THE FARMER'S ADVOCATE

AND HOME MAGAZINE.

VOL. XIII. LONDON, ONT., MAY, 1878. NO. 5.

REGISTERED IN ACCORDANCE WITH THE COPYRIGHT ACT OF 1875.

The Farmer's Advocate

—AND—

HOME MAGAZINE.

PUBLISHED MONTHLY BY.....WILLIAM WELD.

OFFICE:—ADVOCATE BUILDING, LONDON, ONT.

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☞ Letters enclosing remittances, &c., only acknowledged when specially requested. Our correspondence is very heavy and must be abridged as much as possible.

On the Wing.

We have not taken a long flight this time. We went to Burford Plains, in Brant County, also drove some miles into London Township. This latter mentioned township is one of the wealthiest in Middlesex, and Middlesex is one of the best agricultural counties in the Dominion. We presume the farmers of this county can count their savings by millions. Buggies and carriages, silks and jewelry, pianos and melodeons are the rule, not the exceptions of the luxuries enjoyed by farmers in this county. But despite these blessings there is a defect. The passing generation have waged war against the forest; they manfully subdued it, and have reaped rich rewards for the wood they have destroyed or sold in the city, and from the crops raised on the land. The woodman's axe is still heard on many farms, but there are some on which it is heard no more. The last tree is gone that could possibly be taken for building, fencing or fuel. One farmer we met had been driving thirty miles for rails; another was getting posts and lumber from hundreds of miles away. But comparatively few farmers have

PLANTED A TREE

of any kind except in their orchards. The wealthy farmer who had drawn rails thirty miles has not a tree planted along the roadside or hardly anywhere else; the other wealthy farmer, also, who was importing timber from hundreds of miles distant for fencing, has not yet any trees growing by the roadside. The question again arises—

FENCE OR NO FENCE?

Shall we continue to strip our woods of the best timber to keep up these ugly, crooked, miserable-looking snake fences, or shall we adopt the plan of leaving our timber for more useful purposes, as in France, Germany and many other enlightened countries? Even in some parts of the State of New York the farmers have abandoned the old plan of fencing, and the sooner it is abolished in old settled parts of Canada the better. We know that many may differ with us in this view, but when we are forgotten, as we shall be, perhaps some bound volume of the ADVOCATE may be turned to and regretful tears may be shed by the starving, hungry readers, and they will say that the idea of abandoning the destruction of our forests for fencing and the planting of trees, now so forcibly brought before you, should have been adopted. The time has come when it is absolutely necessary to plant trees.

Ever since we commenced the publication of this journal we have attempted to induce farmers to plant trees, and we shall continue to do so. We have formerly held forth as a great incentive to planting trees the enhancing of the value and the beautifying of our farms and the country. Now we intend to appeal to you in another way, which we hope may have more effect. In our foreign exchange papers we read of the existing famine in India and China. The extent of this calamity appears worse to us than that of a hundred wars or any other calamity that ever befel the inhabitants of this earth since the Deluge. Can it be credible that double the number of the entire population of this Dominion are actually dying of starvation? Millions have died and millions more must die. Read the account.

The following extract from the *Saturday Review* gives a succinct account of the facts connected with the famine in China. A perusal of it will convince all of the importance of tree planting; and will serve to show the dire calamities that may be averted by taking time by the forelock.

The scene of the famine is the vast delta plain which forms one of the most noticeable features in the surface of China, and which includes the provinces of Chihle, Shanse, Shense, and Honan. This immense plateau covers an area of 246,721 square miles, and is inhabited by a population of upward of seventy millions. The soil, which consists almost entirely of loess, is so highly productive when watered by seasonable rains, that the district covered by it used to be regarded as the Eden of China. But on the other hand, it is easily percolated by water and consequently fails to retain moisture for any but short periods, while a few days' dry weather is enough to convert the surface into dust. Tradition says that in bygone ages the mountains which fringe the plain on all sides were thickly wooded, and that in those halcyon days constant and temperate showers almost invariably ensured to the farmers rich and plenteous crops; but at the present time so completely have these forests been destroyed that from Peking to Hankow—a distance of 700 miles—scarcely a tree or shrub is to be seen, except in the immediate neighborhood of some of the villages, and old men say that now rain falls less frequently and with greater vehemence than formerly, and that the showers which used to water the earth at seed-time can no longer be reckoned upon.

But at the present moment it is not a question of the failure of one year's crops, but of three, and this triple calamity is aggravated by the fact that during several previous seasons the yield was far below the average. What, then, is the result? It is this—that seventy millions are in the direst want of food, of whom it is reckoned nine millions are actually starving. The imagination fails to picture the amount of misery and distress represented by these figures, and the accounts which reach this country from missionaries and others on the spot, of houses tenanted only by the starved dead, of thousands of emaciated corpses lying by the roadside and in the streets of villages, of the efforts of some to gain nourishment from the bark of trees, the thatch from the roofs of houses, and even from earth and slate-stone, give us but a faint glimpse of the unutterable woe which has overwhelmed a population nearly twice as numerous as that of the whole German Empire.

One of the most horrible aspects of severe and long-continued want is the prominence which the instinctive law of self-preservation almost invariably attains at the expense of every human tie and of every virtue. The gnawings of hunger gradually blunt and destroy every feeling which is not centred in self, and there is always the suggestion ready to hand, that, as food for the whole household is not to be had, it is better that one or two of its members should be sacrificed for the rest. There is no reason to suppose that the sufferers in China yielded more readily to the temptation than others have done under similar circumstances, but now at least the traffic in human beings is openly carried on. Husbands sell their wives, and parents their children in open market.

A traveller recently returned from China writes: "When I left the country a respectable married woman could easily be bought for six dollars and a little girl for two. In cases, however, where it was found impossible to dispose of their children, parents have been known to kill them sooner than witness their prolonged sufferings, in many instances throwing themselves afterward down wells, or committing suicide by arsenic." A less avowed form of selfishness, but one not the less cruel, is the desertion of households by the bread-winners. Thousands of able-bodied men are daily emigrating from the famine-stricken districts to Mongolia and elsewhere, leaving the old men, women, and children to die of hunger or to struggle through as best they may.—[*London Saturday Review.*

This is only one of many reports we read, and when you have read, weigh well the attributed cause, which was neglect to plant and protect trees. Now, use your own judgment. You went on that hard clay farm, or on that sandy, loamy one when covered with trees; you cleared part and had plenty of moisture, and a luxuriant crop rewarded you for many years. But you continued to clear and your neighbors cleared. The expanse is now wide; the hot summer sun and drying winds now take possession of that once fertile, happy, productive spot; your broad-leaved, hardy corn wilts and droops its wilted leaves more than of yore; the grass is burned to its roots; the cattle, horses and sheep already show the struggle coming. Where is their thrifty appearance? gone! The poor hens crawl below some weed, distend their wings and open wide their mouths for the lack of that humidity that used to be so refreshing and invigorating when you first commenced your clearing.

As that corn is wilting, as the poor cattle are starving, and as the poor hens are opening their mouths from dire heat and lack of moisture, so must all of your children suffer for the lack of the timber we destroy. We must have dry seasons, as they have in the most fertile parts of China. One of our only chances to protect our descendants from being in as bad a state as the poor creatures are in China and India is to plant trees.

It is the duty of Legislatures to encourage the planting of trees. Every county councilman ought to be elected to stay at home unless he uses his position for the proper advancement of such improvements; in fact, the planting of trees should be a guide to the selection of proper men to be our representatives. If you take a Councilman or a Member of Parliament who has no flowers or trees he is apt to be coarser, less educated, more bigoted and less suitable for such a position than one who has trees and flowers.

TO THE LADIES.

We know well that you will aid us, because you know we are right. Now, just persuade your father, husband, brother or sweetheart to plant and protect one tree, at least. That one will in

duce some other person to plant one or more. You enjoy the shade and know that there is life and health in it for man and every animal under his care, and there is a possibility of you being one of the instruments that may avert such a calamity as a famine in our land. If you have not already planted, go into the woods and get a maple, even if the buds are out and the leaves beginning to start. Cut off the top; it will make fresh buds and make a tree. May and June are good months to plant evergreens, but you must not let the roots get dry in moving them.

We have seen some parts of Canada where farmers have planted with more spirit and energy than in London Township, but there are places we have seen in other counties that are suffering more for want of trees than this township is.

A MODEL FARM.

In one of our journeyings last year we met the old veteran nurseryman, George Leslie, sr. Our conversation was—as it generally is when we meet—on agricultural or horticultural subjects.

"Doctor," said Mr. L (that is the pet name with which he often salutes us) "you must go and see the Model Farm of the West; Mr. Thomas Palmer, of Burford has it. You will be much pleased; go and see it."

We promised when an opportunity occurred that we would take the trip, and on the 15th of April we visited this farm. It is situated about a mile from Burford village, at which place there is a station of the Brantford & Port Dover R. R. Burford Plains have long been noted for their fine crops of wheat. Mr. Palmer is an Englishman from Lincolnshire; he has been in the country a long time, and is highly satisfied with his success in it and with the country. He farmed many years ago north of Toronto, on heavy clay ground. Hearing of Burford, he visited it and purchased 150 acres. The homestead had been cleared and buildings erected when he purchased; the buildings had been scattered about in all directions and he moved some, built others and put them into farming order, so as to have everything snug and convenient. The wild bushes had also gradually crept into the orchard and around the line fences, so as to make the farm look like a wreck; these were all cleaned up and grubbed out, leaving only the useful and ornamental ones. There is a belt of timber left growing along the outside fences, completely encircling the farm. This gives a very pretty effect, besides affording shade in summer and protection from driving winds and drifting snows in winter; it also tends to draw rain and moisture to the crops. The soil is a loamy clay, of a porous nature; the subsoil is clay on limestone, and at a depth of about 20 to 25 feet is a bed of gravel. Mr. Palmer intends to underdrain the land, not because water lies on it, as at the present time the water soaks readily through and there is no fall to make an outlet for a drain, without going a long distance over other farms. His plan is to dig a large, deep hole to the gravel, brick it up so high that cattle cannot get into it, and then run his drains into this large hole. His object for draining is more to have a current of air passing under the soil and permeating through it to the surface. His theory is this: Hold a lighted candle to the mouth of any drain and the flame will be drawn up; thus air must be constantly passing through the soil, invigorating the roots and doing as much good as the draining off of the water.

The farm fences, crops, stock and implements were all in prime order. A large portion of the farm was sown with winter wheat, and we never have seen fields looking better at this season of the year; some was over one foot in height, and if there be any fault, it is that it was too good.

We went into his orchard. All the large limbs and trunks of the trees had been carefully scraped and the pruning had been done. In this orchard we noticed a peculiar, and to us

A NOVEL PLAN

in arbor culture which the former proprietor had put into practice, and which is referred to more fully on another page.

Mr. Palmer uses large quantities of salt, and finds it very beneficial. In driving through this part of the country we noticed many more trees growing along the roadsides and along line fences than in many other sections. This we attribute in a great measure more to good luck than to good management, as on the plain lands the oak, which is found on them, is very tenacious of life and is more persistent in growing than the timber found on clay lands. It has been left to fight its way along the fences, and now it has become both useful and ornamental—so much so that those who had been careful to cut everything down now see that their farms do not look so well, and are planting to be equal to their neighbors. The beauty of the rows already growing induces other farmers to imitate the example. There are stay-at-home farmers on some clay soils who are far behind the times in beautifying their farms, and who see their stock exposed to the scorching rays of the sun and the severity of winter without attempting to protect them.

TAX ON ENTIRE HORSES.

A correspondent whose article appears in this journal has awakened our ideas on this subject. If a tax of $50 per head were put on entire horses it would have the effect of causing propagation from the best, and many inferior horses would be withdrawn from propagating their species. If such a tax should be levied it should be expended in awarding liberal prizes for good horses, good mares and good colts. Such a law might be enacted. It is our impression that owners of good stallions would hail such a law with pleasure, and that every enterprising farmer would be satisfied that we certainly should have more valuable horses for export. Greater attention would be paid to importing and raising the best.

The collecting of the tax and the expenditure of it might be placed in the hands of Agricultural Societies in each locality, and, in fact, the right to impose the tax might be left with them. The law might fix a maximum and minimum rate, as some wealthy localities might wish to have it raised to $100, while other poorer sections might consider $25 sufficient. It would create greater interest in the Agricultural Societies, which would also be beneficial. We should be pleased to have the opinions of any of our readers on this question.

Caution to Butter Makers.

The prospects for a poor price for ordinary butter for the coming season are very imminent. We would advise our readers not to waste much of their energy in making butter, as has been usually done on most farms. The prices will be low and not as remunerative as those for cheese, and you will probably do better by turning your attention to cheese-making or other purposes.

If butter-making is to be profitable it must be made to suit the market. The old, soft, heated butter brought in baskets and crocks to the country stores will not compare with the butter carefully made at the creameries. Establish a creamery or abandon the business, would be our advice, unless you have every convenience and have established your name for making the best for consumption at your nearest town or village. We give the following extract from the *Monetary Times*, which every one of you should read and guide your operations accordingly:—

ANNUAL REVIEW OF THE BUTTER TRADE.

The butter business of 1877-8 will be, or ought to be, long remembered by "the trade" as distinctly as the French people remember 1872 and the Franco-German War. Indeed, if our merchants will remember 1877 and '78 as long and as advantageously to themselves as the French remember 1872, the disaster which has attended the handling of butter in the past season may prove a blessing after all. The history of the butter business in 1877-8 is full of profit, and we record it that it may be "profitable for reproof, for correction, for instruction in"—butter-making. There has been a dangerous and unworthy rival in the field against us; our American friends would call it "a nigger in the fence," and our English brothers would term it "a dark horse." This rival is butterine or oleomargarine. Of the butter (or what has been retailed as butter) consumed in Britain during the past year, we understand that 70 per cent. has been butterine, shipped from the continent of Europe and from the United States, and, we are informed, some shippers have brought the stuff into Canada from Chicago in bond, branded the word "Canada" on the packages and re-shipped it to Britain as Canadian butter. This butterine can be landed in England in good order and condition from Belgium or France in thirty hours, and sold at 50s. to 60s. per 112 lbs. Mr. and Mrs. John Bull appear to like it, so long as they don't know that it is largely composed of the coarse fatty refuse of calves, bulls and cows; and the shrewd English grocers who retail it at 1s. per lb., and thereby double their money, take good care to keep *mum* and sell it as nice fresh butter. And when Canadian butter is offered there at its value, say 90s. to 112s. per 112 lbs., they shake their heads and say they "have no trade for these Canadian butters." Why? Because Canadian butter gives them only a profit of about 1d. per pound, and butterine pays them 6d. per pound profit; consequently they don't want to see genuine butter, or to let the consumer get a hankering after it.

Then, again, the past season was a very bad one the world over for making butter; why, we cannot tell; but, without doubt, there never was so much poor butter and so little good; and this fact only developed itself after the butter was made and kept a while. Unfortunately nearly all our heavy operators held their butter through the summer, apparently not knowing the part butterine was playing, but expecting a demand to spring up in the fall. When autumn came their butter did not look so well, did not taste as well, and would not sell as well as good butterine. In December the dark days came; the butter had to be shipped and sold at from 40s. to 80s., and the stampede has continued till now. Great has been the loss and ruin, and only where any really good lots have been offered has anything like cost been realized. There are two lessons to be learned by butter makers and butter dealers from all this, and these we repeat for the hundredth time:

The first is the necessity of selling our butter when it is fresh and sweet, to get it into the consumer's hands while it is in its prime. Britain is our chief consumer; the continent of Europe our chief competitor. France, Denmark, Sweden, Belgium are within 48 hours, at most, of England, and these and similar producing districts can pour in their butter in the best possible condition; Canada, to compete, must send her produce in the best and tastiest condition, if she would hold a place in the English market.

Second, if we are to regain the position in the estimation of English butter dealers which we have lost in the last two years, we must make a better article, and sell it cheaper. By these means alone will the use of butterine be curtailed. The improvement in quality which we are urging is to be obtained, in our opinion, through the agency of creameries or butter factories, and through this agency alone will Canadian butter attain national excellence. For the information of our Canadian dairymen, we mention the fact that in the State of Illinois there are 150 creameries going into operation this year which were not previously in existence. In Minnesota there will be 260 creameries in operation in 1878. In Iowa there are 120, and in Ohio over 200. The policy of the directors of these creameries is to sell as soon as they have a car-load ready, at the market price, whatever it may be. The States we have enumerated have certainly inaugurated a "new departure" by going into the dairy business, and are destined to be formidable rivals to Canada, and it depends very much upon the enterprise with which Canadians

go into the creamery business and meet the market, whether we are to retain our prestige or lose it.

The stock now held over in Montreal is estimated at 12,000 packages; and the demand from the lower ports or provinces will in all likelihood be "nil," for the American shippers have crowded into the Maritime Provinces all the butter that they can take.

In conclusion, we need hardly say that the butter product of the world in 1877 was unusually poor, and the handling of the article has resulted in serious loss in Europe as well as America, and should our dairymen refuse to sell in 1878 at whatever price foreign markets will warrant, we predict the loss this year will fall on the makers instead of the merchants. A burnt child knows how hot the fire is, and is likely to act accordingly.

Light and Heavy Soils.

It is an important matter for the farmer to know what crops are best adapted to the farm on which his lot may be cast for life. There is a difference between the agriculture of a country having a temperate climate, such as that of the British Isles, and one subject to the extremes of heat and cold of a North American climate, and the difference between the cultivation of light and heavy soils, between the rotation of their crops, and their ploughing and seeding is scarcely less than between the farming of the old and new world. The heavy soil when thoroughly tilled is well called the wheat soil. Its yield is greater, the berry is plumper and heavier, and it gives more barrels of flour. The lighter soil requires less labour, it produces more quarters of barley of better quality, and brighter color, and in a favorable season is sure to command the highest prices, if passed through skilled hands. A soil neither too light nor yet too heavy, would doubtless be preferable to either, but such a farm is not always to be had; and whether the light or heavy soil be prepared, it must depend on circumstances, such as the locality of the farm and the means of the posessor. A heavy soil can be brought into a higher state of fertility than very light land, and will retain that fertility much longer. It will, when in good condition, bear a severe rotation of crops without being impoverished, and will give a greater return in successive years than any light soil is capable of giving. But on the other hand the expense of cultivation is greater than a lighter soil requires. It may need under-draining—a costly operation. Horses or men cannot perform as great a quantity of work in a given time. The soil is not in condition to receive the seed as early, and, consequently, the crop cannot be early sowed. The difference in the modes of cultivation and in the variety of crops generally sown and planted in different sections of the country, though caused in some measure by a variation of climate, is also owing to a difference of soil; so we find in the country, around the Bay of Quinte, more barley grown than in any other part of the Dominion. Some who sow it there may never question why is it so, but that they have sown the grain best suited to the soil is proved by the fact that the barley of the Bay of Quinte is the best grown in America. Their soil would not produce wheat of equal quality. It is essentially a barley soil. Barley may be grown on heavy soils; on such we have grown good barley crops. It may also be grown on light loam soils, but on neither heavy nor on mucky lands can it be raised so profitably as on barley soil. To ensure the greatest profit from our labour we should pursue such a system of agriculture, and adopt a rotation most suitable to the soil—light or heavy. A light soil is well adapted for soiling. On it peas, oats, grasses, clover, corn, for cutting green, can be sown in seven or eight months of the twelve; it can be tilled and seeded at times when heavy land is too wet for any labour. It is a good soil for growing potatoes, turnips and almost all root crops. It is easily cultivated, but easily impoverished. It needs frequent applications of manure. Having in itself, less fertility than heavier soil; the crop must inbibe a great proportion of its food from the manure applied. And also while the heavy soil retains the unconsumed remaining part of the manure, the light soil wanting that retentive property, permits the oozing away of manurial elements with the water. We have here, as in many places, soils varying greatly, some very heavy, and some light. Each requires different treatment. All cannot be brought profitably under one system. Each soil must be treated for itself.

Sowing Grass Seeds.

A subscriber of Huron County writes to know if it will be too late to sow grass seeds early in May, and to have some directions for sowing. He "would have sown earlier but could not have got the ground in good tilth till now."

In this country grass seeds are generally sown in the early fall or early spring. If the sowing be deferred till spring it is considered better to sow when the snow has partly gone. Sown at that time, the freezing and thawing of the earth cover it sufficiently, and the earliest returning spring heat causes it to germinate early in the soil that is moistened with the thawed snow and well prepared for its reception; and receives nourishment from the ammonia that is always present in the snow. The objection to sow in Canada as late as May, so favorable a time for sowing grass seeds in Britain, is owing to the difference of the climate. In Britain the farmer has seldom occasion to complain of drought in the early summer months. There April and May showers bring forth early grass, as well as flowers, and provoke the early germination of seed. Here we have to prepare for an early drought, and one of long continuance. There, as J. K., in his letter says, there is no better time for sowing grass seeds.

A good catch is, however, sometimes obtained by sowing seed as late as May, if it be a dropping season, and the soil be in good condition, so that the seed may germinate at once, and the roots have taken good hold while the moisture continues. Very much depends on the preparation of the seed bed. For grass and clover especially it is necessary that the seed bed be in the very best condition. Every farmer knows how much the fine tilth contributes to the early germination of seed, and the healthy luxurious growth of the young plants. Moisture, air and warmth are necessary to promote germination, and these are better secured by the fineness of the mould covering the seed, and of the bed into which it sends its tender, radicle to seek its liquid food. The fine earth covering the seed admits the necessary air and heat, and prevents the too great escape of each by evaporation. The variety of grasses to be sown must depend partially on the soil and the system of agriculture the farmer intends to pursue, as well as the adaptation of the land. If the grass land is designed to be broken up after one, two, three or more years, the variety of seed must be selected accordingly. Such grasses as ripen at the same time should be sown together, as for instance orchard grass, June grass and red clover. For most soils when well prepared for grass seeds, they will form an excellent mixture for mowing the first crop and afterwards for pasture. For pasture, white clover should form a part of any formula. When sheep are part of the stock to be pastured white clover is especially valuable. The seed must not be buried deep; a light covering to secure the moisture to the seed is all that is required. A too great depth would exclude the air and prevent germination. A light seed harrow, should be used. By many a bush harrow is used, that is thorn twigs plaited between the "bulls" of the harrow, to prevent the tires sinking deep and burying the seed. Rolling is always serviceable after the harrow; is indispensable for sowing as late as May. It serves to make the surface of the ground more compact, so that the young root, when first started, will have more substance to feed on, and it will endure the succeeding dry weather, better than it would, if the surface were porous and light. A great object to be obtained, in so late sowing, is to prevent the drying up of the plant before it has sufficiently established its root to sustain life during the drought. This can only be done by making the soil so compact as to prevent the evaporation of the necessary moisture. Not only does rolling make the surface compact and thereby ensure moisture. Its pressure also makes the earth fine enough—that is made up of particles smaller in size than the seed it covers, so that the moistened particles may entirely enclose each seed, and that there be no hindrance to the swelling of the seed, the sprouting of its germ, and the striking down into the earth of its root.

The drought of our early summers generally makes late sowing precarious work. It may succeed with due care, but some have been successful in obtaining "a good catch" while many have lost their seed and labor.

Some Queries Concerning Potato Culture Answered.

"Muskoka" desires some information through the FARMER'S ADVOCATE about potato culture. The contradictory opinions and reports he has met with have fairly puzzled him. He asks, 1st, What is the best soil for a potato crop, and the best mode of cultivation? 2nd, Are the best crops obtained from seed whole or cut, large or small—the rose or stem end?

SOIL.—Any soil, if well prepared, will in ordinary seasons yield a good crop; there is, however, some soil better adapted for potatoes than other. Heavy clay soil will produce a good crop if underdrained and well manured. Rich, mucky soil will produce heavier crops than any other in dry seasons, but the soil best adapted for potatoes is light dry land, and if it be a limestone soil, so much the better. On such soil the crop is most certain, and the potatoes of the best quality.

PREPARATION OF THE SOIL.—If it be intended to manure with farm-yard manure, let it be done in the early fall, and the manure plowed in. The plowing should be deep and strong, well cut and ridged up, that it may receive the full benefit of the winter storms. Let the furrows and water cuts be free for the running off of any water. Stagnant water is poison to land. With a second plowing immediately before planting, the soil will be in excellent condition, dry, mellow and free from living weeds. Open the drills 24 to 30 inches apart, and drop the seed 8 to 12 inches asunder, according to the variety of potatoes and the fertility of the soil. Potatoes such as the Early Rose require less space than the Peach Blow and others that have luxuriant haulms and grow their tubers far from the stem on every side. Too much crowding is a means of having small tubers, free air and light being essential to a healthy growth in vegetables as well as animals. Keep the space between the drills cultivated, but not so as to injure the roots.

