THE FARMER'S ADVOCATE

AND HOME MAGAZINE

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THE FARMER'S ADVOCATE PRIZE

—OF—

$100.00

To be given annually by

WM. WELD, OF LONDON, ONT.

will be awarded for 1881, to "The Best Herd of Fat Cattle for Export."

This Prize will be offered at the Provincial Exhibition, to be held at London, Ont., commencing the 21st September, 1881.

CONDITIONS.

1.—The herd to consist of three animals, four years old or under, and must be at the time of exhibition, and for the previous six months, the bona-fide property of the exhibitor.

2. The herd may consist of animals of either sex or of both sexes.

3.—Pure-breds or Grades of any class may compete.

4.—Animals which may compete in any other class may compete for this prize.

5.—A statement of the breeding, mode of feeding, and weight of animals at the time of exhibition, must be given to the chairman of the judging committee before the animals can enter the show ring. An accurate account is desired, but if from any sufficient cause such cannot be given, an approximate estimate may be received by the judges. These statements will be the property of the FARMER'S ADVOCATE, and must be as full and concise as possible to be accepted.

6.—Special judges will be appointed by the Council of the Association to award this prize.

7.—The rules of the Association to govern all points, except as above noted. Entries can be made with the Secretary of the Association, up to Wednesday, the 21st of Sept.

Being desirous of encouraging the further development of our greatest resources, we offer the above prize, and hope to see strong competition for it, as it is one of the best ever offered at our Provincial for which the general farmer could compete. We have also introduced a new feature to Canadian agricultural exhibitions, viz., that embraced in condition "5." This need not debar any from exhibiting: any one who is capable of managing a farm successfully, is quite capable of fulfilling the above requirements, and if he has never made such subjects a source of study before, he will find them of much benefit. The winner of this prize may have, if he prefers, a SILVER CUP of equal value.

Next year we purpose to give a similar prize for the best herd of dairy cows, irrespective of breed, particulars of which will be given in due time.

On the Wing.

In our last issue we gave you an account of a short flight; also some particulars concerning the clarified salt now made at Goderich. That article has caused quite a flutter among some of the salt packers. We hope it may result in better prices for our butter. It is a remarkable fact that every person that may step out of an old rut and attempt any improvement is sure to be looked on with envy and jealousy by those remaining in the mud. You may notice this in every township. The young, aspiring, energetic farmer that attempts to improve is pretty sure to be frowned down and discouraged by the old settler; and the worst feature about these attempted improvements is that the old farmers, who hold large tracts of land, and who would be most benefited by improved stock, drainage or any other improvement, are often the bitterest opponents, and are more apt to throw a damper on enterprise than to encourage it. We know of what we speak on this subject. It is just so with the improved salt. We find some of the oldest packers, instead of hailing the improvement with pleasure, look on it with dread. The dread is that the business for the best salt will be taken from them. They should set themselves to work to produce a better article. The time has now arrived when a superior article will command a price. The best Canadian butter now sells for 30 cents per lb., but thousands of kegs of Canadian butter have sold in Liverpool market at from 6 cents to 10 cents per lb. What is the cause of such a difference? you may ask. Salt and care. We would like to see a fine imposed on every farmer who would offer for sale butter salted with unpurified salt. We trust these important interests of salt and butter will be properly agitated.

Goderich has another industry that is bound to make a stir among plowmen. May we say that Goderich has

A REAL LIVE YANKEE?

No, he is a Canadian by birth, a native of Goderich; but what we mean is, he has the vim, the snap, the get-up, the go-ahead, that appears to us to be the accepted meaning of the term Yankee more than anything else. Mr. Sam'l Seegmiller, when a young man, heard so much of the prosperity of our neighbors across the lines that he determined to leave Canada and try his luck among them. After travelling in search of the Eldorado, he settled in Michigan, and invested his money and devoted his energies to peach raising, and was for a time successful; but fickle fortune, however, varies. In a short time the yellows—a deadly disease, without any cure—attacked his orchard, and caused such a loss that his hopes were destroyed. He then turned his eyes to Canada again, sold out and returned. He had used the chilled plows on his farm there, and found them much superior to our Canadian plows. On his return he found his brother Canadians still using the old-styled iron and long plows. He went to the States again, and made arrangements with the manufacturer of the best chilled plows for a supply to introduce into Canada, and in three months he sold seven hundred of the American plows in our country. The plows gave such satisfaction, displacing the use of the old plows wherever introduced, that he determined to start a manufactory in Canada. He purchased a foundry in Goderich, procured workmen from the States well posted in all the latest improvements, and knowing just how to cast and make these plows—and being of an ingenious, inventive nature himself, he added several very valuable improvements, even excelling those made in the States; and feeling sure in his own mind that he now has the best plow made, he is manufacturing them by thousands, and sending them to all parts of Canada. He says if any good farmer in any part of the Dominion wants one, and there is no agent near him, he will ship one to them, and pay the freight to their nearest station, even should that be in Quebec or the Maritime Provinces, and charge them only the same price that the farmers pay him at his foundry in Goderich. Of course, every manufacturer makes the best; all have some points on which to claim some superiority. We cannot say really which is the best. T. Gowdy & Co., of Guelph, make an excellent chilled plow. Mr. Cockshutt, of Brantford, claims many good points. There are some plows made in Canada and extensively sold that have not such a good and complete finish as those above mentioned. If you desire a good plow, send for a descriptive catalogue to any of the above-named parties, or to all three, and make a selection. We should add the name of Copp & Co., of Hamilton. They formerly sold immense quantities of excellent steel plows, long boards, just the perfect model for the old Scotch and English plowmen; but when last at their factory, only a few months ago, they informed us that the change in the minds of farmers in regard to plows was such that they now sold 95 per cent. more of the short mold-board, chilled plows than they did of their steel plows. The contrast in the appearance of the plows is so great, not only in the length of mold-board and handles and metal used, but in the shape. For instance, the old-fashioned plows that did the prize plowing were made with a peculiar crooked dip at the point, and the coulter had to be specially bent, and the land-side set at a certain angle. This was all done to give a peculiar under-cut, or false cut, and to give a sharp crown to the furrow, which is all very nice to look at, but in real, practical farming it is not half as good as a full, square, honest furrow. The old plows were made partially to imitate the work done by prize plowing, but farmers now know that the land on which prize plowing is done will be fouler from grass and weeds, and will not produce near as much grain as if plowed by a common plow.

(*Continued on Page 132*)

English Letter. No. 26.

[FROM OUR OWN CORRESPONDENT.

Liverpool, May 2nd.

With the advent of the merry month of May an agreeable change in the weather has at length set in, and the fields begin to look as though stock could live upon them. It must have been a trying spring for farmers in the matter of fodder, for until a week ago there was literally no grass at all, and though this may be nothing remarkable with you, English farmers calculate usually on having a tolerably fair growth in April. The past month, however, has been very favorable for getting in the spring corn, and with a good time now, the English farmers have a fair outlook.

The emigration season has now fully set in, and I am glad to observe that so far a very large proportion of the most desirable class of emigrants, that is, English, Scotch and Irish farmers, with more or less capital, are seeking homes within the Dominion, the majority, I think, in the Prairie Provinces. It is true that a large number of English settlers are going to the United States; but they are principally from the manufacturing districts, and are going over to the large cotton and other manufacturing centres of the States. Enormous numbers of foreigners are passing through, chiefly Swedes and Germans. The bulk of this class of emigrants continue to be secured by the American companies, and many are going out to join friends. As the great North-West, however, gets better known, I look to a large influx of these hardy, thrifty, and in many ways desirable settlers, going into those regions of the Dominion so well adapted to them.

Apropos of the above, Chambers' Journal, one of the most widely read of our English periodicals, published a short time ago a series of articles entitled "Phases in Canadian Home Life," in the course of which allusion was made to the ravages of the tomato worm, and the potato bug, and also of bears and wolves in the suburbs of Belleville, Guelph, and I think of your own city of London, Ont. That journal now finds it necessary, in consequence of the numbers of contradictory letters it has received from residents in Canada, to insert a short explanatory article, in which the following suggestive sentence occurs: "The progress made by a new and flourishing country such as Canada, is so rapid and decisive, that descriptions which might hold good of it to-day, would, within a comparative few years, seem erroneous and inadequate" This is a pretty way of saying, in effect, that the article in question had been lying in the editor's pigeon-hole for some considerable term of years, and that a possible dearth of other acceptable matter had brought them forth to this ill-timed publicity. Let us hope that the "Times" and other leading English journals will take to heart the lesson thus taught, and take care in future to be well informed about Canada as it is, and not as it was even a few years ago, before they venture to discuss her affairs very dogmatically.

I am glad to notice that a large number of your live stock importers are now in this country, and are actively looking for, and pluckily buying pedigree and other valuable stock. Mr. Simon Beattie, of Preston Hall, Annan, shipped by the S. S. Brooklyn last week, a consignment of Clydesdales and thoroughbred stallions. The Clydesdales included "Lord Salesbury," "Imperial Crown" and "Fitzroland"; there was a fine Shirebred stallion "Renown," full brother to the celebrated mare "Nettie," and a magnificent dark brown thoroughbred stallion 'Revolver"; he stands 16 hands one half inches high, is short on the legs, and has grand action In fact he is just the model of the class of horse required in Canada to get carriage horses and hunters suited for this country. One of the principal failings of the carriage horses you are sending to this country is that they lack a turn of breeding. A dash of the good big English thorough-bred would effect the desired improvement. This horse, which is to be followed by some 40 or 50 others of like mould and character, is consigned in the first instance to Mr. John Holderness, hotel keeper, Toronto.

I am sorry to have to report that the steamers arriving here with cattle from the States ports are, in many instances, bringing infected cargoes. It is to be hoped that none of these steamers will ply to the St. Lawrence, and that your Minister of Agriculture will have the most rigid inquiries made into the antecedents of any steamer about which there is the least doubt. A little carelessness about such a matter might be the starting point of immense disaster to your trade.

Mr. R. Hunter, of Alma, county Wellington, Ontario, sails hence on Thursday next by the new steamer Oxenholm, which has just been fitted up to engage in the Canadian cattle trade. Her capacity will be from 800 to 1000 head. She will run regularly to and from Quebec. Mr. Hunter has been purchasing horned cattle and sheep for himself, and also for the Government Model Farm at Guelph. Amongst his own purchases are the following: He has secured from Mr. Hugh Aylmer, West Dereham Abbey, the magnificent Shorthorn bull "Socrates," and a two year old Shorthorn heifer "Golden Belle"; from the Marquis of Huntly, a yearling polled Aberdeen bull; from Mr. James Argo, two yearling heifers of the same breed. This breed is rapidly coming into favour on your side of the Atlantic, as on this. This fact is clearly shown by the results of a recent sale After Mr. McCombie's death, his magnificent herd of Polled Aberdeens was dispersed, and now, owing to ill health, Mr. Adamson, Mr McCombie's favorite pupil, and who for some time had the management of the Tillyford herd, in addition to his own, has been compelled to give up his holding. At his sale 36 Polled Aberdeen cattle averaged £56, or $280. A two year old bull realized £165, a yearling £60, two yearling heifers realized £110 and £125, and one cow £225.

Mr. Hunter also takes out a splendid yearling Clydesdale filly, "Queen," and the well bred colt "Tinto." Mr. Hunter also takes out some valuable sheep. Of Southdowns, one shearling ram and two ewes from Mr. Coleman of Norwich; and two ewes from the Prince of Wales' flock at Sandringham. In Oxford Downs he has one ram and six ewes One Cotswold ram from Mr. H. Aylmer, West Dereham; one Shropshire ram and 10 shearling ewes from the Earl of Zetland's Yorkshire flock, and eight shearling ewes from Lord Strathmore, and one shearling Border Leicester ram and two ewes from the celebrated Rock flock in Northumberland.

Mr. Hunter's purchases for the Model Farm include a yearling Shorthorn bull "Sir Leonard" and a yearling heifer, "Beta," from Mr. Aylmer's herd. These with Mr. Hunter's own selection, are described by Mr. Houseman as one of the most valuable and useful drafts of Shorthorns ever sent from Great Britain; Mr. Hunter has also made an important investment in Ayrshires for the Model Farm, including the celebrated bull "Stonealsey." He has also purchased on another account the handsome cow, "Daisy of Sandilands," and her yearling daughter "Daisy 2nd"; also a three year old heifer, "Avon Maid."

Mr. R. Gibson, of Ilderton, has arrived in this country, and has already made some valuable purchases in Shorthorns, which he will ship towards the end of this month. Mr. R. Miller, of Duffin's Creek, is also busy selecting Shorthorns, Clydesdales and Oxford Down sheep.

The usual "May-day" show of the Liverpool cart horses was held on Saturday last, but was scarcely up to the average, either in numbers or quality, the latter owing no doubt to the hard work they have had in an exceptionally long and severe winter. Still, no other town in the world can equal us in this respect, and no doubt our Canadian friends interested in horseflesh were busy taking notes of the kind of animal we require for our heavy traffic.

The Provincial Exhibition.

This year this Exhibition ought and probably will be the best ever held in the Dominion The buildings are not as good as in some other cities; but the fact that the Western Fair alone has for years surpassed the Provincial and the Dominion Exhibition when held in other places, should be a guarantee that, now united, this will be the best agricultural exhibit ever beheld in Canada. The present Board has now overcome the result of previous improper management, and are determined to give better satisfaction to exhibitors and visitors. Greater care will be taken in the selection of judges. less partiality will be shown to exhibitors. and the buildings will be kept open during the time visitors are on the ground on the principal days. Better arrangements are to be made to enable visitors to see the stock. Military displays and improper shows will not be allowed; and better arrangements will be made, we believe, for the accommodation of visitors. The Western Fair, which has always been a success, often surpassing the Provincial in its utility and general management, this year will throw its influence towards the success of the Provincial Exhibition. The great superiority of the situation of the grounds in London, being but a few minutes' walk from either of the railway stations, where all trains must stop, is a great consideration. Being of a sandy nature, yet well sodded, and kept in good order, the grounds always present an attractive appearance, no matter what the weather may be. Arrangements are also to be made, we believe, to give farmers from other Provinces an opportunity of visiting this Exhibition. We know of no better plan to awaken a spirit of progress in our Quebec farmers than for them to take a trip to this the great agricultural centre of the Dominion. Our farmers from the Maritime Provinces would be benefited by a run from home; and no doubt Manitoba will have its representatives present. We trust that the arrangements to be made will be of such a nature as to induce many farmers from our sister Provinces to attend the Exhibition, and thereby share in the benefits which it was designed to bestow. It is well known that hitherto only a few farmers have travelled long distances to attend even the Provincial Exhibition, but those who do attend are generally the leading persons in heir respective localities, and are certain to profit by the experience and knowledge gained. A farmer is improved by attending these Exhibitions. Knowledge is power; and no sane man can attend such an Exhibition without acquiring knowledge.

THE ARMY WORM.—Watertown, N. Y., May 18—The army worm has appeared in this section, destroying all kinds of vegetation. Several fields of grain have been destroyed, and hundreds of acres of pasture land were stripped of every green thing. Reports from all parts of St Lawrence County indicate that the ravages of the worm extend over the whole northern New York. Serious consequences are feared, and many farmers are greatly alarmed.

From the United States.

[BY OUR SPECIAL CORRESPONDENT.]

May 18th, 1881.

Gen'l LeDuc, the Commissioner of Agriculture, gave me an interesting account of the manner in which he was propagating the wild potato of Chiloe. After distributing the small quantity of these wild potatoes sent to him from the Island of Chiloe, South America, he found but one left. This he planted in a pot, and as rapidly as the sprouts appeared, he cut them off and planted them in new pots, so that at this time, from the one potato he has about 20 separate potato plants. He states that he first tried this experiment of propagating potatoes from slips with the Early Rose in 1876. In that year he purchased one potato of the Early Rose variety, planted it, cut off the shoots as they came up, set them out, and from the cuttings thus planted from the *one potato* raised about 25 hills.

The Veterinary Surg., Dept. of Agriculture, has been making an extended investigation and experiments in relation to *Swine plague* in the U.S. His recent investigations have caused him to contradict many prevailing errors, and to submit some valuable suggestions to the farmer and stock raiser. He states that salt and ashes, sulphate of iron, sulphur, assafœtida, black antimony, lime, coal, carbonate of soda, soap, oil of turpentine, and quite a number of other similar substances, singly and in various combinations, have been used very extensively in different States and at different seasons of the year, but notwithstanding diligent inquiry, he has failed to find a solitary case in which any of these substances, or any combination of them, have produced favorable results, or in which their use has been followed by a decrease in the mortality, that might not be ascribed more reasonably to other causes. Sulphate of iron or copperas, he says, especially, is of no value neither as a preventive nor as a remedy. He states that experiments by himself and others demonstrate that Swine Plague may be communicated to other animals, such as sheep, dogs, rabbits and rats, and by them in turn communicated again to swine. He then makes the following suggestions :

The most effective means of prevention consists, first, in promptly destroying and burying sufficiently deep and out of the way the first animal or animals that shows symptoms of swine plague, if the disease is just making its appearance, and in disinfecting the premises, or if that is difficult, in removing the herd at once to a non-infected place or out of the reach of the infectious principle. If possible, the herd should be taken to a piece of high and dry ground, free from any straw and rubbish—if recently plowed, still better—and should there receive clean food and no water except such as is freshly drawn *from the well*. If this is complied with, and still danger should be anticipated—for instance, if one or more animals should have become infected before the herd was removed, or a possibility of either food or water for drinking being or becoming tainted with the infectious principle, the danger may be averted, or at least very much diminished, by administering three times a day in the water for drinking, either about ten drops of carbolic acid each time to every 150 lbs. of live weight, or a teaspoonful of hyposulphate of soda for every 100 lbs. of live weight, till all danger has disappeared." He further states that the separation of the infected or suspected animals must be prompt; that in feeding the healthy animals must be first cared for, as the attendant may carry the disease from the infected to them. That even dogs and other animals may carry the infectious principle from the diseased animals or the yard they occupy, and that buckets, pails, &c., which are used in feeding the sick hogs may become the vehicle of the infection to the healthy. These remedies for preventing the spread of the disease are the most successful. Upon the means of cure he says :—"All the medicines, secret and otherwise, used so far—and their number is legion—have not done a particle of good, or if they have, I have been unable to hear of it. Usually those farmers who have used the most medicine, or the greatest variety of medicines, have lost the largest number of hogs, possibly because, relying upon the medicines, they neglected all other sanitary measures."

Several States of the Union have during the past winter offered a bounty for the purpose of encouraging the cultivation and manufacture of sugar. The State of New Jersey, by an Act of its Legislature, offers a bounty of one dollar for every ton of beets, sorghum, amber or other cane cultivated and manufactured into sugar. Michigan has an Act excepting from tax all buildings and machinery used for making sugar from beets or sorghum, and paying a bounty of $5 for every 100 lbs. merchantable sucrose sugar made from beets or sugar-cane raised in the State.

LOTUS.

Canadian Canned Products.

A GRAND INDUSTRY TO BE DEVELOPED.

With pleasure we learn that two canning establishments are to be erected and put in operation in Hamilton, Ont., this summer. One of these buildings is to be of stone, two stories high, 40 x 144. In this building 150 women and girls will be employed for four months in the year, and 50 for the remainder of the time. This company is meeting with considerable encouragement from farmers and fruit-growers of the district, and some having made contracts with the company, and are growing from five to ten acres of tomatoes this season specially for canning purposes. This very important industry of preserving fruits and vegetables in hermetically-sealed tin cans was introduced into the United States as an experiment about twenty years ago, and has in every particular been a grand success. It was first begun in Baltimore on a small scale, and that city still maintains its supremacy in this trade, having established a number of large factories, which give employment to great numbers of men, women and children. Establishments of this kind are found in the various States of the Union, all giving evidence of increasing business and profitable results. Nearly every kind of fruit and vegetable is preserved by this process; and when these goods have been exhibited at the great Exhibitions in foreign countries they have attracted unusual attention, and the exhibitors have received many orders from European dealers, where the goods are highly appreciated and eagerly sought after.

The export trade in canned fruits, vegetables and meats from the United States, although in its infancy, has already assumed gigantic proportions, and is rapidly increasing. As far back as 1877 their yearly canned exports amounted to 21,000,000 lbs., which was valued at more than one million dollars. Large cargoes of these goods are sent to nearly every country in Europe; also to Australia and Egypt. From the official statistics of the Dominion we learn that Canada last year imported and entered for home consumption 294,780 lbs. of American canned fruit, which was valued at $22,634; also 98,650 lbs. of canned and prepared meats, which were valued at $12,768 making a total of 396,430 lbs., valued at $45,402, which we paid to our American neighbors for goods the greater part of which we can produce as cheaply as they, and in every particular as good. All we lack is the enterprise. Nor must it be forgotten that we import large quantities of similar goods from other countries, while we allow hundreds of bushels of choice fruit to go to waste yearly. There is nothing to hinder the canning business from being as successfully carried on in this country as in the United States. True, we have not so great a variety of fruit; but when we remember that canned tomatoes and peaches, among the fruits, are principally sought after by consumers, there being little or no call for any other kinds, we find we are on an equal footing with our neighbors, for as fine peaches and tomatoes will grow in Ontario as anywhere, as well as a great variety of other fruits. As above shown, American and other prepared and canned meats are largely consumed among us, canned fowl, especially turkey and chicken, also beef and tongue, being most in demand. These articles also could be profitably produced here, and this would keep within our own country a large amount of money which is now sent abroad, and which, if kept at home, would enrich Canadian farmers instead of American. It is to every farmer's interest to look into this matter. If they will not interest themselves in matters which pertain to their own welfare, they cannot blame officials for neglecting them. If the agriculturists will bestir themselves in questions relative to their welfare, the time has come in which they will be ably seconded. We would advise, when local capital is lacking to establish canning establishments, that joint stock companies be formed; but in any case competent and experienced men should be engaged *as managers*. Canning has been carried on to a limited extent in different parts of the Dominion for some time, but we now wish to see this business come to the front. To do so, those engaged in it must exercise more care. Fault is frequently found with the Canadian article, some dealers claiming they are not as good, as a rule, as the American article, and by some they are not as attractively put up. The largest dealer in canned goods in this city recently told us he preferred the American goods, and sold them almost exclusively, because much of the Canadian goods were not of as good quality. Besides this, some of the canning establishments were careless in labeling, he having bought several packages of goods labeled "chicken," which turned out to be rhubarb, much to the disgust of himself and his customers. A *handsome appearing package* is also required. This is a *very important point*, which is now in a measure overlooked by Canadian canners. These evils are not the fault of the raw product, but of the manipulators, and can be easily remedied. It must not be supposed that all the Canadian canned products are in any way inferior. Such is not the case, many of them being of very superior quality, but by the carelessness of a few individuals the trade in them has no doubt received a slight check. Our existing duties give canning establishments a decided advantage in this country. If farmers will consider this subject, we feel sure they will be surprised at the *direct* and *indirect* profit it is sure to give, both to the producers of the meats, fruits and vegetables and to the manipulators of the same.

THE GOOSEBERRY GRUB.—The following destroyer of this pest is recommended by an English gooseberry grower:—When our gooseberry bushes have been attacked by the caterpillar, we have freed them from those terrible pests by using the following mixture, viz : Three parts of powdered quick lime to one of hen manure thoroughly mixed, and applied early in the morning in the centre of the bush where the branches start from. We use about a teaspoonful to each, which falls down the stem and dresses the roots. The mixture should be applied on a quiet day; it not only destroys the caterpillar, but nourishes the bush.

On the Wing.

(*Continued from Page 129.*)

The principal points claimed for the Seegmiller plow are, first, the beam being constructed of four iron rods welded into one, being light, strong and durable; second, in placing the beam on the plow the form of a hinge, so that it turns in any direction, thus enabling the plow to be set at any desired depth or width without the use of clevices, but merely by tightening or loosening two nuts at the junction of the beam with the handles; third, the turning of the guide wheel, which is attached to the hitching-hook or clevice, which turns with the horses. He also claims a square cutting plow, and the only real South Bend plan of casting, which turns out a plow free from defects of blow-holes. The plows look well, and without a fair trial in the field with other plows it is impossible to say whether it will eclipse all others or not; but one thing is sure, that it is destined to make manufacturers and farmers look out for it. We are always pleased to note any improvement in our agricultural implements. The improvements of the age we live in are wonderful. In Germany they are running a railway by electricity, and Frenchmen and Englishmen are sitting, each in their own country, and talking audibly to each other, by means of a telephone wire under water.

THE NORTHERN ORCHARD.

Mr. Seegmiller, finding peach raising so profitable in Michigan, on the east side of Lake Michigan, advised his brother to try it on the east side of Lake Huron, and as no peach orchards were near there he thought that he might perhaps escape from the yellows. His brother has now about four acres in peaches. The trees are very even, and, in fact, this peach orchard is the best we have ever yet walked through. It is now five years old, and fruit buds are thickly set on every limb, even on the topmost twigs; despite the nothern latitude and the unusual severity of the winter, not a dead twig is to be seen. It is well worth a visit, especially as peach growing has not been engaged in as far north as this in Canada, and a finer lot of trees cannot be imagined. He also has a large plum orchard of about five acres just coming into bearing, also about two acres of pears and about eight of apples also bearing, and six acres of strawberries and small fruits. He realized $3,800 from the produce of his farm the past season, and his trees only just beginning to bear. He has 165 acres of land; it is situated 1½ miles from the lake.

But Dame Fortune does not smile so graciously on all his undertakings, and there are losses to be recorded. This consisted in the

DEATH OF WELL-BRED SHEEP.

Mr. Seegmiller desired to have the best flock of sheep he could procure, and with this intent he attended a Bow Park sale and purchased a lot of Cotswolds and Leicesters; he also purchased some more Leicesters from Mr. Jas. Cowan, of Galt, and some from Mr. W. Evans, of Puslinch; 40 in all. One pair cost him $84; the 40 cost him on an average $26.50 per head. Last summer and autumn they ran with common Canadian sheep, or what some would term scrubs; in the winter they were kept in the best arranged and best sheep house we have seen. The house is divided into ten even-sized compartments, having good feed racks and troughs, and plenty of light and air, but not too much; each 12 has a separate yard to run in at the outside of the house in the day time or in suitable weather. The sheep were regularly fed pea and oat straw in the morning and one bushel of mangels to every 12 sheep, in early part of the winter; then turnips in place of mangels towards spring; watered every day; salted properly, and fed good clean hay at night. 120 sheep came through all right till lambing time, which commenced in March. The sheep yeaned all right; sheep and lambs appeared to thrive very well for a few days, then the ewe would lose her appetite; water would run from the eyes; in about a week the sheep would become blind; a film would grow over the eyes; the wool would part from the skin very easily; the sheep would then die. The wool would then fairly peel off, and the sheep turn black. In this way 25 of his expensive sheep have already died. Now this is a serious loss to a beginner—25 sheep to die out of 40. What is most peculiar about this case is that those that died were all the expensive ones, and not one out of his 61 common sheep, all of which are looking well. Both lots had just the same food, same care and attention in every way. We inquired if any veterinary surgeon had been to examine them. We were informed that there had not been any. We asked why, and were answered that they considered that the services of a veterinary surgeon would be an additional expense, from what they had seen, and that local skill was as good. They had an ex-official from the Model Farm, who had tried his skill, but death to the patient was the result. Now, we would respectfully call the attention of the present gentlemanly Manager of the School of Agriculture and the Principal of the Farm to these facts, and request him to inform us, for the benefit of farmers, what was the cause of the death of these fine sheep Mr. Wood has very kindly permitted us to apply to the College for any information we might desire. If the information is furnished to us, we trust it will be in a concise form, and free from terms unfamiliar to farmers.

