

FARMER'S ADVOCATE.

"PERSEVERE AND SUCCEED."

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Editor & Proprietor. }

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Monetary Affairs.

Farmers should avoid debt as much as possible. Purchase for cash, and pay at the time of receipt of goods. There is a loss to both the purchaser and seller by the credit system. But sometimes farmers and others are not able to pay cash—thus the credit system.

Reverses, accidents or failures may cause trouble, and money must be had. The note shaver is exacting and often extortionate; the banks cannot lend on landed security. The loan societies are a better means for farmers to obtain money, if they are punctual in payments; if not, they are also expensive and ruinous to farmers. We by no means advise farmers to borrow as a general thing, especially at such rates as are now being paid for money in Canada. But sometimes it is found necessary. The Agricultural Investment Society of this city we believe to be as good an institution as any in Canada for farmers to procure money at or to deposit surplus money in. The securities are good. For both borrower and lender we consider this a safe and sure institution for loaning and depositing money.

We do not advise farmers to hoard up their cash and leave their land undrained, unplanted or uncultivated. See that your farms are made as fertile as possible by drainage, by planting belts of trees and by proper cultivation, before you invest much cash in any society. Should you after this have a surplus, and wish for higher rates of interest than the banks can give, or wish for money on better terms than you can get it from the banks, then you can apply to this society or perhaps some other similar society.

At the present time the demand for cash at all monetary places in Canada is greater than usual. We again advise you to avoid debt as much as possible. A society can refuse bad loans when perhaps an individual might not; in fact, it is generally better to do your business through some good agent, and avoid loss.

The Agricultural Investment Society of this city has now moved to their new and handsome offices near the market square, and have made such a good purchase of the block as to enable them to be rent free, thus giving them a decided advantage. There are other similar institutions in Canada, nearly all of which are good.

The Weather and the Crops.

Since last issue the crop prospects for '75 have not improved. The fall wheat was badly killed by late spring frosts, and some more has been injured by the June frost, which damaged it as it began to shoot out.

In this section of country, at least, we shall not have over half a crop, in some parts even less. Hay will not be over half a crop. This has been the coldest and driest spring we have yet experienced. Not only is the grass and fall wheat shortened, but spring wheat, oats and barley have suffered very materially for the lack of moisture, and in some sections by frost; thus this portion of the farm productions must be very much shortened in some sections.

The June production of cheese and butter will be less than usual in June. During this month we may reasonably expect an unusually rapid growth; also during midsummer and the fall. In those sections where the winter wheat is bad and

hay short, it behooves each farmer to prepare for a coming deficiency of coarse feed, which he can do by sowing corn and millet; both of these will answer to sow as late as the 20th of July; we have heard of their answering even later. White turnips and rape will also make feed rapidly.

We hear the crops in the northern parts of Ontario are better than in the southern and western portions of it. In Manitoba the prospects are not good, the grasshoppers being very destructive; the farmers had ceased sowing, as they saw no prospect of a return until the grasshoppers should leave them. They expect to raise some late crops after the grasshoppers leave.

Root Crops—Filling up Vacant Places.

June is the principal time for sowing turnips, mangolds and ruta bagas. Some farmers prefer sowing them early in the month, but the last fortnight of the month is considered by most farmers as the best for sowing turnip seed. "From the 15th to the 28th we sow our turnips, if circumstances permit," is the remark of a very successful farmer. Some even defer the sowing to the first days of July. Even though they have been sowed in June, there are few who have not some sowing still to be done, be it much or little. There will often be partial failures—blank places to be filled up. Sometimes there may have been seed either old or badly saved, hence a failure; or the turnip fly may have laid waste a portion of your turnip field; or a drouth during the sowing, and continuing week after week, may have prevented all vegetation. Whatever may be the cause of the failure, a remedy must be applied. It will never do to let the land lie partially waste, giving little returns for manure and labor expended on it. The vacant places should be filled up—sown again.

Transplanting turnips is of little use in so dry a climate as that of Canada. If too late to sow Swedes, sow the Yellow Aberdeen, a very good turnip variety, though for stock feeding inferior to Swedes. Dale's Hybrid we found a very good variety for such a purpose, better for keeping than the Aberdeens. Later still you may sow the Red Norfolk and White Globe, both good producers, but only suitable for fall or early winter feed. White Stone turnips may be sown still later than the Norfolk or Globe, and though smaller than either, they will be found of no little value when you house your stock, to add to their dry fodder. Besides late turnips, you may fill up vacant places with cabbage if you can procure the plants. Than cabbage there is no better food in the fall and winter for milch cows. It promotes their health and causes them to give more milk than any other feed, at a time when such feed is greatly needed. The thousand-headed cabbage and the large varieties, such as Flat Dutch and Drumhead, I have had a greater quantity of feed from, of the best quality, than from any other crop.

Turnip plants do not bear transplanting well, even if they take root and grow; they will never be a good crop. Not so, however, with mangolds. Any vacancies in this crop can be well filled by transplanting from rows that have more plants than are needed, and if you have mangold plants to spare, you may with them fill up some of the blank spaces in the turnip field.

The work of transplanting, whether mangolds or cabbage plants, may be got through very expedi-

tiously, but it is well to have the ground for them in good tilth, though this may take more time than the transplanting. If the failures are in detached spots, a digging fork is a good implement to loosen the soil, and a good workman can prepare the waste places in a very short time.

Patrons of Husbandry.

Since the introduction of this Order in the western part of Canada, it has rapidly increased in membership. The principles laid down in the constitution and the objects aimed at by the Order are commendable, and, if properly carried out, must tend to the advancement of knowledge, the acquisition of wealth, and the promotion of happiness amongst its members.

A combination of farmers for the protection of their rights and interests is but proper, as all other classes have their societies, clubs or directors. The independence of the Order is also right, as we do not deem it proper to send our funds to the States; but the greatest good to be derived from the Order will be the diffusion of knowledge among its members. We do not expect that any great or permanent advantages are to be derived from dealing in small store goods, especially in the vicinities of towns or cities; on this point some of the members differ with us, and others think we are opposed to the Order for holding these views. We know temporary advantages may be gained, but it is doubtful if combinations for such purposes have been found successful; there will be losses as well as profits. The cash system is to be commended; farmers lose much by the credit system, and should confine themselves to cash transactions as much as possible.

In purchasing implements, trees and seeds, a saving may be made, but reliable men must be dealt with and orders must be sent in early. Many of the Granges, we understand, are already purchasing some necessaries largely, and appear well satisfied with what they are doing.

We have received some communications from members of the Order, writing strongly on its constitution and principles, but as we published the constitution, it would only be a repetition to publish them. We have published any good reports or essays that we have received, which have been given through the Grange, and should be pleased to have any really good suggestions on subjects and plans of advancing the profits of our farms, or special improvements. The principles of the Order are introduced; good results are what we wish to publish, whether they may come from the Master of the Dominion Order, a patron, or any other person.

No subject that we have had to treat on since we commenced publishing this journal has given us so much anxiety and care as the Grange movement. We feel somewhat responsible for its introduction and for its success. We feel it a duty in expressing our mind freely, though we have been highly condemned and censured by advocates of the cause. Good can be achieved and honor gained by this Order, if moderation and a proper course be pursued.

For the good of the Order it might, perhaps, be well not to urge its spread too rapidly. Care must be taken to avoid such steps as have been found injurious in the States. Each Grange should have its funds properly secured from danger of loss. Perhaps some Granges admit members too easily.

Is Salt of any Value as a Fertilizer?

In another column will be found an article under the above heading, from the pen of one of our regular contributors, Mr. Julyan, of Sarawak. It is a question of great importance to agriculturists, and as such has engaged the attention of agricultural writers in every country where the tillage of the soil has been considered as a science and not merely as a business to occupy the hands only, and not the minds of men. We have had inquiries from subscribers on the subject from time to time.

Much has been written and many arguments advanced for and against the efficacy of salt as a fertilizer, and many as well as Mr. J. entertain grave doubts on the subject. We might easily increase the list of authorities cited by him against its fertilizing efficacy, for many have answered the query in the negative. But if other authorities of at least as high standing hold opinions directly contrary, what then?

For hundreds of years have the farmers of England considered salt a fertilizer. This is itself a strong testimony in the affirmative. In 1658 Sir Hugh Platt speaks of salt as a fertilizer. Pretty early testimony this from an English agriculturist! At a later period—one hundred and fifty years ago—Dr. Brownrigg maintained that the whole kingdom might be enriched by the application of common salt to the soil. From the time of Dr. Brownrigg to the present day salt has been recommended as a fertilizer.

It were easy to multiply authorities, but we must confine our remarks within circumscribed limits. We would, however, not be doing justice to the subject were we to omit the enumeration of the uses of salt by Mr. C. W. Johnson, in the Farmers' Cyclopaedia. An abridged statement of them follows:

1. Salt in small proportions promotes the decomposition of animal and vegetable substances; and, when properly used, enables land which has been deteriorated by one crop to bear another with advantage.
2. It destroys vermin and kills weeds, thus converting them into manure.
3. It is a direct constituent or food of some plants, and it has been ascertained that if salt be applied to a soil, the vegetables afterwards growing on that land will contain an increased proportion of salt.
4. Salt acts on vegetable substances as a stimulant. It was proved by actual experiment that a large proportion of salt dissolved in water caused plants placed in it to die, though at first they seemed to flourish more than in simple water, and that those placed in a solution of only moderate strength continued to live after those in the simple water had died.
5. Salt preserves vegetables from injury by sudden transitions in the temperature of the atmosphere. Thus salted soils do not freeze so readily as those without salt; salt preserves crops of turnips, &c., from injury by the frost.
6. Salt renders earth more capable of absorbing the moisture of the atmosphere, a property of great importance, since those soils which absorb moisture freely from the atmosphere are always most valuable to the cultivator.

We entirely agree with Mr. Johnson in his plain statement of facts so patent to all observant agriculturists, and in the proofs adduced by him. But it is well to enquire what has been the experience of practical farmers on this subject; not that the writers whose testimonies we have adduced are mere theorists, but because we are always desirous to know what have been the results of experiments of men who have themselves applied the fertilizer and closely observed its effects during the

growth of the plants to which it had been applied, and carefully noted the results in the yield. From such farmers we have had the opportunity of learning the results of their experience in this matter, and their authority is corroborative of my own experience. Mr. F., a well-known agriculturist of Dover Township, applied to a field of wheat a dressing of salt, and the crop was much heavier than his other wheat crops on land of equal quality, and the grain was superior. Mr. H. A., one of the most practical, observant members of the Middlesex Agricultural Society, has had like results from the use of salt as a fertilizer. With both the wheat to which the salt had been applied was less liable to be lodged, the straw was stiffer, and the grain of a superior quality. Mr. T. E., who had many years' experience in England, found salt a good fertilizer, and his opinion is that here its value would be greater than there, this province being so remote from the sea. The members of Forest City Grange have been considering the bringing from the salt district of Huron salt for agricultural purposes.

We have compressed our remarks on this subject within as narrow a space as possible; we desire to be brief and succinct. Judging from such authorities as we have selected from a host, and from the experience of good farmers, we can have no doubt that salt is of value as a fertilizer. It is true its application to land has sometimes resulted in disappointment. Sanguine men have made large trials of it on their farms, indiscriminately. An instance of such disappointment is not of sufficient force to overthrow the testimony borne to its beneficial results.

Is salt of any value for the destruction of vermin? we intend to make the subject of an article in a future number of the *Advocate*.

The Horse Hoe—Thorough Cultivation versus Weeds.

The average yield of the wheat fields of England is almost thirty bushels per acre. In not a few instances the yield is fifty bushels, sometimes still higher. The average yield in Canada is ten bushels lower than in England. In the United States the average is under thirteen bushels. This difference may be in part attributed to the climate, but only in part. To the soil it is not attributable. What, then, is the cause of this short-coming of the produce of the wheat fields of America? In England the farmer aims at thorough cultivation. In America the farmer's great aim is to go over a great number of acres, and that at little expense. In the former the crop is cereals, not weeds; in the latter weeds are permitted to occupy the most fertile fields, and thrive on the plant-food of the grown crops.

Keep at work the hoe and cultivator—we said in a late number of the *Advocate*. This is a rule with the farmers there, when the principles of farming are understood and acted on. A member of the Ixworth Farmers' Club (E.) says: "Some people thought the time had come when they ought to be able to go over their fields after they had been hoeing, and not see a weed upon them, and he did not see why it should not be the case. 'If the work was done well the men ought not to leave a weed behind, and if they did they ought not to be paid.' When shall we here wage such exterminating warfare with weeds!"

THE HORSE HOE.

For thorough cultivation, whether the crop be roots or cereals, no agricultural implement has proved of greater utility to the farmer than the horse hoe, and this implement has been so improved by the united ingenuity of farmers and mechanics, that it is now considered as good as can be desired for the thorough pulverization of the soil

and eradication of weeds. A practical English agriculturist says: "By means of this horse hoe I 'make a clean deep fallow among the growing crops, and oblige the plants to send down their roots into the ground subsoil, thus rendering it more open, and reserving the surface for the completion of the latter growth. We make 'tire strangers of all noxious weeds, admit the ameliorating influence of the atmosphere, the sunny warmth and the moist, refreshing mid-night dews. It is the unobstructed growth of weeds, favored by dense vegetation, that so exhausts the soil, while the absence of light and 'air causes the earth to be poor and sour.'"

The hoeing between drills is a natural consequence of the sowing or planting of crops in drills; hoeing being an essential element to drill culture, and wherever drill husbandry has been the rule in farming, the horse hoe has been nearly coeval with the drill. Hand hoeing was found too tedious, too expensive to be long practised. Hand-hoeing an acre of grain crops will be two days' work for a good farm laborer, and then the work is not so thorough as it is when done by a good horse hoe. A good laborer, with the aid of a boy, a horse, and a good, light, steel horse hoe, such as are now used in England, can hoe from seven to nine acres a day, and that in a thorough, workmanlike style, at the expense of about fifty cents per acre.

THE ORIGIN OF THE DRILLING OF WHEAT, AND THE HORSE HOE.

In 1871 the drilling of wheat was introduced into England by a gentleman farmer of Berkshire, and every succeeding season has given additional proof of its advantages. Mr. Jethro Trull, to whom England is indebted for its introduction, spared no time or expense in the improvement of the drill, and to him is due also the credit of the invention of the horse hoe—both implements that have done more for the agriculture of Britain and the supplying her teeming population with food, the growth of her own soil, than it has been possible for any subsequent agricultural implements to effect.

The advantages of hoeing between crops in their early growth, well known as they are, cannot be too highly appreciated. In the climate of Canada, of which a leading characteristic is drought, the effect may be very great. To every observant farmer its immediate advantage is apparent. The stirring of the soil in the driest weather seems to give to the growing plants somewhat of the refreshment of a gentle summer shower. The newly stirred earth attracts a refreshing moisture from the atmosphere. We know not the law of nature by which this great good is effected, but that such is the result of our labor—this we know. And the soil, even if hard or stiff, is made mellow by the operation, and the plant food by this means is, being set free from the stubborn clods, more readily absorbed by the tender rootlets. Another, and not the least advantage is the entire destruction of weeds. They used to exclude the health-giving air and heat from the young plants, which, now that the hoeing has killed the weeds, have the entire possession of the soil.

So well convinced by the experience of many years are English farmers of the advantages of hoeing, that they consider every thorough hoeing to add to their wheat crop one bushel per acre, and the grain of better quality from the free admission of the air and light and heat to the growing and maturing crop.

Hoeing should be early—as early as possible; the sooner it is done the better. It gives an early stimulus to the growth, supplies available plant food early, and prevents the growth of weeds; whereas a late hoeing might disturb and injure the tender rootlets. Every farmer and farm laborer

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Oil Meal

The query "What from a selected article Calves," in the last those who are unacquainted with the needed information experience in rearing them when matured doubt familiar with article of commerce. same seed as linseed it, and, in some districts Oil meal is oil cake of feeding purposes; linseed meal, ground, and a young stock, and a beast.

After the oil so well been extracted from sold for feeding purposes and is called oil cake use, is broken into fine It is considered by some other food for fattening the markets of Liverpool of commerce in England position oil cake commerce. For all the foreign countries the

When commencing quart of the meal in the evening is as much and after some time creased, but not to We have fed it dust and also, after having with bran mash. ter way.

There is no other ing cattle. It imparts mellow feeling to the value; and, much more cake is more tender better quality than food. Well do the loin appreciate the on oil cake.

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is aware of the fact that late hoeing, instead of being an advantage to a crop, is injurious. When the soil is pulverized, potatoes and cabbages will be improved by hoeing it up to the roots. Some people hold a different opinion on this subject, but I speak from experience. I have had the heaviest crops from potatoes twice earthed up, but care must always be taken not to disturb the roots—the feeding organs of the plants. Beets should not have earth drawn to them, nor should turnips.

Oil Meal for Stock.

The query "What is Oil Meal?" has arisen from a selected article on "Oil Meal as a Food for Calves," in the last number of the ADVOCATE. To those who are unacquainted with oil meal we supply the needed information. They who have had experience in rearing young stock, or in fattening them when matured in the home country, are no doubt familiar with it as a condiment and an article of commerce. Though prepared from the same seed as linseed meal, it differs materially from it, and, in some districts at least, is less known. Oil meal is oil cake ground, and is used solely for feeding purposes; linseed meal is the seed of flax *alias* lint, ground, and is used mostly as a food for young stock, and also medicinally for man and beast.

After the oil so well known in wood painting has been extracted from the flax seed, the refuse is sold for feeding purposes. It is in cakes or blocks, and is called oil cake. The cake, to prepare it for use, is broken into fragments and ground into meal. It is considered by stock feeders superior to any other food for fattening. Those conversant with the markets of Liverpool or the other great marts of commerce in England, know what an important position oil cake occupies in the country's commerce. For all the linseed of the British Isles and foreign countries there is ample demand.

When commencing feeding with oil cake, one quart of the meal in the morning and the same in the evening is as much as should be given to a cow, and after some time this quantity is gradually increased, but not to exceed three quarts per day. We have fed it dusted on turnips and on mangolds, and also, after having soaked some hours, mixed with bran mashes. The latter we found the better way.

There is no other food so highly valued for fattening cattle. It imparts an oiliness to the hair and mellow feeling to the touch that have their market value; and, much more, the beef fattened on oil cake is more tender and juicy, and altogether of a better quality than that fattened on any other food. Well do the lovers of the good English sirloin appreciate the superiority of the beef finished on oil cake.

Oil cake is also given in small quantities to horses. It retains somewhat of the medicinal properties of the seed before crushing. It is used to promote and preserve their health. Given occasionally with their soft food, it aids digestion and is a preventative of constipation. It does not in any measure take the place of oats, as it would not strengthen or invigorate horses to do their work. Its property is to promote health and build up the condition. As such it is very valuable to young stock.

The richness of oil cake is not limited to the putting on of flesh—it enriches the manure from the cattle so fed. So well is this known that farmers lay a much higher value on it than on other farm-yard manure. It is well known that the richer the food of the animal, the more valuable the manure as a fertilizer.

Linseed might with advantage be more generally used here than it is, either as oil cake or otherwise. In my experience of stock feeding, the

calves had always, in addition to milk, a portion of linseed. It was prepared by pouring boiling water on it, then covering it up close and letting it remain so for some time. It was most valuable for promoting the good health and rapid growth of the young stock.

The Great Short-horn Sale of 1875.

The combined sale of Messrs. Miller, Beattie and Cochran took place on the Agricultural Grounds at Toronto, on June the 16th. Messrs. Miller and Beattie had imported a fine lot of animals, to which Mr. Cochran added six from his herd. The weather was fine and the attendance was numerous, consisting of the principal breeders of Canada and the States. The animals, of course, were in fine trim; many were of the best procurable quality.

Col. Muir, of Kentucky, officiated as auctioneer in the place of Mr. Page, whose nerve was not equal to the occasion. On his first appearance and address we heard the remark that it was not necessary to send to the States to procure such an auctioneer, but the Col. waxed warm in his work, and despite his quaint and peculiar expression—"Will you go it?—will you go it?" and his calls for new bids and decided American intonation, he succeeded well, and we believe gave satisfaction in regard to his duty both to buyer and seller.

The horses were first sold. The highest price was paid by Mr. John Miller—\$1,400 for a very fine dark bay 3-year old Clydesdale mare; other Clyde mares sold for \$650, \$325 and \$200; three Clyde stallions brought \$800, \$325 and \$200. Six imported Cotswold rams averaged \$75; twenty imported improved Berkshires sold at prices ranging from \$50 to \$170. We understand the importers were losers on their horses, sheep and hogs, but the cattle made up for the losses and left a good margin.

The following is a list of the prices:

MESSRS. BEATTIE AND MILLER'S SHORT-HORNS.

Cows and Heifers.

- 1. Frantic 27th, E. T. Noel, Nashville, Tenn. \$ 560
- 2. Surmise Duchess 10th, Wm. Major & Son, Whitevale, Ont. 2,400
- 3. Surmise Duchess 5th, J. R. Page, Sennett, N. Y. 2,700
- 4. Chaplet and bull calf, S. M. Meredith & Son, Cambridge City, Ind. 875
- 5. Statira, S. M. Meredith & Son, Cambridge City, Ind. 700
- 6. Young Bracelet, A. L. Stebbins, Port Huron, Mich. 900
- 7. Princess Mand, Avery & Murphy, Port Huron, Mich. 3,000

The Hon. M. H. Cochran's stock was introduced at this stage of the proceedings:

Cows and Heifers.

- 1. Airdrie Duchess 5th, Avery & Murphy, Port Huron, Mich. \$18,000
- 2. Fourth Louan of Slausonvale, Col. B. B. Groom, Winchester, Ky. 2,850
- 3. Mattie Lee 4th, T. L. McKeem, Easton, Pa. 550

Bulls.

- 1. 5th Duke of Hillhurst, Messrs. Noel, Cockerell & Gibson, of Tennessee. 8,300
- 2. Ranger Prince, J. M. Peterson, Monmouth, Ill. 950
- 3. Louis le Grand, Jacob Lamer, Vaughan, Ont. 200
- 8. Princess of Raby, J. R. Page. 2,200
- 9. Delight, S. T. Spangler, Winthrop, Iowa. 750
- 10. Princess of Oxford 4th, J. R. Page. 3,000
- 11. Princess of Denmark 2nd, S. M. Meredith & Son, Cambridge City, Ind. 1,000
- 12. Tea Rose and heifer calf, A. L. Stebbins, Port Huron, Mich. 550
- 13. Mountain Rose 3rd, S. M. Meredith & Son, Cambridge City, Ind. 525

- 14. Fair Maid of Atha, Col. Holloway, Alexis, Ill. 825
- 15. Belle of Atha, A. L. Stebbins, Port Huron, Mich. 425
- 16. Lady of Atha, A. L. Stebbins, Port Huron, Mich. 675
- 17. Flower of Atha and calf, A. L. Stebbins, Port Huron, Mich. 525
- 18. Lady Bloom, A. L. Stebbins, Port Huron, Mich. 400
- 19. Duchess of Greenwood, George Miller, Markham, Ont. 350
- 20. Duchess of Raby, J. R. Craig, Burnhamthorpe, Ont. 3,100
- 21. Mary Hill, W. G. Pettit, Wellington-square, Ont. 275
- 22. Countess and calf, M. Darlington, Westchester, Pa. 250
- 23. Katharina, S. T. Spangler, Winthrop, Iowa. 175
- 24. Lady Barnes, C. S. Smith, Acton, Ont. 555
- 25. Careless 8th, J. R. Craig, Burnhamthorpe, Ont. 2,300
- 26. Baroness Conyers, S. M. Meredith & Son, Cambridge City, Ind. 1,650
- 27. Kirklevington Princess 2nd, Avery & Murphy, Port Huron, Mich. 4,650
- 28. Kirklevington Duchess 8th, J. R. Craig, Burnhamthorpe, Ont. 4,025
- 29. Duchess of Oakland, withdrawn.
- 30. 9th Duchess of Oakland, Benj. Sumner, Woodstock, Conn. 650
- 31. Casquet, S. T. Spangler, Winthrop, Iowa. 575
- 32. Red Rose, S. T. Spangler, Winthrop, Iowa. 180
- 33. Mellisa, withdrawn.
- 34. Jessie Douglas, T. L. McKeem, Easton, Pa. 825
- 35. Don Angeline 7th, T. L. McKeem, Easton, Pa. 200
- 36. Frantic Queen 2nd, E. T. Noel, Nashville, Tenn. 500

The majority of farmers will be, like ourselves, somewhat bewildered when they hear of eighteen thousand dollars being paid for a calf 7 months old. The interest on the money at ten per cent., the present bank rates, would be \$1,800 per annum. The risk of loss of the animal, the time to wait before a calf could be raised, the chance of the heifer breeding or the calf living, or this particular beast or class of beasts maintaining their present name are all questions that must arise and be considered by the thoughtful. The whole value is in the breed. This animal would weigh about 450 lbs.; the color, light roan. In a common farm sale it would not bring over \$15.

Notwithstanding the high price paid, many of the best breeders considered this animal cheap, and that she would pay even at that price. The competition for her appeared great, and the bidding spirited. There are wealthy gentlemen in England, America and Australia who possess great wealth and strive to own the best.

Caution.