SEED POTATOES.—The small potatoes in a hill are inferior in every respect to the larger ones—not so good for table use, less matured and less healthy. A writer has made the following experiment: He selected two of the finest of potatoes received from England, weight 18 ozs., and cut them into 13

sets. In a row next to them he planted the same number of sets, cut from the same weight of these potatoes, but all of small size, such as are usually used as seed. On digging the crop he found that the two large potatoes produced 9 pounds, 12 ounces, while the produce of the smaller seed was only 6 pounds. Among the produce of the large seed there was hardly a small potato, while in the produce of the smaller potatoes there were few large tubers and a great many small ones. Such results of the planting of large and small potatoes have been verified by the experience of many, and any farmer can prove it for himself. From the planting of small potatoes the present degeneracy of potatoes has in a great measure arisen.

WHOLE OR CUT POTATOES FOR SEED.—The potatoes grown from whole seed will not be so large as those from cut seed. From whole potatoes there are too many stalks, and consequently very many small potatoes. The cut seed should be so large as to nourish the young plant in its early growth. There should not be more than two eyes in each set. The theory that the stem end of the potato is preferable to the rose end is a novel one, and only needs more extended experiment to prove its fallacy. Potatoes were cut across each in two equal parts, the rose end parts being planted by themselves and so with the stem ends. Those from the stem end rapidly degenerate every year, showing a marked inferiority, thereby proving that the opinion of the better quality of the rose end confirmed by the practice of potato growers, has been correct. On the first experiment the difference is not so much in favor of the rose end, but it has been proved that stem end seed falls off continually in the quality and quantity of produce.

The Month.

April has been unprecedentedly mild. Vegetation is now fully two weeks further advanced than usual. The land has been in good working order, and the crops have been put in early and well. The winter wheat looks better on the average than ever before. There are no blank spots, and the plant is thick and luxuriant; in fact, so rank is it that we have heard of some farmers who have turned their cattle into it to eat it off. We never heard of this being done in the spring before; whether it will act beneficially or not we are not able to say. Time will tell, and we hope that those who have practised it may report the result, whether good or bad. The parties doing so desired to check it from heading so soon, as they had suffered before from late frosts.

There has not been as much of last year's crop marketed this month as was anticipated. There is yet a large quantity in the farmers' hands. The war rumors have caused farmers to withhold in anticipation of better prices.

Hints for May.

Protect your plums from the Curculio by smoking the trees with gass tar.

Compton's early field corn is highly spoken of by those that raised it in Canada last year. It will be found preferable to many of the varieties now in use, when ripe corn is required.

Superphosphate has been found very beneficial to root crops. Potatoes, turnips, &c., have been much benefited by it. It is no use putting on a half a coat, try a little and put it on as thick as it ought to bo used, say 300 or 400 lbs. per acre at least. You can try it on a small scale at first, say 1 lb. The results have been astonishing.

BONEDUST.—Put all the old bones you can get at the root of some favorite trees or vines then your trees may grow and bear, if you can take time to make Superphosphate, which you might do by deluging them with Sulphuric Acid.

Graft immediately if the buds of the cions are not started too far; if they are, you may loose your work.

Wash your sheep, but let the greese raise again in the wool before shearing.

HINTS FOR MAY.—The grain sowing having been completed the roots claim the farmer's attention. This is the month for potatoe planting. Were it not for the dreaded June frosts, the earlier they are planted the better. Early potatoes are easier saved from the potatoe bug—another item in favor of early planting. The earlier varieties such as the Rose, Vermont, Ohio, Snow Flake, &c., are to be preferred now that there are such enemies to contend with in their culture.

Have the land in good tilth for other root crops. Good cultivation now will save much trouble with weeds and be a means of obtaining good crops. Plaster is very beneficial to the young clover crop. From 100 lbs. to 400 lbs. may be profitably used as a topdressing. The increase produced will more than pay for the expense.

Sow crops for soiling. Peas and oats sown mixed will give an excellent green fodder. The land should be in good tilth and free from weeds in order to ensure a heavy yield. Four bushels or more oats than peas may be sown.

For soiling and for saving for winter fodder, corn is a most important crop. For this purpose Western Corn is generally grown, as it yields more than any other; but smaller growing varieties are coming more into favor. The sweet corn is found to be more nutritious. Top-dressing the growing corn with plaster increases the crop and serves to improve the soil. Hungarian and Millet are both good for soiling and feed.

When corn is to be planted on sod the plowing may be done immediately before planting. The fresher the soil is when planting or sowing the better.

Swine for fall feeding will thrive well by getting a run of a grass-field, and still better on clover. The ground will be greatly enriched, and the cost of summer feeding will be little.

Tree planting if not completed should be done as early as possible; evergreens may be transplanted during the month.

Grafting even as late as this month is recommended by some. It has been sometimes successfully performed when the trees are in full bloom.

Mulching young trees should not be neglected. A good mulching prevents the evil effects of the drought, it serves to keep down ground-weeds and improves the soil.

Keep a sharp lookout for the insects. The tent-caterpillars are early at work weaving their webs, and prepairing for the future. They are most ingenious, and many fruit and forest trees are killed by them. Remove the web with its inmates whenever seen, and crush them beneath your feet. Lye, potash, and other things are applied to kill them on the trees, but destroy them by any means.

Watch for the borers in the apple trees; wherever you see the wood-dust, there search them out, and cut them out of the tree with a knife or pound them out with a piece of wire. The curculio also must be guarded against if we are to have any plums. Jar the trees frequently as soon as the fruit is set. For the blight that affects our pear and apple trees no effectual remedy is known. Cut off the affected branch—if the blight proceeds further grub up the affected tree and burn it.

Gooseberries and currants need as much watchfulness as our large fruit trees; but they can with care be preserved from their insect enemies the more effectually if taken in time. The currant and gooseberry worms must be attended to in time. White hellebore dusted on the leaves is an effectual remedy; we have never known it to fail when applied in time. The currant especially is a valuable fruit, and well worth contending for. Mulching them is very beneficial.

Blackberries and raspberries are now growing the young canes for next year's fruit bearing. All should be cut away but the four or five strongest and healthiest.

Drain Tiles.

A correspondent from Donegal, Ont., wishes to be informed as to the parties who manufacture tiles for under drains, as he desires to get some.

Numerous applications are made to us for information of a similar nature, and many call at the office on similar errands. Strange to say, we cannot give them an answer, as there is no place in Canada that we know of where a supply can always be had. Those who make them in this country only work on such a small scale that a few wagon loads taken in the autumn leave the yards bare of tiles, and those who wish to draw them in the winter cannot procure them.

There is a good opening in this county and many others for persons to establish extensive drain tile factories; we wonder that some parties have not made a regular business of it ere this. Those who are merely working with hand or horse-power machines sell all they can make. What is wanted is a good steam-power and good machinery; take our word for it that there would be more money in such an establishment, if properly managed, than in half the enterprises and plans that people are putting their money into. If any one can supply drain tiles to meet the demand, we should like to know it.

Notice.

The attention of our exchanges and others is most respectfully drawn to the fact that the articles from Professors L. B. Arnold, M. Miles, Jas. Law, "Hortus" and all other original articles are specially written for this journal at considerable expense, and are copyrighted. Whilst we are desirous that all farmers should have the pleasure and profit to be derived from their perusal, we wis h those who copy them into their columns to give us the credit due; otherwise our rights must be insisted on, and the articles can only be read in the ADVOCATE.

ANOTHER NEW WHEAT.—We are in receipt of a package of seed from the Hon. Alex. Morris, ex-Governor of Manitoba, for which that gentleman will please accept our thanks. The package contains a good sample of spring wheat, clean and pure. The seed from which this wheat was raised was brought into our country by the Mennonites from Russia. It was grown in Manitoba, and is said to be yielding remarkably well there. We will have this wheat tested in different parts of Canada, and if it should prove to be of a different variety to what we have and yield well, no doubt some of our seedsmen will import some for next year's seeding in Ontario. The other seed is that of the Northern Ash. It is a large seed, and we will place it in the hands of one of our nurserymen to propagate.

At a late meeting of the Scientific Association of Ann Arbor, Mich., Miss Lou M. Reed, instructor in the microscopical labratory, read a paper on the "Microscopic Structure of the Different Kinds of Wheat." The varieties of wheat examined were Clawson, Deihl, Egyptian, Gold Medal, Russian, Schaffer, Tappahanock, Treadwell and Wicks. In these she found that the Deihl wheat had the largest and thickest layer of nitrogenous or nutritious matter; that it contained more really nutritious matter than any other kind of wheat, although close to it and nearly identical with it was the Treadwell wheat. The others, however, were so far removed as to present a striking contrast. The popular Clawson wheat was found to contain the least nutritious matter of all.—*Michigan Farmer.* We should be pleased to hear what our Canadian millers say about this.

Veterinary.

Galls and Bruises by the Collar.

BY PROF. JAMES LAW, ITHACA, N. Y.

At the present season, when farm horses are pushed through the spring's work, though their skins are sensitive and their systems depressed by the shedding of their coats and the changing season, they are especially susceptible to injuries from the collar, and many an animal is condemned to idleness for weeks when his services are most valuable, or if his owner is more necessitous or less compassionate, is forced to work under much and constant suffering. To obviate this a little timely care will often go far, and even when a slight injury has been sustained the parts may often be restored and a more dangerous result warded off.

GALLS –CHAFING.—The most common injuries are such as affect the sensitive skin only. The continuous and unwonted pressure, together with the accumulation of perspiration, dandruff and sebaceous matter, sets up a local inflammation, and the exudation of a liquid from the vessels into the substance of the integument. This may raise the scurf skin in the form of minute blisters, which burst and leave small raw sores, that are increasingly sensitive to renewed contact with the collar. These may still further inflame, scab over, break, bulge out in proud flesh, or become excavated deeper and deeper, while their margins become thick, angry and irregular. Or the exudation may be mainly into the deeper parts of the skin, causing circumscribed painful swellings or lumps, which in certain systems or under the stimulus of renewed irritation, advance to the formation of pustules or small collections of white, creamy pus, which burst, leaving extremely tender and sometimes intractable sores.

Such chafing and inflammation cannot in all cases be prevented, yet in all much may be done by care. Horses should be brought into the best condition possible before the more severe labors of spring are demanded of them. If from a long period of idleness, neglect, irregular feeding or watering, the functions of digestion, nutrition and the removal of waste materials are imperfectly performed, the skin will show a special lack of resistance, and a susceptibility to slight disturbing causes. If to this is added the profuse perspiration from the skins of animals out of condition, the increased circulation which this implies, and the relaxed, water-soaked condition of the surface, we find an ample explanation of the special liability to injury. Horses, therefore, by liberal feeding, exercise and grooming, should be kept in fair condition up to the time of the commencement of spring's work. This counsel must not, however, be construed into an advice to fatten such horses, to make them plethoric, nor to feed agents that are in themselves specially heating The fat and the plethoric horse will perspire most freely and prove most obnoxious to chafing, while the horse fed mainly on Indian corn and other heating agents will prove equally sensitive. While on this subject of feeding, it is well to state that musty hay or grain, irregular feeding, watering to excess on very cold water when heated or fatigued, and watering just after a feed of grain, are each liable to derange the digestive organs and to induce a special tenderness and susceptibility of the skin.

The next consideration is the *fit* of the collar. This should be perfectly adapted to the size and form of the neck, and ought not to be too large when the horse is thin and too small when he is fat. It should be smooth and even, and should have the draught taken from proper points, neither too high nor too low. When a horse shows the slightest heat, tenderness or swelling of the skin of the shoulder, it should be sponged with warm water on returning from work, and when clean a little tincture of arnica, having a drachm of sugar of lead added to every four ounces of the tincture, may be applied. This may be repeated frequently in the intervals of work. When the injury is more severe, so as to cause blisters, undular swellings or sores, the animal must be laid off work; or if this cannot be done, the part of the collar which presses on the sore must be carefullymarked out and an incision having been made with a knife a full inch on each side of it, the padding corresponding to the injured part must be pulled out and the lining of the collar then beaten down so as to make a distinct concavity and avoid all further pressure. The arnica and lead lotion may be used for these as for the other case, unless there is an open sore, when a drachm each of alum and carbolic acid in a pint of water may be used instead.

BRUISES—SWELLINGS.—Large swellings of the shoulder occurring in the parts beneath the skin, and varying from the size of a hickory nut to that of a human head, are the direct results of bruises, and may be caused by uneven, badly-fitting collars, by plunging irritably into the collar to start a heavy load, by jars connected with unexpected stepping into a hole or furrow, or from violent contact with other horses, with pole, manger, posts, &c. These swellings are usually not only beneath the skin, but under the superficial muscles as well, and are at first very hard, hot and tender, but *pit* when pressed with the tips of the fingers. Later this *pitting* on pressure is no longer seen, and the mass is intensely hard, with, in rare cases, obscure and uncertain fluctuation from contained liquid. Their prevention will demand all those precautions advised to ward off chafing, and a gentle control and care of young, untrained and irritable animals. In treating such swellings it may be taken for granted that each contains a collection of matter in the centre, which must be allowed to escape before a recovery can be secured. This is at first simple semi-solid lymph, which in part speedily degenerates into pus in the centre, while the outer portion, developed into a fibrous covering and surrounded by strong, resistant fibrous structures, acquires great thickness and effectually and permanently imprisons the pus. The object should be to allay the early inflammation and hasten the formation of matter by continuous warm fomentations; or if that is inexpedient, by keeping the shoulder constantly covered by four or five thicknesses of woolen blanket wet with water. When this has been kept up from four to six days, so that the swelling no longer *pits* on pressure, it is ready to open, even if no softening can be detected. According to the size of the swelling, the matter may be found an inch from the surface, or it may be found six, but in any case it should be reached and evacuated. After this, keep the wound clean and daily inject a little of the last named lotion for the sores until the cavity heals from the bottom outward.

Thick Wind or Broken Wind.

They are distinct diseases, and differ widely in their nature and symptoms. Thick wind, called roaring in the eastern States and in Europe, consists in breathing with a loud unnatural sound on violent exertion, heard particularly when a horse is galloping or pulling a heavy load up an incline; also in fast trotting. It is also known under the following terms, viz.:—whistling, wheezing, and piping, which are only different degrees or modifications of the same disease, and are due to chronic disease of the head of the windpipe, (larynx), consisting of a paralysis and wasting of the muscles of that organ. It is often a sequel of severe attacks of distemper, laryngitis or bronchitis, which cause a diminution of the calibre of the larynx and and bronchial tubes, from a permanent thickening of the mucous membrane lining them. Any of its forms are incurable, constitute unsoundness, and unfit the animal, except when affected in a slight degree, for fast work. Broken wind or heaves is a peculiar, difficult form of breathing in the horse, in some respects resembling asthma in the human being: It results from a dilatation and rupture of the large air cells of the lungs and smaller bronchia, complicated with a disordered condition of the digestive organs, all dependent on an impaired state of an important nerve, which supplies the heart, lungs and stomach with nervous influence, viz., the pneumogastric. The characteristics are a well-defined and double expiration seen at the flank, and performed during each respiration, that is much increased by exertion- The term heavy is given to this double action, and when once seen it is apt to be remembered—the horse has a low, suppressed cough, which occurs in paroxysms, especially after drinking, or while eating dry hay; he has a depraved, ravenous appetite, and often becomes pot-bellied. This class of horses, when worked steadily, are hard to keep looking well, and when put to fast work or heavy draught are much distressed in their breathing; but with proper feeding and care they can be made useful horses for slow work. Any degree of broken wind or heaves constitutes unsoundness, and has a tendency to increase with age.

Ontario School of Agriculture—Closing Exercises 1877-78.

The closing exercises of the examinations, held at Easter, of the Ontario School of Agriculture, were held on March 29th, at the College Lecture room. The college is to meet again after an intermission of a fortnight, when it is expected, the majority of the first-course pupils will complete their course; and it is to be hoped that some of the seniors will attend the courses to complete their course of instruction. There was a generally expressed wish that the accommodation for pupils be increased. And there are rumours that other improvements must be made. A preparatory English class, and, also, a finishing class are sproken of as necessities for the future.

Among the visitors present were the Hon. Prov. Treasurer, Hon. A. McKellar, Hon. P. Gow, Professors Croft, Buckland, Smith, Messrs. Klotz, Whitton, Howard, Elliott, Goldie, Clark, Anderson, Laidlaw, Torrance, Bathgate, Chadwick, Hobson, Mahon, Scott, Hamel, McFarlane, McCraig, and others.

There were appropriate addresses from Mr. Johnston, Prof. Buckland, Hon. Mr. Wood, Prof. Smith, Prof. Croft, Hon. A. McKellar, Mr. McCraig, Mr. Boyle, Rev. Mr. Torrence, Messrs. Peterson, Whitton, Hamel, and Waddell.

Space forbids giving the full list of successful candidates.

Second year Agr.—Frst Honours, Warven, Naismith, Logan, Crompton and Farlinger.

Vet. Pathology—Warren, Naismith, Earlinger, Logan.

Vet. Materia Medica—Naismith, Logan, Stewart, Graham.

Organic and Animal Chemistry—Warren, Crompton, Naismith.

Agr. Chemistry—Warren, Naismith, Logan.

Ec. Botany and Entomology—Naismith, Warren, Graham, Stewart.

Meteorology—Warren and Naismith, Crompton, Logan and Stewart, Graham.

Pol. Economy and English Lit.—Naismith, Warren, Earlinger.

Surveying and Levelling—Warren and Logan, Naismith, Crompton, Stewart.

Mensuration -Logan, Warren, Crompton, Naismith.

First Year 1 & 2 Agr.—Brocker, Randall; Chemistry—Randall, Lawton; Zoology—Lawson, Gillespie; Botany—Nichol, Dunkin; Geology—Nichol, Dunkin; Vet. Anatomy—Jopling, Nichol; Vet. Materia Medica—Clark, Lackman; English—Barclay, Lawson; Mathematics—Lawson, Gillespie; Agriculture—Stover, Dunkin.

Stock.

Advantages of Pure-Bred Stock.

BY PROF. MANLY MILES, LANSING, MICH.

Which breed is the best, and what are the advantages of the pure breeds over the common grade stock of the country, are questions that are often asked by those who are not familiar with the different breeds.

A consideration of the origin and characteristics of pure-bred animals will furnish the best and only satisfactory answer to these questions. Animals that have been kept in a circumscribed locality for a long time, without any admixture of the blood of other families, have certain characters in common, which are the result of the conditions in which they are placed, and the hereditary transmission of these characters from parent to offspring. The process of development may be accelerated by the selection for breeding purposes of those that resemble each other in the greatest number of particulars, and the rejection of all that present undesirable variations. As it would be extremely difficult to find two animals that are precisely alike in all details of the organization, we cannot expect the prevailing conditions will have exactly the same influence in modifying the characters of different individuals; and more or less variation in the form and qualities would therefore occur.

From the intimate admixture of blood, arising from the interbreeding of the animals in a given locality, and the continual influence of the same conditions, these differences would gradually diminish until a uniform type was finally established. These animals would then, from the uniformity of their characteristics, and the constancy with which they are transmitted, be recognized as a distinct breed. In what are called the "improved breeds" this process is carried still further.

The flexibility of the animal organization that renders possible the development of the characteristics of a breed through the influence of surrounding conditions, as already noticed, furnishes an opportunity for improvement of a more special character. A liberal supply of nutritious food, in connection with protection from the inclemencies of the seasons, will produce a tendency to early maturity and better feeding quality; or the energies of the system may be devoted to the secretion of milk by developing a habit of the system in that direction, and then new characters may become fixed by a system of selection and breeding, and constitute the improved characteristics of the breed.

The improved characters are, therefore, the result of more highly artificial conditions than those that gave rise to the original characters of the breed.

The improvements, it will be seen, are produced by modifications of food and habits, and they are perpetuated by a judicious system of breeding. It is a too common error to suppose that improvements are made by breeding only, and to overlook the influence of food and management.

At the time of birth the animal has no characters that have not been derived, by inheritance, from the parents, but it may itself be changed in its characters by modifications of food or by the development of new habits, and these new characters, which are added to the sum of the parental characters, may be transmitted to the next generation, where they appear as inherited characters. The process of breeding, then, only serves to accumulate the improvements made in each generation by other means, and perpetuate them as inherited characters.

Great differences in breeds, and in the improved characters engrafted upon them, must therefore be produced from the different conditions that have prevailed in their development. Each breed is therefore naturally adapted to particular conditions of life, and the peculiarities of the farm and the system of management must be taken into consideration in deciding which is "best" in any given case.

The tendency to uniformity in the transmission of characters is increased by breeding only from the animals that possess the same peculiarities for many generations. From this concentration of hereditary force pure-bred animals are "prepotent" in the transmission of their characters when crossed upon animals that have no established characters, as is the case with our native and grade stock. As improved characters are engrafted upon the general characteristics of a breed through the influence of special conditions, the intensity of the power of transmission may likewise be augmented in particular families by more rigorous selections within the limits of the family, to produce a concentration of the special characters that belong to it, which is called high breeding.

One of the greatest advantages of the pure breeds, and particularly of high bred families, consists in the uniformity of their characters and their prepotency in transmitting them to their offspring.

For practical use upon the farm—aside from breeding purposes—well-bred grades may be equal in value to animals of pure blood, and in some instances they may be superior. The best grades, however, can only be produced by a systematic use of "prepotent" sires that have a high development of the characters we wish to establish, and we must look to the pure breeds as the only available source from which such sires can be obtained.

The Angora Goat.

A great deal of attention, says a Sydney paper, is being given in Australia to the cultivation of the Angora goat. The hair is said to make a very good mohair fabric, but its quality depends very much upon the nature of the locality in which the animals are reared. Undulating prairies, with a very good supply of water, are best adapted to the habits of this goat. In sandy, hilly districts it thrives admirably, but the hair is inferior and falls off very quickly. The flesh is excellent, and is preferred in some parts of Australia to the best mutton. The milk is of good quality, and yields a good supply of butter and cheese. The hair is worth about $1 a pound, and one ram will yield about four pounds at each shearing; the best plan is to shear them twice a year, as this prevents the hair from falling off and splitting; at each shearing it is about six inches long. Compared with the Merino sheep the Angora goat seems to have the advantage, in the fact that the former produces only three and a half pounds of wool, worth two shillings and sixpence per pound, and that six Merinos will eat as much as seven Angoras. These facts are important, in view of the acclimatization of the Angora goat in this country.—Kentucky *Live Stock Record*.

Improved Stock in England.

A correspondent of the *Mark Lane Express* writing of English cattle, notices as a good sign that instead of buying all sorts to mix in a wild muddle, as men did but a few years back, purchasers are selecting and sticking to one special line.

Of Hereford cattle he says:

Their quality is so good, and their *contour* often so admirable, that one wonders they are not more generally taken up. The fact is, *connoisseurs* must have that which pleases the eye amongst other requisites; and, however beautiful an individual or two may be, a herd of white faces is not agreeable. If some heretic would hunt up the roan cattle of the district, and infuse a little more purple into their tint, and do away with the ugly white slash upon their faces, I am certain that the demand for his sort would be rapid. Of course the old hands would crab and abuse, but a fresh and extended circle of buyers would reward his enterprise. This brings him to sheep and of these he remarks.

How capricious are the changes in taste of their breeders! Take, for instance, only the now fashionable Sharrowhawk Down. The old Shropshire sheep, as exhibited in print in Youatt's pages, had a comparatively bald head, but the demand came for wool there, and of course the development was obtained by a series of cunning devices, they have now crowns woolly as an owlets; but I am told, by one of the most successful breeders and prize takers with the sort, that in humoring this market he had forfeited about seven pouuds of mutton per quarter. This defect he is taking measures to correct; but there it is now. Of course there is danger in alteration. I am told of one Shropshire breeder who, by a lucky experiment, obtained a flock that carried everything before it. Everybody went to buy. In the next generation out comes the mischief, and one farmer so spoilt his old sort by an infusion of this new one that it drove him fairly off his head, and he ended his days in an asylum. What care and thought these changes—most needful often, but still uncertain, if fascinating as the chemical combinations of the laboratory—require! Still I would try one were I a breeder of Hereford cattle.

