census of 1871 was shown to be as follows:—Ontario, 6,411,305 lbs.; Quebec, 2,763,394 lbs.; New Brunswick, 726,168 lbs.; and Nova Scotia, 1,132,703 lbs.: being a total for the whole Dominion of 11,103,480 lbs. The quality is also said to be about an average, although in some sections where drouth has prevailed the fleeces are somewhat out of condition from the dust collected since washing. But other localities are sufficiently above an average condition as to make the usual averages. An important fact is also noted, that not only the quantity but the quality of the fleeces is being guarded improved by better feeding and sheltering since the farmers have acquired the means to provide better for their flock.

## Horticulture.

### Hanging Baskets.

Baskets of living flowers may be had in perfection. Select such kinds as will stand in rooms. As regards the baskets themselves, I like to see the wire-work painted dark green. Some paint it with bright colors, which greatly spoils the effect of the flowers, which should be gay enough as regards colors, without any addition in the way of paint. Inside the wire-work put a thick layer of green moss, so as to prevent the soil from dropping through; over this put some broken crocks, and then fill up with whatever compost is best suited to the requirements of the plants with which the baskets are to be filled. For summer decoration, there are numberless plants that can be grown in baskets, but for winter blooming nothing is better or looks more showy than Rollinson's Unique Geranium, or Scarlet Tropaeolum, both of which will continue in flower all through the winter, and droop down gracefully all around the basket. A basket, indeed, never looks well unless it is furnished with some drooping plant around the edge, as, for instance, with the variegated egg-leaved Polangomon called L'eglante, while in the centre should be a nicely-grown plant of Fuchsia. Pretty baskets may also be made of silver-variegated geraniums. Lay Plymouth and bright blue lobelia, or blue convolvulus with Christina Geranium in the centre; in fact, any flower that suits, and, if put in with good taste, will look well. For very large baskets—suited for lobbies—rich foliage plants, such as variegated Sedum, Scheverias, Irasines and Centurias have an effective appearance. A window box made of wood and lined with zinc, suspended by four cords or wire, up which can be trained creepers, also makes a pretty room ornament. The great point regards keeping plants in baskets or boxes fresh and in good health, is to give plenty of water during the growing season, but more sparingly in winter, and to keep the leaves clean. If baskets are hung high there should be some means of lowering them, as it is troublesome getting up to them every morning with steps. If the baskets are small the best way is to carry them away, and water them outside; but, in the case of larger baskets, this cannot be done, so a tea tray, or something of the kind, should be placed under them to catch the drops.—*Ladies' Floral Cabinet.*

### Winter Planted Strawberries.

We published late last autumn, says the *Country Gentleman*, a detailed description of the method by which strawberry beds might be planted in a small way, late in autumn or early in spring, so as to bear freely the same or following season. We have now an additional proof of the success of this method in a row thirty feet long, planted on the 12th day of January last, or in the depth of winter. The place was a spot in the garden, well sheltered in the north and east by tall evergreen trees. The winter was remarkably open, and the ground was nearly unfrozen at the time of the planting. Square holes were first dug the breadth and depth of a single stroke of the spade, and in these holes were then placed blocks cut out of a tatted bed of the Charles Downing strawberry, with masses of earth just large enough to fill the holes to the surface. They were then covered over slightly with evergreen branches. We have already had a number of pickings of fruit from his row. The plants are as vigorous as any in older set beds, and have already begun to throw out numerous runners. This mode of planting cannot be rapidly performed, but there are cases where it may be found quite convenient to have few beds on a small scale, that shall come speedily into full bearing.

### Forests in Germany.

Few people have any idea of the extent of forest land in Germany, and most imagine that of the Black Forest little is left except a tradition, and a conventional blister of woodland so named. On the contrary, in Hanover alone there are 900,000 acres of wood under State management, while early a fourth part of the area of Prussia is in forest, although half of that is in private land. As is well known, the forest administration in particular districts has long been famous, especially in Suringia and the Hartz Mountains. In North Germany, generally, the responsibilities are allotted to districts among a carefully organized body of officers, presided over by a forest director.—*The London Garden.*

### Feeding Pot Plants.

We have tried a number of experiments this season with liquid manure, and all lead us to have faith in the application of it at watering, in a weakly state. A number of old fuchsias were stunted and pot bound, but pressure of more important matters prevented our potting them into fresh earth; but to each watering a portion of guano was allowed, and the plants with their pot bound roots have not only made vigorous growth, but flowered freely from June onward till November. Some Pelargoniums which were cut down last season and allowed to break in the usual way, were shaken out of the pots and placed in smaller ones; but when they should have been shifted they were allowed to remain in the small pots, which were crammed with roots. Guano water was given at all times when they required moisture, and the plants grew and flowered better than others which are favored with larger pots and fresh soil. We could give many other examples to prove that giving liquid manure frequently, and not until roots are in abundance to consume it, is the proper way to deal with this important assistant to cultivation.—*Florist.*

### The Yellows.

Every peach grower will recognize one of his greatest troubles in this disease, and would heartily welcome any discovery which would either cure or prevent it. Mr. Thos. Meehan, editor of the *Gardener's Monthly*, believes there is no mystery as to its cause. He says:—

"If you dig around a peach tree with the yellows, you will be first struck with a 'mushroomy' smell. Picking out the roots, and examining them with a lens, you will see millions of thread-like fibres, which are the mycelia of fungi. These eat the young fibres, and leave only the main roots, through which all the nutriment of the plant has to be gathered; and as an old root is unable to do much more than draw water, the tree becomes in a measure starved, and the leaves become yellow, just as they would be if growing in poor soil, which, though the plants might have plenty of roots, furnished nothing for the roots to eat. To have plenty of roots and no food, is equivalent to having plenty of food and no roots. The remedies which look to the destruction of this root are employed. Hot water has done it; so has a weak solution of salt; others have found a weak solution of potash succeed."

### Cherry Trees.

These should never be highly manured. Singular as it may seem, better results have been obtained by growing cherry trees in grass than by cultivating them as highly as pears. Experienced fruit growers in Delaware, who once began a system of manuring and treatment of cherry trees, found, after an experience of a few years, that the bark would burst, gum would ooze out, and many portions of the trees show an unhealthy condition. The growers immediately discontinued high feeding, and seeded the land to grass. The trees recovered their health, and have borne beautifully since the system of grass culture began. It is the only fruit tree of all varieties which we can safely recommend to be treated in this way. A Delaware friend says his row of cherry trees, growing in grass along the fences, are the picture of health and luxuriance; while in previous years, with orchard culture, he could never make them successful.

### Sunflowers.

Sunflowers are rich in honey, and are consequently good neighbors for bees. Oil, hardly to be distinguished from olive oil by any one but an expert, may be extracted from the seeds in the proportion of one gallon to one bushel. One acre will produce something like fifty bushels of seed. The seeds, too, make food, not unpalatable for human beings, and very good for animals and poultry. The Portuguese and American Indians make a kind of bread from them, and roasted they may be ground and used as a substitute for coffee. The stalks may be used as bean poles while growing. Dry, they make passable roofs for sheds and the like, and burn readily on the hearth. The ashes are very rich in potash. Altogether it is a very useful plant, and, to crown all, it has a reputation which the chemists have never disproved, for absorbing malaria, and acting as an effectual screen against that scourge of low-lying districts—fever and ague.

### Proposed Park in Halifax N. S.

The public gardens must occupy an area of fifteen or sixteen acres. While beautiful shade trees, smooth walks, terraces, croquet grounds, fountains, ponds, everywhere meet the eye, flowers are the grand feature. They are not merely arranged in borders, nor sparsely scattered over large beds, but completely cover them with thick sward of endless colors and hues, all artistically arranged. So it is, area after area, acre after acre, but with endless diversities of wood and water, the ponds being made more picturesque by the stately birds that sail negligently over their surface, ever and anon floating nearer the grassy margin, as if to pay their respects to the visitors or receive tokens of their good will in the shape of bits of bread or biscuit. It is a fine sight to see the gardens well filled with well dressed ladies and gentlemen, or to mark the merry school children sauntering around in the pure air and freely exercising their lungs. But it is not a less touching spectacle to see the laboring man eat his frugal meal on a shady seat, near beds of flowers and other pleasant surroundings provided for him by the munificence of the citizens, or an evening to behold the artisans, their wives, daughters and sweethearts enjoying the scene, the grounds enlivened by music, and the shrubbery made gay by Chinese lamps. It is also gratifying to hear that boys and girls, old and young, readily obey the modest requests, "Please do not touch the flowers;" "Please do not walk on the grass." If this be the case—and the editor of the *Reporter* is our authority for the statement, the fact is most creditable to the juvenile public of Halifax, and points to the educating influences of the public gardens.

### Singular Grass Rotation.

Wherever the pastures of Western Missouri have been destroyed by the grasshoppers, new varieties of grass have sprung up which the oldest inhabitant never saw before. The principal of these is a green bunch grass of a luxurious growth, which now covers pastures and door yards where only blue grass has grown for many a year before. Stock eat it with avidity. Some persons contend that it is buffalo grass, while others see in it a resemblance to other grasses of the plains and mountains west of us. We hope that its development will be studied by some expert in the botany of this continent, for its origin may throw a new and important light upon the origin or migration of the locusts. The seed was evidently brought here and deposited by the swarm that laid eggs in this region last fall. If brought here from Kansas or Colorado only, its identity would surely be determined ere this by old plantmen who are so numerous hereabout. It has put forth no seed stalk as yet, and perhaps in this climate it may not go to seed this year. Who will first inform us whence it came and what may be expected from it?

### How to Pot and Grow Ferns.

The hole in the bottom of the pot being broken out very much larger than the maker leaves it, I put in three or four pieces of broken pot, then some rich soil and old manure, just what should be used for cucumbers; no peat, no sand; then I put in the fern, and very gently fill the pot with good garden soil, intermixed with a few small bits of soft brick as large as peas. The pot is placed on soil or ashes, perhaps surrounded with lycopodium. In any case the soil is always kept quite wet, in fact muddy, and the ferns grow as I never saw ferns grow before. The whole secret is in keeping them wet and warm, partially plunged, and thoroughly drained. You may take a pot-bound fern, pull roughly the drainage from the roots, break off the fibres anyhow, re-pot it in wet soil instead of dry, and it will grow and flourish as it never would with ordinary treatment.

When the legs of a horse swell upon standing in the stable, it is an evidence of debility, general or local. It would be well to increase the food in quantity or quality. The following might also be of use, viz: Powdered sulphate of iron, one and a half ounces; gentian root, two ounces; chlorate of potassa, one ounce; mixed and divided into twelve powders. One of those given in cut feed, as little moistened as possible, night and morning.

Ground oats would be better for feed than corn. Friction by rubbing with a coarse woollen upon the parts would also be helpful.

## The Apiary.

## Profits From Bee-Keeping.

We this month give the following extracts, culled from a useful handbook on bees, by J. W. Pagden, of Sussex, England, entitled, "\$350 a Year: How I Make it by my Bees."

## THE AUTHOR'S SUCCESS IN BEE-KEEPING.

"Four years ago I recommenced keeping bees, and without any other outlay than three dollars, excepting what has been produced from the sale of honey, I have now nearly one hundred stocks, remarkably strong and vigorous, independent of a considerable balance in money in their favor."

## THE PLEASURE ATTENDING THE KEEPING OF BEES.

"Amid all the boundless power of our great Creator, there is not probably one individual subject more full of interest to all inquiring minds than the natural history of the honey-bee; for, to those who look merely on the surface of things for amusement, there is the spectacle presented of an insect community, constituted under a regular government, and exhibiting various social phenomena, which are not the less attractive, although they are only partially understood.

"We, as honey manufacturers, must be content without inquiring too deeply into the whys and wherefores connected with the mysterious natural history of the honey-bee, on which pages by the hundred might be written; but will be content with the knowledge of the fact that they are ever ready and willing to work from morn to night, gathering and storing honey for our benefit."

## ASPECT FOR HIVES.

Having at once taken much interest in this very interesting and pleasurable pursuit, we are pleased to see that Mr. P.'s remarks are in entire accord with your observations on the most suitable aspect for hives:—

"In almost all bee gardens you will notice that the hives of bees are ranged close under a south wall; this I have found to be the worst situation possible, the heat sometimes being so great that all work is entirely suspended for some of the most valuable hours of the day, and moreover they are exposed to all the storms of wind and rain which prevails from that quarter. I have made a trial of almost every point of the compass, and find east, or a point north or south of this, to be the best. A straw hive will last three times as long in this as in the first named position.

"It is not at all necessary or advisable to place the hives under a wall or hedge at all. The most convenient plan is to range them two or three feet apart, with the back of the hives to a garden path; this much facilitates all operations that are required to be performed, such as putting on or removing supertop hives, feeding, etc.

"The bees are also much less pugnacious, from not being irritated by persons passing in front of them and thus frequently impeding their flight to and from the entrance of the hives.