Agricultural Exhibitions.

Man requires recreation and amusement. Those who have no rest from labor often become of no more value to the world than the ox or horse that labors with them, and in morals, principles or instinct fall almost as low as the dumb brutes. Amusements are often carried to excess, and in many instances of this kind, men even with cultivated knowledge, descend lower than the ignorant. We should aim to avoid the two extremes.

We know of no better plan to attain this and make it of the greatest benefit to the greatest number, than by a liberal patronage of all agricultural exhibitions, and by encouraging and supporting every plan that will aim at their extension and improvement; also to add to and encourage every proper art, as well as agricultural products. It is to be regretted that directors have sometimes allowed improper exhibits to attract the attention of the public; but we in Canada have not much to complain of on that score.

Our Provincial Exhibition was inaugurated by an energetic gentleman who really desired the welfare of the country. It has done much good, but like all things that man controls, abuses have crept in. The most deserving founder of this institution lost the power he once had, and the controlling influence fell into the hands of parties who desired to make it subservient to private aggrandizement, and to use it and its power and prestige to further such ends. To do this political favoritism has been used, and honors and places have been given to undeserving recipients, and real merit has been trampled in the dust. The result is that general dissatisfaction has taken hold of the minds of the people, and the cry is, away with it. The Industrial Exhibition, of Toronto, and the Western Fair, of London, have eclipsed it. Everything that the Government could do to aid the old management to exist has been done. In fact, all the power that the Government could bestow, all the money they could grant has now been exhausted to maintain this Association. At the last session of Parliament the last trial grant was given, and that only under the promise that better plans are to be developed. The gross mismanagement was partially disclosed in the House, and the feelings of the members are opposed to further expenditures in support of the present management.

We regret that there should exist a desire to decrease the good done by Township Exhibitions, also that there should exist a desire to do away with the Provincial Exhibition. Because the Provincial Board has for a long time been running in a deep and bad rut, that should not destroy the Exhibition altogether. It is our duty to try and improve the road, get out of the old rut, grease the wheels, and set the machinery going again. To do this a fresh team is wanted. Some of the old members have already stepped out or been left out, the crack of the driver's lash has been heard (in Parliament). Some new horses have been hitched in, some of the old ones are desirous of giving a good pull, and we believe they are a team good enough to pull it out of the rut. There undoubtedly are some in the team who are supernumeraries; who eat, but can only pull the wrong way. There have been votes cast, and there will be others, and open votes will tell. Every recipient of public money should give a clear statement of every measure he supports or opposes. As soon as the errors of the old Board are fairly opened to the public, proper steps can be taken by the new members, and the public will be able to judge what is required for improved management.

ACCOMMODATION FOR VISITORS TO AGRICULTURAL EXHIBITIONS.

This deserves more attention than is generally given to it. Directors are too apt to think there is no money in this department. Their first object is to get a crowd into the exhibition, and make what they can from gate money, provision stands, etc. The necessary accommodation for visitors is always neglected. What a trifling expense it would be to have a few plank seats scattered about the grounds. The planks would not be injured, and the use of them need not cost over $2 per 1000 feet. Directors, assistants, exhibitors and attendants all assemble at the exhibition grounds first, and they can secure comfortable accommodation. Sight-seers who come in the morning, spend a few hours on the grounds, and leave by the evening trains, constitute by far the majority of the attendance at agricultural exhibitions. There is another class of persons, who are kept away by the lack of accommodation, that is persons of means; persons who are or ought to be able to profit themselves and aid others to do the same by these exhibitions. Men of business cannot afford to spend much time at these places, but would probably spend one, two or three days if suitable accommodation could be had. We have no hesitation in saying that thousands at different exhibitions we have attended could not procure a bed fit to sleep in, in fact, none at any price. This knowledge is tending to keep many of the very best visitors away. We feel satisfied that we can accommodate ourselves to circumstances as well as the average, and if we cannot get a lodging in any city, town or village, we do not think anyone else need try. We shall give you a little of our experience at the last Provincial Exhibition held in Kingston. We put up at Mr. Irwin's, the City Hotel, the best farmers' house there. Well acquainted with the landlord

he did the very best he could, and gave us a sofa in the parlor with covering all right, but bed bugs were so thick that not a wink of sleep could be obtained that night. At Hamilton five years ago no hotel could supply even a sofa, cot or bed, and a thick cotton had been cut to make beds six feet long, but when stuffed with straw it had reduced the length to five feet. All had to hang their feet out, but we got some sleep; there were about 50 others in the same room. At Toronto two years ago we thought we were all right as we had a bed and room engaged a week ahead ; but it was no use ; we had to take a cot in a passage in the Walker House. A window was open unknown to us through the night close by the cot, and in the morning we had such a bad cold that it stuck to us for two weeks. At the State Fair in Jackson, Michigan, we could got no bed or sofa in any hotel. The only chance was to have a pew in a church and purchase a quilt. The church was a large brick one—pews all cushioned. The body of the church was let to men, the gallery reserved for women, and two persons kept order and quiet. We had as good a night's sleep as ever we had when attending exhibitions, a good wash in the morning, and a good meal in the basement. In fact we felt grateful, and that nice refreshing night's sleep in that church has done much to obliterate some obnoxious preaching we have heard. This church was heavily in debt, and the proceeds of this enterprise, we believe, enabled them to nearly liquidate that debt without begging ; and they won the hearty thanks of your editor and many hundreds more that were sheltered during the same time. Last year at the so-called Dominion Exhibition, at Montreal, we went to some half-dozen of the best hotels in that city, but could not obtain a night's lodging. The citizens had a directory establishment to direct visitors where to obtain accommodation. We repaired there and read the address of a good establishment, and went there :—All full, but here is an easy chair in the passage. No quilt or any place to lay down. Price of chair for the night $1. We then repaired to the house of Mr. Swinburn, the practical veterinary. The beds were all occupied, but we were grateful for a good sleep on the sofa. Some that do not know and have not had experience may condemn these remarks, but at the time of a rush previous arrangements are often disregarded, and telegraphing is of little use when all places are full. The Mayors and Aldermen of cities, and the President and Directors of exhibitions should not license or grant privileges for persons to make money out of saloons or feeding establishments unless the parties would prepare a lot of extra sleeping accommodation. We do not intend to advise people to attend any of these large exhibitions and stay over night unless there are better arrangements made than we have yet seen. Who could think of bringing a wife or daughter to these exhibitions, and depend on procuring accommodation. We will use our influence to try and have better arrangements made, and hope others will aid us.

Our Spring Prizes.

Many hundreds of our subscribers gained prizes during the past winter. Those that made their selection have had them mailed at a proper time to ensure their growth. Some deferred making their selection till the season was getting too late for plants, vines, shrubs or bulbs. Therefore we forwarded to all that had sent us new subscribers and had made no selection, a package of seeds, plants or bulbs, which, we trust, will have been received by our friends, who, we hope, will appreciate our efforts to please them.

The Board of Agriculture and Arts.

This Board held a meeting the latter part of April. As the ADVOCATE was then nearly ready for the press, we could not say much about it in last issue. The principal business was the appointment of a new Secretary; there were 15 applicants by letter, but the choice was between three, viz., Mr. Johnston, Mr. Wade and Mr. Mowat. After a long series of balloting, Mr. Wade, of Port Hope, succeeded in obtaining the situation. There had been considerable canvassing done for some of the candidates. The other business that occupied most of the time was the revision of the prize list.

Mr. Klotz opened another important question. He had been examining the Treasurer's books, and found that the Treasurer had been crediting himself to $4 per month in addition to his salary. He stated this to the Board. None of the members were aware that this additional charge had been made ; this had been going on for some time. Mr. Graham, the Treasurer, was called to explain. He said he had made the charge for additional work in examining the Secretary's books. It was shown that no resolution had been passed by the Council justifying this additional payment, and the opinion of some of the members was that he was even now overpaid by the salary he receives, namely, $400 per annum. So excessive had they thought his former salary, which was $600 per annum, that they had reduced it to $400. It is claimed that he has to give heavy securities. The Treasurer's is an important office and worth a salary of $600 per annum. Continuing for a long series of years, with traveling and other expenses, it should command a very efficient person, and the duty of the Treasurer, we should think, would be to watch closely all the funds belonging to the Association, and if any were not properly accounted for, he should explain the reason why. If he had suspected anything wrong in any individual, we think he should have at once let the public know about it. As a public, paid official, we think he should explain and leave no reason for any doubt in the public mind.

We do not pretend to say that Mr. Graham has done anything amiss, but we do think that the public are entitled to more information about the above facts, and think it is Mr. Graham's duty to explain before his resignation should be accepted, or before a new Board is elected or appointed.

The charges made by the Chief of Police of Ottawa against the improper management of this Association we do not think has been satisfactorily explained, see ADVOCATE, vol. 15, page 2. The extent of the late Secretary's deficiencies are as yet unknown to us. The loss of a bag of untold money, when the Provincial was last held in Toronto, has not yet been satisfactorily explained. The names of the persons who were in charge of the said bag of money when it was taken, should be given, by whom appointed and why no security had been taken. Also, why it is necessary for the Board now to appoint a bank clerk to audit the accounts.

Prof. Brown gave notice of motion to the effect that the Legislature be requested to alter the constitution of the Association, so that Mechanics' Institutes be represented by one person only, in place of three. Also that no professor of agriculture, as such, be *ex-officio* member of the Council, and that two of the leading breeders of the Province be appointed by the Council to represent that important interest.

Mr. Saunders, of London, Ont., read the second report of the Special Committee of Enquiry, in which recommendations were made to reduce the salaries of various officials, and to considerably reduce running expenses. The salary of the Secretary was fixed at $1,200, and his assistant at $750.

Recommendations were also made to the effect that four prizes for essays be given, particulars of which we gave in our last issue, page 125.

Also, that the evenings of the 21st and 26th of September, during the Exhibition, be set apart for holding public meetings, for the discussion of topics relative to stock-breeding and grain growing—how best to advance these interests. The prize-taking essays are to be read at these meetings. Prof. Mills will also read a paper.

The recommendations of the Committee were adopted.

THE HERD-BOOK.

Mr. White presented the report of the Special Committee as to the registration of pedigrees and the publication of the herd-book, recommending that a meeting of the breeders of all kinds of thoroughbred animals be called on the evening of the second Wednesday of the first week of the Exhibition, to ascertain their opinions on the matters referred to.

Manitoba.

When visiting Manitoba in 1879 we took with us a few maple seeds, and gave them to different parties to plant as an experiment there. We have since heard with pleasure that some have made good growth the first year, and are succeeding fairly. We presume that we would have heard from all, but their industrious lives do not allow time to report progress. The soft maple trees in front of our dwelling have now a fine lot of seed hanging on them. They will soon be ripe—about the time that you should be reading this article, — 4th of June. As these soft maples make a handsome tree, are rapid growers, and are the most hardy found with us in Ontario, it is our opinion that they would be of advantage to our friends in Manitoba. We intend to save some seeds as soon as they fall, and to send a small package to every one of our subscribers in Manitoba who desire some and will send stamps to pay the postage on the seed. For this we expect that you will take care of them and send full report as to your success, and we hope to see one or two growing when we visit Manitoba again, which we trust some day to do. May our next visit be more fortunate than our last, when we were caught in the midst of your rainy season and thus prevented from visiting the Northwest Territory as well, which we hope to do if we visit you again. We may hope to be able to show your Province in a better light than whon under a cloud.

HINTS TO INTENDING NORTHWESTERN SETTLERS.

In the report of the Minister of Agriculture of Manitoba appears the following timely suggestion from Mr. James Stewart, High Bailiff :—"I would suggest that intending settlers in the Northwest, who come and settle down on the prairie, should break up an acre or two of land around where they build on the west, north and east, and plant with maple seeds. Plant in rows four feet apart, the seeds to be planted one foot apart. They afterwards can be thinned out and transplanted. I have them twelve feet high from the seed in four years, and they form a good shelter. I find, after a residence of nine years, that this country is well calculated for raising the different kinds of grain sown by farmers."

The N. Y. Tribune says neither soap nor anything that contains caustic potash or lime should be used in cleansing tin milk vessels. The first is nasty, and all corrode the tin. For scouring, use salt; for disinfecting, use sal soda; for cleansing, wash first in cold water, then with warm, and scald with boiling hot water, and drain without rinsing or wiping. Infection from a wiping cloth may undo the effect of scalding.

Dairy.

Cows Coming in on Grass.

BY PROF. L. B. ARNOLD.

The best time for cows to come in is in the month of April. It is very desirable at any rate that they should come in long enough before grass comes to have all swelling and inflammation get out of their bags before being crowded with a large flow of milk from new grass, otherwise the fleshy condition is liable to continue to the injury of the flow all summer. But it often happens that this matter cannot be controlled just as desired, and some of the herd, especially where there are large ones, will be coming in when the pastures are at their best, and injury and often loss occurs from swelled udders, or milk fever, or garget, or obstructed teats. Cases of milk fever especially which have terminated fatally are so often reported coupled with an inquiry of the cause and remedy, that a word of warning in season seems appropriate at this time. To guard against milk fever and against injury to the udder as well, cows coming in after grass becomes flush which are in high flesh, or even in fair condition, had better be kept in the barn or away from grass entirely for two or three weeks before coming in and for at least ten days afterward, or until the swelling and hardness is out of their bags and the milk is flowing plentifully and without obstruction. Then a gradual introduction to grass may be safely ventured.

Cows which are pretty thin are quite as likely to do as well if allowed to make grass a part of their rations as to be entirely excluded from it, and they also may be allowed a small amount of some unstimulating food like bran or shorts, but heating food like corn meal, linseed meal, or cotton seed meal, should not, in warm weather, be given to any cow previous to parturition, and even in cold weather such heating food at such a time should be used very sparingly if at all.

While shut away from grass it is very important that cows should have all the good water they can drink, and that they have it when they want it. Thirst produces inflammation, and this is just what is all-essential at this particular time to guard against. Water is one of the best of febrifuges, and should never be withheld when wanted.

Another safeguard against the occurrence of milk fever is the use of saltpetre. It should be given to cows at all times, but more especially previous to parturition. It is just as useful for them as common salt. It is also one of the best safeguards I have ever used or known against retention of the after-birth, abortion, and garget. It should be used at all times whenever there is any indication to or danger of a swelled udder, by pulverizing finely and mixing with common salt at the rate of one ounce to the pound of salt and feeding the two together freely.

The immediate cause of milk fever is a cessation of the flow and secretion of milk by reason of excessive inflammation, swelling and hardening of the milk glands at a season when there is an extraordinary rush of blood to them which ought to pass through the udder but is obstructed by the swelling. A check in the flow of milk and blood both at the same time makes such an intense pressure upon the nerves of the udder as to produce the most excruciating pain. The whole system suffers from the shock—the weakest part, which from the state of excitement is usually the brain, but often the stomach, or some other organ, sympathises most. Extreme nervous prostration and death soon follow, unless relieved. A crisis in this pressure upon the nerves of the udder is usually brought on by chilling the surface and driving the blood inward, as by exposure to chilly night air or cold air or cold rain. Sometimes it is brought on by the debilitating effects of excessive heat, or by overloading the stomach when it is too weak to digest the load, or by drinking too much cold water when the stomach is too feeble to recover from the chill, all of which causes should be most carefully guarded against when it is known that milk fever is liable to occur, and it is always liable to occur when the bag gets very badly swollen, hot and hard. It does not occur when the bag is soft. It is therefore important to keep it flexible, and it is to this end our advice is chiefly aimed. If there is danger of swelling and inflammation from milk before parturition occurs, the bag should be milked out often enough to keep the inflammation down. Some people have a prejudice against milking before cows come in, but there is no more harm in milking them before than afterward. It is often necessary to do so to guard against garget as well as milk fever at this time of the year. After milking has once begun there should be no abatement. It should be continuous and regular, or trouble will be very sure to follow.

Delivery is usually soon followed by thirst, and in hot weather it is apt to be pretty severe. Discretion should be used in slaking it. If the animal is strong, water of the temperature of the air will not hurt her; but if she is at all weak, as she is very liable to be in hot weather, cold water will not be safe for her to take. I have found it a safe and excellent practice to take two quarts of bran or shorts in a pail, and turn on boiling water enough to cover it, and after standing ten or fifteen minutes, to fill the pail with cold water, and give this for the first drink. If well stirred up it will be so thin as to be readily drank, and the flavoring of the bran makes the water, though warm, agreeable. If the patient is much weakened, it is an excellent plan to mix with the bran a tablespoonful of ginger, or an equal strength of some other stimulant. Moderate feeding should be followed for several days, or until the patient begins to gain strength and the milk to flow freely.

Following the course here marked out, I have never had a case of milk fever in my own dairy, though I have kept one a great many years, and had cows coming in at all seasons; but I have often had occasion to prescribe for others who have neglected the precautions.

A practical dairyman gives the following as his method of making a good dairy herd:—"Nine years ago I began weeding my herd of cattle, testing them, and dispensing with all that were not better than an average. I bought some cows, raised some heifers from my best stock, and when in milk one fell below my standard of a good cow. I sold her as soon as possible. Those of my own raising have nearly all proved superior to those purchased. I find that no cow will do as well when changing homes and masters as she will in her original home. When I had fourteen as good natives as I could well collect, I purchased a well-bred registered Jersey bull and raised my heifers, and from that source my present herd."

In all the late competitive exhibitions, where competition was unrestricted and merit alone controlled, butter made from cream which had been skimmed off the milk has carried off the prizes as against that made from whole milk.

The Board of Directors of the Eastern Dairymen's Association met at Belleville, Friday, May 13, and after a long discussion, it was resolved to hold the next butter and cheese exhibition in connection with the exhibition of the Toronto Industrial Association in September next. The sum of $400 was appropriated to secure a competent butter and cheese inspector.

Coloring Cheese.

The fact is familiar to all butter makers that should the cream become too warm in the churn the butter is sure to be very light-colored. The same principle holds good in cheese making, and as it is absolutely necessary to heat the curds to make cheese this heating takes the color out. Certain markets, and notably the English, require a cheddar color to our factory cheese, and in order to meet this, coloring matter of some kind must be used. Annato in some form is generally considered the cheapest and best. The most economical manner of preparing it is with potash. At a late meeting of the Elgin Board of Trade a celebrated doctor discussed this question, and to show the ill effects of potash on the stomach, he exhibited a specimen partly destroyed by this powerful alkali. From that he argued that the potash in coloring matter is injurious to the human stomach, and must cut some figure in causing cheese to be short lived. To what extent these conclusions may safely be adopted we will leave to the intelligent reader, but there certainly seems to be a measure of truth in them, at least to the degree that cheese makers should take some warning and be not too rash in high coloring with an article of which potash forms a principle ingredient.

It is our opinion that the market would eventually be improved if a general system of shading down the color was adopted to bring our factory make to more nearly resemble the famous Stilton. Purchasers taste considerably with their eyes, it is true, but still the table test proves the sure one in the long run, and no one can hold a good market any length of time without meeting this requirement. Our cheese have won their present high standing in the English market on their solid merits, and not by such a simple fancy point as that of color. We would not advise a too rapid, change, but simply a toning down of color, which we believe would improve the quality and be a step in advance of the position now held by our highly colored cheese.—[American Dairyman.

The Hog Nuisance at Cheese Factories.

At the recent Convention of Canadian Dairymen at Stratford, Ont., the question of feeding hogs at cheese factories was pretty thoroughly discussed.

From the first establishment of the factory system, up to the present time, various methods have been proposed to do away with the hog nuisance at factories. At first, and even at the present time, many of the factories have hog-pens located near, where the whey is conducted, and fed out to a considerable number of hogs belonging either to patrons or the factory managers. The stench from the whey and the pens pollutes the air for a long distance, not only to the damage of milk and products of the factory, but to the discomfort of persons living in the vicinity, as well as to the travelling public which are obliged to pass these establishments.

It has been claimed, and there can be no doubt of the fact, that the health of those living in the vicinity of these pest places is often seriously impaired. In some instances the hog-pens are located at quite a distance from the factory, the air is filled with foul odors, and is liable to be more or less absorbed by the milk, while it causes discomfort to those occupying the premises. In other cases the whey, after being run in a tank, is divided among patrons, who carry it back to the farm in the cans employed for hauling the milk. The plan does not wholly get rid of the stench arising from decomposing whey, while trouble is often experienced from a neglect of thoroughly cleaning the cans before using them again for milk. Much bad milk, it is claimed, comes from this source, and factory managers have much trouble in getting good milk, and in regulating the proportion of whey to the different patrons. At some factories so fierce is the struggle for whey that factory managers have resorted to the scheme of pumping water into the tank—diluting the whey freely in order that patrons may be freely supplied with material to fill their cans when returning home.

The method adopted by Mr. Losee, of Canada, avoids all these inconveniences. He makes cheese at a rate that entitles him to the ownership of the whey, and he runs it into tanks upon carts, and then hauls it away from the premises. His factory takes the milk from about 500 cows, and his plan is to take a 10-acre lot some little distance

from the factory (one in grass is preferred), where from one to two hundred hogs are to be kept. Movable troughs for feeding are placed in this lot, the whey is drawn out daily in tanks and spouted into the troughs. Every two or three days the troughs are moved to a new place in the lot, the troughs being arranged so that they can be drawn to the desired spot with a horse, by simply hitching a chain to one end of the trough. In this way the whole field is gone over from time to time, insuring cleanliness in feeding, and avoiding any disagreeable smell. The hogs are constantly rooting up the ground in search of green food—grass roots and the like—and at the end of the season not a vestige of weed or vegetation remains. Occasionally shelled corn or peas are scattered over the ground thinly, in order to induce the hogs to keep up their work of rooting and cultivating the soil. Their constant rooting and stirring of the earth thoroughly mingles heir excrement in the soil, thus preventing any disagreeable odor, and by fall the land has been manured and worked in the best manner for a crop of winter wheat, for which it is then employed. Mr. Losee stated that last season he kept 140 hogs on a ten-acre field. The hogs in the spring, or when he commenced feeding, weighed on an average about 100 pounds each, and when they were finished and sold in October the average weight was 223 lbs. Some shippings, shorts and grains were fed with the whey, the cost of which was not to exceed 50 cents for each animal, and in October, when ready for the butcher, they were in fine condition. Duri g the season not a single hog was lost, or was in any way diseased. Mr. Caswell, who was present, and purchased the hogs in the fall, confirmed the statement of Mr. Losee, and said the hogs were the best in all respects that he had seen at any of the factories, the meat being solid and free from the soft, watery condition usual to whey-fed pork. He paid for them at the rate of 5½ cents per pound live weight, which was about the price paid per pound in spring when feeding was commenced. As they g ined each on an average 123 pounds, and as only 50c. per hog was paid for grain and food in audition to the whey, it will be seen the pront on each hog was $6.26, or $876.40 on the lot.

In addition to this must be added the thorough culture and manuring of the ground and the eradication of weeds Mr. Losee remarked that his plan was the cheapest and best way he was acquainted with for freeing the land of Canada thistles, for the hogs would follow every root and branch of the thistles until they had completely exterminated them. In preparing these ten acres for winter wheat, he had never seen soil in better condition. The whole piece had been worked over so many times by the hogs that it required little manual labor to put it in condition, and thus the whole lot looked like a garden.

This method seems worthy of attention among cheese factory manag rs, and among its prominent advantages is the keeping of factory premises free from disagreeable odors arising from decomposing whey and the hog-pen nuisance.

Where the whey is sold a charge is made of about $2.60 for every ton of cheese manufactured At some of the factories the whey is valued at about what it would cost to box the cheese, and this has ranged during the past year from $2.60 to $3 per ton of cheese manufactured.

During the discussion of the hog nuisance at factories, dealers in whey fed hogs stated that the shrinkage on live hogs, when dressed, amounted to about 22 per cent. on an average. The general impression prevailed that Mr. Losee's plan should be adopted, whether the hogs should be owned by the manager of the factory exclusively, or by patrons.—[X. A. Willard in Dairyman.

The Farnham correspondent of the St. John's News says the Beet Sugar Company is progressing very satisfactorily, and 1,900 acres have been secured for beet culture. The Company have now in operation a large number of machines for sowing and cove ing the seed. The farmers have simply to plough and harrow their land, the Company furnishing and planting the seed at a very trifling cost. To show how rapidly and economically this can be done with the improved machines, it may be interesting to know that at St. Hughes ten acres were planted and covered in by two double machines in two hours and a half. This does away in a measure with the argument that there is a greater amount of labor necessary in raising beets as compared with other crops.

Agriculture.

The Culture of Early Amber Cane.

Dr. Collier, Chemist of the Agricultural Department, Washington, D. C., U. S.. in his treatise on the Early Amber Sugar Cane, after writing at length of the great necessity of procuring the best seed, says: "Though it is advisable to sow 10 or 12 seeds in each hill, should they all come up, thin out to 4 or 5 soon after they appear."

You might have more in a hill but the best results are obtained from that number.

When you have too many stalks in a hill, the amount of crystallizable sugar per stalk is small in comparison with the percentage of foreign matter.

The danger resulting from birds pulling it up is small, but still more so than from worms or flies; the birds pull it up, but lay it down again not eating the seed, as it has a decidedly bitter taste when small enough to be pulled by birds or destroyed by flies or worms.

Pull up a stalk and taste it and you will be convinced: at least, such has been my experience.

An easy plan for keeping off crows is to drive a few sticks here and there through the fields, and tie strips of elm bark or twine from one stake to another, leaving them there until the cane is large enough to take care of itself.

As soon as the cane is up, perhaps half-an-inch, stir the ground around the hills which may have become crusted, and as it is now of slow growth and tender, the wind may wear off the small shoots against the sharp, rough edges of the crust.

Another benefit to the plant is this: it lets the warm rays of the sun down to the tender roots.

A great deal depends on the amount of labor be stowed on the cane at this stage; for, if it makes a good root, the root will make a good stalk.

Do not forget this, as it is very important.

Again, it gives a check to any grass or foul weeds which may have started, and if allowed to grow would soon spoil the cane, or injure it so severely that in nine cases out of ten it would never regain what it had lost.

Hence, keep the soil loose around the hills and free from weeds.

When the cane starts to grow, do not be discouraged if you should see it make but very indifferent progress at first; it will put forth suckers or false shoots. These are worse than weeds, they not only draw their strength from the same ground but extract the very life from the main stalks.

They are full of that foreign matter spoken of before, and should they be allowed to remain, at time of cutting, you will find that they contain a degree of sweetness in a very small proportion to the size of the stalk.

Therefore it is best to remove all but the parent or main stalk, which will be a large as well as a rich one if freed from those hangers-on.

Go through your cane about the middle of July and cut or pull off all the suckers and shoots close to the parent stalks.

Do not be afraid of losing anything by this, for all the saccharine matter absorbed by them will go into the main cane and make it all the sweeter.

If the suckers were not taken off and also not worked up the loss in quantity would be fully 25 per cent., and if worked with the rest the loss in quality, both taste and color, would be from 10 to 20 per cent.

Should they be cut before the middle of July they might requir cutting again; but, if cut then, the leaves of the standing cane will so shade them that they will make but indifferent progress, and if a few should again obtain rank growth it will be but a trifling matter to go over them a second time.

Now go through the field occasionally with the hoe and cut all the weeds and throw a little fresh dirt around the roots.