Crossing Buffaloes on Cows.

I give a short account of a herd so crossed, and kept in this neighborhood some thirty years ago. I well remember the fat ones being brought to our market, and the remarkably fine quality of the meat—this, too, in a district surpassed by few in its feeding capabilities; and I and many others to whom I have spoken agree that we never tasted beef like that from the cross-bred buffaloes.

The following account may be relied on:

A cow buffalo in calf was purchased from the late Lord Combermere by the late Mr. Norcop, of Betton Hall, and placed in his park. She produced a bull calf which, with its mother, was allowed to roam at pleasure. Getting access to a Longhorn bull, the cow brought further produce which at last attained to a herd of about fifty. The practice was to castrate all the male calves as soon as dropped, the old man in charge of them being able to go among them at will, though with strangers they were very wild and untractable, the cows being served by the bulls of the neighboring farmers, most of which were the old-fashioned Longhorns. The animals thus bred grew to a large size, more especially those which had a less proportion of buffalo blood; these, too, gradually lost the delicious hump of fat that characterized the pure and half-bred ones, though even to the last the conformation of the back showed where it should have been, and the quality of the meat was markedly superior to the ordinary stock of the district, the fat being perfectly delicious.

The three-year-old bullocks would run as much as seventeen hands high, and sold to the late Mr. Duckers—who, I believe, bought all as they were ready—even in those days of cheap meat, for £30 each. I well remember how the buffalo beef was sought after by all who had tasted it when it became known that he had killed some. The herd roamed at pleasure about the park, but were very wild with strangers. No obstacle would stop them when alarmed; fences or gates were crushed down before them like stubble, and when food became scarce they would scent the young after-grass at a great distance, and make for it straight as a line. The way they dashed into the pool and swam across has been described to me as a most interesting sight. They bred freely under the conditions previously stated, were quiet with their feeder, but had to be shot when their turn came for the butcher. The pure-bred ones were small beasts, but, as I have said, the cross-bred ones were immense animals. I have been told also by one who knew them well that the late Lord Combermere had a herd at Combermere Abbey, some of which were still larger than those at Betton.—*Cor. London (Eng.) Live Stock Journal.*

American Shorthorn Association.

In Great Britain, a country of comparatively limited extent, where everything centres at London, and where there is a large class of landowners and farmers with more or less leisure and ample means, who are constantly called to the metropolis on various errands of business or pleasure, the establishment of a "national association" is a natural and easy process for any purpose which requires the concentrated attention and energy of interested parties. But in this country, with its vast area, and the general necessity on the part of most of us that our own affairs at home

should be primarily considered, the case is quite otherwise, and it is therefore by no means strange that similar undertakings meet with results so very dissimilar. The consequence is that most associations here that are professedly "national," are either entire failures or are maintained by the public-spirited efforts of a very limited number who transact the business, and annually elect nominal representatives to extend the apparent scope of the association over a wider territory. Of such societies the American Shorthorn Association offers a case in point, if we may judge by the following extract of a letter from a Shorthorn breeder in a western State, east of the Mississippi, who has been actively engaged in its proceedings from the outset, and has done his best to promote its success and usefulness :

"The contributions at the last meeting at Lexington, I understand, were scarcely sufficient to pay just the expenses of the association, leaving nothing for publication of the proceedings. I also understand that on the secretary's notifying the delinquent members of the previous year to remit their annual dues, only two or three of them responded, and only a few dollars are now left in the treasury—not enough to attempt publishing the last report. Indeed there was little done worthy of publication. The continual wrangling over the pedigree question has disgusted many of the best breeders, and has, unquestionably, done a good deal of harm. I trust that we shall hear no more of it, and that breeders will content themselves with good fair pedigrees, and exert themselves to increase the quality of their animals. In fact, I regard the last convention a failure, being held in the midst of the Kentucky blue grass region, and less than fifty members, all told, attending, and not one-half of those in attendance were Kentucky breeders, of whom there are more than the whole number of fifty living less than that distance of miles from Lexington !

"I cannot help contrasting the British Shorthorn Society with our own, they having a membership of one thousand or more—ours less than fifty ! I still have increased faith in the future of Shorthorns in this country. It seems to me that they will prove to be the cattle *par excellence*, and we need not fear any rivals for many years, at least. I have had more demand for young bulls this winter than ever before, and have disposed of all I had to spare. All of them went into the hands of farmers to be used on their grade cows. The prices were not large, but such that, with ordinary keep, we can make money by rearing."

Dairy.

Oleo-Margarine.

BY L. B. ARNOLD, SECRETARY OF THE AMERICAN DAIRYMEN'S ASSOCIATION.

The artificial butter, known as oleo-margarine, has become a terror to many butter-makers, and it has some significance in the butter trade of the country, but it is not at the present time the powerful antagonist it is often supposed to be.

This new product of human food, as is claimed, is confined to the caul fat of beeves, the suet or beef fat contains too small a per cent. of the soft butter fats, and too much stearine, to admit of profitable working at the present prices of butter. As caul fat can only be used while it is fresh and sweet, the production of this new butter must be confined to the abattoirs of large cities, as only from them can the fat be obtained in sufficient quantity to admit of profitable working. There are slaughtered in and around New York city, an average of 8,000 beeves a week, which yield an average of 45 lbs. of caul fat per head, or 360,000 lbs. per week. From this can be obtained 60 per cent of oleo-margarine oil, making 216,000 lbs. of butter possible per week. If all this oil was made into butter it would not very much disturb the transactions in that great city which handles a million and a half pounds of butter per week, though its influence would be distinctly felt. From an investigation of the facts it appears that not more than 3 per cent. of that amount of oil, or 6,000 lbs. a week, are made into butter, the balance of the oil manufactured being shipped or used as oil. The caul fat produced outside of New York city furnishes a smaller per cent. of butter than in the city, which makes the prospect of a controlling influence for oleo-maragarine butter look pretty feeble when it is contrasted with the 1,000,000,000 lbs. of genuine butter annually made in the United States and Canada. It is hardly a drop in the bucket. Nor is the outlook for the future very promising. I have not been able to get a complete list of all the manufactories of oil or butter in the United States, but of the 16 the names of which have become known to me, 13 have gone to the wall, though backed with an aggregate of $1,890,000 capital stock to start with, and the remainder are evidently running on a small margin of profit, if indeed there is any at all.

Manufacturers seem to have been more successful in improving the quality than in reaping profit. The improvements which have been effected have probably given rise to more alarm than the quantity produced. It is not without considerable merit as now made. Its relation to dairy butter will better appear from the statement of a few facts in its manufacture, which may be comprised in a few words. The fat is taken while fresh and warm, and thoroughly cleansed, first in warm, and then in cold water, and then chopped by a machine in fine pieces and at once placed in rendering kettles where it remains heated to 118° till the fat is separated and drawn off. As stearine does not melt below 125°, rendering at this low temperature leaves back a considerable share of this white, hard, and tasteless element in tallow, with the scraps. This oil is at once cooled to 85° and then put in little cotton bags holding about a quart, and pressed, when the softer parts run off and leave another portion of the stearine in the bags, making the oil now a mixture of olein, palmitin, and stearine in almost the exact proportions in which they exist in genuine butter. This done, 100 lbs. of the oil are twice churned in 20 lbs. of fresh sour milk, and after the last churning turned into pounded ice and suddenly chilled, which gives it the exact texture of butter. It is then ready to season, work and pack. Upon emerging from the worker it is so nearly identical with good dairy butter in composition, texture, and flavor, as not to be readily distinguished. But as it lacks the flavoring oils, butyrine, caproin, &c., which give taste to butter, having only so much of them as it has taken from the milk in which it was churned, it has not the lively taste of good fresh butter. As an offset for lack of flavor it remains a long time free from the rancid, strong and stale taste, so common to real butter, and hence may be said to be negatively good. But oleo-margarine butter has a fault of its own by which an expert can always distinguish it. Though the red blood does not circulated much in the deposits of animal fat, the vascular system extends through them the same as in the rest of the body, carrying colorless juices which, besides water and fat, contain albuminous matter and waste, that give to raw or untried fat its peculiar flavor. In the ordinary mode of rendering fat at a high heat, 212° or above, the water in these juices is evaporated and the albumen and waste solidified and precipitated or left adhering to the scraps. But in the low rendering at 118° the juices in the raw fat which have not been washed out in cleaning, go with the oil and are carried into the butter, and when it melts on the tongue there is always left a distinct flavor of raw fat. It is not very prominent, but always enough to distinguish between oleo-margarine and true butter.

A higher degree of skill may remove this defect and also the lack of flavor, but so long as they remain they will prevent it from competing with fancy butter, and the great cost of apparatus and expense of manufacturing, and the limited amount of caul fat, are likely to continue to be too great to admit of a competition, that need not for the present be very alarming, if dairymen do their duty in the production of dairy butter.

Increasing Popularity of the Jersey Cow.

The increasing popularity of a family of cattle is not based on mere caprice. There must be some substantial grounds to induce farmers and graziers to pay high prices for a breed of cattle selected from many breeds, each in some points excelled. For dairy purposes the Jersey Cow is now, and bids fair to continue, the most popular of all the breeds, in the United States at least. A Correspondent of the *Live Stock Journal* says :—

It seems to me a safe prediction, that the Jersey cow—perhaps I should say the Channel Island cow—will become more popular, and especially more fashionable. She has made great progress in these directions in the last few years. It is not very long since that she was looked upon as almost purely a fancy animal, and had but little general recognition in that line even. Now, however, the breed is in high repute with many practical men—men who keep cows with the view of making money from their product, rather than by their sale for breeding purposes. In this country the number of pure bred Jerseys is much greater than that of any other breed of cattle, the almost everywhere leader — the Shorthorn—alone excepted. While the prices they command are not high—judged by the standard of fashionable Shorthorns—they are very satisfactory, and the demand is unquestionably increasing. This is also true in England, where their appreciation has been more recent and rapid. I am not able to agree with their enthusiastic admirers, if these insist that the Jersey is the best cow for the general farmer ; but I do believe the breed is a very valuable one, in its purity for a goodly number, and in its crosses for a much larger number.

It is an important question for Jersey breeders, whether they will accept the present standards as the best possible, and seek to secure uniformity to existing fashionable models, or whether they shall attempt to retain the present excellences, and also further develop others. The generally recognized and accepted claim for the Jersey is, the production of rich milk—milk containing an unsually large percentage of butter. Large yields of milk are occasionally reported; but very generally they claim, not quantity, but quality. Among breeders, we find quite different standards for judging. One class makes milk production the great test; this to be shown by actual tests of the individual or her ancestry, or else indicated by the escutcheon, or mark supposed to indicate excellence in this direction. Another class attaches great and, unquestionably, undue, importance to fancy points, noticeably a solid color and black points. Incidentally, there has been considerable change in size and appearance. The average Jersey cow of to-day is larger and a great deal more symmetrical than was the average Jersey of twenty years since; but this change has been somewhat incidental. Few breeders have made these changes a principal subject.

Of course it would be exceedingly unwise to adopt a Shorthorn model of perfection for the Jersey; but I believe the greatest utility of the breed—its adaptation to the wants of the largest number—can be best secured by giving more general attention to increasing the size, improving the form in its adaptation to meat production, and rejecting color as an important element in deciding value. There can be no essential connection between the production of rich milk and small size. A reasonable degree of symmetry cannot be a bar to excellence in milk production. And, whatever may be true of those in some special circumstances, it is clearly true that the great majority of American and English dairymen show, by practice, that they do regard the value of the carcass, when the cow ceases to produce milk, as a not unimportant element. With the increasing spread of Jersey bulls, it becomes a more and more important question—What is to be done with the bull calves ?

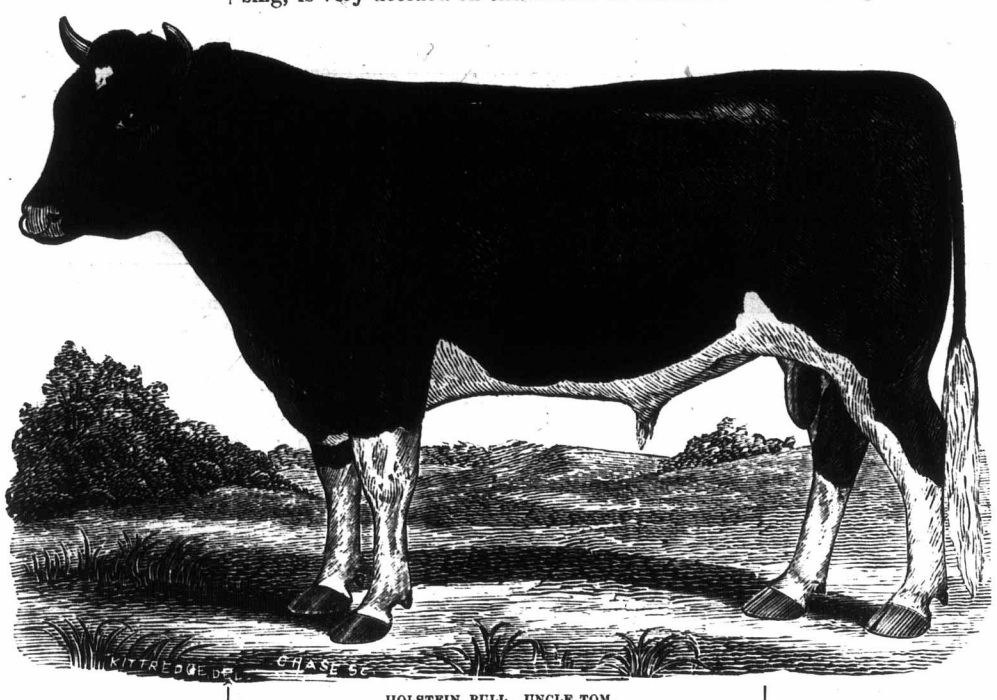
Of the two problems—to secure uniformity of color and retain the special excellence of the breed; or to somewhat increase the average size and improve the form for beef making, without injury to the milk-giving tendencies—I would choose the

latter, as equally easy, and vastly the more praiseworthy attempt. I have known Jersey bulls which weighed 1,600 or 1,700 pounds; and I do not know that they were the less desirable, as shown by their progeny. I have seen Jersey cows which were good looking cows, judged by the ordinary standard, that looks to double adaptation, which were also good as producers of milk rich in cream; as certainly I have known some most angular, undesirable cows, as judged by the same standard, which were also inferior at the pail.

Holstein Bull and Cow, "Uncle Tom" and "Isis."

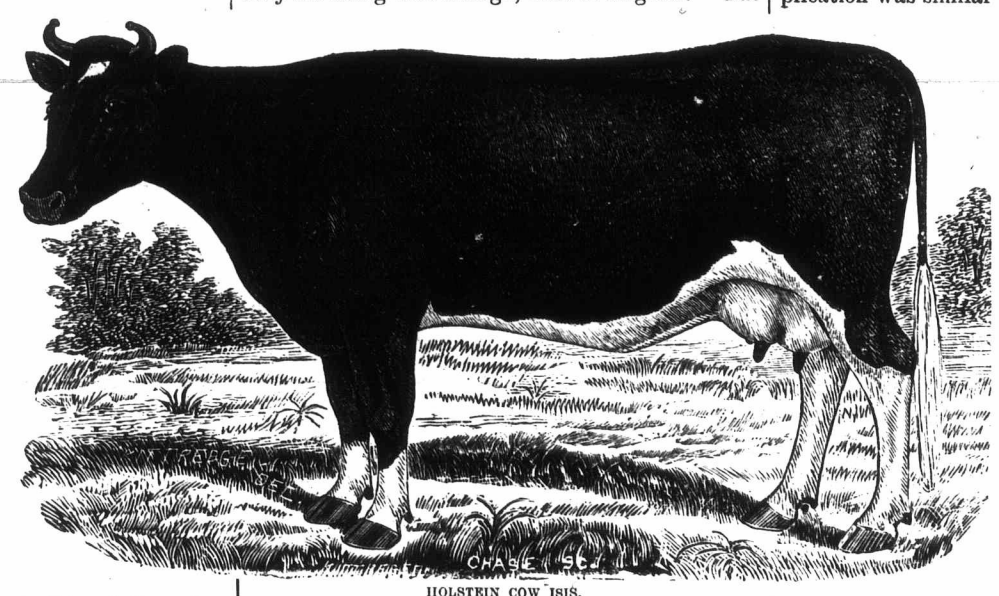
We now give our readers illustrations of two Holstein Cattle, the property of Messrs. Smith & Powell, Syracuse, N. Y. This class is coming into favor in many parts of the States. The crowning superiority of this class is that they produce a larger quantity of milk, for the weight and size of animal, than any other breed.

Mr. Smith has just returned from Holland with another large addition to their herd. This class of cattle are reared to the greatest perfection in Friesland, North Holland.



HOLSTEIN BULL, UNCLE TOM.

A HOLLAND DAIRY.—The best pupils of the Agricultural College of Grignon, in France, are sent, at the public expense, on an excursion each year, to examine the improvements in some agricultural district. In 1876 they visited Holland and gave an account of a 500 acre farm, reclaimed from Harlem Lake. After this land was drained and rendered fit for miscellaneous crops, Mr. Amersfoordt devoted it principally to dairy purposes, keeping the justly celebrated black or Holstein breed. Many of his cows are said to produce 4,865 quarts yearly; the average yield per cow being thirteen quarts, or an annual yield of 4,000 quarts per cow. It is said that 66 gallons of milk produce 18 pounds of butter and 40 pounds of cheese; and that the average gross income per cow is about $112 of our money. It will be perceived that this large gross income per cow is made from the large quantity of milk yielded, and not from the peculiar richness of the milk; for 66 Dutch gallons would weigh fully 660 pounds, so that it would require 36—60 pounds to make a pound of butter, and 11½ pounds of milk to make a pound of product, whilst we often make a pound of product from ten pounds of milk—that is, 1 pound of butter and 2 pounds of cheese from 30 pounds of milk.—*Kentucky Live Stock Journal.*



HOLSTEIN COW ISIS.

A plan for improving the aroma of butter, in use in many parts of Switzerland noted for good milk and fine butter, is as follows: The milk, as soon as it is drawn, and while yet warm, is filtered through a sprig of washed fir tips, the stem of which is inserted loosely and upright in the hole of the funnel The milk deposits hairs, skins, clots, or gelatinous sliminess on the leaves. It has imparted to it a most agreeable odor, and does not readily turn sour. A fresh sprig should be used each time.

Mr. Mechi, the farmers' scientific farmer of England, estimates that fifteen hundred sheep folded on an acre of land for twenty-four hours, or one hundred sheep for fifteen days, would manure the soil sufficiently to carry it through a four years rotation.

A New England farmer hired a man who proved very expensive help, as, in a month's time, he dried up the cows nearly a third "simply by kicking and scolding."

The theory is again confirmed by the experience of the year that pear blight is at least most successfully prevented by culture in sod; by feeding with salt and ashes and keeping the trees well mulched, perhaps with sawdust or ashes is best. Any exposure of the soil to sun and weather has a disastrous effect.

CULTIVATION OF ORCHARDS.—Prof. Beal, of Lansing, is very decided on the matter of orchard culture for all soils similar in fertility to most of those in Michigan. He says: "If you have money to fool away, seed down your young orchard to clover and timothy, or sow a crop of wheat or oats. If you want the trees to thrive, cultivate well till they are seven to ten years old. Spread ashes, manure or salt broadcast. Stop cultivating in August, weeds or no weeds. This allows the trees to ripen for winter." He adds that the question whether to cultivate old orchards or not must be answered by manuring the trees. If the color of the leaves is good, and they grow well and bear fine fruit, they are doing well enough, even if in grass. But if the leaves are pale, the annual growth less than a foot on twelve-year trees, and the fruit small and poor, something is the matter, and they are suffering for a want of cultivation or manure or both. Prof. B. says that "to judge of the condition of an apple tree is like judging of the condition of sheep in a pasture. Look at the sheep and not at the pasture, and if they are plump and fat they are all right."

FRUIT PREVENTING DISEASE.—We have frequently had occasion to point to the fact that a regular supply of well-ripened fruit tends to preserve health in a family and to prevent disease arising from malaria. Those who move to new portions of the country should therefore make it a point to plant all kinds of small fruits which come soon into bearing, as well as to set out those sorts of the larger fruits which bear early. We observe a statement in a late number of the *Rural World*, corroborating this view, from E. A. Riehl, a well-known fruit grower, who has a supply of fruit for every meal, and his family of seven children are blessed with uninterrupted health, while neighbors, who neglect fruit culture, have had repeated and fatal sicknesses.

THE WHITE PETUNIA AND THE POTATO BUG.—A correspondent of *Vick's Monthly* writes:—We were troubled with potato bugs very much when living in Illinois, and accidentally found out that the fragrance of the white petunia was a deadly poison to them, for when they came near it they would drop dead, and we could gather them up by the shovel full. My idea is to plant the white petunia around the potato plot and scattered through it, as it will settle the bugs. [Important, if true.]

The Editor of the *Horticulturist* says:—We have known quite a number of instances—indeed so many as to make it quite a rule—that old orchards apparently dying-out have been brought back again to fruitfulness by the liberal use of wood ashes, also stirring the soil. Potash is the most important element in the successful growth of all kinds of fruit trees. An old gentleman told a Club not long ago that he had known a man make and preserve an orchard of apple trees in a flourishing and productive condition, originally placed on very poor grounds, by sprinkling every year around each tree, to the circumference of the extent of its branches, half a bushel of ashes. We consider this a very important item.

Wheat bran is reported to form an excellent fertilizer, and from containing magnesian phosphates is especially adapted as a dressing for potatoes. Several experiments are reported, in which it is said to have proved of equal value to other well-known fertilizers. The method of application was similar to that of guano.

A FARM OF THIRTY-TWO MILLIONS OF ACRES.—"Brother Jonathan" over the borders boasts of some large farms, but there are farms in British territory larger than any he can show. We read from a Queenstown newspaper that Messrs. Travers and Forsyth in the northern territory of South Australia have a farm of 50,000 square miles, 32,000,000 acres—a nice compart title.

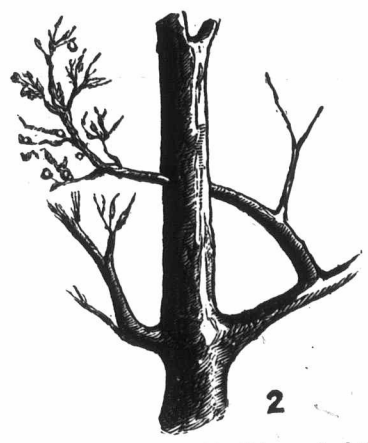
To make varnish, place shellac in a wide-mouthed jar, with strong alcohol enough to cover it, and set in a warm place until dissolved; or set the bottle in a saucepan of cold water, with some sticks to keep it from the bottom, and set on the stove to gradually heat. Be cautious of fire. If too thick, add alcohol. Keep the brush in the varnish, with the handle through the cork.—*Am. Agriculturist.*

THE CHECK-REIN.—There can be no doubt but that a check-rein upon a draught horse is calculated to worry and injure the animal more than all the ordinary labor he is required to perform. If a man has a heavy load to push or to draw, he lowers his head by bending forward, and thus throws the weight of his body against it; and so would a horse do, under similar circumstances, if he were permitted.

On the Wing.

(Continued from Page 98.)

Mr. Palmer, in his exuberance of kindness, took possession of our horse and insisted on our staying over night. In the evening he took us to see his friend, Mr. McWilliams, living near by. Mr. McWilliams is one of the rare specimens of native Canadians from Irish and Dutch descent, a man we should judge to stand over six feet high and to weigh about 300 lbs. At the farmers' bees and raisings at which he assisted the butt end of a log would go on the top of a log-heap with a "whoop," and the plate of the barn on the side he worked would be first up, and the old woods would fairly ring again with the "hurrah" that would then fill the air. He has now the comforts and luxuries of civilization at his command. His principal crop has been, is, and, from what we could judge, will



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be wheat, wheat, wheat. In this part of the country they do not pay as much attention to root and stock raising as in many other localities. It is our impression that roots and stock will have greater attention paid to them in future on the Plains than they have previously received. His principal root crop is potatoes, of which he plants about nine acres annually. We asked him how he managed to protected them from the Colorado bug. He said they were not troubling him now; he got a potato bug catcher that was made in Waterloo, and a boy pushed it up and down the rows once a week; and this kept his potatoes pretty free from this pest. He said a boy would go over four acres a day easily with it, and that it cost him much less than destroying them with Paris Green. It kept his potatoes free from the bugs, and there was no danger to man or beast.