"Bee houses are worse than useless, as they afford shelter and a nursery for all their worst enemies, and generally in attending on one hive you cause annoyance and confusion to the whole household. It is important in practising the depriving system to have every hive on its own stand, detached from others."

We may in a future number continue our extracts from Mr. Pagden's work, but for the present we will merely give another extract:—

## BEES' ENEMIES.

"Never put a new swarm of bees in an old hive, as there will almost certainly be the eggs of the honey-moth deposited in the crevices of the hive, which will hatch out and probably destroy the swarm. Nothing is more to be dreaded by the beekeeper than the moth, as when they once gain an entrance to the hive, the bees appear as if powerless to expel them, although they will seize them savagely at the entrance. When moths have once established themselves in a hive, and the maggots begin to eat their way through the combs, the sooner the bees are fumigated and put into another hive the better, as for them to remain with the moth maggots will be certain destruction to them.

"Moths, as well as the large slug, may be taken in great numbers, late on summer evenings, by spreading a mixture of sugar, home-made wine, and rum, on walls or the stems of trees."

## ENTRANCE TO HIVES.

"Do not have a large round entrance to the hive, making the admission of mice, large slugs, and other enemies an easy matter; but have an entrance of only about a quarter of an inch in height, and from an inch in winter, to four inches in length in summer. But a watch must be kept on the entrance, as sometimes the weight of the hive will press it down, stopping the entrance altogether. I have known many swarms destroyed from this cause.

"Should wasps, or robber bees, attack a hive, the only plan is to narrow the entrance, so that only one or two bees can pass at the same time; this enables the bees the better to defend their gates, and generally to hold their own against all invaders."

## TO DESTROY WASPS.

"A very simple and easy plan of doing this is to saturate a piece of woollen rag with spirits of turpentine, and put it into the entrance of the nest, leave it there for the night, and the next morning every wasp will be dead. A wasp's nest, when removed unbroken, is very extraordinary and beautiful in its construction, and a curiosity quite worthy of preservation."

## Poultry Yard.

## Non-Setters.

ED. OHIO FARMER:—I have about seventy hens, and I am troubled very much with their wanting to set. I want a non-setting fowl. Will you or your correspondents tell me what to get? How many cocks should run with one hundred hens?

Tioga Co., N. Y.

C. P. S.

The Black Spanish, the Polish, the Leghorns and the Hamburgs are all great layers, and not inclined to set. Some prefer one breed and some another. One cock to every ten or twelve hens is sufficient, at most, and some of our best poultrymen keep a less proportion than that. The following, from the American Fancier's Gazette, gives the prominent points of different breeds:—

In the egg-producing class, the Leghorns stand pre-eminently above all others. This variety consists of the white and brown. The browns appear to be the favorites, being hardy, easily raised, and maturing quickly—the pullets often laying at four months. Pullets of this breed frequently lay as high as 260 eggs during the year. Their large comb and pendants require a warm house during our rigorous winters.

The next in high favor is the Black Spanish; these, like the former, are non-setters, and prolific, but not so easily raised. They do not, until nearly grown, get their full feathers, being generally half naked for a considerable time after hatching. These, like the Leghorns, require comfortable winter quarters, owing to their large comb and wattles.

The Houdans, a French breed, come next as layers and non-setters. This is what they call a *made* breed, between the Poland and Dorking—showing the characteristic crest of the former and the fifth toe of the latter. Although not as continual layers as the two varieties mentioned, yet they possess points superior to the others in size, delicacy of flesh and hardihood, but very liable to disease.

The small breeds, the different varieties of Hamburgs and Polands, have their admirers as fancy fowls. They are excellent layers, partially non-incubators, but are not recommendable, owing to their size, as likely to improve our present stock of common fowls.

The Dorkings.—This class may be considered the standard English fowl, and combine more general qualities than any other; regular setters, large size, plump, square built, delicate flesh, and, highly flavored. They lay a full supply of eggs and are probably the best table fowl raised. They likewise have large combs and pendants, like the Leghorn and Spanish. They do not thrive well on damp soil.

The Asiatics are the most extensively bred and most fashionable class at present raised in America, and on the whole are probably better adapted to the rigorous winters of the United States and Canada than any other, being well supplied with an abundance of feathers down to the toes, having small combs and wattles, no danger thus arising from those parts being frozen.—Ohio Farmer.

## Preventing Gapes.

I have seen many remedies recommended, but none better than this:—As soon as the chickens are hatched, put them in some dry place in an outbuilding which has a board floor, and keep them there a week with good well water to drink and meal or cracked corn for feed, and about a peck of road-dust for them to dust in. After that, take them out-doors; put the hen in a coop with a board floor, and let the chickens run at large, giving them wheat screenings all the time, for wheat is invaluable for young chickens. About three times per day, give cracked corn, wet. About twice per week, give two tablespoonfuls of cayenne pepper, mixed with the feed. Keep the chickens in the coop in wet weather, never allowing them to get wet, nor to have any foul place to peck in or any buttermilk to drink. Always give them plenty of well water to drink, and do not let them drink the refuse water about the place. I have always followed up this plan and never had a chicken get the gapes. But if the chicken gets the gapes, it may be cured as follows: Take up the chicken in one hand, and with the forefinger and thumb pinch or press as low down as possible on the windpipe, pinching and working up till the bill is reached. Then feed, as soon as possible, some meal mixed with cayenne pepper and a small quantity of fresh lard.—Cor. Country Gentleman

## Double-Yolk Eggs.

The large eggs which contain double yolks are rarely hatched. If properly fertilized and success fully hatched, they would doubtless produce twin chickens, or, by reason of a mechanical annexation of the yolks or growing bodies, they would produce malformed or monstrous chicks. A recent case occurred in Illinois, and is reported by a trustworthy paper. A chicken was hatched which had but one head, one neck, one breast bone, and then the chicken separated into two bodies, with four legs and four wings. The curiously malformed bird or birds was accidentally killed, and was found to have one heart, liver and gizzard, but the intestines split in two about one inch from the gizzard, and there were two sets of them, one for each body. This was probably produced by a double-yolked egg.

CONDIMENTS IN POULTRY DIET.—Cayenne pepper, mustard or ginger can, with great benefit, be added to the food of fowls, to increase their vigour and to stimulate egg production. This apparently artificial diet will be seen to be natural if we remember that wild birds of the gallinaceous species get access to very many highly spiced berries and buds—articles that give the "game flavor" to their flesh. The ordinary food of the domestic fowl is not, indeed, entirely without some such addition since there is more or less of an aromatic principle in wheat, Indian corn and all other grains. Nevertheless, it is not sufficient in quantity to supply the place of the stronger spices.

## England Hankering for Agricultural Colleges.

J. J. Mechi is grieving, in the English press, over the fact that there is but one Agricultural College in England, while America has thirty-two which proves that J. J. Mechi does not know much about American Agricultural Colleges. Our Agricultural Colleges, with one or two exceptions, neither make farmers nor experimenters. The one English College has added more valuable facts to agricultural knowledge than have the whole lot of American impostures; but the English institution is also accused, rightly or wrongly, of turning out only the kid-gloved species of the genus *Agriculture*.—W. Rural.

IRON AS A PURIFIER.—The remark of Musprat that iron is nature's scavenger has been justified by recent studies, in which it has been shown that strips of iron thrown into cisterns of water speedily destroy all sewage contamination. Medical lock has proved, by a series of experiments, that iron produces nitrous acid by its action on the nitrogenous organic matter, which is the most destructive power nature has. He has found as a general result, that by allowing water to be in contact with a large surface of iron, in about 4 hours every trace of organic matter was either destroyed or rendered insoluble, in which state it could be purified effectually by filtration.

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Baskets of living flowers may be had in perfection. Select such kinds as will stand in rooms. As regards the baskets themselves, I like to see the wire-work painted dark green. Some paint it with bright colors, which greatly spoils the effect of the flowers, which should be gay enough as regards colors, without any addition in the way of paint. Inside the wire-work put a thick layer of green moss, so as to prevent the soil from dropping through; over this put some broken crocks, and then fill up with whatever compost is best suited to the requirements of the plants with which the baskets are to be filled. For summer decoration, there are numberless plants that can be grown in baskets, but for winter blooming nothing is better or looks more showy than Rollinson's Unique Geranium, or Scarlet Tropaeolum, both of which will continue in flower all through the winter, and droop down gracefully all around the basket. A basket, indeed, never looks well unless it is furnished with some drooping plant around the edge, as, for instance, with the variegated egg-leaved Pelargonium called L'eglante, while in the centre should be a nicely-grown plant of Fuchsia. Pretty baskets may also be made of silver-variegated geraniums. Lay Plymouth and bright blue lobelia, or blue convolvulus with Christina Geranium in the centre; in fact, any flower that suits, and, if put in with good taste, will look well. For very large baskets—suited for lobbies—rich foliage plants, such as variegated Sedum, Scheverias, Irasines and Centaurias have an effective appearance. A window box made of wood and lined with zinc, suspended by four cords or wire, up which can be trained creepers, also makes a pretty room ornament. The great point regards keeping plants in baskets or boxes fresh and in good health, is to give plenty of water during the growing season, but more sparingly in winter, and to keep the leaves clean. If baskets are hung high there should be some means of lowering them, as it is troublesome getting up to them every morning with steps. If the baskets are small the best way is to carry them away, and water them outside; but, in the case of larger baskets, this cannot be done, so a tea tray, or something of the kind, should be placed under them to catch the drops.—*Ladies' Floral Cabinet.*

### Winter Planted Strawberries.

We published late last autumn, says the *Country Gentleman*, a detailed description of the method by which strawberry beds might be planted in a small way, late in autumn or early in spring, so as to bear freely the same or following season. We have now an additional proof of the success of this method in a row thirty feet long, planted on the 12th day of January last, or in the depth of winter. The place was a spot in the garden, well sheltered in the north and east by tall evergreen trees. The winter was remarkably open, and the ground was nearly unfrozen at the time of the planting. Square holes were first dug the breadth and depth of a single stroke of the spade, and in these holes were then placed blocks cut out of a rotted bed of the Charles Downing strawberry, with masses of earth just large enough to fill the holes to the surface. They were then covered very slightly with evergreen branches. We have already had a number of pickings of fruit from his row. The plants are as vigorous as any in older set beds, and have already begun to throw out numerous runners. This mode of planting cannot be rapidly performed, but there are cases where it may be found quite convenient to have few beds on a small scale, that shall come speedily into full bearing.

### Forests in Germany.

Few people have any idea of the extent of forest land in Germany, and most imagine that of the Black Forest little is left except a tradition, and a conventional blister of woodland so named. On the contrary, in Hanover alone there are 900,000 acres of wood under State management, while early a fourth part of the area of Prussia is in forest, although half of that is in private land. As is well known, the forest administration in particular districts has long been famous, especially in Thuringia and the Hartz Mountains. In North Germany, generally, the responsibilities are allotted to districts among a carefully organized body of officers, presided over by a forest director.—*The London Garden.*

### Feeding Pot Plants.

We have tried a number of experiments this season with liquid manure, and all lead us to have faith in the application of it at watering, in a weakly state. A number of old fuchsias were stunted and pot bound, but pressure of more important matters prevented our potting them into fresh earth; but to each watering a portion of guano was allowed, and the plants with their pot bound roots have not only made vigorous growth, but flowered freely from June onward till November. Some Pelargoniums which were cut down last season and allowed to break in the usual way, were shaken out of the pots and placed in smaller ones; but when they should have been shifted they were allowed to remain in the small pots, which were crammed with roots. Guano water was given at all times when they required moisture, and the plants grew and flowered better than others which are favored with larger pots and fresh soil. We could give many other examples to prove that giving liquid manure frequently, and not until roots are in abundance to consume it, is the proper way to deal with this important assistant to cultivation.—*Florist.*

### The Yellows.

Every peach grower will recognize one of his greatest troubles in this disease, and would heartily welcome any discovery which would either cure or prevent it. Mr. Thos. Meehan, editor of the *Gardener's Monthly*, believes there is no mystery as to its cause. He says:—

"If you dig around a peach tree with the yellows, you will be first struck with a 'mushroomy' smell. Picking out the roots, and examining them with a lens, you will see millions of thread-like fibres, which are the mycelia of fungi. These eat the young fibres, and leave only the main roots, through which all the nutriment of the plant has to be gathered; and as an old root is unable to do much more than draw water, the tree becomes in a measure starved, and the leaves become yellow, just as they would be if growing in poor soil, which, though the plants might have plenty of roots, furnished nothing for the roots to eat. To have plenty of roots and no food, is equivalent to having plenty of food and no roots. The remedies which look to the destruction of this root are employed. Hot water has done it; so has a weak solution of salt; others have found a weak solution of potash succeed."