(To be Continued.)

We are indebted to the Secretary, Mr. J. H. Real, of New York, for a copy of the Journal of the American Agricultural Association. This work contains several valuable papers on agricultural topics, which are written by able writers.

Covered Yards.

At a recent meeting of an English Farmers' Club, Mr. H. M. Cobb read a paper on the above subject, from which we extract such as is of interest to Canadian farmers. He said :—

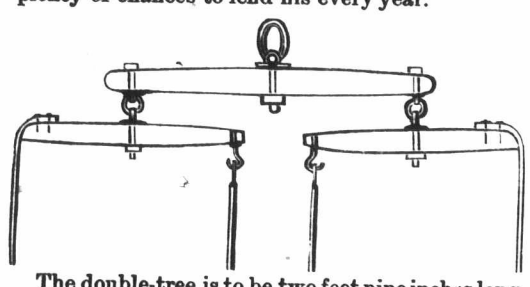
Lately I had the pleasure of seeing the yards erected by Mr. Randell, of Chadbury, Evesham, which are most conveniently and economically arranged; and I could not help making a comparison between the healthy appearance of his store beast, not at all extravagantly fed, and those of the store cattle we usually see in this neighborhood—in the former case quietly licking themselves with enjoyment after a comfortable meal, instead of standing with tucked-up quarters, using their bodies to keep off the rain and pitiless blasts. From what I saw then, I feel convinced that even store cattle kept in covered yards must be worth quite $5 per head more at the end of the winter. Mr. Randell says, in a letter to me lately, the improvement of the animals alone would pay 5 per cent. on the outlay. Mr. Beard, of Horton, Canterbury, who has also erected covered yards at his own expense, says .—"I find stock are as hardy and do as well when they go out in the spring as others. There would, I think, be found no practical or theoretical man to attempt to disprove that the manure is considerably improved. This improvement has been estimated by various writers at 100 down as low as 30 per cent. To prove increased value you require results, and I will show the actual facts gathered by Lord Kinnaird and others from trial of the manure on different crops; the application of an equal quantity of manure from covered and uncovered yards, made under the same conditions as to the food and age of the animals, to an acre of land, gave the following results :—Dung from uncovered yards—first year, potatoes, 7 ton 12 cwt ; second year, 42 bush. of wheat, 156 stones of straw. Dung from covered yards—First year, potatoes, 11 ton 12 cwt.; second year, 54 bush. of wheat, 215 stones of straw. Showing an increase for the first year of more than 50 per cent., and in the second 25 per cent. in round figures—actual facts, more than confirming our previously determined 30 per cent. Again, two plots of an acre each of meadow land were treated with fifteen loads of the two sorts of dung separately, and a third left unmanured, the result obtained being:—From uncovered yard dung, 16 cwt. of hay; covered, 25 cwt , or a gain of over 50 per cent., thus again largely exceeding our estimate. The unmanured plot produced 10 cwt., thus confirming the correctness and value of the experiment. Dr. Voelcker says that the worst possible way of making manure is to make it in open yards, as a large proportion of valuable fertilizers are lost in a very short time, and after a lapse of twelve months two-thirds of the quality of the manure is lost, leaving only one-third, which is scarcely equal to the same weight of fresh dung.

This matter has been investigated by other agricultural authorities, all of whom decide that manure which has been sheltered is of much more value than the unprotected article. Canadian farmers would do well to notice this fact. In this country nine-tenths of all the manure is kept in the open barnyard. The straw stacks are in no way protected, and many of them are badly built, and in the fall, winter and spring from one to three feet of water-soaked straw, frozen in a solid mass, has to be chopped around and pried off the top before a cut can be made or good straw be come at. After this frozen mass is taken from the stack, it is left in the open barnyard to be thawed by the heat of the sun and warm spring rains, and after it has laid and leached for weeks it is hauled on the land and called manure. Such a state of things does exist on many Canadian farms to-day. The use of a covered yard from May until November is an item by no means to be despised Implements which suffer quite as much from exposure to the sun as from rain can be stored here, and various uses could be found, especially when the barn will not hold the season's crop. In such cases grain can be stacked here for a short time until threshed.

Sweet corn has been planted quite extensively by farmers and dairymen this spring. Its value for winter forage and early feed is becoming better known and appreciated, and it will gradually gain until every live farmer will find himself providing it as regularly for the denizens of the barn yard as the mistress does for the table.—[Ex.

Whiffletrees for Orchards.

As a general thing plowing an orchard is an irksome job, horses and men frequently becoming impatient, and the trees are liable to be more or less barked; but if proper appliances are used such need not be the case. An orchardist, who for 15 years has used a set of whiffletrees similar to those represented by our illustration, and who first had them made, says they are the best thing for the purpose he has ever seen, and that he has plenty of chances to lend his every year.



The double-tree is to be two feet nine inches long, the single-tree to be two feet four inches long. A hole bored through the double-tree to receive a five-eighth eye belt with a link in the eye and a nut on the other end; the belt to be loose in the double-tree, so it will turn, also a hole through each end of the double-tree and through the center of each single-tree. Then, two eye belts to be connected with a short link, put on each belt, one goes through the center of the single-tree, the other the end of the double-tree. These belts are to be loose so they will turn. A good washer to be on the back of the double-tree and in front of the single-trees, also a good nut on each belt. The inside ends of the single-trees can be ironed to any one's liking, but the out ends should be made square and rounded on the back side, towards the front, then take a good length of tug (an old one is as good as a new one, if you have it), lap the tug on to the back of the single-tree about three or four inches, and put two rivets through the tug and single-tree to hold it. Let it draw around the end of the whiffletree, and you have the very best thing that ever was to plow an orchard with.

Water as a Solvent.

BY C. HARLAN.

The mineral constituents of the bones of man and animals are but the ashes of our daily food.

Every year, from the rocks and soil these ashes come, decomposed and dissolved by water, carbonic acid and oxygen.

Green manures, by their ability to collect and preserve moisture, on the surface, and in the soil, when cut down or plowed in, render an immense assistance in the growth of the organic world. Water is the blood of vegetation. It carries nourishment from the ground to the stem, to the leaf, to the seed. In its solvent action rocks become the food of man!

When the soil is dry, no mouldering down to a finer dust, no disintegretion of minerals, no decay of any kind can be discovered, every atom, apparently stationary, seems fixed and firm as adamant.

Travellers tell us, that in the dry air of Egypt, the old monuments erected thousands of years ago are just as fresh and smooth in outline as if the chisel had finished them but yesterday. But when some of these relics of the past were transported to Paris, in the moist climate of France, they soon began to change, and atom by atom to crumble away.

Dr. Youmans says: "It has been shown by extensive experiments that no species of rock whatever will resist the solvent action of water impregnated with carbonic acid."

What an instructive lesson! How valuable to the farmer! Such knowledge, how exceedingly useful. That in our daily effort to convert the earth upon which we tread into a flourishing vegetation we can combine and concentrate the forces of nature by covering the ground, that moisture and carbonic acid may do a great work for man.

Yes, so vastly important is the benefit that may be derived from mulching with green manures that we not only see it in the augmentation of our crops, and the improvement of our tillable soil, but it may be observed in the condition of the forests around us. Those that have a deposit of leaves undisturbed for years, about their roots, make an annual growth much greater than those which have been robbed of their carpet of dead foliage, by the winds or by the hand of man.

"The fallen leaves," says Liebig, "contain such trifling quantities of potash and phosphoric acid, in comparison to their mass, that it is difficult to account for the injurious consequences arising from the raking up and removal of the fallen leaves in woods."

It is difficult only when we forget the conditions existing in the woods. There the protection of the soil, the perpetual moisture, and the carbonic acid constantly forming, work without ceasing beneath the mulch, crumbling and moldering the minerals into an impalpable and soluble state, ready to be absorbed by plants or trees.

Liebig admits that "the injury is, perhaps, rather attributable to the fact that the remains of leaves and plants constitute a lasting source of carbonic acid, which carried by the rain to the deeper layers, must powerfully contribute to disintegrate and decompose the earthly particles."

These substantial truths should establish the advantage, if not the necessity, of shelter and moisture to improve the soil, and also to promote the growth of our crops.

Yet there is no scarcity of water in our favored country.

We have a fainfall of 4,000 tons per acre every year. But what becomes of it?

Professor Johnson says: "According to the observations of Dickinson at Abbot's Hill, Hertfordshire, England, and continued through eight years, 90 per cent. of the water falling between April 1st and October 1st evaporates from the surface of the soil, only 10 per cent. finding its way into drains laid three and four feet deep.

This, we presume, is about the amount of evaporation in the United States. Then, what a magnificent prospect is here presented!

Mighty rivers are pouring, not down the deep valleys, but upwards from our broad fields to the blue sky above us!

Yes, every square mile of territory sends a constant flood, rushing, though invisible, to the vast seas in the viewless air!

But what becomes of the 10 per cent. of water that goes sparkling down the ravines to its ocean home? Is it allowed to depart in peace? No. The farmer, at great expense, cuts channels along the hill side to irrigate the sloping plains, and proves that it will pay to do it. And then many calculations are made, and the time predicted when engines will be used to pump back the water again to revive the parched and dusty soil.

All this is done while the 90 per cent. of fluid is passing away without an effort made to save it. We do not need it all. No, not the half of it. We know by covering the land we can retain enough for all the wants of vegetation.

To have a vigorous and uninterrupted growth, we must have moisture in the soil, and we must retain it there from rain to rain, or we will have a partial failure in our crops.

Professor Johnson says: "The great deserts of the world are not sterile because they cannot yield the soil-food required by vegetation, but because they are destitute of water."

He also says: "Poor soils give good crops in seasons of plentiful and well-distributed rain, or when skillfully irrigated, but insufficient moisture in the soil is an evil that no supplies of plant food can neutralize."

The cause of this will be plain, on a moment's reflection. Plants can only take up their food in a fluid condition.

Mr. Lawes proved that an acre of wheat, in five months and eighteen days, evaporated through its leaves 355¼ tons of water. Now every drop of this water was more or less instrumental in transporting a little atom of food from the soil to some part of the plant, and when the deposit was made, being no longer needed, the water passed off through the leaves.

Liebig also teaches this doctrine. He says: "Though the soil be ever so rich in the elements of food for plants, still the latter will not grow in hot weather if there be a deficiency of moisture in the soil, for the moisture in the soil is the channel through which mineral food has to reach the interior of plants."

The reader who has not been a careful observer of the changes in nature, and the amount of rainfall, year after year, will be very likely to suppose that drouth is a plague that very seldom visits our land, and hence he may consider it useless to spend much time in devising means to remedy the evil. But what are the facts?

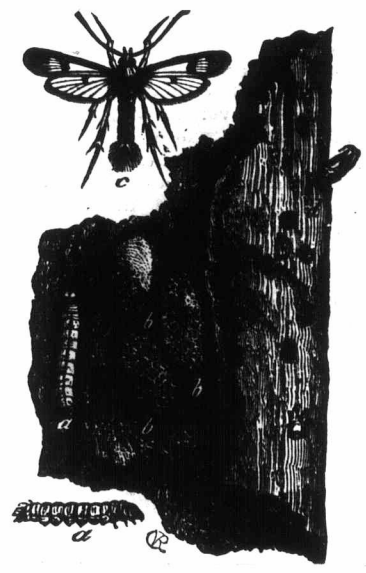
The Cultivator says: "Seasons of drouth of more or less severity are of frequent occurrence in our climate. Weeks and even months pass with little or no rain; the scorching glare of the sun drinks up our summer brooks, and turns the fields to dust or brick-like clods beneath its influence. The growing crops are shrivelled and dwarfed by the heat."

Indeed, water is so indispensable in the process of vegetable nutrition, that only a fortnight of dry weather apparently checks the vigor and freshness of the green world around us.

The Legged Maple Borer.

Aegeria Acerni (Clemens).

In 1860 Dr. Clemens described this pretty moth in the Proceedings of the Academy of Natural Sciences, Philadelphia, and since then it has been written on by Mr. P. Gennadius in the American Naturalist for January, 1874, and in the same year by C. V. Riley, in his 6th Missouri Report. It is well figured in the accompanying cut, (after Riley), in all its stages; *a* shows the larva, *b* the cocoons exposed by removal of the bark, *c* the moth, and *d* the chrysalis.



The moth appears late in May and during June. When the wings are expanded it measures about three-quarters of an inch across; its wings are transparent, decorated with bluish-black markings. The head and palpi are of a deep reddish-orange, antennae bluish-black, thorax ochreous-yellow and terminated by a tuft of brilliant red-dish-orange hairs.

The other side of the body is ochreous-yellow with bluish-black markings.

The female deposits her eggs on the bark of the soft and sugar maple trees, chiefly on the former, and when hatched the young larvae burrow through the bark and feed upon the inner portion and sap wood, never penetrating into the solid h art wood. The excavations made by the larvae are filled with its brown castings. When full grown it is more than half an inch long, cylindrical to the eleventh segment, then tapering to the end, with the skin wrinkled and folded. The head is small, f a yellow color, cervical shield paler; stigmata brown; legs and tips of prolegs reddish. When the larva is full grown it eats its way nearly through the bark, leaving but a very thin layer unbroken; it then retires within its burrow, and having enclosed itself within a loose, silky cocoon, changes to a brown chrysalis. A short time before the moth escapes the chrysalis wriggles itself forward, and pushing itself against the thin papery-like layer of bark, ruptures it and the chrysalis protrudes as shown in the figure. Soon afterwards the imprisoned moth in its struggles ruptures the chrysalis and escapes.

This insect appears to be increasing in numbers every year, and is very destructive, especially to young maple trees. Many of our shade trees in London are much injured by it, and where very numerous it is liable to completely girdle the tree and kill it. It is also found throughout the Middle States. To prevent the moths from laying their eggs the trunks of the trees should be painted about the first of June with a mixture of soft soap and lye about the thickness of paint, or with a mixture of lime and soap. When once the larvae obtain an entrance it is very difficult to discover them, and they will carry on their destructive work all through the summer.—[Mr. W. Saunders, in Canadian Entomologist for April.

The Apiary.

The Interior of a Bee-Hive.

We will open one of our modern bee-hives in order to show its interior and to study the habits of the inmates. We are thus enabled to see with our own eyes what has been a mystery to bee-keepers for hundreds of years, and still continues to be one to many at the present day.

We will light our bee-smoker and blow a few whiffs of smoke into the entrance of the hive. In a few moments the joyous hum is changed to the frightened buzz. The sentinels posted on the outside of the hive run in, all the bees make a rush for the honey in the hive, fill themselves, and keep up a vigorous fanning with their wings to expel the smoke. Now, as a bee filled with honey never makes an attack, and as we have induced them to eat by frightening them with smoke, we may perform all the necessary operations with them in safety, provided all our motions are slow and gentle and we do not jar or squeeze them.

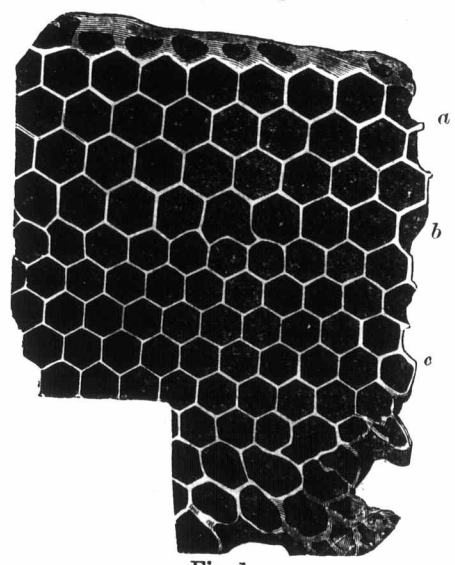


Fig. 1.

We first lift off the top story of the hive, and set it to one side. This top story contains boxes like those in which comb-honey is sold in the cities. We shall not take time to examine it at present.

The lower story is now open before us. It is a rectangular box 20¼ inches long, 16 inches wide, and made of pine boards planed on both sides to an exact thickness of seven-eigthths of an inch. As we look down upon it, we see ten slats, seven-eighths of an inch wide, resting on rabbets cut in the end pieces, The spaces between the slats are just half an inch, and permit the bees to pass through freely.

A little smoke blown gently on those which have crawled up will drive them down out of our way, and show us that the slats are the tops of frames, made of four pieces of wood, seven-eighths inch wide and five-sixteenths inch thick, tenoned together. These frames hang freely in the hive, the projections of the top bar resting upon the rabbets mentioned above, and it is in them that the bees build their combs. By this means we secure frames of straight comb entirely independent of each other and removable at will.

In order to remove one of the middle combs, we carefully slide back a few of the frames on each side so as not to crush or squeeze any bees, take hold of the ends with both hands, and lift it out slowly and gently, bees and all. They will move about on the comb while we are holding it, but will not leave it. Beginning our observations at the top, we find that our comb is filled with honey about one-third of the way down, and that some of it is capped or sealed over with wax. The cells are all hexagonal. Some of them contain pollen or flower dust. Closer inspection will reveal the fact that the comb consists mainly of two kinds of cells; the larger ones, measuring four to the inch, are drone cells, and the smaller ones, five to the inch, are worker cells, so called from the two kinds of bees that hatch in them. The cells near the bars, and those that serve as a transition from one kind to the other, are not regular hexagons. In the subjoined figure *a* are the drone, *b* the transition, and *c* the worker cells. By far the greater number of the bees on our comb are workers, the smaller kind, upon which devolves the labor of gathering and storing honey, pollen, and a kind of resinous sticky substance called propolis, of secreting wax and building comb, of nursing the young, of defending their stores against enemies, and of keeping their house in order. Prof. C. F. Kroeh, in Scientific News, says: Dissection under the microscope has proved them to be females with undeveloped ovaries.

Comparatively few of the bees before us are drones, easily distinguished by their larger size. They are a harmless sort of tramp, living on the fat of the land, but doing no work. Their sole function, so far as any one has been able as yet to discover, is to mate with the queen.

If we have been so fortunate as to select the comb on which the queen happens to be, we shall not be long in finding her among her subjects, or, we should rather say, among her children, for she is the mother of them all. Under favorable circumstances she will lay as many as 3,000 eggs a day. Our modern hive permits us to watch her and count them without difficulty. Berlepsch, a distinguished German apiarian, found queen bees laying 1,604, 1,913, 2,400, and 3,021 eggs in 24 hours, the second and third figures being the daily averages for 20 days. Prof. A. J. Cook, the entomologist of the Michigan Agricultural College, has a queen that laid over 4,000 eggs a day. It is evident that the queen is the most important member of the hive. She is considerably longer than the other bees, her shape is more tapering, and her wings do not cover so much of her body.

On holding our comb in such a manner as to allow the sun to shine on the bottom of the open cells we may see some of the eggs, tiny whitish specks, standing on end. In about three days the warmth of the bees clustering on these cells hatches the eggs into very small white worms. The young bees in the hive supply them at first with a mere drop of milky fluid, which forms their food and causes them to grow so fast that they fill their cells by the seventh day. A short time before they attain their full size the supply of food is stopped and the bees cover the cells with a capping made of a porous substance resembling paper in texture. When thus imprisoned, the worms or larvæ, as they are called, spin an extremely thin cocoon, in which they remain until about twenty-one days have elapsed from the time the egg was laid. Then they gnaw off the caps of the cells and come out perfect full-sized working bees. Drones require three or four days longer. The sealed cells containing drone-brood may be distinguished from those containing worker-brood by the fact that the cappings of the former are more convex, and project further beyond the general surface of the comb. Not unfrequently all the stages in the development of the bee may be studied on a single comb.

The generation of the queen bee is one of the great marvels of nature. It is indeed so marvellous that entomologists refused to believe it until they were compelled to do so by the most irrefragable proof.

Ordinarily a hive contains but one queen, and when she is removed the bees for a time exhibit great uneasiness, running all over the hive, inside and out, in search of their lost mother. In a few hours, when it becomes evident to them that all hope of her return must be abandoned, they select

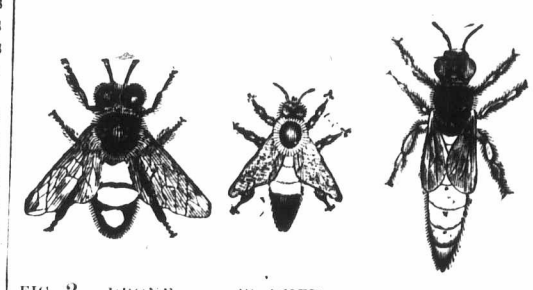


FIG. 2.—DRONE. WORKER. QUEEN.

a number of common worker eggs, enlarge the cells, and feed the inmates with a profusion of a very rich, cream-like substance, supposed to consist of partially digested honey and pollen, to which the name of "royal jelly" has been given. Then the bees build out the cells, not in a horizontal, but in a vertical plane, and give them a shape resembling a child's thimble elongated.

The effect of this treatment is to change the nature of the insect entirely. The same egg, fed in the ordinary manner, would, in 21 days, have produced a worker bee, incapable of reproduction, but endowed with organs and instincts for gathering stores, secreting wax, and stinging invaders. The average duration of its life then would have been from three weeks to a few months. The queen, on the contrary, emerges from her cell in 16 days, and lives 4, 5, and even more years. Her size, shape and color are very different. Her organs of reproduction are fully developed, but she is incapable of gathering stores and secreting wax.

The capacity for the development of both sets of insects must have been present in the germ of the egg. Evidently we cannot affirm that these instincts are directly transmitted from parent to offspring, for it is entirely beyond the control of the parent to determine what its offspring shall turn out to be. If the eggs turn out a worker, its instincts are entirely different from those of its mother. Neither is it true that the insect acquires its instincts afterwards, as observation abundantly proves that it is born with them. Again, the formula that the difference of food and environment develop one set of organs at the expense of others, and that the possession of certain organs obliges the insect to act as it does, will not cover the case at all; for the queen bee goes through certain peculiar performances that are not at all dictated by her conformation.

Lest any one should fail to appreciate the practical value of these preliminary observations, we may as well state in this connection, that the queen

Fig. 3—QUEEN CELL.

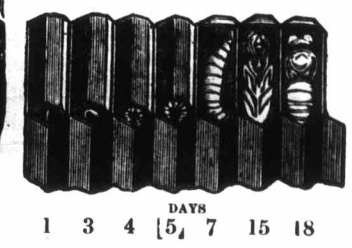


Fig. 4—DEVELOPMENT OF THE BEE.

bees, raised by availing ourselves of the above principles, have become a commercial article, and are sold by thousands at the rate of one to fifteen dollars apiece, according to their beauty, purity of race, and prolificness, and according to the excellence of their workers.

Paris Green on Strawberry Plants.

I have read many suggestions to use Paris green water as a dip for strawberry roots, to prevent the ravages of white grub. I have given the method a fair and extensive trial. Early in May of 1879 I set three acres to strawberry plants. Two acres did well from the first. The other was treated differently, and as follows: The roots of thef plants were dipped in a puddle of six quarts os water, in which a rounded teaspoonful of Pari green had been mixed, with enough of the clayish soil to make the whole of the consistency of cream. Strong plants, freshly dug from my own beds, were sopped in the mixture, then carefully and firmly set by myself in the moist soil. Except a dozen plants or so, all were dead and dried in less than a week.

The practice had been so strongly recommended by a prominent journal that I reset some hundreds of plants, using the same process, finishing the field, however, with plants puddled but free from Paris green. The comparison was very striking. Those plants treated with Paris green wilted almost immediately, lost lustre of leaf and never recovered. The remainder of the field, though wilting somewhat in the sun, recovered their strength and lustre at night. Upon examination of the wilted and dying plants, I found that the roots were black even before the leaves were dead. Some plants treated with Paris green kept over night in moist condition, presented the same blackened appearance at the roots. While resetting the field, I pulled many of the dead plants from the earth, and was much surprised to find that some roots had been eaten by the white grub, which I saw still at work upon some feebly-living plants. The grubs were healthy in every instance, notwithstanding the treatment had been fatal to the vines. Moreover, of several varieties of strawberry plants which a neighbor had of me, before I observed the effect of Paris green upon them, those of the stock I had puddled in poison utterly failed to grow; others all lived.

It is evident to me that less than enough Paris green to kill the grub will kill the plant. I am inclined to think it just so with common salt. To my knowledge a sprinkling of muriate of potash is a dangerous application.—[Ex.

PRIZE ESSAY.

Potato Starch.

BY P. E. BUCKE, OTTAWA, ONT.

There are several starch manufactories in Canada—one in the County of Huntingdon, one at Kemptville, County of Grenville; another at Coteau Landing, County of Soulanges; a fourth belonging to the Hon. the Minister of Agriculture was recently burned at Compton, County of Compton. But the largest starch manufactory in the Dominion is the one known as the Edwardsburg Starch Company, of which Mr. T. W. Benson is the manager. This mill is situated on the St. Lawrence River, at Cardinal, County of Grenville, and cost about $170,000. Starch from Indian corn is principally manufactured, but when there is a demand for potato starch they make that article during the months of October and November, when potatoes are cheap, and before cellars are required to preserve them from frost. There are quite a number of starch factories in the United States, but France and Germany are the two countries where the manufacture of this article is chiefly carried on.

The cost of erecting starch works capable of making from 2,000 to 3,000 pounds per day would be from $3,000 to $4,000. An engine for the driving power would be required, as much heat is used in drying, and the spent steam from the engine could be used for that purpose. A large amount of gas pipe is also required for heating purposes in drying the starch. This, as well as the engine, could be obtained in Canada, but the special machinery used could be had better from the States, where manufacturers are accustomed to make it. J. T. Moy & Sons, of Buffalo, N. Y., could probably supply what would be required; There is also a firm in the State of Maine who make a specialty of this kind of machinery.

The machinery to be imported would cost about $400. One of the largest outlays would be a cellar which should be capable of holding from eight to ten thousand bushels of potatoes.

The chemical analysis of the potato gives, under the most favorable circumstances, 30½ per cent. of starch, but under the ordinary methods of extraction, used on this continent, it is estimated that not more than 16 per cent. is obtained; that is, about eight pounds of starch to one bushel of potatoes.

The quantity of starch differs materially in different varieties of potatoes, as well as in the modes of culture and the different seasons of the year in which they are worked up. During the months from November to March, when the tuber is thoroughly ripe and sound, and before it begins to sprout, the greatest amount of starch is procured.

Starch is not distributed equally over the tuber, but exists largely towards the exterior. The centre of large potatoes is almost entirely composed of water, whilst that part immediately under the skin contains little or no starch.

The wholesale market price of this article varies considerably, and ranges from three to six cents per pound. This is, of course, for the common coarse article; when highly refined and sold as an article of diet, it brings a higher price; but so far this has not been made in this country.

Potato starch has not hitherto met with a ready sale. Manufacturers all complain that it is a drug in the market. It cannot be exported with profit to the Old Country. This probably arises from the fact that the machinery used in France and Germany is more complete, which enables these countries to undersell either Canada or the neighboring Republic in the English markets.

This kind of starch is principally used by the cotton mills in the manufacture of fabrics, and for human food. It is not suitable for laundry purposes. When used for food it takes the name of "Prince of Wales' Food," "Soluble Starch," "Indian Corn Starch," "Potato Flour," "English Arrowroot," etc. A variety of tapioca is also made. This is done by heating in an oven to 212°. It is thought to improve bread, and is sometimes mixed with it. It is much used in confectionery, and in the preparation of paper it is applied as a size. It is mixed with gum in paste, and the adhesive matter on the back of postage stamps is largely composed of potato starch. It is also used in the manufacture of grape and starch sugars. A party here who has recently imported machinery for the manufacture of glucose, or grape sugar, offers 2½ cents per pound for all he can get, but such a price would not pay for the manufacture. He states, however, he is not very particular as to the quality of the starch supplied.