The dullness of times in the States has driven some of the smartest talking agents into Canada; some of them can talk so well that they often persuade people to purchase articles they do not want. We do not deprecate many of the useful things brought from the States, but the traveling through the country of a pack of fellows selling patent rights of articles is what many get deceived in. Giving a note for a patent may be well for manufacturers, but farmers too often regret such steps.

The statement was made at the recent meeting in Boston of the Milk Producers' Association, that, twenty years ago, the annual production per cow in New England was 200 gallons, and that now it is more than double this quantity.

Leander Wetherell, of the Boston *Culturator*, has no patience with false pretence in dairy products. He would keep artificial coloring matter out of milk, butter and cheese, "desiring none but what is put into the cow's stomach."

Patrons of Husbandry.

Forest City Grange.

At the last meeting of Forest City Grange, the Master, Mr. H. Bruce, introduced a subject in which he asks for co-operation, namely, the checking of the wanton destruction of our insectivorous birds. He showed that many of our choicest birds are now destroyed by wanton boys; also that numerous persons holding a license from the Government, are making a business of shooting any quantity of these valuable and most handsome birds, merely for their skins, which command a high figure in foreign countries.

We hope all friends of the farmer will aid Mr. Bruce in stopping the destruction of our beautiful and useful friends, as we all want more fruit, more grain, more music and more beauty around our homes, and less insects. If one or two persons are taken up and fined for the destruction of our feathered friends, we should soon have more birds and better crops.

The greatest destruction, we believe, is done by the inhabitants of cities, towns and villages. They have more leisure, and go into the country in all directions where a feather is heard of that they want to get. Who will be the first to move to abate this evil complained of? Remember the law inflicts a fine for their destruction. There may be an occasional instance of farmers' sons destroying the birds, but they are rare, and in such cases it is probably done only by the most indulged and petted boys, who, perhaps, will waste the hard earnings of their forefathers.

Application will be made to the Legislature to withhold licenses from persons now destroying our birds for the purpose of traffic. Mr. Bruce also spoke of

THE POTATO BEETLE.

The potato beetles are more numerous than ever. The best way to destroy this pest is by using Paris green, which should be used very carefully, as it is a virulent poison, one grain being sufficient to kill a man. The best method of using it is by mixing it at the rate of one pound of green to fifty or sixty of plaster. Apply it when the dew is on the plant, or after rain, taking an oyster can perforated at the bottom, with a lath attached about three feet long. By walking along the rows and slightly tapping the lath or stick, enough of the powder will be left on the plants and a greater saving of the material effected than by the usual and more dangerous way of applying it with the hands.

Granges Organized Since Last Issue.

183. Amaranth. Master, Wm. Woodsworth, Bowling Green; Sec'y, Thomas Durham, Bowling Green.
184. Fairfield. Master, Thomas Gregory, Centralia; Sec'y, Sept. Hogarth, Exeter.
185. Union. Master, James Mann, Valetta; Sec'y, Mungo Stewart, Valetta.
186. Dover. Master, John Wright, Chatham; Sec'y, Wm. Stringer, Chatham.
187. Cheltenham. Master, Joseph Little, Cheltenham; Sec'y, Colin Campbell, Cheltenham.
188. Battle Hill. Master, J. Watterworth, Glencoe; Sec'y, L. Annett, Glencoe.
189. Equussing. Master, George C. Thompson, Georgetown; Sec'y, Wesley Reid, Georgetown.
190. Cherry Grove. Master, Robert Brown, St. Mary's; Sec'y, John Cameron, St. Mary's.
191. Cheapside. Master, Robert Buckley, Cheapside; Sec'y, Jacob Sherk, Cheapside.
192. Hillsdale. Master, Edward Archer, Hillsdale; Sec'y, John Johnston, Simcoe.
193. Nilestown Victoria. Master, Eli Jarvis, Nilestown; Sec'y, Walter H. Edwards, Nilestown.
194. Wilson. Master, R. J. Waterford, Coleraine; Sec'y, Isaac Davies, Coleraine.
195. Cromarty. Master, Robert Hamilton, Cromarty; Sec'y, James Gillespie, Cromarty.
196. Camillia. Master, James Decatur, Camillia; Sec'y, D. McNaughton, Camillia.
197. Fingal. Master, David Barber, Fingal; Sec'y, A. McDiarmind, Fingal.
198. Erin. Master, John Berry, Erin; Sec'y, Alexander Smith, Erin.

199. Oshawa. Master, Allen Trull, Oshawa; Sec'y, Danie' Lich, Oshawa.
200. Burlington. Master, B. H. Kean, Burlington; Sec'y O. F. Springer, Burlington.
201. Clarke. Master, W. H. Wilson, Northport; Sec'y, S. J. Cotter, Northport.
202. Laurel. Master, Thomas West, Laurel; Sec'y, H. Lipsett, Laurel.
203. Union. Master, G. W. Francis, Belmont; Sec'y, Wm. Barr, Gladstone.
204. Melville. Master, Henry Scott, Orangeville; Sec'y, J. A. Mitchell, Orangeville.

Notes on the Garden and Farm.

Original and Selected.

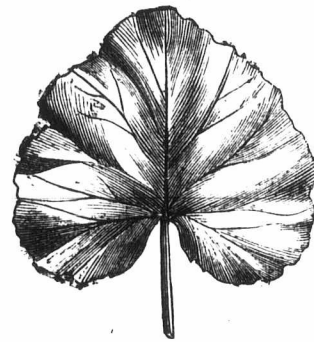
Our Illustrations—The Leaf.

The Leaf—The Blossom—The Fruit—All beautiful, all rich in blessings bestowed on us. As we pass by the lowly leaf, how seldom do we stop to



BALM LEAF.

admire its beauty or reflect for a moment on its great utility and its marvellous structure. You may have seen a skeleton leaf, and by this means learned somewhat of its formation. As you looked on its many veins and fibres when the more perishable part had melted away, you could see that in its creation there was manifested a design and skill superior to any of the works of man; and in the perishable part that had passed away from observation those innumerable little pores by which the leaf sipped as they fell the welcome dew and refreshing showers. The leaf



APPLE LEAF.

has a beauty all its own, differing from but not inferior to, the more showy blossom. It is not of many or bright hues. How beneficial is this design. As the eye rests upon the green in its various shades, it is refreshed from the weariness of looking too long at more gorgeous and glaring colors. The verdant clothing of our fields is the very best preserver of our sight. And in the green leaves there is no dull sameness to fatigue the eyes. The variety of form and size is truly inconceivable. From the dark, rich ivy that clothed



ROSE LEAF.

the old walls, I have often tried if I could find two leaves alike, but of the thousands of leaves that grew side by side on the same plant, all were different from each other in form or size, or in both.

The June Frost and Shade Trees.

In the early part of June, we had a practical lesson on the utility of shade trees. On the nights of the 13th, 14th, and 15th, this neighborhood, was visited by a pretty sharp frost. Many of the earlier vegetables were injured, some killed. Early potatoes, beans, tomatoes, and corn suffered. The frost was not limited to this immediate neighborhood, nor even to our own Dominion, but here we can testify from personal observation of the value of shade trees, during such a visitation. Wherever the garden or field was exposed to the influence of the frost, early crops were seriously injured or destroyed, while those having good shade on the north were safe. The garden of the writer was shaded by a grove of evergreens on the north, and consequently plants that would otherwise be injured or perhaps killed, escaped all injury, except one little corner that was not so well sheltered as the rest. Moral—Plant shrub trees.

Value of Evergreen Trees among Fruit Trees.

A well grown evergreen tree gives off continually and oxodium of warmth and moisture that reaches a distance of its area in height; and when the tree planters advocate shelter belts, surrounding a tract of orchard of fifty or more acres, when the influence of such belt can only reach a distance of the height of the tree in said belt, they do that which will prove of little value. To ameliorate climate, to assist in prevention of injury against extreme climatic cold in winter and of the frosting of the germ bud of the fruit in spring, all orchards should have planted, in and among them indiscriminately, evergreen trees at distance each of not more than 50 feet apart. Such a course pursued, we have no doubt, will render greater health to the trees, and be productive of more regular and uniform crops of fruit. At all events, it is worth trial, and we shall be glad if our readers can inform us of any practical experiments on the subject. — *Scientific American.*

The Best Currant.

I undertook to raise currants for market several years, ago and of course I was determined to show my customers what fine-sized fruit I could produce. Accordingly the greater portion of my plantation was composed of Cherry, La Versailles, and other new mammoth kinds. To finish up my ground I filled in the remainder of the space with the ordinary Red Dutch. Well, in due time I had as fine-sized fruit as one generally finds on a market stall, but the funny part of the story is, my despised Red Dutch was very nearly as fine as the others, and as to the yield the former beat all the others out of countenance. So that my little finishing-up patch brought me in as much income as all the others. I know some of our small fruit-growers contend that there is more money in the Cherry and its large friends, but on my soil, and in my location, and with my system of culture (which is exceedingly liberal), I say the old Red Dutch cannot be beaten.

Two Marvelous Flowers.

The *Horticulturist* gives an account of two novelties among flowers, which it is almost tempted to treat as fables until their verity is established by personal inspection. The following is the description of them:

"One is a *black lily* in Santa Clara, California, with three large blossoms, each nine inches long, and perfectly black outside of the green petals. The other is to be seen at Constantinople and described by an eye-witness as belonging to the narcissus genus of bulbs. The flower represents a perfect humming-bird. The breast, of a bright emerald green, a complete copy of this bird, and the throat, head, beak and eyes are a perfect imitation. The hinder part of the body, and the two outstretched wings, are of a bright rose color, one might almost say flesh colored. These wondrous bulbs should have been sent to the Vienna exhibition. They will be in abundance by the time of our Centennial Celebration in 1876. And yet they can hardly be greater curiosities than the strange and mysterious '*Sancta Spiritus*' flower from South America, with its life-like representation of doves."

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I am constant when a boy, and the Sweet William miraculous change now have the *Aur* spotted centres; like *Ranunculuses* can be produced; England the past form off this plant Grouped together effective than single nary border. The the flowers of a bri and fragrant. Beg June, a succession September. It is increased by divisi by means of seed, originated in the plants owned by T bestowed upon it *magnificus*; but it Sweet William.

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The Rev. W. I "The Perfect H horseman as well stands equines f ness it is to bree noble and usefu brief but sensible —which is a ser town and countr any not akin to

The true way driver doing lit him that confid himself when h back of him. style of driving adopt, viz.: W hand and pulli might and main pulls the weigh not with his br under the impr ed in order to with rare exce pull upon the allowable; prob yond this has n

A Beautiful Flower.

I am constantly faithful to the flowers I loved when a boy, and among them I delight to class the Sweet William. Since that time, however, a miraculous change has occurred in this plant. We now have the *Auricula eyed* with their beautiful spotted centres; the very double forms, looking like Ranunculuses, and as brilliant as floral tints can be produced; but in my wanderings through England the past Summer I chanced upon a dwarf form of this plant that pleased me more than any. Grouped together in a bed, they proved far more effective than single plants scattered over an ordinary border. The height was about 12 inches, and the flowers of a brilliant deep crimson, very double and fragrant. Beginning to bloom some time in June, a succession is kept up until the latter part of September. It is entirely hardy, and is readily increased by divisions of the root in Autumn, or by means of seeds which always come true. It originated in the extensive collection of herbaceous plants owned by Thos. S. Ware, of Tottenham, who bestowed upon it the title of *Dianthus barbatus magnificus*; but it is also known as Ware's Double Sweet William.

The Destruction of Small Birds the Cause of Phylloxera.

It is said, by Dr. Turvel, that the rapid spread of Phylloxera, or grapevine lice, in France is due more than any thing else to the rapid extermination of small birds of the country. It is well known that a regular discharge of guns all over France is heard at certain seasons of the year, every person who can hire or borrow a musket, entering into the crusade, and that an indiscriminate slaughter is made of birds of all kinds and character. Even if the birds themselves cannot reach the vine louse, it is suggested that other kinds of insects, which are attacked by birds, leave the vines in a weakened condition and more liable to destruction by parasites.

To Indoor Gardeners.

A correspondent of the *Farmer* says: Plants kept in an sitting room where frequent sweeping has to be done should be covered until the dust has settled, as dust upon the foliage injures the plant by retarding its growth and bloom, as leaves are to plant life what lungs are to animal life.

Where scale or red spider have accumulated, as they will in a warm, dry atmosphere, or in dark situations, whale oil soap suds showered over the leaves and sponged off on the under side, or turning the bottom up and dipping the whole down into the decoction, will remove the pests. Where plants are crowded into too small space, they will generate the aphid or green fly, and the thrip and mealy bug. Smoking or washing the plants plenty of fresh air and all the sunshine possible. But few plants will grow in the shade, and this class is mostly confined to the begonia family and a few varieties of vines; among them are the smilax and common ivy.

The Horse.

How to Drive.

The Rev. W. H. H. Murray, in his work entitled "The Perfect Horse," shows that a man may be a horseman as well as a minister, and that he understands equines far better than many whose business it is to breed and work good specimens of the noble and useful race. For instance, read this brief but sensible dissertation on driving the horse—which is a sermon that should be heeded, in both town and country, by all who use decent horses, or any not akin to mules.

The true way is to let the horse drive himself, the driver doing little but directing him, and giving him that confidence which a horse alone gets in himself when he feels that a guide and friend is back of him. The most vicious and inexcusable style of driving is that which so many drivers adopt, viz.: Wrapping the lines around either hand and pulling the horse backward with all their might and main, so that the horse, in point of fact, pulls the weight back of him with his mouth and not with his breast and shoulders. This they do under the impression that such a dead pull is needed in order to "steady" the horse. The fact is, with rare exceptions, there never should be any pull upon the horse at all. A steady pressure is allowable; probably advisable; but anything beyond this has no justification in nature or reason;

for nature suggests the utmost possible freedom of action of head, body and limbs, in order that the animal may attain the highest rate of speed; and reason certainly forbids the supposition that by the bits, and not the breast collar, the horse is to draw the weight attached to it. In speeding my horses I seldom grasp the lines with both hands when the road is straight and free from obstructions. The lines are rarely steadily taut, but held in easy pliancy, and used chiefly to shift the bit in the horse's mouth, and by this method my horses break less and go much faster.

Mules vs. Horses.

While horse breeders are sounding the praises of thoroughbreds, trotters, Percherons, Clydesdales, and all the host of strain and breeds, claiming untold good qualities for the one and the other, we seldom or never hear a single note in favor of that useful animal, the mule. On the road, amid the hum of cities, in the very bowels of the earth, these patient, persevering, long-lived "hewers of wood and drawers of water" are plodding through their daily drudgery unhonored and unsung. We once overheard a farmer say, with quaint expression: "The best horse for a farm is a mule;" and we subscribe ourself a champion of his faith. Do you want an animal which will serve you faithfully without growl or bark—one which will keep fat on short commons, never need the veterinary, always be ready for work? Do you want a great big burly brute that will catch a coal wagon on his shoulders and tow it up a hill, or a little sprightly fellow to plow corn, or to do chores, or make himself generally useful?—If you do, get a mule. He will require less care, will cost less money, will do more work, will eat less corn, will live longer, and pay you better than any horse we know of—on the farm. Now it will be said that mules move slowly, that they are tricky, that they are frequently baulky. Some mules have none of these traits, and some have them all, but their good qualities, taking them all in all, very far surpass their bad ones. Who ever saw a spavined mule, or a curbed mule, or a dead mule that had not been killed by accident? A man may live a lifetime, he may have gone through the wars, where horses laid down and died by the score from bad treatment and starvation, but I venture to say he can count upon his fingers the number of mules he ever saw yield up the ghost under any ordinary pressure.

We sing our psalm to the mule only as regards his usefulness on the farm. We do not claim that he is a trotter, though we remember to have seen some very lively steppers—nor that he would be a success on the running turf. He certainly is not an object of beauty, and would make but a poor show in a gilded coach or a lady's phaeton. He is intended for use, not for ornament. His place is where the laborer toils through the long day, planting and cultivating and gathering and garnering the produce of the fields. He eats no corn he does not earn! He is an animal of "business," and goes right along, slowly but surely, looking neither to the one side nor the other. We confess to a liking for the mule.

There's something honest about him; he sails under no false colors; he puts on no airs, and he is just a little better at ten or fifteen years of age than he is at five or six. His principal growth from year to year is in dignity, wisdom and ears. He never forgets anything he learns. He soon learns all about a corn row; the darkies can ride him at night without his seeming to suffer from it, and if every horse on the farm has the epizootic, you will find that the mule—if you have one—is as calmly prepared for every emergency as ever. Yes, when it comes to business, I like a mule.—*Illustrated Journal of Agriculture.*

Death of the Oldest Horse in the World.

The Morgan horse, purchased thirty-one years ago by the late Cyrus Reed, of Lexington, died February 19th, at the great age of forty-three years. In his younger days, he had some peculiar traits, and many anecdotes have been told of him. His bump of caution seemed well developed, for he never could be induced, by force or reasoning, to cross a bridge where his feet had never trod before, until his driver got out and walked over the bridge, to assure him of its safety. In his younger days, he was considered quite fast, and in his old age made quite a respectable appearance. During the last year of his life, he was seldom in the harness, but was allowed to "repose on his laurels." He was quite a good-looking horse, the

only indications of age being the white hairs about his head, which had been touched by the frosts of many winters. It is to be regretted that his picture could not have been preserved, so that the rising generation could learn from it a lesson of the preserving qualities of good care and careful usage.

The Apiary.

A. C. ATWOOD - EDITOR.

Managing Second and Third Swarms.

June is usually the swarming month, though sometimes bees do not swarm till July, and the old adage says—"a swarm of bees in July is not worth a fly." This is not altogether true, for if late second and third swarms are managed properly at swarming time, they can be made as valuable as a first swarm; for example, instead of sticking every handful of bees that come off as an after swarm into a separate box to work down a few small combs and gather a few pounds of honey, which they eat and then die, run a number of them in together at swarming time, and by that means make up one good stock; if it gets late in the season, and a second swarm comes off say on Monday and another second or third swarm comes off on any other day of the week, just shake some of them into the hive the swarm is in, just the same as if the hive were empty; no danger but they will agree if done within a week after the first swarm is put in, and if two swarms do not make it large enough, add another third or second swarm, until they are strong enough. Do not trouble yourself as to what will become of the extra queens; the bees will manage that part, as you will see by looking in front of the hive next morning. Of course you will not have so many swarms in the fall by following this method, but what you have will be good.

If you have a number of stocks all in box hives, some of them are swarming themselves to death and others will not swarm at all, and still are full of bees. I will tell you what to do. Some day after you have had a second or a third swarm come off and hive, blow a little smoke on the stock that has not swarmed; turn it top end down and place an empty hive on top; then with a hammer rap on the lower hive for say twenty minutes; by that time all the bees, queen and all, are driven up into the empty hive. Place them now on a stand, and let them begin afresh as a new swarm, and being a large number of bees, they will soon become a strong stock and better than if they remained in the old hive, for it puts energy into bees as well as men sometimes to have to begin life again.

I can speak from experience on this point, for it was the best thing that ever happened to me when in '57 I lost seven thousand dollars—all I was worth—and had to begin again. I never would have known how to make money had it not been for that.

But to return, you now take your small swarm and tumble them out of the hive you temporarily placed them in, and move them into the old hive from which the lazy bees had been ejected; though they are few in number yet they enter a furnished house, the combs are full of brood, and they will soon become a fine stock.

Champion Reaper and Mower Still a Grand Success.

The *Peterboro Review*, June 11th, says:

We noticed on the Fair Ground, last week, the celebrated Champion machine, the same as was shipped through our town to Wm. J. Hall, Keene, and from all appearances, and what farmers and mechanics and others tell us, we believe it to be the leading and best machine of the day. The "Champion" men being nearly all strangers amongst us, except Mr. Hall, they showed to the immense crowd they had around all day the strength and durability of their machines, the strength of their rakes being unsurpassed. They don't seem to fear anything; they drove over the roughest ground of any machine present; they sailed over obstructions which none of the others attempted to, carried their points, and explained their machines to the farmers; and all the agents that could find fault did all they could, but the "Champion" men seemed to carry the day all through. Any one needing a reaper or mower this season would do well to see the Champion and give it a trial before purchasing, as Mr. Hall informs us they give a guarantee with every machine.

Agricultural.

How to Keep the Soil Productive.

This subject was ably discussed at the Farmers' Institute at Freeport, Ill., on the 28th ult. Mr. John Swanzy read a paper in which he said that it must not be expected that the soil, if plowed year after year, would remain productive. The shipping of grain must also be stopped. It must be consumed at home and returned to the soil. More stock should be kept and the grain fed to it. More clover should be sown. The dairy business would greatly tend to keep the soil productive. The grass necessary to support the dairy would give the land rest. The fear that the dairy business was being carried too far—that too many were going into it, was groundless. There were ten pounds of cheese consumed now where there was only one formerly. The soil must be kept up. Our manufacturing and mercantile interests depended for their prosperity upon a productive soil.

Mr. Thomas Hunt followed with a very able paper. Mr. Hunt said that it was unmistakable that the land was giving out. In many of the older States grain can only be raised by special manuring. Illinois and the other newer States were fast following in the same direction. Our wood lands were being rapidly exhausted. The wood was cut off, and comparatively little grain was raised on the land. If the wood was permitted to grow again, in twenty-five years it would yield a better profit than all the grain that is raised on the land during that time. The result of this wholesale cutting off our wood was to dry up the streams upon which the soil largely depended for fertility. It was a common thing to find rivers which were once deep now shallow, and to find streams entirely dried up. It was our duty to keep the soil productive: to make two spears of grass grow where there was but one formerly; to beautify the earth, so that our posterity might bless, not curse us. The man who through ignorance, carelessness or idleness permits the land of which he has charge to run, was an actual damage to the world. The land should be kept productive. Crops should be raised which were needed at home markets, and exchanged for proper fertilizers.

We should raise more grass and small grains and feed these to hogs and cattle. As much stock should be kept as can be fed, so that as much manure as possible can be made. A deadly war should be made on thistles, weeds and burrs. It did not pay to raise these on land worth \$75 per acre. Still he knew of farmers who were doing this unreasonable thing. Everything which has been part of an animal should be put into the soil after it is voided. Slops and soap-suds, which were so repulsive when carelessly permitted to stand in pools around a house, made excellent fertilizers, and should be thus used. Mr. Hunt closed by asking his hearers to remember that the soil was not to be plundered, but that it was a factory to be worked.

Prof. Burrill, of the Illinois Industrial University, followed with an interesting paper, and illustrated much of what he said with printed cuts. The Professor said that the essential requisites of plant growth were, first, food; second, light; third, moisture, and fourth, heat. The food was mineral and vegetable. No really agricultural plant would gain anything in the dark, and it had been demonstrated that ordinary white light was the best for the growth of plants. Moisture of course was a necessity. It must be remembered that there was a difference between moisture and water. One was fixed water, and the other was flowing water. The former contained the elements of growth in a fixed condition. Different plants required a different amount of heat. Some would grow in freezing water and some in boiling water, but our strictly agricultural plants had no such wide range. Most of them required high temperature. Now the soil supplied the food and moisture, and regulated the heat, and while it could do these things properly it was productive, and when it failed to do them it became non-productive. —*Western Rural.*

Attention is being drawn in England to the value of the mule. At a recent show the prize mule stood seventeen hands, and was proved to be much stronger than a horse. Another animal exhibited, and which was only twelve and a half hands high, had been driven the previous week 220 miles in forty-two hours, and entered London on the evening of the second day at a pace of ten miles an hour, with no mark of fatigue.

Seeding With or Without Grain.

You have often invited practical farmers to write communications for the *Farmer*, and I have formed a great many resolutions to do so, and so often broke them; but as this question of seeding land to grass is one of great importance, and I have practised a method I have not seen described of late, I will endeavor not to break my last resolution to write out my experience.

In seeding ground to grass, I have, for the last ten years, practised stocking in the corn. My practice is to turn over a piece of bound out grass, turning it about seven or eight inches deep, as flat as possible; then manure with about forty loads of barn-yard manure to the acre, mix it thoroughly with the soil with cultivator and harrow, and when well pulverized, mark the rows three feet and six inches apart each way, and plant to corn, taking pains to sink the hills so that when the corn is covered the hills will be no higher than the rest of the ground. The first time hoeing run the cultivator between the rows both ways, and not hill up around the corn at all. At the second time of hoeing I prefer to cultivate again both ways and hoe without hilling, or rather, stir the dirt around the corn, without hauling any more around it than I take away. After the corn is hoed, I sow the grass seed by commencing on one side and sowing back and forth until the piece is finished. I have two hands follow me with rakes and rake in the seed as fast as sown.

This may look, to one that has never tried it, like a great undertaking, but two men with rakes will rake the ground over as fast as one can sow the grass seed. It is better to sow the seed as soon as possible after the corn is hoed, while the ground is light, if possible, before the rain falls on the ground to make it hard. If I have large pieces, I sow and rake it about as fast as it is hoed, not waiting to finish hoeing the whole field before sowing the seed. I have sown the seed before commencing to cultivate the corn the second time, but I do not think I get the seed into the ground as evenly as in the way I have described.

By managing this way the seed is got into the ground about the time nature designed or a little earlier, the last of June or the first of July. When we take into consideration that the fodder from an acre of corn that is well cured is worth more to feed to cows or young stock than an acre of grass is at the first cutting, and that one hundred bushels of ears of corn, or fifty bushels of shelled corn to the acre, is no more than an average crop, let us ask ourselves had we better sow our ground to grass alone, or plant to corn or some other green crop? —*Cor. New England Farmer.*

The Manure Question.