### Cherry Trees.

There should never be highly manured. Singular as it may seem, better results have been obtained by growing cherry trees in grass than by cultivating them as highly as pears. Experienced fruit growers in Delaware, who once began a system of manuring and treatment of cherry trees, found, after an experience of a few years, that the bark would burst, gum would ooze out, and many portions of the trees show an unhealthy condition. The growers immediately discontinued high feeding, and seeded the land to grass. The trees recovered their health, and have borne beautifully since the system of grass culture began. It is the only fruit tree of all varieties which we can safely recommend to be treated in this way. A Delaware friend says his row of cherry trees, growing in grass along the fences, are the picture of health and luxuriance; while in previous years, with orchard culture, he could never make them successful.

### Sunflowers.

Sunflowers are rich in honey, and are consequently good neighbors for bees. Oil, hardly to be distinguished from olive oil by any one but an expert, may be extracted from the seeds in the proportion of one gallon to one bushel. One acre will produce something like fifty bushels of seed. The seeds, too, make food, not unpalatable for human beings, and very good for animals and poultry. The Portuguese and American Indians make a kind of bread from them, and roasted they may be ground and used as a substitute for coffee. The stalks may be used as bean poles while growing. Dry, they make passable roofs for sheds and the like, and burn readily on the hearth. The ashes are very rich in potash. Altogether it is a very useful plant, and, to crown all, it has a reputation which the chemists have never disproved, for absorbing malaria, and acting as an effectual screen against that scourge of low-lying districts—fever and ague.

### Proposed Park in Halifax N. S.

The public gardens must occupy an area of fifteen or sixteen acres. While beautiful shade trees, smooth walks, terraces, croquet grounds, fountains, ponds, everywhere meet the eye, flowers are the grand feature. They are not merely arranged in borders, nor sparsely scattered over large beds, but completely cover them with thick sward of endless colors and hues, all artistically arranged. So it is, area after area, acre after acre, but with endless diversities of wood and water, the ponds being made more picturesque by the stately birds that sail negligently over their surface, ever and anon floating nearer the grassy margin, as if to pay their respects to the visitors or receive tokens of their good will in the shape of bits of bread or biscuit. It is a fine sight to see the gardens well filled with well dressed ladies and gentlemen, or to mark the merry school children sauntering around in the pure air and freely exercising their lungs. But it is not a less touching spectacle to see the laboring man eat his frugal meal on a shady seat, near beds of flowers and other pleasant surroundings provided for him by the munificence of the citizens, or an evening to behold the artisans, their wives, daughters and sweethearts enjoying the scene, the grounds enlivened by music, and the shrubbery made gay by Chinese lamps. It is also gratifying to hear that boys and girls, old and young, readily obey the modest requests, "Please do not touch the flowers," "Please do not walk on the grass." If this be the case—and the editor of the *Reporter* is our authority for the statement, the fact is most creditable to the juvenile public of Halifax, and points to the educating influences of the public gardens.

### Singular Grass Rotation.

Wherever the pastures of Western Missouri have been destroyed by the grasshoppers, new varieties of grass have sprung up which the oldest inhabitant never saw before. The principal of these is a green bunch grass of a luxurious growth, which now covers pastures and door yards where only blue grass has grown for many a year before. Stock eat it with avidity. Some persons contend that it is buffalo grass, while others see in it a resemblance to other grasses of the plains and mountains west of us. We hope that its development will be studied by some expert in the botany of this continent, for its origin may throw a new and important light upon the origin or migration of the locusts. The seed was evidently brought here and deposited by the swarm that laid eggs in this region last fall. If brought here from Kansas or Colorado only, its identity would surely be determined ere this by old plantmen who are so numerous hereabout. It has put forth no seed stalk as yet, and perhaps in this climate it may not go to seed this year. Who will first inform us whence it came and what may be expected from it?

### How to Pot and Grow Ferns.

The hole in the bottom of the pot being broken out very much larger than the maker leaves it, I put in three or four pieces of broken pot, then some rich soil and old manure, just what should be used for cucumbers; no peat, no sand; then I put in the fern, and very gently fill the pot with good garden soil, intermixed with a few small bits of soft brick as large as peas. The pot is placed on soil or ashes, perhaps surrounded with lycopodium. In any case the soil is always kept quite wet, in fact muddy, and the ferns grow as I never saw ferns grow before. The whole secret is in keeping them wet and warm, partially plunged, and thoroughly drained. You may take a pot-bound fern, pull roughly the drainage from the roots, break off the fibres anyhow, re-pot it in wet soil instead of dry, and it will grow and flourish as it never would with ordinary treatment.

When the legs of a horse swell upon standing in the stable, it is an evidence of debility, general or local. It would be well to increase the food in quantity or quality. The following might also be of use, viz: Powdered sulphate of iron, one and a half ounces; gentian root, two ounces; chlorate of potassa, one ounce; mixed and divided into twelve powders. One of those given in cut feed, as little moistened as possible, night and morning.

Ground oats would be better for feed than corn. Friction by rubbing with a coarse woollen upon the parts would also be helpful.

The Apiary.

Profits From Bee-Keeping.

We this month give the following extracts, culled from a useful handbook on bees, by J. W. Pagden, of Sussex, England, entitled, "\$350 a Year: How I Make it by my Bees."

THE AUTHOR'S SUCCESS IN BEE-KEEPING.

"Four years ago I recommenced keeping bees, and without any other outlay than three dollars, excepting what has been produced from the sale of honey, I have now nearly one hundred stocks, remarkably strong and vigorous, independent of a considerable balance in money in their favor."

THE PLEASURE ATTENDING THE KEEPING OF BEES.

"Amid all the boundless power of our great Creator, there is not probably one individual subject more full of interest to all inquiring minds than the natural history of the honey-bee; for, to those who look merely on the surface of things for amusement, there is the spectacle presented of an insect community, constituted under a regular government, and exhibiting various social phenomena, which are not the less attractive, although they are only partially understood.

"We, as honey manufacturers, must be content without inquiring too deeply into the whys and wherefores connected with the mysterious natural history of the honey-bee, on which pages by the hundred might be written; but will be content with the knowledge of the fact that they are ever ready and willing to work from morn to night, gathering and storing honey for our benefit."

ASPECT FOR HIVES.

Having at once taken much interest in this very interesting and pleasurable pursuit, we are pleased to see that Mr. P.'s remarks are in entire accord with your observations on the most suitable aspect for hives:—

"In almost all bee gardens you will notice that the hives of bees are ranged close under a south wall; this I have found to be the worst situation possible, the heat sometimes being so great that all work is entirely suspended for some of the most valuable hours of the day, and moreover they are exposed to all the storms of wind and rain which prevails from that quarter. I have made a trial of almost every point of the compass, and find east, or a point north or south of this, to be the best. A straw hive will last three times as long in this as in the first named position.

"It is not at all necessary or advisable to place the hives under a wall or hedge at all. The most convenient plan is to range them two or three feet apart, with the back of the hives to a garden path; this much facilitates all operations that are required to be performed, such as putting on or removing supertop hives, feeding, etc.

"The bees are also much less pugnacious, from not being irritated by persons passing in front of them and thus frequently impeding their flight to and from the entrance of the hives.

"Bee houses are worse than useless, as they afford shelter and a nursery for all their worst enemies, and generally in attending on one hive you cause annoyance and confusion to the whole household. It is important in practising the depriving system to have every hive on its own stand, detached from others."

We may in a future number continue our extracts from Mr. Pagden's work, but for the present we will merely give another extract:—

BEE'S ENEMIES.

"Never put a new swarm of bees in an old hive, as there will almost certainly be the eggs of the honey-moth deposited in the crevices of the hive, which will hatch out and probably destroy the swarm. Nothing is more to be dreaded by the bee-keeper than the moth, as when they once gain an entrance to the hive, the bees appear as if powerless to expel them, although they will seize them savagely at the entrance. When moths have once established themselves in a hive, and the maggots begin to eat their way through the combs, the sooner the bees are fumigated and put into another hive the better, as for them to remain with the moth maggots will be certain destruction to them.

"Moths, as well as the large slug, may be taken in great numbers, late on summer evenings, by spreading a mixture of sugar, home-made wine, and rum, on walls or the stems of trees."

ENTRANCE TO HIVES.

"Do not have a large round entrance to the hive, making the admission of mice, large slugs, and other enemies an easy matter; but have an entrance of only about a quarter of an inch in height, and from an inch in winter, to four inches in length in summer. But a watch must be kept on the entrance, as sometimes the weight of the hive will press it down, stopping the entrance altogether. I have known many swarms destroyed from this cause.

"Should wasps, or robber bees, attack a hive, the only plan is to narrow the entrance, so that only one or two bees can pass at the same time; this enables the bees the better to defend their gates, and generally to hold their own against all invaders."

TO DESTROY WASPS.

"A very simple and easy plan of doing this is to saturate a piece of woollen rag with spirits of turpentine, and put it into the entrance of the nest, leave it there for the night, and the next morning every wasp will be dead. A wasp's nest, when removed unbroken, is very extraordinary and beautiful in its construction, and a curiosity quite worthy of preservation."

Poultry Yard.

Non-Setters.

ED. OHIO FARMER:—I have about seventy hens, and I am troubled very much with their wanting to set. I want a non-setting fowl. Will you or your correspondents tell me what to get? How many cocks should run with one hundred hens?

Tioga Co., N. Y.

C. P. S.

The Black Spanish, the Polish, the Leghorns and the Hamburgs are all great layers, and not inclined to set. Some prefer one breed and some another. One cock to every ten or twelve hens is sufficient, at most, and some of our best poultrymen keep a less proportion than that. The following, from the American Fancier's Gazette, gives the prominent points of different breeds:—

In the egg-producing class, the Leghorns stand pre-eminently above all others. This variety consists of the white and brown. The browns appear to be the favorites, being hardy, easily raised, and maturing quickly—the pullets often laying at four months. Pullets of this breed frequently lay as high as 260 eggs during the year. Their large comb and pendants require a warm house during our rigorous winters.

The next in high favor is the Black Spanish; these, like the former, are non-setters, and prolific, but not so easily raised. They do not, until nearly grown, get their full feathers, being generally half naked for a considerable time after hatching. These, like the Leghorns, require comfortable winter quarters, owing to their large comb and wattles.

The Houdans, a French breed, come next as layers and non-setters. This is what they call a *made* breed, between the Poland and Dorking—showing the characteristic crest of the former and the fifth toe of the latter. Although not as continual layers as the two varieties mentioned, yet they possess points superior to the others in size, delicacy of flesh and hardihood, but very liable to disease.

The small breeds, the different varieties of Hamburgs and Polands, have their admirers as fancy fowls. They are excellent layers, partially non-incubators, but are not recommendable, owing to their size, as likely to improve our present stock of common fowls.

The Dorkings.—This class may be considered the standard English fowl, and combine more general qualities than any other; regular setters, large size, plump, square built, delicate flesh, and highly flavored. They lay a full supply of eggs and are probably the best table fowl raised. They likewise have large combs and pendants, like the Leghorn and Spanish. They do not thrive well on damp soil.

The Asiatics are the most extensively bred and most fashionable class at present raised in America, and on the whole are probably better adapted to the rigorous winters of the United States and Canada than any other, being well supplied with an abundance of feathers down to the toes, having small combs and wattles, no danger thus arising from those parts being frozen.—Ohio Farmer.

Preventing Gapes.

I have seen many remedies recommended, but none better than this:—As soon as the chickens are hatched, put them in some dry place in an outbuilding which has a board floor, and keep them there a week with good well water to drink and meal or cracked corn for feed, and about a peck of road-dust for them to dust in. After that, take them out-doors; put the hen in a coop with a board floor, and let the chickens run at large, giving them wheat screenings all the time, for wheat is invaluable for young chickens. About three times per day, give cracked corn, wet. About twice per week, give two tablespoonfuls of cayenne pepper, mixed with the feed. Keep the chickens in the coop in wet weather, never allowing them to get wet, nor to have any foul place to peck in or any buttermilk to drink. Always give them plenty of well water to drink, and do not let them drink the refuse water about the place. I have always followed up this plan and never had a chicken get the gapes. But if the chicken gets the gapes, it may be cured as follows: Take up the chicken in one hand, and with the forefinger and thumb pinch or press as low down as possible on the windpipe, pinching and working up till the bill is reached. Then feed, as soon as possible, some meal mixed with cayenne pepper and a small quantity of fresh lard.—Cor. Country Gentleman

Double-Yolk Eggs.

The large eggs which contain double yolks are rarely hatched. If properly fertilized and successfully hatched, they would doubtless produce twin chickens, or, by reason of a mechanical annexation of the yolks or growing bodies, they would produce malformed or monstrous chicks. A recent case occurred in Illinois, and is reported by a trustworthy paper. A chicken was hatched which had but one head, one neck, one breast bone, and then the chicken separated into two bodies, with four legs and four wings. The curiously malformed bird or birds was accidentally killed, and was found to have one heart, liver and gizzard, but the intestines split in two about one inch from the gizzard, and there were two sets of them, one for each body. This was probably produced by a double-yolked egg.