As a large quantity of water is employed in the manufacture of potato starch, it is usually turned to account in Europe for the purpose of irrigation; and for this purpose it would be of more value here than there, as the atmosphere is not so humid, and there is more sun-heat and less rainfall during the growing season.

So much depends on the business capacity of the management in all manufactories that one person might make the production of starch pay when ten others might make it at a loss. The writer has little doubt, if economy were studied in the arrangement and fittings of buildings and machinery, and the waste water and offal were thoroughly utilized, a business of this kind could be made to pay, but it would require some previous study of the modes of manipulation already in use to give a fair chance of success.

HOME-MADE STARCH.

A short description of the mode of producing the above article may not be uninteresting to the casual reader:—A nice food may be prepared by any one for an invalid, with little trouble and no expense, quite equal to the arrowroot procured at the shops. The writer has frequently made it, and can assure the reader no special skill is required. Take say one dozen medium-sized potatoes, wash and peel, then, with an ordinary tin grater, such as is used for kitchen work—about three inches across and nine inches long—grate these whilst raw into a milk dish or tin pan half full of water, making them by this operation into a fine pulp; stir briskly and allow to settle for five minutes, then pour off the liquid into a second dish, straining through a colander; set this aside to stand over night, or, if grated in the morning, for five hours. By this time the starch will have settled to the bottom of the pan; the water should then be poured off, and the starch dried in the sun or a warm oven. It is then fit for use. Put a spoonful of starch into a bowl, mix to a stiff paste with cold water, then pour over it boiling water, stirring all the time, and it will thicken. Some people prefer cream or milk, with sugar, added. Children, especially, eat it with great relish. For invalids a glass of port wine is usually mixed with it.

METHOD OF PRODUCTION IN LARGE MANUFACTORIES.

It will readily be understood that for the production of the article in question, a large supply of potatoes will be required in stock. For this purpose suitable cellars or root houses should be made; but, in order that the potatoes may be kept so as to yield the greatest amount of starch, they should be stored in a place in which a low temperature can be retained. If the pit could be kept at 32° F., the tubers may be kept without loss of starch for a year or more.

In the manufacture of starch from potatoes, the first process is to remove the soil attached to them. This is usually done by soaking them in water for five or six hours. They are then passed into a hopper and run through a revolving cylindrical cage made of iron rods and wire, upon which a jet of water falls. All the dirt attached to them and much of the skin is thus removed. The heavier portions of sand and small stones sink to the bottom and fall through the bars. The potatoes are then emptied into a trough, and elevated by means of a Jacob's ladder, from whence they fall into a rasping machine. Too much care cannot be taken to remove all stones before they enter this apparatus. It is impossible to give much of a description of the different processes through which the tubers pass without plates, especially as there are several different machines used for almost every process. The rasp or slicer cuts the potato so fine that it is reduced to a pulp, or paste. Some of these machines will reduce thirteen tons in ten working hours.

The paste obtained is a mixture of starch and potato fibre. These are separated by washing with water on brass wire sieves of different fineness. The starch passes through with the water, whilst the fibre is left on the sieve, which, passing over a roller, deposits the pulp in a place by itself. This pulp is in some factories again run between two revolving rollers, and the cells which hold the starch, and have escaped the action of the grater, are thus broken, and an additional three per cent. of starch is thus obtained.

The next job is to take out any sand or earth which may not have been removed by the washing process. When, therefore, the liquid starch, or rather starch water, has been run into vats, the earthy particles quickly deposit themselves, and the liquid is then drawn off by means of a syphon, or through a cock placed near the bottom of the vat. The starch water is then run into tubs and allowed to settle. Here it deposits itself in a thick paste, which is dried, either by being deposited on cloths to drain, and then on well dried plaster; or the water is removed by centrifugal action, or by drying in ovens heated from 131° to 136° Fah. When dried it is ground between rollers and bolted like flour, through silk. The finer processes, as above described, are employed when starch is made as an article of diet.

[We have received a communication on the above subject from England, which will appear in next issue.]

The hints given by our Washington correspondent, on page 131 of this issue, in regard to diseases in swine, are no doubt of much value to the Americans, and may also be of value to Canadians in treating many diseases, but at the present time we consider that Canada is free from the hog cholera, foot and mouth disease and trichinosis, although there probably may be some of these diseases lurking about that have not come to our knowledge. We have seen animals in Canada suffering from hog cholera and the foot and mouth disease, and are aware that many have died from these causes. We gave information to the Board of Agriculture and Arts and also to the Government in regard to these facts; but neither the Agricultural Commission, the Board of Agriculture and Arts nor the Legislature have given as much information about the introduction, spread and extermination of the disease in Canada as we think such a very important subject deserved. It would be of very great importance to Canada if the Government were to cause a careful report of the introduction of these diseases, the number of places where they have existed, and the number of animals that have died therefrom. We believe, if a thorough investigation were made, that it would show that these diseases have several times been introduced into Canada, and that hundreds of animals have died as a result thereof. And another most important fact would be brought out, namely, that in every instance the diseases have died out of themselves, without any aid or care, within a few months after their introduction—the healthfulness of our climate and the purity of our water being adverse to the spread of diseases which have proved so injurious in other countries. If the truth were properly brought out, it would enhance the value of our products in foreign markets, and tend to keep in and bring to our country the most intelligent and better class of emigrants, not only from Europe, but even from the States, where they have suffered so much from malaria, bad water and contagious diseases.

PARASITES IN THE INTESTINES.—Calves, and lambs as well, are often troubled with diarrhea and discharge from the nose and eyes from the effects of parasites in the intestines and lungs. Those parasites are slender, white, thread-worms, known as *Strongylus filaria*, and are produced from eggs taken into the stomach with the food. The worms escape from the gullet into the air passages and cause irritation of the membranes, and in the bowels cause obstinate diarrhea. The treatment is to give turpentine, a tablespoonful in milk, every morning for a week or ten days, and afterward the same quantity of caster-oil for two days.

Stock.

An Improved "Piggery."

The accompanying diagram of a "piggery" may be of interest to those of our readers who are engaged at all extensively in raising swine for the market. Before explaining the figures in detail, we wish to say that this building is intended to stand on a side hill affording the necessary elevation, and, by its slope, securing perfect drainage.

FIGURE 1.

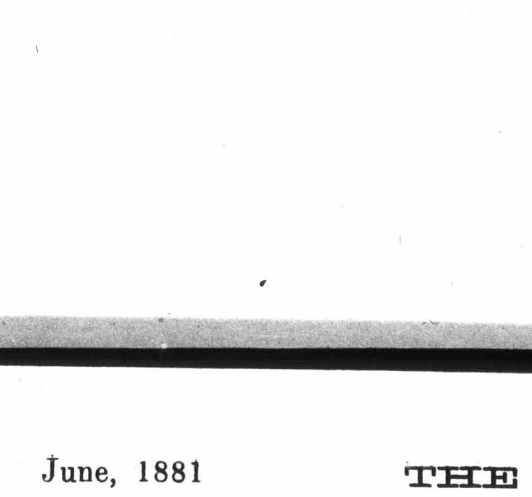


Figure 1 is a plan of the basement, 24-36 feet in area. Through the centre runs a broad alley, with a door at the upper end. In this plan the letters P stand for pens; T for troughs; and D for doors. V represents a swill-vat at the lower end of the alley. The doors in every case are made in two partitions, so that ventilation may be secured by leaving the upper half open while the lower half is shut. The floors and troughs are of stone. A door is hung in front of each trough to push into the pen and fasten over the trough, so as to allow the food to be equally distributed. A pipe leads from a small tub in the story above the swill-vat:

FIGURE 2.

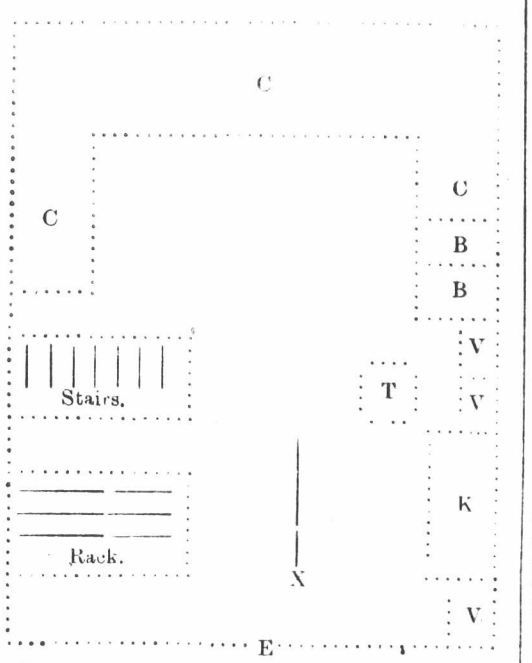


Figure 2 represents the main floor, which is 24 x36 in area. E is the main entrance; K the great kettle; and T a trap-door. X is a derrick, which lifts the slaughtered hog through the trap-door, swings it around to the rack for cleaning. The letter X is placed at the axis of this derrick. C C C are large corn bins, and B B smaller bins. V V V are feed vats. The kettle may be used not only for scalding hogs, but for cooking food, frying out lard, making soap, and other purposes. The cleaning rack is movable with spaces for water to drain through. The floor underneath the rack is slightly concave, and extends outside the sill to carry the water from the building. Directly over the cleaning rack are the scaffolds, which are movable timbers resting on cross-beams. The hogs are hung and taken down with the derrick. The plan is easily changed to meet the views and requirements of large or small farms, and is the best I have yet seen.—[Ex.

Sussex Cattle.

This is an English breed, closely allied to the Devons, but larger and coarser. In color they are red, somewhat lighter than the Devons, though quite as uniform in color. Until recently there has never been a public herd-book for this breed, but we are glad to learn one has been recently issued. The Editor, Mr. Alfred Hesman, who is an eminent breeder, both of sheep and cattle, says:—"In recent years the progress made by Sussex stock has proved it to be one of the most profitable breeds." Yet it is not widely distributed, being chiefly confined to the county of Sussex, England. This breed was bred originally for the yoke, and for that purpose was highly esteemed during the last century; and as the "roast beef of Old England," at ten or twelve years of age, they were as famous one hundred years ago at Smithfield as they are ever likely to become. The qualities of early maturity and rapid laying on of flesh have been added to those of hardihood, size and robustness. It is claimed by their breeders that these qualities have been gained solely by judicious selection and mating during many years, and not by crossing with other breeds. The English Agricultural Gazette says:—"The problem of pushing a calf from birth into beef within twenty months or less has been solved in Sussex more successfully, perhaps, than anywhere else in Great Britain. At the Agricultural Hall at Islington last December there were seven Sussex steers under two years old on exhibition, and only four Shorthorns under that age, and we believe the former exceeded the latter in average weight of beef made in each week of their lives. The same superiority either in breed or feed has been shown at previous shows. The fact that Sussex cattle make meat more rapidly than any other class of stock was clearly demonstrated last year at the Smithfield Club cattle show. The Shorthorn steers not exceeding two years old weighed as follows:—1st prize, 1 year 10 months 2 weeks, 12 cwt. 2 qr.; 2nd prize, 1 year 10 months 1 week, 14 cwt. 0 qr. 9 lb.; 3rd prize, 1 year 7 months, 10 cwt. 2 qr. 3 lb. The Sussex steers not exceeding two years old weighed—1st prize, 1 year 11 months 3 weeks, 13 cwt. 1 qr 8 lb.; 2nd prize, 1 year 10 months, 13 cwt. 3 qr. 26 lb.; 3rd prize, 1 year 11 months 3 weeks, 12 cwt. 0 qr. 25 lbs. The heaviest Shorthorn, at the same age within a week, exceeded the heaviest Sussex bullock by 11 lb., while the general average of the latter breed surpassed that of the former, so that our statement in reference to former shows was borne out at the latest show held last December. We find from our own notes of the London show of two years since that a 3 years and 10 months old Sussex ox weighed 2,766 lbs., having gained 14 lbs. of beef per week up to nearly four years old. A younger Sussex bullock weighed 1,777 lbs. at 117 weeks. These are interesting and significant facts. As show cattle, perfect in all points, the Sussex cannot compare with the Shorthorns; but only as beef makers. The world has hitherto been accustomed to look to the Shorthorns as pre-eminent in regard to early maturity; but Shorthorn breeders must look to their laurels." Animals of this breed can be had at reasonable prices.

A farmer, speaking of fencing, says: I have in use on my farm post and oak board, post and rail, hedges and barb wire fence, and I prefer the latter to either of the others. Reasons are: It takes fewer posts, costs nothing for repairs, and is a barrier to all my stock, and no stock that are accustomed to it will be injured. Twice in the past year I had a pair of horses attached to a wagon run away in a field fenced with barb wire, and in both instances they ran twice through the only open gate in the field before being secured. Frightened as they were, they kept clear of the barbed wire.

Garden and Orchard.

Carbolic Acid for Insects.

The time has come again when "the little busy bugs" will open up their summer campaign, and dispute with the "lords of creation" for possession of the "fruits of the earth." Allow me thus early to call attention to an article, the merits of which everybody knows, but which many dare not use—I refer to carbolic acid. Prepared as indicated, it cannot, I think, hurt the most delicate house plants, and it is sure to kill insect life.

My plan of preparing is as follows:—I obtain crude carbolic acid; I use it in this form because it is stronger and better for the purpose, and costs but very little (about 25 cts per gallon, I think). I pour a quantity of this dark crude acid into a quantity of good strong domestic soft soap; stir well together, and allow to stand for a few hours. I then test the compound by mixing a little of it with soft water. If too much acid has been added, oily particles of carbolic acid will be observed floating on the surface. This shows that more acid has been put in than the soap will incorporate or "cut," and more soap should be added to balance the excess of acid. No more definite rule can be given, as so much depends on the strength of the soap. Two or three tablespoonfuls of the acid to a quart of soap may be first tried. I prefer to make as strong with acid as the soap will perfectly cut. A very little practice will enable any one to compound it correctly. The refined acid may be used when the crude is not at hand. When prepared as above make a moderately strong suds, and apply with syringe or sponge. In using on very delicate plants, should any fear be felt for the plants, they can be rinsed off after a few minutes. My first and eminently successful use of this compound was some years since, on a block of young cherry trees, some fifty thousand in number. The black aphis "came down like the wolf on the fold," only "they came not as single spies, but in whole battalions." The trees were alive with aphis. The only scarce things on the trees were leaves, there being hardly enough to afford standing room for all the dusty guests. However, not being a convert to the doctrine of squatter sovereignty," I declared war, and failing to decrease the number by ordinary means, I compounded soft soap and carbolic acid, and with a single application exterminated the enemy.—[Gardener's Monthly.

Experiments with Pyrethrum.

The following experiments with pyrethrum were made by Prof. A. J. Cook of the Michigan Agricultural College, at Lansing, and published in the American Naturalist:

Sept. 27, 1880.—I placed ten cabbage caterpillars in each of two small wooden boxes which were covered with wire gauze. In one box I dusted the least possible amount of pyrethrum mixed with flour in the proportion of one part of the pyrethrum to twenty parts of the flour. I sprayed those in the other box with a liquid mixture, using one tablespoonful of pyrethrum to two gallons of water. In five minutes all the larvæ were on their backs; nor did any of them recover. A large number of the caterpillars on the cabbage plants were sprinkled or dusted with the pyrethrum, the proportion the same as given above. In one hour the plants were examined, and in every case the caterpillars were found dead.

The same experiments as those detailed above were tried with the potato beetle. Those in the boxes were all down in fifteen minutes, both beetles and larvæ; nor did they recover. I watched those on the vines for twenty minutes, when several had fallen to the ground. These were some distance from my home, and I could not watch them longer. Whether all dropped or not I am not able to say, nor whether all or any recovered.

Several other experiments were made by dusting a mixture of pyrethrum and flour in the above proportions over cabbage plants; it was also applied with water, mixed as in above experiments.

From the many trials made it has been conclusively shown that this powder is fatal to cabbage worms and caterpillars generally, and is so in very dilluted liquid mixtures. It has been used successfully when only 1-200 of a pound was used to one gallon of water.

We have only to sprinkle it on the plants, though it may be necessary to make more than one application to insure complete success. The success was better with the liquid than with the flour mixture, and can be applied with greater speed and economy.

A twig of alder, covered beneath with wooly Aphides was dipped into the liquid mixture of 1-50 pound to a gallon of water. The next morning all the lice had fallen to the ground, never to rise again.

Flies and mosquitoes in a room where the powdered pyrethrum had been blown in not very large quantities, less than 1-100 of a pound to a room twelve feet square, were felled to the floor, where nearly all remained till morning, though the application was made the night before. If not swept up some of the flies would recover. The flies commence to fall in ten minutes.

Although this powder is so effective in killing the above insects, it has been found not to injure the squash bug. Pyrethrum can be obtained from any druggist for 10 cts. per oz., or about $1 per pound, and is pronounced not to be in any way hurtful to human beings. It has been extensively used in this city with excellent results.

As it is not injurious to health, if it is as good as the Professor states, it will be found of great value in the vegetable and fruit garden.

Fuchsias.

The fuchsia is one of our favorite flowers. It requires more care here than in the more temperate clime of Britain, but its rare beauty more than remunerates the florist for his care. Some of our finest flowers are only propagated from slips or cuttings, and of this class the fuchsia is one. Get small, thrifty plants, and put them in four-inch pots, and keep them in the sitting-room until all danger of frost is over. Prepare a bed to the north side of your house, and in this set the plants, pots and all, and if the situation is not well sheltered from the wind, build a lath fence about two feet high around it. Through the hot, dry weather they should have a good sprinkling of warm water about three times each week. They will begin to bloom as soon as they have time to make the buds, and if carefully lifted in the fall will bloom until Christmas, and such varieties as Speciora and Lustre much longer. As soon as done blooming, and the leaves begin to turn yellow and drop off, you should give the plants their annual rest. Gradually quit watering and set the plants in the cellar, only giving them enough water to prevent them from drying out entirely. When the new growth starts again, bring to the sitting-room and begin propagating new plants for another summer's flowering.

Some plants grow more straggling than others; but no plant is more obedient to training in youth than the fuchsia When the little upright plants attain a height of six or eight inches, clip out the top, and instead of one, three or four shoots will grow out. Let their branches attain about the same length, and then repeat the process to each, keeping the side branches of equal length, or tapering like a pyramid; or, by clipping off all the lower limbs, and letting the upper ones droop over, as they are sure to do when loaded with their beautiful flowers, you have an umbrella. Indeed, you can have it any shape you wish, and the plant will be pleased with the pruning, and will reward you with fourfold more flowers. Put a few rusty nails or some chips of iron from around a blacksmith's anvil in the surface soil of the pots, and you will be surprised with the increased vigor and abundance of bloom.

Layering Roses.

A London authority gives the following mode of procedure in layering roses:—About the middle of July, in most seasons, the shoots will be found about eighteen inches or two feet in length; from these, two thirds of their length, the leaves should be cut off close to the shoot, beginning at the base, with a very sharp knife; the shoot must then be "tongued;" *i.e.*, the knife introduced just below a bud and brought upwards, so as to cut about half way through. This must be done at the side or back of the shoot (not by any means at the front or in the bend), so that the tongue does not close. To make this certain a small piece of glass or thin earthenware may be introduced to keep it open. Much nicety is required to have the tongue at the upper part of the shoot, so as not to be in the part which forms the bow, as it is of consequence that it should be within two inches of the surface, so as to feel the effects of the atmospheric heat; unless this is attended to the roots will not be emitted quickly. The tongued part must be placed in the centre of the compost, and a moderate-sized stone put on the surface of the ground to keep the layer in its place. The first week in November the layers must be taken from the parent plant, and either potted as required or planted out where they are to remain. Those sheets not long enough in July and August may be layered in October, when the layers are taken from the stools; and, if any are forgotten, February and March will be the most favorable months for the operation, As a general rule July is the most proper season.

Soot and Charcoal.

The first of these substances contains more fertilizing material in proportion to its bulk than almost anything that is applied to the soil. It is an excellent material to apply to soil in which rose bushes, squashes, tomatos and melons are planted. If applied in too large quantities it may prevent seeds from germinating and cause the death of very tender plants. Pulverized charcoal is a valuable addition to soil. Apart from the potash and other mineral salts it contains, it is of little or no chemical advantage to land. It is of great benefit to it however in other ways. Its dark color increases the temperature of the soil with which it is incorporated. It takes up moisture at times when the earth is saturated with it and retains it till the plantt have occasion to require it. It also acts as a filter towrrds the water that passes over or through it, and retains in its cavaties all the valuable mineral and vegetable substance it contained. It is, beside an absorbent of ammonia and other gases, essential to the growth of plants. As charcoal is essentially indestructible its presence in the soil is of more than ordinary benefit. It stimulates the growth not of a single crop but of many crops. It absorbs fertilizing substance from water and air at times when plants do not grow and holds till they are in a condition to appropriate them. The roots of trees, vines and bushes penetrate lumps of charcoal and draw from them the fertilizing material they take up from time to time. Buried deep in the soil, charcoal is of great value to bushes, vines, and plants like tomatoes if liquid manure is used in connection with it.

Miss Eleanor A. Ormerad, of England, in treating of "the onion maggot" in her valuable report of 1880, states that "the most successful remedy for the attack, when found to be established, appears to be the use of paraffine oil." In one locality where this pest was doing considerable damage, it was found that after mixing "a good glassful" of paraffine oil with about six gallons of water, and carefully throwing a spray of the mixture over the onion bed two or three times, the attack was terminated. Another observer used the paraffine in the proportion of one pint to two gallons of water, but states that the paraffine should be used carefully in dry weather, lest it should burn the plants. The paraffine is also applied by saturing sand with the oil, and sowing the sand among the onions, and afterward watering it by means of a can with a rose. Lime-water was found to be less effectual than paraffine, but destroyed the insects after a time. In one instance a good crop of onions was secured by taking care to pull and burn the infested plants with the infesting larvæ, as soon as they could be detected by the turning yellow of the leaves. And still another observer states that he has no trouble with the maggot, as "on its first appearance I water freely with soap-suds two or three times, which usually destroys it and nourishes the onions."—[Professor J. H. Comstock.

Liquid Manure for Roses.—The Rural New Yorker reports an experiment performed by G. S. Wales in applying liquid manure to roses, which, although not new, is worthy of notice for its success. Small plants have been set out on clayey soil, and after every heavy rain which had furnished leachings from the manure pile in the barnyard, it was applied to the roses in a few holes made within four or five inches of each plant with a sharpened wooden rod. The next day the soil was stirred with a hoe. The operation was repeated eight or nine times through the season, and the result was reported to be wonderful; the blooming continued through the summer into October.

pplying Paper Bags to Grapevines.

A correspondent of the Country Gentleman says:—Hundreds of thousands of bags were applied here last season, and the net conclusion seems to be that it is not best to enclose the cluster while in blossom, but promptly as soon as out of bloom—say when the grapes are as large as small shot—and continue to bag till about the size of buckshot or small peas. I put on 10,000 bags while the grapes were the above size last spring, with entire success. The clusters were perfect, bloom especially beautiful, and flavor vastly improved. Later in the season, when the grapes were larger and some nearly full size, though perfectly green, I put on 10,000 more bags. The weather was cool for several days at the time, and everything looked favorable; but the bagging was too late, and the grapes nearly all rotted as bad as the year previous, when no bags were used. The bagging was all done on the same vineyard, side and side.

With respect to paper, oiled or waxed paper does not pay, and will not stick with paste. I have used manilla paper, 15 pounds to the ream, also 20 and 25 pounds, and even 40 or 50 pounds to the ream, and find the lighter paper the best, not only because cheaper, but fruit ripens better in paper of 15 or 20 pounds than in forty-pound paper. As a poorer material is often incorporated in manilla paper, 20 pounds to the ream is the safest to buy, and will make about 4,000 bags to the ream, cut into proper shape by the bookbinder at 10 cents per ream. A man will paste from 300 to 400 per hour, and for field purposes the whole expense is light. Boys and girls will pin on 1,000 to 1,200 per day. A single pin to a bag is used. The leaf opposite the cluster, if desired, can be removed without injury, and the mouth of the bag can be doubled over, if more convenient to pin. If pinned fest in almost any way it answers the purpose, as it is not found necessary to have them air-tight. The lighter is proved to resist storm and wind about as well as the heavier, because the foliage soon covers the bags to a great extent, and protects them.

A farmer who has grown millet each season for over twenty years, says, "It is ready to cut for hay as soon as it is evenly headed out. The development of the heads can be watched, and as soon as they exhibit a tendency to develop into the milk stage, cut immediately. The mistake is too often made of delaying the cutting until the seed has hardened, and of course the fibre of the stalk has become toughened; has taken on a more unassimilable nature, and has as a consequence lost largely its feed value. Cut in the beginning of the milk stage of the seed, my opinion is that well cured millet is superior to timothy, not only as a food, but also in milk producing qualities, and with no other hay can I come so near making butter having a June aroma in March and April, as I can with my early cut millet.

Destroying Curculios.—Allow me to say to the many readers of your valuable paper, that if they will place a hen and small chickens under their plum trees soon after the fruit begins to set, and jar the trees two or three times a day, (say morning, noon and night,) they can raise plums. Vrry small chickens are best, as they do not go far from the coop, and will pick up every insect that falls from the tree. I have practiced it for several years, and feel sure of a crop of plums if I have the blossoms and chickens at the proper time. It is better to keep the ground free from grass or weeds under the trees, so that the insects can be readily seen by the chickens as they fall to the ground.—[Ex.

Salt for Red Rust.—We observe in some of our exchanges the recommendation of salt as a remedy for the red rust, so destructive to some varieties of the raspberry, and especially to the Kittatinny blackberry. It is applied in spring as soon as growth commences, by scattering broadcast and throwing a small handful at the root of every plant showing any indications of rust. It is repeated about once a week till the rust disappears. The blackberry will bear a free application. The experiment is easily tried, and if too large a dose happens to kill any of the plants, this would be better than to have them destroyed by rust, and its spread to other plants.

Stained berry boxes may be whitened by submitting them, in close confinement, to the fumes of burning sulphur. They should be first moistened. Those having dry-houses will find that a suitable place for the bleaching.

Peach Trees Killed.

The New York Express says: "There is no hope any longer entertained by the fruit-growers of Delaware of any profit from peaches in that State this season. It is said that not in 25 years has there been a worse showing, and the belief is that a great majority of the peach trees have been killed, while all the rest have been so severely injured as to make them useless. If this be indeed true the loss will be very serious, for no less than $5,000,000 are invested in peach cultivation on the peninsula, of which more than half is invested in Delaware.

RAISING SQUASHES.—J. T. Chandler states that he has adopted the following method of raising squashes, and assures us that since practising it he has never in a single instance failed of a good crop: He first digs a small hole for each hill, into which he puts a liberal quantity of manure and covers it to the depth of an inch or two with soil. The whole is then covered with coal ashes, with which the hole is filled, and the soil and the manure covered. The seed is planted or plants set in the ashes directly over the manure. At each hoeing a fresh supply of ashes is scattered around the plants, which are thus kept entirely free from grubs, while in his experience every hill planted without ashes will be destroyed.