The manure question is one that should interest every farmer, gardener and fruit culturist in the State. Articles like that of Mr. Geddes on the benefits of growing clover, I consider very valuable. In Mr. Gulley's article on manure, etc., there is also much of practical value to all that wish to enrich their land.

There is one statement, however, contained in the latter that I think ought to be investigated. In the third column of his article as published in the *Farmer*, we find the following statement:—"On the farm was a pile of manure one year old, left from a cow-stable, that we were directed to put on this field (a field of 21 acres of very poor land.) The pile would have made about 20 or 25 such loads as we buy for a dollar. This manure was spread on 12 acres of that poor land, and the result was wonderful. On the land not manured the yield was 20 bushels of oats per acre (a poor yield for even poor land.) On the 12 acres manured there was a yield of 49 bushels per acre, of the same grain (a good yield for good ground). This was an increase of one hundred and fifty per cent. nearly." Let us examine this subject carefully, for there was a grand result from apparently very small means.

Suppose the loads of manure averaged a half cord each, and two loads to the acre, that would require 24 loads for the 12 acres manured, and would be one cord per acre.

A cord contains 128 cubic feet, and an acre of land contains 43,560 square feet; divide the number of cubic feet in a cord and we shall find that one cubic foot of manure will have to cover 346½ feet of surface. Reduce the manure to a surface one inch thick, and we shall find that we have a surface of 1,536 feet. Divide the number of square feet in an acre by this, and we shall find

that we have one square foot of manure one inch thick to cover 27½ feet, in other words, we shall have nearly one twenty-eighth of an inch all over the ground.

This may be called applying manure on the homeopathic principle. The effects appear to have been marvelous. Let it be distinctly understood that Mr. Gulley's truthfulness is not called in question, but judging from many year's experience, with what information has been heretofore obtained, and it appears to me that there must be something in the manure or the land that has not been set forth.

Farmers are in the habit of applying from five to twelve times as much manure to the acre as Mr. Gulley did, and seldom receive as much benefit from the first crop. Do we manure too heavy? Is the homeopathic the true system in manuring? —*L. S. L., in Michigan Farmer.*

Seed Corn.

The selection of seed corn is a matter of great importance, but many farmers give it little thought until they want the seed to plant. Then it is "Hobson's choice." They must take what is at hand or none. When they get ready to select the seed, the best has been disposed of, and a light crop of defective quality is the result. In New England a great deal more care is exercised in the selection of seed corn, and in spite of its inferior soil and climate, a much larger average per acre is obtained than is produced on the fertile prairies of the West. With all the natural advantages which Western farmers possess, they ought to lead the world in the production of this important crop. The indiscriminate mixture of white, yellow, gourd seed, and flint varieties, which is common, not only tends to decrease the yield (some varieties being less productive than others), but also to keep down the price. Some years ago a circular was issued to the farmers of Kansas and Missouri, by a Kansas Board of Trade, calling their attention to the fact that the corn grown in that section was badly mixed, assuring them that if uniformity could be secured, and only one variety produced, the price would be advanced several cents per bushel, and requesting them to be more careful in selecting seed for future crops. Taking the statistics of 1872 as a basis, I find that an increase of price of three cents a bushel, on all the corn grown in the single State of Missouri, would amount to the immense sum of \$3,172,231. And there can be no doubt that the selection of the best variety and keeping it free from mixture with other kinds would increase the real value far more, and the selling price as much as three cents a bushel. On a single bushel this is a small sum, but on the product of a large Western farm it is something. "Like produces like." This is a law of nature recognized everywhere. "Whatever a man soweth that shall he also reap," is an inspired doctrine which applies alike to the natural and the moral world. If a man takes no pains in the selection of the seed he ought not to complain if it is not to his liking. If he had planted yellow corn, he would have a crop of the same kind, but if he persists in mixing all kinds and colors in the seed, he will certainly find them as badly mixed in the crop. When our farmers come to the conclusion that they cannot afford to use poor seed corn, and are careful to plant only that which is pure and good, they will find that they have taken a long step on the road to success in the culture of this crop. Good seed, fine tillage, liberal use of fertilizers, these are the elements of successful corn culture.

Some Experience with Corn Fodder.

As we farmers have to resort to various expedients to provide a sufficient amount of rough feed for our stock, especially when winter lingers so long in the lap of spring, I thought perhaps it might be interesting, if not instructive, to some of my brother farmers to hear how a neighbor succeeded.

First, then, let me say as to fodder corn. In 1871, May 12th, after plowing the ground in the usual manner for a crop of corn, I proceeded to mark it off in rows two feet eight inches apart, into which I drilled corn by hand, having nothing more speedy, as thickly as I thought it would grow to a good height without producing any ears. This I covered with a common two-horse corn plow, which did the work well. When of a proper size it was plowed once with a double-shovel, which was all the cultivation needed. There was no room for

weeds, although it had been shocked in the usual shocks, and well tilled. In November it was convenient to handle, and of the hay. Two and corn produced thirty-five large loads, one while the other passed continued until the high stakes fore and a man could put it up not carefully weighed large a yield of so very any other way. The general farm land same patch was twice caught by a sudden frost which prevented its being here say that it was 10th—to be sure of frost. Last year it helped the dry pastures for a fodder crop this soon as the weather is nished with its first prospect to get some fodder 1871, I would further anything of that kind highly prized by stock the same time as good which would be left under could be got. —*Live Stock Journal.*

Ashes vs. Bar.

Unleached ashes consist of potash, lime, amounts of silica, alumina, soda, sulphur, chlorine. When leached substance eliminated which the ashes have low heat the principle leached out.

When wood is burned large heaps, under a tains large quantities of insoluble silicates, and hence the long leached ashes on land and giving out pounds. And hence leached ashes. But piled per acre, the even ten years, and even

The soluble portion according to Bishop by sixty pounds of twenty pounds of pounds of common

According to experiment Newcastle-upon-Tyne manure, the analysis showed sixty-five per cent. of carbonaceous matter, source of carbonic acid, cent. of inorganic matter or fertilizing matter per cent, of other fertilizable value.

If manure, prepared only the quantity of manure as it is generated, its ammonia and other by fermentation, it carried away by evaporation but a trace of nial dung—probably cent.

Now, since leached to be of nearly equal value to the un-leached ashes, it would be equal to from 100 barn-yard manure of ashes from 100 is 2.57. Of 100 soluble, or will be of water; \$6.50 ar the refuse of ash taken as being of cent. found value heretofore mentioned ashes representing value with ten per cent. of value more tons as compared

weeds, although it had previously been a very foul patch. The last week in August it was cut and shocked in the usual manner, in moderate-sized shocks, and well tied at the top with long grass. In November it was tied in bundles of a size convenient to handle, and placed in the barn on top of the hay. Two and one-half acres of this drilled corn produced thirty-four loads of fodder; and they were large loads, one man placing and packing while the other passed up the bundles; this was continued until the hay-rack, 14 feet long, with high stakes fore and aft, was filled full, as high as a man could put it up. I have been sorry it was not carefully weighed, as I have never seen so large a yield of so very excellent fodder raised in any other way. The ground was not richer than the general farm land of the neighborhood. The same patch was twice put to fodder since; once caught by a sudden frost, followed by wet weather, which prevented its being properly saved. I will here say that it was planted too late—about June 10th—to be sure of being out of the way of the frost. Last year it was cut early and fed green, to help the dry pastures. It will be again set apart for a fodder crop this year, and planted (drilled) as soon as the weather is suitable, it having been furnished with its first coat of manure. I shall expect to get some fodder. As to quality of crop of 1871, I would further say that I have never fed anything of that kind (rough feed) that was more highly prized by stock than that was. I had at the same time as good timothy hay as I ever saw, which would be left untouched as long as the fodder could be got. It was fed liberally, in racks, and was eaten up clean.—Putnam, in *National Live Stock Journal*.

Ashes vs. Barn-Yard manure.

Unleached ashes contain, besides large quantities of potash, lime and carbolic acid, notable amounts of silica, alumina, oxide of iron and magnesia, soda, sulphuric and phosphoric acids, and chlorine. When leached the potash is the principal substance eliminated, and, if the wood from which the ashes have been made is burned at a low heat the principal part of the potash will be leached out.

When wood is burned in large fire places, or in large heaps, under a strong heat, the product contains large quantities of soda and potash in the form of insoluble silicates, which are gradually set free, and hence the long continued effects of ordinary leached ashes on land from the slow transformation and giving out of potash, soda and other compounds. And hence, also, the variable value of leached ashes. But, when one or two tons are applied per acre, the effects are shown for ten or fifteen years, and even longer in many cases.

The soluble portions of one ton of wood ashes, according to Bishop Watson may be represented by sixty pounds of crystallized carbonate of soda, twenty pounds of sulphate of soda, and twenty pounds of common salt.

According to experiments made in England, at Newcastle-upon-Tyne, with prepared barn-yard manure, the analysis made previous to application showed sixty-five parts, twenty-five consisted of carbonaceous matter, of course inert except as a source of carbonic acid. This leaves about ten per cent. of inorganic matter; only 0.6 of nitrogenous or fertilizing matter was contained, and about three per cent. of other fertilizing substances of considerable value.

If manure, prepared as it is in England contains only the quantity of valuable matter we have shown, manure as it is generally made in the West, with its ammonia and other volatile matters thrown off by fermentation, its soluble portions washed and carried away by every rain that falls, would contain but a trace of valuable substances of the original dung—probably not more than one or two per cent.

Now, since leached ashes are found particularly to be of nearly equal value, as manure, to unleached ashes, it would follow that a ton of ashes would be equal to from forty to sixty tons of ordinary barn-yard manure. Why? The average quantity of ashes from 100 parts dry oak, beech, birch, etc., is 2.57. Of 100 parts of such ashes, 13.57 are soluble, or will be given immediately to the action of water; \$6.50 are insoluble or such as are left as the refuse of ash works. These \$6.42 parts may be taken as being of the same worth as the ten per cent. found valuable in the analysis of the manure heretofore mentioned. Therefore, a ton of leached ashes representing 100 parts, ought to be of equal value with ten tons of manure, representing ten per cent. of valuable compounds, or of forty or more tons as commonly made in the West, repre-

sented two and one half or less per cent of value.

But there is another source of value in the application of ashes to land. They supply not only the inorganic matter necessary to plants, but they act chemically as insolvents upon other salts already in the soil; or they act in neutralizing acids.

On the farm, ashes act most notably upon the legumes, as clover, peas, beans, etc., and promote the growth of red clover where this plant is indigenous. Mechanically, they render sandy soils more compact and heavy clays more friable. Besides, in Horticulture, they promote the growth of vegetables, and notably are of exceeding value to fruit trees in assisting to form large crops of fair fruit.

Therefore, besides the opinion given in a general way, we would prefer where fruit trees are concerned, unless the soil is undeniably poor, the application of one part of ashes rather than 100 parts of manure; and for this reason:—The manure would stimulate the trees to form wood, while the ashes would assist the trees in the production of fruit. If the soil is really poor then use ashes in connection with manure.—W. Rural.

Implement Progress in Britain.

Great Britain made the largest and finest display in 1873 at Vienna of agricultural machines. In those worked by steam she surpassed all other nations. For instance, there were shown by England one steam plow, twenty-seven single and ten double-furrow iron plows, four single-furrow wooden plows, twenty-three drills, fourteen horse-rakes and hay makers, and nineteen reapers and mowers; of steam engines, six traction, forty portable, eight fixed and ten vertical; thirty-six steam threshing machines, and six moved by horse power; and seventy-one food preparing machines. In plows and drills Germany and Austria came out stronger. M. de Tisserand, the president of the jury of this class, speaks most favorably of the British machinery and implements; and the other foreign members concur with him in the high opinion and approval expressed as to the progress made by England since 1867. His preliminary remarks are so sensible that they deserve record here: "Progress is the consequence of want; and agriculture, like all other industries, modifies her old customs only when driven to do so by imperative necessity. Agriculture has often been reproached with progressing less rapidly than other industries, but on this subject much can be said to show that this reproach is unwarranted. To start with, the cultivator of the soil, besides being dependent on the elements, is merely an auxiliary of Nature, and in the production of a quarter of wheat, or a stone of meat, his labor is a minute fraction, as compared with the work which Nature puts forward in his aid. As regards all other industries, the work of man is everything. Once that a manufacturer has conceived a pound of raw cotton into thread, he is enabled with the aid of his machinery to do, now-a-days, work in one day which would have employed 100 or 200, or even more men. Moreover, such necessities are far more keenly felt in other industries than that of agriculture, although the latter occupies at least two-thirds, or perhaps three-fourths, of the population of the globe. Its capital is immense, and it naturally is not susceptible of rapid modification and changes. Hence the slow growth of agricultural progress."

How to Make a Farm Pay.

The following essay on the above subject was delivered by Mr. Appleton Eleot, at a late meeting of the Tuckersmith Farmers' Club:—

In order to create a starting point we must have a farm of say 90 acres of clearing. To stock this the farmer should have five cows and their offspring, which will give him five head of cattle to sell at 3 years old every year, bringing say \$30 each. He will also require two mares and one colt one year old and another two years old, and by raising a colt every year he will always have one three years old for disposal, which should be worth \$100. He can also fat half a dozen hogs till they weigh about 250 lbs. each, two of which it will be necessary to keep for his own use, while the other four can be sold at \$7 per cwt. In addition to this it is also desirable to have some poultry. The butter and eggs will keep the house in groceries and the children in clothes. To keep this stock will require 30 acres, part for hay and the rest for pasture. This will save 60 acres for the crop.

The farmer must seed 10 acres down every year, and then he will have 10 acres of sod to plow. He should put his sod in with peas, his pea stubble in with wheat, the wheat stubble with oats, which should be well manured and afterwards put in with wheat, the stubble of which will require the rest of his manure. He must also put in at least two acres of potatoes, which will be worth \$50 per acre, besides turnips, carrots and other green crops for the use of the cattle. This field can afterwards be planted with barley and seeded down. This will give a regular rotation of crops. There will be 10 acres of peas, 20 of wheat, 10 of oats, 10 of barley and 10 of roots, &c. I will now endeavor to give you an estimate of the yield and value of these crops. Peas at 30 bushels would aggregate 300 bushels, 100 to be used for seed and to fat the hogs on, leaving 200 bushels to sell at 60 cents; 20 acres of wheat at 25 bushels per acre would give 100 bushels for seed and bread, leaving 400 bushels to sell at \$1 per bushel; 10 acres of oats at 40 bushels per acre would produce 400 bushels, of which, after allowing 200 bushels for the horses and for seed, 200 bushels could be sold at 35 cents; 300 bushels of barley, the product of 10 acres at 30 bushels per acre would give 20 bushels for seed and leave 280 bushels to sell at 75 cents. Then we have two acres of potatoes worth \$50 per acre. Now let us see how much we have made from the farm:—

Five head of cattle at \$30 per head	.....	\$150
One horse at \$100	.....	100
Four hogs weighing 250 lbs. each at \$7 per cwt.	.....	70
200 bushels of peas at 60 cents per bushel	.....	120
400 bushels of wheat at \$1.00 per bushel	.....	400
200 bushels of oats at 35 cents per bushel	.....	70
280 bushels of barley at 75 cents per bushel	.....	200
Two acres of potatoes at \$50 per acre	.....	100
Total	.....	\$1210

I will now give you my way of cultivating the land. For peas, plow about seven inches deep in the spring; for wheat, plow in the fall ten inches deep and then cultivate in the spring; for oats plow eight inches in the fall and then cultivate in the spring. The land used for the root crop should be plowed twelve inches deep in the fall, and after the turnips are taken up, plow ten inches deep, and again in the spring, and seed down with barley.

Kohl Rabi.

In an article on the cultivation of this very profitable forage plant, by Mr. G. Street, read before the Bedfordshire Agricultural Society, he says: If we knew what sort of season to expect, it would be well to grow turnips in wet seasons and kohl rabi in dry ones, as heavier crops might be secured than if the same root were grown continuously. The rabi has the advantage of being more certain than the turnip, and a good crop may be grown any year. It is more adapted to light than to heavy soils, and will do better in a hot, dry summer than in a wet one, as in the latter it is apt to grow too much top, without a sufficient development of bulb. It is very nutritious, and will produce considerably more meat than turnips, weight for weight. All kinds of stock do well on it, and I have noticed that when getting anything up for showing, whether horses, beasts or sheep, my men always prefer it to turnips or wurzels.

Sulphate of Iron and Vegetation.

M. Gris has made experiments on the influence of sulphate of iron on vegetation, and comes to these conclusions: that the salt is a stimulating manure; that it presents no danger when intelligently applied; that its action is evident upon the coloring principles of leaves; that from its cheapness a few cents' worth is sufficient to treat hundreds of plants; that it might be applied to cultivation on a large scale, and especially to the cultivation of fruit. His manner of applying the sulphate is as follows. A solution of two drachms to one quart of water is made, and with this the plants, previously placed in the shade, are watered. It is presumed that the earth surrounding the plant is moist; if this is not the case, a more dilute solution must be used. The solution may be applied daily for five or six days; about two and a-half ounces are sufficient for each watering of an ordinary sized plant.

It is estimated, says *Columbian's Rural World*, that 300,000 head of hungry cattle could not have eaten as much corn in three days as the grasshoppers consumed at Atchinson, Kansas, in three hours.

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The Conservatory of the Centennial Exhibition.

Last month we had the pleasure of laying before our readers an engraving of the Agricultural Hall of the Centennial Exhibition. To-day we present to you an engraving of the Conservatory. This department will doubtless possess attractions second to none other. The view of exotic plants and fruits and flowers would of itself well repay the journey from the Dominion to the Quaker City. The many families of the cactus tribe, the richest feature in the scenery of the Antilles, will form no mean part of the exhibition. And then, no doubt, lemons and pomegranates and oranges will hang from the branches on which their blossoms opened to the cooling of the sunbeams, amid their dark, ever-green leaves. Central and South America will display their vegetable riches; while the gorgeous products of the lands of the Ganges and the Nile will bloom as they do in their native soil; and the grape and fig of Palestine will be seen growing, for the time, on the banks of the Delaware.

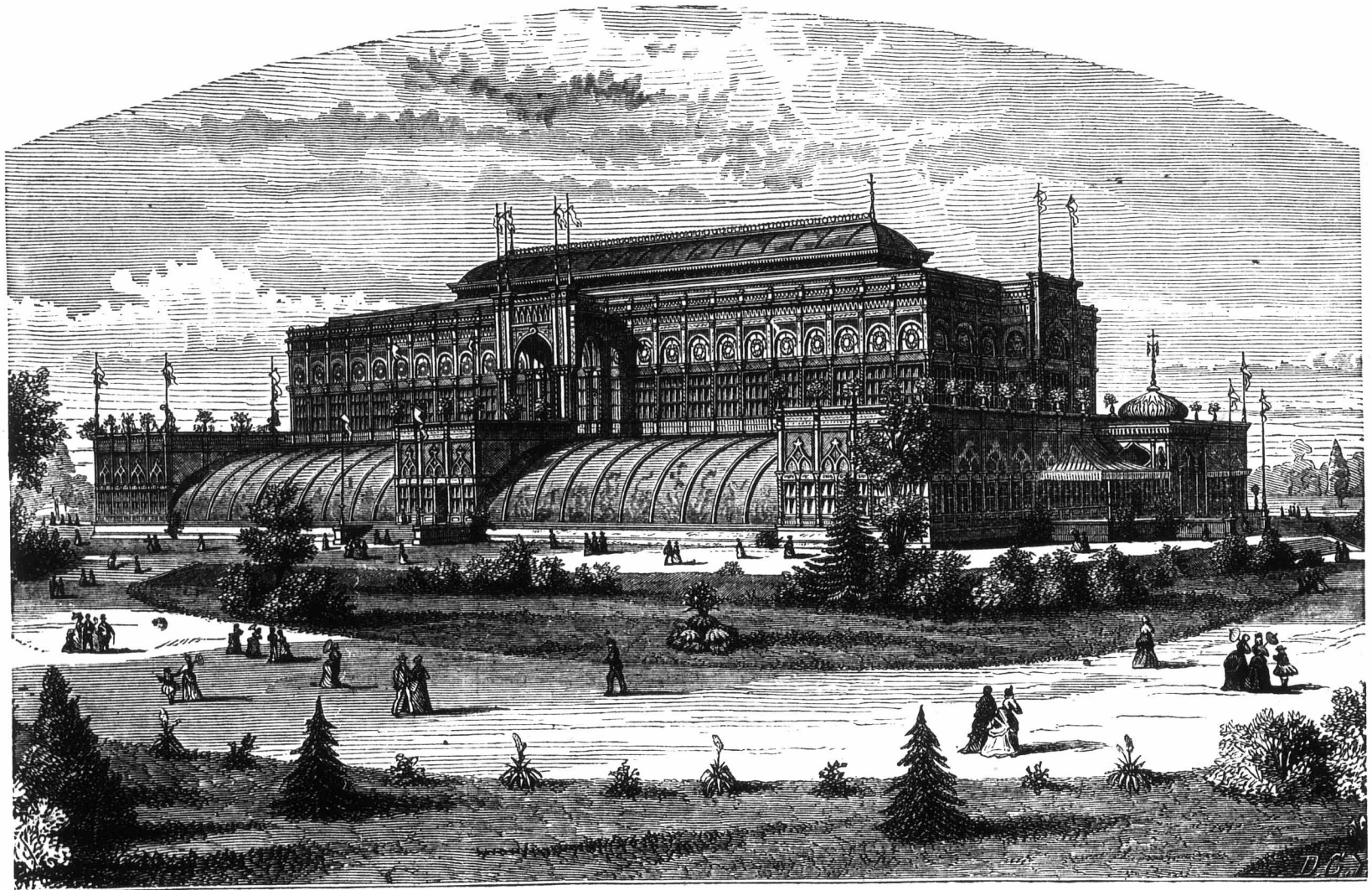
solid matter and two and one half pounds of nitrogen. While the same amount from another horse that was fed on hay alone only six and one half pounds of nitrogen. A cow fed on good hay and grain produced in 100 pounds of urine, ten pounds of solids, while fed on hay alone, only six and one-half pounds. Manure made from green feed does not contain only about one-half as much fertilizing element as if made on hay and grain. The bulk will be greater but the value less. Manure made from growing animals is worth less than that from mature cows. Also if the animal is hard worked and exposed to the cold and storms, the manure is far less valuable than from animals at rest in a comfortable barn.

The excrements of the different kinds of farm stock vary widely in value, as the manure from neat stock contains the least nitrogen and more water than that of any other stock. The more nitrogen contained in manure the more rapid its decomposition; hence it is sooner absorbed as plant food. Hence manure is richer in nitrogen than that of neat cattle and contains less water, consequently it decomposes more rapidly, and its

gen, the same amount from horses, five lbs; swine, six pounds; sheep, seven pounds; of mineral substances, cows, twenty-four one-fourths; horses, thirty pounds; swine, thirty pounds; sheep, sixty pounds; potash and soda, cows, one pound; horses, three pounds; swine, five pounds; sheep, three pounds; solution phosphoric acid, cows, two and one-fourth pounds; horses, three and one-half pounds; swine, four and one-half pounds; sheep, six pounds; would advise to mix the different kinds of manures, forking them over occasionally to prevent them from burning.

Superphosphate on Wheat.

A correspondent writing from Monroe County, N. Y., to the *Country Gentleman* on the effects of superphosphate drilled upon his wheat, says: "Last fall I drilled wheat on a summer fallow during a very dry time, putting 150 to 200 pounds of superphosphate, as usual. No rain occurred for several days, and the wheat was slow in coming above the surface. Two or three strips, where I had purposely omitted the superphosphate, came up five



THE CONSERVATORY OF THE CENTENNIAL EXHIBITION.

The Worth of Manure.