CONDIMENTS IN POULTRY DIET.—Cayenne pepper, mustard or ginger can, with great benefit, be added to the food of fowls, to increase their vigor and to stimulate egg production. This apparently artificial diet will be seen to be natural if we remember that wild birds of the gallinaceous species get access to very many highly spiced berries and buds—articles that give the "game flavor" to their flesh. The ordinary food of the domestic fowl is not, indeed, entirely without some such addition since there is more or less of an aromatic principle in wheat, Indian corn and all other grains. Nevertheless, it is not sufficient in quantity to supply the place of the stronger spices.

England Hankering for Agricultural Colleges.

J. J. Mechi is grieving, in the English press over the fact that there is but one Agricultural College in England, while America has thirty-two which proves that J. J. Mechi does not know much about American Agricultural Colleges. Our Agricultural Colleges, with one or two exceptions, neither make farmers nor experimenters. The one English College has added more valuable facts to agricultural knowledge than have the whole lot of American impostures; but the English institution is also accused, rightly or wrongly, of turning out only the kid-gloved species of the genus *Agriculture*.—W. Rural.

IRON AS A PURIFIER.—The remark of Musprat that iron is nature's scavenger has been justified by recent studies, in which it has been shown that strips of iron thrown into cisterns of water speedily destroy all sewage contamination. Maclock has proved, by a series of experiments, that iron produces nitrous acid by its action on the nitrogenous organic matter, which is the most destructive power nature has. He has found as a general result, that by allowing water to be in contact with a large surface of iron, in about 4 hours every trace of organic matter was either destroyed or rendered insoluble, in which state it could be purified effectually by filtration.

## Garden, Orchard and Forest.

## Remedies for Mildew.

Some years ago I read, in a German periodical devoted to practical chemistry and chemical technology, edited by Dr. Elsner, that molasses, mixed with water, was a certain remedy for mildew on gooseberries; but no proportions were stated. A few days afterwards I noticed that a gooseberry bush in my garden looked as though it had been sprinkled with flour, so much was it affected with mildew. I immediately mixed some molasses with an equal quantity of water and applied it to the bush with a common syringe, immersing some of the branches in the mixture. The next day the mildew had disappeared, the black spots only remaining on the leaves where the mildew had destroyed the epidermis. Since then I have repeated the application every year with the same result.

I find that it is better to take rather more water than molasses. The efficacy of the remedy is evidently based on the fact that it excludes the air from the leaves, forming a thin cuticle on them and thus suffocating the mildew. The first rain will dissolve it and carry it off. Several years ago a week solution of common glue was recommended as a remedy against mildew on grape vines—the action and the effect being the same as with the molasses—but I found that it was much more convenient to use the molasses than the glue. Not having the opportunity to try either of these remedies on grape vines, I do not know whether it will destroy the mildew on them.

In the same work a Mr. Roberts proposed another remedy for mildew, which he calls Sulphur-zone. He found that precipitated sulphur had no effect on mildew; that common sulphur, pulverized, was much better; but that the best was flour of sulphur. He has convinced himself that flour of sulphur, which is produced by sublimation, retains a good deal of sulphurous acid (not sulphuric acid,) less of which is found in pulverized, and hardly any in precipitated sulphur. He added that flour of sulphur impregnated with more sulphurous acid than it naturally contains, is found, by physicians, to be a more powerful remedy for destroying the insects which produce the itch than the flour of sulphur in its natural state. He prepared a powder which contained a quantity of sulphurous acid four times that of sulphur. In applying this he found that a comparatively small quantity was required to be as effective as the ordinary flour of sulphur.

His suggestions may be worthy of experiment on plants invested with mildew, but should be conducted cautiously for fear of injuring the plant. The flour of sulphur, as ordinarily used for checking this pest, should be moistened with some sulphurous acid; but in what proportion should be made a matter of experiment.—*Dr. Siedhoff, to the American Garden.*

## Covering for Wounds of Trees.

BY DR. CHARLES SIEDHOFF.

[However good plastic slate may be for the purposes mentioned below, our experience forbids its use for roofing purposes.]

It often happens that, either by intention, as in pruning, or by accident, trees are wounded in various ways. A common practice is to cover large wounds with coal tar; but this is objected to by some as injurious to the tree. Experiments made in the orchards and gardens of Pomological Institute, at Ruthlengen, in Germany, go to show, however, that its use in covering large wounds is not injurious; but that, on the contrary, a callous readily forms under the tar, on the edges of the wound, and that the wounded part is thus protected from decay. There is, nevertheless, another objection; for if the tar is applied a little too thick, the sun melts it and it runs down on the bark of the tree. This can be obviated by mixing and stirring and thus incorporating with the tar about three or four times its weight of powdered slate, known as slate flour—the mixture being also known as plastic slate and used for roofing purposes. It is easily applied with an old knife or flat stick, and though it hardens on the surface, it remains soft and elastic underneath. The heat of the sun does not melt it, nor does the coldest winter weather cause it to crack—neither does it peel off.

The same mixture is also useful for other purposes in the garden. Leaky water pots, barrels, pails, gutters, sashes, &c., can be easily repaired

with it, and much annoyance and loss of time be thus avoided. It will stick to any surface provided it be not oily; and as it does not harden when kept in a mass, it is always ready for use. A gallon will last for a long time.

A most excellent preparation for small wounds and for grafting is thus prepared:—Melt a pound of rosin over a slow fire. When melted, take it from the fire and add two ounces of balsam of fir (Canada balsam), or two ounces of Venice turpentine (not spirits of turpentine), stirring it constantly. As soon as it is cool enough, mix in four to six ounces of alcohol of 95 deg. strength—according to the season—until it is as thick as molasses. It keeps well, in close-corked bottles, for a long time. Should it become too thick, by the gradual evaporation of the alcohol, it can easily be thinned by putting the bottle in warm water and stirring in sufficient alcohol to bring it to a proper fluidity. It is applied with a brush.

This preparation is much better than the liquid grafting wax composed of rosin, beef tallow and spirits of turpentine, which often granulates. If there be any danger that the scions will dry up by evaporation, they may, beneficially, be brushed over with this composition—it being first made more fluid by adding alcohol. By this means I succeeded, in February of last year, in grafting a single eye of *Egle sepiniaria* upon a lemon tree, in a dry sitting-room, without the use of any glass covering.—*American Garden.*

## The Perforating Power of Roots.

It is indeed wonderful how easily the roots of plants and trees bore through hard impacted soils in search of nourishment. They use for this purpose a sort of awl, of immense power, situated at the end of the root, and capable, with the aid of the other root machinery, of thrusting aside heavy weights and getting through almost any obstructions. Yet the awl only consists of a mass of microscopic absorbent cells formed by protoplasm or vegetable mucus—the fluid in which vital action is first set up. The roots of the elm and maple will bore through the hardest soil of walks or streets, enter drains, twine about water pipes, and penetrate through the seams of stone and brick structures. The roots of some plants have been known to pass through eighteen inches of solid brick-work, and made their appearance in a wine cellar below. Plants have a great power in overcoming obstacles, when foraging for food. They are like a hungry animal which no fences can restrain when there is food beyond. The movements of roots in soils proceed on certain principles of utility in connection with the welfare of the plant. Some need more moisture than others, and the roots will drive through rocks or obtain it; others need silicious food, and will penetrate through a clay bank to reach the desired foraging ground. The urgency with which Nature drives plants and animals in pursuit of food is almost irresistible.—*Journal of Chemistry.*

## Tree Planting in Towns.

The *American Garden* makes an earnest plea for the planting of trees in the streets of cities as a sanitary measure. Growing plants assimilate the carbon of carbonic acid, discharging its oxygen into the atmosphere. The respiration of men and animals, and the consumption of fuel, load the atmosphere with carbonic acid, and the only means of destroying that poisonous gas is found in plant agency. Hence, if the atmosphere of a city were to be closed within impermeable walls, and there were no growing plants within the enclosure, the air would quickly become irrespirable. But of course the air is nowhere thus walled out, and hence the deleterious gases it contains are dissipated and carried away by the unceasing movements of atmosphere to other regions where an abundant vegetation may deprive it of its carbonic acid. Still there is no doubt that this purification of the air is accelerated by the presence of vegetation in the cities themselves. The writer in the *Garden* says that "Paris has now so large a number of parks, and its streets and boulevards are so profusely planted with trees, that the death rate has thereby been reduced from one in thirty-four as it formerly was, to one in thirty-nine as it now is." But trees are further of service in shading gutters and roadways, thus materially retarding and preventing the action of the sun in producing noxious fermentation. Then, too, the roots of the trees take up largely of such matters as are washed by the rains into the interstices of the pavements.

## Providential Help.

It is well to consider that with all our progress in knowledge, which seems to hold out hopes to us of almost all power, we should be very badly off were it not for providential help, which often seems to come to us in the most unexpected manner, and just as we are made to feel our utter helplessness against the forces that are contending with us. We, in agriculture, see this beneficial power more perhaps than any other class, and in nothing more than in our experience with insect enemies. Some few, as in the case of the plum curculio, seem to hold their own in spite of everything; but this does not attack things absolutely essential to our happiness. It would be a very nice thing to have plums as plentiful as black-berries; but we can resign the plum, though to be sure not without some regret. And then in spite of the curculio we do get plums and peaches, and cherries, and sometimes so abundantly that after all it seems as if this plagu-y thing only takes the surplus after all. We do not know that there is any countercheck in nature on the curculio; but on most others there seems to be.

We have had held up to us alarming pictures of grape ravages by the phylloxera, and from French experience there appears no doubt about its being in many cases a terrible thing; but Prof. Riley tells us a minute parasite has found it out, which, industriously following it and feeding on it, may keep it from being very destructive. Very often these parasites do certainly get the upper hand. A few years ago a caterpillar attacked the cabbage plants in the east, and it was almost as hard to get a crop there as it is likely here to get a crop of potatoes; but its enemy followed it so closely that the cabbage-worm is now of no account where the parasite exists. Even the dreaded potato beetle in some parts of the West, where it was once abundant has considerably disappeared, and it is believed chiefly through its being preyed on by other insects, which have greatly diminished their numbers. Even the grass-hopper, which in number and suddenness beats all other insect plagues, has at length been found by some other insect, which deposits its egg in the young hopper before it leaves the ground, and takes its life before it has had the chance to lay its eggs for another brood. It has long been known that great numbers of insects like to prey on the grasshopper; that is to say, they deposit their eggs in their bodies, and the young larvae thus live during their earlier stages on grasshopper food. The common hair-worm, which many people suppose is a real horse hair transformed by falling into water into a living thing, is in its earlier stages, a parasite in the grasshopper. It eventually kills its foster parent, and then makes its way out, and has an independent existence either in the damp ground or in water.

Thus in many ways does a good providence come to our help, and though we are apt to feel sorely troubled just now with the great destructiveness of our insect foes, there will no doubt soon come an end to them all.

## Raising Evergreens from Seed.

The cones of our native evergreen trees should be gathered when fully mature in Autumn, and before they open, then spread them upon shelves or the floor of a dry, warm room, and leave in this position until sufficiently dry to permit the seeds to drop out when handled. Some of the pines, however, have very persistent cones, and may require considerable drying before the scales will relax sufficiently to allow the seeds to drop out; but in such cases it is best to soak the cones for a few hours in warm water before drying. When the seed have been secured and all refuse matter removed, they may be put into bags and hung up in a cool room until the season arrives for sowing in Spring.

## SEED BEDS.

It would be folly to attempt the growing of evergreens from seed in the open ground, as we do most kinds of deciduous trees. The hot sun and drying winds of our climate make havoc with the young seedlings when they first appear above ground, and even with all the care bestowed and artificial appliances employed by our nurserymen, serious losses frequently occur at this period in the life of seedling evergreens. Knowing the sensitiveness of these plants to the influence of hot, dry winds and scorching rays of the sun, beds for the reception of the seed should be prepared in such a manner that full protection may be given during the period named. Frames made of boards a foot wide will answer every purpose, and placed

upon the surface been prepared. Convenient size screens may be feet by four, which able to be broken the strips of lat they are wide, permit enough o sure a healthy g nish shade enoug other materials n as screens of clof making the be building or unde are cheap and less useful to hav to keep out the It is well to mak the winter mon when required fo

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upon the surface of the ground after the beds have been prepared. Four feet wide and twelve long is a convenient size for the frames. To cover these, screens may be made of common lath, say three feet by four, which is a handy size and not so liable to be broken as larger. In making these screens the strips of lath may be placed as far apart as they are wide, say an inch and a half; this will permit enough of light to reach the plants to ensure a healthy growth, and at the same time furnish shade enough to prevent burning. Of course other materials may be employed for shading, such as screens of cloth, boughs of evergreens, or even making the beds on the north side of a fence, building or under large trees; but the lath screens are cheap and most convenient, besides more or less useful to have about for putting over hot beds, to keep out the chickens, if there are any around. It is well to make up the frames and screens during the winter months, in order to have them ready when required for use in early spring.