Fearing that the Delaware (U.S.) farmers will not raise enough beets, the Delaware Beet Sugar Company has leased about three hundred acres of land in different portions of the State, for the purpose of raising a sufficient number of beets to supply the deficiency caused by the apathy of farmers who cultivate them only on a limited scale. In order to economize labor, the company has imported a number of German and French beet-cultivators, which are capable of cultivating four rows of beets at one running.

Although the character of the feed makes a great difference in the value of manure, yet the following will be a fair general comparison between horse and cow manure. Cow manure contains ten per cent. more water than horse manure. Horse manure contains about three per cent. of nitrogen, while cow manure contains about two and a half per cent. Horse manure contains one per cent. of phosphoric acid, while about one half of one per cent. is obtained in cow manure.

Among the many remedies proposed for the protection of plums from the curculio, we find the following. We have no experience of its merits. Plant tansy at the roots of your plum trees, or hang branches of the plant on the limbs of the trees, and you will not be annoyed with curculio. An old an successful fruit-grower furnishes the above, and says it is the most successful curculio preventrtive he has ever tried.

DISEASED FRUIT TREES.—We have tried it repeatedly and never knew it to fail. That is, cutting off the diseased part and slitting the bark on one side of the limb and body from the affected part down. In fact, if the diseased part is cut off and the limb and body slit, it will stop the destruction of the tree, or at least it has for us every time.

Professor Bouchardat attributes to the vine powerful sanitary properties. He asserts that wherever it is cultivated to any considerable extent there is a very sensible diminution of interm ittents. The virtue is attributed to the action of the vine on the effluvia which cause fever.

In propagating honeysuckles, cuttings of wood when nearly ripe will strike, if inserted in a shady border in the autumn and duly watered. Perhaps the most successful mode of propagating is by layers pegged in moist soil in the autumn when the leaves commence falling.

The attention of our farmers is directed to the advertisements of W. Hamilton, Merritt and Gill, Allen & Co., who are the proprietors of leading land plaster beds of this Province. It is superfluous to further call our readers notice at this date to the great benefits arising from the use of pure plaster.

Among our sweet summer flowers there are very few more desirable than the sweet pea. They give us all colors, from dark purple to white, and several colors on the same flowers, and for cutting for boquets we know of nothing better, though they do not last very long.

The army worm and Colorado beetle (potato bug), have appeared in large numbers in both Queens and Suffolk counties, L. I.

The Pelargonium.

The flowers of the pelargonium are so varied in color and so brilliant in hue that it is almost a matter of surprise that these beautiful plants are not held in as high consideration, or as universally cultivated, as the zunale varieties of the geranium.

Most of the pelargoniums come from the Cape of Good Hope. They are natives of arid plains, which are subject to periods of extreme dryness, and are nourished during those periods only by the moisiure of the atmosphere, if near the sea, or, if in the interior, by heavy dews. The roots are few, the main one being a tap-root, and, like the cacti, nature has so formed them that they are incapable of throwing off much m isture through the roots or leaves.

Careful watering must be one of the essentials of success. One skilled amateur says his rule is to let the earth in the pot become thoroughly dry before watering, and always to give a period of rest after blooming. Another amateur, a lady, also skilled in floriculture, says she never had any success wlth pelargoniums till she gave them a long period of rest. In the spring, when putting her flowers out of doors, she laid the pots containing pelargoniums on their sides, and let them remain perfectly dry until tall. She then took the plants out of the pots, shook the soil from the roots, and scrubbed them well with a hand-brush and water. The old-looking roots were cut off, and the top trimmed down to six or eight inches in height. They were then re-potted in rich earth, and watered very moderately till they started into full growth, and after that more freely. With this treatment they never failed to bloom.

A young physician, who raised many extraordinarily fine varieties of pelargonium from seed, in stating his mode of culture, said that his practice was to re-pot large plants whenever they seemed in danger of being pot-bound. The mould he used was made up of black earth from under a manure heap, and a little stiff clay to retain the water. After the plants were done flowering they were trimmed rather close, and with regard to probable places of sprouting. They were then placed in partial shade, and all shoots found straying out of symmetry were pinched off. His large plants were kept moist till after bloom, and then rather dry.

When the pelargoniums were raised from slips, they were put into pure silver-sand and kept in the shade for one day, then given one hour's sun each day after till growing. For the seed, half woods' earth and half sand were used The seeds were kept in the shade till they came up, then given about an hour of sunshine each day, especially if the soil became green. They need not be covered with glass.

Their flowering season is from March to August. Two pests of the pelargonium are the green aphis and the red spider. The aphis may be removed by immersing the plant in a decoction of tobacco and water, or by sprinkling snuff over the shoots when wet. The tobacco should remain on for a day or a night, and can then be washed off.

The red spider should be removed with a wet sponge, as they keep generally on the under side of the leaves, and are difficult to dislodge.—[Floral Cabinet.

THE WIRE WORM.—For land infested with the wire worms there seems to be but one entirely sarisfactory remedy—the starvation of the worms through summer fallowing. And in order that this remedy prove effectual it is necessary that the fallow be thorough, so that the weeds and grass be kept down during the entire year. The sowing of buckwheat for one year in the infested ground has often been advised, and doubtless this plan wovld result in some benefit, as the roots of the buckwheat are distasteful to the worms. But this method is not so sure as that of summer fallowing, for in most cases there will be weeds and grrss growing among the buckwheat, upon which the insects can feed. Manuring well, and using eveay yossible means to promote a rapid and vigorous growth of any crop put upon the iufested land, would without doubt do a great deal towards securing a good harvest. The sowing of salt has been tried manytimes; but experience proves that enough salt to effectually eradicate the worms will also destroy vegetation. In case it is desired to rid a small piece of land of these pests, as flower or vegetable garden, it may be done by trapping them with slices of potato placed under boards; the potatoes to be examined each day, and the worms collected and destroyed.

Lupines.

The annual Lupines are a numerous class, and varied in the character of their growth and the color of their flowers. The white, blue and rose colored varieties which are found growing wild rejoice in the every day adpellation of "Old Maids' Bonnets." In English gardens this genus is very popular, and a large collection has been flowered at Chiswick Garden this season. Some have been imported from the South of Europe, Spain, Sicily, and the Levant. The generic name Lupin signifies a wolf, in allusion to the exhausting habit of the plant and its supposed injury to the soil. Some of the Lupines were extensively cultivated by the ancient Romans, both as forage plants for cattle and as pulse for human food, and they are still employed for the same purpose in some parts of the continent. The white Lupine is so grown and in Tuscany, it is cultivated as an ameliorating crop to be ploughed in when no manure is to be had. Truly, somewhere, "our choicest flowers are somebody's commonest." In English gardens the Lupine finds an honorable place; across the channel it is ploughed under asa weed.

Grow the Hollyhocks.

It is pleasant to see that the old-fashioned hollyhock, improved, is gaining favor in many gardens. We had a row last season that were really grand, and attracted a great deal of attention. Dahlias cannot be mentioned in the same week with them. They are perfect in their blooming, and display a spire of beauty that no other plant vouchsafes except the gladiolus, and they do not continue in flower more than half as long. Where the roots cannot be had the seed can be sown, and can be up to the 15th inst., but they will not bloom until the second year. They produce, however, abundant seed, and there is nothing to prevent a replanting of seed so as always to have a fresh bed of them. It is better, however, that the seed should be changed every few years, or it will be at the risk of more perfect blooms.—Germantown Telegraph.

The project for a world's fair at New York in 1883 has been definitely abandoned. There are rumors that Boston will now take up the matter, but this is not probable.

The Dominion Line steamship Texas, from Liverpool, which arrived Monday, April 11th, had the largest consignment of thoroughbred cattle ever imported into Canada. It consists of sixty purebred polled Angus, Hereford and Shorthorn bulls and two Clydesdale stallions for the Cochrane Ranche Company, who are about starting a stock farm of 10,000 head at the foot of the Rocky Mountains. There are also three Guernsey cows, imported by Hon. J. J. C. Abbott; eight Clydesdale stallions for Beattie & Holderness, Toronto; fifty Oxford Down sheep for various parties in Ontario; and over one hundred head of polled Angus, Hereford and Shorthorn animals, male and female, including a Duke bull and Barrington and Leavington heifer, and seventy-five Oxford Down sheep for Senator Cochrane's stock farm at Compton. They will be shipped through on a special train, in bond to Point Levis, where they will be quarantined. Prof. McEachran takes charge of the shipment.

Mr. Jno. Dryden, M. P. P., of Brooklin, Ont., writes us that his Shorthorns and Cotswolds are doing exceedingly well, and that he has recently made the following sales of Shorthorns:—To Jno. Sanders, of Darlington, Ont., cow, Lady Edith; to Wm. Wary, also of Darlington, the three-year-old cow Bonny; to S. Sleep, Seegrave, Ont., cow Cova, with her bull calf Canada Boy and yearling heifer Carolina; to F. Bellows, of Nissouri, N. S., bull calf Cavalier; to Messrs. Watt, of Elora, Ont., the imported heifer Orange Blossom 30th, and the yearling heifer Mayflower (which is a full sister to Messrs. Watt's deploma bull); to Messrs. Potts & Son, of Jacksonville, Ill., N. S., 3-year-old cow Marmony and the 4-year-old cow Queen of Beauty III.; also a bull calf to T. Murray, M. P. P., Pembroke, Ont.

Franz Kinze, a German of Pittsburg, Pa., was attacked by trichinosis last week from eating pork not thoroughly cooked. It was a fully developed case. His life has been saved, but he refuses to state where he bought the pork. It is the first case known at Pittsburg.

Persons who are troubled with ants in their houses may get rid os them by rubbing the shelves with gum-camphor. Two applications will be sufficient, with a week intervening.

NOTICE TO CORRESPONDENTS.—1. Please write on one side of the paper only. 2. Give full name, Post-Office and Province, not necessarily for publication, but as guarantee of good faith and to enable us to answer by mail when, for any reason, that course seems desirable. 3. Do not expect anonymous communications to be noticed. 4. Mark letters "Printers' Manuscript," leave open, and postage will be only 1c. per ½ ounce. We do not hold ourselves responsible for the views of correspondents.

CROPS IN BRITISH COLUMBIA.

SIR,—Although British Columbia is more of a mineral than an agricultural province, it nevertheless contains many millions of acres of as fruitful oil as can be found in any part of the world. Farming at present is carried on by a limited number of people, the mines and the fisheries absorbing most attention. Those however who have turned their energies to the soil have obtained as generous a return for their labours as those who have sought riches in the rivers or among the mountains

As an evidence of the fertility and worth of British Columbia lands, I send you the yield obtained and the prices realized off three fields belonging to Messrs. Boyd and Kilgour, on Frazer River, and situated about 6 miles from Burrard Inlet, the western terminus of the Canada Pacific Railway. A field of 13 acres of timothy has been cut for eleven consecutive years, and has averaged 3½ tons per acre at $15 per ton, or $682.50 per annum, or for the eleven years $7507.50.

A 23 acre field of barley last year produced 22 tons, which were sold for $770.

A 23 acre field of oats averaged 78 bushels per acre, worth at the market price of 50 cts per bushel, about $900.

On adjoining lands to Messrs Boyd and Kilgour, over 30 tons to the acre of white carrots were grown, which sold at $11 per ton, or $330 per acre.

If any of your Manitoba or North-West friends have a more profitable soil, they will I hope come to the front with what they have done, and not hide their crops under a bushel.

A BRITISH COLUMBIAN.

THE SWAYZIE POMME GRISE APPLE.

SIR,—The ADVOCATE, Nov. 16, page 14, presents to its readers a remarkable communication over the signature, S., Simcoe P. O., directing the special attention of Canadian fruit growers to two varieties of apples, claiming pre-eminence on the record of American pomology, viz.:—The Swayzie Pomme Grise and Fameuse. "The Swayzie Pomme Grise of Canadian origin commands the exceptional high price of $25 per barrel for dessert fruit in Europe." This uncommon statement shows S. to be a philanthropist. I said, if that statement receives verification I will take stock in that apple. Some patrons and admirers of the ADVOCATE in this part of Canada have a peculiar veneration for the veracity of its presentments. I regret to be able to confess a similar experience. It is gratifying to know from this article by S. that Canadian apples bear the palm in the English market, and that there are other markets where our fruit is regarded as a special object of attention. The Pomme Grise is common in some parts of Nova Scotia—a little grey, inferior fruit in appearance, that the worms are careful to avoid; not much esteemed at the mill, and taking low rank on the Provincial Fruit Growers' list. Shipments of this apple have been made to England, but it does not appear to be a speciality. It may have been rendered inferior to the Canadian variety by change of locality, climate and mode of culture. The attention of several fruit-growers was called to S.'s statement, and after due consideration, it was deliberately pronounced a typographical error—that the figures were intended to represent shillings, not dollars. It is the opinion of more than one person that our modern orchard practice is not up to time, and I have concluded to get further behind time, to go back in this fruit business to the days of our grandfathers, and see what they promised in the shape of apples and pears, with other choice luxuries. I have been growing too much soft fruit, and am not alone in the scrape. There are many others that "hum" the same tune. I am going for the old, good long keepers. S., in his communication, is not far from the truth when he suggests to plant an orchard with those varieties that are specially adopted to our northern climate.

P. P., Wolfville, N. S.

[The statement of S., Simcoe, is not an exaggeration. We are very particular in guarding against inaccurate statements appearing in the ADVOCATE. The high opinion entertained of the Swayzie Pomme Grise, as shown by the high price obtained for it in English markets, is corroborated by Mr. George Leslie, Toronto, the late A. Pontey, of London, and many other leading pomologists. Mr. Leslie calls it "the best dessert apple in the world, a most prolific bearer, and the highest priced apple ever shipped, while it is also one of the very hardiest." He says further:—"The most popular apple for shipment is the Swayzie Pomme Grise, which is about the highest priced apple that has ever been shipped, about £5 a barrel being paid for it in Covent Garden Market. The tree is an excellent grower, and will produce about three barrels of fruit a year when in full bearing. The Swayzie Pomme Grise is small, and is used entirely for dessert purpose. In my opinion it is the best apple in the world. The fruit is pretty, it is a perfect cinnamon russet, and where exposed to the sun takes on a very nice red cheek." We can speak of the apple from our own experience. We have grown it in our own orchard, and our son shipped it with a variety of other apples to England, and it brought the highest price. There is another Pomme Grise, the Montreal, also in the lists of hardy apples. P P. may have mistaken it for the Swayzie Pomme Grise, of which our correspondent S. speaks in his communication.]

MORE ABOUT THE CORN CROP.

SIR,—In last number of your valuable journal, and after an article headed, "A Notable Crop of Corn," are a few very proper remarks, which very naturally attracted my attention; for with two fields of corn, grown in two different years, I nearly ruined the crops, by the root pruning (recommended in the article referred to), caused by very deep cultivation of the corn. After it had grown to be quite large, I had made a tool that would work much deeper that those I had, partly to see what the effect of such tillage would be, and soon after working it the last time there was a heavy rain and wind, which laid it nearly flat on the ground, from which it never recovered to make as good a crop as other fields not so cultivated, nor so affected by the storm, which so nearly ruined this, because it was so much uprooted. In the other year, having a nice field of corn growing quite rank and strong, and being well eared out (the last of July), I thought I would run the cultivator once more through it, to cut off any weed growth, and leave it in good tilth; but being then very dry, and the drouth continuing, the corn ripened up quite prematurely, allowing me to cut it up a week or ten days earlier than other fields, but greatly reducing its yield, giving small ears of shrunken kernels as a direct result of cutting off the supply of nutriment by this root pruning, or deep cultivating, after the corn has attained such size that its roots are occupying most of the space between the rows. But still I do not learn by these failures to never do such tillage, for I have since then obtained excellent results by giving full grown corn the same manner of culture, only under different circumstances and conditions, which were these: having a stalky growth of corn, well eared out, and much wet weather prevailing, the corn did not seem to do well nor mature at all for some time, when I cultivated through it as before, and this seemed to check the green stalk growth and develop the ear more fully, besides maturing the crop sooner. This, and other similar experience, teaches me that in time of drouth I should not disturb the roots too much, after the crop is very much advanced in growth, but would recommend doing it to check a too rapid growth—especially if it is an unusually moist and growing time. And in thus learning to adopt a manner of work and treatment suited to the ever varying conditions and circumstances of farm management consists the "Science of Agriculture," and shows the skill of the agriculturist. H. I., Batavia, N. Y.

GRAFTING OLD APPLE TREES.

SIR,—Will you or some of your correspondents be kind enough to tell me how to graft old trees, as I have some one or two hundred bearing indifferent fruit. Is it safe to cut off the top and graft on the stump, or would you limb-graft, or cut them down and plant young trees. I grafted a few trees, cutting off all the tops, grafting in the big limbs near the trunk. My neighbors tell me they will die, or the grafts will grow so rapidly that they will die the next winter. If they live and grow too rapidly, can't I cut them back, and thus prevent them from dying?—C. J., Kars, Kings Co., N.B.

[The most successful grafting of old apple trees within our experience was by cutting off the tops of all the limbs, leaving a portion of each sufficiently long for cleft grafting. This practice is pursued on trees too large for whip-grafting:—The cion is prepared by cutting it in the form of a wedge. The part cut for insertion in the stock should be about one or one and a half inches long, with a well developed bud at the shoulder where it is to rest on the stock. This bud hastens the growth of the cion. The outer edge should be somewhat thicker than the inside. The stock is split on one side of the pith by a chisel and mallet. The split is kept open with a knife, and the cion is inserted with the thick side out. Secure the cion in its place and keep the air excluded by tying with a soft string and by a covering of grafting wax. The trees may be too old or unhealthy to make good fruit bearers; if so, grub them out and plant young trees. A shortening of the growing cion may be done if the growth be too rapid.]

PRICKLEY COMFREY, CORN CULTIVATORS, ETC.

SIR,—From cuttings of this wonderful forage plant, planted in the spring of 1880, I cut on the 13th of May, weighed and calculated amount per acre, allowing 700 plants to the acre, which would produce 15 4-5ths tons of green feed to the acre. Considering the slow growth this spring up to the 1st inst I consider the foregoing most wonderful in producing power. I had plants last year from cuttings 15 feet in circumference. Their growth this year will, of course, be much greater, and the production much larger. Pigs eat it voraciously; cows do well on it, making the increase of milk very marked. It is well worthy of trial.

Can you speak from experience in reference to the merits of the different corn cultivators for two-horse use?

Can you tell me a remedy and give the cause of a sow destroying her litter? I have a pure Maggie, or Poland China sow, procured at considerable expense, which killed in a savage manner all her litter but one, which was rescued from her and is doing nicely. Should like to learn of the cause and a remedy if such is known.

A. C., Newburgh, Ont.

[The "Western Corn Cultivator," manufactured by J. G. Cockshut, of Brantford, Ont., is the best two-horse cultivator made in Canada. For particulars concerning breeding sows see April number of ADVOCATE, page 84.]

HOUDAN FOWLS.

SIR,—I have been breeding the Houdans for several years, and find them an excellent fowl. Perhaps they are the hardiest of all the French varieties; they combine very many excellent traits and qualities, being extremely hardy, of early maturity, great layers of large white eggs, and they are one of the very best of table and market fowls; their flesh is rich, juicy, and tender, with a large proportion of breast meat; they will dress as much, or more, than any other fowl of the same live weight. They are of a lively sprightly disposition, but not high flyers, and seem contented almost anywhere, though they are well adapted to a good range, and particularly to the farm, being naturally good foragers and not very troublesome in the garden and orchard. They are generally non-setters, although I have had one occasionally set and hatch and do quite well. They make an excellent cross with any other fowls; they are a very ornamental bird as well as a very useful one.

J. H. S., Logan, Ind., U. S.

CATTLE FOODS COMPARED.

SIR,—There appeared in the April number of your valuable paper an article under the above heading, with the conclusions of which I cannot agree, and beg to submit my reasons. First, because he places the yield of turnips low; second, because turnips are not nearly as valuable for feeding cattle as sugar beets; and, third, because he compares the cost of raising the roots with the market price of the other feed, which would not be a fair comparison, though it probably would favor the roots.

Let us institute a comparison between the different varieties of roots and corn, as regards cost for feed; and let us base our calculations upon a crop raised by first-class farming, though not upon extra crops. By first-class farming, then, I believe the following would be about a constant yield per annum:—1,200 bushels mangolds, 800 bush. sugar beets, 700 bush. carrots, 700 bush. turnips, 100 bush. corn in the ear.

Cost of raising and storing one acre sugar beets, estimated to raise 800 bushels:—

Manure, 10 loads	$10 00
Fall plowing	1 50
Gang-plowing in spring	75
Harrowing twice	50
Seed (8 lbs., with 2 lbs. carrot seed)	4 00
Drilling with wheat drill	25
Horse hoeing, four times	2 00
Singling and hand-hoeing	4 00
Harvesting	14 00
Interest on land ($100 per acre)	6 00
Total	$43 00

Cost of acre of mangolds, 1,200 bushels:—

Same as beets	$43 00
Additional harvesting, 400 bush.	7 00
Total	$50 00

Carrots, 700 bush. per acre:—

Manure, 15 loads	$15 00
Fall plowing	1 50
Spring plowing	1 50
Harrowing	50
Seed	1 20
Drilling by hand	1 00
Horse hoeing, four times	2 00
Singling and hand-hoeing	6 00
Harvesting	12 25
Interest	6 00
Total	$46 95

Turnips, 700 bush. per acre:—

Manure, 5 loads	$ 5 00
Fall plowing	1 50
Gang-plowing, twice	1 50
Harrowing	50
Seed	75
Drilling by hand	1 00
Horse-hoeing, twice	1 00
Singling and hand-hoeing	3 00
Harvesting	12 25
Interest	6 00
Total	$32 50

Cost of acre corn, 100 bush. ears:—

Manure, 5 loads	$ 5 00
Plowing	2 00
Harrowing, mucking, seed and planting	1 50
Cultivating	2 00
Cutting and husking	5 00
Hauling to crib	1 25
Threshing, grinding and hauling to mill	6 00
Interest	6 00
Total	$28 75
Less stalks worth	3 75
Cost of corn prepared to feed	$25 00

Now, as the amount of nutriment is in

Mangolds	118½ lbs.	in 1,000 lbs.
Sugar beets	184½ "	"
Carrots	152 "	"
Turnips	102 "	"
Corn	800 "	"

There would be in—

1,200 bush. mangolds	8,514 lbs. nutriment.
800 bush. sugar beets	8,832 " "
700 bush. carrots	6,384 " "
700 bush. turnips	4,284 " "

Or $50 buys 10,269 lbs. fat and flesh-forming matter in sugar beets; 8,514 lbs. do. in mangolds; 6,791 lbs. do. in carrots; 6,590 lbs. do. in turnips; 4,480 lbs. do. in corn.

We must also consider that in feeding the mangolds we have to handle and provide store-room for 500 bushels more than we would of carrots or turnips to get the above results; also, when we have the cornmeal, whether it will be less or more trouble to feed than roots.

So far we have proven our results only from theoretical or chemical values. Practically, I have not had time or opportunity to prove them true or false; though last winter I fed a large, aged and almost toothless cow upon one bushel of sugar beets daily, costing five cents, and what cornstalks she could masticate, and she gained apparently faster than she did on pasture, though farrow, all summer, and as fast as 3-year-old steers eating a peck of cornmeal daily with cut straw, meal costing 12½ cents; and when I gave the steers a half-bushel of roots in addition, they gained faster than I ever saw cattle under similar circumstances otherwise.

I am so well satisfied with sugar beets that I intend to raise enough to feed milch cows and young stock upon them and straw or stalks exclusively. Steers fattening might do better with less bulk and more strength, say four quarts meal and one bushel of beets daily, with cut stalks *ad libitum*, or hay. I presume the quantities per acre which I have assumed would vary upon different land. On clay loam I think these quantities will be about right; on sand they might not; and on alluvial lands, perhaps, carrots would yield more and turnips less. The amount of manure estimated per acre is the most difficult matter to decide correctly; but from experience I find carrots very exhaustive, corn very little so; and the amounts of manure estimated are for one year's growth. Of course we would apply much more, but at least one-half would remain unused in the ground. Trusting to hear from others on this subject, I remain, your subscriber,

E. D. S., Winona, Ont.

WINE FROM GRAPES.

I was much pleased to learn by the last number of the ADVOCATE that the amber sugar cane agitation had not been allowed to die out; it occured to me that many of your subscribers were perhaps not aware that the soil and climate of Ontario is so well suited for grape growing and wine making as it really is, and as I have acquired some knowledge of both grape growing and wine making in both France and Italy, I will with your permission give the readers of the ADVOCATE the benefit of such knowledge, and in doing so will endevour not to use French or any language that any Canadian farmer cannot understand.

In 1852 and 1853 I spent a great deal of my time travelling through the country around Paris, and visited or saw a great many vineyards, some one and two hundred acres in extent. I have travelled for miles in some parts where there was little else but grapes growing, and not a fence of any description. The fact is I often smile when I hear and read so much about what we are to do in this country for fence timber when the bush is all gone I have always when hearing or reading this, thought: do as the French farmers do, that is do without. You find there fruit of every description growing down to the roadside, and just as safe, I might say more safe than in Canada with a fence round it.

I found that around Paris, and east as far as the German frontier, the grapes were grown in rows, about eight feet apart, and the vines about six feet apart in the rows and tied to stakes about seven feet high, a great many not so high.

Paris and the surrounding country to Rheims is the very centre of the champaign business. There are numerous factories in Rheims. I was here in the employ of one of the largest champaign merchants in the place for nearly three years, and learnt that champaign was a wine made of the juice of the grape, sugar, high wines and other things, in quantities to suit the tastes of the people who drank it. Wine made to suit the English taste would not suit the Russians nor the Germans. Wine made for the English, Americans and Germans was the nearest alike of any. There was a little more sugar in the American than in either of the others. We had a tasting room close to the offices, where samples of all wines were brought before the final bottling; little do the people of this, or any other country know the difficulty there is in getting the wine made up to suit these tastes. I have often heard the cellar master say, this needs a little more sugar, other times a little more spirit and so on, until all admitted the taste to be perfect, and orders were given to complete the work of corking up. The corking is done by a machine.

Amongst other things I learnt was, that to make a first class bottle of champaign you required wine from seven different vineyards, and one of these had to be Verezeny You might have 17 or 70 vineyards it benefitted you nothing if one of them was not in this favoured district. The country for a few miles round Rhemis is very level, and I failed to find a single vineyard in any direction out of the town. I often asked the question why grapes were not grown nearer to the town, as I had learnt that six miles out in any direction there was any number of vineyards. My answer was most invariably, the land is too level, grapes would not be worth anything.

I found a wine here, not a made up one like champaign, but the pure grape juice, that I considered the best I had tasted since I came to that county; unfortunately for the man owning the vineyard it was very small, only some few acres. I asked the owner one day why he did not extend his vineyard when he could make such good wine; his answer was that it had been tried long before he had come into possession, but to no purpose. I asked again if he really meant to say that cuttings taken from vines he had growing, and planted further down the slope of the hill, would not make the same wine (his vineyard was on the south-east side of a hill); he answered me that the grapes in taste and appearance would be the same, but that the wine made from them would be different. There are in France hundreds of such cases, and it may seem strange to some, but I found that the old saying about the best goods always being wrapped up in the smallest parcels was true in this case. The best wine I found in small quantities, too small to make them of value to export, and only of value as a good orchard or a good house on a farm in Canada. The farm always sells for more money or much quicker when offered for sale, therefore of more value.