In an essay read before the Franklin Farmer's Club of Springfield, Mass., E. H. Judd, the author, says:

There is a very marked difference in the value of the same kind of fertilizer. Manure that I have purchased from stables in the villages and applied in like quantities, on soils alike in the last few years have varied widely in their results. Manure made where the feed has been hay and grain alone, is worth nearly as much again as that made from hay and roots. The more nutritious and liberal the food, the greater the value of the manure. Manures made from feed containing but a small amount of nitrogen are comparatively feeble in their fertilizing elements. Experiments prove that the urines of animals fed on grains and good hay, contain half as much more solid substance, and nearly two and a-half times as much nitrogen as that from animals fed on poor hay and roots, and nearly as great difference in the solid excrements. One hundred pounds of urine of the horse fed on cut hay and corn meal moistened with a little water, was found to contain 21 pounds of

fertilizing elements are soon taken up by vegetation. It acts immediately, hence its great value for all quick growing crops. The value of manure made from swine varies more than that of any other stock. If swine are fed on slops and potatoes and apples, the manure is of little value, compared with those fed on grain, or from the offal from the slaughterhouses. The excrements of sheep contain the most nitrogen. I think manure made from this stock worth nearly twice as much per cord as that made from cows. An English farmer experimenting with different kinds of manure made from cows, horses, sheep and swine, applied them on equal plots of land of nearly the same state of fertility and sowed also one plot of same size without any fertilizer, with the following results:

	lbs.
Plot without fertility.....	159
Plot with manure from cows.....	167
Plot with manure from horses.....	226
Plot with manure from swine.....	233
Plot with manure from sheep.....	244

He also had analyzed the excrements of the above named produced from winter feed: 100 lbs of the droppings of cows contained three pounds of nitro-

or six days before the balance of the field. Some of my neighbors thought I had killed the wheat, as the unfertilized portion appeared bright and green, while all around was bare. In a few days however, the manured wheat came up as well as the other; but for two weeks the unmanured wheat was the brightest and greenest. Then a soaking rain fell, and within ten days the situation was reversed. The rain dissolved the superphosphate, and immediately it shot ahead of the other, showing to a line where the manure came, all the fall. This spring the difference in favor of the superphosphate is greater than ever. The strip where the fertilizer was not distributed was badly browned in winter, while the manured part has been bright and green all the time. The effect is much more uniform than stable manure, as it is impossible to spread manure by hand as evenly as a good drill will distribute a fertilizer. It is necessary, however, that there should be rain sufficient to dissolve the superphosphate, or it will do no good to the first crop. It is possible even that it might in a very dry season do it a positive injury. I have drilled superphosphate with barley again this spring, and, as heavy rains came after seeding,

I expect go and four an makes twic difference

Touchin rule, plow be as well speak, if c of our app would be v

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Some tin all these p root penetr a depth of l of plants p raw earth, but roots c can not get as on porou down whoo 30 feet in deeply. T corrected l who woul fixed ideat the abstra Now about they are ascertain the stubbl furrows a the Downs ably brea They aim ally attain to the ev Eight incl a Guildha glass — pe wine glass mind, whi 5-inchglas ly familiar the usual o or five inch is wrong, with a sci the distric am always mation to ed the abe and asked so far as "No," s field, fore: the custo some of M We did so kind of l the gentle the surfac and been three of furrow, in boasts no never bri with gin, taking a a stateme he plows inch furro in maki say that for steam and all els that has b deserve o the painst its defect a good en

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I expect good results. The cost is between four and four and a half dollars per acre, and it usually makes twice or more than twice that amount of difference in the crop."

Deep Plowing in Sussex.

(P. P., in London Agr. Gazette.)

Touching that rash assertion that farmers, as a rule, plow only the depth of a wine glass, it would be as well for us all to use a 2-foot rule before we speak, if circumstances and our subject will admit of our applying such a test, and if not, why then it would be well to bear in mind this verse:

"Though modern practice sometimes differs quite,
Tis just as well to think before you write."

Some time ago a gentleman who had neglected all these precautions, discovered a parsnip whose root penetrated the solid clay, as he informed you, to a depth of 13 feet 6 inches from the surface. If the roots of plants possessed any such power of feeding upon raw earth, there would be no need for deep tillage; but roots can only follow air and water, and they can not get down far unless there is an outlet below, as on porous or rocky ground, or near an excavation; down whose sides they will run, near the surface, 30 feet in length, or in the case of land drained deeply. The matter was set right and the mistake corrected by Mr. Wilkins, and not by the gentleman who would rather shut his mind up than have his fixed ideas disturbed, whereas a lover of truth in the abstract must keep his mind continually open. Now about the wine glass and family bible furrow, they are not the rule in Sussex. The time to ascertain the depth of tillage is in autumn, when the stubbles are broken up, and in spring when the furrows are again moved. The farmers between the Downs and Forest Ridge invariably break up their fallows deep. They aim at 9 inches, and they usually attain about 8 inches, according to the evidence of my pocket rule. Eight inches is a tall wine glass quite a Guildhall and Gog Magogian wine glass—perhaps that is the kind of wine glass the gentleman had in his mind, while I was thinking of the 4 or 5-inch glass with which I am moderately familiar. But then he meant to say the usual depth of tillage is only four or five inches. As regards Sussex he is wrong. I was walking in June with a scientific and capital farmer of the district just mentioned, and as I am always anxious to gather information to forward to you, I mentioned the above assertion to my friend, and asked if he considered it correct so far as this district is concerned. "No," said my friend; "here is a field, for example, that fairly represents the custom of the country. This is some of Mr. Spudman's work. Let us measure it." We did so, and found it better than a foot, for that kind of land; that is, it was nearly 9 inches. If the gentleman could have seen the clouds that covered the surface, he would probably have smelt steam and been delighted. But it was done by horses—three of them in each plow, and across the old furrow, in June, by an old fashioned farmer, who boasts no superiority over his neighbors, and is never brilliant except in the nose, which shines with gin, for Spudman makes no more scruple of taking a dram, than the gentleman does of making a statement which he is unable to support. But he plows the regulation depth always, a nearly 9-inch furrow being the custom of the country in making fallows. In conclusion, let me say that I am as anxious as Mr. Mechi himself for steam cultivation, deep cultivation, tenant right, and all else necessary to secure the doubled produce that has been spoken of; but the country will never deserve or obtain these good things till it takes the pains to understand the state of our Agriculture, its defects, and its requirements; nor can it serve a good end to distribute error.

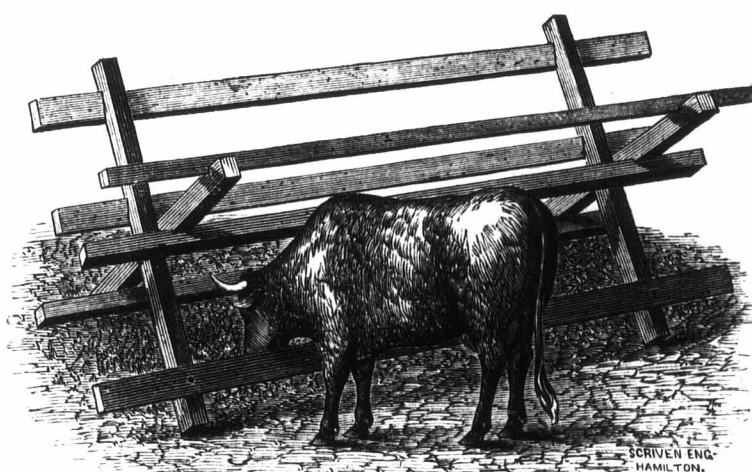
A new potato disease has made its appearance in Algeria within the last two years, and has totally destroyed two-thirds of the crops and threatens to do even a larger amount of injury. Potatoes attacked by the pest are utterly worthless for any purpose whatever. No animal will eat them, and on opening the tubers it is found that they are honeycombed in the centre, and filled with a blackish material that gives forth a very offensive odor. The grub which works the mischief is unknown in Europe, and the name has been given it of *Bryotropha lanosolla*.

Soiling Stock.

We have been shown by Mr. W. Harris, of Mt. Elgin, the model of a revolving fence, which appears to us to be a very useful plan for soiling stock. We give below a cut of this invention. The slats are six-inch boards, the drop pressure two-inch scantling, the whole construction being cheap and apparently efficient. It is so constructed as to allow the stock to eat green feed, green corn and clover in and under the fence, not allowing them to get off the feed with their feet, or get over or through the fence; also, as soon as the feed is eaten clean, the fence can be tilted over in the feed, allowing a fresh feed whenever needed. All good farmers claim a much greater profit when the soiling system is introduced—some say 10 per cent., but others claim 40 per cent.

Advantages of the Turnip Crop.

Turnips in Britain have superseded the old-fashioned fallow, and for this reason are often called a fallow crop. What an immense gain there must be in permitting no land to be idle. Experience has shown that it is highly advantageous to raise alternately a deep-rooted plant like the turnip, and a surface-rooted crop like wheat and other grains. The deep-rooted plants draw up from the lower strata of the soil valuable nutriment, and leave a portion of it on the surface, where it can readily be reached by the shallow-rooted plants. Moreover the broad tulip leaf attracts and absorbs moisture and fertilizing material from the atmosphere, which it returns to the land along with the nutriment obtained from the sub-soil, in the form of manure. The clean and



REVOLVING FEEDING FENCE.

high culture necessary to this crop, rids the soil of weeds, and leaves it well mellowed, rich, and in the best possible condition for a grain crop. Turnips furnish a welcome, wholesome, nourishing, green food for stock at a time of year when there is nothing else of the kind to be had. Growing stock will do better on straw and turnips, than on hay alone. The manurial value of the straw is greatly increased thus, while its decomposition is hastened by the pectic acid of the turnip. Hence to mix turnips and straw is an excellent method of feeding. It is not the least advantage of this crop, that it may be attended to after the hurry of the spring's work is over. Our season is a hurried and short one. Sweet turnips do well put in in the middle or latter part of June, and the white varieties in July.—*Canada Farmer*.

Plowing Twice for Wheat.

A correspondent of the Cincinnati, Ohio, *Gazette* writes:

If any one will break his ground deeply and thoroughly two or three times during the spring and summer the extra amount of wheat per acre will pay for plowing, and leave a handsome profit besides. I have tested this practice several times, with the most satisfactory results. In 1869 I had a field of sixteen acres of like fertility. I expected to plant half of the field in corn, but for some reason I did not. In the half that had been plowed for corn, after the ground had been broken, the weeds grew more rapidly. Consequently I broke it again on the 20th of June. On the 21st of September following I plowed the entire field, and sowed the wheat. The result was as follows:—

The half which had only received a single plowing yielded per acre thirteen bushels and eighteen pounds; the half that received three breakings yielded per acre twenty-three bushels and forty pounds, which made a difference of more than ten bushels per acre. At one dollar per bushel this would pay for the extra plowing, and leave a net extra profit of six dollars per acre besides.

The Health of Farmers.

Two or three years since, the Secretary of the Massachusetts Board of Health in the fourth Report furnishes a table extending over a period of nearly thirty years, by which is shown that the average age of farmers is far in advance of any other calling, trade or profession, the former being a little over sixty-five at death, while those last mentioned, rarely reach fifty-three years at death. It is shown too, that generally speaking, farmers enjoy better health than other persons, and if the statements are reliable, and there seems no reason to doubt them, it must bring us to the conclusion, that a farmer's occupation is, of all others, the most conducive to good health and long life. It must be borne in mind, however, that farmers and their wives may, like other people, wear themselves out by exhaustive labor. They may over-work themselves, and thus shorten their days, or they may sell the best of everything raised upon the farm, and live upon the coarsest and most indigestible food, and by such means entail upon themselves a variety of evils. Now, it is well known, that as a rule, first eggs, the earliest vegetables, and the choicest poultry, are sent off to market frequently, without any being reserved for the use of the family,

who perhaps are compelled to make a dinner off salt pork or something else that in certain seasons may do very well, but at other times again, if we are to believe the testimony of medical men, does much injury. A farmer and his family, need just as much as other folks, the best their farms afford, and it is neither economy nor good sense to sell the best and make use of the worst. Money in the stocking neither gives health nor happiness, a little of it is very good, in fact indispensable but it should never be accumulated at the expense of health and a sound constitution.—A pork diet and saleratus bread will not do much to help either, but the table which presents an abundance of vegetables, fruits in their season, good well made bread, and plenty of fresh meat, will do much to keep the Doctor out of the house, as well as furnish bone and sinew for the labor of every day, and materially aid in extending

life to ripe old age.—*Colonial Farmer*.

Absurdities.

Frosted grass does not tend to dry up cows. Apples in moderate quantities have no such tendency, but, on the contrary, may be fed to advantage—especially sweet apples. Potatoes are said to dry up cows also—nothing is more absurd, for they are an eminently milk producing food—and when small potatoes are not boiled and fed to pigs, the cows ought to have them. Pumpkins are well known as excellent milk feed, the seeds, however, are diuretic in their tendency and very likely to reduce the quantity of milk.—*Rural New Yorker*.

Canadian Butter.

Remarking upon the butter trade, an American trade journal pays a handsome compliment to the product of Canadian dairies in the extract following:—"Some misunderstanding prevails in regard to English market reports and circulars, confining American and Canadian butter. In some instances Canadian is reported as American, at prices which have not been quoted or realized for American, and none has been obtainable for export of a quality to compare with the finest Canadian. On the 14th November American was quoted at 120s. to 130s. and Canadian prime to choice 135s. to 140s. per cwt. Only certain grades of English and Irish butter are quoted higher."

A marvelous deposit of borax, several feet in depth, has been found in the bed of an ancient lake in Southern California.

Stock and Dairy.

To Make the Dairy Pay.

BY ALEXANDER HYDE.

The production of milk is, and must continue to be, the leading branch of farming in New England and most of the Northern States. Nothing can rival the dairy for profit, unless it is sheep husbandry in some favored localities, where dry, upland pasturage abounds and there is a good market for mutton. There are three dairymen to one shepherd in the country, and the capital invested in the dairy business is quadruple that in sheep husbandry.

The first and fundamental condition is a good herd of cows. We know of dairies in which the cows average their owners gross returns varying from \$100 to \$180. These we call good paying dairies. There are others in which the average runs as low per cow as \$40. This is not a paying business, and generally the prime cause of profit and loss is the quality of the cows. Mrs. Partington says there is as much difference in cows as in other folks, and she is right. A herd of cows is like a hive of bees, there may be so many drones that the working bees cannot support the swarm, and in this case the dairyman must do as the queen bee does, order the destruction of the non-producers. A cow that will not produce a paying amount of milk should be speedily turned over to the butcher.

For dairy purposes, it is not very material whether the herd be composed of natives or grades or thoroughbreds; but it is material that the cows should be adapted to the branch of the dairy business which is pursued. If butter is the objective point, then the quality of the milk should be more regarded than the quantity. There is no doubt that the Jerseys produce the most oleaginous milk. In well authenticated cases, Jersey milk has been known to yield thirty-five per cent. of cream, and five quarts of this milk have made a pound of butter. The average per cent. of cream from common cows is probably not over twelve, and the average amount of milk required to make a pound of butter is not far from twelve quarts. For all the practical purposes of the butter-maker, grade Jerseys are quite as good as the full bloods, and there is now and then a native cow which equals the best Jersey in her butter production. Such natives are few, and when we secure one we are by no means sure of a calf from her of like character.

If the chief end of the dairy is making cheese, or sending milk to market, then it would be folly to keep Jersey cows, for casein does not abound in their milk, and it is too creamy to be afforded at the ordinary price. The Holsteins give a large amount of milk, and they are therefore good for dairymen who send their product to market. Holstein milk is also rich in cream, and makes a very respectable cheese, though not as creamy as Ayrshire, which seems to combine oil and casein in the best proportions for all sorts of dairy purposes. For consumption in the family we prefer Ayrshire milk to Jersey, as the latter is too creamy for little folks to eat, not furnishing them with sufficient material for growing muscles and bones. It is worthy of passing note that Jersey skin-milk is blue enough, as the emulsion of the cream is rapid and thorough, and what is left is pretty much all water, but in the case of Ayrshire milk the cream rises more slowly, and only partially at the best, and the skim-milk makes pigs thrive nicely. If we desired a herd of cows fitted for all dairy purposes—milk, butter, cheese, and feeding to young animals—we should select Ayrshires.

After the herd is selected, the next thing is to take good care of it. In the hands of some dairymen the best herd will run down in a short time. A man must have a love for his business to succeed as a dairyman. He must be much with his cows, treat them as friends, study their dispositions and habits; in short, must feel a sort of paternal pride in and solicitude for them. It is said of the late Mr. Hammond, the famous Merino sheep herder of Vermont, that he was with his sheep day and night, and looked upon them with the same complacency that a father feels for his children. Whoever has this sort of feeling towards his cows will be sure to treat them well, and may be equally sure that they will return his kindness with brimming pails of milk. More depends upon this kind feeling between the cow and her owner than is generally supposed. A cow knows when she is petted, just as well as a child does, and when she has confidence in her master, she takes life easily, does

not get into a stew, but gives all her "mind" to secreting milk. It is kind treatment that makes the cow of the poor Irish woman give such a mess of milk. The cow is considered a member of the family, and, in return, the dumb beast does her best to support the family. We have known some of these petted cows, when bought at a high price on account of their milking qualities, and stabled and fed luxuriously, to degenerate into ordinary milkers. The new owners, instead of a gentle tap and a pleasant "so, mully," gave the cows a kick, and spoke sharply to them, of course, causing a nervous feeling in the animals, and preventing the secretion of milk.

The right food and plenty of it are essential to a profitable dairy. Every manufacturer knows he must have good stock or he cannot make good goods. Shoddy never made good broadcloth, and never will. A cow is a machine by which to manufacture grass, hay, bran, etc., into milk, and both the quality and quantity of the milk depend upon the raw material as well as the machine. Some German experimenter has recently promulgated the theory that the quality of milk depends upon the cow, the quantity upon the feed; but every farmer knows better than this. It stands neither to reason nor observation that corn meal nor oil-cake do not produce a richer milk than late cut hay.

We would not, however, recommend pressing cows, especially young ones, with much meal. It not only drives the machine too fast and wears it out too soon, but renders it liable to get out of order. A cow fed mainly on corn meal, or cottonseed, or oil-cake, or any such heat-producing food, is subject to garget and other inflammatory diseases, and in the long run produces less milk than one fed with hay, roots and bran. It is a great temptation to feed rich, carbonaceous food, it makes the animal look so sleek; but the dairyman should steadily resist the temptation. If he is wise, he will not encourage the tendency in his animals to put on fat, but will develop the milk-secreting glands. The tendency to fat or milk is partly an inheritance, but the nature of the food has much to do with its development. The beef-grower wants fat, and he should feed meal and other fattening food; but the dairyman wants milk, and succulent grass, roots and bran are better adapted for his purpose.

Another important question with milk-producers is, What shall we do with our product; make it into butter and cheese, or sell it in its raw state? We heard this subject recently discussed in a farmers' club of men of large experience, and the facts adduced went to show that butter-making is the most profitable branch of the dairy business.

One great advantage in butter-making is, that it does not draw upon the resources of the farm, as does selling milk or making cheese. The butter sold is mostly composed of carbon, a cheap article, abounding in the air and in most soils. The skim milk still retains most of the nitrogen and inorganic constituents of the milk, and as this is fed to pigs or calves, little fertilizing material is taken off, whereas in selling milk, all goes, and in making cheese the nitrogenous compounds are exhausted.

In making butter the profit is doubled and sometimes quadrupled by making a prime article. Poor butter nobody wants, but the gilt-edge brings almost any price the maker has a conscience to charge. The quality of butter is much more closely scrutinized than formerly. Very few families are willing to take up with what is called store butter.

The Dairy Factory in Hot Weather.

It is of greater importance than people are generally aware of that milk, before being dispatched to a cheese factory, should be treated with care and intelligence, as milk is peculiarly susceptible of injury from careless and improper treatment. The principles of decay and decomposition are present and active in the milk when it leaves the cow's udder; and under these conditions it is particularly liable, during hot weather, to suffer materially in condition by being put in closely lidded cans, and jolted in farm carts for a mile or two, over, in many instances, very rough and uneven roads, such as are generally found in dairying districts.

Were the milk, on being drawn from the cow, first of all "sieved" into a farmer's cheese kettle, or some other vessel whose wide, open top would admit of the free access of fresh air to play on the surface of the milk, and which would also at the same time admit of a free escape of the animal heat and the gasses with which the milk is impregnated

and charged, it might afterward be safely conveyed to the factory in the ordinary cans, its liability to suffer injury during the transit being reduced to a minimum.

Aerating and cooling should accompany each other. Neither is sufficiently effective without the other. Cooling kills none of the germs that produce putrefaction in milk, for the moment the temperature is again raised to a favorable height they at once reassert their vigor and activity like vegetation in May. But it retards their progress, and this is of importance. On the other hand, air absorbs and conveys away all the unpleasant odors, and kills all the decay-germs it touches. And the prompt removal of these from milk is of much moment to the flavor of the cheese which is made from it. It is therefore of the utmost importance, especially in flat and low-lying districts, that all farmers should be specially careful to aerate their milk as soon as it is taken from the cow. That, while the milk remains at the farm is of greater importance than cooling. This is sufficiently done in the factory, if the supply of water is adequate.

The "agitators" used in cheese factories to prevent the cream collecting on the surface of the milk, perform the further important office of aerating and deodorizing the milk, though, in my opinion, to a less extent than ought to be done until farmers have acquired the habit of aerating it at home. For this purpose there are several simple plans, the adoption of which would be of great benefit to the character and tone of the cheese. These precautions are, of course, only necessary during hot or electrical weather; but it is during the hot months that the finest grades of cheese are, or ought to be, made.

Cheese—The Influence of the Market.

The dairy business is two-fold. The first division begins in the pasture and closes when the cheese is boxed. The second division begins when the cheese is lifted into the wagon and ends upon the dinner table. Division first is manufacture; division second is trade. Of the relations of these departments to each other it is unnecessary to speak at length, although the inquiry is very interesting and profitable. It can not be doubted, however, that too little attention is given by dairymen generally to the second division. The influence of the product upon the market is better understood than the influence of the market upon the product, and yet the light which is reflected from the market ought to illuminate every part and process of the factory. Our dairymen know very well the deadening effect produced upon the market by a poor product, and the increased consumption and demand which follow the introduction of a fine article. They know the influence of an overstock or a scarcity. These are some of the most easily discerned indications of the influence of the factory upon the market. But reverse the process, seek for the lines of influence of the market upon the factory, and they are not so generally appreciated and understood. They are in their nature more subtle and more difficult to define, and yet success lies in discovering them. Teachers can easily trace the influence of a scholar's good or bad recitations upon their figures in their book of scholarship; but they cannot so easily determine how far the high marks of one scholar stimulates the remainder of the class to excel him. And yet no one doubts the strength of this influence toward better work throughout the school. Not otherwise is the effect which the sale of cheese reflects upon the manufacturer. First, there is what is generally recognized the influence of the market in determining the quality and form of the product. There is a commendable disposition manifested by the great majority of cheese-makers and factory owners to ascertain just what peculiar qualities of make the buyers with whom they come in contact most desire, and to amend their processes to reach this desirable result. This is well. It is an attempt to adapt the product to the consumer's wishes. It is an uncertain effort, but it is in the right direction. It is a wish to do something which will enlarge the eyes of the consumers, and this winning of the consumptive demand is the business principle which is the secret of success in the manufacture of any speciality. The attempt is rude and often unsatisfactory, because the buyer, whose opinion is asked, may be disqualified to speak; first, because he is not the principal operator, and does not fully and exactly know the wants of the trade; second, because he is not skilled in the manufacture, and can not shed correct light upon the way of doing a thing, or the particular point which is a fault, even if he knows what is desirable. Cheese makers often have oc-

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casation to laugh at buyers' suggestions, or, what is worse, they are misled by them. A man in a factory had his cheese severely criticised by a buyer, and he asked what change he ought to make in his making. The buyer said: "Put in a curd mill at once." A few weeks passed and the buyer returned. This time he professed to like the cheese much better, and remarked the fine effect produced by grinding of the curd. The maker smiled, but said nothing. The buyer might as well have said, put in a grist mill, for there had not been a curd mill in the factory during his absence. It is easy to see the effect of such an incident. It leads makers to distrust all buyers' comments, and though this is the inevitable result, it is unfortunate, because most valuable suggestions can sometimes be gained from visiting buyers. By the method which now exists for the reflex influence of the trade to effect the manufacture this influence is not permitted to do the best work. It is easy to say what the best work of this kind would be, but not so easy to say how it can be done. For instance, the influence of the trade is toward the sending of a uniform product from the factories. There has been improvement, but the trade has as yet only begun its influence in this direction. There are various kinds of cheese desirable in the market. There is white cheese, and cheese of light and deep color. There is cheese of different degrees of firmness. There are cheeses of certain weights and forms for certain trades. When the trade exerts its full influence upon the manufacture, there will be recognized certain well-defined classes of the product, and there will be a recognized standard in each class. Take the matter of color for example. The understanding in this particular is very definite. A buyer will say: "Your cheese would be better with a little more color." The maker increases the quantity. The buyer returns and bores the new make. He says: "What are you going to do with this cheese, it is red enough to paint a barn with." This is the trouble, a "little more" is a hundred times more apt to be too much than just enough. There is no standard. If the maker keeps on changing, his curing room will be like Joseph's coat, and then no dealer can use it profitably. Why cannot a congress of dealers agree upon two or three well defined grades of color, and, perhaps, issue to the factories slips of proper material, dyed with the proper shade, and marked with the distinctive mark of the grade. When a maker hits upon a certain grade of color recognized by the trade, he can then know that he is all right, if he is careful in giving uniform strength to his coloring matter. The matter of shape and weight could certainly be easily arranged in classes and the sizes for the different demands, and in time the cheese would take this form, for it would be just as easy for the manufacturer of dairy apparatus to make and sell "standard hoops," as for each to make a size of his own. The question of firmness is a more intricate matter; but could not standards be devised if proper application were given to the question. These are the ultimate results toward which all tendencies toward uniformity in the product are now working. The trade acknowledges itself embarrassed by the lack of uniformity, and the difficulty of securing uniform lines of the product. Let them tell us what uniformity would be most desirable. Let them give us a basis upon which to rest the uniformity. The New York Butter and Cheese Exchange is constantly winning wider recognition because of its efforts to ground the produce trade upon a more systematic commercial basis. Why not now sweep away the uncertainty which exists to the word of mouth method of communicating trade wants, and give us well defined classes and standards which the trade really desires in the manufacture?—*Utica Herald.*

Sheep Husbandry.