#### BEST SOIL FOR THE SEEDLINGS.

A light porous soil is necessary, whether it be sand, loam, or peat, and it should also be deep and moderately rich, although rank, fresh manure will not answer for this purpose. Soil that becomes compact and hard on the surface when dry, would prevent the young seedlings from coming up, consequently should not be used for this purpose. Where a loose, friable soil cannot be obtained in sufficient abundance to be used exclusively for the entire depth of the beds, a smaller quantity will answer, by spreading it over the surface to the depth of two or three inches.

#### SOWING THE SEED.

As soon as the ground is sufficiently warm and dry to work readily in spring, the seed may be sown in drills six inches apart and crosswise of the frames. If the seed is covered by sifting the earth over them to the depth of half an inch, it will be better than covering it with hoe or similar implements. After covering, water the bed thoroughly, applying with a watering pot and through a fine rose. The screen may be put on and, from this time forward, considerable care will be necessary to give just enough water to insure healthy growth, but not enough to cause the plants to mildew or "damp off," as it is usually termed by nurserymen. It is easy enough to grow evergreens from seed, when one has learned how by experience. The seedlings will require careful attendance during the entire first season, and may be transplanted the second, if a good, vigorous growth is secured.—*Rural New Yorker.*

#### Our Experience in Planting Raspberries and Blackberries.

We have many enquiries as to the best time to set the above—whether "fall or spring is the best." We have always had the best success with fall planting. First, because every plant grows, leaving no vacancies in the row, while in spring settings we always fail to have good results in their coming, and thus have vacancies in the rows, and as these cannot be filled up until the following fall or spring, the rows are always uneven. Second, fall set plants make at least one-third better growth the first year than those set in the spring. Third, one has so much more time to attend to it in the fall than in the spring, and hence can make so much better job of it.

For years we have tried both times for setting, and our preference is the fall. It is well known that they cannot be set in the spring unless land is of a very light, sandy nature, so long as ground is unsettled or kept wet by rains, and hence most persons fail to get them planted out before latter part of spring, and then the dry weather coming on, many failures and vacancies occur. The past spring proves this to us with a number of sorts we set, both of "tips" and "sucker" varieties, and we have fully resolved that hereafter our plantations of raspberries will go in in the fall. "But won't they heave out?" and "How must I set them?" are questions asked us. If it be sod land, it should be plowed at once, in narrow furrows, so as to cut up the sods into as narrow strips as possible. Let this lay until first of November, then plow again across the furrows as they were plowed before, having had the land well harrowed or cultivated over two or three times previously, or after the first plowing. For blackberries and black raspberries, mark off the land with a one-horse plow into furrows 6 feet apart one way (7 feet is still better for blackberries), and 3 feet the other, and in each crossing put out a plant, setting blackberries and cane or sucker

raspberries about as deep as they stood before, and "tip" raspberries so they will be about two inches below the level. Then, just before winter sets in, throw a good fork or shovelful of coarse manure or litter over each hill. This answers two purposes, one enriching the soil where the plants are by the soakings from manure, and the other protecting them from "heaving."

Another plan is to make a good hill or mound over each plant. This prevents water from standing immediately over the plants, and plants being so well protected by earth, are not harmed. Early in the spring level these mounds down. This plan not only protects them through the winter, but by this drawing away the earth, leaves the soil over the plants loose and friable. These mounds over the field can also be leveled down by running over them with a light harrow early in the spring. If it be corn or potato land, one good, thorough plowing and harrowing will answer.

The plants can be set any time before the ground freezes, though it is well not to risk putting it off too late, as a freeze up may occur to prevent. They can be taken up and transplanted any time after middle to 20th of October.

#### Manure for the Vine.

Of all the substances entering into the composition of the manure heap, none have a better influence upon vines than bones. In the formation of a border, they are of essential utility, affording for a long period a constant source of nutriment. The avidity with which the roots of the vine seek such a depot of food may be easily seen by placing a large porous bone amongst the roots of a vine. In a few months it will be literally covered with rootlets, which have sought it out and find their nutriment in its recesses.

Leather, hair, horns, woollen rags and other animal offal possess a similar action to bones. They all possess the valuable property of lying undecomposed in the soil for long periods, yet yield readily to the disintegrating action of plant roots. Hence, while they afford abundant and valuable nourishment to the vine, it is not surfeited by them, as this nutriment must be wanted and sought before it will be given up.

Ashes of wood, whether fresh or leached, are a powerful manure for the vine, and probably contain all that it requires. Leached ashes may be applied as a top dressing in almost any quantity with excellent effect, but a more cautious use must be made of fresh wood ashes, they being much more powerful and caustic.

Coal ashes have hitherto been deemed utterly worthless, and are usually thrown into the street. To some soils, however—particularly those which are too heavy—they are a very useful addition; and as they are a powerful absorbent, there is no doubt that, if mixed with night soil or some similar matter, they would prove an excellent article—more lasting, and, consequently, better than night soil by itself. They should never be thrown away, however, as they contain lime, iron and minute, though appreciable quantities of alkalis, soda usually predominating. It is also quite possible that they contain minute traces of phosphates, though in no analysis with which I have met is it mentioned. Where the coal has been burned at a high temperature, the alkali is in general reduced and the metal volatilized.

The dung and urine of animals form a powerful manure. The solid excrements of all these are best mixed with some absorbent, as plaster, charcoal, burnt clay, etc., or thoroughly decomposed in contact with vegetable matter, as straw, leaves, etc. The liquid and soluble portion may be used as liquid manure, or may be poured over the fermenting dung heap.

The dung of birds, as hens, pigeons, etc., and also guano, form a very convenient and most excellent top dressing for vine borders, but are better when applied as liquid manure during the growing season.

An excellent manure may be made as follows: Sink a hole in any convenient part of the premises and fill up with sawdust; on this pour all the urine that can be obtained from time to time, and keep closely covered with a board cover.

When sufficient has been added, or when the smell has become offensive, remove the cover and place a pile of charcoal, burnt clay, coal ashes or other absorbent, on top of it, and allow it to lie for a few weeks. At the end of that time a mass of matter will have been produced almost equal to guano.—*Rural World.*

#### Suitable Soil for Growing Plants.

The principal cause of success attained in growing plants in pots, vases or baskets, &c., is in having a soil suitably adapted to the want of the plants to be grown therein. From the numerous inquiries constantly reaching us, we apprehend the want of a suitable soil to be the principal cause of the non-success our fair readers are occasionally subject to. The question of soil is very simple and easily answered for those living in the country, who usually have the opportunity of selecting any kind of soil they may need. In our practice we use only one kind of soil for any and all purposes, and as the plants usually thrive to our satisfaction, we are contented.

Effete and worn soil should never be used for potting plants, as they usually dwindle and grow unsatisfactorily less, instead of becoming examples of health and vigor, as their owners require them to do. Nothing can be better for plants than the top "spit" of soil taken from an old pasture or from the side of the roadway. This should be thrown into a pile to allow the sods to become rotten, after which it should be broken up finely, and equal parts of fine, well-rotted manure and sand should be added to it, and the whole thoroughly mixed up together, when a compost will be obtained that will be fit to grow any kind of plant usually found in a dwelling house. If the grassy part is pared off thinly with the spade the soil below can be secured, mixed with manure and sand in the proportions indicated, and used at once with every success. We always prefer to obtain, when possible, a chestnut loam, and the fresher or newer the soil the better the plants will succeed. A soil mixed in the proportions above mentioned will not become sodden or sour, as is generally the case when worn-out soil, as taken from the garden, is used.

Many persons think it necessary to use black muck for plants. This we never use, and we think it decidedly injurious to plants, except it has been exposed to the action of the sun and air for some time before using, as it is very sour and full of poisonous gases when first taken from the swamp, that are injurious to plant life.

So much alive are the gardeners of Europe to the importance of having new soil in their flower beds for certain varieties of plants, that they annually dig out and remove the soil to the depth of twenty inches, replacing it with new soil and manure, and consider themselves well rewarded with the extra success that attends their labors in the production of finer plants and flowers by such procedure.

#### Cut Worms.

In the last issue of the *ADVOCATE* we mentioned the successful result of applying salt to land for the destruction of cut worms. In the following, from the Report of the American Department of Agriculture, there are other remedies given; probably some of them may be successful. Salt, for that purpose, we know to be an unfailing remedy, if properly applied.

Searching for the worms when they come out to feed, or digging them from their holes near the plant, and killing them, is doubtless the most effectual remedy we can employ. Curtis says one-quarter ounce of salt dissolved in a quart of water will drive the grub away, and preserve the plant till washed off by rain. Tobacco-water will kill them if it comes in contact with them. Quicklime will also destroy them if put on the plants when wet, and dry soot dug into the ground is very offensive to the grub. Suds made of one pound of soap to ten gallons of water, and applied warm, will cause them to dart out, when they can be immediately killed. Four ounces of aloes dissolved in a gallon of water and applied to the plants, is said to preserve them from the cut worm. Smooth holes made with a rake or hoe-handle near the plants will serve as traps into which the worms fall, and may there be destroyed. Coal-tar and water, a spoonful of the former to a gallon of the latter, will, it is said, drive the worm away without injuring the plant. Where a few choice plants are to be protected, this may be done by wrapping stiff paper or walnut-leaves around the stem when setting them out, leaving the paper a little above ground, and an inch or two below. Cow-dung stirred in water, and poured around the plant so that the solid part will remain and form a hard surface, through which the worm cannot penetrate, has been recommended. For a similar insect in Europe, Kollar advises lime-ashes applied to the land, or lime water in damp weather. If the female moths are attracted by sweet liquids, many of them may be killed, and as they are also lured by lights in the evening, they may be destroyed in this manner to some extent.

## Home Circle.

## The Mill and the Manor.

## PART II (concluded.)

It was deep winter. The snow lay thickly on the ground. The little river ceased to flow over the securely constructed dam which had been substituted since the accident. The ice lay so thickly upon the water, that at intervals during the day the factory boys and girls were sliding and skating, and making the air ring with their joyous exclamations. Carts and wagons came and went along the roads. The sound of machinery seldom ceased within the factory during the day. Life, in its greatest activity, reigned in the neighborhood of the mill. It is not to be wondered at, therefore, that Kennedy, long used to the bustle of a camp, should often escape from the desolate solitude of Crumble Hall, and spend some of his time in examining the various processes of the manufacture of cotton. An attraction, however, existed in the dwelling-house of the wealthy manufacturer which took him there much oftener. On the morning to which we allude, he was returning from his daily visit to Mrs. and Miss Spindler, when, to his surprise, he saw Sir James's carriage roll away from the door of Crumble Hall. On entering, he was met by Penthouse, who, with the most perplexed countenance, announced that Sir James had been there, had insisted on seeing the squire; that they had met, and that the interview, so far as he could learn, was rather stormy. Charles hastened to his uncle, and found him unusually agitated. On seeing his nephew, he made a violent effort to check his feelings, whatever they were, and to assume that collectedness which was, he thought, becoming in the head of the house of Crumble. In a tone of severity, he inquired of his new nephew when he had last seen Miss Spindler?

Kennedy instantly blushed up to the eyes. He tried to answer, but stammered so much, that what he said was inaudible. "Despite," said the old squire, "my aversion to company in general, and to these people in particular, yet the father of that young woman forced himself into my library this morning, and whether agreeable or not to me, insisted on an interview. The subject of it, sir, you can easily divine." Charles, who had recovered himself, partly declared he had not the remotest idea.

"Would you believe it, sir?" said the haughty squire, "your new friend, the spinner of cotton, the employer of those noisy urchins who daily disturb my meditations by their vulgar acclamations, has had the presumption to hint at the probability of an alliance between our families."

"Of what nature?" inquired the nephew with an imitation of innocence really wonderful, considering the emotions of dread and hope which were contending for mastery within him.

"Would you trifle with me, sir?" inquired the uncle in a tone of severity.

"I do assure you," was the reply, "that I have not the smallest notion of what kind of alliance Sir James proposed."

"Then you have not sought the hand of his daughter?" This was a home question; but after a little consideration the young man answered frankly, boldly: "No, uncle; I can say with a clear conscience that I have not sought Miss Spindler in matrimony; no allusion to any such project has ever entered into our conversation during the many delightful hours I have spent in her and her family's society." Mr. Crumble brightened up at this. There was, he thought, some sense of family dignity still left in his nephew, despite his frequent visits to the mill-owner and his growing love for the mechanical arts. Hoping to have such an anticipation confirmed, he made further inquiries into the nature of the intimacy which existed between him and their neighbors. After a little consideration, Charles replied in these terms: "My dear uncle, it would be improper in me to deny that the feelings with which I regard Miss Spindler are the strongest it is possible for man to experience; but I have always looked upon their realization as hopeless. In the first place, the circumstances under which we first became acquainted give me, in the eyes of the world, a strong claim to her regard. Now, I am very unwilling to press that as a claim which, under other circumstances, would have been a voluntary solicitation. I am said to have saved her life, and upon that ground it is doubtful whether too high a sense of gratitude would not make her refusal of the cause, to her, of greater pain than I have a

right to inflict. For of course, whatever her feeling may be, her friends would not be justified in consenting to her union with a penniless man, the scion of a broken family." This speech being by no means accordant with his views, was very disappointing to the squire of Crumbleton. "What!" he asked, "do you expend all these delicate scruples upon a weaver's daughter?—a woman whom an alliance with us would elevate? who would have the honor of being the first of her class to be introduced into the Crumble family, which has remained untainted with plebeian blood since the Conquest? who would blot our escutcheon with quarterings of—? and here the old gentleman paused, to consider whether it would not be undignified to give way to a bit of playful extravagance—" who would, peradventure, as I was about to observe, quarter on our shield a spinning-jenny with shuttles volant, engrafted?" Charles, taking advantage of this little specimen of Herald's college humor, ventured to contradict his uncle—an experiment which, on such a subject, he knew to be highly dangerous. "There is no danger of such a misfortune, I assure you. The fact is, Sir James Spindler's family is as old as ours!" As if stung by some bitter retort, the squire eagerly seized the baronetage to confound his nephew from its pages. "They are," continued the latter, "the Spindlers of Sussex."