The farmers in this section are using large quantities of salt. They find it has even a better effect than plaster. A box of it is put on the hind end of a wagon, a man or boy drives the horses, and one man sits at the end of the wagon and sows it right and left, using both hands. They sow about one barrel to the acre, putting it on the ground either with the seed or before or after seeding, and cultivate or harrow it in with the seed.

In Paris, Ont., we noticed that one of the lawns had been cut with the lawn mower, April 16th. This we think worthy of record, as we never saw grass so long so early in the season; and perhaps twenty years hence some of your children may turn to this record in one of the bound volumes of the ADVOCATE. We remember feeding straw on the 20th of May to our hungry cattle, when they could not get their noses to the ground for snow. What a contrast to the present season!

A NOVEL WAY OF TRAINING TREES.

When in Mr. Palmer's orchard our attention was called to a plan that the former proprietor had practiced on some of the trees. Where a limb of an apple tree had grown in such a manner as would be likely to cause it to break off or split the tree when bearing, he had taken a sucker or shoot from the limb and put it through an auger hole bored through the body of the tree or a limb that could support the dangerous one. The shoot had grown and the body of the tree had also grown, so as to show no defect; one would have thought it was a natural growth by the appearance of the bark. The limb placed through the other was as vigorous as any other part of the tree, and was well set for fruit; the tree was also as vigorous as others in the orchard.

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We instructed our artist to draw the accompanying sketch, No. 2, to show you in what way this is done. There had been many trees done in the same manner. Some of our readers may try the plan; it will be quite a curiosity, and it may be very useful to amateurs and those having time to make ornamental and curious trees. We presume that the proper time to do this with best effect would be at grafting or budding time, when by binding the parts tight and excluding the air, a sure growth would be the result and the wounds would then soon heal over.

When at Dr. Francis' garden, in the township of Delaware, some years ago, we noticed a fine large

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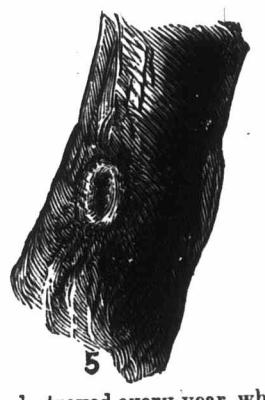
apple tree well laden with fruit. The limbs of the tree were in such forms that they could not have borne the fruit without breaking or splitting the tree. The Doctor had several years previous bored holes through the limbs and connected them by means of strong iron rods having solid heads at one end and screws at the other. The rods were put through the tree as shown in Fig. 1. This is also a good plan where trees are valuable and proper care has not been taken when they were young to give them a proper shape. Many valu-



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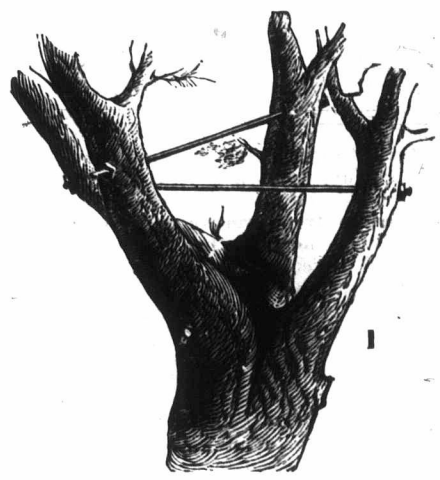
able trees are destroyed every year when there is a good crop of fruit. This plan may be of some use to some of you.

In passing through the country we often see where limbs of trees have been improperly cut off and a large dead stub is sticking out. We give figures 3 and 4 to show how they appear, and no doubt many of you have seen them also. Fig. 5 shows where a limb has been properly cut off and the wound almost healed. As soon as you get this paper you may go through your orchard and prune off any small twigs that are growing where you will not want them. It will save much labor by cutting when they are small and do no injury to the trees. Some of the boys may try the through-grafting with a large gimlet or small auger. Try it quietly on some limb, and when you get it growing you will be delighted to show it to your friends. Our nurserymen may put this plan to great profit by making very handsome and curiously shaped trees. We know of no nurseryman who has taken up this branch of the business in America. There is money in it for some.

Perhaps some smart Yankee may get out a patent for some such process. If one could patent the plan it would be a good thing, as there would be a chance of remuneration for those who would



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go through the country and teach people how to grow trees in beautiful, artistic and curious forms. Just try it this spring and give us a drawing of your growing tree when it is united, and we will have a cut made of it for publication.

Look to the Apple-Tree.

The time will soon come when if apple-trees are suffering from the borer, the effect will be seen in the foliage before the proper maturing time comes. By the term "borer" different insects may be understood; but the one we mean, and which is the only one people trouble themselves much about in this part of the world, is the one which enters the stem of the tree near the ground and bores its way up the trunk, just below the bark, in the young wood. It can be readily detected by examining the trunk at that spot, and if this borer is there small sawdust-like particles which have been ejected by the larva of the insect will appear. The numerous holes which this fellow makes cuts off a large supply of the sap which ought to go from the roots to the leaves, and these therefore become half-starved, and thus results the yellow color.

To get these worms out is the one universal thought; but people differ as to how it is best to be done. In years gone by the most popular process was to run up a stiff wire, but people have found by experience that the "worm" is not always crushed by it, especially if he has genius enough to make his way a devious one. The wire strikes against the side, and while we are laughing at the thought of his utter destruction, if it has reason and not instinct, as some writers contend for insects and animal life in general, it is probably laughing at its lucky escape. This plan does not seem to satisfy many people, for there are continually appearing new modes which are supposed to do better than the old one.

One of the most original of these is to take clay, temper it so that it will hold water pretty well, and then make a dish around the base of the tree, the edge extending up as highs a the worms have probably ascended. Water is then poured in and the insects are *drowned out*. We should be afraid it would be as hard to get the water to run up into these worm-holes as for water to get up into an inverted tumbler. However, whether this or any other plan is good or not, there is nothing to our mind like taking them out with the jack-knife. This is easily done without much horizontal injury to the bark, and there is a satisfaction in being able to look straight into the eyes of one's enemy, and to testify positively to his death.

Agriculture.

Is the Application of Plaster Beneficial?

This has been the purport of enquiries from several correspondents. Some have applied it without any perceptible results. From the *Michigan Farmer* we take the following article on the subject:—

We believe in sowing plaster on whatever crops it is to be applied early, and especially on sandy, light loamy or opening lands. Plaster helps to develop the growth of the green, leafy and woody part of the plant. Of itself we do not think that it has any effect in developing the seed or grain directly. But the plant that is developed well physically, so to speak, is strong through its large leaf and stem surface and capacity to absorb the light and heat of the sun, to nourish the seed, and to grow it more perfectly. The result is that plaster sown early stimulates the growth of the plant in its young stage of development when, like the calf, it seeks milk because it is close at hand, near to the young rootlets that are sent out, after the food that is stored up in the seed is exhausted. Plaster helps to gather, absorb and change what elements are furnished by the air, the water, and the mineral and earthy matters on the surface of the soil, and to transform them into substances that are soluble enough for the plant to feed upon. The chemical movement or changes caused by the particles of plaster when acting on the soil and under the influence of light, heat, air, water and contact with mineral matters, unquestionably develops a certain amount of heat that tends to stimulate the feeding and digestive powers of the young plant, and promotes its growth at an early day, somewhat as oil-cake fed to the calf in addition to the milk of its dam develops it into a large size, builds up its muscular system, increases its vital organs, and expands and strengthens the young animal, so that it retains all these advantages till it is ripe as a full grown well developed bullock. It is the aid thus given to the young plant which makes the application of plaster at an early day so valuable, and especially to some plants such as clover, which are leguminous, and need a trace of sulphur as a part of their composition!

Professor Kedzie tells us that plaster benefits crops for four reasons:—

1. Because of its composition, as it contains two substances that are necessary for the growth of crops, viz: sulphur and lime.

2d. Plaster has the power of combining with the volatile carbonate of ammonia, the pungent fumes of which pervade stables and other places, and which also is contained in many fertilizing substances, and on the surface soil itself, at the close of winter when the snow is melted and the ground is no longer frozen. This volatile substance would be dispersed if plaster was not applied, and hence the earlier it is distributed the more useful it is as a fertilizer, or rather in rendering useful the fertilizing matters which the soil and the decaying debris of the vegetation of last year has gathered and accumulated during the winter, but which has not had time to become assimilable by the young plants just hatched (as we may say) from the eggs or the seed.

3d. The solution of sulphate of lime or plaster caused by the rains, has a peculiar distinguishing influence on the compound silicates of the soil, setting free potash and magnesia for the use of the plant, so that it gets an increased supply of the very food it needs in the condition it is best adapted for promoting its growth. Hence says the professor, we furnish by the use of plaster, an increased supply of four very essential constituents of plant growth, sulphur, lime, potash and magnesia, and we may add also, it furnishes the plant with a certain amount of power to store up, or gather nitrogenous material for the more thorough organization and perfection of the seed. We think this is very fairly proven by the results of all the crude experiments, and of the actual practice of farmers, but also by the results of the experiments of Dr. Kedzie himself, who says after studying these very results:—

"Does plaster afford an increased supply of nitrogen to plants by reacting upon the vegetable mold of the soil, setting free its inert nitrogen in an active form? To test this matter I weighed out two equal quantities of the same swamp-muck, placed one in a given measure of a solution of plaster, the other in the same quantity of pure water. These two specimens were placed side by side, stirred up occasionally, and after a week a quantity of water filtered from each, and the solutions carefully tested for ammonia. This experiment I have repeated, and with results nearly uniform. The plaster always gave decided indications of ammonia, while the pure water with muck either gave no indications of ammonia, or very feeble ones."

Elmira Farmers' Club.

Items from the late discussion as reported in the *Husbandman*:—

What is Best for Hedges?—Why not try our native Buckthorn? It is easy to propagate, will stand frost, water and drought, and even the browsing of animals, sheep included. It will keep its own tenaciously, but will not spread and occupy all the ground adjoining it. While it does not grow as rapidly as some other shrubs, it grows slowly and compactly, in a way to endure and become a dense, reliable, permanent hedge. In a warm climate, with constant moisture, perhaps it would not be best to wait for it to grow; but in our climate, subject as we are to alternations of extreme cold, wet and dry weather, I apprehend it is that or no permanent hedge.

A Cheap Wash for Barns and Fences.—W. A. Armstrong: We have used cement and skim milk. We think it is better than lime. It is a light drab color. It costs but little; fifty cents worth will paint a large barn. We put two quarts of cement into a six-quart pail, add two quarts of skimmed milk, mix well, and it is ready for use. Stir occasionally while applying it. The cement is the kind used in building cisterns.

Summer Fallowing.—W. A. A.: Summer fallowing will kill sorrel. Ten acres of my farm was troubled with sorrel; a good coat of manure and a fallow destroyed it. A summer fallow will kill other weeds as well as sorrel. It has the result also of increasing the fertility of all heavy soils, or at least of putting them in such condition that the plant food they contain is more readily available.

Beet Sugar.—In a letter to the Secretary, D. W. Payne describes the method pursued by him in manufacturing beet sugar, of which he has succeeded in producing a very good article: The beets used gave, by analysis made at Washington, ten and one-fourth per cent. of sugar, which is nearly equal to the average yield of the beets grown in France. I am unable to state from my experiments what amount of marketable sugar could have been obtained from these beets, but in Europe, from beets containing twelve per cent. sugar, eight per cent. is extracted. The apparatus used was so crude, and so many mistakes were made, that it was impossible, through waste, to arrive at correct conclusions as to quantities. Indeed, at one time, it seemed extremely doubtful whether any sugar would be obtained at all. To get sugar became at last the only aim, and everything else was neglected. One thing alone, and that is really of the most importance, was determined, viz., that beets can be grown in this valley, yielding a sufficient amount of saccharine matter to render the manufacture of sugar here not only practicable, but profitable. It is made in Europe from no better roots, with great profit, and it would seem that the necessary knowledge only is wanting to enable us to do it. During the past year important discoveries have been made, doing away with the complicated process generally in use, and making it an easy matter for the farmer to work up his crop of beets on the farm into marketable sugar, thereby enabling him to participate in the manufacturer's profits.

Larger Crops at Less Cost.

Our national prosperity depends more on the husbandman than on the statesman or financier; wealth must be produced before prosperity can be gained, and any means employed by which we can produce more and at less cost must be a national blessing. Our production is already large, but is not what it should be with the resources we possess. We have soil, climate and opportunity to supply millions of the old world with bread, and by thus giving the staff of life to the hungry of other nations, we secure the best good and greatest prosperity to our own people. The want of our country is greater knowledge and better practice in agriculture; a knowledge that will enable us to produce two bushels of grain or two pounds of meat at the present cost of one; and this, no intelligent farmer will doubt, is attainable. The average return of wheat in our country is below ten bushels per acre, and as the cost of growing one crop cannot but exceed $10, it follows that the product costs fully market value, and in a large portion of our country it does not pay for labor expended.

Now, if we can increase the yield to twenty-five bushels per acre with but little added expense, we see how great would be the increased profit. But many will say such return cannot be realized. I believe it can under all ordinary circumstances. It is true that there is a difference in the adaptation of soils to crops, but on all natural wheat lands, such as prevail in Western New York, such yield is not extraordinary, and for a succession of years, under good cultivation. My own crop has for several years averaged fully up to that figure, except the crop of 1875, when the yield was but about seventeen bushels, owing to the extreme frost of winter. I will give the return for fifty acres in wheat, and the cost of the same last season on my farm. My practice is to follow a rotation of crops, wheat following barley. This land had grown a full crop of barley in the season of 1876, and the stubble turned under early in August, the furrow about eight inches deep. The cost of the crop of wheat harvested in 1877 was as follows:

Plowing 50 acres at $2 per acre	$100 00
Harrowing four times, 25c. per acre each	50 00
Surface plowing twice with gang plows	62 50
Rolling once, 25c. per acre	12 50
Seed, 1½ bush. at $1.50 per bush., per acre	112 50
Drilling, 50c. per acre	25 00
150 lbs. superphosphate per acre, at $30 a ton	112 50
Harvesting and drawing to barn	150 00
Threshing and marketing, $35 per acre	175 00
Picking loose stone, etc., 25c. per acre	12 50
Total	$812 50

Contra.

Yield, 30 bush. per acre, 1,500 bush., sold at $1.26 per bush	$1,890 00
Value of straw per acre, $2	100 00
Total	$1,990 00
Use of land, $23.91 per acre	$1,177 50

These figures are not given as being an extraordinary crop, for many have produced larger ones. The season was unusually favorable for grain, and we do not expect like crops every year, but we may approximate to it. Certainly this gives a good return, and shows that wheat growing may be made profitable under good cultivation; but had the yield been only an average of the State—some ten or twelve bushels per acre—it would not have paid cost of cultivation, and nothing for the use of the land. It is seldom that our seasons are so bad that wheat growing does not afford reasonable encouragement to the farmer when wisely conducted. Land must be kept clean and fertile to make grain growing a paying business in any of the older States, which the virgin soils of the West are producing so abundantly and at so little cost. That is, we must be better farmers in the older States to enable us to compete with the many bad farmers of the West. A new country is never well farmed, for when Nature produces abundantly for negligent culture, we need not expect thorough cultivation, but when necessity demands a better and more thorough system we need not expect success unless we comply.

Our Eastern farmers must farm better than the Western, or we cannot grow grain as a paying business; but with good cultivation and a judicious use of fertilizers, we can produce wheat, barley, oats, beans, etc., and put them on the Eastern market at as good per cent. profit as the Iowa, Kansas or Minnesota farmers will do in years to come. The important question for the Eastern farmer now is, to know how he can produce crops as cheaply as the Western farmer can, including transportation. They have some advantages over us that are hard to overcome; we have many advantages over them: we have a more uniform climate, less subject to extremes, and are less troubled with insects that destroy. Yet our main reliance must be on a better and a more economical system of husbandry. Our farmers must use more mind, more thought in their business that they may get advantages which the Western farmers already possess. Their lands are already fertile; ours must be made so by economizing every means of adding to our supply of manure, and by the use of such mineral elements as experience may prove beneficial to the soil and profitable to the farmer.—*F. P. R., in N. Y. Tribune.*

Solid Land for Wheat.

From an English standpoint, Mr. J. J. Mechi says—and so far as the question of solidity is concerned, the rule will hold good anywhere:—"From long observation and experience, I am more and more convinced that a loose friable bed for wheat is a mistake, and that compression or solidity is essential to the well-doing and non-rootfalling of the crop. The old system of dibbling wheat will be esteemed, especially in light and friable soils. The treading, and also the weeding by the dibble, had the effect of consolidating the soil. The drill has superseded the dibble, for it does the work so much more quickly, and deposits the seed more uniformly. A good dropper was not often to be obtained. I remember seeing lines of human beings treading the newly-sown wheat on the late Mr. Woodward's farm in Worchestershire. So convinced was he about solid land for wheat that he used 24 horses for three days trampling down some nearly broken up grass land after sowing it with wheat, and so got a fine upstanding crop."

After discussing the relative merits of dibbling—dropping a single grain of wheat at regular intervals, he says:—"As regards the proper quantity of seeding per acre, much must depend upon certain circumstances of soil, climate and fertility. No doubt, as a rule, the excess of quantity is absurdly wrong; but I will make a humble bow and deference to those who, by trying comparative quantities, have arrived at a suitable and profitable conclusion. The average increase, according to Caird, is 9 to 1. I will venture to assert that it is impossible to obtain from a sound wheat kernel, having room for development, so small a return as even a single ear, which would probably give 30 to 40 or more for 1. When I dibbled my one peck per acre of wheat (one kernel in every dibble-hole at about 4½ or 5-inch intervals) there were usually several ears from each kernel, often 10 to 25, and I know of a case recently in Kelvedon where a single kernel produced 108 stems and heads, but then it had no competitors. It grew on parsely bed. Liebig truly says that the greatest enemy to a wheat plant is another proximate wheat plant. From what I hear, the thin sowing light is dawning gradually on British agriculture.—*Michigan Farmer.*

Fertilizers for Root Crops.

A noted English writer on fertilizers for roots says that superphosphate of lime is principally used in England; but guano is used to a considerable extent in Scotland and Ireland, where the climate is cooler and moister than the south of England. In dry seasons there, as well as in this country, these fertilizers do not give satisfaction. Having, in connection with other scientific farmers, made many experiments with artificial fertilizers, running through a series of years, he came to the following conclusions:

1. That their action is very much dependent on the soil. Some soils possess a great responsive power, and others do not respond at all to fertilizers.

2. Poor land, and in poor condition, derives the most striking benefit from artificial dressings. Lands in high cultivation, on the other hand, derive often no benefit at all.

3. Superphosphate is the most paying manure we can use for Swedes.

4. Guano, nitrate of soda, farm-yard dung and organic matter containing nitrogen, diminish the germinating power of the seed and cause a blankness in the crop when they are brought into close proximity with the seed.

5. Guano and nitrate of soda top-dressed on, either at the time of sowing, or later, by which means they are not placed in contact with the seed, increase the crop, but not to an extent which warrants us in recommending them in the district.

6. The dissolved guano is less injurious in its effect upon the seed than ordinary Peruvian guano.

7. That the benefit from the application sometimes is represented by 10 to 12 tons per acre over the unmanured plant, and that in other cases the unmanured plants are fully equal to those dressed, in which cases there is a heavy pecuniary loss from their application.

8. About 3 cwt. of superphosphate to the acre has given the best economic result during several years' experience, extending over hundreds of plats.

The writer says, however, that on some soils a larger quantity is applied, "as a ton per acre to mangels," but root culture is one of the main crops in England, and immense crops are obtained which warrant the use of such large quantities of fertilizers. He admits that artificial fertilizers often prove a failure—"in many cases the money expended is wasted, while in other cases it is well spent." The manner of applying fertilizers on English prize farms is thus: "Artificial manures are applied by hand on the surface, namely, 5 cwt. of pulverized bone, 1 cwt. of guano and 3 cwt. of superphosphate, at a cost of £3 10s. per acre. The land is then scarified, harrowed and rolled, by which operation the artificial manures are thoroughly incorporated with the soil, and the last week in May, if the season admits, the turnips are drilled on the flat, at a distance between the rows of 19 inches."

Corn as a Farm Crop and for Food.

The Milwaukee *Milling Journal* has an article comparing the cost and food value of wheat and corn, to the disadvantage of the former. The climate of Canada is not so favorable to the proper maturing of corn as that to the south, yet it might be profitably grown to a greater extent than it is. It would give us a greater diversity of crops, very profitable in agriculture, and if even not well ripened, it has its advantages for stock feeding. The *Journal* says:

Wheat is the dearest food consumed by mankind, and when the comparative value and cheapness of the different grains is more thoroughly understood, the singular fact will be developed that there is as much caste in food as in the human race that is supported by it. Scarcity and high cost of wheat will eventually force nations and individuals to learn that the moral and financial elevation of the masses depends upon the substitution of some good material cheaper than wheat and bearing nearer proportion to the reduced state of wages now prevalent the world over. When the conventional necessities of life increase in cost, laborers' wages diminish, and suffering and discontent ensue. The following comparison will show that corn, as well as oats, is cheaper food than wheat:

Oats contain 19.91 per cent. nourishment; corn, 12.30 per cent., and wheat, 14.06 per cent. Each pound of nourishment from oats at 58¼ cents per bushel costs 9.33 cents; from corn at 67 cents per bushel, each pound costs 9¾ cents, while from wheat at $1.07 per bushel each pound of nourishment costs 20.61 cents. The corn crop of the United States equals the wheat crop of the civilized world, while 40 per cent. of the latter can not raise sufficient for their own wants. The deficiency in the United States wheat crop for 1876 exceeded the entire export of 1875, while our exports of wheat in 1875 were 10,000,000 bushels less than in 1874, showing that wheat cannot be claimed as a sole dependence from the rapidly increased population of the world. Corn must, before many years, be consumed as a partial substitute, at least, for wheat, and the better the quality of the grain and the more perfect the process of preparing it for food, the quicker will come the enlarged demand. This is in part confirmed by the fact that our exports of 1876 were 3 per cent. of our whole crop, while for the twelve preceding years they averaged only 1 per cent. of the corn produced.

Draining Land.

Clay soils cannot produce to the full extent of their ability unless underdrained. The ordinary routine operation of plowing has a tendency to form a compacted strata immediately below the cultivated or plowed portion, which acts as a basin in the retention of water; such soils are cold and late, because the water prevents the heat of the sun from warming the soil until the water has been removed by evaporation, which produces cold; so that in addition to the impracticability of early spring cropping of such soils, every summer shower cools the earth surrounding the roots of the growing plants, which thus sustain a series of checks in their progress to maturity.

These evils are removed by draining. Even the strongest clays are more or less permeated by veins of sand or gravel, sometimes by a layer of vegetable matter which has collected in a crack or fissure; but so long as there is no outlet beneath these conducting veins they are inert, but when underlaid with drains their action is at once apparent; the subsoil that previously held water like a basin now transmits like a filter, and as the water sinks the air follows; the rains descend freely through the soil, carrying to the roots the nutritive elements with which they are charged; the absorbing property is increased, it holds more moisture in suspension and crops remain luxuriant even in seasons of drouth, and superfluous water being removed from below, the heat of the sun is economized in warming the soil, instead of being expended in the evaporation of surface water.

Briefly it may be stated that some of the advantages of underdraining consist in the removal of stagnant water from the surface, and excess of moisture from heavy rains; the temperature of the soil is increased, which allows early planting of crops and hastens their maturity; it equalizes the moisture of the soil, so that crops are in a great measure exempt from the evils resulting from excess of rainfall on the one hand, or from a deficiency of rainfall on the other; the roots of plants are supplied with soluble food carried down by rains, as well as that which is rendered available by the decomposing influences of air and moisture on the surrounding soil, and on such manures as are applied for additional fertilization; the land is more economically worked, and cultivation suffers less interruption at all seasons, and as a consequence crops are increased to their maximum production, at least so far as they are dependent upon the physical condition of the soil, a factor of equal importance with that of its chemical constitution.