From a lecture by Dr. C. F. Kingsbury, in the *New England Farmer.*

The hour having arrived for closing the discussion upon grass, Dr. Charles F. Kingsbury, of Lyme, proceeded to deliver one of the best lectures of the course, upon the breeding and care of sheep. He said if one would be successful with sheep or with any other stock, he must love his animals, and it was very evident to his hearers that the Doctor not only loves his sheep, but that they also love him. He thinks sheep farming in New Hampshire has paid better for the past twenty years, than any other branch of farming. At a low estimate, 100 ewes will, every year, yield a net income of \$183, shearing 600 pounds of wool, and producing eighty lambs. The cost of keeping should be about \$297, and the income from lambs should be \$240, and

from wool as much more. Success, however, requires farms adapted to sheep, a knowledge of the business, an education for it, and a love for the animals. With such conditions for starting, the next step is in the direction of securing sheep with good constitutions. He gave the points to be observed in selecting sheep for breeding. Good, flat legs, full chest, wool full length on the face clear up the edge where it stops, round, but not pot belly, and wool instead of grease to make up the pounds of the clip, are among the good qualities of fine woolled sheep. Breeding ewes must have considerable exercise in the open air, and it is well to have the water at some distance from the feeding pens, to encourage exercise. Sheep should not be washed if the wool can be sold without washing, as water is not a natural element for sheep to live in, and they are always injured more or less by the operation. It takes too long for the wool to dry, and colds and catarrh are the usual result. Never hurry at shearing; treat the animals kindly and never cut the skin, as wool never grows again on cut spots. A master of his business will take the fleece off whole, close to the skin, without drawing blood; none other should be employed. The lambing season is a critical one for both mother and lamb, and they should be watched closely and treated with the best care. Castration and excising tails are necessary operations, but they must be performed neatly and quickly, and with the least possible loss of blood, and before the lambs are over five days old. Young animals have no blood to spare. A sponge dipped in a solution of persulphate of iron, applied to the artery of the tail after cutting, will prevent bleeding. Ticks may be destroyed on lambs by dipping them in tobacco water, but care must be exercised that their heads do not get under the liquid. To prevent foot rot, keep sheep on high, dry pastures in summer, and in dry clay yards in winter. It is as important to cut hay early for sheep as for other animals; late cut hay causes a bad condition of the system. Roots are excellent for keeping the bowels regular and a small feed would be beneficial every day in winter.

Working Barren Cows.

An experienced Kentucky breeder, Mr. Vanmeter, writes to the *Live Stock Record*, giving the results of his treatment of cows that had been deemed to be hopelessly barren. This specific as a remedy for barrenness is—work. At the famous New York Mills herd sale he purchased, for an old song—\$100—the Duchess of Thorndale, then deemed hopelessly barren, as she had not produced a calf for three years. His mode of management is simply to produce the flesh without producing inflammation. Starving the animal he thinks injurious, and adopts the plan of giving severe exercise with only moderate feeding. In most cases he works the supposed barren cow under yoke. In the case of the third Duchess of Thorndale, he had her led or ridden four miles daily, and fed on a limited quantity of hay and fodder. She is now in calf. Shorthorn cows are quite liable to prove, or become barren, probably because of their tendency to accumulate fat, and if the remedy given above prove effectual, and it certainly looks reasonable, it will increase the popularity of that breed.

Preserving Green Food for Stock.

The Central Agricultural Society, of France, has, by its practical and scientific commission, made an exhaustive report on the process for conserving green maize for stock feeding, during winter and spring, in covered trenches. The farm selected was that of M. Goffart, the agriculturist, who has adopted the plan since 1852, and who has also made it first known in France in 1870. There is nothing positively new in the idea. Since time immemorial, vine leaves have been preserved in a green state, in the district of Lyons, and which has made a reputation of the famous Mt. Dore cheese. In cider-making countries, the apple pulp is similarly conserved; in various parts of Germany, several vegetables are preserved in a green state for fodder, being generally seasoned with a quantity of celery; the same respecting beet pulp. M. Goffart's soil is peculiarly suited for maize; he prefers the South American varieties, the Caraguay especially, the stems of which often reach twelve feet in height. The maize is sown after rye, cut green; the latter receiving the manure. He cuts the maize before pitting it, and mixes cut straw and chaff with the mass. This induces regularity in fermentation, and best excludes the air. The larger the trench the better the mass is preserved; those who do not chop the maize, sow it thickly to have fine stems. M. Goffart obtains as high as

65 tons of this green fodder per acre, double that beet would produce; he nourishes 30 cows with the conserve, and they eat it with avidity, despite its alcoholic odor and slightly acid taste; the cows yield from 25 to 30 quarts of milk daily, and their calves had the silkiest of skins, the eyes brilliant, no better test than this to demonstrate the value of food given to their mother. About 60 pounds per day, per head, is the average consumption of the conserved food. The commission testifies to the results obtained by M. Goffart. Valuable in dry climates, but thinks very much remains yet to be accomplished as to the best plans for preserving autumn green forage for spring feeding.—*Western Farm Journal.*

Saltpetre in the Hog-pen.

I presume that many of the readers of the *Farmer* are not aware of the presence of saltpetre in their hog-pens, or its effect on the health and life of their hogs. It is a deadly poison to swine, and a hog that has once got a taste of it will dig for and eat it until it kills him, and that will not be long, either, if he is left in a pen where he can get at it. I have seen hogs refuse to eat corn and root for the nitre. Add to this the fact that most farmers keep their hogs in their barn cellars, which are perfect nitre-beds—that is, they contain all the conditions for the formation of nitrate of potash or saltpetre—a valuable fertilizer, but dangerous food for pigs.

The ammonia, and especially the liquid portion from horses and hogs, contains nitrogen, which, in warm weather, rapidly decomposes and turns to ammonia, which unites with the oxygen of the air and forms nitric acid. All soil contains more or less potash, and this nitric acid, leaching into the soil in the bottom of the pen, or the dirt that has been carted in, unites with the potash and forms nitrate of potash. There is no danger of their getting it as long as the pen is wet, but when it becomes dry, the saltpetre will crystallize in the dirt, and if the pigs get at it there will be sudden and mysterious death in the pen, and the owner will wonder what ailed his pigs, they weighing well, and the next he knew they were dead.

But how shall we avoid the danger? First, by never putting pigs in an old pen after the manure is got out, until the bottom is well covered with fresh dirt; then keep it well supplied with loam in dry as well as wet weather, remembering that it is in dry dirt only that it can crystallize, and while it is wet they cannot get at it.—*Cor. N. E. Farmer.*

MILK AS WELL AS BEEF.—If a recent discussion at a meeting of English breeders on the management of Shorthorn cattle, the chairman said:—"One great fault in Shorthorn feeding had been that they had looked too much to beef and too little to milk. He had been grieved to see a Shorthorn heifer unable to bring up her calf and to require an inferior animal to be used. Mr. Thomas Bates and other breeders used to boast about the milk as well as the beef-producing qualities of their animals, but this was not so now. The object of the early Shorthorns was not to have fashionable herds, but animals in the best condition; the miners and well paid artisans would not buy those great lumps of fat, but as prime mutton and beef as could be had. What the farmer now wanted was the class of stock fit to bring into the market as early as possible, and which would bring the greatest profit. What was wanted was to produce two-year old bullocks as prime as they formerly were at four years." Our own breeders would do well to give heed to the above observations; for too many of them, especially at the West, have latterly greatly neglected the milking qualities of their Shorthorns, paying almost exclusive attention to them for beef. We have repeatedly seen the first prizes at our cattle shows awarded to cows that had but two or three serviceable teats, and to others whose udders and teats were so small that they could not produce half milk enough to keep up a calf. It was not thus with the early Shorthorns—they were almost universally great milkers.

A pure bred merino ram, owned by a Mr. Gibson, of Tasmania, and reared by him there, was sold in Melbourne a short time ago for the sum of 680 guineas. While the ram was in Mr. Gibson's possession, the amount of money raised by the animal's male progeny alone was estimated at upwards of 5,000 guineas. Merino rams and their breeding of merino sheep seem to be almost as profitable in Australia as gold digging.

Garden, Orchard and Forest.

A. PONTEY - - EDITOR.

Gardening Operations for July.

This month will bring with it a necessity for extra care on the part of any one wishing to be the possessor of a beautiful garden in the months of August and September, when the majority of annual plants, such as asters, stocks, zinnias, balsams, &c., will be at their best. It will be highly necessary now, should the present dry weather continue, to give ample and judicious soakings of water to all newly planted things; we say soakings in distinction to the usual sprinklings that are generally given, which merely moisten the surface of the ground and never reach to the roots; in fact, such waterings are rather more injurious than otherwise for anything, tree, shrub or plant, for the reason that they induce a root growth near the surface, which is influenced by each recurring season of drought. The flower beds intended to be watered should be thoroughly hard first, and whatever weeds there may be, raked off; then the water should be applied in the evening with a liberal hand. Should the surface appear to bake after watering, hoe and rake again; the labor will not be lost on the flowers.

Verbenas and petunias will commence to run now, and should be pegged down; this will facilitate the rooting process at the joints, and thereby furnish an extra amount of nourishment to the plant; in short, instead of one plant with one root, you get a dozen plants in one root, with a feeder of its own and the help of the parent root as well.

This is the month for roses, that queen among flowers. Who, having a garden, would be without them? The hybrid perpetual varieties, both of moss and others, furnish us with magnificent clusters of this incomparable flower of every shade of color which the rose is capable of. Those who are the happy possessors of a bed of these delightful plants will now reap a harvest of pleasure and enjoyment in admiring them and enjoying their delicious fragrance.

But along with the flowers or in advance of them will come an array of enemies to the foliage in the shape of the red spider, green fly and the rose slug. The two former can be kept in check by an application of tobacco water through a syringe or fine watering can; Gishurst's compound and whale oil soap will eradicate the slug. As soon as the first flowers show signs of fading, cut them off three or four buds below the flower; this will encourage the growth of fresh shoots, which will again give a succession of fine blooms within a few weeks.

Dahlias will require tying to the stakes as they continue to grow; those who want fine blooms must also give them some liberal dressings of liquid manure or mulch the surface about the plant with well rotted manure (old hot bed the best), and water through it. Glass bottles, with wide necks, filled with sweetened water and hung in the plants will attract and destroy the insects which spoil so many good dahlia blooms in the buds.

Hyacinths, tulips and crocuses that have done flowering should be taken up and packed away in sand until the planting season again returns. We think it is preferable to leave lilies in the ground, marking the spot where they stand, so that they may not be disturbed; they gather strength by being allowed to remain a long time undisturbed, and by-and-bye, instead of one flower stem to a root, you will have half a dozen.

Those who are anxious to propagate them can do so by taking off some of the scales at the base of the bulbs and putting in clean sand.

Talking about propagating, some one of our readers may have a favorite rose bush or shrub which he or she may wish to increase. Now is the time to do so by layering. Take the shoots of this year's growth and peg them down into some fine sand; especially is this necessary with roses, as many of the plants sent out by nurserymen are budded upon the Manetti stock, and if allowed to grow a year or two under the supervision of people who are not adepts, the stock will outgrow the variety budded on it, and instead of a good variety of hybrid perpetual rose, the single manetti or aurette stock will be all that is left.

In scanning over a horticultural work recently, we came across an article from a sufferer from budded roses, who graphically describes his experience in the line, and one of his expressions

struck us as embodying the very essence of all that could be said about budded roses; it was: "They are a treacherous and troublesome nuisance, and must be incessantly watched, stealing more of the amateur's time and care than they are fairly entitled to." They are the worst of suckers, and he who grows them will be well *sucked in*. In the hands of a professional gardener budded roses may do, but for the amateur, have them on their own roots by all means.

In the fruit garden constant watchfulness must be exercised for insect pests. On the plum trees the curculio must be looked out for and destroyed; on the currant bushes hellebore or carbolate of lime must be freely used to destroy the worm; the gooseberry bushes must be mulched with fine grass or some other suitable article to prevent as much as possible the spread of mildew. On the apple trees the caterpillars must be looked after and destroyed.

Talking about caterpillars, any one having a small orchard would save himself a great deal of trouble the following season by going over his trees in the fall and cutting off the twigs around which he finds the band of eggs fastened by these butterflies.

In the vegetable garden late cabbage and celery are about the only two principal things to attend to now. Let those who are fond of celery bear in mind that to have it good it must be grown quickly, consequently it wants generous feeding in the way of manure, and any amount of the principal ingredient in hydropathic treatment. Hoe thoroughly and deep; never let the weeds get a start, but hoe before they appear, and you will not only have a clean garden, but one in which the garden products will not suffer from drought as do those of the gardeners who spare the hoe and elbow grease.

Apple Vermin.

OLD APPLE TREE BORER.

Saperda cunicata—(Fab.). Sub-order Coleoptera Family Cerambycidae.

From the forthcoming Report of the State Board of Agriculture.

This pest, which has been so long in our country is widely distributed in our State. Very few, if any, orchards are exempt from its attacks. Not that it always, or generally, totally destroys the trees, still those suffering from its attacks are always lessened in vitality, and it not infrequently happens that the trunks become so riddled with their tunnels that the tree becomes a prey to the hard winds, which are sure to come with each returning year.

NATURAL HISTORY.

The beautiful brown beetle, with its two stripes of white, appears early in June, and thence on through July. So the egg-laying is principally done in these two months. The grub, whitish with a black head, eats through the extremity. I have frequently found apple tree limbs no larger than my thumb, with a tunnel as large as a pipe-stem. These larvae push their sawdust like particles back of them and out of the hole where they first entered, so that it is not difficult to find them. They live and feed on the wood of the tree for three years; hence we see how that a single larva might have bored, if left undisturbed, for a distance of several feet. They finally bore a hole for exit, fill it slightly with their sawdust, and a little back of the same make a cocoon of their own chips, in which they pupate. Soon after, in June and July, the beetles again appear.

REMEDIES.

Soapy mixtures are found to be obnoxious to these beetles, so that in their egg-laying they are found to avoid trees to which such an application has been made. Thus we may hope to escape all danger by washing the smooth trunks of our trees early in June, and again early in July, with soft soap, or a very strong solution of the same. T. T. Lyon, now of South Haven, whose judgment is very reliable in such matters, urges that we always use the soap itself.

We should always examine the trees early in September, and wherever we find this pernicious grub's saw-dust shingle out we should always give him a call. Perhaps we may reach him with a wire thrust into the hole, and by a vigorous ramming crush the culprit. If we have doubts as to the

crushing we should follow him with a knife, but, in cutting out the borers, too great care cannot be taken to wound the tree just as little as possible. This heroic method is sure, and requires very little time, and no person who takes pride in his orchard, or looks to it as a source of profit, can afford to neglect this September examination, nor the previous application of soap to which it is supplementary.

About Mulching Fruit Trees.

All successful and intelligent pomologists recommend the practice of covering the ground round about fruit trees with straw, coarse manure, sedge, tan bark, sawdust, or any sort of material that will smother every weed and grass, and keep the soil moist and mellow. It requires only a thin layer of straw to accomplish the desired purpose. Still, if one has only a few hundred fruit trees to be mulched, it will take such a large quantity of mulching material that few persons are willing to incur the expense incident to collecting and spreading the needed supply. A farmer in New Jersey, who has a large pear orchard in full bearing, keeps all the ground about the trees covered so completely with sedge, that not a weed nor any grass appears. When pears fall from the trees, they are received without being bruised on this soft bed. He likes the practice of mulching fruit trees, but says it costs a great deal to collect sedge and spread it.

I have a few hundred fruit trees of the most desirable varieties; the ground around which is mulched as fast as suitable material can be collected. When all kinds of mulching in my neighborhood may be sold for \$10 to \$20 per ton, trees are not apt to be mulched. Knowing how highly I value weeds, a near neighbor, having four or five acres of bogmead, on which he dreaded to mow with his own manual force, proposed to give me the entire growth of that ground if I would cut weeds and all, neatly, and remove the burden from the ground.

The growth of vegetation on such ground must be removed every season, or the old and dry stems will render it almost impossible to mow the succeeding crop. There are thousands of acres of such grass and weeds about the country which go to seed undisturbed, simply because the proprietors have not sufficient pluck to cut the heavy growth, cure and remove the burden, all of which would make excellent mulching.—*New York Observer.*

Manuring the Soil about Fruit Trees.

Concerning this important subject, Casper Hiller, of Conestoga, Pa., writes:—"Chemistry has satisfactorily demonstrated that the alkaline earth found in ashes of plants and their fruits, must abound in the soil, or good trees and good fruit cannot be expected. Potash, lime and phosphate of lime enter largely into the apple, pear, peach and grape, and all virgin soils naturally contain these in a greater or less degree. It is estimated that 120 pounds of these alkaline earths are taken out of each acre annually, by a crop of tobacco. Wheat, corn, potatoes, trees and fruits, all take up a large amount of this food, and we need, therefore, not be surprised that our apple trees are short-lived and our fruit imperfect. Stable manure, as our own experience has shown, will not supply in sufficient quantity of alkaline salts of which we robbed our orchards by injudicious cropping. We can see evidence of this from the fact that no orchard can be successfully raised on the site of an old one. These losses can probably be made up by judicious use of lime or phosphate of lime, ashes or potash, charcoal, &c. No general rule can be given for the application of these special manures, because we do not yet know enough about it to lay down a regular formula. But we might say, as did the doctor, "quantity sufficient." Some soils may want much, others little, and some one kind and some another. Two pear trees that had for years brought no good fruit, were made to yield fine fruit by digging a trench a few feet from the trees and filling it with suds mixed with two bushels of charcoal and two pounds of potash. A successful grower of peaches scrapes the soil from the base of the tree and pounds half a peck or more of fresh lime around them. Old peach trees have been renovated by pouring a few quarts of hot lye around them. Five or six years ago, Thomas Mehan planted an experimental orchard of 1,500 trees—apples, pears, peaches, cherries and grapes—and from the start put it into grass, and has since annually taken off over two tons of hay per acre. Those who have seen it pronounce it a model of perfection.

A Long Is dealing with every suggestion. "I have now around the many thousands commenced each week using that pe traps, I co which fell f destroyed the which were By putting continuing week, both son are key apple orch the worms wormy app in Michigan tem has lon fruit growe adopt and p at conventio many go h That is the

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Marshall erican Pon said: This is a necessity of impress tea lutely neco to send lar progressing the Sackel markets th extra size, common va fruit, or ev economical in the pre shall take smaller,

The Codling Moth.

A Long Island fruit grower gives his method of dealing with the Codling Moth. After trying every suggested mode without effect, he says: "I have now adopted plain woolen rags wrapped around the stems of the trees, and have caught many thousands in this manner. Last summer I commenced on July 20th, examining these traps each week until September 28th, and I killed during that period 2,841. Besides employing these traps, I collected and cooked all infested fruit which fell from the trees. By this means I destroyed the larvæ of a large number of curculio, which were also in the immature apples gathered. By putting on the bands early in the season and continuing them late, examining at least once a week, both broods which usually appear in a season are kept in check. If every man who has an apple orchard puts this simple plan of destroying the worms into practice, we should hear less of wormy apples." There is nothing very new to us in Michigan in these suggestions. The band system has long been commended to the attention of fruit growers, but the trouble is to get them to adopt and practice it. They all hold up their hands at conventions in the winter time, but how many go home and practice what is preached? That is the trouble!

Pole Beans without Poles.

J. B. Root, of Rockford, Ill., tells in his Garden Manual, how he succeeded last year in raising Lima beans without poles. One-fifth of an acre was planted in hills, six seeds of each, eyes down, and when the runners were three feet high if straightened up the tips were nipped off, thus inducing prompt development of all blossoms, and a set of side shoots which clung to each other and formed a sort of cone. No more pinching in was practised for fear of too late a growth. The result was the plant seemed content with a less stature, and a large proportion of the settings matured. The crop was fully one-half greater than ever before, and more than a half greater than that on poles the same season. Hereafter he will confine himself to this method, with the difference that a lath, set deep, will be used for each hill. This will furnish something for the cone to cling to in a wind, and the top of the lath will be a good point at which to nip the vine. It is added that if the crop is raised for ripe beans there should be several pickings, as some of the pods touch the ground and in a wet time the beans become stained. While others are advised, on the strength of this experience, to try the plan, it is "recommended that with this, as with all new things, to 'hasten slowly,' and never risk an entire crop on an experiment."

Pear Blight.

G. B. Leighton, at the meeting of the Norfolk, Va., Horticultural Society, remarked about pear blight: "The Commissioner of Agriculture recommended the use of carbonate of lime with sulphur added, say one pound of sulphur to six or eight pounds of carbonate of lime reduced to the consistency of thick whitewash and applied to the diseased parts, and where the bark is diseased remove the outer portion before making the application. I have used this with magical effect on blighted or diseased trees, but in the future I shall use the formula recommended by Hon. Wm. Saunders, of Washington, who has charge of the public grounds, as being more economical than the above, on account of the volatile nature of carbolic acid, to-wit: To half a bushel of lime add four pounds of sulphur; slack to the consistency of whitewash; and when applied add half an ounce of carbolic acid to each gallon of wash and apply as soon as needed."

Thinning Fruit.

Marshall P. Wilder, in his address at the American Pomological Convention, at Richmond, Va., said: "This is a lesson which we have learned, and the necessity of which we have often endeavored to impress upon cultivators, and which successive lessons teach with stronger emphasis. It is absolutely necessary for all who send fruit to market to send large fruit, and the markets are constantly progressing, requiring large and fine fruit. Even the Seckel pear, which once commanded in Boston markets the highest price, will not now, unless of extra size, sell for any more than, if as much, as common varieties of large size. A medium sized fruit, or even one of the smaller size, may be more economical for use, but until some decided change in the preferences of the majority of purchasers shall take place, larger fruit will sell better than smaller."

Insects on Flower and Plant Culture.

Mrs I. H. Williams, a successful florist, furnished a paper for the recent meeting of the Wisconsin Horticultural Society, of which the following is the main portion:

The aphid or green fly is so well known to all plant-growers that it scarcely needs a description, and is the easiest to dispose of in the green house by smoking with damped tobacco stems, then syringing. This knocks the stilled bugs down into the earth, where their wings become covered with it, and soon die. Plants in the house may be washed with warm suds and rinsed off with clear, tepid water, and then remove the surface of the soil where they will fall. Garden plants may be syringed with tobacco tea, made by pouring boiling hot water on tobacco stems. A decoction made from quassia chips is also recommended as a wash. Encourage the lady-bug and the toad in the garden. They are untiring, ever vigilant and valuable assistants in destroying those insect foes.

The red spider is the most insidious and annoying of all insects; its appearance is sudden and it is difficult, on account of its minuteness, to be noticed until much mischief has been done. They seem brought into life by a dry, hot temperature, and, when they have taken possession, are a difficult clamant to remove. A cool, moist temperature is death to them, and this can be obtained by repeated dippings and showerings. The instinct of self-preservation seems strong in all the insect tribe, taking refuge as most of them do, on the under side of the leaves. Oftentimes the red spider cannot be seen without the aid of a glass, but their presence soon speaks for itself by the turning brown and curling up of leaves. A wash composed of two ounces of soft-soap to a gallon of quite hot water, into this dip the infested plants, let them drip and return to the wash again, then wash off with clear water.

The mealy bug is the most repulsive looking of all insects. When viewed through a microscope it resembles a tiny poodle dog, pinkish white in color, oval in form, unpleasant to kill, and a very troublesome intruder. It is found on hard wooded plants such as the fuchsia, ivy, geranium, hoya carnosa, or wax plant, and even taking possession of the most prickly of cacti. Smoking, freezing, drowning harms them not. The only remedy is a strong suds of whale oil soap applied with a tooth-brush. It is found in the axil of the leaves, where it makes its nest, and to the inexperienced eye, looks like a mere speck of down, but at that speck take alarm and be on your guard, for they spread rapidly. There is another remedy which is only superior for the reason that you are not obliged to rewash the plant in clear water to remove the soap. One part of alcohol, three parts water, applied with a small paint brush

The scale bug is a small, oval, brown-backed insect; with thick shell clinging so closely to the stalk or leaf that it seems to be part of the plant. They must cling by section, for I have never been able to discover any visible means of locomotion, or ever seen them move, as one may other insects.

They must be rubbed off with the hand, then wash with strong suds of whale oil soap. They are found on obutlons, ivys, orange, lemon, and sometimes on roses. Plants thus affected should, in the Summer, be planted in the ground and let the busy little ants do the work of cleaning for you, and right well will they do it.

The thrip is a small, white fly, usually round on the under side of the leaves. The least touch of the plant will cause them to rise and fly. They are generally found where plants are too much crowded, or in badly ventilated places. Tobacco smoke will dislodge them, or where there are but few plants, sprinkle and wash often. They be will found on bouvardias, salvias, lantanas and roses. Plants so affected will have on the under side of the leaf a tiny white speck. This is the egg or germ which produces the insect, so be sure and remove it.

The rose slug is a small light-green worm which makes its appearance about the first of June, to greet our lovely June roses. They, like the rest, shelter themselves under the leaves; they come like a vast army in battle array, ready, to defy us. They make sad havoc, not only with the foliage, but even destroy the buds, so that some years it seems impossible to preserve this queen of flowers from their ravages, and many in despair reluctantly give up the culture of the rose. I have tried the following, and know it is valuable, destroying the slugs without injury to the plants: One-fourth pounds of white hellebore and one-half pint soft

soap to a pailful of water. Early in the morning use wash with a garden syringe, as with that, one can reach the under side of the leaf. In August, if any were allowed to escape in June, they will return again, patch closely and at once apply the remedy.