I have heard so much about Verezeny and Sellery that I made up my mind to embrace the first opportunity and go out to see what I could learn there. Sellery was where the Verezeny grapes were pressed, and is situated about a mile from the nearest vineyard. This is why we in America find so many champaign bottles labeled Sellery, that being as close as many champaign merchants can get to Verezeny, and as there are no vineyards in the place means nothing; but let them once put Verezeny on their bottle, and to find them, you would have to visit the penitentiary, as that would be fraud, so you see they go within a mile only of committing a fraud but don't do it. It was in the fall of 1854 that I took a holiday and started with a line to the person in charge of the wine presses at Sellery. I found them in the midst of the grape harvest, if I may so call it. I was treated with the greatest of kindness; I saw everything that was to be seen in and about the presses. The superintendent drove me all round the country to see what as to be seen. I found the vineyards all on the hill sides. There was a range of hills running for miles, all clad with vines, and to me what was the most astonishing was to be told that only for a certain distance were the grapes noted for any particular quality. To me they all tasted alike, looked alike, the same soil, the same geological formation (lime stone) but for all there stood Verezeny, the envied spot, on the top of the hill, and to look up and to think that only so far on each side of that small village could the same price be obtained for the wine.

PERTH.

(To be continued.)

TO KILL CANADA THISTLES.

SIR,—What would be the best way to kill Canada thistles so as to get a crop this year? Had potatoes in it last year and the thistle destroyed them.

S. M., P. E. I.

[To finally kill Canada thistles prevent their appearing above ground by a constant use of the cultivator or hoe. Excluding the growing thistle so weakens the vitality of the root that they will die out. Never allow any to go to seed.]

SIR,—Fall wheat will be pretty light in this section. Some parties have sown fields with oats; spring grain that was drilled in looks well, but owing to the dry weather this spring, broadcast sowing did not come up very even; clover looks splendid. By all appearance there will be plenty of hay.

J. A., South Cayuga.

Poultry.

Vermin on Poultry.

BY R. A. BROWN, CHERRY GROVE, ONT.

At this season of the year there is a deal of work to do about the poultry house. In the first place, the whole interior wants removing; all that is possible to take out do so, and leave for a few days. If the nest boxes, perches, &c., can be left out so as to get a good drenching rain, all the better. Scrape and clear the inside as well as possible, then dust all round with light, dry dust in every hole and crevice; then sweep all out clean, and give it a good coat of whitewash made of quick lime; be particular about the perches and nests; fill all crevices full of the above liquid, and replace everything in its usual place, and your house will appear like new.

That is one step towards riding fowls of vermin, and a very important one. Now, before telling you how to destroy the remaining vermin, I must tell you what they are that you are to look for.

There are four kinds of parasites that prey upon poultry, but all are not found in one yard—only where birds are sadly neglected.

First, the chicken louse, which is found on the head of the young chicks when only a few days old; their color is dark; elliptical in shape, and about an eighth of an inch long, with legs near the head; they move very slowly; are a sort of tick which fasten on the head of the young chick and fairly sucks the chick's life-blood away if neglected. They are easily detected and cured if looked after in time. Rub a little lard on the chicken's head when two days old, and you will have no further trouble with that kind of vermin. Put no sulphur about the chick, or you will be as sure to kill it as you would the ticks.

The second enemy is the spider louse, or red mite, which infests the coops of both old and young in neglected quarters. At first they will not be noticed, as they usually prey upon the birds at night, and hide away in the cracks in the day-time, while the owner will wonder why his chicks grow no faster, but upon examination finds the cause to be the little red vermin just mentioned. All the feed in the world will not be sufficient to sustain such stock and make them thrive. If this pest is once allowed to multiply, it will overrun the whole establishment, and deduct much from the profit of the yard. To get rid of it, use plenty of hot lime wash, with a little kerosene oil and some carbolic acid mixed with it. Be sure every crevice is filled with the wash, so that none are left to restock the place again.

The third parasite is the most common and does the least harm. It is long, runs very swift, and is sometimes so near the color of the fowl's flesh that it easily hides about the roots of the feathers and is not detected. To get rid of it, give the fowls a dry run, with a good dust-box filled with a mixture of dry wood ashes and road dust, also a small portion of sulphur in their feed occasionally.

The fourth variety is very destructive to the fancier when once it gets among his flock. It preys upon the feathers, and will strip the feathers of all the down, leaving only the bare shafts to cover the hen's body if not checked in its onset. They are of a pale buff color, very broad and rather flat-shaped, and multiply rapidly when left to their own "sweet will." The first indication of their presence is a few broken feathers, then some dry-looking ones; the next stage is as if the fowl had a flight, and got his feathers torn off in spots, and been very much worsted in battle. To destroy these pests, dip the fowl all but the head this remedy prove effectual, it is necessary that in a weak solution of carbolic acid, and keep alone till dry.

There is another pest we wish to speak of while on the subject, and that is scaly legs. It is by no means a dangerous "complaint," but is very troublesome and unsightly. It is reported by some as being an insect, but whether or not, it is very negligent to let it remain, or work its own remedy. It makes the fowl very lame and stiff in time. It is simply a rough, scaly, hard substance on the legs and toes, resembling fish scales. Take the fowls affected to a clean pen or yard, with plenty of clean straw or chaff, and apply kerosene oil to the affected parts once a day for about a week, intervening with lard or sweet oil; then rub the legs clean, and oil with the sweet oil or lard alone for another week, every time cleaning all the loose scales off, but never tear them off or make the leg bleed, or the remedy will be worse than the disease. If the symptoms should reappear the same season, you had better cut off their heads and replace with younger stock.

Value of Different Breeds.

A correspondent to an exchange says: We have tried a good many sorts, the latest being Langshans, and we have no hesitation in saying that they are found the most profitable on a farm. They are good winter layers; the eggs are certainly not of the largest, but they are fair medium, and they come in at a time when eggs are the dearest. The birds make capital weights, and we know of no breed to surpass them for table. They are gradually finding their way unto many farms in this vicinity. When first introduced here the prices asked were prohibitive; now they are getting more distributed, and last week I bought two hens and a cock for $1.25 each to send to a friend at a distance. Two years ago the vendor would have asked $5.00 each for the birds. Hitherto we have kept Rouen ducks, but they got too fat and eggs were very few. This year we have some Indian Runners, and they are laying remarkably well. One of them dropped an egg this week 8½ inches by 6½ inches; of course this was an exceptional one, but the general run of the eggs are of the average size. As table birds they bear no comparison in weight to the Rouens, but as egg layers we find them preferable, and this latter is the chief object we have in view.

Feeding for Rapid Growth.

As a general thing there is little danger of feeding growing fowls too much. During the period of growth when every part of the organic structure is undergoing development the chicken will assimilate all the food it takes.

The experience of most all successful poultrymen is to feed often and as much at a time as they will pick up clean. This system of feeding is both economical and profitable. It first causes rapid growth and early development, and in the next place the faster they grow the better, so that you can turn your capital over more rapidly.

Very young chicks cannot consume enough food at one time to last them half a day, as their crops are small; their rapid growth and habitual exercise demand material proportionably nourishing and active to develop a vigorous constitution.

If chickens have a liberal range the grubs, insects and worms they pick up will greatly aid them to grow. Indeed it may truly be said that these and vegetables are the natural food of young birds. But domestication goes a step further by supplementing grain, milk and animal food to produce more egg forming material. Chickens confined in coops or small runs must be supplied with a variety of good food, scraps from the table, cooked corn and oat-meal and seasoned with pepper, bits of bread soaked in milk, chopped onion tops or garlic, bits of cheese or curds and milk will be productive of the best state of health and the most rapid growth.

Poultry Disorders.

As a rule it does not pay to spend much time or money in doctoring poultry, and our experience proves, to us at least, that frequently the best remedy is "the axe and chopping block," for it arrests disease, in that bird at least, and may be the means of preventing the other members of the flock from contracting the same disease or disorder, although, as soon as any bird is seen with a faded comb, or other evidence of ill-health, it should be removed to separate and distant quarters, and then treated according to the kind and severity of the ailment. Extreme cleanliness, together with comfortable shelter, proper food and fair range generally insures complete immunity from disease if not from ordinary disorders, and is every way preferable to inviting disease by lax management and then administering cures or drugs for that purpose.

A moderate and judicious use of cayenne pepper goes far toward toning up the system, but it must be remembered that it can and will do harm when fed too frequently or in too large quantities, as is done by some breeders who see the good results which are at first apparent from its use. If a few bits of old iron or rusty nails are kept in the drinking water, it will help to tone up the system, and may prevent many minor disorders to which poultry are usually subject. When the birds become loose, indicating the first stages of diarrhœa, a lump of alum kept in the water usually has the desired effect of checking that tendency and it is not a bad thing to have the alum in the drinking water, during the spring and early summer months, even when the chicks do not show signs of laxity, to act as a preventive. Greenish and very fluid droppings indicate disease, generally the so-called Poultry Cholera, and show that digestion does not go on as it should. Such birds should at once be removed from the rest, all the worst cases put to death and the others treated to astringent medicines and low diet. In many cases, to entirely stamp out the disease, it is necessary to remove the yards and runs to new ground and to purify and cleanse the buildings to the extreme point. A few days' neglect, either to chicks or buildings, may be the means of losing the entire flock, for they die by tens and more when it once gets full headway, and soon there is not a bird left to tell the tale.—[Poultry Monthly.

A GOOD POULTRY RECORD.

SIR,—My location is on heavy soil; my poultry house is exposed to the north, west, and south-west winds, and the fowls are yarded part of the summer. The house is 5 by 8 feet, and 9 feet high, sided up and down with matched boards, with one window in the south end, making not a very warm house for winter. My fowls are mongrels and Plymouth Rocks. Dr.—To thirteen fowls, January 1, 1880, $6.50; 22 bushels of corn, $15.32; rent of house, $2; profits to balance, $13.55; total, $37.37. Cr.—By 1318 eggs, $14.14; twenty-nine fowls (130 lb. used), $14.73; seventeen fowls on hand, December 31, $8.50; total, $37.37. The thirteen fowls comprised twelve hens and one rooster. The food was corn only—all they would eat—fed whole, except that the chickens were fed cracked corn until large enough to swallow whole grains. They also had scraps and bones from the table. After they had picked what little meat there was on the bones they were picked up and thrown into a coal fire, and the coal ashes divided between the privy and hen house. The clinkers and bones partly burned were thrown into the yard for the fowls to pick over. The eggs used were credited at the average price paid at the store. The lowest price obtained was 12c. per dozen; the highest was 28c. The fowls eaten were old fowls and chickens, credited at selling price at the time. The lowest price was 8c. per pound, the highest was 15c. I have made no account of the manure produced, but called it equal to the trouble of taking care of the fowls. W. A. H.

COAL-OIL IN THE POULTRY YARD.—I experimented with the above until I knew it would eradicate vermin of all kinds in or about poultry houses or upon poultry. The first publication of the fact called out much adverse criticism, some claiming that it would injure the fowls, others that it would kill them. All this I finally silenced by affirming that it might be applied on the head, under the wings, and, when feathered, on the fluff, etc., of poultry of any age, from two months old up. Since my last reperted experiments I have been testing its further value to the poultryman. I cured, with kerosene alone, a fine pair of Partridge Cochins, which had the roup in its full virulence. With a soft rag or a small piece of sponge soaked in kerosene, carefully wipe the nostrils perfectly clean; then force a drop or so in each; now carefully sponge the head and eyes thorouhly; when this is properly done, give each full-grown bird one-third teaspoonful down the throat. This is not cruel; I know that soaking the eyes in kerosene will not cause so much pain as half a drop of alcohol, or alcoholic mixture, put into each eye.—[William Horne, M.D., V.S.

CUT-WORMS AND TOMATO PLANTS.—Matthew Crawford states in an exchange that the destruction of tomato plants by the cut worm may be avoided by making a compact mound of earth about the plant, as large as an inverted teacup, the cut-worm being unable to climb. Another way, which we have long practiced, is to wrap around the stem, if the cut-worm is feared, a few inches of paper or a large green leaf of any kind, before drawing the earth around it. They will not take the trouble to gnaw through the paper or leaf.—[Ex.

The Family Circle.

"Home, Sweet Home."

Grandmamma Gorden.

Although of mature age, I had fallen so completely into my uncle's power as to give him the almost absolute disposal of my hand I was brought up most unwisely—in other words, with expectations—and consequently I was good for nothing else but to keep on expecting. I spent many years as a walking gentleman of society in London, and many more in wandering to and fro upon the Continent; but at length, when actually within hail of forty, I found myself once more with my legs under the mahogany of the Athenæum, and with nothing to pay for the good things above it but what came out of the pockets of a tough and somewhat peremptory old man.

He had never before insisted upon my marrying, but the reason was that he had remained in constant expectation of the occurrence taking place through my own connivance. Indeed, it had been his business for many years to interpose gently between me and the catastrophe, suggesting now that I did not know enough of the lady, and again that I knew too much, and so forth

The fact is, I had never been without expectations of taking a wife, always voluntarily abandoned, till my first crop of gray hairs appeared. After that, the difficulty was on the side of the lady; and I was at length so much disgusted by the unreasonableness of the sex that I determined to live and die a bachelor. Just at this time I received from my uncle a letter which was short and to the purpose.

"Dear Nephew,—I am glad to hear of what you call the vacancy in your heart, as you will thus have no difficulty in fulfilling my wishes and obeying my solemn injunctions. You have promised several times to marry, and you must now do so. I have never interfered with your choice, and you are not to interfere with mine. The widow and heiress of my old comrade Gorden is in the market Our estates run into each other in such a way that you might comprise them both in the same ring fence. She is a healthy woman, and not too young; and the arrangement is that you are to be married at the end of her year of mourning, if she can fancy you.

"Yours affectionately,
"JOHN MURCHISON."

If she could fancy me! The widow of old Gorden, and a healthy woman indeed! What a horrible description! I thought my uncle must have intended to try the extent of my loyalty; and I do not know that I had ever a fit of more bitter reflection than while conjuring up the idea conveyed; for, owing, I suppose, to the idle life I had led, I had not yet got rid of the ideas of romance which were so unfit for mature years like mine. It was one thing to indulge my despair in old bachelorhood, and quite another to carry disappointment into the domestic circle of an old woman. I confess I did hope that Mrs. Gorden owed her healthy condition to at least some lingering remains of youth, but a second letter from my uncle, in reply to my remonstrances, dissipated at once my fond illusion by informing me that the widow's family could afford no possible objection, her only daughter being well married.

There was no help for it. It was necessary to turn my meditations from the lady to the estate, and, if I thought of the ring at all, to fancy it within a ring fence. But the affair could not be slept over any longer, and I set out for my uncle's seat, having previously signified to him my full acquiescence in his plans. In due time I arrived at the little town of Sethan, distant only a few miles from my destination.

It was here I heard—and with cruel suddenness—of a circumstance connected with my intended which made me at first determine to rush back to London, and, if necessary, take to street-sweeping, authorship, or any other desperate resource rather than marry that Mrs. Gorden. I was passing a half-open door in the hotel, when I heard a female voice addressing a child in the terms of wise endearment consecrated to the rising generation.

"It shall go," said the voice, "and so it shall, to its own gran—granny—grannyma—to its own—own—own grannyma, that it shall, so it shall—won't it?—to its own Grannyma Gorden."

The next minute, in reply to my hurried questions, my fears were confirmed by the landlord—my intended old and healthy bride was an absolute grandmother—grandmother Gorden!

I had intended to go on at once to my uncle's, but that was now impossible. My agitated mind needed repose A night's reflections were necessary to arm me with sufficient philosophy to meet the destroyer of my peace, and, engaging a bed at the inn, I went out to walk in the neighboring wood. The locality was not chosen without a motive, for I knew that from the summit of a low hill a mile distant I should obtain a view of Sethan Court, and I felt that, if anything could reconcile me to the idea of the healthy old widow, it would be the spectacle of her castellated mansion seated in a park which was a very paradise of beauty Every step I advanced reconciled me more and more to the old lady, and when I saw the indications of trout in the stream through the trees, I was more than ever intent.

But just at that moment a sound broke upon my ears which conjured up recent disagreeable associations; it was the cry of a child. My thoughts at once turned to hale, hearty, long living grandmotherhood. Visions of canes and snuff-boxes rose before my eyes, everlasting coughs rattled in my ears, and, worse than all, the glances of matrimonial love from the eyes of a grandmother froze my blood.

How different was the scene that met my eyes as I turned the corner of a clump of trees! The infant I had heard was lying on its back on a grassy knoll, fighting up with its little clenched fists, and crowing, as the nursemaids call it, with all its might, while bending over it, with eyes brimful of love and laughter, poking its tiny ribs with her fingers, snatching wild kisses from its brow, and seizing its neck with her lips as if she would throttle it, knelt a young woman—and such a young woman!—a woman in the very prime and glory of her years I did not think she could have been quite thirty. Her bonnet was lying on the grass, and her dishevelled hair floating in dark masses over her shoulders; but a bright radiance was on her queenly brow, just as a voice of peremptory command was heard in her light joyous laugh. There was a fearless self-possession in her manner, such as years superadd to the feminine softness of youth; and her features, originally moulded in wax, were now as firm, yet as exquisitely fine, as if they had been cut in the semi-transparent marble of Paros. While feasting on the beautiful picture formed by the mother and her child—surely that must be the relationship—a little incident occurred which disturbed them both.

The infant with a shriller squeal of delight, and a more vigorous spasm of its limbs, than it had hitherto indulged in, suddenly rolled down the knoll, crowing as it went, and the lady, with a playful yet nervous cry of surprise, stretched after it in vain as she knelt, till she measured her whole length upon the sod. Before she could get up, I had sprung from my ambush, caught up the truant as it lay half smothered in daisies and buttercups, and presented the prize to the flushed and startled mother.

To describe the conversation of such a fascinating woman is impossible She was not a woman of society, yet she was perfectly well bred. She had spent the greater part of her life in the country, invigorating both mind and body with the pure air of heaven, visiting town occasionally, and thus she was enabled, with the assistance of books, and the general literature of the day, to keep pace with the progress of the world.

I do not know how it was, but our acquaintanceship seemed to be ready-made, and, having mentioned my uncle's name, she had no difficulty presently in remembering his respectable friend Mrs Gorden.

"You know Mrs Gorden?" said I—"Yes."

"What! Grandmother Gorden?"—"Yes."

"How do you like the individual?"

"I sympathise with her, for I too——" And breaking off with a sigh, she held up the fairest hand in the world, so as to show a widow's ring.

I had not hitherto noticed her slight mourning, but I now saw that she was a widow, a young and charming widow, and that the infant was the pledge of a love extinguished by the grave. She was free, this lovely young woman, and I was about to be chained for life to Grandmother Gorden! She saw my agitation, but of course could not comprehend its cause.

"Come," she said, with an angelic smile; "I see you do not like my venerable friend, but I am determined to reconcile you to her. She is a grandmother, it is true, and therefore not so young as she has been, but she wears well—she is indeed particularly healthy; and thus, if you form a friendship with her, it is likely to last for many years"

"That is the misery of it," said I. "If she were but like other old women—if she were but subject to the common diseases of grandmothers—my fate might be endurable."

"Your fate! What has that to do with Mrs. Gorden's longevity?"

"I am only going to be married to her—that's all!" and the absurd announcement was no sooner out of my mouth than the fair stranger broke into peals of laughter, which, to my ears, at that inauspicious moment, sounded like the screams of an evil spirit.

"Pardon me," said she, endeavouring to compose herself; "I am far too giddy for a——" and the widow kissed the orphan child. "But the idea of a marriage between you and Mrs Gorden is really too ridiculous. You appear to be a martyr to circumstances: but has the old lady given her consent?"

"Her consent? Oh, let her alone for that! It's not often that a fellow like me comes in the way of a grandmother. There is no likelihood of her refusing me; and, if I refuse her, I may as well hang myself."

"Why think of such an alternative? Although probably dependent on fortune, you are not too old to work and to struggle If you will not allow poor, aged Mrs Gorden to enrich you, there are fortunes in the world still to be made by the adventurous and the industrious"

"Give me a motive," cried I suddenly, "and I will both dare and suffer! I cannot do it for so poor a meed as fortune; but place in the distance something worthy of my efforts, something rich enough to reward them, something——"

"What?" said she innocently.

"Love!" cried I, in desperation; and, before she could prevent me, I had caught hold of her hand, and smothered it with kisses.

I spent several hours with the lovely widow, and saw—clearly saw—that only a little time was wanting to enable me to gain her affections; and then I bade her adieu, exorting a promise that she would not communicate my arrival to Mrs. Gorden, and that, when I called at the Court, she could see me alone, that I might have an opportunity of telling her what had passed between my uncle and myself.

When I arrived at my uncle's, I found him in a very bad temper, as he had expected me the day before; and matters were not mended when I mentioned frankly the misgivings I had on the score of domestic happiness.

"Domestic fiddlesticks!" cried he "What more would you have than a good estate and a good wife—a healthy woman to boot, come of a long winded race, and as likely as not to lay you beside my old friend Gorden? She is a grandmother already. Doesn't that look well? You do not think her too young?" And the old gentleman grinned, while I gave vent to a spasmodic exclamation. "Then what disturbs you about her more especially since you tell me that there is 'a vacancy in your heart'? But here comes a letter from the Court," and, tearing open a large old-fashioned looking missive, presented to him by a servant, he read as follows:

"My dear Sir,—I am told that your nephew has arrived, and, as he has been reported upon favorably by one who saw him yesterday, and on whose taste and judgment I can rely, I am tempted to say, with the frankness of my character, that I shall be happy to make his acquaintance. I am truly grateful for the many obliging things I am told he said of me, and I hope one day or other he will find them all realized. My dearest grandchild sends a kiss to you both; and, with best regards, I remain, as usual,

"GRANDMOTHER GORDEN."

"There!" cried the old gentleman, with odious triumph "There is a spirit for you! Why, you dog, you will be as happy as the day is long!"

I scarcely heard him, for my thoughts were brooding bitterly over the treachery of the beautiful widow. She has broken her promise, and she had rendered my position a thousand times more embarrassing, by persuading the wretched grandmother that I had been such an ass as to say complimentary things about her age, ugliness, and infirmities. It was clear that she was a jilt, that she had only been laughing at my admiration, and that she was now determined to exact further amusement from my calamities I resolved however, to die game; and, telling my uncle that, though well acquainted with Mrs. Gorden from report, I desired to see her personally before deciding, I threw myself on horseback and galloped straightway to the Court.

It had been my intention to ask for Mrs Gorden, but the wily widow was on her guard, for, as the door opened, I heard her call to the servant in her silvery tones, "Show the gentleman in here;" and in another minute I stood once more in the presence of the unknown of the forest. I found her more beautiful, better dressed, and younger-looking than she had appeared the day before, and, as I saw with keen appreciation the treasure I was about to lose for ever, my resentment died away, and deep grief took its place.

"You forgot your promise," said I; "you make a sport of my misery."

"What could I have said when questioned?" inquired she, sweetly. "But what misery do you allude to—the misery of marrying a grandmother?"

"Yes—when my heart is devoted to another. But it is needless to talk to you; you are as incapable of passion as a statue. You could never have loved even your husband!"

"You are in some degree wrong; still, I was so young when I was married—only sixteen—that I looked upon my husband more as a guardian than a lover. I was not quite seventeen when I became a mother."

"Is it possible? That is not a great while ago."

"Greater than you perhaps suppose; for a sound constitution and salubrious air are apt to lead to mistakes. Would you take me to be well on towards thirty-five?"

"What became of your child?" cried I, suddenly.

"We all married young in our family," replied the widow, hanging her head. "It was my daughter's infant," she continued, looking up at me with the most beautiful blush that ever lit the cheeks of a girl, "which you restored to me yesterday from among the daisies and buttercups, and I am GRANDMOTHER GORDEN." M. P.

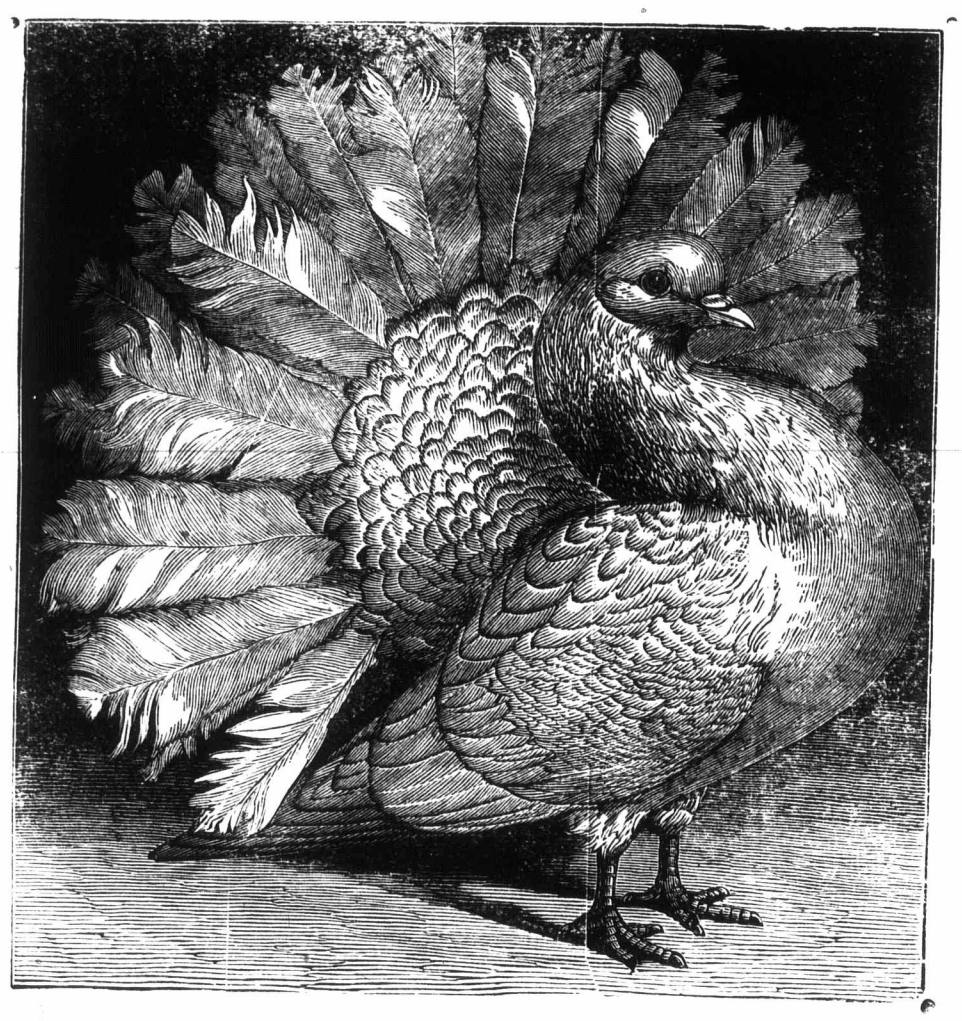
House Cleaning.

Mrs. L. R. writes:—"This is my first year of housekeeping, and as house-cleaning time approaches I am full of dread and uncertainty. I want everything done in the best manner, but do not know how to plan, what to do first and what last, and when to begin. Please, out of your long experience, enlighten my ignorance and tell me what I should do. I am sure other young housekeepers will be grateful also for your suggestions."