Leaks in Bad Cultivation.

At the meeting of the Pictou Agricultural Society, Prof. Lawson addressing the meeting on several points in scientific agriculture, said:

I do not advocate thorough draining and high cultivation to start with; the first thing was to find out the leaks in bad cultivation, waste of manure and waste of feed, and to stop them. Then more rapid progress could be made, for farming would become more and more profitable. By our present want of system it is impossible that it can be. The remarkable fact was brought out by several speakers that of late years there had been a great depreciation in the assessed value of farms in Pictou County. One gentleman instanced a similar depreciation in the fertile districts of Cumberland and the Sackville marshes, where thousands of tons of hay were annually sold off the farms, and nothing returned to the soil to keep up its fertility. In Ontario the wheat lands are giving out from the same cause, and in Massachusetts farms are yearly passing into bush land. Facts like these, which touch not only the material welfare, but the very existence, of our people, should be investigated by our statesmen as pointing to the greatest problem in political economy that remains to be solved on this continent.

Killing Canada Thistles.

I had on my farm a four-acre field covered with Canada thistles. I say "had" because I am convinced the present season's treatment has made it too hot for them and I shall see no more of them. The land was strong—"it takes good land to raise good thistles." One-half of the field was seeded, immediately after plowing and a thorough working with a two-horse cultivator, with soiling-corn. This was put in drills, 30 inches apart, with a large one-horse seed-drill—about 3½ bushels per acre. By the frequent use of the cultivator the space between the rows was kept clean, and directly in the row the few that have stuck up their heads look very yellow and sickly, shaded by the dense growth of corn. The remainder of the field was seeded heavily with Hungarian grass. Timely showers have made the season favorable for this crop and it has grown rapidly, smothering the disagreeable former occupants of the soil. I do not consider this so successful a mode of treatment as the former, because Hungarian grass grows so slowly on the start and the thistles have an opportunity to gain a foothold. The crop is nearly ready to harvest. Here and there, in looking over the field, a thistle is seen, but a stranger would never mistrust how foul the field was seventy days ago. At any rate what few there are will be cut before they mature seed.—*Cultivator.*

Sheep for Cut-Worms.

Experience has taught me that cut-worms never follow after sheep or bother on land where sheep have run the previous fall and winter. If you have no sheep of your own, let your neighbor's turn in, if you have land that is likely to be infested with them. If the ground is thoroughly pastured you need not have any fear of cut-worms

M. L. L. in Prairie Farmer.

Garden, Orchard and Forest.

Seasonable Hints—May.

BY HORTUS.

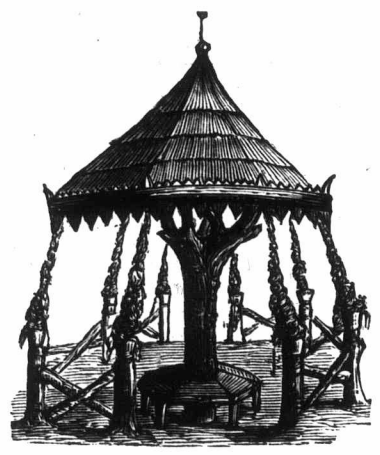
This month will be found to be the best time in the year for the planting of all kinds of evergreens; just as the season becomes too advanced for planting with safety all kinds of deciduous, fruit and ornamental trees, the time for handling evergreens may be said to commence, and be continued till the new growth attains a height of five or six inches; then a little more care will be necessary to keep roots from exposure to wind and sun. When planting it would be well to dip roots in thin mud; after earth is filled in, cover the ground with a thick mulch of litter, straw, &c. On very dry sandy soil give your trees a good watering occasionally. Aim to finish your planting before the very hot weather sets in, which commences generally about the 1st of June. Select some cloudy day to go to the swamps adjacent for a wagon load or two of such evergreens as there may be found growing; these plant in rows two feet apart and six inches in row. From this small nursery, which may receive such additions as time and inclination will allow, hedges screens and wind-breaks may be planted around the farm. When planting do not put any manure near the roots. Evergreens are impatient of manure, and if soil requires enriching, it will be better to use the manure as a mulch for the first season; this also applies to the use of manure when planting fruit trees.

A simple method of layering grapes to produce strong young plants, by those unacquainted with other means of propagating, will be found in the following: Make a trench with a hoe six inches deep, in a V shape; in this lay a cane from the vine, pegging it down securely at the bottom of the trench; leave it till the buds have attalned a length of four or five inches; then draw in enough soil, pressing it with the fingers around the young growth to within an inch of the top of growth. Again, in a week or so put in more soil, and continue doing so till the trench is level. In the fall, before the ground freezes, remove your layers, which will be found strong rooted, each eye making a fine plant.

Grafting may yet be practised till trees are in leaf.

The improvement and adornment of the grounds surrounding the residence should receive as much care and attention as would be spent in the erection of the building itself. Many will spend thousands for buildings, and grudgingly devote a few dollars for the purchase of plants, paying little attention to the landscape beauties of their premises, forgetting that by the judicious laying out of paths with the arrangement of flower beds, grouping of trees, &c., in accordance with the character of their residence, they will form a picture that will be an object of admiration and emulation to their fellow countrymen. For the planting of small borders or beds, the following neat growing shrubs will answer the purpose: Double Almonds, Prunus Triloba; Spireas in variety; Daphno mezereum, two colors; Forsythia; Tartarian Honeysuckles. These, intermixed with shapely specimens of spruce and an occasional group of roses, are sufficient for the adornment of small grounds. Paeonias, Phloxes, Lychnias, Delphisium and other strong-growing, hardy perennials, can be advantageously used in connection with the above. Once they are planted, very little labor afterwards is required to always have nice surroundings. The digging up of the grounds, and raking and levelling off the same, will be found agreeable occupation and relaxation from the heavier duties of the farm.

An odd, awkward corner of the garden will be a capital place for a small rockery, and if a little shady it will be all the better. Here the many beautiful ferns and creeping plants which may be found growing wild in the woods and along fence sides, can be transplanted safely; the graceful foliage of the ferns contrasts well with the irregular forms of the rockery.



For edgings of walks and beds, a foot wide of sod kept nicely trimmed can hardly be excelled; otherwise dwarf box, Tom Thumb cedar and white cedar form nice edging and may be kept as low with the shears as fancy may dictate.

As suggested in the last number of the ADVOCATE, many neat and ornamental rustic contrivances may be constructed with but little exercise of taste and labor. Select three birch poles about ten feet long and group in the form shown in the

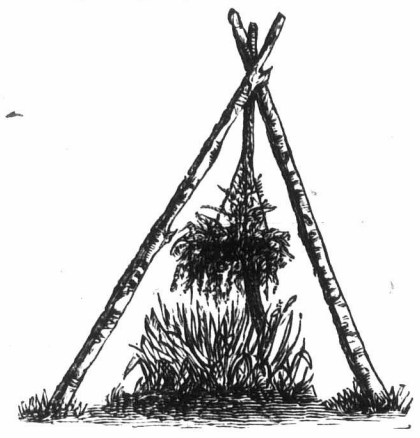


illustration. From the centre at the top may be suspended a basket filled with plants such as white Petunia, &c.; beneath this arrange a small bed of rich soil, filled with Gladiolus or other scarlet flowering plants. The idea may be carried out, *i. e.*, a camp fire. Another object may be composed as follows: Select an old stump, cut a flour barrel

in two and into the half fill earth; plant a geranium for centre, and around the edge place such plants as German ivy, so as to trail over edges; place this on your stump, and you will be pleased with its quaint and simple beauty. It will look just as nice when the plants are grown as if you had spent $20 or $30 for an iron vase.

In the vegetable garden most of the seeding and planting will be well advanced by this time. Whatever seeding there is yet to be done, remember to have the soil in right condition before sowing. If very wet the ground is sure to bake if worked upon, and it is far better to wait even till June than be in a hurry now and have your labor and seed wasted. If the soil is very dry, when sowing be sure to pack it well after sowing with the back of the spade or by the use of a hand roller; treading the soil well in the sowing of ordinary vegetables will greatly facilitate even germination. The cultivation of the cabbage has been greatly affected of late by the ravages of the worm. Although many remedies are in vogue for destroying this loathsome pest, we find the best to be plenty of manure and water A patch of cabbages grown in a moist, rich place will be found to grow so luxuriant as to defy the worm, which must turn to those grown in poor, dry places for sustenance. Many thousand plants of tomatoes, peppers and such plants as are transplanted are destroyed by being cut off close to the ground by the cut worm. This sly individual works by night and hides in the soil around the base of the plant during the day. Especially on light soils is it found to be very destructive. A remedy for this pest is to wrap a small piece of paper once around the stem of the plant, so as to extend about an inch or so above and below the line of the soil.

[If shrubs such as those named cannot be conveniently had, evergreens, such as spruce, cedars and balsams can be procured from the woods. They should be transplanted when small, and those selected that are branched closely from the ground. They can be kept neat and will be highly ornamental. There are also to be procured from the woods native shrubs well worthy of more attention than is generally paid to them.—ED.]

Superphosphate in a Garden.

About a year ago I purchased two hundred pounds of superphosphate to apply on my garden. I think it will be of some interest to you to know the results. I planted one-fourth of an acre with potatoes, in hills two feet four inches apart each way. In every hill I put about one-half of a garden trowel full of superphosphate and two single eyes of the potatoes. In about two hundred and fifty hills I dropped the fertilizer and covered it very little before I dropped the seed. In all the rest of the hills I planted the seed with the fertilizer together. I hoed them twice and the harvest was sixty-two bushels, although I did not cut more than one bushel for seed. The kinds I planted were Extra Early Vermont, Snowflake, Brownell's Beauty and Compton's Surprise. I could not see any difference in the yield of the potatoes where the seed was dropped with the fertilizer, or the fertilizer dropped first, covered a little and then the seed put on the top of it.

I had a most remarkable result from the use of superphosphate on cabbage. I transplanted two hundred and fifty plants of Brunswick improved, but before I set out the plants I dropped in each place a handful of fertilizer and mixed it with the soil. The growth was so rapid that I was compelled to pull the cabbage early in September, because it burst open and the stems began to d cay. I had the same rapid growth with onions, sweet corn, beets, &c.—*Cor. Husbandman.*

Cultivation of Apples.

The following valuable suggestions are from an essay by Prof. Beal, of the Michigan Agricultural College:—

A young tree must be treated very much as you would treat a hill of corn. Hoed crops will answer in a young orchard. Sowed crops will do much harm to young trees. It is a good plan to keep young trees mulched. It prevents the rapid evaporation of moisture from the soil, keeps the surface mellow, prevents the soil from freezing and thawing in winter, and becoming overheated in summer. Whether to cultivate or not can be told by the looks of the trees. If the color of the leaves is good and the growth all right, and the trees bear well of fine fruit, they are doing well enough even in grass. To judge of the condition of an apple tree is much like judging of the condition of sheep in a pasture.

Seasonable Hints.

In order to grow good fruit we need only repeat in a general way that trees require as much food as a crop of corn or potatoes; but it is very important to keep the feeding roots at the surface, and therefore that the very best way to manure fruit trees is by surface dressing.

Manuring of grapes should be regulated by the nature of the soil. If it be damp—in most cases a bad condition for grape growing—stable manure in great quantities means diseased vines. In dry ground it has a beneficial effect. Many persons on small places have grapes in damp ground, or can have none. They must take care to keep the roots near the surface; never crop the ground about them to destroy the small fibres, if it can be avoided; and even good may often follow, when the vines seem failing, to carefully follow up the roots, lift near the surface, and encourage, as much as possible, those remaining there. Wood ashes, bone dust and such like fertilizers are best for grape vines in low ground.

All fruit trees like a rather dry, rich soil. On a cold, clayey bottom, diseases are usually frequent. Do not plant deep; cut off tap roots, and do all you can to encourage surface fibres. Surface manuring is the best way of doing this after the tree is planted. Do not allow anything to grow vigorously around your trees the first year of planting, nor allow the soil to become hard or dry. Let trees branch low, and prune a little at transplanting.

Pruning of fruit trees, when required, should be proceeded with at favorable opportunities. We write "when required," for in our climate more injury is done by the knife than by the neglect to use it. Gooseberries, for instance, are usually ruined by pruning. In Europe it is customary to thin out the centre well to "let in the sun and air." Here it is the sun and air that ruin them by inviting mildew; and so the more shoots the better. Our country farmers are the best gooseberry growers, where weeds run riot and grass and gooseberries effect a close companionship. Wherever, in fact, the gooseberry can find a cool corner, well shaded from the sun, and with a soil which is never wet, and yet by no means dry, there will gooseberries be produced unto you. The English kinds mildew so universally as to be almost gone out of cultivation south of the St. Lawrence. Nor, indeed, is it to be so much regretted, since the improved seedlings of large size and fine quality, raised from the hardier American species, are becoming known and their merits appreciated by growers.

The rule, in pruning grape vines, is to shorten the shoots in proportion to their strength; but if the advice we have formerly given has been attended to, there will be little disproportion in this matter, as summer pinching of the strong shoots has equalized the strength of the vine. Those who are following any particular system will, of course, prune according to the rules comprising such system. As a general rule, we can only say excellent grapes can be had by any system of pruning, for the only object in pruning in any case is to get strong shoots to push where they may be desired, or to increase, with the increased vigor of the shoot, which pruning supposes will follow the act, increased size in the fruit it bears.

Perhaps no insect has given the apple orchardist so much trouble as the codling moth, and any tactics that will give victories over this long triumphant enemy will be hailed with shouts all along the line. Hear what Mr. A. G. Tuttle, for many years President of the Wisconsin State Horticultural Society, and a leading nurseryman of that State, says. Mr. Tuttle is testing over 100 varieties of Russian apples; and what he says is that he has discovered a remedy—or rather a trap—for the moth, that has proved to be a complete success. This is the trap:—

Take shallow pans or saucers, and place some strong apple vinegar in them, and hang among the branches of the trees. The smell of the vinegar attracts the moth, and they are caught and drowned in the same.

Mr. Tuttle says he has caught over forty codling moths in one of these pans in a single night. He counts it a great success. He says he notified C. Downing, the leading authority on fruit in this country, of this matter, and of this success; and that Mr. Downing advised him to disseminate the information through the medium of the press, as it would be of immense benefit to the fruit growers of the country. Certainly this is important, if true.—*Coleman's Rural World.*

The Value of the Earth-Worm.

The common earth-worm, though apt to be despised and trodden on, is really a useful creature in its way. Mr. Knapp describes it as the natural manurer of the soil, consuming on the surface the softer part of decayed vegetable matters, and conveying downwards the more woody fibres, which there molder and fertilize. They perforate the earth in all directions, thus rendering it permeable by air and water, both indispensable to vegetable life. According to Mr. Darwin's mode of expression, they give a kind of under tillage to the land, performing the same below ground that the spade does above for the garden, and the plow for arable soil. It is, in consequence chiefly of the natural operations of worms that fields which have been overspread with lime, burnt marl, or cinders, become, in process of time, covered by a finely-divided soil, fitted for the support of vegetation. This result, though usually attributed by farmers to the "working down" of these materials, is really due to the action of the earth-worms, as may be in the innumerable *casts* of which the initial soil consists. These are obviously produced by the digestive proceedings of the worms, which take into their intestinal canal a large quantity of the soil in which they feed and burrow, and then reject in the form of the so called casts. "In this manner," says Mr. Darwin, "a field manured with marl has been covered in the course of eighty years, with a bed of earth averaging thirteen inches in thickness."—*Encyclopedia Brittanica.*

How Grapes Feed.

A curious, interesting and suggestive experience is thus recorded in *The Country*—the attractive journal of rural pastimes and pursuits lately started under the editorship of Wm. M. Tileston:

We had planted a row of Delaware vines, one of which was placed about three feet from a hole in which a quantity of bones had been buried. The vines all made a healthy growth, but the one referred to was specially vigorous. This, however, we attributed to its general vigor, and not to any special influence, having forgotten all about the buried bones. But one day, after digging near this hole, we noticed that our healthy, vigorous vine was wilting, and in a few hours it was as completely wilted as if it had been pulled up by the roots and exposed to a hot sun. Unable to account for this strange circumstance, and suspecting some new enemy, we dug it up, carefully following all the roots to their extremities.

To our surprise, however, there was only one root of any consequence, and this led directly to the aforesaid hole. Following it up, we came to where we had cut it, and there taking up the severed end and following that, we found that the pit full of bones was one mass of roots. It was evident, therefore, that when first set out one of the roots had pushed off in the direction of the bones, and on reaching them it had found such a supply of nutriment that it alone was competent to carry to the vine all the food it wanted. The other roots therefore dwindled away, or at least made but a trifling growth, and the vine, depending wholly upon the single root just described, perished when it was cut off.

We may add that the root was almost bare of fibrils or branches in its course from the vine to the bones, but once there it divided and branched in every direction, running into the interior of the hollow bones and clasping both internal and external surface with a perfect network of fibrils. To us it showed several points. Bones are evidently one of the best manures for the vine, and as we wish them to last for years, they need not be broken up. As it is well to have the roots of the vine spread over a considerable space, bones or other very rich manure should not be placed in holes, but distributed through the soil.

Destroying Tent Caterpillars.

As the season is near at hand when the caterpillars or apple-tree worms will hatch out, build their tents in the crotches of the apple and other fruit trees, and be ready to feed on the tender leaves and shoots as they come out, I propose to give your readers the cheapest, simplest and most efficient remedy for their destruction. A close observer may now find the eggs of these insects—no larger than mustard seeds—in little rings or patches on the limbs of the trees, where they were deposited by the parent butterfly last summer; but most people will be likely to overlook them until after they hatch out and form nests in the crotches of the branches or limbs of the trees. In this, their caterpillar form, the best time to find their homes and to find them at home is in the early morning, before they start on their daily tramps up the limbs to feed, and when the dew on their nests gives them a sparkling appearance.

Having found them, make a moderately strong solution of soap or soapsuds, using a quart of soft soap to two gallons of water; or, if soft soap is not at hand, use its equivalent in dissolved bar soap, lye or potash. Apply this solution to the nests or tents of the worms with a swab of rags tied to a pole of suitable length for reaching them. With care the nests can, in most cases, be broken open at the top and filled with the suds or lye-water from the drippings of the swab. By this method all the worms, which lie closely nested there, will get soaped before they get out. Or the nests may be wiped out with the wetted swab, and such worms as have not been touched may be given a dose—a drop is sufficient for each—and it may be applied at any time and under all circumstances.

The more freely this wash is used about the trunks and limbs of apple trees, the better for them; worms or no worms. No man who tries this method of ridding his trees of these disgusting and destructive insects, will ever be guilty of using burning straw, paper, kerosene oil, or any of the injurious means commonly resorted to.—*H. S., in Country Gentleman.*

Reply to J. L., Hamilton post-office, Ontario.—Grafting wax is made of wax three parts, resin three parts, tallow two parts. These are to be melted together in an iron vessel kept for the purpose, at as low a temperature as will serve. It may be applied with a brush to wounds. When used in grafting it is more convenient on cloth. Old cotton, calico or other fabric that will tear readily, is torn into strips, made into rolls, soaked in the hot wax until thoroughly penetrated; the excess of wax is then drained off, and when cool is ready for use.

Poultry Yard.

Guinea Fowls.

At a late meeting of the American Institute Farmers' Club a talk was had regarding the Guinea fowl.

J. S. Scoville, Hadley, Saratoga Co., N. Y., sent word to the club how to get rid of the potato bug. He said: Let every farmer keep Guinea hens. They will destroy all of the bugs. They eat them as fast as hens eat corn, and furthermore, will keep all bugs and insects of every kind off garden vines. Mr. Scoville estimated that one hen to the acre will protect the potatoes. He also argued in favor of these fowls that they will not scratch like other kinds, or harm the most delicate plant. Their eggs are valuable, and they lay oftener than the common hen; and lastly, they are valuable as a weather indicator, for just before a storm they set up a terrible screeching, which is kept up until the storm is upon them.

President Ely corroborated what had been said about the Guinea fowl, so far as their not harming the garden is concerned, and added that many farmers prized them because their screechings kept hawks away from the poultry yard.

Dr. Heath concluded the evidence regarding these fowls' harmlessness to plants, etc., by calling attention to the fact that large flocks of them are kept in Central Park. He thought if it is indeed true that they will dispose of potato bugs, the statement should be promulgated throughout the country. He said that the bugs had made their appearance in large numbers on Long Island, and that many of the farmers are apprehending unpleasant circumstances. He hoped farmers having any information on this subject would send in further testimony.—*Colman's Rural.*

Eggs all the Year Round.—Give your hens a reasonable share of attention; furnish suitable accommodations; get and keep the right breed; save only the earliest hatched pullets for laying; furnish as great a variety of food as possible; feed as much as they will eat; give green and animal food of some kind in winter; keep the hens quiet and comfortable; don't allow them to be worried or frightened; keep clean and fresh water at hand always. These rules intelligently applied, says Prof. Corbett, will secure an abundant supply of eggs the year round.

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.

Orchard Grass.

SIR,—You would much oblige if you would tell me the best time and best way to sow orchard grass, and how much seed I should sow in a half acre. P. R., Tyrell.

[We quote the following from the *N. Y. Tribune*, which coincides with our views :—"Having had a number of years' experience with orchard grass, I will state some things I have learned about sowing it and growing it. In the first place, it is so good a grass, and lasts so long in the ground, that it pays to seed it well to begin with. I have seeded several pieces, and done it at different times of the year, and have found that what was sown the latter part of August did much the best; so much so that I would not depend on any other time of seeding, and when the ground is once well stocked with it, it will seem to run out any other grass or clover and permanently occupy the ground for a long term of years. I would recommend manuring the lot this spring; then, if the soil is strong enough to bear it, plant to early potatoes, that can be dug by the 1st of August, and the ground fitted to sow to orchard grass by the middle of the month. Or, if it can be afforded to sow it to peas or oats to plow under, it can thus be fitted for the grass early, as before stated. If a good seed-bed is made and the season favorable, two bushels will seed an acre very well to the grass alone, and not in connection with any grain crop. Sown at this time of the year the weeds seldom grow to interfere with it, and it obtains so good a start as to stand the winter well, and yield a full stock of grass for mowing the following year (or following spring, I might say), for it gives its best full crop for mowing about the last of May, after which it would be best to use as pasture. It should be sown from the 15th of August to the 1st of September, and I have sown clover with it at the same time, which did well for a year or two. I have also sown about two bushels of oats with it to grow up with the grass in the fall, and stand for a winter protection to it, and then its deadened leaves will act as a mulch over the ground in the spring, helping to give it an early start."—H. IVES, Genesee Co., N. Y.]

Varieties.

SIR,—It has been said that "variety is the spice of life"—so though my productions may not be very important, they may add to the variety, should you deem them worthy of a place in your interesting paper.

In your last number, on "Flax Culture," you say : "About twenty years ago the cultivation of flax may be said to have commenced in Ontario. Before that the only flax grown in the country was some small plots sown by the colonists for home use."

It is in reference to these "old times" I wish, by your permission, to make a few remarks.

In those olden times it seemed as indispensable to provide clothing and bedding as to raise wheat for bread, and consequently, when the price of cotton was fifty cents per yard, and scarce even at that, as was the money in this then wooden country, we, the pioneers, calculated as much on raising and manufacturing flax for summer clothing, bedding, bagging, &c., as we did of utilizing the wool from our sheep (spun by our women) for our winter use; and as we accommodated ourselves to our circumstances, we lived in simple, frugal style—were healthy, happy and independent, not even feeling the want of the fabrics now manufactured in our own country, and still more imported and piled up in the stores of our cities, towns and villages all over our now improved country. What changes time has wrought ! I have myself raised and cleaned hundreds of pounds of flax by hand, and I am aware there are others, I presume thousands, still living, of similar experience, but improvements have succeeded each other and perhaps steam has been the greatest agent in revolutionizing the world.

I have seen the day when there were not even steel springs to ride on; now the power of steam drives the cars on the rails with almost lightning speed, and instead of two mails passing through from Quebec to Maldon in a year, as at a former time, it now passes through in a few days by the power of steam. Cotton, formerly manufactured and woven by hand, and brought here and sold at fifty cents per yard, is now manufactured and woven by steam, and sold here at ten cents per yard. Traveling by land or water is now accomplished with speed by steam, and its power has almost superseded the hand work of the mechanic, and what was formerly done in weeks or months by hand is now performed in a day or two by steam power—and hence the over production at times.