Duration of Pine Forests and Timber-Growing.

It is not a small thing to to be treated with contempt whether forests may or may not be planted, and the people and Government be guiltless. Scarcely enough timber for the supply of the necessities of a generation is left in this country. According to a careful statistical calculation by the most intelligent lumbermen of the country, there is not an amount of pine timber now standing in the forests of the United States sufficient to supply the demands of the market for the next eighteen years, allowing the rate of increased consumption to be the same as it has been in the last ten years. Therefore immediate and extensive planting of pine and other varieties of rapidly-growing timber alone can save the future multiplied millions of population from distressing want. On all our own wide untimbered plains and among the hills and valleys of the Atlantic slope, let this work be done. In a very few years timber may be raised from seed-planting in abundance both for fuel, lumber and the mechanic arts, and all the blessings of forest protection enjoyed. It was but ten years from my first importation of European larch plants, then no larger than a goose-quill, that I cut considerable number of forest-posts, and in the twelfth year hundreds, many of them eight to ten inches in diameter.

My forest at Elgin Ill., encircles and covers a considerable portion of sixty-five acres of land, and has afforded a sufficient amount of fuel for the last ten years for two families. When it had been planted fifteen years I cut and manufactured into lumber several tons of the various kinds of wood, namely: European larch, white pine, white ash and soft maple, trees having a diameter at the stump of from eight to eighteen inches; which lumber I incorporated with the finishing lumber of my present residence in this city. This artificial forest now standing on land which was bare prairie in 1859. This, the planting and raising of forests to a size sufficient to cut into lumber for building purposes is the work of only a few years. The man of twenty-one years may plant the seeds of many of the most valuable varieties of woods, and at seventy see stately forests of pine and larch, and many other varieties, more than 100 feet in height and from two to three feet in diameter and worth many thousands of dollars per acre. —*Granantown Telegraph.*

Profit From Forest Trees.

It matters little whether it be Norway Spruce, White Pine, Scotch Larch, American Elm, Red or Soft Maple, &c.; all and each with many more are rapidly and easily grown. The simple course is first to sow the seeds thinly in beds with rows 4 inches distant each from the other. Shade them, from the time of seeding, both winter and summer, until they have grown to be 4 to 6 inches high; then, having made the ground loose and pliable, transplant into rows 4 feet apart and the plants 1 foot apart in the rows. This will give something over 10,000 plants to the acre. At the end of three years every three plants out of four should be taken up from out of these rows and replanted in another field at distances of 4 by 6 feet. The growth now of both plantations will be repaid, and in three years more than one-half of the whole will be of 12 to 20 feet in height and a diameter of 4 to 6 inches, and valued for various purposes at 30 to 50 cents each. The removing of these pays for all the previous labor, and interest on land, and the stock left on the land, it is safe to say, in 6 years more will sell for \$2,000 per acre. So much for a calm view of judicious investment, where money can be spared and the future looked to for its return at a large profit. The few varieties I have named are as nothing, for the Chestnut, Butternut, Black Walnut, and many more of fruit-producing trees, have in them qualities of value for timber, and should the investor grow 1,000 acres, less or more of them, their production of fruit would fully compensate him, if he did not care to thin them out from time to time for sale as timber. This world is only half or a quarter peopled as yet, and each and every year man is becoming cognizant, and more and more dependent upon the value of the fruits of the earth for health and vigor of life.

Correspondence.

[In reviewing for the press the communications from our many contributors, we have abridged them not a little. They will, we hope, excuse us for using the blotting stylus so freely. In all our communications with our readers our aim is to be brief, pithy, and to the point. Some correspondence we do not insert at once, but hold over till we find less pressure on our columns. The letters, queries and observations are daily in receipt of from the agricultural friends of our journal, even if brief, we value highly. They in many instances point out to us the want that needs remedying.—Ed.]

"Sarawak" on the Potato Beetle, a New Agricultural Implement, &c.

To the Editor of the FARMER'S ADVOCATE.

SIR,—The crops generally are looking well in this part of the country, although I have heard some complaints of rust and mildew: but I believe the damage is partial, although I cannot say so much for the potato bugs, as they are becoming more numerous than ever. I happened to pick up a bug in my hot-bed in May last, and, observing a peculiar appearance about it, I placed it on the palm of my hand, and on moving it, I found that the appearance was nothing but a lot of young ones, which began to run about on my hand in a very lively manner, so of course I threw the whole brood into the fire. This discovery, though of no practical use, may account for their being so very numerous when they first appear before any potatoes are overgrown. I may add that the parent bug, though marked with ten lines, had no wings developed. Farmers at a distance from large towns must only plant enough for their own use, and look well after them, and at the same time plant only the earliest varieties. Last year my Early Rose potatoes were ripe in three months after planting, so that if only these and any other variety which may be equally early and possessing better keeping qualities, were planted as soon as possible after the frost is out of the ground, the whole crop, unless checked by the June frosts, would be saved by the end of July, and the bugs would have to find something else to feed on for the remainder of the summer. However, a great deal will depend on the season. My Early Rose potatoes this year were planted on the 14th May, and although they are now of a good size and quality, yet they will not be ripe in three months after planting; still they will ripen long before the common varieties. When a crop of potatoes can be got off the ground by the end of July, they might be followed by a crop of White Globe turnips, which would come in handy for the cows late in the fall.

In the Report of the Exhibition of the Royal Agricultural Society at Bedford, I find a Canadian drill on a new plan was exhibited by Hollings Bros., and I hope the attention of some of our agricultural implement makers will be directed to the new topping and tailing machine, and also to the turnip thinning machines, which I should think would be very useful to those farmers who raise large quantities of turnips.

I have seen a statement that the farmers in the Western States are beginning to enquire what has become of the money they have subscribed for their respective Granges. Will you state in the ADVOCATE next month to what purposes the money subscribed for the District and Dominion Granges is applied, and whether the accounts of the respective treasurers are to be audited every year. I have no doubt that the Granges, if honestly managed, will prove very beneficial to the country, and if the Grangers would exert themselves in their respective localities to check the extension of horse racing and the consequent gambling, which, I am sorry to say, appears to be spreading amongst the farmers in this part of the country at least, if not elsewhere. It has long been a subject of regret that farmers' sons are too fond of leaving home and seeking employment in the cities, for which their previous habits have not prepared them, and if the passion for horse racing and gambling should continue to spread amongst them, matters will only become worse. The farmers are the substratum on which the prosperity of the country depends, and if that foundation should ever become rotten at the core, how can the country continue to prosper?

We have had exceptionally variable weather during the summer. For instance, on the 19th ult. ice was formed a quarter of an inch thick a few miles to the south of Owen Sound, and on the 25th the thermometer indicated 92° in the shade at this place; and on another occasion the thermometer was 82° at 4 p. m., on one day, and 58° on the evening of the next day at the same place.

So the late Rector of the Agricultural College at Guelph has found it necessary to resign office. I have noticed the advertisement issued by the Minister of Agriculture for another Rector, which is the sickest thing I have seen for a long time. The College under its present management is a sheer humbug, a mere refuge for needy Government partisans, but if the whole establishment were let to a company of practical farmers, the rent would make some return for its cost, with a much greater amount of benefit to farmers' sons than will ever be the case at present.

June 8th, 1875.

SARAWAK.

To the Editor of the FARMER'S ADVOCATE.

Is Salt of any Value as a Fertilizer?

SIR,—Several years ago Mr. Lawes submitted a paper to the Royal Agricultural Society of England, in which he detailed a number of carefully conducted experiments with salt, which showed conclusively that a general top-dressing of salt exerted no effect at all, either by increasing the growth of straw or by augmenting the crop of grain. A commission of eminent chemists, designated by the French Government, reported that it had no value at all as a fertilizer. It is possible that salt may be of some value as a fertilizer in this province, which is so far remote from the sea that there can be no saline particles in the air, and it would be well if some carefully conducted experiments were made on different soils and in different parts of the country. For such experiments to have any practical value it will not be sufficient to scatter it broadcast over the whole of a field either of grain or grass, and then report that the crop was benefited by it, but the salt must be used on part of the field only, and the quantity used per acre carefully noted, and also the yield of grain and straw, or of hay, as the case may be correctly ascertained.

It seems simply absurd to suppose that a top-dressing of salt, unless very heavy, can have any effect in destroying either grubs or wire-worms. Suppose 300 lbs. of salt applied to an acre; that quantity contains 4,860 ounces, whilst there are 4,840 square yards in an acre, so that there would be less than an ounce of salt for every piece of ground nine feet square, or about as much salt as is sprinkled on a beef-steak when cooking.

The favorable result of applying salt to Indian corn or beans in the hill is owing to the salt being applied at planting time, and is explained on the theory that the salt being dissolved and taken up in the sap, renders the stalk of the corn or beans distasteful to the grub. I have read an account of the experiment being tried by an American farmer on part of a forty-acre field of Indian corn, with very favorable results. I have for the last two years tried it myself on beans by scattering the salt along the drills as soon as the beans were covered, and certainly I had fewer beans destroyed by the grub than in former years when I used no salt. Nevertheless, I do not consider the result sufficiently satisfactory to form a precedent for others to follow. I intend to repeat the experiment this year with more exactness, as the grubs are more numerous some years than others. By weighing the quantity of salt used and applying it only to a part of the crop, I hope to be able to make a more correct report at a future time. I have applied salt with a very good effect to onions that were being destroyed by the onion maggot, but it must be applied very thick and more than once during the season. I have seen brine from a beef barrel applied when the onions had obtained half their growth, but although the ravages of the maggot were checked, yet the tops of the onions were injured so as to interfere with the full development of the bulbs; so I prefer to use the dry salt, and if the weather should prove dry, give a good watering immediately afterwards, so as to dissolve the salt.

Salt may be beneficially applied to plants of the cabbage tribe, and also to celery, but these are marine plants originally. I have never taken the trouble to raise asparagus, as the soil of my garden is too heavy for that vegetable, but a lady who

formerly resided in Owen Sound, and who prided herself on her garden, assured me that when she raised asparagus she used to apply a dressing of salt three inches thick; but that garden was originally a quicksand, so that when fruit trees were first planted there a quantity of shavings had to be placed in the holes dug for the trees before they were set out.

I would recommend this subject to the attention of your readers, and hope some of them will be induced to experiment with salt and report the results.

CHARLES JULYAN.

Queries on Onion Culture, Quack Grass, &c.

To the Editor of the FARMER'S ADVOCATE.

SIR,—Will you or some of your correspondents be kind enough to furnish some information respecting onion culture.

Will it answer to sow the seed in the fall on soil that is too wet in the spring?

What are the most profitable kinds?

How much seed per acre?

Which is the best way to harvest them?

What is the average yield per acre?

Will broadcast sowing answer on clean ground?

I have read Mr. Doyle's method of killing quack.

This is how we did last summer on a field that was part sod, part stubble, some of the stubble being very weedy and thistly, and all of it quack. We plowed the stubble early in the spring very shallow with a gang plow, so as to cover the seeds of weeds, that they might start to grow; allowed the cattle to eat all they would, and kept them in till they ate everything close. Then about the middle of June we cut close with a scythe all thistles and weeds the stock had left; plowed deep, and as fast as plowed, harrowed slightly to smoothen the ground a bit, and sowed thick with buckwheat, keeping the harrows close after the plow. The deep plowing buried the weeds and quack, roots and all. The close cutting left no stalks for the things to breathe out. Plenty of animals can live under water so long as they have their noses out. The same rule applies to plants partly. Sowing immediately after plowing, while the soil was yet moist, gave the buckwheat an immediate start. It came on well and smothered almost everything else that tried to grow, and left the field in fine order.

I think this method less troublesome and more profitable than Mr. Dople's. S. P.

[Onion seed is very hardy, and if sown in the fall will, the greater part, if not all, live in the ground through the winter and grow the following spring. Fall sowing is practised by some gardeners in the milder climate of Britain, but we have never known its being tried in Canada. Onion seed shed in the autumn in our own ground here we have known to vegetate freely the succeeding spring, but we would certainly prefer spring sowing, if at all possible. Some of the seed might perish through the long, severe winter months, and the consequence might be a failure or only a partial crop. Could not your soil, too wet in the spring, be drained? There is little profit in the culture of wet land. The most profitable kind of onion is a doubtful question. The Red Wethersfield is said by some to be best for a general crop, though the yellow onion, or Danvers are better for keeping, and the White Portugal is by many preferred to all others, as having the finest flavor. To harvest them you must pull them and then let them dry thoroughly. As much as four hundred bushels per acre has been raised on good soil, well cultivated. There is no advantage in sowing onions broadcast, compared with drill culture; were there no other objection to it than the expense of weeding, that would be sufficient. The old method of sowing broadcast has given place entirely to sowing in drills.—Ed.]

Fall or Winter Barley.

SIR,—Would you please inform me through the ADVOCATE if there is any such thing as fall or winter barley, and if it is as profitable to raise as spring, and also where the seed can be got.

WM. ADAMS.

Pigeon Hill, Q., 24th May, 1875.

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[We at one time introduced barley for fall sowing, but it did not succeed, though fall sowing does well in England. Bere or Bigg, specially adapted for fall sowing, you will find mentioned in the ADVOCATE for June. We have not heard of its being tried in this country.—Ed.]

From Carlingford.

SIR,—I commenced taking your excellent paper for the first time this year, and I like it well. It is the best agricultural paper I have seen.

We have about sixty acres of land, which can be divided into nine fields nearly equal in size. It has been cropped with wheat and other grain crops until it will hardly bring an average crop. We intend going more into the dairying in future, and we want to try the soiling system. I have been thinking of the following rotation as best suited to yield the most feed: 1st, western corn; 2nd, oats; 3rd, green crops for summer feed; 4th, roots; 5th, peas; 6th, fall wheat; 7th, 8th and 9th, meadow. I would like to know whether you think the above is the best order for the rotation or not.

Would you be so good as to inform me whether you know a good plan for destroying blue lice on cows, and oblige
A SUBSCRIBER.
Carlingford, Feb'y 10th, 1875.

[In designing a rotation system you must take into account the nature of the soil, as well as the purposes for which you design the farm. The succession of crops given will answer, as, for instance, oats after maize. By your system you can accumulate large quantities of manure. It will be all needed for such a continuous cropping; corn, roots, and, not less than others, the meadow, must have manure without stint.—Ed.]

Lice on Cattle.

SIR,—We have had a very severe winter. Quite a few cattle in this vicinity are infested with lice. I will tell you a good remedy: sulphur in a little slop or cut feed.
JAS. BURROWS.

Top Keppel, May 22nd, 1875.

[Mr. B.'s brief communication gives a good internal remedy for the disease mentioned by our correspondent from Carlingford. Carbolic acid is by some recommended as a good external application. So is a solution of tobacco; kerosene oil and ley also diluted, are said to be effectual. It is well to bear in mind the proverb—"Prevention is better than cure." Good wintering on sound, well-saved provender is the best preventative of vermin on cattle.—Ed.]

Milk Sheds.

SIR,—I have not seen anything in the ADVOCATE about a Milking Shed, and as I find it one of the most useful and convenient out-buildings in connection with dairy farming, I thought I would give your many readers an idea of my plan of one (perhaps not the best). It is built for 16 cows, side to the road, 16x48 feet, two double stables, the bent to which the first row of cows are fastened is put four feet from the end of the building, with beam right height for the top of the stanchion and set back 1 1/2 inches from face of posts to allow one set of stanchions to be nailed on, and then a joist 1 1/2x6 inches nailed to posts, and solid stanchions forming a mortise for the loose one to work in, it being only 1 1/2 inches thick, coming two inches above the mortise, with the side next the cow beveled down to top of beam, and fastened by a loop of small round iron with a staple in each end which will drop over the stanchion, and by it being shoved to its place. These are fastened at the bottom between two planks, same as joist above; this gives room for four cows. The next bent is 16 feet from this, and that gives room for four more, with their heads in the opposite direction. This is one half the sheds. Seven or eight feet from this another bent is put in, leaving room for two rows of heads, and making the other like the first, you have the shed complete. The floor is small stones, covered; with a square timber for the hind feet, and forming a place for droppings. The posts are cedar, set on the ground without any timber foundation; square roof, and gable ends boarded

down to beams. I think any person will find this kind of shed more convenient than one long and narrow with only room for one row of cows. I suppose 18x48 feet would do for 20, by commencing at the right side of the row to milk and loose each as she is milked, as we often do even when four feet are given to each cow, so as not to be obliged to go between two cows. Yours Respectfully,
Winchester, April 10th, 1875. WM. R. ALLISON.

Application of Salt.

SIR,—You will greatly oblige if you will inform me what quantity of salt to put on an acre of spring wheat or oats, and which is the best time to put it on. Also, what is the correct rule for the measurement of cattle, to ascertain their correct weight. By answering the above you will confer a great favor.
ALEX. MCKINNON.

Hillsburg P. O., Erin.

[Salt is generally applied sometime before sowing the seed, from ten to twenty bushels per acre. Mr. C., of Essex, E., gave a dressing of salt in November, after the wheat was sown, about fifteen bushels to the acre. It produced at the rate of six bushels per acre more than that which was not dressed, and it was much better in quality. Salt (we are informed) for agricultural purposes can be purchased at the Huron salt wells for about \$2.50 per ton.—Ed.]

Pruning Fruit Trees.

SIR,—I write on pruning trees; the month of June is the best time; the sap at that time is forming into wood, and is like thick paste. When the timber is cut the wound heals over at once; take a limb one inch in diameter of a good thrifty tree, it will be so near covered in the fall that you can scarcely put the end of your finger in the space uncovered; the wound keeps fresh until covered. This time is the best for old and young pruning; in the spring the sap runs out and the bark sours, which causes a fly to lay eggs in the bark which hatches and becomes a worm, and kills the one side of the tree, if not altogether, and the wound becomes black.

Pruning in the winter is still worse, the timber and bark dries together for some distance from the wound, and will take a number of years to heal over.

I write this from experience. I have worked when very young till now, in pruning and grafting fruit trees. The best way to convince men, is for them to prune in each season, and judge for themselves. There are some that you cannot convince any other way, and more no way at all.

Yours Respectfully, HENRY A. SWITZER,
Blanchard, June 10th, 1875.

Seed Wheat.

SIR,—I get your FARMER'S ADVOCATE indirectly, and I notice an article in your number for May, about changing seed, signed "S," giving the opinion of the Messrs. Gibbs of Oshawa, in the deterioration of your fine wheat, and that you ask the opinion of parties in the matter, consequently I will trouble you with a few remarks.

I have always heard the theory of often changing the seed, which is a good one. But in my opinion there is one thing they lose sight of and which I consider a very important one. That for instance when parties change their seed, they sow it excluding their own entirely, and are particular careful that it should not get mixed with their previous seed. Now my theory is the very reverse. By all means sow them together, mix as many bushels of the new with as many bushels of your own, if healthy and of the same kind, so that they flower together, for without a doubt impregnation takes place from one stem to another, and I have no hesitation in saying that it might be carried a considerable distance; certainly from one field to another, and probably across some fields. We might ask the question, Why white and black oats get crossed? in fact have found them in the same stem distinct. You will also find corn cross from one field to another, white and yellow getting mixed, but even in the same field if the wind prevails from the same direction at that period, you will find very few ears in the side the wind strikes first, driving the pollen to the other further in, and should you only plant one or two rows north and south where the wind could strike it, and, if blowing strong from the west or east, you

could have but an odd ear here and there the pollen carried away possibly to some other field in its course, if convenient by.

I am a purchaser of grain, and farmers from a certain neighborhood whose varacity could not be doubted, sell me wheat and assert most positively that it is fine, when I consider it golden drop or club, but neither the one or the other. I imagine I see something resembling fine, but more particular to the other kind. I ask the question how this comes? and find in the locality there is very little fine grown, and what is, is soon absorbed by the other kinds. Then, to have fine or any other kind of grain pure, healthy and kept up, must go on getting seed from other localities, and mix equal proportion with your own family of grain if good, if not, get it in your neighborhood, and even then to keep it pure should be universally sown in that locality. Of course heavy soil should be sown altogether with fine. Grain may be improved by getting a good cross by sowing together.

The cereal kingdom goes through the same process that the animal does; therefore, how important it is to mix or marry them. How careful breeders of stock are in getting a good cross. A. M. C.—

To A. M. B. Many good farmers we are aware, sow wheat mixed as you recommend. This is in some measure practised in England, as it is believed that by so doing they get heavier crops. But a person going to the expense of procuring choice seed, and desirous to perpetuate it, will be careful to prevent any admixture. Even in growing for the market it is doubtful if the increased yield would compensate for the lower price that mixed grain would bring. In sowing coarse grains for feeding purposes where quality is not so much desired as quality, a judicious mixing may be advantageous.

Caterpillars on Gooseberry Bushes—Sulphur for Fruit Trees—Vermin on Sheep.

SIR,—During my residence in Old England if I had a gooseberry tree affected with caterpillar, I would dredge it well with powdered white hellebore, they would all soon disappear. On one occasion, I threw a little chloride of lime under the tree, it answered the same purpose, but the plan I preferred most, was to sprinkle about the joints of the tree a little flour sulphur. On the south side of the large fruit trees I would also make a hole 2 or 3 inches deep close to the ball of the tree, and put in a piece of roll sulphur about the size of a nut; the object was, that the heat of the sun would cause fumes of sulphur to arise, and thereby prevent insects from settling on the tree. I did it about the time that trees were budding. In dry weather, when I did so, the trees flourished, and were free from insects. It is a good plan to plant tomatoes by the side of the apple trees to prevent the worm.

It is a good plan to pour cold soap suds to the roots of the fruit trees; it destroys worms and feeds the fruit.

To cure lice or tick on sheep, I would advise giving them sulphur with their salt occasionally.

Yours Truly, JAMES SHAW,

Diary and Book-Keeping for Farmers.

I will just give a description of my way of book-keeping as a farmer.

First,—I keep a diary in the following manner: I take (say half a quire) of large white paper, which is sufficient to keep a diary four years. I make two straight lines down the left hand side half an inch apart—the first space for the day of the week, and the second for the day of the month—and head each page with the month and year, one page for each month. Thus,

APRIL 1875.

Thur.	1	Commenced plowing.	Cool Weather
Fri.	2	Plowing.	Warmer
Sat.	3	Plowing, repairing fences.	Clear
Sun.	4	To Church.	Thunder Storm
Mon.	5	Sowing and harrowing peas.	fair

And so on through the month and year, making one line for every day. I make those entries every day, or, if I am not at home, or have not time, I enter it the second or third day, or at night when I come in from work. I make an entry of what I am employed at each day, such as above, &c.,

through the year, and scores of other things which take place through the neighborhood. I also take a note of the depth of snow at different times during winter—the time winter sets in and spring opens. The time the leaf comes out and haying and harvesting commences, and scores of other things too numerous to mention here. I commenced this diary ten years ago, when I was only fifteen years of age. It was more to keep my hand in practice writing and pastime than anything else that I started it, but now I am only a small farmer and I would not give up my diary, and be deprived of the pleasure of keeping it on any account.

I also keep a day-book in which I keep an account of all my credit dealings, such as storekeepers' accounts, blacksmiths' shoemakers' saddlers' accounts, &c., so that, by looking over these accounts a short time, I can tell at any time the exact amount I owe to any creditor, as I keep each account in a place by itself. I also balance my books, or take stock at the end of each year thus: I put a reasonable value on each parcel of property, and sum it up and then the debt, if any, and subtract the less from the greater and I have the total amount I am worth clear of debt. In this way a man can tell how much he gains or loses each year. Some will think that this mode will take a good deal of time and trouble, but it does not take as much as one would imagine. The advantage and pleasure of knowing how we are prospering overbalances all the trouble or expense incurred by keeping an account of our financial affairs. If any of the readers of the FARMER'S ADVOCATE have another way of keeping their accounts, which they think better, we would like to hear from them; we may improve by so doing.

Markdale, Ont.

C. W. R.

A system as given above by C. W. R. is such as should be pursued by farmers more generally than we fear it is. Not exactly the same, but, as it is a regular daily entry of the weather, work done, and receipts and expenditures.

The diary kept by the writer was more explicit, fuller in details, stating at the conclusion of any piece of work the number of hands employed on it, and its cost as far as could at the time be ascertained, as, for example,—

Saturday, Feb. 28.—Finished plowing rock field 6 a. Time plowing, 9 days. Plowed average 8 inches. Cold north wind. Same day finished turning composite heap in north field—6 day's work.

August 12.—Finished reaping the fourteen acre field. Very heavy crop of oats. Reapers and binders 72, at 2s. 6d. a day—£9. Note any plantation measure. Glorious harvest weather.

Sept. 9.—Delivered at L.—Mills 215 barrels of oats, produce of fourteen acre field—nearly 15½ barrels, or 86½ shels, per acre—price, 12s. per barrel. Weather favorable for Autumn work. Brief notes as the above for every day throughout the year would be very valuable for future reference.

Trifolium.

SIR,—Please tell me through your valuable paper all that you can about Trifolium—where the seed is to be obtained, price per bushel, and how much to the acre should be sown; also, is it an annual plant.