Our young friend cannot begin too soon, especially if her house is heated throughout so that work can be done without risk of taking cold. When house-cleaning is gotten through with early in the season, there is time for the housekeeper to enjoy the lovely May and June weather, to get sewing done, to rest and gather vigor for July and August heats. At this writing the finishing touches to our yearly house-cleaning are being made. As to methods—painting and kalsomining must be done first, then cleaning. Begin at the top of the house and finish as you go. In bed-rooms have closets overhauled, bedsteads taken apart and scrubbed, carpets taken up and beaten, furniture wiped clean. If the walls are painted, have them washed with soda or ammonia water. Finish one room completely before beginning on another, unless you have two women to help instead of one; and in a large house it is better to have two or three or as many as can work to advantage, and so rush the "agony" through and get over it as soon as possible. Each morning plan out your work before a thing is done, and if you need to do so write out memoranda so that nothing shall be overlooked and everything be done systematically. When you are all through, there shouldn't be a nook nor a cranny where there is a speck of dirt. When the china and kitchen closets are cleaned, have every piece of china, glass and tin taken down and washed, the walls of the closet cleaned, the shelves scrubbed, clean papers put on them and the dishes returned to them. Stuffed furniture, covered with reps or brocatelle, should be taken out doors, whipped with "cowhide," then brushed off carefully; satin covered furniture should be wiped with a soft cloth. If there are spots in carpets, after the carpets are thoroughly beaten, swept and tacked down again in place, the spots may be removed by scrubbing them with oxgall and water or ammonia and water. Matting should be laid carefully on the grass or on a clean floor, swept on both sides, then washed off, if it needs washing, with a broom dipped in salt water. In going over the house gather together all old woollens and put them in an outhouse or sell them to the "junk man," so as to have no food in the house for moths. The cellar should be thoroughly overhauled, all decaying barrels, boxes and vegetables removed, a coat of whitewash with copperas dissolved in it be spread upon the walls. Cisterns and cesspools should be cleaned out, and the latter rinsed down with lime water or copperas water.

The White Fantail Pigeon.

This is one of our most beautiful pigeons, and better suited to the house as a pet than most kinds. Our engraving represents the white fantail to perfection. There are several colored varieties of this pigeon such as white, blue, silver, black, yellow, red, frizzled and laced, but of all the colors we deem the white the most beautiful and desirable. The pure-bred bird should be of snowy whiteness, with long and delicately curved neck, which much resembles that of the white swan, both in formation and gait. These pigeons are very popular with those who have bred them, as they are readily reared and domesticated, and soon become pets of the household, not easily to be dispensed with. The Fantail, or Shaker, as it is sometimes called, should possess a tapering neck, the breast full and prominent, the tail always erect, and never containing less than twenty-four or thirty-six feathers, otherwise the tail will droop and the beauty of the bird be considerably marred. Although there are instances of birds having as many as forty-eight tail feathers, that number detracts from their beauty and makes them appear uncouth and clumsy. The dove-cot of the Fantails should be built near the ground, as the birds are not given to taking high flights; or if the cots are attached to the barn or carriage-house, the roosts should not be more than six to eight feet from the ground; in fact, the nearer the ground they are placed the better. With ordinary attention these birds will prove hardy and prolific in any section of the country.



THE WHITE FANTAIL PIGEON.

A lady of this city was stung last week from fifty to a hundred times about the head and face by bumble bees. A strong solution of soda applied to the wounds at once checked the swelling and alleviated the pain. The philosophy (or chemistry) of this is that bee poison is an acid which the soda neutralizes. —[Lebanon Standard.

We know from repeated personal experience that liquid ammonia will speedily give relief from the stings of insects. The writer has often been stung by bees, and without serious effects, except in the case of the yellow wasp, whose sting always sends its poison speedily to every drop of blood in our system, causing great blotches to rise upon every part of the person, and almost unendurable suffering. The yellow wasp's sting would probably prove fatal with us, but for the prompt application of some counteracting remedy. We find a good and sure one in the liquid ammonia.

To Preserve Eggs.

The simplest and most effective way, and, indeed the most economical, to preserve eggs without imparting to them any foreign flavor, or rendering them unfit for hatching, the Ploughman says, is to use the patent stopper glass jar, with vulcanized India rubber joints to make it perfectly tight, like the jars for preserving fruits. As soon as the eggs are collected, put the jar into hot water, and when thoroughly warm so as to rarefy the air, put the eggs in the jar, the pointed end upwards, and pack them with paper or something to prevent them from breaking, then close the jar before taking it out of the water. If the work is skilfully done and the jar is tight, the eggs will keep for many months and be as fit for the breakfast table as the day they were laid. It is said they will be fit for hatching also a year after they are so packed, but never having tried them for that, we cannot affirm it from actual experiment.

Notes on Ornithology.

BY ORNIS.

About this time of the year every third or fourth farm has the nest of a Pewee, *Sayornis fuscus*, either around the house or barn. This bird, on account of its confiding nature and harmlessness, is a general favorite. It is among the first to arrive in spring, and in the course of the summer commits much havoc among the ranks of flies, beetles, etc., which it captures entirely on the wing. The nest, a large affair built of mud and lined with dried grasses and horse hair, is placed in the gable, on the horizontal part of the pipe running from the eavestrough, or on a rafter in the barn. In it are laid five white eggs about the size of those of the Song Sparrow, *Melospiza melodia*; generally, however, one or two in a set, sometimes all, are dotted with fine reddish spots.

Nearly related to the Pewee is the Least Flycatcher, *Empidonax minimus*, whose sharp little note "chebec, chebec," may be heard all summer through even the hottest parts of the day. It is more common in towns than in the country, but in either it is not at all rare. It is rather later than the Pewee, arriving about the first of May and frequenting the orchard rather than the barnyard. It builds a pretty little nest of silvery white bark strips outside, lined with similar but reddish material, and places it in a rather high, small crotch of a tree. In this it lays four white eggs tinged with buff, and about the size of those of the Chipping Sparrow, *Spizella socialis*.

Of the same genus is the Great-crested Flycatcher, *Myiarchus crinitus*, a bird about the size of a Cherry Bird, *Ampelis cedrorum*, with a brown back and straw-colored breast. This also is common around orchards, where it will build its nest in almost any convenient place—an old pump log, a hole in a tree or fence-post, or a box set up for the purpose being generally selected. The nest is made indiscriminately of pieces of straw, twine or rag, lining it with feathers and snake-skins. It is a rather peculiar fact that these birds hardly ever build a nest without one or more of these skins woven into it, and the common Wren, *Troglodytes aedon*, also seems to like this material. The eggs of the Great-crested Flycatcher are rather a curiosity in their way; the ground color is light buff thickly streaked with bright brown, presenting a very strange appearance as if the lines had been made with a pen.

Another common Flycatcher is the Kingbird, Beebird, or Bee Martin, *Tyrannus carolinensis*, so called from its liking for bees, which it devours with avidity. The name Kingbird may possibly come from the scarlet feathers of the crown, which may be seen by parting the dark ones. The nest, which is rather large, is placed on a side limb, at from four to forty feet from the ground, and is built of very much the same material as that of the Least Flycatcher. The number of eggs is from three to five, the ground color being light buff, with large spots and blotches of a rich brown, chiefly collected around the larger end. This is a very quarrelsome bird, or rather a very valiant one, for it seldom attacks birds smaller than itself; but no sooner does a crow come in sight than it is off in pursuit, and it is a genuine pursuit, too, for the crow immediately makes all haste to get away. Hardly a minute elapses, however, before our little friend has caught up to it, and is pouncing down on it from above, and making matters generally uncomfortable. This sort of attack is often kept up for half a mile or even a mile, and when two or three kingbirds get after one crow or hawk it becomes quite interesting. The Purple Martin, *Progne purpurea*, also has this character, but living as it does more in towns than in the country, it does not have so much opportunity to exhibit it. Closely resembling the Flycatchers are the Swallows, *Hirundinidæ*, and there are few birds better known than the Purple Martin (*Progne purpurea*), Barn Swallow (*Hirundo borreorum*), Eave Swallow (*Hirundo lunifrous*) and Bank Swallow (*Cotyle riparia*).

The Purple Martin, as we have remarked, is a denizen of the town, and but very occasionally strays into the country, so that a description of it is unnecessary. Not so, however, with the Barn and Eave Swallows. They are essentially country birds, and are very great favorites with the farmers, many of whom will not allow them to be molested in the least. While flying they may be distinguished by their tails, that of the Eave Swallow being almost square, and that of the Barn Swallow very deeply forked. There are many other points of difference—in fact, they have few points of resemblance; but when flying, it is necessary for those not very well acquainted with them to look at the tail, in order to be certain. The Bank Swallow is hardly so familiar to most people, confining itself principally to streams, and breeding in holes in the banks, where it lays five pure white eggs in a nest of straw lined with feathers. This bird may be distinguished from a much rarer species, the Rough-winged Swallow, *Stelgidopteryx serripennis*, by having the throat white and the breast with a band of dark gray, while the Rough-winged Swallow has the throat and breast all dark. By rubbing the finger backwards along the outer wing quill, it will be found to be very stiff, whence the name Rough-winged. This species lays from five to seven pure white eggs in a hole often as large as a kingfisher's, and the nest is made of straw and leaves, thus being distinguishable from that of the Bank Swallow, which is lined with feathers.

"Mother," remarked a Duluth girl, "I think Harry must be going to propose to me." "Why so, my daughter?" queried the old lady, laying down her spectacles, while her face beamed like the moon in its fourteenth night. "Well, he asked me this evening if I wasn't tired of living with such a menagerie as you and dad."

Minnie May's Department.

My Dear Nieces,—I hope most of you are earning music in some way or other, either playing or singing, separately or in class. No art has made greater progress during the last few years than music, and a young lady completely ignorant of it is now-a-days an anomaly. Where the younger members of a family unite in cultivating this delightful art, a safeguard is given to the leisure of the brothers, and a new bond of family love and sympathy arises. Music is a decidedly domestic accomplishment, and should be cultivated by all. It is true that a decided talent for it is rare, but both the ear and touch are capable of cultivation. Of course the best and surest way of acquiring this knowledge will be to obtain the best instruction; but as it is possible that such a boon may not be attainable, from situation or circumstances, by all my young nieces, I venture to give a few hints for self-improvement. If not a very advanced pupil, it is essential to gain a separate power of touch for each finger, and to pass the thumbs smoothly and rapidly in a scale; the fingers in all exercises should rest lightly and naturally on the keys, but be sure and avoid pressing any other note down but that which you strike. It will be difficult to control your fingers at first, but with constant practice you will soon overcome this difficulty. The object being to strengthen each finger, the weakest, you know, are the third and fourth, so to them give particular attention.

With regard to the charming accomplishment of singing we must say a few words. Practice and cultivation will do as much for the voice as for the fingers, and the best method is to practice daily from twenty minutes to half an hour, taking care not to tire the voice. For example, you should begin on the C below the treble stave, and hold the note out as long as you can give it equal tone. Then, taking a good inspiration of breath, you should do the same on D, and so on up the scale, till you reach the compass of your voice, taking care that the notes are clear and true, and not above your compass. Descend in the same manner. Taste, expression and perfect intonation will go far to make a singer, but whether for vocal or instrumental music, the oral instruction of a good master is beyond all the volumes of music ever written.

Minnie May.

Answers to Enquirers.

Mrs. T.—"How can feathers be prepared so that they will not have a peculiar and unpleasant smell for pillows, cushions, &c.? What kind of feathers are least liable to give an unpleasant odor?" Ans.—Carelessness in preparing and drying the feathers results in the stuffy and disagreeable odor alluded to. Bits of skin or flesh adhering to the feathers give an unpleasant odor, as do feathers plucked before they are quite ripe. Feathers ought also to be thoroughly dried and lightened up by placing in a moderately warm oven after they have been securely tied in stout cotton bags. Geese feathers are preferred above all others, and ducks' feathers rank next in value among domestic fowls. The downy feathers of hens and turkeys, while they do not command a high price in market, serve a very good purpose, if carefully prepared, for cushions, sofa pillows and the like.

Mrs. G.—"I have a new Brussels carpet, which having been down on the floor a few days shows large grease spots. Can you give me a recipe for removing the spots?" Ans.—Spread a thick paste of potter's clay over the spots; tack over it some thick brown paper, and at the end of a week brush off the clay; or, bruise and scatter some blue clay, such as is required to make fire-brick, which is free from sand, over the spots, and rub it in slightly with the hand. After a few days sweep off the clay. If one application does not remove all the grease, make another. If the grease comes from the floor on which the carpet is laid, remove the carpet, and make similar applications to the floor.

R. A. C.—"I want to paper a room, one side of which has a board partition. What can I do to keep the paper from cracking?" Ans.—Tack a covering of thin muslin over the wooden partition, taking care to stretch the muslin tight and smooth ever the surface. Over this hang the wall-paper in the usual manner.

Almena.—The letters R. S. V. P. stand for *respondez s'il vous plait*—answer if you please. They are used on cards of invitation when an answer is desired. They are not generally used now, as it is supposed that people will be polite enough to accept or decline an invitation, without being reminded. Some circles have adopted the style of not sending answers unless to decline, in which case silence means consent; but the fashion is ungracious, and it is always more polite to answer, accepting with thanks.

Jennie.—"What will I apply to my hands to soften and whiten them?" Ans.—Rub them with a little glycerine every night, and put on a pair of old white gloves, with the palms cut out.

RECIPES.

COOKIES.

Two cups of sugar, one cup of butter, two eggs, one-half-cup of milk, one teaspoonful of cream tartar, one-half teaspoonful of soda, flour to roll stiff.

WHITEWASH.

The following is recommended as making a whitewash that will not wash off by rain. Slack one peck of lime in five gallons of water, in which one pound of rice has been boiled until it is all dissolved. The rice water should be used hot, and the mixture covered closely until the lime is slacked. Then add one pound of salt. Have the wash heated to boiling when applied.

REFRESHING BEVERAGES.

Cold tea is one of the most refreshing and satisfactory summer drinks, provided it be not spoiled by the addition of milk and sugar. It ought to be made early in the day, and left to stand in a stone jar until thoroughly cool, and should then be flavored with slices of lemon. Milk and water, toast and water, curds and whey, or lemonade made in the good old fashion are also to be recommended.

CUBEB BERRIES FOR CATARRH, ETC.

A new remedy for catarrh is crushed cubeb berries smoked in a pipe, emitting the smoke through the nose; after a few trials this will be easy to do. If the nose is stopped up so that it is almost impossible to breathe, one pipeful will make the head as clear as a bell. For sore throat, asthma, and bronchitis, swallowing the smoke effects immediate relief. It is the best remedy in the world for offensive breath, and will make the most foul breath pure and sweet. Sufferers from that horrible disease, ulcerated catarrh, will find this remedy unequalled, and a month's use will cure the most obstinate case. A single trial will convince any one. Eating the uncrushed berries is also good for sore throat and all bronchial complaints. After smoking do not expose yourself to cold air for at least fifteen minutes. The berries are perfectly harmless, and there is no use in going to "catarrh doctors" while you can procure this remedy. They can be got at any drug store.—*Chicago Tribune.*

Work for June.—In this lovely month the country usually puts on its most attractive dress. The warm weather pushes on vegetation, and there is no lack of work. Some will be so absorbed in this that they can see little beauty in vegetation as it is displayed in innumerable forms. A little better planning; a little less hard work; work for fewer hours in the day, and a knowledge of botany would make every farmer enjoy life better. The botanist sees something to admire in every plant, and plants make all or support all that there is of much interest in any country.

A youngster was sent by his parent to take a letter to the postoffice, and pay the postage on it. The boy returned highly elated, and said:—"Father, I seed a lot of men putting letters in a little place, and when no one was looking I slipped yours in for nothing."

Farmer Ben's Theory.

"I tell ye, it's nonsense," said farmer Ben,
"This farmin' by books and rules,
And sendin' the boys to learn that stuff
At the agricultural schools,
Rotation of crops and analysis!
Talk that to a young baboon!
But ye needn't be tellin' yer science to me,
For I believe in the moon.

"If ye plant yer corn on the growin' moon,
And put up the line for crows,
You'll find it will bear, and yer wheat will too,
If it's decent land where't grows.
But potatoes, now, are a different thing,
They want to grow down that is plain;
And don't you see you must plant for that,
When the moon is on the wane.

"So in plantin' and hoein' and hayin' time
It is well to have an eye
On the hang of the moon—you know ye can tell
A wet moon from a dry.
And as to hayin', you wise ones now
Are cuttin' yer grass too soon;
If ye want it to spend, just wait till it's ripe,
And mow on the full o' the moon.

"And when all the harvest work is done,
And the butcherin' time comes round,
Though yer hogs may be lookin' the very best
And as fat as hogs are found,
You will find your pork all shrivelled and shrunk,
When it comes to the table at noon—
All fried to rags—if it wasn't killed
At the right time of the moon.

"With the farmers' meetin's and granges now
Folks can talk till all is blue;
But don't yer be swallerin' all ye hear,
For there ain't morn' half on't true.
They are trying to make me change my plans,
But I tell 'em I'm no such coon;
I shall keep right on in the safe old way,
And work the farm by the moon."

What is Hoar-Frost?

The appearance with which the inhabitants of England are familar under the name of hoar-frost is nearly allied to dew. The white incrustation which at such times ornaments the landscape is, indeed, neither more nor less than frozen dew. It is dew deposited at a time when the dew-point of the air stands lower than the freezing-point of water, and when, therefore, the moisture which is abstracted from the air at once presents itself in the form of needles of ice. The ice spicules are arranged in a somewhat confused and indefinite way, on account of their intimate association with and deposit upon of the radiating objects. The needles project from the frosted surfaces like the short, stiff hairs of a stubby brush. They are most abundantly produced and most lengthened out wherever the radiation of heat is most energetically carried on, as it is at the points and sharp edges of serrated leaves, and each different kind of plant consequently has its own pattern of frosting. Hoar-frost is very rarely seen on smooth, rounded surfaces, and it never appears where radiation is prevented. Screens expanded above and around are, on this account, quite as effective in preventing the occurrence of hoar-frost on plants as they are in obviating the deposit of dew

"How do you like the Episcopalian service?" asked Jones. "Never heard it," replied Fogg. "I dropped in at one of the churches last Sunday. It was quite early, and so I began reading the service. I didn't read far, though, before I found that it would never do for me. So I came out." "Why, what was the trouble?" "Too many collections." "Too many collections?" "Yes, on almost every page it said 'collect.' One collection is all I can afford to respond to. Must be awfully expensive to be an Episcopalian."

Charles Mathews, jun., once told me (says J. C. Young) that he went into an eating-house to have lunch, and found the orders given by the visitors on the first floor were conveyed below to the kitchen through a tube. A gentleman came in and ordered a basin of ox-tail, two mock turtle, three others asked for pea soup, and one more for bouilli. The waiter, too busy to give the orders for each separately, gave them altogether, with great rapidity, in this concentrated form:—"One ox—two mocks—three peas—and a bully!"

Uncle Tom's Department.

My Dear Nephews and Nieces,—

"Hurrah for June! bright, rosy June! Joy rises in me like a summer's morn!" as one of those pleasant people, the poets, has said. Let everybody be glad; but most of all you, my youngsters. The month properly belongs to you. Wasn't it set apart by Romulus, ages and ages ago, especially for the young people, or "Juniors" as they then were called? And hasn't their name stuck to it ever since? Yes, indeed! So be as merry as you can; but with all your fun and frolic, be thankful, and make June weather all about you. June time—any time—is full of joy when hearts, brimming over with thankfulness, carry cheer to other hearts, making

"A noise like of a hidden brook
In the leafy month of June,
That to the sleeping woods all night
Singeth a quiet tune."

I am well pleased with my host of nephews' and nieces' correspondence for this month, and am glad to see them not falling off; still I feel sure that many more must have solved the simple puzzles of last month in addition to those who have sent their names and answers. It could surely be no trouble to write them on a post-card. Now let me hear from more for July.

Uncle Tom.

Letters.

Lucknow, May 14th, 1881.

Dear Uncle Tom,—I was very sorry that I got too late to send the puzzles in last month, as I have very hard lessons to learn, and when I thought about them it was too late; but, nevertheless, I'll be more punctual hereafter. Pa has taken your paper three years, and this will be the fourth; he likes it immensely. I have not room to send the puzzles this time. Yours ever,

Mattie V. Towle.

Dear Uncle Tom,—Father has taken the Advocate for nine years, and it has more than paid for itself, and we could not do without it. The weather has been very warm lately, and the crops are about all in and a good deal up. I live on a farm, and I think I will try your plan of raising something for myself. I have some pigeons, which I intend to trade off for rabbits and other things. Yours truly,

Henry Lovering.

Oshawa, May 17.

Dear Uncle Tom,—I had very great trouble in making out the answers for this month. They bothered me very much. It has rained for one day and night. I go to school all the time, and when I am home in the evenings I work in the garden. We put in some musk and watermelon seeds. My brother and I went fishing on Saturday, and we caught thirty-four fish. I have some pigeons and ring-doves, in which I take very great interst. I anticipate having a good time on the 24th, and I hope you all will, too.

Charlie M. French.

PUZZLES.

124—CHARADE.

An old man dwells in yonder cot;
His brow is wrinkled, and his hair is gray;
And though great riches he hath got,
He very soon must pass away.

In charity he took no part,
Though having plenty was my second;
So avaracious, mean at heart,
My first by every one was reckoned.

He's taken ill—alas! he's dying;
Cold dewy drops are on his brow;
His treasures are his thoughts while lying,
But, oh! what are they to him now?

The flickering light will soon be over;
No thought, alas! for his poor soul;
His time of life and bed of death
May justly now be termed my whole.

Wm. Tyrrell.

125—HIDDEN FISH.

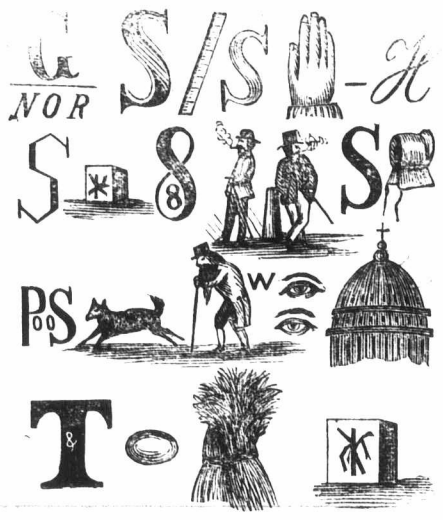
1. Aunt Sally's almont-trees are beautiful this year. 2. The poet Cowper chose very nice subjects for his poems. 3. I want to enjoy the Idylls of the King, so leave me under the shade of these trees. 4. Messrs. Smith & Co. divide a capital profit yearly. 5. Mr. MacCormack, ere leaving last night, made Jessie an offer. 6. I cannot write with these pens. Have you no steel ones? 7. Do not disturb Ottaman—he has not often a studious fit. 8. What a pity your sister lost her ring in that haymaking frolic! I am so sorry. 9. I shall visit many places—perhaps Melton Mowbray the first.

Susannah B.

126—PUZZLE.

I am not vegetable; I am not mineral; and it is rather stretching a point to call me animal. But, however that may be, it cannot be denied that I am the beginning of animals—of birds, of beasts, and of fishes.

127—AN EXCELLENT MAXIM.



128—ENIGMA.

When the dinner-bell joyously peals through the house,
Bringing thoughts of roast lamb and sweet visions of grouse,
To the dining room hasten—with you I'll be there,
Straight in front of your eyes as you drop in your chair.

You take soup, I presume? O most marvellous dish,
Deserving the preference always of fish?
What an insight Count Rumford had into the need
Of our hungry humanity when he perceived
That, if all the empty space in our inside
Could be filled with some liquid, nor baked, boiled nor fried,

Compared with that liquid, would be worth a bit
For serving, on hunger, a notice to quit!
But his lordship's conclusion, in my case, won't follow,
For soup, it's well known, only makes me more hollow.

I ne'er help myself, but I'm bound to report
That the host and the guests never let me go short;
Yet I cannot get fat. But I will not complain,
Though fated eternally thin to remain;
For the more you may stuff, and the more you may cram,
Behold, for your pains, the more empty I am!

W. G.

Answers to May Puzzles.

119.—Advancement.
120.—
Rome
Open
Mead
Ends
121.—Kingfisher.
Quail.
Hummingbird.
Sparrow.
Dove.
122.—Sebastopol.
123.—1. Alfred. 2 Dora. 3. Andrew. 4. Edgar. 5. Paulina. 6. Marion. 7. Bertha. 8 Mabel.

Names of Those Who Sent Correct Answers to May Puzzles.

R Elgin Fowle, Harriet Brethour, Hannah Stevens, Richard E Osborne, Ida V Chamberlain, Robert Wilson, Martha C Moore, Henry Lovering, Charlie S Husband, Minnie Gibson, Sarah J Fenwell, Maggie Ella Lucas, Rebecca Gordon, Maggie Roberts, Wm M Adams, Bennie M Oxley, Clara A Cassidy, Charlie M French, D L Vansicklen, Wm Howell, Susie M McIntosh, Jack Smith, Arthur Gordon, Jessie Cassells, Ella Thompson, Geo. Fitzroy, H. J. Cousins, Samuel Webber, Ida L Triller.

The New Arrival.

Ma.

A charming little tiddy iddy bit of mother's bliss,
A tiny toddles, sweet as flow'rs of spring;
A precious popsy wopsy—gives its mammy, den a kiss,
A pretty darling itsy witsy ting!

Pa.

So *that* the little fellow! H'm! A healthy-looking chap.
Another mouth to feed, as sure as fate!
No, wife, I *don't* consider that is coming's a mishap,
But still I *could* have done with less than eight.

Brother.

My eyes! Is that the baby? What a jolly little pup!
But I say, ma, wherever is its nose?
And I say, father, by-and-by, when he gets more grown up,
He'll wear my worn out jackets I suppose.

Uncle.

Another? Well, thank goodness, *I* am not a married man.
What! Don't I think him pretty? No, I don't.
To keep him from the workhouse you must do the best you can;
Don't think that *I'll* assist you—for I won't!

Doctor.

How are we getting on to-day? I trust we soon shall mend.
We musn't think we're strong just yet you know;
We better take something which this afternoon I'll send,
And let me see—hum!—ha!—Ah, yes—just so.

Nurse.

He's lovely, that he is, mum! See them sturdy little legs!
He's twice the size of Lady Smither's third;
And when he comes a-cutting of his little toosey-pegs,
He'll be a man, he will, upon my word.

Neighbor.

Oh yes, dear, he *looks* healthy, but you musn't trust to that—
I do not wish, of course, your hopes to dash,
But when I see a tender babe, so ruddy, strong strong and fat,
I—look, dear, on his face! Is that a rash?

Ma (*da capo*)

A charming little tiddy iddy bit of mother's bliss,
A tiny toddles, sweet as flow'rs of spring;
A precious popsy wopsy—give its mammy, den, a kiss,
A pretty darling itsy witsy ting!

—*Fun.*

A Baptist clergyman is responsible for the following:—A good brother was visiting at the house of a friend, whose wife was very deaf. The morning after his arrival they read a portion of Scripture, followed with prayers, when the visitor went with his host to the barn. When they returned to the house the deaf wife was still on her knees. Her husband immediately went to her and shouted in her ear, "Amen." Upon hearing that, she arose and went about her household duties.

Compassionate old lady (paying her fare)—"How jaded your horse looks, cabman; is not the bit uncomfortably large for his mouth?" Cabby—"It ain't the big bit in his mouth, mum; it's the small bit in his stomach—the result of hard times, mum."

Dreadful Calamity.