This simple piece of information perplexed rather than pleased the old gentleman. Incredulous, but anxious to satisfy his doubts, he forthwith left the room desiring his nephew to follow him to the library. Mr. Crumble went straight to a large folio, and opening it with the utmost eagerness, became so deeply immersed in the genealogy of the Spindlers, that all Charles's information concerning the young lady and her father, the cotton-spinner, went for nought. Volume after volume was consulted and replaced. At length the old gentleman, uttering an exclamation of wonder, ejaculated, "Ennobled in the thirteenth century, quartered with royalty in the fourteenth, and in the peerage down to the Revolution! A man with this splendid lineage turned weaver! Alas, alas, what are we coming to!"

Poor Kennedy was dying of impatience to hear what had passed, in the interview between Sir James and his uncle, concerning the subject next his heart, but the old gentleman was so overcome with wonderment at the fact of the owner of a better pedigree than his own taking to trade, that he could give no satisfactory answer to the query. Hence Kennedy still remained in suspense—a state in which he must be for the present left, for it is now our business to follow Sir James Spindler, as he drove down the avenue to the Crumbleton village, after the unsatisfactory interview with the squire. He had previously arranged to meet his agent at the Tabard on some matter connected with Kennedy and his uncle. The peculiar notions and pride the squire had, however, disarranged these plans.

On reaching the rustic porch of the inn he beheld Mr. Brevor, his agent, in close conversation with two strangers; their business seemed urgent, and they appeared annoyed at being recognized by Sir James's attorney. Immediately the carriage came in sight, they made off towards Crumble Hall. "You need not take out the draught of the deed I desired you to make; it will be useless now," said Sir James as he entered the best room of the little inn, followed by his man of business. "The peculiar notions of the eccentric old lord of the manor will not allow me to carry out my project—at all events not for the present. By the way, who were those two men you were talking to?"

"Mr. Tapp, the Chancery tipstaff, and an assistant. The poor old squire! he will have his pride lowered now; for to-night he will sleep in the Fleet prison."

Sir James was much shocked at this news, and made further inquiries. "It is rather odd," began his informant, "that I should meet Tap here, for I was concerned for the respondent in the Crumbleton peerage case, and know all the particulars. The truth is, the tipstaff is the bearer of an attachment for costs, and must, as in duty bound, convey the appellant to close quarters, and keep him there until the costs are paid."

"Be kind enough to follow me into the carriage," said Sir James, hastily entering it himself. He ordered the coachman to drive back to Crumble Hall as quickly as possible. On reaching the old manor-house, he lost not a moment but proceeded to the library. Here a scene presented itself which would have appalled the stoutest heart. The Chancery officer had already executed his commission; the immediate effect of which was to render Mr. Crumble senseless; in which state he lay in a chair,

Penthouse, the old faithful servant, was weeping like a child, and Kennedy was struggling with the most violent grief while trying to revive his uncle. Spindler, when the first emotions produced by this melancholy scene were mastered, quietly induced the tipstaff and his companion to accompany him to the drawing-room, where Brevor was waiting. The after-proceedings of the worthy knight were few, but decisive. He desired Brevor to examine Mr. Tap's papers, with a view to ascertain correctly the amount of the demand. This done, he arranged at once with the officer for its discharge by cheque, and a guarantee for its due payment by the London bankers from Brevor, which was perfectly satisfactory from so well-known and eminent a lawyer. "Mr. Tap, glad to escape from a scene he owned shook even his nerves, took his departure, and the master of Crumbleton was free.

This information was cautiously conveyed through Kennedy; but still the recluse was for the rest of that day unable to comprehend the nature of the events which had passed. His reason seemed clouded, and he was left to enjoy that quiet which was so congenial to his habits. When Kennedy returned to his true friend, he felt oppressed with a weight of obligation that seemed for him difficult to bear, and impossible to remove. But Sir James knew how to make it sit easily. "Things have come to a crisis with a vengeance!" he exclaimed, as he returned Charles's warm grasp of the hand; "and there is no more necessity for that caution which both myself and Lady Spindler have been obliged to use in reference to a subject which has caused us much uneasiness. Motives of honor, which cannot be to highly appreciated, have, it is evident, prevented you from divulging certain feelings towards a certain young lady which, it has been long manifest to us, exist. Those feelings, we have also ascertained, are mutual. Your honorable reserve was, we found, making the young lady miserable, destroying her spirits, and undermining her health. I therefore took the bold step of consulting your uncle on the matter. He would not, however, even hear me. My next application may, however, be more successful. Indeed, there is another affair I wish to consult you both about; but I will not open it now, for I see you are agitated." Charles, who trembled from head to foot with the most acute emotions, begged Sir James to go on; for though filled with happiness, he was, he said, too old a soldier to feel much agitated.

"Well, then, I have simply to ask whether you would like to become a cotton-spinner?"

How Charles answered this question, was shown by what took place at Bampton and Crumble Hall during the month following this interview. The neighborhood felt the effects of his reply for miles round, and Crumbleton had no longer occasion to envy the prosperity of Bampton.

Crumble Hall was invaded by workmen; gardeners and foresters were spread over the lawn and park; carpenters and smiths were dotted about the enclosures; and the sound of the hammer was heard where nothing had been previously audible but the cawing of rooks. All these people were superintended by Penthouse, who gave them lectures on the belles lettres; and having been idle himself for so many years, wondered how they could get through the quantity of work they performed.

By slow and cautious degrees, Kennedy had managed to get his uncle's consent to give to a Spindler a new branch of the family tree. The squire of Crumbleton had pored over the respective pedigrees for more than a week, and it was only when he discovered that Sir James was the first man of his family who had done anything useful, or dabbled in trade, that he gave his consent. He, however, stipulated that the male heir in future should, on attaining his majority, obtain letters patent to change his name to Crumble, that the much cherished name should not be lost to posterity. And he insisted that the marriage ceremony should be performed by a right reverend bishop, who was his fifth or sixth cousin, reserving to himself the right of giving away the bride.

All this was done exactly to his mind. The Bampton cotton factory was managed entirely by Kennedy, whom Sir James retiring from active business—took into partnership. Devoting an energetic and well-formed mind to the undertaking, it flourished; and Crumble Hall gradually regained the stately affluence it had formerly enjoyed. The old squire lived to see this consummation, to dandle on his knee a future applicant for the royal letters patent, and to be cured of his dislike to the Mill for the sake of the wonders it had worked on the prosperity of the Manor.

## Uncle

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Uncle Tom's Department.

MY YOUNG FRIENDS,—I presume that before the ADVOCATE reaches you this month your holidays will be at an end, and "school work" commenced.

I was pleased to see the taste displayed by my young friends in the way of flowers, hedges, trees and general neatness around their residences, and I shall not soon forget the happy summer I have spent.

I think those spelling matches you wrote me about last season has had a splendid effect, for I notice great progress in your letters.

Puzzles.

DIAMOND PUZZLES.

76.—A consonant; a number; higher in place; a planet; circular; to finish; a vowel.

77.—A consonant; the name of a man of old; a girl's name; anger; a vowel.

DOUBLE ACROSTIC.

78.—1. A fish. 2. A Mohammedan pilgrim at Mecca. 3. Pertaining to hearing. 4. To pillage. 5. Poor. 6. Dullness of spirit. 7. Very wicked. 8. To disembark. 9. A puny devil. 10. Jewish traditions. 11. To preserve. 12. To darken. 13. The fabled drink of the Gods. 14. Heaviness of heart.

GEOGRAPHICAL PUZZLE.

79.—As we were going through the (a lake in North America), we saw a (river in the U. S.), which had a cub. The hunter blew a (river in Montana, U. S.), and frightened a (country in Europe), which had lain (a harbor in New Jersey), by the side of a (lake in Minnesota.) We caught the cub, took it home and gave it some (river in Montana.) As the hunter, who called himself (a cape in the south of England), was going along, he trod on a (river in Idaho), when he muttered, "You are anything but (a river in Australia)," and having dispatched it, put it in a (river in Russia), and sent it to a naturalist. We then returned home, as the day was very (river in the U. S.), and a (lake in Sweden) lot of people you never saw.

SQUARE WORDS.

80.—A girl's name; the lair of a beast; an insect.

HIDDEN STATESMAN.

81.—I am composed of 11 letters. My 1st is in wrong but not in right; My 2nd is in in but not in out; My 3rd is in long but not in short; My 4th is in last but not in first; My 5th is in sit but not in stand; My 6th is in all and also in hall; My 7th is in more but not in less; My 8th is in pink but not in white; My 9th is in light but not in dark; My 10th is in art and also in part; My 11th is in rat and also in cat; My whole is the name of a celebrated English statesman.

RIDDLES.

82.—My first is a plaything; my second few play with; my third plays with nobody.

83.—My first I hope you are; my second I see you are; my third you always shall be.

84.—My first some men will often take, Entirely for my second's sake, But very few indeed there are Who both together well can bear.

85.—Two brothers we are, two burthens we bear, By which we are bitterly pressed, And the truth, for to say, we are full all day And empty when we go to rest.

86.—Pray tell me, ladies, if you can, Who is that highly favored man, Who, though he marries many a wife, May be a bachelor all his life.

ENIGMA.

87.—I'm seen amid green hills and dales— Among clouds that float above ye; My name has graced the sweetest tales, And all the poets love me.

88.—Before a circle place twice twenty-five, and five in rear, also first of eight, and then you will find what conquers man.

Answers to August Puzzles.

63.—Spear-pear-ear-ra. 64.—Fifteen. 65.—Monosyllable. 66.—Money.

67.—C BE 72.—TEA 73.—CANE 74.—GRAPE HAM EAR AGED RAVEN HARE ART NEEDED AVOID BARON ART EDDY PEIHO CEMENT ENDOW

68.—Man: at first he crawls, then walks, and lastly walks with a staff. 69.—Grain. 70.—Because it is between two "i's." 71.—Shakespeare; Winter's Tale—1. Swallow; 2. Hayti; 3. AvoN; 4. Knight; 5. Eye; 6. Star; 7. Pernassus; 8. Exploit; 9. Anna; 10. Regal; 11. Eve. 75.—Whiskey.

ANSWERS RECEIVED TO PUZZLES IN AUGUST NO.

—Canadian Cliff, South Granby, P. Q.; Libbie Pool, Aldboro'; Jenny Gerry; Charles Fuller, Hibbert; Gideon W. Wilson, Whitby; Archibald J. Taylor, Gleneve; A. Richardson, South March; John Rennie, Toronto; Ellen Anderson, Wyoming; Ella E. Armitage, Schomberg; Frank Nelson, Ottawa; J. H. Cross, Caledonia; Frank Lawson, Nilestown; Rachel Smith, London Tp.; J. Fortner, Grand Rapids; P. Chester, Montreal; R. Gahan, Owen Sound; L. Sleeman, Petersburg.

Miss Malony on the Heathen Chinese.

Och! don't be talkin'. Is it howld on, ye say? An' didn't I howld on till the heart of me was clean broke entirely, and me wastin' that thin you could clutch me wid yer two hands. To think o' me toilin' like a nager for the six years I've been in Amerikay—bad luck to the day I ever left the owld country—to be bate by the likes o' them!

paper collar, looks up and—Howly fathers! may I never breathe another breath, but there stood a rale haythen Chineser a grinnin' like he'd just come off a tay box. If you'll blave me, the crayture was that yellin' it 'ud sicken you to see him; and sorra stich was on him but a black night-gown over his trousers, and the front of his head shaved cleaner nor a copper biler, and a black tail a-hangin' down from it, behind, wid his two feet stuck into the heathenestest shoes you ever sot eyes on.