I am aware that in these later times our Government has expended considerable sums of money in employing agents to pass through the country to instruct the farmers how to raise flax, but I then thought that it was only a waste of money. But as improvement is still the order of the day, I hope to see, ere many years pass by, some enterprising individuals or companies erecting factories for supplying at least the coarser linen fabrics, cordage, &c., now imported, thereby affording to farmers the necessary inducement to go again into the flax-raising business, to some extent, by the prospect of a home market, thus retaining our money in the country and affording employment to our mechanics; but I never expect to see the flax-raising business so generally introduced into this country in proportion to the population as it was formerly.

In a back number of the ADVOCATE I noticed reference being made to cellars built rat and mouse proof.

My cottage was built with field stone in 1857. The cellar was dug eight inches on each side larger than the house, and five inches deeper than the bottom inside; this trench was dug eight inches into the cellar all around, and then flagged or laid with flat stone so close that a mouse could not get through. On this pavement the wall was built, having a projection of eight inches both outside and inside, so that mice or rats going down next the wall, as they not unusually would do, would come on the pavement or eight-inch projection, and not knowing how to get round it, would return out again. The wall and every part of the house was carefully built, so that no place of harbor should be found for these vermin. And no mouse or rat has ever gone through or under the wall. Mice have at a few different times got in the cellar by the door being carelessly left ajar in the evening, or the screen being left out of one of the windows when the sash was up, but as they found no place to harbor, they were soon caught; and we have no rat or mouse in the house, cellar or garret.

P. F., Burlington.

Turnip Culture.

SIR,—As the time is drawing near when farmers in general begin to think of stirring their land for roots, I thought that a few practical hints as to the best mode of cultivating turnips might not be out of the way.

For several years past I have been very successful in this line of farming, and my success is owing to the following rule of cultivation :

In the first place, I plow my ground in the fall, and in the spring, if it is old land, I give it a good covering of well-rotted compost, which I plow under. I then harrow and roll it, and let it lay until I want to sow my turnips.

When I want to sow I plow the ground very deeply; then cultivate, harrow and roll it until it is free from lumps of all sorts. If stony, I take good care to pick them all off, as they are a nuisance when sowing. I generally put about a pound and a half of seed per acre, in drills about 24 or 28 inches apart.

I always roll after sowing the drills, if the ground is any way dry, so that it will retain the moisture and thus throw a quick, healthy growth. Once the plants appear, I watch to see whether the bugs cut any of the leaves, and if they do, I take my scuffler and thoroughly work the ground between the drills, which is sure destruction to the pests.

When the plants are large enough to thin, I again run through them with the scuffler to cut up any weeds or thistles that may have sprung up between the drills. I then thin them to about 10 or 12 inches apart.

Between haying and harvest, if time allows me, I again cut out the weeds with the hoe, and scuffle the ground, in order to keep it loose, and if the ground is not thistly this will suffice; but if very thistly I again take the hoe about the middle of September, and if the thistles are well cut out this time the ground is in first-class condition for a crop of spring wheat the ensuing year, which will be free from thistles, wild oats or any other weeds with which our West Gwillimbury farms are infested to so ridiculous an extent.

New soil requires the same process of cultivation, with the exception of barn-yard manure, in place of which I supply lime or ashes, which enrich the ground, as well as to do away with numberless grubs which would otherwise destroy so many young plants, and thus hinder the evenness of the crop.

I also heard of another mode by which the plants may be preserved from the ravages of the fly, and which I mean to give a trial. This is simply to put about a tablespoonful of turpentine to a pound of turnip seed.

I cannot say as to the verity of the latter mode, but the former process is a fact of experience, and if followed out would do away with the report of so many failed crops of turnips. I would like this to be laid before the large number of intelligent readers of the ADVOCATE through its columns.

S. W., Lloydtown.

SIR,—Now that Canadian horses bring first price in the English market it may interest your readers to trace the successive steps by which we have attained that celebrity.

Early in the settlement of Upper Canada it was enacted that every stallion be assessed at $1,000, a sum then equal to two good average farms, thus insuring a good class of sires.

The first of these were the Foxhunters, Postboy and Wild Arab, the stock of the latter better known as the Nimrod breed. Alibey, Prospect, Manolepen, Trueten, and other thorough-breds. For general purposes, Sir Archer, imported from Virginia with a drove of excellent mares and geldings, Royal George, Brilliant, Duroe, Tamworth, Anglo Saxon &c.; and for heavy draught the Clydes, and some French from the Lower Province.

The arrival of the military gave an impetus to the raising of riding and buggy horses, and since then the continual drain of our best animals rather lowered the standard, till the American war swept away the refuse. To prevent the occurrence of a similar depletion, and to insure the continuance of the success already attained, I would suggest that every entire horse, over two years old, be taxed $50, as no inferior animal would then be kept to deteriorate our now far-famed breed of horses. CENTOUR.

SIR,—I sometimes think I should like to offer a little correspondence occasionally. I have had twenty years' experience as an agriculturist, and observe closely many things in connection therewith. I have adopted a system of drainage which I find very satisfactory after several years of trial, and which, I feel certain, would afford satisfaction in very many cases where better material cannot be readily obtained. I have some 4,000 feet of this style of drain in use, and some of it laid 10 years, and to all appearance as good as when first laid down, except, perhaps, a few feet from the outlet where the lumber is exposed to the air, and which can easily be renewed when necessary.

My plan is as follows :—I get Hemlock lumber, (which should be cut out of green logs), cut into the following widths, viz : 3, 4 and 5 inches wide, and 1 inch thick. I nail the 3 inch and 4 inch together at right angles, using about 6 nails in the 12 feet length. I then invert them on to the 5 in. piece and nail on each side sufficient to hold together, about 4 nails on each side. The shape is something like this ⊢ and gives an internal area of say 4 square inches more or less. Now a man and boy with a hammer and nails at each end, and a saw at one end to saw off any uneven lengths of lumber can readily make from 30 to 40 of the 12 feet pipes or tubes in an hour, then cart rails to your drain and lay them alongside the ditch, which requires to be dug straight to facilitate the laying, and also to have an even bottom. Now, all being ready, two hands can lay them in very rapidly, keeping the joints well butted together, and if any joints are too open, lay a small flat stone or chip over it to prevent the rail from washing down, then cover in the soil, and my word for it,

you will have a drain good for 25 years, if the lumber is sound, and the work well done.

I think the Ontario Government made a mistake in confining the material to tile, in the late drainage act. Tiles, if not well burned, are a very perishable article, and in this country where the frost penetrates so deep in the ground, soft tiles will give out, perhaps, the first spring, causing the drain either to choke or burst up, and run over the surface. If well burnt, I have no objection to raise, only the expense of purchase and freight to distant localities.

I find I have already drawn out to greater length than I intended, and, as I fear, I shall only be a nuisance as a correspondent, I think I had better subscribe myself. J. H., Newford.

[Such correspondence is never considered a nuisance, it is the most valuable, plain, practical, useful suggestions from farmers that have put in practice their plans and found them beneficial, are most acceptable. The above plan will, we have no doubt, be put in practice by many of our readers. We shall be pleased to hear again from J. H.]

Compton's Early Field Corn.

SIR,—As I always take a great interest in any new varieties of seeds that are recommended, last spring I procured a small quantity of Compton's corn from the well-known seedsman, James J. H. Gregory, of Marblehead, Mass. This new variety was originated by Mr. Compton; it is a seedling of the Dutton, and resembles that variety somewhat in appearance, its main point of superiority being earliness.

The corn was planted on the 21st of May and given ordinary cultivation. The soil was a gravelly loam, and had been a clover sod, plowed in the fall, and had no manure of any description. A frost early in June cut the corn and retarded its growth for a couple of weeks, but after all it was ripe and fit to cut the latter part of August. In regard to its yielding qualities, it far surpassed our common corn. There was one-sixteenth of an acre in the land occupied by the corn; it yielded eleven bushels of ears, or at the rate of 176 bushels per acre. It was the finest sample of corn I ever saw, many of the ears being from 13 to 15 inches in length, and well filled out to the tips of the ears. Every one who saw the corn pronounced it the finest they had seen. A Yankee pedlar came along one day, and I showed him some of the finest ears. He would scarcely believe that such corn could be raised here in Canada. He said it was the best corn he had seen since he left Indiana four years ago.

One disadvantage of this new variety of corn is that the stalks are rather slender in comparison to the ears. Before fully ripe it broke down badly from weight of ears. It is a well known fact that many of the seasons here in Canada are rather short for the successful raising of Indian corn. With this new variety there will be no inconvenience from this source, as in our shortest seasons it will have ample time to become fully developed before any frosts, for it is decidedly the earliest variety of large eared field corn in cultivation. When earliness alone is taken into consideration, it is a very valuable acquisition to the farmers of Canada; its superiority in this respect alone can scarcely be over estimated. Every farmer who raises corn should procure a small quantity and give this new variety a trial the coming season.

My Snowflake potatoes were a splendid good crop, of medium size and with very few small ones. In productiveness they surpassed the Early Rose, and for good qualities as a table potato there is no variety can equal it. I planted one-half peck of the Early Ohio potato, and raised seven bushels of very fine potatoes. They were of a good fair size and of first-rate quality.

W. G., Thamesford.

SIR,—In looking over your paper I find enquiries about disease in young turkeys, and I thought I would just send you word as to how I treat them when afflicted with disease. I dissolve a little asafœtida in water and mix in food—enough to not make it too disagreeable to be eaten, as it has an unpleasant odor. I never allow them out in dew or rain, and a few doses is a sure cure. I never lost but one after I used it, and that was too far gone. For vermin, I put about the size of a grain of wheat of blue ointment under each wing, and some on the head.

I find young turkeys do better with the turkeys than hens, as they find food more suitable for the young ones. SUBSCRIBER, Binbrook.

SIR,—In reply to "W. P.," East Zorra, in your No. for March, concerning porkers, I have been beating it for a number of years. In 1874 I killed one pig 7 months and 22 days old, which weighed 347 lbs. In 1875 I killed two pigs 8 months old, which weighed respectively 346 and 363 lbs. In 1876 I also killed, but cannot give weights. In 1877 I killed two pigs 7 months and 16 days old, weighing respectively 324 and 336 lbs. All dressed weights. They were of the Chester White breed.

A. D., Picton.

Short Notes.

A RIVAL FOR WHEAT.

SIR,—I saw in your last number an article under the above heading, and will try to tell you a little about broom corn and broom corn seed. Broom corn grows best on rich alluvial soil, or on the vegetable mould of the prairies. In Massachusetts it is raised on the banks of the Connecticut River. It is a very uncertain crop in this climate, being very easily injured by late spring or early autumn frosts; sometimes, however, it does very well.

The seed, when ripe, is very nutritious and is good food for poultry, or for horses when mixed with oats. It is of an oily, heating nature, and will make a horse's coat shine. I never saw it used for human food, but have heard that it makes good pancakes when ground. A good crop of broom corn will yield a large quantity of seed, if allowed to ripen, but the brush would not be worth more than half what nice green brush would bring in the market. Brooms made from ripe brush wear well enough, but are not so saleable. There is a good deal of work about a crop of broom corn, as the seed must be scraped off without injuring the brush, and the brush must be dried under cover.

I do not wish to discourage your readers from experimenting with broom corn; yet, although I have been engaged in the broom business for many years, and have had a good farm at the same time, I have not raised a pound of broom corn during the last seven years.

WASHING YOUNG FRUIT TREES.

I have over a hundred young fruit trees, and they are noted in the neighborhood for their healthy, sleek appearance. I wash them every year with a mixture of weak lye and soft soap, or when I cannot get lye handy, I buy a pound box of concentrated alkali at the drug store, dissolve it in two pailfuls of soft water, and add about a quart of soft soap. This will be enough for 100 young trees, six or eight years planted, or 200 newly planted trees. When washing the trees I use a swab of rags tied on the end of a short stick.

A very good thing for trees, too, is to sow dry ashes in the tops of them when the trees are wet after a shower; the ashes cleanse the bark, and when washed down to the ground, are a good fertilizer for the roots.

When you buy young trees, avoid those that have been forced to a big soft growth in rich soil, for when transplanted they are apt to become stunted, and sometimes die outright; while trees that have been raised in a comparatively poor soil will grow much better.

Mulching fruit trees with coarse, strawy manure is of great benefit to them.

To keep mice from barking young trees, make a little sugar-loaf mound of earth around the stem in the fall. J. A. S., Burford.

Apple Tree Blight.

SIR,—Can you inform me through the ADVOCATE or otherwise what is the cause of my orchard apple trees dying and the remedy? The disease starts about the base of the limb, the bark of which turns black, and the leaves and fruit on that limb begin to die, and so on until all the tree dies. The disease appears to go from one tree to another, so that I am likely to lose all my orchard.

DANIEL LAWSON,

East Fremone, Sanilac Co., Mich.

[It is a species of blight very similar to the fire blight on the pear tree, and like it, the best remedy is the prompt use of the knife, removing the diseased portions as soon as the discoloration appears.]

D. S. Sinclair, of Paradise, Annapolis Co., Nova Scotia, wants to know the price of a good Ayrshire cow. Some of our breeders might reply.

SIR,—As I promised, I will now endeavor to give you an idea of our cows, if you think it would be of any use to your readers. I will give a statement of one cow and two heifers—three-year-olds. "Filly," the cow, and "Beauty," a heifer, came in April 25th. "Flory" calved July 7th; she miks well yet. We keep them in a comfortable stable in winter, and fed mill-threshed straw both winters; salt regular; water once and twice a day, just as they may require. We fed them one pailful of cut roots with about half a gallon of mulley once a day, until the middle of January; gave the salt with the roots then; in summer in troughs in the field.

Fed the first two calves and butchered, selling the first and using the second in quarters; sold for $2, and sold both skins for 40c. each. Raised the last calf; being a bred one, it cost $10 by New Years, and is worth that now; sold first made butter fresh at 20c.—100 lbs.; sold second salted in tubs and jars at 20c.—312½ lbs. Took milk to the cheese factory—2,467 lbs.; received $25.50; cheese sold October 20th at 12⅛c. per lb. Sold last made butter in rolls—96 lbs., at 20c.; found it about the same at home and factory at these prices. Do not know how much we used, as we just take cream and milk as we require them, and use our butter fresh as we need it. Have made a stone jar of butter to use until the cows come in, which will be in May this year, as they pay best at that time; being near the grass they never fail any in milk. I have also got a flour barrel packed full of cheese, which I made since fall for next summer's use. I strew bran amongst it to keep moist.

To the above account of my dairy I have to add $12 for pork fed on the milk. The total receipts in cash are as follows:—

Veal, $2; skins, 80 cents; calf, $10; butter, $101.70; milk to factory, $25.52; pork, $12.20. Total, $152.22. We have kept one hog to eat the waste, and some of the pork was packed.

MRS. S., River Raisin, Ont.

SIR,—My only apology for my long silence is that I have been away from home most of the winter. I have, during that time, made a very complete tour of the State of Michigan.

It has been a winter long to be remembered from the mud embargo laid upon all business of whatever character, in the State.

The disaster has fallen most heavily, perhaps, on the lumber districts. There has been a perfect dead stand-still, which added to the already financial pressure so long hanging over the country, has seemed to have been "the last straw that has broken the camel's back."

I am pleased to report, however, that wheat never showed a finer prospect for a large crop, and with the remaining possibility of a vigorous attack from the insect, there seems to be no fears of a failure.

The spring has fully set in a month earlier than usual. The fruit prospects were never better for Michigan than they are to-day, as compared with any season in the memory of the earliest inhabitant.

The Senawer County Farmers Club is still growing in its interest and usefulness, embracing in its membership some of the finest agricultural talent in the county. S. B. M.

Adrian, Mich., March 21st, 1878.

THE CLIMATE OF MUSKOKA.—From the many inquiries I have received about Muskoka I find the majority of those who write particularly ask if our winters are very severe, and if the snow reaches a great depth here, some supposing that Muskoka must be in the Arctic regions. I have lived five years in the district, and find that the winters here are much less severe than in Lower Canada. We seldom have more than two or three days during the winter when the thermometer reaches 10° below zero, and the snow never reaches more than four feet in depth, and very seldom that. From two to three feet is the general depth, and during the past two winters it did not exceed 18 inches. This winter has been an exceptional one. The ground was bare till the close of the year, and plowing was carried on until Xmas. Now we have hardly enough snow to make good sleighing, and many of the settlers are busy under-brushing. A large influx of new settlers to this locality is expected during the next few months.

JAMES ASPDIN.

Aspdin, Muskoka, Jan'y 14, 1878.

Incubation by Hot Water.

SIR,—As I am going into the raising of poultry on rather a large scale, and having seen some reports of the hatching of eggs by hot water, I would feel obliged by your letting me have what information you can in your valuable paper concerning this novel method.

A FOWL FANCIER.

There was never a time when the rearing of poultry was attended with greater profit than now. Prices are enormous when considered in the light of those which ruled only a few years ago, and a considerable addition might, therefore, be made to the income of almost every farmer by increased attention being paid to the poultry yard. That much greater attention is being paid now than even a few years back all of us who know anything of modern farming are well aware: but neither our farmers' wives nor other people, who know something of agriculture, and practice it, are enough acquainted with the efficiency of modern apparatus for hatching. Several methods have been got out for effecting this purpose. The most recent, and, as it should be, the most simple, and, as we are inclined to think it will prove, the most effective method is that of Messrs. Thomas Christy & Co. Their hydro-incubator consists of a cistern of hot water surrounded by a thick lining of cork dust or other non-conducting material, and the only attention required is to replace a portion of the hot water once in the morning and once in the night, and to turn the eggs, which are in a drawer beneath the cistern. The incubator resembles a wooden box with a drawer at foot. This drawer has a real, and also a false bottom, cool air being admitted between them; and in the false bottom are a few slits, covered by a loose sheet or lining of felt. On this lies the charge of 100 eggs, kept in a warm atmosphere by the radiation from the hot water cistern immediately over the eggs. Thus the eggs are warmed from the top, and a sufficient amount of moisture is self-applied from the condensation of the cold air on the felt below. The cork or cork-dust lining around the cistern, except at the bottom, acting as a non-conductor, keeps in the heat. They have likewise got out an apparatus for rearing the chicks, by the use of which the chickens can be much more effectually reared even than by that bugbear to poultry keepers, the "brooding" hen, notwithstanding that her ladyship will take charge of two dozen young chicks at once, and care for them without ever having sat on the eggs. It is said that "an incubator and rearing mother are now essential machines on every farm." Half an hour in the morning and twenty-five minutes in the evening is sufficient time to expend in attending to the artificial rearing we have described. Ducks, turkeys and game, as well as ordinary farm-yard poultry, can be raised with certainty under Mr. Christy's systems. A hydro-incubator and a rearing mother can be supplied complete, with a set of thermometers and ready packed, for less than £8.

The Grape Vine Flea Beetle.

SIR,—I wish to ask a question about my grape vines, of which I have nearly a hundred. A week ago I noticed bugs on them, eating the buds and causing them to bleed, and now there are not more than five or six that have any sound buds on them. I have gone over them and taken off two or three hundred in one day, yet the number increases. It is a small bug with blue-green cased wings, with a pair of transparent wings underneath. Can you or some of your numerous readers tell us in your next number the best way of destroying them? I have raised grapes for twenty years, and was never troubled with them before. Will hellebore be of any use, and will the vines bud again provided the bugs can be destroyed? A reply will much oblige.

S. F., Sutherland's Corners.

[This beetle is known as the Grape Vine Flea Beetle (*Haltica chalybea*). It is very destructive sometimes to the buds of the grape vine, eating out the centre and destroying them. Syringing the canes with a mixture of Paris Green and water, one teaspoonful to a pail of water, would no doubt destroy them, provided the Paris Green be of good quality. They may also be destroyed by hand-picking. Later in the season the larva of this beetle—a little blackish grub with six legs—appears feeding on the leaves, eating holes in them. These may be killed by using a solution of hellebore, two tablespoonfuls in a pail of water, and showered on the vine from a syringe or the rose of a watering pot.]

Shelter Belts for Orchards.

SIR—An article in the March number of the ADVOCATE, under the title of "What Variety of Trees are Best Adapted for the Shelter of Orchards, and What is the Best Time to Plant," gives expression to the opinions of different individuals on this subject. Our personal experience in this matter is limited, so far as practice is concerned, but we have learned some facts from observation which are applicable to this consideration of the subject, and may be of service and value to the readers of the ADVOCATE.

A few years since we were making a visitation of the farm of Hon. E. H. Hyde, of Stafford, Conn., Vice-President of the Conn. State Board of Agriculture, and among other portions visited were the fruit orchards. It may be stated here that Governor Hyde is an extensive fruit grower, more especially of apples, but largely of pears; the field in which pears were growing was near the residence —the soil a clayey loam. Upon those portions of the lot nearest the house were set evergreen trees or shrubs for ornamental effect, being mixed in with the fruit trees.

In one place, for artistic effect, the pear trees were set in a circle and plants of arbor-vitæ set between the trees, filling in all the intermediate space, with the view of forming a hedge to the height of about five feet, which was to be kept headed back; but, like many another ideal plan, it was never carried to a successful termination, so far as original designs were concerned. Inside the circumference of this circle were set a number of the pear trees of the orchard.

As intimated, the hedge was allowed undisturbed growth, and all the time of our observation was at a height equal or nearly so to that of the trees.

Now as to effects, and in this there could be no mistake, because other trees of the same variety, but without shelter, were sufficiently near as to be under the influence of the same character of soil, and all other conditions save the influence of the evergreen trees.

While trees of the same variety of fruit at a little distance away would blossom and give promise of an abundant fruitage, as they increased in age they gave unmistakable signs of being in some way blasted, and while they would mature fruit, it was still hard, knotty and immature in general character, flavor, juiciness, &c. On the other hand, those trees that were protected by means of their connection with the circular wall spoken of, or by being within the enclosure, would be laden with fruit perfectly developed in form, of about the average ordinary size, juicy, rich and melting as could be desired for the most cultivated taste. And while the former would be green and unattractive to the eye, the latter would be richly colored and exceedingly beautiful.

Here are the two cases brought into direct comparison, with very dissimilar results. Whether these results are attributable wholly to the change of condition effected by the simple shelter, or to other causes in combination, it might be difficult to decide. We noticed in the case of the protected trees that from the annual defalcation the trees were more thoroughly and effectively mulched than was the case with the unprotected. Then, again, what particular chemical elements this peculiar mulch might contain, if any, that would be beneficial to the development of fruit, is an undetermined question; but it is enough to know that by a combination of conditions induced by a collection of arbor-vitæ trees certain favorable results were produced. Now, if this can be relied upon as a general result, it will well pay any fruit grower to set arbor-vitæ trees in his orchards, so as to form a barrier sufficient to break the shelling and blasting winds that are so effective in not only diminishing, but destroying an entire crop.

We could name other cases of a similar character, but space will forbid further mention. Arbor-vitæ seems to be especially adapted to this service, because of the ease of its propagation and average hardiness.

WILLIAM H. YEOMANS, Columbia, Conn.

The Hessian Fly.

Agricultural College,
Lansing, April 19, 1878.

To the Editor of the Michigan Farmer:

About a week ago the Hessian flies commenced hatching out in this vicinity. Now they are present in the wheat field to the tune of countless millions, reminding one of swarms of mosquitoes in summer. Every farmer can see them by close observation. In the morning the females are very noticeable, as their bodies—abdomen—are red from their load of that color, looking not unlike a small mosquito after he has taken his fill of blood. At night, having deposited their burden of eggs, they too are black, but still can be told by their spy-glass-like tip, the ovipositor, while the claspers of the male resemble a blacksmith's forceps.

They are now busy laying their minute red eggs, just visible, upon the closest scrutiny, without a glass.

The prospects look dark, and would look darker except for the little black parasites with their four wings and active habits, which are also numerous, but less so than "the fly." Knowing the general interest in this subject, I hope this will reach you in time for your next issue.

Yours truly, A. J. COOK.

Millet and Orchard Grass.