THE MOST MELANCHOLY CATASTROPHE IN ONTARIO.

The 24th of May is generally observed as a holiday in all the British Possessions, in honor of the birthday of our beloved Queen. Cheap excursions at reduced fares are granted on all the railroads, and the inhabitants generally look forward to this day as one to be devoted to pleasure. Such was the case in London, and as a consequence thousands of the citizens were out in all directions. The city Water Commissioners constructed a dam across the River Thames at a point about four miles from the city, for the purpose of providing sufficient water-power to operate the machinery by means of which the water from the springs is forced into the reservoir, from which London is supplied. The damming of the river gave a beautiful stretch of water of four miles in length, and varying in width from 250 to 350 feet. The scenery along the banks of the river is very pleasing, and the high hills, the waterfall and the view at the dam make this an exceedingly pretty and romantic spot, within easy distance of the city. So popular had this resort become, that four steamboats and about 200 row-boats have been plying on the river during the summer season; and so great has been the rush for "Springbank"—the name given to the new pleasure-grounds—that the steamboats have frequently been greatly overcrowded. In some instances almost twice as many passengers as they were entitled to carry have been permitted to remain on board. One of the smallest of these steamers was returning to the city on the evening of the 24th, freighted with between 400 and 500 happy beings, who, not knowing their danger, refused to keep in position, but, going too much on one side, caused the boat to tip, sink and break up, plunging the passengers into the water, about forty feet from the shore, the upper deck falling on their heads. Very few imagined the danger in the still, calm river, so near to the land; but in a few minutes 180 precious lives were sacrificed. Mr. Octavus Weld (a son of the Editor), who had but the day before returned from the University at Toronto for his holidays, was at the moment the accident occurred rowing his youngest sister and his eldest niece around the ill-fated steamer. He immediately ran his boat ashore, and, hastily assisting the young ladies to land, returned to the rescue of those struggling in the water. His boat was tipped over by the drowning people; with difficulty, however, he soon got his boat to shore, tipped out the water, and again returned to the rescue, when he succeeded in taking many boatloads to land, seizing them by the hair of the head or any other way to get them into the boat. He said the heads were so thick in the water that he could not use his oar without touching them. Soon others arrived in boats, who worked hard to rescue those in the water and to pick up those on the floating wreckage. The work of finding the bodies was kept up during the whole night and next day. The sorrow and anguish that the death of so large a number has caused is beyond description. The loss of children, of parents and of friends has caused the saddest gloom to be cast over this city. How could the uncertainty of life be better exemplified? Where all was joy and mirth, in two minutes 180 innocent pleasure-seekers, in the midst of health and happiness, were called to that bourne from which no traveller returns. Your meditation must complete this sad account.

The citizens of London feel that there is some blame to be attached to them for this melancholy occurrence, as it had long been known to all that the boats have been dangerously overloaded, and many have avoided the excursions for this reason. One of the main causes which led to the overloading on this occasion was owing to the boats not leaving Springbank as advertised. Two boats should have left there for the city previous to the departure of the one on which the accident occurred. The people had undoubtedly been deceived. Many desired to return two hours before, so as to arrive in London at 4 or 5 o'clock, instead of between 6 and 7.

We have noticed great danger on the boats at Toronto from overloading; also at excursions by rail, particularly when trains have not been run on time, from insufficiency of car accommodation. We hope and trust that this accident will tend to cause our Government to enact such a law as will prevent loss of life from the overcrowding of public conveyances of any kind. In France such a catastrophe could not happen.

"The Grey Mare is the Better Horse."

This proverbial saying, instead of being Flemish, is more likely of British, origin, and may have teken its rise from the following circumstance: A gentleman having married a lady of considerable beauty and fortune, but whose domineering temper and disregard of marital authority on all occasions made his home wretched, entreated her father to take back his daughter, and her dowry into the bargain. "Pooh, pooh!" said the old gentleman, "you know not the world. All women govern their husbands, and it is easily proved. Harness the five horses in my stable to a cart, in which I will place a basket containing 100 eggs; leave a horse in every house where the husband is master, and an egg only where the wife governs. If you should find your eggs gone before the horses, you will think your case is not so uncommon; but if your horses are disposed of first I will take my daughter home again and you may keep her fortune." At the first house the son-in-law came to he heard the wife, in a shrill and angry voice, bid her husband answer the door; here he left an egg without any inquiry. He visited a second and a third house with the same result. The eggs were nearly all gone when he arrived at the seat of a gentleman of position in the county. Having asked for the master, who happened not to be yet stirring, he was ushered into the presence of the lady. Humbly apologizing for the intrusion, he put the question of obedience; and on the lady replying she was proud to obey her husband in all things, the husband entered the room and confirmed his wife's words, upon which he was requested to choose which horse he liked. A black gelding struck his fancy, but the lady desired he would choose the grey mare as more fit for a side-saddle. Notwithstanding the substantial reasons given why the black horse would be more useful, the wife persisted in her claim for the grey mare. "What!" said she; "and will you not take her, then? But I say you shall; for I am sure the grey mare is much the better horse." "Well, well, my dear," replied the husband; "just as you please, if it must be so." "Oh," quoth the gentleman carter, "you must now take an egg, and I must take all my horses back again and endeavor to live happily with my wife."—[Notes and Queries.

Let the birthday of each member of the family be always remembered when it comes. Let there be something out of the ordinary routine in the arrangement of the table—pies fashioned as Jennie likes them best, one of Frank's favorite plum-puddings or Julia's special liking, a loaf of ginger cake, or a wonderful lemon-pie, such as only "mamma" can make. There must be presents. Some people may think that they cannot be afforded; but reflect. The little one needs shoes, dresses, aprons and many other articles. Purchase one or more for the birthday; it will seem just as much a present as though she was not obliged to have it. Next come story books, a knitted wrap and a pair of skates—should the birthday occur in winter—a pretty little school satchel, etc. Encourage the little ones to give to each other, and remember father's and mother's birthday too.

Commercial.

FARMER'S ADVOCATE OFFICE,
London, May 28, 1881.

The month of May has been an unusually favorable one for the farmer. The weather has been somewhat hot at times, still everything has been favorable for putting in, as well as the growth of, the crops. We don't think we ever saw finer clover and better pastures than there are at present.

WHEAT

Has ruled very quiet all the month till the past few days, and now the "bulls" seem to have become masters of the situation. The opinion seems to be gaining ground that there is less wheat in farmers hands, than has been supposed. The receipts of wheat in Chicago during the past week were 207,000 bushels, against 657,000 bushels for the corresponding period last year. The visible supply is also some 4,000,000 less than same time last year. Latest advices justify the conclusion that the wants of Europe will not fall much short of last year. Notwithstanding all the "bull" stories about a short spring wheat, seeding reports now come in from all the Western and S. W. States showing that the average is quite up to last year.

Considerable discussion has been going on in the papers about the present regulations as to grinding in bond. There is no doubt the privilege is being abused, and the customs authorities imposed on by unscrupulous millers. If some are abusing the liberties granted, and there is no means of finding them out, we would say stop the business altogether, or give all the privilege that the dishonest few are abusing.

What we have seen of the growing crop of wheat, much of it is only what might be called medium. Still there are a great many fine fields, and the acreage is very large.

WOOL.

June is the month for marketing wool, and many farmers will be at a loss to know whether to sell early or wait for further developments as the season advances. The prospects now are that prices will rule comparatively low. Still if 22 to 25 cents can be made, farmers must not complain, for with the present price of fat sheep, the low price of wool is counterbalanced by the high price of mutton. It would be well if farmers would take into consideration the kind of wool best adapted and most likely to be wanted for manufacturing purposes. This subject is being discussed in the different agricultural papers, and farmers will do well to look into the matter.

APPLES.

The losses on spring shipments of apples have been very serious, in some instances not paying freight, to say nothing about the cost of apples, packing and barrels. Orchards in some sections are quite full of bloom again this year, and the prospects are we shall have another good crop of apples.

CHEESE.

There has been a considerable break in cheese the past ten days; but prices have again steadied, whether it will be for any length of time we cannot say. The make seems to be pretty heavy for the time of year, and the shipments from New York are large for the month of May. Of course these shipments are the April and early May make, which are all hay cheese, and more or less skimmed as well. Whether the market will hold its own with heavier shipments of finer goods remains to be seen. Cheese sold a year ago this time at 11 cents, and two years ago about 7 cents.

If factory men, cheese makers and patrons, one and all, will only exercise the greatest care and diligence in caring for and handling their milk and cheese, they will have much less cause for complaint as to prices. When markets are dull and low, shippers and dealers are always harder to please, and make wider differences in the price of fine and medium or poor goods.

BUTTER.

There is very little demand as yet for export, and prices are only nominal. Montreal papers quote currency at 19 to 20 cents, and dairy packed at 16 cents.

London Markets.

GRAIN

	Per 100 lbs		Per 100 lbs
Delhi Wheat...	$1 80 to 1 83	Rye.....	80 to 90
Treadwell..	1 80 to 1 88	Corn.....	95 to 1 00
Clawson	1 80 to 1 88	Peas.....	1 00 to 1 20
Red	1 80 to 1 90	Oats 1	00 to 1 03
Spring	1 50 to 1 80	Barley... 1	30 to 1 50

FLOUR AND MEAL.

Flour, fall wht.	3 25 to	Oatmeal fine	3 00 to
" mixed..	3 00 to	" coarse ...	3 50
" spring..	3 00 to	Cornmeal 1	75 to
Bran, per ton	10 00 to	Shorts...	18 to

PRODUCE.

Butter, crock.		22 to	23	Potatoes, bag.	65 to 80
do fresh..		17 to	20	Apples p bag,	30 to 50
do in basket		18 to	20	Turnips, p bu.	20 to
do store pckd		00 to	00	Cheese.....	13
Eggs.....		10 to	14	Beef, per qr..	5 00 to 7 00
Carrots, p bu		to		Mutton, lb....	7 to 8 50
Onions, bag ..	0 70 to		1 00	Lamb	9 to 10 00
Beef, per qr..	6 00 to		7 50	Veal.....	4 to 8
Tallow rend..	3½		6½	Dressed hogs,	
" rough...	0			per 100 lbs.	7 00 to 7 25
Honey.....	0 0 to			Live hogs, do	0 00 to
Cordwood	3 00 to		4 50	Lard	0 to 9
Ducks.... ..		30 to	50	Geese, each ..	40 to 45
Chickens, pr..		25 to	40	Turkeys " ..	75 to 1 25
Cheese, per lb		11 to		Milch cows. ..	20 00 to 40 00
Beans	1 00 to				

HAY AND STRAW

Hay to 8 00 10 00 perton | Straw, per load 2 00 to 3 00

English Markets.

English markets have been steady, with somewhat of an upward tendency, Markets continued quiet, but seemed firmer last week with an increased demand for red wheat, with signs of advance on foreign. From Beerbohm's Telegraph, London, 28th we quote:—Floating cargoes of wheat firm; corn unaltered, Cargoes on passage and for shipment, wheat strong; corn unaltered. English and French country markets a turn dearer.

Liverpool Markets.

Liverpool, May 28.

Flour, 9s to 11s; wheat spring, 9s; winter red, 9s to 9s 6d; white, 9s 5d; cal club, 9s 9d; corn 4s 11d; Oats, 6s 2d; barley, 6s 3d; peas, 6s 7d; pork, 72s 6d; lard 54s 6d; bacon, 44s to 45s; beef 87c; cheese new, 55c.

Montreal Market.

Montreal, May 28.

Flour receipts, 2,700 barrels, sales 100 barrels Market firm but quiet. Flour superior $5 5), extra $500, fancy $5.35, spring extra $5.32 1-2, superior fine $5 to $6, strong bakers $5 50 to $6, middling $4 10, Ontario bags $2.50; wheat spring $1 25, Chicago spring $1 25 asked; corn 56c; peas 89c; oats 30 1-2c; barley 70 to 75c; rye $1 05; oatmeal $4 60 to $4.70; cornmeal $3.10; butter Western 13 to 14c, B & M & Eastern Townships 14 to 17c; cheese 11 1-2 to 12 1-2c; pork, mess. . 20; bacon 11 to 12c.

Montreal Cattle Market.

Montreal, May 28.

Fair to good heifers and steers sold at 5 to 5½c, and cows and rough steers at 4½ to 4¾c. A carload of superior cattle from Ottawa for shipment sold at 5 1-5c. The calves offered were nearly all of inferior quality, and prices ranged from $1.50 to $5 each, 16 of the best being sold in one lot at $4 per head. Sheep shorn of their fleeces sold at from $5.50 to $7 each, or 5c per lb. There was an active demand for good lambs; one lot of six fine lambs were bought at $4.70 each. Common lambs brought from $3 to $4 each. The market for hogs is dull and prices dropping. Sales were made at from 7c to 7¼c per lb.

Toronto Market.

Toronto, May 28th.

Fall wheat $1.11 to $1.18; barley No 1, 80c, No. 2, 75 to 77c. No. 3, $1 11 to $1.12; peas 75 to 76c; oats 38 to 39c; corn 58c; flour superior $5.05, extra $4.95, fancy $4.85, strong bakers $5.35, spring extra $4.90, fine $4 to $4.10, bran $12 to $13; hogs $8 to $8.50; oatmeal $4.30 to $4.50; cornmeal $3; pork $20.

Remarks—Wheat and flour quiet and steady. Barley, rye and corn nominal. Oats dull and unchadged.

New York Markets.

New York, May 28th.

Flour receipts, 1,600 bbs., market without decided change, sales, 1,400 bbs, closing quiet. Rye flour market firm and unchanged; cornmeal market quiet; $2.95 to $3.30; wheat No. 2 spring, $1.22 to $1 23, No. 2 red $1.27 1-2 to $1.28 1-2, No. 2 white $1.25 to $1.26; rye quiet $1.09; corn 58c to 59c; oats 47c to 49c; pickled shoulders 7¾c; hams 10 1-2c; butter heavy and declining, state 20c to 22c,

Chicago Market.

Chicago, May 28th.

Wheat $1 08 to $1.11 1-2; corn 42 1-2c to 43c; oats 37 1-2; rye $1.16; barley firmer, 97 1-2c to 98c; pork easier, $16 for cash; lard $10.55; bulk meats easier, shoulders $5.60; short ribs $8.25; clear $8.75.

Boston Markets.

Boston, May 28th.

Flour for car loads $3.75 to $4 per bbl.; cornmeal steady, $2.70 per bbl; rye flour $6 to $6.25; oatmeal $5 to $5 75; corn 62c for steamer on the track; oats 55c for No. 2 white; beans handpicked mediums $2.65, choice handpicked $2.70; potatoes, Houlton Rose, 90c to 95c, Maine rose 85c to 90c; prolifies 80c to 85c; hay, choice eastern $23 per ton, common $14 to $18; barley $1.25; buckwheat $1.25; poultry 12c to 12 1-2c per lb.; sheep shorn 4 1-2c to 6c per lb.; milk cows $30 to $45; hogs $5.80 to $6.50.

Stock Notes.

Mr. Arthur Johnston, of Greenwood, Ont., sailed for the old country on the 14th of May. It is his intention to bring a large consignment of first-class stock back with him.

The Bow Park Shorthorns which were recently sold by auction at Waukegan, Ills., realized a total of $28,590; the average price of the cows $688.58, that of the bulls $365.60.

Peter Arkell, of Arkell, Ont., is now in England selecting pure-bred Cotswold and Oxford Down sheep. He intends to import quite a number for himself and H. Arkell, also of Arkell, Ont.

An English exchange says the Polled Aberdeen or Angus cattle are sharing largely in the trade which has opened up with America for the best British breeds of cattle. Within the last 1½ years nearly 100 Polled Angus have been exported.

Mr. J. D. Howden, of Columbus, Ont., recently sold to J. & C. Huston, of Ills., 38 grade Cotswold ewe lambs at $10 each—not a high price considering the quality of Mr. Howden's stock. Mr. Wm. Smith, of the same place, also sold to Mr Huston 18 ewe lambs bred as the above for 7 each; these are reported to be the culls of Mr. Smith's flock.

The Liverpool Journal of Commerce says:—The rumor circulated that the Canadian cattle brought from Portland by the Lake Manitoba were infected with foot and mouth disease we learn, on inquiry, is unfoundedd. The cattle were duly passed as clean, and the owners have further a veterinary surgeon's certificate to that effect.

A. A. McArthur, of Balmoral Farm, Lobo, writes that his celebrated herd of Berkshires have wintered well, and that they have produced this spring the finest lot of pigs that have ever been bred at his farm. He is receiving orders from the different Provinces of Canada, also from many States of the Union; and the demand for Berkshires is rapidly on the increase.

Messrs. T. & A. B. Snider, of German Mills, Ont., have recently sold a fine pair of Poland China pigs to Mr. Levi R. Whiteman, of Knowlton, Quebec. Mr. Whiteman is an extensive breeder of Shorthorn cattle, and also intends to go into breeding the Poland China hogs. We are informed by the Messrs. Snider that the Poland China are an excellent breed, but as they are going more extensively into breeding Shorthorn cattle and Perchernon Norman horses, they intend to quit breeding hogs altogether. They report their cattle and horses doing well.

Drying potatoes is an industry in Rochester, N.Y. A man there is largely engaged in the business of supplying the north-western army, and his practice is to first slice the potatoes, then put them in a steam box three or four minutes to keep the starch in, and then subject them to drying. If not placed in the steam box the starch would come out. When used they are soaked, and are then like fresh potatoes.

ADDITIONAL CORRESPONDENCE.

HOW I WINTER MY BEES SUCCESSFULLY.

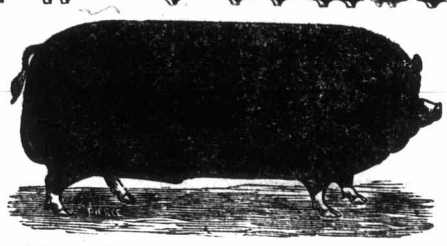
SIR,—My hives are of the simplicity style—racks crosswise and division board. About the 15th of October I crowded the bees on about eight racks by means of the division board, then made a box large enough to allow four inches of sawdust all round the hive, then put the box over the hive and packed it with dry sawdust, the drier the better. I also made the box deep enough to allow six inches of sawdust on the top of the bees. I took off the lid of the hive and put on top of the racks a new piece of thin cotton cloth, then put on about six or eight inches deep of sawdust. (The sawdust should be got early in the season and dried so as to have it perfectly dry.) I am of the opinion that cut straw or chaff would do just as well for the sides as sawdust, but not for the top, as sawdust is not so liable to mould from dampness. All came out as nice as I could wish this spring, and are now doing well. I make my own hives and buy queens sometimes. I will be able to divide by the 10th or 15th of June. This is about the 7th year with me for bees, and I lost heavily every winter before.

C. R. T., Newmarket.

There are to be some Government prizes given for farms in this part of Ontario this season, the particulars of which we have not yet been able to procure. We want more LIGHT, TRUTH and JUSTICE in the management of our agricultural affairs. To endeavor to obtain this, we will publish extras when necessary, to distribute to those persons that desire the same. There should be no half-way measure. Either persons are opposed to LIGHT, TRUTH and JUSTICE or they are in support of it.

Will you, or any member of the Board of Agriculture, or any Member of Parliament, aid us in our researches to obtain it for you?

"BALMORAL HERD"
—OF—
Noted Berkshires



The successful career of this celebrated herd of Berkshires, from its beginning to the present, has gained a position that is pre-eminent for producing the finest individual animals that has even been bred on this continent.

It is not necessary here to recapitulate the Grand Honors they have won at the Great Shows of America, which no other herd, in the space of five years, has *ever achieved*. Their ancestry traces back to the best animals that the English breeders have produced. For the successful amalgamating of these different strains, "Balmoral Farm" has become noted.

I offer to the Berkshire breeders of America, of this spring's farrowing, the finest lots of BOARS AND SOWS that has been bred on the farm. **My prices are $20 each or $35 per pair.**

I have also a fine lot of Young Earls and Countesses of Balmoral, at **$40 each or $75 per pair.** They are my noted strain of blood.

Parties visiting the farm, when desired, will be met at the City of London.

Come and see, or address—

A. A. McARTHUR,

Telegraph Office—LOBO. "Balmoral Farm," **Lobo, Ontario, Canada.**

GALT SAFE WORKS.

GOLDIE & McCULLOCH,

GALT, ONTARIO, CANADA,

Manufacturers of

VAULTS, VAULT DOORS, ETC,

Fire and Burglar-Proof Safes

For Banks, Registry Offices, Public & Private Buildings, &c.

We are also the largest Manufacturers in the Dominion of

Steam Engines and Boilers, Water-Wheels, Wood-Working and Stave Machinery, Wool Machinery, Flouring and Saw Mills, Mill-Stones and Mill Furnishings of Every Description.

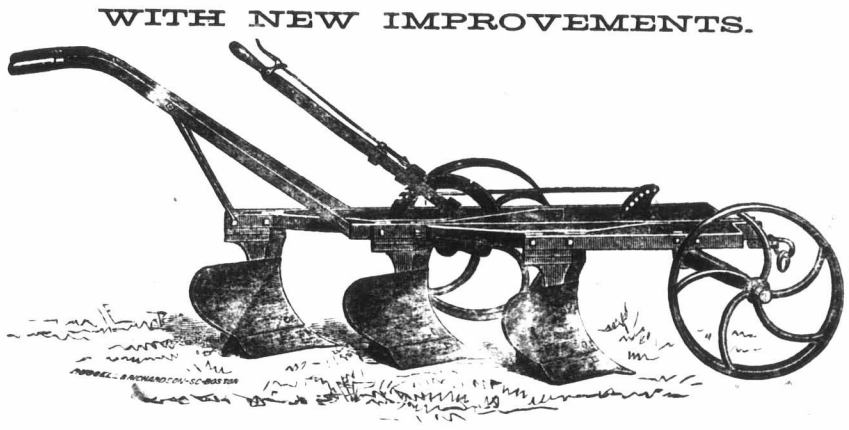
Circulars furnished on application. All materials and workmanship guaranteed.

N. B.—We are now making a small Fire-proof Safe, specially got up for FARMERS' use, 28 inches high outside, 19 inches wide, and 19½ inches deep, with book space, pigeon holes and drawer inside, and patent combination lock. This little safe, when finished, is a nice ornament in a room, and every farmer should have one, the price being within the reach of all.

GOLDIE & McCULLOCH, Galt, Ont

PT. PERRY GANG-PLOW

WITH NEW IMPROVEMENTS.



THE BEST IN THE MARKET! THOUSANDS IN USE!

Every farmer should have one. Orders filled direct from our establishment to all parts of Canada. Reliable Agents wanted in every county. Address,

181-f **PAXTON, TATE & CO., Port Perry, Ont.**

CHAMPION!

The best Cultivator and Horse Hoe for hoeing, cultivating and hilling Roots, Corn, Shrubs, Strawberries, &c., is our Little Iron Champion. It is what all should have.

FIRST PRIZE

Wrought Iron Beam American Jointer

PLOW!

Long handles, wrought-iron beam, suitable for our Canadian farmers. Two sizes,

First prizes at Toronto Industrial, St. Thomas, Western at London, and other fairs in 1880. Chilled Iron or Steel Mouldboards; also Hill's Patent general purpose Plow and one-horse Plows. Send for price list. Address--

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THE FIRST PRIZE DRAIN-TILE & BRICK MACHINE

IMPROVED FOR 1881.

This is the Cheapest and most Efficient Machine for Farmers and Tile Makers. Capable of making from five to ten thousand tile or brick per day, suitable for horse or steam power.

References kindly permitted to the following gentlemen, who have procured them in this part of Canada:—

Messrs. C. Pratt, John McGregor, London; J. Nichols, Frome; J. Gerward, A. Nichols, Lambeth; Geo. Vanghran, St. Thomas; S. Budden, Dorchester; Wm. Anderson, Arva; N. Foster, Exeter; J. Smith, West McGillivray; H. Marsh, Nairn; W. Dobbie, Appln; J Waterworth, Wardsville W. Feith, Glencoe; F. Bayington, Bothwell; E. Hales, Alvinston, and others

I am now prepared to ship to all parts of the Dominion. The Bricks and Tiles have a smooth surface, no sand being required, and they can be packed up directly from the machine. For particulars and Price, Address,

D. DARVILL, Manufacturer,

183-c. **London, Ont., Canada.**

WE WILL GIVE

Special Prices

For this Spring only,

ON THE FOLLOWING STOCK:

400,000 First Class Standard Apples, Four and five years old.

20,000 First Class Black Walnut, Five to six feet high.

500,000 First Class two Year Berberry, For hedges.

Also full line of other Fruit and Ornamental Trees at ordinary rates.

PONTEY & TAYLOR,

St. James' Park P. O.,

184-tf LONDON, ONT.

THE

Canadian Pacific Railway

COMPANY.

EMIGRATION TO MANITOBA

—AND—

The Canadian North-west.

SALE OF LANDS

To encourage the rapid settlement of the country, the Canadian Pacific Railway Company will be prepared, until further notice, to sell lands required for agricultural purposes, at the low price of $2.50 an acre, payable by instalments and will further make an allowance, by way of rebate from this price, of $1.25 for every acre of such lands brought under cultivation within three to five years following the date of purchase, according to the nature and extent of the other improvements made thereon.

The lands thus offered for sale, will not comprise Mineral, Coal or Wood Lands, or tracts for Town Sites and Railway purposes.

Contracts at special rates will be made for lands required for cattle raising and other purposes not involving immediate cultivation

Intending Settlers and their effects, on reaching the Company's Railway, will be forwarded thereon to their place of destination on very liberal terms.

Further particulars will be furnished on application at the Offices of **Canadian Pacific Railway Company,** at Montreal and Winnipeg. By order of the Board,

CHAS. DRINKWATER,

Secretary.

Montreal, April 30, 1881. 186-b

SEEDS FOR JUNE.

We will mail, postpaid, on receipt of price, any one variety of the following Swede Turnips:—

1 lb Webb's Improved Hardy Swede for 50c

1 lb Webb's Beef-heart Turnip for 50c

1 lb Webb's Purple-top Mammoth Turnip, 50c

And will send, per express or freight, (charges to be paid by purchaser), any of the following varieties of Swedes—Skirving's, Shamrock, Westbury, Sharp's Improved or Bangholm, in 10 or 20 lb lots, at 20c per lb.

Our stocks are pure and fresh, and we invite the attention of large buyers of Swedes to give us a trial.

We hold choice stocks of Hungarian Grass, Millet and Buckwheat. Prices sent on application.

The Champion Horse Hoe and Diamond Point Cultivator, the two best implements in the market. Price, $12.

Address—

The Canadian Agricultural Emporium,

360 Richmond St., London, Ont. 185-a

Notice to Exporters & Feeders of Cattle.

Those parties who wish to realize the best price for their FAT CATTLE should consign them to be sold direct to butchers in the large inland towns of England.

Messrs. URWICK & HUNT, Auctioneers,

will be glad to make arrangements to dispose of weekly consignments in the great central town of BIRMINGHAM, where the supply is always much below the demand.

All particulars on application Reference: MR. S URWICK, Secretary to Hereford Herd Book Society, Hereford, England, or Editor of Hereford Times, Hereford.

Address communications to—Midland Counties Herald Office, Birmingham, England. 185-b

BERRY BASKETS & CRATES, Peach, Plum, Cherry and Grape Baskets, Bushel and Market Baskets, Clothes Baskets, &c., &c.

W. B. CHISHOLM, Oakville Basket Factory.

185-f