A. SCHULTZ,
Clontarf, Ont.

[Trifolium is the botanical name of clover, a genus of plants comprising many species, of which the best known are the Red Clover (meadow clover), Crimson Clover, White Clover, Yellow Clover (Trefail). Of the great value of clover Mr. S. needs no information; it is well known to every farmer. By "Trifolium" you may refer to some particular forage plant, not to clover. We have heard Lucerne called Trifolium, though it is not such, properly speaking. In Europe it is considered as of great value as a forage plant, but is not much known in this country. If this be the plant referred to, we can procure you a few pounds (enough for a first trial). The price is about 30c. per lb. It is well worthy of a trial.—Ed.]

Home Circle.

The Mill and the Manor.

PART I.

On a beautiful autumn evening, a branch coach from the Birmingham railway stopped at that most ancient inn known as the "Tabard," in the village of Crumbleton, not far from Warwickshire. This being an extremely unusual occurrence, the coach was soon surrounded by a crowd of children, who were joined by an accession of gossips as soon as they could hobble up. Perhaps the feeling of curiosity had never been so intensely excited since the opening of the Stratford station, and the first starting of the cross-road coach which was now in the act of "dropping" the stranger in the village. The passenger was stared at without compunction, and each package of luggage minutely examined as it was handed from the roof of the vehicle to the inn door-step, to find out who could possibly want to stop at Crumbleton; not above ten strangers having been seen at the place for as many months. The schoolmistress, however, happened to place herself on this very promiscuous committee of inquiry, and by dint of perseverance, and a little spelling, was able to read the inscription on one of the boxes, which ran thus:—"Charles Kennedy, Esquire, —th Light Infantry." Having perused once more the direction, she pointed her spectacles full in the face of the traveller, and throwing up her hands uttered a scream, at the same time articulating the information that it was "Master Charles." Though the juvenile part of the community did not know Mr. Charles from Adam, yet they shouted out of sheer imitation. The innkeeper looked on in stoical indifference, for his attention was absorbed by certain slices of bacon which he industriously cut and ate from the top of a huge piece of bread. His wife, however, dropped a respectful curtsy, opened the hatch, and invited the stranger in.

"I would prefer walking up to the Hall at once," said the stranger, "and will send one of the servants for my luggage." With this, having greeted the old "dame" with a kind but melancholy smile, he moved away. The schoolmistress once more elevated her hands, invoked a blessing on the young squire's heart, the children set up a loud "hurrah!" and the innkeeper, laying down his clasp-knife and bacon, shouldered the trunks unbidden, and followed the hero of this extempore village ovation. "That's right, neighbor," exclaimed the old dame. "Poor Master Charles won't find many servants to do his bidding now. I suppose the ruin of the family has brought him home from foreign parts. Poor squire! poor Master Charles!" As the old schoolmistress hobbled back to her cottage, she was obliged to stop to wipe her spectacles—they were dimmed with tears.

"So trade is very bad in the village?" said Charles Kennedy, continuing a conversation he had begun with mine host of the Tabard.

"Terrible, sir—the workhouse will be full again when the harvest's done. What's to mend the times I don't know. The Brumpton people on tother side of the park are all alive. A new squire is building a big mill there, but none of trade the comes to us. There is some talk of the Hall being sold—perhaps that will help us."

"Sold!" exclaimed the person addressed; "are things so bad as that?" He walked rapidly on to conceal his agitation, but it was increased when he came in sight of the hall of his forefathers.

Crumble Hall was one of the most picturesque objects in or near the county of Warwick. Seated on an elevation in the midst of a well-wooded park, the old manor-house stood out in bold relief from the rest of the landscape. The irregular, almost grotesque outlines it exhibited, showed even from a distance that it was no modern building, and a nearer view confirmed the impression. Time had used the old building and domain very roughly since Charles Kennedy last quitted it. The greater portion of a decayed clock-tower had fallen down, and a stable had been unroofed. The lawn, which in his recollection was neatly kept, was now overrun with rank grass and wild flowers. The park fences were broken, and at the moment Charles entered the lawn, a couple of beasts were grazing close under the drawing-room window. The innkeeper deposited his burden at the door, and departed.

It was with great difficulty that Kennedy was able to master his agitation while standing in the entrance-hall of the decayed manor-house. No one was there to greet him; not a sound was to be

heard—all was solitary, desolate. A bell, covered with dust, stood under a table, and it was not till he had rung it with some violence that any one appeared. After a time, however, footsteps approached; a door creaked on its hinges at the end of a corridor, and presently he who had once been the butler, but was now the general servant of Crumble Hall, stood before the visitor. At first they could not recognize each other. Kennedy, embrowned by an Eastern sun, wasted by the terrible Afghanistan campaign, was hardly like the same gay being who, several years before, left the hall as a newly commissioned ensign. The old servant too, from a comely, well-dressed butler, had dwindled down to a shrunken ill-clad serving man. The greeting was, however, as cordial and as cheering as if prosperity, instead of adversity, reigned in the house. The servant was indeed a happily-constituted being, whose cheerfulness misfortune was no more able to shake, than it was his fidelity to his old and ruined master.

"So, Penthouse," said Kennedy, as he threw himself into a crazy chair in a small parlor, "things are quite as bad as I anticipated, I perceive. But my dear old uncle—how does he bear with all this terrible poverty?"

"Why, sir," replied the old servitor, "not quite so well as I do; but wonderfully—wonderfully, Master Charles. The pride which led him to litigate our extinct peerage (Penthouse always spoke in the plural), supports us in the utter ruin which it has brought us to."

"Fatal perseverance!"

"Fatal, indeed, sir, for he has not done with it yet. Though beaten out of the herdd's office, and condemned by the committee of privileges, he fondly clings to the hope of one day obtaining the earldom of Crumbleton for himself and his heirs. He has completely secluded himself in the muniment room, reading and arranging the family records in search of fresh evidence, in order once more to bring his case before the House of Lords."

"And has he taken no steps to retrieve his broken fortunes by more practicable means?"

"None, Mr. Charles. The lawyers have nibbled away the estate bit by bit, till the park and lawn are all that is left; and as trees and deer pay no rent, I'll leave you to judge of the short commons which have sometimes to be endured under this once hospitable roof."

"I suppose the old gentleman has become quite a wreck since the decision against his claim?"

"O no, sir; he is, to all appearance, as hearty as ever. His mind, constantly employed in the search after some mysterious old parchment, has not time to dwell upon his troubles. We lead an easy life now, sir, compared to the hurry, bustle, and excitement there was while the suit was going on. As for me, I have had little else to do than to amuse myself in the library."

"In the library? Well, I thought I found a remarkable alteration in your mode of expressing yourself. I find you have not visited the library in vain."

"Alas! sir," rejoined the worn-down servant with a sigh, "there is no plate to see after now; no cellar-book to keep; 'Othello's occupation's gone,' as Shakespeare says; and so, sir, I have been obliged to go through a course of English literature for want of anything better to do."

"Do not regret that, Penthouse," exclaimed the young visitor; "better times are in store for us. In the first place, my uncle must be wakened out of his long dream, and that part of the estate which still remains to us must be cultivated, for which the small capital produced by the sale of my commission will suffice. It shall never be said that we fall without a struggle. No, no; the plate-chest shall be unlocked, and the cellars stored yet!"

"Bravo, Master Charles!" exclaimed Penthouse, started up in a sort of ecstasy; "you'll put new blood into us. I have not heard a hopeful, or—no offence to master—a really common-sense word since you left us. And now, then, let me prepare him for the news of your arrival. With this the old man tripped out of the room with the lightness and alacrity of youth."

Meanwhile Kennedy walked into a back room to get glimpse of a prospect over which he had rambled in childhood. There was a stream at the foot of the park, along the banks of which he had sported in younger and happier days. How often, while traversing the parched plains of the East, had memory pictured each shaded nook into which the little river forced itself! For miles its banks were as familiar to him as his alphabet; and it was naturally the first object he wished to seek out. On entering the room, which commanded a view of the stream, he found it dark; the window shutters

were closely bolted out, and, instead of being sought, he found there shot up which the brighting with the la covered the ro whole face of and destroyed. mentary disg his uncle's rui phrases of the the finest porti into the hands ton lord!

In the mid tered. He inst them as close were the squi foundations of window in the shut up. Mr. of his memory, and the rushi decision of the tinned Pentho lawyers came e bills of cost, he groan; but wh thought my de was then I wr home, sir." T devious way, staviors, to the

In that apar most celebrat century. He w family registe tent on an obj and his mean the present, d Charles embro true affection, a degree of pr Kennedy was sentative of I affection whi hundredfold o uncle till a l ventures; but a wreck since the decision against his claim?"

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ing, when th

were closely barred. He unfastened them, looked out, and, instead of the romantic little brook he sought, he found a huge ugly dam, beside which there shot up to an immense height a chimney, which the bricklayers were at that moment crowning with the last row of bricks. A crowd of slaters covered the roofs of a vast series of buildings. The whole face of the exquisite landscape was altered and destroyed. Kennedy turned away with a momentary disgust. These objects told the tale of his uncle's ruin more forcibly than the choicest phrases of the newly-learned Penthouse. One of the finest portions of the Crumble estate had fallen into the hands of a new order of aristocracy—a cotton lord!

In the midst of these reflections Penthouse entered. He instantly shut the windows, and barred them as closely as if he dreaded a siege. Such were the squire's orders; for, from the day the foundations of the new buildings were laid, every window in the house which overlooked them was shut up. Mr. Crumble wished to blot them out of his memory, in spite of the noise of the masons and the rushing of the waters. "He heard the decision of the House of Lords against him," continued Penthouse, "without a sigh. When the lawyers came upon him with their folio volumes of bills of cost, he gave up his title deeds without a groan; but when he heard about the cotton-mill, I thought my dear old master would have died. It was then I wrote the letter which has brought you home, sir." This was said as they wended their devious way, through narrow passages and dark stairs, to the muniment room.

In that apartment sat the appellant to one of the most celebrated "peage cases" of the present century. He was surrounded on all sides by deeds, family registers, and county "histories," still intent on an object which had employed his energies and his means from the day he became of age to the present, despite the utter futility of his labors. Charles embraced his uncle with the warmth of true affection, and the old man received him with a degree of pride almost amounting to exultation. Kennedy was an orphan, the last existing representative of his ancient lineage, and the natural affection which the old man felt was increased a hundredfold on that account. Charles sat with his uncle till a late hour, recounting his Eastern adventures; but cautiously abstained from alluding at present to the decay of the estate, or to the terrible cotton-mill.

About a week after his arrival, Kennedy was strolling beside his favorite brook. He was deeply musing on a consultation with his uncle, from which he had just risen, and grieving at the firm hold family pride had taken in the old man's mind. He had seated himself on a bank which, being at some distance from the new factory, had remained undisturbed by plans of the engineer or the spade of the excavator. He was comparing the scene as it existed in his nonage with its altered, and, in his view, ruined appearance, when, amongst other objects quite novel to the scene, he espied between the trees a fluttering ribbon. On nearer examination, he perceived that this delicate pennon waved from a bonnet, which surmounted the half-concealed person of one of the loveliest young ladies he had ever beheld. She was seated on a camp-stool amidst a thick plantation of shrubs, sketching so busily, that she did not perceive she was being overlooked. Kennedy's nearer approach, however, undisturbed her; she looked up, and without betraying the smallest alarm or embarrassment, asked him what o'clock it was? Charles answered, apologising in the same breath for having disturbed her. "Nay," replied the damsel, "it is I who ought to ask pardon—I am trespassing." Kennedy begged she would not deem herself an intruder; she was extremely welcome to the use of any part of Crumble Park. "Really," thought the young lady, resuming her drawing as she cast a furtive glance at the shooting-jacket Kennedy wore, "this is one of the best-bred gamekeepers I ever met with. Have you much game in these preserves?" she inquired aloud; going on with her sketch quite unconcernedly.

"I have seen very little yet."

"Perhaps you have not been long in this place?"

"Exactly a week." A pause ensued; the young lady went on 'washing in, a bit of the waterfall made by the weir which she was copying, the young gentleman thinking all the time that she was, in spite of her great beauty, by no means the most retiring young lady he had ever met with. The pause continued to rather an unpleasant length; and Charles was on the point of soliciting a glance at the drawing, when the lovely artist looked up abruptly from

her picture, and said with the utmost *naivete*, "I wish you would do me a favor. I find my sketch wants animation, and a gamekeeper in the foreground would improve it wonderfully; now, would you kindly stand just at that turn of the brook where the bulrushes are? for I always sketch from nature when possible. But you have not got your gun. Well, never mind; take my parasol!" Charles almost mechanically did as he was bid. "Thank you," exclaimed the young lady when he had got into position; "that will do very well, if you will be good enough to lay the gun across your arm." Charles obeyed her command as well as the parasol would allow, and stood for some minutes in the most picturesque attitude he could assume, wondering what was to come next.

Had he known what was really in store for him, he would not have remained so long where he was. Placed with his back to his new acquaintance, his eyes were turned towards the dam, which he had just time to perceive had not been very securely constructed. The thought had scarcely crossed him, ere a rushing noise warned him of an approaching danger. He had just time to step back and clasp the girl in his arms, when the dam gave way; and the waters with unresisted impulse burst over the very spot where he and his companion were standing! He seized with one arm the trunk of a tree, hoping to hold his fair charge in the other till the shock of the waters had passed. But the tree was too powerful; it swept all before it. The whole to which he clung was uprooted, and the three masses with its living freight floated rapidly down the stream. Kennedy, though separated from his lovely burden by the shock, called to her to keep fast hold of the tree. His warning was useless, for when he was again able to look round, she had disappeared. By a strenuous effort he clutched, in passing, the lough of an overhanging tree, and thus stopped his own dangerous career. He strained his eyes in the hope of seeing his companion, and presently perceived her struggling to free herself from a quantity of floating foliage in which she was entangled. Kennedy dared not move to her rescue, lest the whole mass should disengage itself before he could reach the spot where it had stopped. It was lucky he did not, for in another instant it swam rapidly towards him. As it passed the tree to which Charles clung, he seized the dress of the girl, and by a violent effort succeeded in staying her future progress, and in keeping her head above water. Presently his cries for assistance brought several workmen from the mill, and the young lady and her preserver were dragged safely to land.

The female was to all appearance drowned. Her features were pale and calm as death; her pulsation was imperceptible; her arms were rigid. In this state she was hastily carried to Crumble Hall.

Charles rapidly preceded her, and, without regard to his own condition, gave such orders as enabled the old female domestic, who was Penthouse's only remaining fellow-servant, to get a room ready for the reception of the stranger. Luckily, the rumor of the accident brought the village doctor to the spot. Under his directions the sufferer was placed in bed, and every means were used to restore animation that skill and experience could suggest.

To be Continued

Laughing Children.

Give me the boy or girl who smiles as soon as the first rays of the morning sun glance in through the window, gay, happy, and kind. Such a boy will be fit to "make up" into a man—at least when contrasted with the sullen, morose, crabbed fellow, who snaps and snarls like a surly cur, or growls and grunts like an untamed hyena from the moment he opens his angry eyes till he is "confronted" by his breakfast. Such a girl, other things being favorable, will be good material to aid in, gladdening some comfortable home, or to refine, civilize, tame and humanize a rude brother, making him gentle, affectionate and lovable. It is a feast to even look at such a joy-inspiring girl, and see the smiles flowing, so to speak, from the parted lips, displaying a set of clean, well-brushed teeth, looking almost the personification of beauty and goodness, singing, and as merry as the birds, and wide-awake birds, that commenced their morning concert long before the lazy boys dreamed that the sun was approaching, and about to pour a whole flood of light and warmth upon the earth. Such a girl is like a gentle shower to the parching earth, bestowing kind words, sweet smiles, and acts of mercy to all around her—the joy and light of the household.

"Persevere and Succeed."

When your plans of life are clear,
Persevere and succeed;
But no faster than your brains,
Haste is always in the rear;
If Dame Prudence has the reins,
Persevere and succeed.

Do not ask too broad a test—
Persevere and succeed;
Lagging never clears the sight;
When you do your duty best,
You will best know what is right—
Persevere and succeed.

Never doubt a righteous cause,
Persevere and succeed;
Throw yourself completely in;
Conscience shaping all your laws,
Manfully through thick and thin,
Persevere and succeed.

Do not ask who'll go with you—
Persevere and succeed;
Numbers! spurn the coward's plea!
If there be but one or two,
Single-handed though it be,
Persevere and succeed.

Though before you mountains rise,
Persevere and succeed;
Scale them? Certainly you can;
Let them proudly don the skies;
What are mountains to a man?
Persevere and succeed.

Judging by Appearances.

In the other years when Maine was a district of Mass., Ezekiel Whitman was among the chosen to represent the district in the Massachusetts legislature. He was an eccentric man, and one of the best lawyers of his time. In those days Whitman owned a farm, and did much work upon his land; and it so happened when the time came for him to set out for Boston, his best suit of clothes was a suit of homespun. His wife objected to his going in that garb, but he did not care. "I will get a nice, fashionable suit made as soon as I reach Boston," he said.

Reaching his destination, Whitman found rest at Doolittle's City Tavern. Let it be understood that he was a graduate of Harvard, and that at this tavern he was at home.

As he entered the parlor of the house, he found that several ladies and gentlemen were there assembled, and he heard a remark from one of them. "Ah, here comes a countryman of the real homespun genus. Here's fun."

Whitman stared at the company, and then sat down.

"Say, my friend, you are from the country," remarked one of the gentlemen.

"Ya-as," answered Ezekiel, with a ludicrous twist of his face.

The ladies tittered.

"And what do you think of our city?"

"It's a pooty thick settled place, any how. It's got a sweepin' sight o' houses in it."

"And a good many people, too?"

"Ya-as, I should reckon so."

"Many people where you come from?"

"Wal, some."

"Plenty of ladies, I suppose?"

"Ya-as, a fair sprinklin'."

"And I don't doubt that you are quite a beau among them?"

"Ya-as, I heaus 'em home—tew meetin' and singin' schewl."

"Perhaps the gentleman from the country will take a glass of wine?"

"Thankee. Don't care if I do."

The wine was brought.

"You must drink a toast."

"Oh, git eout! I eats toast—never heard o' sich a thing as drinkin' it. But I kin give ye a sentiment."

The ladies clapped their hands; but what was their surprise when the stranger, rising, spoke calmly and clearly in tones ornate and dignified as follows:

"Ladies and gentlemen, permit me to wish you health and happiness, with every blessing earth can afford; and may you grow better and wiser with advancing years, bearing ever in mind that outward appearances are often deceitful. You mistook me, from my country dress, for a country booby, while I, from the same superficial cause, thought you were ladies and gentlemen. The mistake has been mutual."

He had just spoken when Caleb Strong, Governor of the State, entered and enquired for Mr. Whitman.

"Ah—here I am, Governor. Glad to see you."

Then, turning to the dumb-founded company:

"I wish you a very good morning."

And he left them feeling about as small and cheap as it is possible for full grown people to feel.

Ancle Tom's Department.

South Granby, June 4, 1875.

DEAR UNCLE TOM,—I wish to return my thanks for the three packages of flower seeds, which I received as third prize for the puzzles which I sent last month. Inclosed find a photograph of the Queen, also one of Lord Dufferin, which I take the liberty to send as a prize, to be given to the first correct answers received to the following conundrums:—

1. Why is the wick of a candle like Mount Parnassus?
2. What garment is at once the warmest and the coldest?

Yours truly,
CANADIAN CUFF.

At "CUFF's" request I now offer those photographs to the nephew or niece sending in the first correct answers.
UNCLE TOM.

Puzzles.

55. There is something in your thumb that is not in your hand;
It is in Jerusalem but not in Egypt's land;
It is in a mountain, though not in a hill,
But if you search the whole world through
you'll find it in mill.

AGGIE JOHNSTON.

56. What is it that was two weeks old when Adam was no more,
And before it was five weeks old, Adam was five score.

FRANK LAWSON.

57. A word of three letters, easy and short,
Reads backwards and forwards the same,
It expresses the sentiments warm from the heart,
And of beauty has perfect claim.

MINNIE A. JOHNSTON.

58. We left our little ones at home,
And whither we went we did not know;
We for the Church's sake did roam,
And lost our lives in doing so.
We went a straight and forward road,
With all the wicked full in view;
We lived to man and died to God,
Yet nothing of religion knew.

JANE MARIAH LYNN.

SQUARE WORD.

59. A large whirlpool; a chain of mountains in the old world; a narrow alley; to run from danger.

AGGIE JOHNSTON.

ENIGMAS.

60. I am composed of 27 letters.
My 1, 6, 7, is a product of my 23, 25, 26, 5.
My 11, 12, 18, 3, cannot do without my 23, 20, 15, 22.
My 18, 13, 14, is generally seen in conjunction with my 17, 4, 10, 9.
My 2, 24, 4, 3, is sometimes caught with my 11, 17, 9.
My 23, 21, 26, 1, is no use except there is plenty of 16, 12, 18, 8, 4.
My 19, 6, 22, not many people would like to do without.
My 11, 25, 9, has caused much 27, 25, 26.
My whole is an old and true proverb.

HENRY FITZJOHN.

61. I am composed of 15 letters.
My 1st is in fancy; my 2nd in fame;
My 3rd is in bread; my 4th is in name;
My 5th is in paper; my 6th is in read;
My 7th is in search; my 8th in agreed;
My 9th is in day; my 10th is in verse;
My 11th in moon; my 12th in converse;
My 13th is in able; my 14th in intend;
For to close it at last with my 15th in end.
My whole you will find is the farmer's best friend,
To read and to study, but not for to lend;
'Tis so cheap and so useful to keep by the fire,
To read in the evening when from work you retire.

J. PATTERSON.

62. I'm quiet and noisy, I'm narrow and broad,
I'm used alike by peasant and lord;
By my aid I succour, and also destroy;
In various ways man doth me employ.
Still as the dead, like a lion I roar,
You'll find I'm employed in scrubbing the floor;
In every land you will see me there,
And great the distress when my presence is rare.

MAGGIE JANE STEVENSON.

Answers to Puzzles in June No.

44. Clover 45. Pi-an-o. 46. Chair-hair-air.
47. Onse, Wye, Trent. 48. Horse. 49. Violin.
50. NINE. 51. Cow. 52. A quill pen. 53. The whale that swallowed Jonah. 54. MDLXXVII—Macdonald, of Glencoe, Duke Edric, Leogrins. Xenophon, Xantippe, Vanduyck, Ira (Northumberland), Isambard, K. Brunel.

ANSWERS RECEIVED TO JUNE PUZZLES.—M. E. M., Spencerville; J. W. Hughes, West Winchester; Hamilton Brown, Melancthon; Margarie McDonall, Glenmorris, Lancaster; Aggie Johnston; Minnie A. Johnston, Cornwall; —, McGillivray; Charles Regan, London; J. Patterson, Duart; M. Glass, London Township; J. Hind, Goderich; J. Simms, Ottawa; C. Kind, Bluevale; W. S. Montreal; E. Clemens, West Williams; Tom Ruston, Sebringville; F. Lowry Richardson, March; John House, Canboro'; Margarie McDonell, Glennevis; Jas. Stevenson, jun., Fitzroy; Hattie Haviland, Ingersoll; W. A. Cross, Lefroy; Jas. H. Cross, Caledonia.

ANSWERS TO MAY PUZZLES TOO LATE FOR JUNE ADVOCATE.—D. R. Macdonald, Glen Norman; E. Finn, Winnipeg; Joseph Hynes, San Francisco.



A MOORISH MODE OF HUNTING THE ALLIGATOR.

The Alligator.

This is a scene of common occurrence witnessed by travellers in hot Eastern countries, and in South America. It is also a sport frequently engaged in by the Moors. I wonder how my nephews would like to amuse themselves at it during the summer holidays; methinks they would rather be excused. The mode of capture is simple, but requires courage. The Moor has one arm covered with mail or iron, in the hand of which he holds a barb, sharpened on either ends, and in the other a dagger. After loitering around awhile, he provokes the hideous monster to assault, and the Moor choosing his position awaits the contest. The alligator making for his prey, bites at the arm holding the barb, and in doing this "the biter gets bit." The barb secure itself in the creature's mouth, and the more he wrestles with it the tighter it becomes. Thus secured the Moor brings the dagger into operation on him, and terminates his existence. The greatest danger lies in inserting the barb; if it chances to slide, and the alligator makes another grab, then "Good-bye, Mr. Moor."

The other night two men, evidently green ones, went into a telegraph office for the purpose of sending a dispatch. The message was taken by the operator, and the pair proceeded down stairs. They had just reached the sidewalk, when the gong at a neighboring hotel was sounded for tea. Whereupon, one of them excitedly exclaimed, "By Jerusalem! there it goes, Jim!"

HUMOROUS.

The Maiden's Prayer—"Papa, buy me a new summer suit."

"This," thought a boy, while being whipped by his fond papa, "is very like a whale."

"I am astonished, my dear young lady, at your sentiments; you make me start." "Well, I have been wanting you to start for the last hour."

I don't wish to say anything against the individual in question," said a very polite gentleman, but would merely remark, in the language of the poet, that to him truth is stranger than fiction."

The latest conundrum is, "Why is the Fourth of July?" That's all. An interval of fifteen minutes is here allowed for guessing the answer. Then the conundrum is put again in this form: "Y is the fourth of July."