The grasses referred to are Golden Millet and Orchard Grass, the former for hay and the latter for grazing. The Golden Millet must be sown every spring after the danger of frost is over, broadcast or in drills, in the same manner as oats, three pecks to one bushel of seed to the acre. It is a very rapid-growing grass, and matures in about ten weeks time. Its yield is enormous—often as much as five tons of hay and one hundred bushels of seed to the acre. It takes much labor to save it, and a good force is necessary to follow the machine when cutting as grain. It is eagerly eaten by all stock; even hogs live and thrive on it, and it is a crop of which the farmer is sure to raise a fair yield every time he sows, one rain insuring a good crop. I have seen good hay from it when the season was too poor to make hay from anything else, and I am sure that when any farmer once gets into the seed he will not want to get out. It will grow in almost any climate, having been successfully grown in some part of nearly every latitude from Maine to Florida.

Orchard grass is good as a pasture or for the seed. Growing the seed has been a very profitable business in this country until the present year—the price ranging from $1.75 to $2.50 per bushel, but this season an unusually large crop brought the price, even at retail, down to about $1 per bushel. It is one of the earliest and most hardy grasses of which I have any knowledge. Cold or heat will neither freeze nor burn it out, and when once set you have a good pasture that will always be the first you can turn stock into, and it will outlast all others in dry, blighting weather. It will grow on any land that will grow anything at all, and will improve and lighten the land every year you leave it on, and it will be there until you remove it intentionally. I know some farmers who have had a stand of twenty years, and seemingly it is good as new.—*W. J., in Country Gentleman.*

THE ONTARIO VETERINARY COLLEGE.—The annual examination took place on the 4th of April. The gold medal was carried off by W. Jex, of Brantford, and the silver medal by S. Foelcker, of Pennsylvania. Diplomas were also given to the following:—S. G. Anderson, Tottenham; L. P. Chase, Illinois; J. R. Deacon, London; F. W. Derr, Ohio; G. Falls, Ottawa; T. Hagyard, Kentucky; C. Hand, Alliston; H. Heckenberger, Pennsylvania; G. P. Hinman, Cobourg; J. Humphries, Pennsylvania; W. Jex, Brantford; A. Moore, Guelph; J. McKerracher, Highgate; J. V. Newton, Barrie; S. P. Palmer, Toronto; B. A. Pierce, Illinois; H. Sutterby, New York; A. N. Smeall, Toronto; E. P. Smithers, St. Louis; A. R. Stephenson, Cobourg; J. Waddel, Seneca; L. E. Wheat, Pennsylvania; G. Theobald, Teeswater.

O. F. Atwood, of Richville, Vt., recently killed a bull calf that was eight months old lacking four days, which dressed 476 pounds. This calf was fed with sour milk through the summer, with a quantity of meal during the last three months. This shows the efficacy of sour milk as food for calves.

The Family Circle.

"Home, Sweet Home."

A Married Man.

"What shall I do?" said Ralph Willett, as he walked into the office of his friend, Robert Ayres, looking the picture of despair.

"Why, what's the trouble now?" and good natured Bob, a young lawyer who had just hung out his shingle, shut up the musty volume of lore over which he had been poring, and gave his attention to Ralph's grievance.

"It's just this," said Ralph, opening his clenched hand and disclosing a letter crushed into a thousand despairing wrinkles. "Here's my answer from the trustees of Monroe Academy; they're satisfied with my recommendations, and my references appear unexceptionable, but on one point they are strenuous—they will employ none but a married man."

"Pshaw!" blurted out Bob.

"Here they say, 'Only one question remains to be affirmatively answered by you before we close in with your terms. Are you a married man? You may think this question a strange one, but we have had so much trouble in the past with preceptors who, after a few weeks, devoted themselves mainly to flirting, that we have passed a resolution as unalterable as the laws of the Medes and Persians, that we will employ none but married men. If you can suit us in this respect, our contract may be considered closed. Let us hear from you at once in regard to that particular, and we hope you are prepared to meet our requirements, as we confess ourselves strongly predisposed in your favor. Yours truly,

'WILLIAM PETERS,
'Secretary of the Board of Trustees.'"

"Let 'em go," said Bob, as Ralph finished reading, and glanced up at him. "There are other academies in the world, and all are not blessed with such an old maid board of trustees."

"But it's getting late in the season, and will soon be impossible to engage a place for the coming year. The opening seems to be a fine one, and it's a hard case if one must be married in order to be a teacher."

"I don't suppose," mused Bob, "that it would be of any use for me to write them a voucher for your unexceptionable morals and anti-flirting principles?"

Ralph shook his head with a smile. There was a moment's silence.

"I'll tell you what," burst forth Bob, "here's my advice to you as a friend and a lawyer, and no fee wanted either: make them think you are a married man; you can convey impressions without saying it in so many words, if that will ease your conscience, Ralph."

"Bob Acres, you're crazy."

"No—just look here," and Bob ran over a hasty plan of arrangements.

"Upon my word, it's easily done," said Ralph, as the idea struck him.

He was in a mood to clutch at anything just then, for teaching was his chosen vocation, and he felt in honor bound to support his widowed mother in easy comfort. Before half an hour he had so far fallen in with Bob's absurd proposition as to write, with his assistance, a letter to the board of trustees. Here is the clause which most interests us:—

"Fortunately for me your one important requirement is not an impossible one in my case. I shall not, however, bring Mrs. Willett to Monroe with me at present, as she does not like boarding, and it is hardly worth while to set up housekeeping there, when I am only engaged for a year, and we have a good home here. It seems best on the whole that she should remain here among her friends for the present, so you will please engage board for me alone in some quiet place near the academy."

"There," said Bob, triumphantly, "even Mrs. Opie might be satisfied with that, for there is a Mrs. Ralph Willett of whom all you say is true; but she is your mother and not your wife."

"It's a dangerous game, I fear," said Ralph, closing and sealing the letter, "but I believe my intentions are good. If they find me out I shall probably suffer."

"They will not be apt to find out the facts at this distance, but if they do they won't hang you, my boy. I should put in a plea of self defence if I had to defend the case."

"I shall saddle all the blame that occurs on you, for I should never have thought of such a thing myself."

"My shoulders are broad," laughed Bob, "and lawyers are generally supposed to be incorrigible sinners, you know. But never fear, the crime is not a great one. Going into a strange place and palming one's self off as a single man when one is married, has a suspicious look, but passing for a married man when one is single is quite another thing."

A month later Ralph Willett opened the fall term of Monroe Academy. At the close of the first day a trio of school girls walked down the shaded sidewalk. Rose Peters, a handsome, dressy belle; Kate Martin, the wise and witty, and Effie Broomfield, a sweet, gentle girl, and universal favorite, spite of her humble home and attire.

"Isn't he perfectly splendid!" exclaimed Rose, the pronoun referring to the new preceptor, our whilom acquaintance, Ralph Willett.

"What an intelligent, expressive eye he has," remarked Kate.

"Yes," assented Effie, "and such a finely-shaped head. One needn't be a phrenologist either to notice that."

"I do think," said Rose, candidly, "that he is really the most attractive preceptor that we ever had in our academy."

"Take care, Rose," laughed Kate, "no flirting now, you know," for Rose was a first-class flirt, and her capabilities in that line had done more than all else to turn the heads of the two last preceptors and abate their usefulness in school. No wonder her father had introduced that remarkable resolution among the board of trustees.

Rose turned in at the gate of her father's splendid residence, but paused for a few words.

"Just as if," she said, "a married man could not flirt! For my part, I think they're just the best men of all to flirt with."

"Rose Peters," said Effie, reprovingly, "it is well for your credit that only your friends hear that speech."

"I mean it," persisted Rose. "They are so safe, you know, not being on the lookout for a wife, and one can go to any length, without the least fear that they will spoil it all by popping the question."

"I supposed," remarked Kate, "that very question was just what you aimed at in your flirtations."

"It's no such thing; I always avoid it as long as possible, for it spoils all the fun. When I can avoid it no longer, and they will speak, I am as lamentable as possible with the poor fellows, and tell them I hope we shall be friends all the same, but we never are; somehow there always is a coolness after that."

"Rose," said Effie, seriously, "I must either change my definition of a flirt, or give up that you are not one."

"What is your definition?"

"I have always called a young lady a flirt who led on young men to declare themselves for the sake of refusing them."

"Then I'm not one according to your own definition."

"I must confess," said Kate, outspoken, as usual, "I don't see what better you are, save from selfish motives. The effect on them is the same."

"I can't help it if young men will be so foolish as to fall in love with me," persisted Rose. "All I want is a good time, and no vexatious questions about marriage. That's why I like married men the best, you see."

"Allow me to prophesy, Miss Rose," said Kate, "that you've found one married man who will not flirt with you, and that's Mr. Willett." And with this parting shot she and Effie walked on.

* * * * *

MONROE, Oct. 10th,

"DEAR BOB:—It is in the midst of the term, and—as said the lamented Daniel Webster—'I still live.' Really and truly I am enjoying my school much, except for that one thing, which makes me feel guilty all the while. You and I alone know what that is. But I can see the wisdom of the trustees in their stipulation; for I never yet found a lot of school girls so harum scarum as they are here. This Miss Peters is an only child, a beauty, and an heiress, and very much spoiled; her whole mind, heart and soul seem to be absorbed in conjugating the verb to flirt, in all its moods and tenses. She even tried her arts upon me, but, laying aside my 'married pretense,' I never fancied that style of a young lady. Failing in that, she took to pouting and creating rebellion in school. I took a straight course, and sent her home to ponder on the error of her ways; she came back the next day, asked my forgiveness very sweetly, and has been good as a kitten ever since, though I look for the claws daily. There are other high spirits in school, but she is the belle and acknowledged leader. Then there are some quiet, orderly ones, just my idea of girls as they should be—but I must not forget that I am a married man

"Bob, you remember I hold you responsible for all white lies this year. I am careful as possible, but fear Mrs. Opie might sometimes be shocked. Yours,

"RALPH WILLETT."

Thus Ralph went on, winning golden opinions from everybody, winning the love and respect of his scholars, and more than all, in the eyes of some, bringing back to Monroe Academy its former good reputation. The school bade fair to increase in size, thus adding to the material prosperity of the place, and we are all ready to love anybody who helps to fill our pockets.

At the close of the fall term he went home to spend a fortnight vacation. Bob Ayres and he had some quiet laughs over their secret. Bob prophesied great things as its result.

"I tell you, Ralph," he said, "I believe it's sometimes right to do evil that good may come."

"Don't let's crow till we get out of the woods," replied Ralph. "I've gained a good situation by the deception, but it remains to be seen how long I will keep it."

The winter school proved to be quite different from the fall term. Many new faces were among the pupils, and some of the old ones missing—among the latter, Effie Broomfield.

"She has taken a school away in the south part of the town," said Rose Peters to Mr. Willett, as she came to his desk after school was dismissed to consult him about her Latin. "Isn't it funny to think of Effie teaching?"

"I have no doubt she will do well," was the answer. "Other things being equal, I have always noticed that the best behaved scholars make the best teachers."

"Oh, you don't think I'd make a very good teacher, then, do you? I was very naughty last term, you know, but I'm going to be good enough this term to make it all up." And Rose lisped off her little speech in such an innocent, childish manner, looking so charmingly pretty all the while, that a more impressible man than Ralph Willett might have been captivated, but he was not at all. "Of course Effie will do well," she continued. "I want to go out and see her school some Saturday, but father is always too busy to carry me."

Where was Ralph Willett's gallantry that he did not offer his services as escort on this plain hint? But he didn't; he only resolved that he would go by himself at the earliest possible opportunity. There was nothing out of character even for a married man to take an interest in his former pupil, and watch her success as a teacher.

He went, accordingly, the very next Saturday. How charmingly dignified the school ma'am was, and how her sunny presence lit up the dingy old school house. The school was a notoriously hard one, but she was beginning finely, as Ralph assured her, and added that he should come again by and by, to note her progress.

Somehow or other he did not enjoy the winter term as well as in the fall. His mother noticed the change in his letters, and spoke of it in hers.

"I do not think you are enjoying your school as well as you did in the fall. Your letters are not so cheery as then."

"Why don't I enjoy myself so well?" Ralph asked himself. "All is harmonious in the school."

Then he laid the blame upon the cold weather, and he had bad roads which hindered his long walks, but somehow his cogitations would come round at Effie Broomfield, and he would fall to wondering how she was getting on; if she had to burn wood in that rusty three-legged stove, and if she was contented boarding round. And in school hours, when some blundering pupil was mixing moods and tenses in a hopeless tangle, or standing at the blackboard, helpless in the mazes of geometrical problems, it was certainly curious how his thoughts always reverted to Effie, the musical way in which Latin verbs in all their forms came readily from her lips, and the clear-headed, neat-minded way in which she would elucidate a problem. Effie Broomfield! It was not the most harmonious name in the world, but he found himself often repeating it mentally, over and over, as if it were a strain of music.

Near the close of the term he went again to visit her school. Well might he feel pride in his pupil as he noticed the results of her winter's work. Rude, gawky boys were transformed into young gentlemen, and romping, hoydenish girls into young ladies. Their progress in learning had been rapid and thorough, and Ralph was not at all sparing of his encomiums. The little school ma'am took them as demurely as though they were a matter of course, seeming to feel in no wise flattered, and Ralph, somehow, felt himself her inferior.

"She's just the one for a teacher," he said to himself, as he pursued his solitary way homeward. "What a splendid wife she would make for some man who intended to make that his life work."

He did not go home at the winter vacation, it being only a week.

"It is almost too bad," Mrs. Watkins said to him consolingly. "I dare say it looks a long time ahead before you will see your wife."

"It does, really," replied Ralph, with a blush that sent Mrs Watkins into silent admiration over his modesty.

Mrs. Elliott informed the curious that Mr. Willett sent a letter to his wife every day through vacation, and was obliging enough to show to several the white monogram envelopes whereon "Mrs. Ralph Willett," in writing almost as handsome as engraving, stood to their minds as evidence of high martial affection. The spring opened with a great increase of scholars, and Ralph needed an assistant. Effie Broomfield was among the pupils, but he was so impressed with her superiority as a teacher, that he offered her the post of assistant; she finally consented with reluctance to teach half the day, giving the other half to her studies. Kate Martin was engaged the other half of the day, and the school went bravely on.

It was a lovely spring. The snow went off in such good temper! no angry winds or dismal rains; the brooks burst into music as soon as they broke their icy bonds, and the birds sang sweetly as ever before—at least this was the way it seemed to Ralph Willett. Every night at the close of the school, he was wont to have a little conference at the desk with Miss Broomfield; somehow there was always something to inquire about or to suggest, and then they often walked down the street together as far as Mrs. Watkins' gate.

"I do think, Effie," said Rose Peters, enviously, one day, "that you are getting to be a real flirt. Mr. Willet is altogether too attentive for a married man."

Effie's eyes flashed indignantly.

"You have no occasion to make such a remark. Mr. Willet says nothing to me but what is proper and business-like, and anybody might hear."

"Oh, now, don't fly into a passion about it," laughed Rose, twirling the multitude of rings on her fingers, "I only meant to joke you a little; though, to tell the truth, if he wasn't a married man I should think he was dead in love with you; his eyes follow you everywhere, and when you speak he seems to devour every word you say."

"Hush!" said Effie, authoritatively, though not a soul was in hearing. "I will not listen to such nonsense."

"Oh, you innocent little darling!" laughed Rose. "I only wish I had your chance in Mr. Willett's eyes, and make that wife of his jealous."

"It's a pity that the devoted attention of all the unmarried men in town will not suffice you, but you must sigh after the married."

"Children are always crying for the moon, you know. Perhaps if Mr. Willett wasn't a married man he would be no better than the rest; but, as it is, there is not a young man in town worth mentioning the same day."

All pleasant things in this world must come to an end sooner or later, and this pleasant spring term was no exception to the rule. It closed in May with a grand exhibition. The night proved, as exhibition nights are prone to, dark and rainy. Dame nature, after being in good, smiling behaviour all the time, might be pardoned for making this closing night a time for her most copious tears.

Effie Broomfield wended her way to the exhibition under her father's escort, with the triple aid of his arm, lantern and umbrella.

"You make a splendid beau, father; you don't seem at all afraid of wetting your own boots and leaving the best walking."

"Thanks for the compliment, but I dare say you will be leaving me in the lurch and allowing one of those same glossy booted young men to walk home with you. It's the way of the ungrateful world, you know."

"But not my way," said Effie stoutly; "I'm engaged to you for to-night, so don't forget to wait for me; your lantern, umbrella and good care are altogether irresistible."

The hall was crowded to overflow in spite of the rain, and Effie, from her seat away in front, did not notice that her father was called out before the exhibition was half over. At its close she donned her wraps, and while she spoke the good byes to one and another of her schoolmates, waited and watched for her father.

He did not come, though the hall was fast emptying. Two or three offers of company home she declined, still thinking he must be there, when up came Fred Peters, a chum of her brother Jack's.

"Oh, Miss Effie! I've been hunting the hall over for you; your father was called out to serve on a jury, but he left his lantern and umbrella with Jack, and told him to see to you. But Jack, he'd been and offered his company home with Minnie Warner before that, so he asked me to tell you to wait till he came back."

Effie groaned in spirit, for Minnie Warner's home was away at the other end of the long street. Was there ever anything so inconsiderate as a younger brother of sixteen? She went up

to the window and interviewed the weather, thinking perhaps she could make the trip alone without a protector. But it was raining in torrents and fearfully dark; there was no other alternative but to wait for Jack to play the gallant and done with it.

The crowd had all gone and the lamps were being put out; only one remained, when Mr. Willett suddenly came up stairs and re-entered the hall.

"You here still, Miss Broomfield?" he exclaimed. "I supposed everybody was gone. I came back for a book I forgot;" and he picked it up from a table that was near.

A few words sufficed to explain Effie's awkward dilemma.

"Never mind," he said, "if you will accept my company home, I shall be happy to relieve you from the unpleasant situation."

She accepted the offer in the same spirit in which it was made, and soon found herself on the way home, with a lantern as bright, an umbrella as large, and an arm as reliable as her father's.

As for Ralph Willett, it was the first time since his coming to Monroe that he waited upon a young lady, but the occupation was far from uncongenial. Indeed, the very lively tattoo which his heart was beating, as for the first time Effie Broomfield's hand rested on his coat sleeve, convinced him fully of what he might have known long before had he acknowledged it to himself—that he was hopelessly in love with her. And all the while she, innocent little thing, was chatting as freely and unsuspiciously as if he were her grandfather.

"I do not expect to need an assistant," said Ralph, referring to the next term, "but I hope you will attend school."

"I should like to," said Effie, "but I must be taking care of myself now, and cannot do just what I prefer."

"You will try teaching again?"

"Yes, sir; but not here. I have not mentioned the matter to anyone as yet, lest something should happen to defeat my plans, but now the time is so near I may tell you that I expect to go to Virginia to teach. A friend there has kindly procured me a situation, and I must start next week."

To Virginia! Next week! Ralph forgot all his caution—forgot everything in the dread of loosing her - and clasping her hands burst eagerly forth,—

"Don't go! Effie, dearest Effie, I love you as my life. Do not leave me!'.

Was that the quiet Effie Broomfield? that indignant, scornful maiden, who tore herself away from him, from under the shelter of his umbrella, and with flashing eyes exclaimed,—

"Leave me this instant, Mr. Willett, and never let me see your face again! Oh, what have I ever done that you should so insult me?" and she gave way to a torrent of tears.

"Miss Broomfield," said Ralph in his dilemma, "will you think me more or less of a villain if I tell you I have never been married?"

"You have spoken of your wife,' said Effie.

"Of Mrs. Willett, I acknowledge—but she is my mother and not my wife. I have never been married and shall never be unless you consent to be my wife. I beg pardon for alarming you so, but I spoke on the impulse of the moment."

What was Effie to do? It still rained hard, so she took his arm again, listening to his hurried explanation. When they reached her door Ralph whispered on leaving,—

"May I come and see you in the morning, and your father?"

With her half whisper "Yes," he pressed her hand warmly and bidding her good-night departed.

Morning brought Mr. Willett to electrify her parents with his explanations. He made his case so clear that there was no doubt of his honesty, but at his request they forbore to say anything abroad until, two days later, in response to a telegram, down to Monroe came his mother, Bob Ayres, and the old gray-haired minister, who had known him from a baby upward.

They brought proof enough of Ralph's assertions, Bob Ayres generously taking all the blame of Ralph's deception, and giving an account in his graphic way of how it came about; so Effie no longer hesitated to give her hand where, it was useless to deny, her heart had already preceded it.

Of course Monroe was all ablaze, but everybody so idolized Mr. Willett that all seemed perfectly willing to extenuate the case. Ralph went to the trustees, acknowledged his fault and tendered his resignation, which they utterly refused to accept.

So Effie did not go to Virginia, but her travelling suit was all ready for her bridal trip the following week; and when Ralph came back to Monroe to commence his summer term, it was indeed, and in truth, as a married man.

Obscure Men Happiest in Wedlock.

No woman will love a man the better for being renowned or prominent. Though he be the first among men, she will be prouder, not fonder; as is often the case, she will not even be proud. But give her love, appreciation, kindness, and there is no sacrifice she would not make for his content and comfort. The man who loves her well is her hero and her king. No less a hero to her, though he is not to any other; no less a king, though his only kingdom is her heart and home. It is a man's own fault if he is unhappy with his wife, in nine cases out of ten. It is a very exceptional woman who will not be all she can be to an attentive husband, and a very exceptional one who will not be very disagreeable if she finds herself willfully neglected. It would be easy to hate a man who, having bound a woman to him, made no effort to make her happy; hard not to love one who is constant and tender, and when a woman loves she always strives to please. The great men of this world have always been wretched in their domestic relations, while mean and common men have been exceedingly happy. The reason is very plain. Absorbed in themselves, those who desire the world's applause were careless to the little world at home, while those who had none of this egotism strove to keep the hearts that were their own and were happy in their tenderness.—*Alabama Baptist.*

Minnie May's Department.

My Dear Nieces,—The happy month of May has again come when we can amuse ourselves in the soft, balmy air, working in our flower-garden. Our sluggish pulses are aroused by the warm sunshine, and life-giving air. All our senses are animated by what we see and hear, and every-one of us feels a strong desire to take a part in general activity. I pity those who are shut up in stores and factories, or any place where they are debarred from the glorious privileges of walking out upon the green earth and seeing the daily unfolding of leaf, bud and flower. It is not only the most healthful exercise to work in the garden, but refining to our tastes.

I am happy to know that so many of my nieces take such delight in their gardens, and that some of them were so successful in winning prizes at the last autumn shows. Try again dear nieces. And I trust that you may retain the honor. I will name a few varieties of popular annuals which will give satisfaction the entire summer, if proper attention is given to their culture.

Aster, embracing the entire list of many varieties; Balsam, the improved double kinds; Petunia, the choice kinds; Nasturtium, the new Tom Thumb varieties; Portulacca, both double and single, make pretty bedding plants; Phlox Drummondii; this plant is pre-eminently the one for all, succeeding admirably in all places, and under the most adverse treatment. Dianthus, such as Heddewigii, Laceniatus, Imperialis, Eschscholtyia, &c.—for brilliancy, this plant is unsurpassed. Verbena, Ten Weeks Stock, Zinnia and Larkspur. The above plants should be grown by all who cultivate flowers. No extra treatment is needed in their cultivation, and the most inexperienced hand can grow them with ease. I must not forget to mention that fragrant little annual Mignonette, which, of course, needs no commendation from anyone. How I wish I could peep at you all while engaged in your treasured gardens and I might be able to give a few useful suggestions.

Minnie May.

RECIPES.

TO REMOVE INDELIBLE INK STAINS.

Indelible ink stains may be removed by first soaking the stain in strong salt water and then washing it in ammonia. The salt changes the nitrate of silver into the chloride, and the ammonia dissolves the chloride.

CURRY OF COLD MEAT.

Cut thin slices of cold roast beef into rather small pieces; slice thinly, and fry an onion in about two tablespoonfuls of butter until nicely browned; then pour in as much good broth as required for the gravy; add a little salt and a tablespoonful of curry powder; let boil up and add the beef; stir constantly for ten minutes; make a border or wall of boiled rice around a dish and pour the meat and gravy in the centre.

SUN-BURN.

Cream is very good to allay the burning sensation suffered in sun-burn, and to heal the skin.

SUNSTROKE.

Sunstroke may be prevented by wearing wet leaves, wet paper or moist cloths around the head during exposure to the sun. Frequently bathing the head is equally good as a preventative.

PREPARED GLUE.

In half a pint of water in a wide-mouthed bottle put eight ounces of best glue, place the bottle in water and heat until the glue is dissolved. Then stir in slowly two and a half ounces of strong nitric acid. Cork tightly. Glue thus prepared is always ready for use, and may be applied in mending furniture, broken vessels and other articles not exposed to water.