Well, the ways and trials I had wid that Chineser, Ann Ryan, I couldnt be tellin'.—Not a blissid thing cud I do but he'd be lookin' on wid his eyes cocked ap'ard like two poomp handles, an' he widdout a speck or smitch o' whiskers on him, an' his finger nails full a yard long. But it's dyin' you'd be to see the missus a 'larnin' him, and he a grinnin' an' waggin' his pig tail (which was pieced out long wid some black stoof, the haythen chate!) and gettin' into her ways wonderful quick, I don't deny, imitatin' that chary, that you'd be shurprised,

Is it to ate wid him? Arrah, an' would I be sittin' wid a haythin an' he a-atin' wid dromsticks—yes, an' atin' dogs an' cats unknownst to me, I warrant you, which it is the custom of them Chinesers, till the thought made me that sick I could die. An' didn't the crayture proffer to help me a wake ago come Toosday, an' me a foldin' down me fine clothes for the ironin' an' fillin' his haythin mouth wid water, an' afore I could hinder squirit through his teeth stret over the best linen-cloth, and fold it up tight as innercent now as a baby, the dirrty baste! But the worst of it all was the coppin' he'd been doin' till ye'd be distracted. It's yersel' knows the tinler feet that's on me ever since I've bin in this country. Well, owin' to that, I fell, into the way o' slippin' me shoes off when I'd be settin' down to pale the practies or the like o' that, and, do ye mind! that haythin would do the same thing after me whiniver the missus set him to parin' apples or tomaters. The saints in heaven couldnt have made him believe he cud kape the shoes on him when he'd be pealin' anything.

Did I lave for that? Faix an' I didnt.—Didnt he get me into trouble wid my missus, the haythin? You're aware yersel' how the boondles comin' in from the grocery often contains more'n 'll go into anything dacently. So, for that matter, I'd now an' then take up a cup o' sugar, or flour or tay, an' wrap it in paper an' put it in me bit of a box tucked under the ironin' blankit and shud it be, but this blessed Saturday morn the missus was a spakin' pleasant and respec'ful wid me in me kitchen, when the grocer boy comes in an' stands fornest her wid his boondles, and she motions like to Fing Wing (which I never would call by that name nor any other but just haythen,) she motions to him, she does, for to take the boondles an' empty out the sugar, an' what not where they belongs. If you'll belave me, Ann Ryan, what did that blatherin' Chineser do but take out a sup o' sugar, an' a handful o' tay, an' a bit o' chaze right afore the missus, wrap them into bits o' paper, an' I spacheless wid shurprise, an' he the next minute up wid the ironin' blankit and pullin' out me box wid a show o' bein' sly to put them in. Och, the Lord forgive me, but I clutched it, and the missus sayin', "Oh Kitty!" in a way that 'ud curdle your blood. "He's a haythin nagur," says I. "I've found you out," says she. "I'll arrest him," says I. "It's you ought to be arrested," says she. "You won't," says I. "I will," says she—and so it went till she gave me so much sass as I cudden take from no lady—an' I gave her warnin' an' left that instant, an' she a-pointin' to the doore.—Scribner's Magazine.

An old Grecian philosopher advises all men to "know themselves." That's advisin' a good many to form very low and disreputable acquaintances.

A brick fell from a scaffold on the head of a passing negro. "Fring dem dere peanut shells another way, won't yer? was the darkey's advice as he scratched his wool.

The New York saloonists, arrested for keeping open Sundays, claim to open now "just to feed the canaries." Those canaries are five feet odd inches high, and mostly take whiskey.

### Minnie May's Department.

The following method from Miss Powers, for making a hanging basket, will, I have no doubt, if properly attended to, make a handsome ornament for your dwellings. Its simplicity and cheapness should induce many readers of the *ADVOCATE* to give it a trial.

MINNIE MAY.

#### A CHEAP HANGING BASKET.

DEAR MINNIE MAY:—A cheap and pretty hanging basket can be made of a carrot. Cut the root end off, leaving about a finger. Scrape the inside out smoothly; cut off the leaves and stems. Hang it up at an east window, taking care to keep it filled with water. In a short time the leaves will curl up and cover the carrot. I hope some of your readers will try this, and if they are as well satisfied with it as I am, I shall be content.

MAY POWERS.

Can any of my readers furnish this correspondent with the required information?

DEAR MINNIE MAY:—Will some of your kind readers send me recipes for the following:—How to make cream pie, lemon pie, coconut pie and cake; also tapioca pudding. By so doing they will confer a favor upon me, which I will endeavor to repay when the opportunity presents itself.

Newmarket, July 28, 1875. HOME GIRL.

### Recipes.

#### ICED APPLES.

Pare, core and slice apples of a large, tart kind. Bake them till nearly done. Put them away to get entirely cold; then prepare some sugar icing, and first pouring off all the juice, lay the icing thickly on the tops and sides, as much as you can. Return them to the oven to just harden and set. Serve with cream.

#### BISCUIT.

Take some of the bread dough in the morning, as much as would make a loaf of bread, add one cup of butter; mix well; let rise; then make into biscuit; let rise; then bake.

#### TEA RUSK.

One-half pint new milk; one cup of hop yeast; set the sponge at night; add flour to the above to make a batter; in the morning, add one-half pint of milk, one cup of sugar, one of butter, one egg, one nutmeg, flour to make it sufficiently stiff; let rise; then roll it out and cut it out; let rise; then bake.

#### SNOW OR BRIDE'S CAKE.

A pound each of flour and sugar, half a pound of butter, and the whites of sixteen eggs beaten to a stiff froth. Flavor it with rose.

#### COOKIES.

Two cups of sugar; two cups of thick sour cream; two beaten eggs; a teaspoonful of salt; a teaspoonful of soda; flavor with cinnamon, or to suit the taste.

#### SUGAR CAKE.

One pound brown sugar, one-quarter pound butter and lard, half and half, one teaspoon of soda, two teaspoons of vinegar, one cup of water. Roll thin and bake quickly.

#### SMALL SPONGE CAKE.

Beat well together two eggs, and then stir in a teaspoonful of powdered white sugar, and beat for five minutes; add slowly a teaspoonful of flour, beating all the while; grate half a lemon into it and bake in scalloped tins.

#### PRESERVED CITRON.

Pare the citron, remove seeds, cut into pieces one inch square. Pour on boiling water and let boil fifteen minutes. Drain and make a syrup of one pound of white sugar to one of citron. Take two lemons to one quart of preserves; put all together and boil smartly for half an hour.

#### GENERAL DIRECTIONS FOR PREPARING PICKLES.

The following plain directions for steps to be taken preparatory to pickling we hope may be found useful. Pickles may be made at any time during the winter or spring, provided that you have ready cucumbers, grapes, or even peaches, which, having been gathered fresh during their season, were put in a strong brine, and kept well thereunder by the pressure of weights, so as not to be exposed to the air. When you take the vegeta-

bles or fruit out of brine, soak for a day or two in cold water. Then put them over the fire in a kettle, covering well with weak vinegar. Let them gently simmer until parboiled, or rather tender, but by all means guard against letting them cook until soft. Cucumbers are ruined by long cooking, which destroys their crispness and renders them almost inedible. Let them remain in this vinegar until you are ready to supply the final seasoning and strong cider vinegar, needed for the preparation of all kinds of pickles. A delay of a week will do no harm, although the process may be completed forthwith if you prefer. The horse-radish used in pickles must be scraped and dried; the garlic must be soaked from three to ten days, changing the water once or twice a day; the mustard seed bruised; spices are put in without any preparation. When onions are used, they merely need to be sliced and scalded.

#### CANNING TOMATOES.

"Amateur" in the *Country Gentleman* says:—In canning tomatoes I always add pepper and salt, and dip off all the superfluous juice, as in cooking for the table we must get rid of that, so it is only an unnecessary material taking the place of the solid tomato. Again, instead of taking any extra trouble in heating the jars, setting them on damp cloths, &c., I simply stand the jar in a soup plate, and put in (the jar) a cold silver tablespoon. It has never failed with me, and is no trouble at all. There is some power it has of taking the heat from the jar, and preserving it intact. In using the Mason jar a second time, great care must be taken to have the elastic firm and strong, and the edges of the top unburnt.

#### PALATABLE BEETS.

Beets are excellent prepared in the following manner:—A small teacupful of vinegar (if very strong, reduce with water), a tablespoonful of butter, the same of white sugar, a little salt and pepper, a heaping teaspoonful of cornstarch dissolved in water and added. Stir all together until thickened by boiling; it should be like thick cream when done. Have the sliced beets in a small saucepan, on the stove. Pour the dressing over, stirring carefully. Send to table very hot, in a covered dish.

#### HOW TO CRYSTALLIZE FLOWERS.

Gather the flowers before they are ripe, or rather, while they are a little green, and dry them in a dark room; when they are dry, dissolve one pound of alum in a quart of rain water; the flowers will, of course, have lost very much of their original color, but this you must restore by painting them, which must be done before you begin to crystallize them; then make up the flowers in any desired shape of bouquet, dip them in the solution, take out again, let remain in the air for a minute or two, and dip again. Repeat this until you have as much of a deposit on the flowers as you wish, and then frame and put under a glass.

#### FRECKLES.

It is generally conceded that these are a disfigurement and a nuisance. They give no small annoyance to many young people, who are otherwise decidedly good-looking. A young lady who was troubled in this way, recently wrote a communication to the *Herald of Health*, asking how to get rid of the trouble. The following is the reply given:—

Freckles are not easily washed out of those who have a florid complexion and are much in the sunshine; but the following washes are not only harmless but very much the best of anything we know. Grate horseradish fine, let it stand a few hours in buttermilk, then strain and use the wash night and morning. Or squeeze the juice of a lemon into half a goblet of water and use the same way. Most of the remedies for freckles are poisonous, and cannot be used with safety. Freckles indicate a defective digestion, and consist in deposits of some carbonaceous or fatty matter beneath the scarf skin. The diet should be attended to, and should be of a nature that the kidneys will do their duty. Daily bathing, with much friction, should not be neglected, and the Turkish bath taken occasionally, if it is convenient.

The main objection most people have to sending communications on postal cards is that the writing is, of course, open to general perusal. A good way of avoiding this work is to use sympathetic ink. A solution of 10 grains hyposulphite of soda in 16 teaspoonfuls of water is the simplest fluid for the purpose. Use a perfectly clean pen, and, after writing, go over the letter with a smooth paper cutter to remove all traces of the salt. Exposure to the heat of a bright coal fire turns the writing black.

### Things Worth Knowing.

Powdered charcoal is good for surface wounds. It is said that half a cranberry, bound on a corn, will soon kill it.

Water window plants with tepid water, and wash the leaves often.

All vegetables should be washed in hot water first to cleanse them for cooking. Insects, sand, dirt, etc., are loosened by the heat.

Equal proportions of turpentine, linseed oil and vinegar, thoroughly applied and then rubbed with flannel, is an excellent furniture polish.

To each bowl of starch, before boiling, add a teaspoonful of Epsom salt. Articles prepared in this way will be stiffer, and, in a measure, fire-proof.

If you don't want milk to sour during a thunder storm, kindle a fire in the dairy, even in hot weather, the purpose being to drive out the moisture.

When milk sours, scalding water will render it sweet again. The whey separates from the curd, and the former is better than shortening in bread.

Frosted glass, useful for screens, etc., is made by laying the sheets horizontally and covering them with a strong solution of sulphur of zinc. The salt crystallizes on drying.

M. Saree, a professor at Neufchatel, has found a plan for keeping eggs. Whilst they are fresh he coats them with paraffin, and they are said to keep without any trace of change for two years.

To take mildew from linen, mix soft soap with starch powdered, half the quantity of salt, and a piece of lemon, and lay it on both sides with a paint brush; let it be in the open air—on grass is preferable—till the stain is removed.

There seems to be few people who know it, but it is nevertheless true, that if you hold between your teeth a pair of scissors, a steel knife, or almost any other iron or steel substance, you will not weep during the process of peeling onions.

Borax is strongly recommended as of great value in case of inflamed or weak eyes. Make a solution (not too strong), and bathe the eye by opening and shutting it two or three times in the water. This can be done by means of an eye cup, or equally well by holding a handful of water to the eye.

In a lengthy article on fall sickness, Dr. Hall concludes that if persons in the country, where intermittent fevers prevail, would adopt the breakfast before going out of doors, and keep a blazing fire upon the hearth in the living room during morning and evening, fevers and chills would almost entirely disappear as a prevailing disease.

Grapes are recommended as a cure for biliousness. This fruit, by its agreeable acidity, so acts on the system as to relieve it of its bile, and thus removes the cause of the symptoms, and that is "cure." The immediate cause of all the discomfort is a "confined" condition of the system. The seeds of the grapes act as an irritant as they pass along the alimentary channel, and cause it to "water" as the eye "waters" if a hard substance touches it. This watering dissolves the more solid matters contained in the intestines, washes them out, and the man is well. The covering of the grapes should be chewed, but not swallowed.