King James I. was once entreated by his old nurse to make her son a gentleman. "Nae, nae, nurse," was the reply of the British Solomon; "I'll mak' him a lord and ye wull, but it is beyond my power to mak' him a gentleman."

The best description of weakness we have ever heard is contained in the wag's prayer to his wife, when she gave him some thin chicken broth: "Would she please try to coax that chicken just to wade through the soup once more."

Perkins will get tight occasionally, much to the astonishment of all his friends. "For years," says he, "it was unaccountable to me, for I never did drink but a mouthful or two; and the cause never did strike me until I measured my mouth that it held a pint."

A gentleman meeting a Wall-st. friend, said: "I've just mortgaged my house, and have several thousand dollars to spare. Can't you tell me something neat and safe to go into?" "Yes," replied the broker, "I can put you to a sure thing; buy that mortgage on your house!"

A farmer was sowing his ground, when two smart fellows riding by, one of them called out with an insolent air, "Well, my good fellow, 'tis your business to sow, but we reap the fruits of your labor." The rustic replied, "This very like you may, for just now I am sowing hemp."

The heavy fall of "mountain dew" in the streets of Dublin, on the occasion of the great fire, was attended with fatal results to three of the guzzlers. They drank themselves to death because whiskey was to be had for the dipping up, but didn't die in vain, for it will give temperance lecturers a lever to work by.

The horn of the house-fly is once more heard on the hills.

"I am afraid you will come to want," said an old lady to a young gentleman. "I have come to want already," was the reply. "I want your daughter."

The grasshoppers have a new enemy in the north-west; having eaten up the crops, the inhabitants are retaliating by eating them. The Mennonites are said to enjoy them as food immensely. So, from the fact that Mennonites are hearty eaters, we expect that the grasshoppers will soon disappear, and ere long this source of nourishment to the Mennonites will be at a discount.

The Old London papers tell a sad story of that irreclaimable being the British Jack Tar. At one of Moody and Sankey's recent meetings there was a great outpouring, and after the audience had given all necessary indications of a hopeful state of mind, Mr. Moody called upon all those who wished to go to heaven to rise in their place. One after another all the persons present remained standing save one perverse sailor, who obstinately kept his seat. Fixing this obdurate mariner with his eye, Mr. Moody addressed him and asked if it could be possible he did not wish to go to heaven also. "Yes, your honor," responded Jack; "I wish to go to heaven." "Then why don't you rise with the rest?" "Because," replied Jack, very slowly, and surveying the whole company with a scrutinizing glance, "because I ain't going to ship with any such a looking crew as this?"

Whites of 4 eggs,
butter, 1 of sweet
milk, 1 of cream,
melt the butter
then pour in the

Half a pound
suet, 1/2 lb. brown
crumbs, 1/2 cup
spoonful of flour

One cup granulated
bread crumbs,
suet, 1/2 of sugar,
as plum pudding
from it.

One-half cup
of sweet milk,
Tartar, 1/2 soda.

Two cups of
egg, 1/2 cup lard

One and a half
yolks of the egg
which add the
together; whisk
them gradually
the mixture, d
lard. Let the

One cup of
teaspoonful of
a little salt; st
put the apple
the batter over

One cup of
lard, 1 teaspoon
hot lard.

One quart of
1 cup of sugar,
the whites to
white sugar p
for a few min

Three cups
butter, 2 eggs
soda, 1 lb. of
together and
It is best whe

The whites
sugar, half cu
tar, one teaspo
starch, one cu
in the cream

Chop fine
spoonful of f
gar, add a lit

Take soda
enough to cov
serve dessert
and sugar an

One oz. of
1 pint cold w

Four cups
teaspoonful s
lemon.

Beamsville

During the
soiled, parti
quite light,
to have the
readers into
which can b
side. Take

Minnie May's Department.

Household Recipes.

DELICATE CAKE.

Whites of 4 eggs, 3 cups of flour, 2 of sugar, 1 of butter, 1 of sweet milk, $\frac{1}{2}$ teaspoonful soda in the milk, 1 of cream of Tartar in the flour. Do not melt the butter but beat it and the sugar together, then pour in the eggs already beaten.

FIG PUDDING.

Half a pound of figs, cut small and bruise $\frac{1}{2}$ lb. suet, $\frac{1}{2}$ lb. brown sugar, 3 eggs, $\frac{1}{2}$ lb. grated bread crumbs, $\frac{3}{4}$ cup jelly filled up with water, a large spoonful of flour. Steam or boil.

MARY'S PUDDING.

One cup grated carrots, 1 of grated potatoes, 1 of bread crumbs, 1 of currants, 1 of raisins, 1 of suet, $\frac{1}{2}$ of sugar, $\frac{1}{2}$ flour, a little salt. Boil same as plum pudding, indeed you can hardly tell it from it.

JELLY CAKE.

One-half cup of butter, 2 of sugar, 3 of flour, 1 of sweet milk, 3 eggs, 1 teaspoonful of cream of Tartar, $\frac{1}{2}$ soda.

SHINGLES.

Two cups of butter-milk, 1 teaspoonful of soda, 1 egg, $\frac{1}{2}$ cup lard, roll soft and thin. Fry in lard.

OYSTER FRITTERS.

One and a-half milk, $1\frac{1}{2}$ lbs. flour, 4 eggs, the yolks of the eggs must be beaten very thick, to which add the milk and stir the whole well together; whisk the whites to a stiff froth and stir them gradually into the batter; take a spoonful of the mixture, drop an oyster into it and fry in hot lard. Let them get a light brown on both sides.

BIRD'S-NEST PUDDING.

One cup of cream, 1 of sweet milk, $1\frac{1}{2}$ flour, 1 teaspoonful of cream of Tartar, $\frac{1}{2}$ soda, 3 eggs and a little salt; stew and sweeten a pint of tart apples; put the apples in the centre of the dish and pour the batter over them. Bake 1 hour.

DOUGHNUTS.

One cup of sugar, $1\frac{1}{2}$ cups butter, milk, $\frac{1}{2}$ cup lard, 1 teaspoonful of soda, a little salt. Fry in hot lard.

PUDDING.

One quart of sweet milk, 1 pint of bread crumbs, 1 cup of sugar, yolks of 4 eggs; when done, beat the whites to a stiff froth, with 3 table-spoonful of white sugar put on top, then return to the oven for a few minutes.

RAISED CAKE.

Three cups of bread dough, 2 cups of sugar, 1 of butter, 2 eggs, 1 wine-glass of wine, $\frac{1}{2}$ teaspoon soda, 1 lb. of raisins, stoned; beat all thoroughly together and let it stand to raise till quite light. It is best when warm.

WHITE CAKE.

The whites of six eggs, a large cup of white sugar, half cup butter, teaspoonful of cream tartar, one teaspoonful of soda, one cup of corn-starch, one cup of cream; dissolve the corn-starch in the cream and mix thin; flavor to taste.

MINT SAUCE.

Chop fine some spear mint, to every 2 table-spoonful of the mint put 3 table-spoonful of vinegar, add a little brown sugar. Serve cold.

BRUCESIDE PUDDING.

Take soda biscuits, pour boiling water over them enough to cover them, let them stand till ready to serve dessert; give a biscuit to each with cream and sugar and a teaspoonful of jelly.

AMMONIA COOKIES.

One oz. of baking ammonia, $\frac{1}{2}$ lb. lard or butter, 1 pint cold water or milk, $1\frac{1}{2}$ lbs. white sugar.

COOKIES.

Four cups flour, 2 of sugar, 1 of butter, 5 eggs, 1 teaspoonful soda, 2 of cream of Tartar; flavor with lemon.

FANNIE WALKER.

Beamsville, Ont.

Cleaning Kid Gloves.

During the warm weather kid gloves are easily soiled, particularly as the prevailing colors are quite light, and as it costs some time and money to have them cleaned at the dyer's, we let our readers into the secret of cleaning them at home, which can be done just as well as if paid for outside. Take a little sweet milk and a piece of

white or brown soap. Fold a clean towel three or four times, spread it over your dress, and spread out the glove smoothly upon it. Take a large piece of white flannel, dip it into the milk, then rub it upon the soap, and rub the glove downward toward the fingers, holding the wrist of it by the left hand. Continue this process until the glove, if white, looks of a dingy yellow, but if colored, looks dark and entirely spoiled. Now let it dry, and then put it on your hand, and it will be soft, smooth, glossy and clean. Take care, however, to omit no part of the glove in rubbing it, and see that all the soiled parts are thoroughly cleaned. This process applies only to white and colored kid gloves. For black gloves that are soiled, turned white and otherwise injured, take a table-spoonful of salad oil, drop a few drops of ink into it, and rub it all over the gloves with the tip of a feather; then let them dry in the sun. White kid boots and slippers can also be cleaned by the first process to look "as good as new," and black kid boots and slippers can be restored to their pristine gloss by the latter method.

To Make Summer Drinks.

To make root beer, take a quantity of sarsaparilla roots, sassafras bark and some hops, and boil till the strength is extracted. To three gallons of the liquor, after it is strained, add one quart of molasses and a cup of yeast. After standing in a warm place eight or ten hours, strain again and bottle. It will be fit for use the following day.

For ginger beer, take one pint of molasses and two spoonful of ginger, put into a pail to be half filled with boiling water; when well stirred together, fill the pail with cold water, leaving room for one pint of yeast, which must not be put in till lukewarm. Place it on the warm hearth for the night and bottle it in the morning.

For spruce beer, take three pounds of sugar, four gallons of water, one ounce of ginger, a little lemon peel or essence of lemon, and a little essence of spruce to give it a flavor. Stir all together, warm it a trifle; add a cupful of good yeast. When fermented, bottle up close.

Mead is made by dissolving one part of honey in three of boiling water, flavoring it with spices, and adding a portion of ground malt, and a piece of toast steeped in yeast, and allowing the whole to ferment.

About Cooking Peas.

GREEN PEAS.—Have the hands and the dishes clean in shelling, so that the peas need not be washed before cooking. If the pods are very nice and sweet, they may be cooked in the water before the peas are put in; but usually this does not pay. Have the peas a little more than even full of water and cook them twenty minutes after they begin to boil. As the season advances, cook them longer. Be sure to have them tender, and do not cook them after they are tender. If done too soon, let them stand hot without cooking. Serve warm, full of juice, and, if you wish for the full benefit of the sweat pea flavor, serve without seasoning.

Strawberry Syrup.

Make a syrup in the proportion of three pounds of sugar to half a pint of water. Boil and stir until clear. Allow two and a half pints of strawberry juice to the half pint of water. After you add this, let it boil hard for not more than five minutes. Take it from the fire before it loses its fine color, and pour hot into self-sealing glass jars—the kind that only need the top to be screwed on. This syrup preserves even the odor of the fresh strawberry, when opened months afterward, and flavors ice cream delightfully.

A Wonderful Cloak.

King Kalakaua's famous feather cloak will be on exhibition at the Centennial Exposition a Philadelphia. The manufacture of this article was begun about one hundred years ago by the order of some of the ancestors of Kamehameha, former king of the islands, and upwards of fifty years were required for its completion. It is made of the feathers of a peculiar species of bird, each bird furnishing only two feathers, one from under each wing. The color of the cloak is a golden yellow.

GREEN PEA.—Thicken the water with green peas run through a colander, with or without vegetables. Turnips, carrots, potatoes, parsley and tomatoes are the vegetables that best harmonise with green peas.—*Science of Health.*

Entomology.

Flat-Headed Borer.

Chrysobothris femorata Fab. Sub-order Hemiptera. Family Buprestidae.

At present this borer is quite as ruinous in our State as any, and I should not think it strange if in a well balanced account it was found even to surpass the others in the evil which it works to our fruit interests. I have seen young orchards nearly ruined the first summer after setting by this devastator. Not long since a nurseryman came from a distant part of this State to consult me as to the ravages of this pest. He said that during the past summer, in some regions of the State, more than half the trees he sold were killed by this scourge, and of course he was unjustly blamed. At present no nurseryman should sell trees without throwing in advice in regard to practising against this devastator, for, as we shall see, such trees are peculiarly liable to attack.

These borers are not confined to the apple tree, as I have found them working in oak, maple and other trees of our forests.

NATURAL HISTORY.

This brownish beetle with a coppery lustre is found from May till August, though I have found them more common in June and July. As with the striped *Saperda*, the eggs are laid on the bark. The whitish grubs, with their enormous front, brown head and curled tail, usually bore only superficially, eating the inner bark and sap-wood; yet I have seen, and have now on exhibition here at the college, sections of young trees over an inch in diameter bored completely through by these big-headed rascals. They eat but a single season, and come forth as imagoes early in the spring.

They usually work on the trunk, though sometimes in the branches, almost always on the south, the west, or the south-west sides of the tree; and their whereabouts may always be ascertained, not only by the saw-dust, but also, and more certainly, by the black color of the bark. When the black color offers the suggestion of the presence of this borer, we can quickly become assured by striking a knife into the same. If the blade pierces the bark and goes on still a little further, we may be sure of the enemy's presence.

This borer is far more liable to attack feeble trees. Anything, therefore, which serves to diminish the vitality of the trees, promotes the ravages of this borer. Hence, after such a winter as we have just experienced, or after having the growth of our trees interrupted by the removal from the nursery to our orchards, we are in special danger of harm from these destructive borers. Hence, the coming season, when loss will be inevitable, we should more than ever be on the alert to mitigate the damage by our vigilance and care, and by the timely application of

REMEDIES.

The remedies for the flat-headed borer are the same as those given for the old borer, soap in June and July, and a knife in September; though these grubs may be found in July and August, and to delay the cutting out till September would often be fatal, especially to trees in newly set orchards. I have known cases where labor of this kind in July would have paid more than \$100 per day, besides saving a great amount of vexation.

Apple Tree Bark Louse.

Mytilaspis conchiformis Gamelin. Sub-order, Hemiptera. Family Coccidae.

This old enemy, though less destructive than formerly, probably because of parasites and mites which prey upon it, so that, like the Hessian fly, wheat midge and many other insects, it has probably done its worst work, yet to leave it to itself at the present time would be to yield the strife prematurely.

NATURAL HISTORY.

The bark colored, oblong scales, so harmless in appearance, serve, from August to May, only for protection to the 60 or 70 wee white eggs which are found underneath. About the first of June the young lice appear—so small that, though clad in yellow, they can hardly be seen without a glass. Coming forth from under the scale, they roam about for a few days; are sometimes blown to other trees, thus spreading their evil work, but very soon settle down to earnest business. This consists in insert-

ing their tiny beak and sucking the vitality from the trees. Very soon a scale commences to form around them from an exudation, which is a secretion from the general surface. By August the impervious scale is complete. The eggs are then soon deposited and the parent louse dries up, and shrinks away to nothingness.

REMEDIES.

As the scale is impervious to most fluids, though oils will penetrate it and destroy the eggs, the best time to fight these insects is just after the eggs hatch. At this time soft soap or strong soap-suds sure death to the young lice. Hence, the trees should be washed the first week of June with soft soap, not only making the application to the trunk, but also to the main branches and limbs as far as possible.

IMPORTANT FACT.

We thus see that an application of soft soap to our apple trees, made the first week in June, is of exceeding value. It not only exterminates the sappers (bark lice), but banishes the miners (borers). We thus understand why our fruit trees thus treated seem fairly to laugh, as if grateful for such timely aid in banishing their enemies. I have no hesitation in affirming that the apple grower will find the above one of the most paying operations that he can undertake in his orchard. Let all, then, scrape their trees early in the spring, apply soft soap—not lye—the first of June, and again the first of July, not forgetting to adjust cloth bands by the last of June.—*Prof. A. J. Cook.*

Garden Pests.

STRIPED BUG, OR CUCUMBER BUG.

After trying many methods, I find nothing so cheap and effective as to keep a close watch, and as soon as the bugs appear, scatter wood ashes over the vines, either by hand or with a dredging box made for the purpose. To the Hubbard and other winter squashes, it should be applied both on the upper and under surface of the leaves. It is important to begin hostilities as soon as the bugs seem to determine upon a point of attack, and in order to confuse them—and it does assist greatly to distract their attention, and sometimes they quit in dismay even at this—whenever crossing the field I find they have begun operations, I at once scatter over them fine pulverized dirt to answer until some ashes and a dredging box can be brought to the front. Employing these means with promptness, I have rarely lost an acre of vines from their ravages, though I can boast of as many billions of bugs to the acre as any man on this continent.

CUT WORMS.

If balls of fresh clover or other green grass be scattered throughout the field, the cut worms are said to be attracted to them and crawl into them, where they can easily be destroyed. But this cannot be entirely effective, especially on sandy land badly infested, and close watch must be kept, and whenever traces of their work are seen they must be dug out and killed. With early tomatoes and other early crops which would justify the expense, I have saved the crop by scraping away the dirt at the surface and applying from a pepper box Paris green mixed with flour or plaster. Under this treatment—though many plants are attacked—yet little damage is done. Tomatoes in particular, when eaten half off, do not seem to suffer much from it.

COLORADO POTATO BEETLE.

A tablespoonful of Paris green in a ten quart pail of water, applied with a fine rose sprinkler, having but half the usual number of holes, is at once the cheapest, most effective, safe and lasting method of applying poison. Two applications usually answer for the season.

CABBAGE OR TURNIP FLEA.

This little pest often eats off the young plants so soon after they break through the surface that if close watch has not been kept an inexperienced person would believe the seed had never grown. An application of ashes scattered highly along the rows at the earliest possible moment will generally save the crop.

In extensive field culture of turnips, immediate re-sowing of the crop as soon as the loss is discovered, is perhaps the best course. To be sure of cabbage plants, the only safe course is to make several sowings a few days apart. Worm eaten turnips are due to their growth on old soils. Ashes scattered along the rows at the

time of sowing will often prevent, but new soil, not more than two years from the sod, is always to be preferred.

Woody and tough radishes occur on soils so heavy that roots have not made a thrifty growth. The early varieties should not be sown after the middle of May, but the summer sorts instead.

Lice in cabbage are usually due to a slow growth, either on account of poor soil, drouth, or other causes, and can better be prevented than cured. An application of a pinch of salt to each head often proves of service; but plenty of manure and liberal and constant use of the hoe and cultivator are the best preventives.

Galvanized Wire Baskets.

Messrs. Crooker Bros. & Co., of Wellington Square, Ont., are, we believe, the most extensive manufacturers of wire baskets in Canada; in fact, there is no establishment that we have heard of that has ever turned out such large quantities of baskets, or of such good quality. They manufacture now sixty different sizes and kinds of baskets, differing in usefulness, ornament and size from the large barn baskets for chaff, to the smallest sizes for holding eggs.

Their ornamental flower baskets are very neat and handsome; the ladies' work baskets are branched, and look and are very useful and neat. They have made a great improvement in the root baskets, as they are now much strengthened by having an additional twist given to the wire. The galvanizing is rather an expensive process, as one half of the rank used is wasted in dross. These galvanized baskets must gradually come into use. Their baskets for packing up potatoes and for putting potatoes in, and for putting them in pots for boiling, must be approved of as soon as seen. This is rather a new business, and we hope will be found a profitable one in our country.

Shorthorn Sale.

Mr. Seth Heacock, of Kettleby, Ont., sold 12 head on the Provincial Fair Grounds in Toronto, the day after Messrs. Beattie, Miller and Cochran's sale. The following is a list of the prices:—Belle of King, John R. Craig, \$70; Carlotta, M. J. Corkery and W. Long, Thornhill, \$195; Cherry Duchess, Corkery & Long, \$150; Daisy 4th, S. T. Spangler, Winthrop, Iowa, \$520; Minnie Herman, Corkery & Long, \$320; 2nd Duchess of Oakland, E. T. Noel, Nashville, Tenn., \$135; Susie Mowbray, S. T. Spangler, \$300; Carlotta 2nd, Corkery & Long, \$255; Wallflower 10th, S. T. Spangler, \$200; Oakland Duke 2nd, John Little, Greenwood, Ont., \$100; Alpheas Oxford, S. T. Spangler, \$460.

Cheese Making in Canada.

There has been something of a revolution in cheese making in the Dominion since 1870. The total production in 1870, was 4,984,843 pounds of home made, and the value of this made in factories was, 1,601,738. But in 1873 the exports rose to 19,483,211 pounds, while last year the quantity rose to 24,050,982 pounds.

Hall's *Journal of Health* urges rest from stimulating brain labor. Insanity, it says, always comes on with increasing sleeplessness, and the first step toward recovery is a growing ability to sleep. Too much business stimulates the brain; and if this is continued too long the inevitable results are either insanity, paralysis or apoplexy. Insanity is caused by too much blood being in the arteries of the brain; paralysis is a loss of power—the parts have worked so much they can work no more; apoplexy is when the vessels of the brain are so full, so distended, that they are ruptured. The person who is kept up to the working point by any artificial stimulant runs a dangerous risk of losing life or reason.

Condition and Changes of Eggs.

The late Prof. Agassiz, in a lecture in which he told that the egg is the origin of all animal life, stated the following in relation to the properties and changes in the eggs of fowls:

It appears to have been really ascertained, and the fact is important, that the albumen of the egg of the common fowl, newly laid, has properties differing in some particulars from those of the stale egg. One of these, and that which is best known, is the milkiness which it exhibits when dressed for the table, provided the egg be not put into water of too high temperature, and kept there unduly long; another is seen in the matter coagulating.

Experiments show that the white of the newly laid egg is more readily affected by heat of a certain temperature, than that of an egg exposed to the air, as indicated by the appearance of milkiness it presents—and yet that, within a certain range of temperature the amount of coagulation or the degree of firmness is less. That a difference in qualities should result from exposure to, and the action of, atmospheric air, can hardly be doubted. The newly-laid egg contains, of course, little or no air; and, if atmospheric air be excluded, and its absorption prevented, as by lubricating the shell with oil or any oleaginous matter, the albumen retains for a considerable time the qualities of the newly-laid egg.

The fact just stated is familiar to all experienced and observing egg dealers. The exact time, however, for the change to take place is believed to vary in some measure according to the season, a shorter time in Winter being required than in Summer—the egg, in the former season, owing to a lower atmospheric temperature, contracting more in bulk as regards its substance than in the latter. A very few days, five or six at farthest, seem to be sufficient.

It is also ascertained that, with the absorption of oxygen, in the instance of the stale egg, carbonic acid is formed, and ammonia, and the color of the albumen is darkened, it becoming of a light brownish yellow, and at the same time acquiring an unpleasant smell and taste. But the putrefactive process does not take place, however long the egg may be kept, unless there be some admixture of the yolk and white.

Death to Potato Bugs Without Paris Green.

One lb. sulphur and one lb. quick-lime, mixed in four gallons of water, is said to be death to the bugs, and is preferred by many to the use of Paris Green. We have not yet tried this, but intend doing so.

A Step in the Right Direction.

The members of the Forest City Grange, Pioneer Grange and Delaware Grange, are offering rewards for the conviction of persons destroying insectivorous birds.

"We read in de good book," says a colored Baptist brother down South, "of John de Baptist—member of John de Methodist. And that is the reason most of the colored Southern people are Baptists."

Market Report.

The reports of crops throughout the country being light, has had its effect on our markets. We consequently find prices firmer, though with little advance. The very favorable change in the weather these few days has raised the spirits of the farmers, and though much of the winter wheat was injured beyond recovery by the spring frosts, there has been a great improvement in the spring crops. The reports from the Western States, on the whole, give promise of good yield; the majority of reports indicating at least an average condition. The prospect in Great Britain and the Continent of Europe is always of the highest importance to producers of bread-stuffs. So far as heard from, the weather in England has been propitious, and the prospects of a good return at least fair; markets continue to rule low. On the Continent there is, in most countries, a promise of good crops. In others, as in some sections of France, the prospects are not good.

LIVERPOOL, JUNE 25.—Weather fair. Breadstuffs dull. Flour, 21s to 22s; wheat, 8s to 9s 2d; barley, 3s 4d; oats, 3s 4d; corn, 31s to 32s; peas, 30s; pork 32s; cheese, 58c.

CHICAGO MARKET.—Wheat, 94c to \$1.02; corn, 65c to 66c; oats, 46c to 50c; rye and barley quiet and unchanged.

TORONTO MARKET.—Continues dull and unchanged in price for wheat and oats.

LONDON, ONT., MARKET.—Wheat, per cental—Deihl, \$1.00 to \$1.70; Treadwell, \$1.55 to \$1.57; Spring Wheat, \$1.55 to \$1.68; Barley, \$1.25 to \$1.30; peas, \$1.20 to \$1.30; oats, \$1.30 to \$1.32; corn, \$1.20 to \$1.30; beans, 90c to \$1.25; rye, \$1.10 to \$1.20; buckwheat, \$1.15 to \$1.25; keg butter, 16c to 17c; roll butter, 18c to 22c; cheese, 8c to 10c; hay, per ton, \$15 to \$20; fleece wool, 36c to 38c; potatoes, \$1.00; cordwood, \$3.75 to \$4.00; flour, \$2.25 to \$2.75; oatmeal, \$2.75 to \$3.00; corn meal, \$1.75 to \$2.00; rye flour, \$1.75 to \$2.00.

As certainly as expect our grain to seed without besto tion and preparati of care as much as of system in its cu be attributed the ferior quality, of to a comparison be or of any of the ce and purest of the

All grain has a and this degenerat vented, by due ca accelerated by the It is also apt to be ferior grains and s that we can, by ca improve the stand

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We are not wi vention of smut. the spores may sometimes fail i