### Clover Protection.

I was feeling "blue" about the poor prospects for wheat, and not less so in regard to a 22 acre field of clover, that is more than half winter killed. Along the sides of the fences for two or three rods wide, the clover is as thick and luxuriant as could be desired; and also on the west side of the dead-furrows, and the east side of the ridges, and wherever the snow protected the plants from the wind. The field was seeded down with clover last spring, half of it on winter wheat, and the other half on spring barley. The part seeded with the barley is far better than that put in with the wheat, but neither are half as good as I expected, except where the snow protected the plants. I thought I had a right to hope for a great crop of clover. I had taken great pains in draining, preparing and cleaning the land. The Squire has a field near by seeded at the same time. Last fall my clover looked so clean and nice, and his so full of weeds, that I fear I contemplated the difference with satisfaction. But now my clover is half dead while his is green and flourishing. The weeds and rubbish protected the young plants. I have noticed several cases where wheat stubble was left high, that the clover seems better than where it was cut close.—*J. Harris, in American Agriculturist.*

Report of Varieties of Wheat.

The following reports have been received since the last issue:—

Maple Grange, Methuen, Aug. 6.—My Scott Wheat was more winter-killed than the Clawson Wheat. I like the Clawson very much. A. J. WRIGHT.

Belmont, Elgin.—Scott Wheat is the best wheat in this section. Stands winter better than any other wheat; will yield more grain; is not rusted. Deihl is rusted and badly winter-killed. Treadwell is a good crop, yet not equal to Scott Dominion Wheat, but will yield a fair crop. Mediterranean does not yield as well as the above varieties. JOHN HALL.

From A. J. C. Shaw, Thamesville.—I beg to say that, at a meeting of the Kent Division Grange, the question was taken up and expressions given by nearly every member present. All agree, though the wheat was very much injured throughout the country from winter-killing, the Scott Wheat stood the winter better than any other kinds, and it was also recommended that the Patrons of Husbandry use it generally, until some other variety becomes fairly tested.

George Jarvis, Westminster.—I threshed 103 bush and 28 lbs. of Seneca wheat, grown from 200 lbs. of seed. No wheat has yielded equal to it in this neighborhood. It stands the winter well, and is of excellent quality.

We have just threshed the produce of the ten bushels of Scott Wheat procured from you last fall, and have one hundred and fifty bushels. We are well satisfied with it. We also sowed the two packages of Clawson wheat, which also did well, we have not threshed it. A. & W. REID.

Zimmerman, Aug. 17, 1875.

I have sown the Scott Wheat this last season, and I find it the best wheat to stand against rust. Joseph Charlton, miller of Duncrief Mill, Lobo, threshed five and a half acres of Scott Wheat on Monday, the second of August. He got one hundred and eighty bushels of wheat from five and a half acres, and one half of an acre was killed, so there was only wheat grown on five acres, that is, thirty-six bushels to the acre. Next to the Scott is the Michigan Premium Wheat, a white, bald wheat—whiter than the Treadwell, and good to stand the winter. There is very little rust to be found on it. I think it is as good as your Clawson Wheat. It grew in Adelaide this season on stiff clay, and it is good for market. Some say out around Adelaide, where the land is high enough to raise fall wheat, that it is the best, but I have great faith in Scott, only it is rather dark in color for the market, but I shall have some of your Clawson Wheat. I shall sow Scott, Michigan Premium and Clawson—land the same, all sheltered, all fair play. I am convinced they are the best three kinds in Ontario. JOHN COCHRANE, Duncrief P. O. Lobo P. O., August 5th, 1875.

We sowed two bushels of Seneca Wheat on the 20th of September in the same field with the Scott. The Seneca stood the winter and spring frosts the best; in fact, it was not injured in the least, whereas the Scott and Treadwell was considerably injured. It turned, of 62 shecks, and stood up well. It rusted considerably, but it did not injure the filling. The Scott Wheat did not rust. We have not threshed the wheat yet. I send you a sample of the Seneca Wheat. Yours Truly, Colinville, Aug. 12, '75. J. CRICKSHANK.

I had 114 bushels of Scott wheat off two acres and 2,065 yards, which is forty-five and 2-5 bushels to the acre. I measured the ground. THOS. COVERHILL, Vanneck P. O.

Mild May, August 4, 1875.—The package of Stone Wheat you sent me rusted so bad that I never harvested it. The two bushels of Scott Wheat you sent me a year ago has done well, it will turn out about 35 bushels an acre. No appearance of rust on it at all. Very apt to shell out. The Clawson Wheat you sent me at the same time has done well. The head is large and well-filled. The straw seems to be rather fine for the size of the

head. The package of Trifolium you sent me has grown a little stronger than other clover in the same time. I sowed in May. JOHN CUTTS.

Dear Sir,—You want information about fall wheat. The kind sown up here is mostly Treadwell. I don't know of any Scott here. There is some Deihl sown, but we think it don't stand the winter as well as the Treadwell. The fall wheat up here, where it is sheltered, is very good. Stanley Township, Huron Co.

SIR—In my opinion the Clawson and Scott wheat are the two best varieties to sow. Last fall I sowed one acre of Clawson. It was on a gravelly hill, badly exposed, and it yielded a little over 40 bushels of fine wheat, although part of the field was very thin. I intend sowing all of it except a small quantity that I have promised to a neighbor. I sowed between 40 and 50 acres of Scott wheat, but the spring frost injured it badly. In some parts of the field where it had been protected it will yield 40 bush. per acre. J. JARVIS. North Oxford.

Fairs

Provincial Exhibition at Ottawa, 20th, 21st, 22nd, 23rd, and 24th Sept. Electoral Division Toronto, on Monday, Tuesday, Wednesday, Thursday and Friday, on week next succeeding Provincial Exhibition. Central, Guelph, 14th, 15th, 16th and 17th Sept. Western Fair, London, 28th, 29th, 30th Sept. and Oct. 1. Union Exhibition at Hamilton, Sept. 28th, 29th, and 30th, and Oct. 1. Ohio State Fair at Columbus, from Sept. 6th to 10th. St. Louis State Fair, from Oct. 4th to 9th. Michigan State Fair at E. Saginaw, from Sept. 13th to 17th. Maine State Fair at Portland, from Sept. 21st to 24th. Massachusetts Horticultural Fair at Boston, from Sept. 21st to 24th. New York State Fair at Elmira, from Sept. 27th to Oct. 1st.

New Granges.

The only new Granges of which we have received notice, up to the day of our going to press, are:—

- 224, Centre, County of Middlesex—Master, D. A. McRae, Appin; Secretary, A. McIntyre, Appin. 225, Macville, County of Peel—Master, R. B. Shore, Mackville; Secretary, J. H. Newlove, Mackville. 226, Orono, County of Durham—Master, Ezra Hall, Orono; Secretary, John Richaly, Orono. 227, Ridge Road, County of Simcoe; Master, F. Bell, Shanty Bay; Secretary, Wm. Butcher, Shanty Bay.

Exhibitions.

To the Directors of the Provincial, Western and other Exhibitions.

Is the practice to be continued of allowing an exhibitor of fruit, or other produce, to collect assortments from any part of the country to compete in many classes, and to enter and show the same as produced or grown by himself to the great injury of an exhibitor competing in the same classes who only shows fruit produced by himself; as also of allowing any exhibitor to be placing or arranging his fruit at the time the judges are making their award, both of which unfair advantages has been allowed both at the Provincial and Western Fairs? READER.

More Choice Stock for Canada.

Mr. R. Gibson, of London Township, and Mr. R. Craig, of Brampton, attended the sale of A. G. Greenwood, of New York Mills, last week. Mr. G. purchased four head of short-horns, paying \$5,600 for Lady Mary, which was the highest price paid for any animal at the sale. For the others he paid over a thousand each. Mr. Craig paid \$2,700 for one and \$3,000 for another.

Owing to the crowded state of our columns we are compelled to delay the commencement of the new story until next month.

The Care of Sheep.

Hon. A. E. Kinney, at a meeting of the Plainfield, Vt., Agricultural Society, said he would recommend the following rules to be observed in the care of sheep:

- First.—With regard to management, never starve a sheep, especially in summer. Second.—Do not feed much grain if you have good hay, but at all events never let your sheep grow poor. Third.—Many farmers lose by letting their sheep live as long in autumn without feeding as possible, consequently, if they are in good condition in October, and lose flesh and are made to gain again there will be a tender place in the wool. Fourth.—Have your lambs come in March, if course wool; in May, if fine. Fifth.—Shear your sheep, if possible, before the twentieth of May. Sixth.—Keep your sheep from all cold storms at all times of the year, and be as careful of them as of your horse. Many sheep perish by showers after shearing, even in July; so I say shear at a time of year that they can be housed for a whole week after shearing; and in storms in autumn, if sheep are exposed, it takes a long time to dry the wool, and the sheep are consequently uncomfortable for a long time; colds and consumption are the result. Seventh.—Raise the standard of your flock, weigh every fleece at shearing; number the sheep, and note the weight of the fleece, and then sell or kill the poorest sheep, as like produces like, and your average will soon go from four to seven pounds.

Commercial.

Early in the summer months there was great anxiety for the crops of the season. A late, cold spring did give a good promise of heavy produce from our fields, and from every side we heard of the fall wheat having been badly winter killed and badly injured by the spring frost. These fears have been happily not realized, but, on the contrary, we are blessed with abundant returns. From every part of the Dominion we have reports of an abundant yield of the cereals. Even the fall wheat, contrary to the generally received opinion, is yielding large returns, and of excellent quality. Spring wheat is a very heavy crop. Barley is an unusually good crop, the yield very heavy, and quality good, though in some instances the grain is not quite so bright as might be wished. Oats, a very heavy crop in grain and straw. Potatoes, the largest produce known for years, and the fears at one time held by some of disease, from the unusual August rain, was groundless. Though turnips seemed at first to promise badly, the season ensuing has been very favorable.

THE CROPS AND HARVEST IN ENGLAND.

The crops in England, though equal to an average, fall short of the yield of '74, and the harvest weather has not been so favorable. The Times, in its Commercial column, says:—“The grain markets are inactive, but the previous prices are obtained for wheat. It seems to be the opinion that the prices of wheat will be well maintained this season. This idea has sustained the market in spite of the heavy arrivals of foreign wheat. The British wheat so far brought to market has not been of good quality. There is not much that is new to report about the condition of trade. Abroad the harvest will generally be 3 per cent. below a fine yield, but with old stocks to draw on, there can be nothing approaching a scarcity, and a moderate advance on last season's prices is likely to secure an abundance.”

- LIVERPOOL, AUG. 21.—Red Wheat, 10s. to 10s. 10d.; White Wheat, 11s. 2d. to 12s.; Flour, 25s. to 27s.; Barley, 3s. 6d.; Oats, 3s. 4d.; Corn per quarter, 33s.; Peas, 43s. to 43s. 6d.; Pork, 80s.; Cheese, 54s. NEW YORK, AUG. 21.—Wheat quiet and firm. Receipts, 160,000 bush; sales, 34,000 bush. at \$1.25 to \$1.43; Rye, quiet; Corn, steady and quiet, sales, 30,000 bush. at 79c to 83c; Barley, dull; Oats, quiet, 63c to 64c; Butter, 29c to 29c. CHICAGO, AUG. 21.—Wheat, inactive and lower, \$1.10 to \$1.16; per bush; Flour, inactive and nominal; Corn, higher; Oats, 36c to 36c; Rye, 77c to 81c; Barley, \$1.02 to \$1.03. MONTREAL, AUG. 21.—Flour receipts, 3,707 barrels; market dull and weak, \$5.10 to \$5.40 per barrel. TORONTO, week ending Aug. 21.—Wheat, dull and drooping; prices \$1.20 to \$1.27; Barley, 84c to 85c; Oats 44c to 47c; Flour, weak, \$4.75 to \$5.85. LONDON, AUG. 21.—Wheat, old, \$1.75 to \$1.90—new, \$1.65 to \$1.90; Barley, new, per 100 lbs., \$1 to \$1.05; Peas, \$1.15 to \$1.20; Oats, old, \$1.10 to \$1.15—new, \$1 to \$1.02; Rye, \$1.10 to \$1.20; Beans, 90c to \$1.25; Corn, \$1.15; Buckwheat, \$1.15 to \$1.25. WOOL. The market is dull, and in prices we find no occasion to change since our last. There is some demand for Combing Delaine and Fine Fleeces at unchanged values, and more steadiness is apparent in view of the recent decline, and holders are more hopeful of the immediate future. Manufacturers are only buying in small parcels, as the Woolen Goods market does not warrant their increasing their stocks; as it is, the market has not improved since our last, but is dull and tame; the unsettled state of the weather seems to effect all branches of business. Foreign Wools are also dull, and prices favor the buyer. Carpet, owing to the light supplies business is restricted, and prices rule firm. California and Texas Wools are without any change. Pulled Wools met with a fair inquiry at steady prices. To move any larger lots of Fleeces, lower prices would have to be accepted; 45c to 48c is about the market for X and XX Fleeces. The sales embrace 10,000 lb. X and XX Ohio Fleeces at 47c; 4,000 lb. Scoured California at 75c; 8,000 lb. Eastern Texas on private terms; 5,000 lb. Spring California at 30c; 3,000 lb. Medium Western Fleeces on private terms; 10 Bags Black Pulled on private terms; 13 bags No. 1 do. on private terms; 25 bags Lambs do. on private terms.—N. Y. Tribune.