CREAM BEER.

Into three pints of water put two ounces of tartaric acid, two pounds of white sugar, the juice of one lemon, and boil all together five minutes; when cool, add the whites of three eggs well beaten, half a cup of flour, half an ounce of essence of wintergreen; bottle, and keep in a cool place. For a tumblerful of water use two tablespoonfuls of this syrup, and add one-quarter of a teaspoonful of soda.

TO CLEANSE FEATHERS.

M. M. S. writes: "There is no difficulty in cleansing feathers, granted the needed care and patience. Place feathers in a large tub, pour over them a hot suds of soap and borax, let them stand an hour or so, rinse thoroughly in clear water, and then spread on a sheet to drain in a cool, airy place. As fast as possible, place them in the kitchen oven, using dripping-pans with paper in them. Turn and watch that they do not burn. When dry, pick them over, and if not too much worn they will be as light as new feathers, and free from bad odors. When feathers are put in a new tick, or in the old one cleansed, if a comforter or quilt be kept between it and the under sheet, the beds will keep both sweet and clean. Mattresses, as well, should have such a cover, as the exhalations from the body soon soil the ticks. If the comforters are warm, run together the parts of old sheets that are good and case them. They are easily ripped apart in spring and fall for needed cleansing. Feather beds are doubtless condemned by many hygienists, but people who are thin in flesh will continue to use them. Let such people see that their beds are in the open air at least twice a week, and, with plenty of fresh air every day in their sleeping rooms, they surely cannot suffer from their use."

POLISHING TIN.

I notice that a recipe is wanted for polishing tin, and send mine: Pulverize charcoal very fine; dip a coarse cloth in soft soap just a little, then in the charcoal, and rub the tin briskly. Wash in hot water, and dry with a clean towel, afterwards setting them in the sun if it is shining. Tin polished in this way looks like new, and the tin does not wear off. E. B K.

CLEANING WALL PAPER.

To clean wall paper, take about two quarts of wheat bran, tie it in a bundle of coarse flannel and rub it on the paper. It will clean paper nicely; some people use bread, but dry bran is better.

Kitchen Utensils.

A correspondent makes the following suggestions as to what utensils should be kept in well-regulated kitchens:

"An oval or lozenge shaped kettle is the best for cooking fish, as it takes less water to cover it, and the greater the amount of water the longer it is in coming to the boiling point. All fish kettles should have a perforated false bottom, upon which the fish is laid, and upon which to take it out. I may say here that in cooking fish it should always be in boiling salted water, because boiling salted water is hotter than boiling fresh water, and therefore it makes the fish firmer by coagulating the albumen it contains. If the fish is not kept at boiling heat all the time, but allowed to simmer, it makes it soft and more apt to fall to pieces.

"Meat we wish to have as tender as possible, and for soups we want to extract all the nutriment. It is, therefore, better not to add the salt until it is nearly cooked sufficiently, and fresh water only moderately hot should be turned upon the meat when placed on the fire. But, on the contrary, if you desire to keep the nutriment within the food, as in cooking vegetables, boiling fowl, mutton, &c. boiling water, moderately salted, should be used; and it should be kept just on the boil for meat, and not on the gallop. If salted meats, such as ham, tongues, and corned beef are placed in boiling water, and kept boiling fast, they will become hard, and remain nearly as salt as before being cooked. But if put into water slighly warm and allowed to simmer until done, all superfluous salt will be extracted, and the meat will be tender and juicy. In boiling it is also necessary to skim off all scum that rises to the top, for if not taken off it sticks to the meat and renders it unwholesome. Therefore skimmers, colanders, strainers and ladles, are necessary articles to have in a kitchen. A deep saucepan, with a steamer fitted to the top, is also a necessary article.

"It takes longer to steam than to boil, but it is the nicest way of cooking many articles, such as dumplings, puddings, custards, and even some vegetables, especially squash and potatoes. In steaming food, the water must be kept boiling hard all the time.

"A wire stand to place in the dripping-pan, so as to raise the meat above the bottom of it, is a great advantage in cooking meat.

"No kitchen should be without scales and weights, to test the correctness of butcher's scales, also to measure the quantites of various receipts.

"A knife-board and bath-brick must certainly be found in every kitchen closet.

"For pastry, a marble slab is very useful, as good pastry depends very much upon the cool temperature."

Doing up Men's Wear.

A lady who found great trouble in washing and doing up men's and boys' wearing apparel, owing to their wrinkled appearance after ironing, says :

I learned by experience never to wash any kind of woolen goods, especially if they are colored, in a water where white clothes had been previously washed, on account of the lint, but to put up a suds made of clear hot water and soap, and then rinse in clear warm water, folding the garments carefully before putting them through the wringer; they would then dry out clear and look well; but the doing up was where the difficulty came in.

After a while, however, I was fortunate enough to receive instruction from an experienced laundress, which caused my troubles to vanish like dew before the sunshine. The lesson was so simple I was surprised at myself to think that I had not thought of it before.

It was merely this : After the garments that are to be ironed are thoroughly dried, spread them smoothly over the ironing board; then wring a cloth out of clear water, spread the cloth over the goods and iron with a hot flat iron until the cloth is dry; dip and wring the cloth again, spread it above the part already pressed, and proceed as before until the face of the goods has all been passed over.

When pants are to be done up the seams should all be pressed over a press-board, the same as when newly finished; then fold the same as tailors do, and go over them with a wet cloth and hot iron ; after being treated to such a course, woolen wear goods will come out looking nearly as good as new, and no one need be ashamed to wear them "either to mill or to meeting."

It is a little difficult to do up coats and vests, because of the different material of which they are composed not all shrinking alike; yet they can be managed so that they will look nice if care is exercised in the management, that is, stretching the parts that have shrunk and pressing in place as they are being done up. If the linings are too loose, rip them up and lap over, or rip off.

Care of Looking-Glasses.

"Perhaps some readers have wondered why looking-glasses sometimes get so dull and dim that no washing or rubbing will make them clear. That dimness is caused by heat. A looking-glass or mirror, subjected to sunshine several hours every day, or to the hot air from a furnace, register or stove, or to the heat of a gas-light or kerosene lamp, will soon become ruined. At first some portion of the glass looks dim and misty, then more cloudy, and, finally, spotted or speckled with black, for the heat has caused the coating of quicksilver to expand and loosen its hold upon the back of the glass, till, after a time, particles fall entirely away, and the glass, once beautified by fair reflection, is rendered unsightly and unattractive forever. Oil-paintings are often seriously injured by the same cause. Much of the blame laid upon the careless mixing of the colors—especially those used by modern artists—rightly belongs to those who hang the pictures. Care is taken to place them in good light—still greater pains should be taken to secure them from heat. If, during some portion of the day, the sun shines directly upon these paintings, or heat rises constantly toward them from stove or furnace, the canvas gradually takes on a dull appearance, and soon presents an array of cracks that fill us with dismay ; if they are not speedily removed to a more favorable position, portions of the outer coat may peel off, and the ruin is complete."

A shopkeeper of great experience says that however talkative clerks may be during the day, they are always ready to shut up at night.

Moisten the Air.

It is important to remember at all times, when artificial warmth is needed, that heating the air has the peculiar and remarkable effect of causing it to take up and *secrete* a large amount of water. Air that at the freezing point is damp, when heated to 70°, or a comfortable condition, so hides away all the moisture that it is unpleasantly dry; it then absorbs the moisture from our bodies and from our lungs, and produces a feeling of uneasiness. It sucks out the moisture of the furniture, causing it to warp or crack, if not fall to pieces. When it comes in contact with the cold glass, and is reduced in temperature, it gives up the hidden vapor, and thus cold windows and walls tend to still further dry out the air. To make the atmosphere healthful, as well as agreeable, always keep upon the stoves or over the heating furnaces a full supply of water in wide, open-top or loosely covered vessels, to constantly evaporate moisture to saturate the air. This is equally important for all living organisms in a room, for plants as well as animals, and in churches and school-rooms as well as in private dwellings.

Quiet Girls.

The quiet girl is generally worth studying, and will frequently astonish those who pretend to understand her, by rising to heights, when she is summoned thither, which are unapproachable to her complacent and courted critics. Yet it may happen that quiet girls of the best type may lack the wit, the adaptability to that with which they have no sympathy, the glibness, and that unlimited faith in themselves which must be possessed by those who desire to attract the notice of the more shallow portion of society who believe in noisy girls. All quiet girls are not endowed with genius and the virtues, for some are simply fools who would be noisy enough if they could find anything to say. But we protest against the habit which prevails of slighting quiet girls and speaking ill of them before they have been fairly tried, and of paying sickening homage to the conceited chatterboxes of little moral sense and principle. While noisy damsels will often turn out to be gaudy impostors, many quiet ones will amply repay the time, trouble or love which any one may bestow on them.

Poor Girls.

The poorest girls in the world are those who have never been taught to work. There are thousands of them. Rich parents have petted them ; they have been taught to despise labor and depend upon others for a living, and are perfectly helpless. If misfortune comes upon their friends, as it often does, their case is hopeless. The most forlorn and miserable women upon earth belong to this class. It belongs to parents to protect their daughters from this deplorable condition. They do them a great wrong if they neglect it. Every daughter should be taught to earn her own living. The rich, as well as the poor, require this training. The wheel of fortune rolls swiftly round—the rich are very likely to become poor, and the poor rich. Skill to labor is no disadvantage to the rich, and is indispensable to the poor. Well-to-do parents must educate their children to work. No reform is more imperative than this.

Capturing Ostriches.

The greatest feat of an Arab hunter is to capture an ostrich. Being very shy and cautious, and living on the sandy plains, where there is little chance to take it by surprise, it can be captured only by a well-planned and long-continued pursuit on the swiftest horse. The ostrich has two curious habits of running when alarmed. It always starts with outstretched wings against the wind, so that it can scent the approach of an enemy. Its sense of smell is so keen that it can detect a person a great distance, long before he can be seen. The other curious habit is that of running in a circle. Usually five or six ostriches are found in company. When discovered, part of the hunters, mounted on fleet horses, will pursue the birds, while the other hunters will gallop away at right angles to the course the ostriches have taken. When these hunters think they have gone far enough to cross the path they see the birds will take, they watch upon some rise of ground for their approach. If the hunters hit the right place and see the ostriches, they at once start in pursuit with fresh horses, and sometimes they overtake one or two of the birds ; but often one or two of the fleet horses fall, completely tired out with so sharp a chase.

Grandpa's Story.

A story? a story? Ah, yes, my dear children—
Come, gather you closely 'bout grandpa's knee;
I'll tell you a story—a sweet little story—
A story that happened to grandma and me.

I'm old now—I know it—my hair is all snowy,
And I've touched the full cycle of threescore and ten;
The story I'll tell you—it happened, my darlings,
When I had a grandpa, and I was "Wee Ben."

And grandma, dear grandma, who sits there a-knitting,
Was fair-haired and dimpled, a right pretty lass.
We were playmates, my children, your grandma and I were,
We were lovers as children—ah! how the years pass!

"The story?" Holloa, there is mist on my glasses,
It always will come when I think of that day;
It will go in a minute—hand grandpa his 'kerchief,
The story I'll tell when I've wiped it away.

You see, we were playing—your grandma and I were—
Were playing that we were the "Babes in the Wood;"
And we said we were lost in the depths of the forest,
And pretended to cry—as lost babies should.

And I saw grandma crying, and forgot she was playing,
And then I cried, too, hard as ever I could;
Then grandma she laughed, and I smiled through my crying,
And so we stopped playing 'the "Babes in the Wood."

And all our lives through we've been working and playing,
And laughing and crying, as we did in the game;
For when grandma has cried my eyes have grown misty,
And my smiles have all come when grandmamma's came!

—*Wm. M. F. Round, in Wide Awake.*

The Hum of Industry.

Two men and a boy were walking along John R. street recently, when one of them—the father of the boy—said :

"How pleasant to my ears is this hum of industry!"

"So it is to mine," replied the other, and when the boy got a chance he asked :

"Father, did you mean that pounding back there?"

"Yes, my son," was the answer.

That evening, as the father was seated in his evening chair, he heard an awful pounding in the kitchen, and rushed in to see his son belaboring a chair with a hammer.

"What on earth does this mean?" he shrieked at the lad.

"The hum of industry, father," was the pleasant reply.

The boy was hummed out of that so fast that it was over an hour before he could compose himself to softly enquire of his inner consciousness : "Was father lying to that man, or is night a bad time for the hum of industry?"

CARE OF THE TEETH.—In the first place, the teeth should be picked and washed after each meal, so as to remove particles of food from their cavities and interstices. All persons should learn the habit themselves, and teach it to their children, when quite young, of brushing the teeth vigorously, both inside and outside, at least once a day. It is better to do so both night and morning, but at all events before retiring. It is also very desirable to employ some soft cleansing substance, in addition to the mere rubbing. Such are soap and precipitated chalk. But, in all cases, care should be taken not to use any preparation that feels harsh or gritty to the teeth, as all such are injurious.

Tom : "Harry, what makes you look so down in the mouth? Has your savings bank busted?" Harry : "Oh, no, it isn't that; but I'm so confoundedly afraid that my girl will make up with me before Christmas that I don't know what to do."

How Girls Can Learn to be House-Keepers

Begin with your own things and your own place. That is what your mother will tell you if you rush to her enthusiastic with great intentions, and offer to relieve her of half her house-keeping. Don't draw that little bucket of cold water to have it poured back upon your early zeal. Reform your upper bureau-draw; relieve you closet-pegs of their accumulations of garments out of use a month or two ago. Institute a clear and cheerful order, in the midst of which you can daily move, and learn to keep it. Use yourself to the beautful—which is the right—disposing of things as you handle them, so that it will be a part of your toilet to dress your room and its arrangements while you dress yourself, having the draperies you take off as lightly and artistically hung, or as delicately folded and placed, as the skirts you loop carefully to wear, or the ribbon you put with a soft neatness about your throat. Cherish your instincts of taste and fitness in every little thing that you have about you. Let it grow impossible for you to put down so much as a pin-box where it will disturb the orderly and pleasant grouping upon your dressing table, or to stick your pins in your cushion even, at all sorts of tipsy and uncomfortable inclinations. This will not make you "fussy"—it is the other thing that does that — the not knowing, except by fidgety experiments, what is harmony and the intangible grace of relation. Once get your knowledge beyond study, and turn it into tact—which is literally having it at your fingers' ends as I told you, and order will breath about you, and grace evolve from commonest things, and uses, and belongings, wherever you my be, and "putting things to rights" will not be separate task-work and trouble, any more than it is in the working of the solar system. It will go on all the time and with a continual pleasure.

Take upon yourself gradually, for the sake of getting them in hand in like manner, if for no other need, all the cares that belong to your own small territory of home. Get together things for use in these cases. Have your little wash-cloths and your sponges for bits of cleaning, your furniture brush and your feather duster and your light little broom and your whisk and pan; your bottle of sweet oil and spirits of turpentine, and piece of flannel, to preserve the polish, or restore the gloss, where dark wood grows dim or gets spotted. Find out by following your surely growing sense of thoroughness and niceness, the best and readiest ways of keeping all fresh about you. Invent your own processes; they will come to you. I shall not lay down rules or a system for you. When you have made yourself wholly mistress of what you can learn and do in your own apartment, so that it is easier and more natural for you to do it than let it alone—so that you don't count the time it takes any more than that which you have to give to your own bathing and hair-dressing—then you have learned enough to keep a whole house, so far as its cleanly ordering is concerned.

A barefooted little boy stepped on a bee, and soon after said to his mother: "Ma, I didn't know that bees had splinters in their tails!"

A Daisy's Prophecy.

"This year, next year, sometime, never."
From the daisy's golden heart
One by one a lover slowly
Plucked the snowy leaves apart.
"This year, next year, sometime, never,"
And his voice grew soft and low
As he paused and said, "Ah! daisy,
You will say this year I know."

Close beside him stood a maiden,
Shy and sweet, with face so fair,
While the sunbeams danced and flickered
On her wavy golden hair.
Thus with small hands idly folded,
And her fair head drooping low,
Listening to the words repeated,
Waited she her fate to know.

THE FICUS PARCELLII

Two more leaflets, "This year, next year,"
So the last leaf fluttered down.
To the maiden's cheek the color
Came like roses newly blown.
"Next year, darling, 'tis the fortune
That the daisy tells for you;
Tell me sweetheart, do you love me?
Shall we make the fortune true?"

"Won't you tell me?" still he pleaded,
As his dark eyes searched her face—
And he read there for his answer,
Love, death only could erase.
Ah! but dasies prove false prophets,
Death may break our fondest vow,
And we weep o'er fallen idols
When in dust we lay they low.

Next year came, but when the dasies
Bloomed again in light and shade,
Sunbeams cast their golden splendor
O'er a grave but newly made.

Ah! fair daisy, not a marriage
But a death you then foretold,
For the maiden fair is sleeping
'Neath your blooms of white and gold.

EDITH G. WINANS.

Refinement.

Refinement is not fastidiousness. It is not luxury. It is nothing of this kind. It is far removed from excess or waste. A person who is truly refined will not squander or needlessly consume anything. Refinement on the contrary, is always allied to simplicity and a judicious and tasteful employment of the means of the good and happiness which it has at command. It seeks to divest itself of superfluities, and aspires contiually to the utmost possible purity. Refinement leads to personal cleanliness and elegant neatness, good taste and simplicity in dress. All "loudness" or flashiness is repugnant to its spirit. In its home and surroundings, the same chasteness and natural grace are maintained. The abode of genuine refinement and a mere pretending to it are very different. In the former you will find no excess, gaudiness or false glitter; but the latter abounds in them. In personal manner, refinement is most conspicuous. A man of refinement is always polite without effeminacy, and considerate without stiffness.—*Southern Industries.*

The Ficus Parcellii.

We are pleased to show our readers the representation of any new and beautiful plant, such as they cannot yet see in their own windows or gardens. In a few years, when the plant becomes plentiful, many of you will have them. This is a species of coleus, a native of Australia. It is introduced in England by Messrs. Veitch & Son. It is now being introduced on this Continent. The leaves are a bright green, irregularly and profusely blotched with cream white and dark green. The plant is said to be a full grower maintaining its splendid varegation throughout, and is said to be a very fine decoration, and has excited admiration wherever it has been exhibited.

DRIVING IN EGYPT.—All the carriages and harnesses are of European manufacture, while among the horses stately Arabians are numerous. The grandest equipages have both a driver and a footman upon the box, while in front of the horses the nimble *seis* runs to clear the way. These runners are dressed in white, the skirt reaching only to the knees and the sleeves large and flowing. An embroidered jacket, with the tarboosh, or fez, as a head covering, completes the costume. The lower limbs and feet are nude. The staff of office of the *seis* is a slender stick about one yard in length, which he carries in a perpendicular position. The grace, speed and endurence of these runners are most remarkable and interesting. Some carriages have two, and those of the khedive and his family often appear with four, two running abreast. The many equipages of the khedive, his sons and his wives, are all imported, and in addition to a full number of the servants already described, each has two or four cavalry-men accompanying as a body-guard.

Uncle Tom's Department.

My Dear Nephews and Nieces,—The letter budget is not quite so large this month. I do not wonder at it, for I know how busy you all are in the spring assisting in making your homes look tidy and beautiful. Perhaps, at no season of the year is the importance and necessity of labor so fully realized as in the spring time. We know then, most surely, that if we do not sow, we shall not reap, and somehow, nature seems to aid us more at this time than any other. Besides there is so much to attract your young active minds. I think it a vast deal better to be enjoying the out-door games, than to be inside poring over books, or writing. However, there is time for all things, and, I have no doubt, my letter drawer will be crowded with many nice letters next month, telling all that you have been doing, and with so many good puzzles, that it will be quite a task for me to choose the best ones. What delightful weather we were favoured with for the Easter holidays. I can imagine all the nice games you would interest yourselves with. Indeed, the very thought of them makes me feel quite young again.

Mr. Weld kindly offers a beautiful chromo this month, to the one who sends us the three best puzzles, and, also, to the one who answers the most puzzles correctly. All communications must be in by the 20th. Mark your letters "Printers' Manuscript," leave open, and postage will only be 1c. per ½ ounce. Uncle Tom.

PUZZLES.

32—DOUBLE ACROSTIC.

1. A kind of brush.
2. A town in England.
3. A town in Italy.
4. A town in Ireland.
5. Barren.
6. A river in Scotland.
7. A town in England.
8. A town in Prussia.
9. A misfortune.
10. A town in Portugal.
11. A town in Austria.
12. A town in Piedmont.
13. A kingdom.
14. A lake.

My initials and finals name two well-known persons. Ella Weston.

33—Behead an artificial production and leave a name for a girl.

Behead again and leave an animal.

Curtail and leave an adverb; curtail and leave an adjective.

34—Behead a circle and leave a part of the human frame.

Behead and leave a fish.

Curtail and leave a diphthong.

Behead and leave a vowel. L. N. Reid.

35—ANAGRAM.

Het riptosta dan eht eoptr emrfa.
Mtus erahs eth mcomon motb fo lla.
Etirh rylgo iwll out eepls eth aems.
That illw raesi otghuh pmeseri allf.

L. N. Reid.

36—CHARADES.

1. My first is to join, my second is a pronoun, my third is to divide, and my whole is a State of North America.

2. Whole I am an animal, beheaded I am what my whole possesses.

3. My whole is an impression, my second are made from my first. Ida Parsons.

4. Whole I am ill will; beheaded I am a girl's name; beheaded again I am insects; beheaded again I am congealed liquid.

Lewis Brunton.

37—WORD SQUARE.

1. (1) A mineral produce. (3) Something lent.
   (2) A town in China. (4) An English river.
2. (1) A lady's name. (3) An ancient drink.
   (2) A town of Arabia. (4) Extremities.
3. (1) A dance. (3) A sensation.
   (2) A flower. (4) A vegetable.

John Routledge.

38—PUZZLE.

A ittlel odrw ni nedssink poenks,
A niotom ro a reat,
Hsa netof leah'd hte tearh hatst okenrb
Dna emda a dneifr erecnis.

Minnie Fraser.

39—REBUS.

I am found on every field; I lie on every path uncared for; I am broken, kicked, defaced without a murmur; sometimes I am made to ornament your rooms, while at others I am burnt to save another; behead me and I am a sound; no instrument is complete without me; I am in every voice, in every noise; behead me again and I am friendless; I have no parents, the solitary one of all our race; curtail me and I am an adverb; also a preposition almost indispensable. Minnie Frazer.

40—DECAPITATIONS.

1. Complete I am a very small particle; behead and I am water; behead again and I am a possessive adjective as pronounced in the Scotch tongue; behead again and I am a preposition; curtail and I am a personal pronoun.

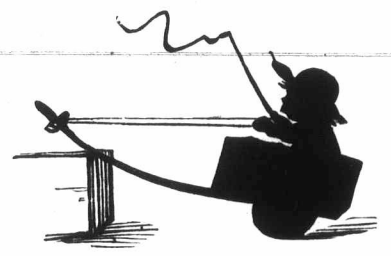
2. Complete I am an adjective; behead and I am an adverb; curtail and I am a preposition; curtail again and I am an interjection. Rhoda.

Answers to April Puzzles.

23—1, Helen; 2 Eva; 3 Francis; 4, Mabel; 5, Ada.
24—Find, mind, hind, kind, wind, bind.
25—Love can neither be bought nor sold; its only price is love.
26—Plea-sure.
27—1, Because it is not aloud.
2, Oysters, because they are always found in beds.
3, The adder.
4, Because it has leaders, columns and reviews.
5, Because for every grain of corn they give a peck.
6, A shoemaker's—because good shoes last longer than bad ones.
28—"Light cares speak; great ones are dumb."
29—Scissors.
30—Mud-lark.
31—Be not wise in your own conceit.

Names of Those Who Sent Correct Answers to April Puzzles.

Arthur Crooks, Lizzie M. Reid, Janet Boyle, Rhoda G. McKay, Maggie Blair, H. J. Fry, Minnie Fraser, Catherine Jane Walker, Ida Parsons, Jane Crosby, Eila Weston, Eva Milton, John Routledge, Alex. Campbell, Mary McCrae, Eben Miller, Samuel Johnson, Evelyn Walker, Joseph McNaughton, Andrew Forsyth, Edwin Monteith, Frank Hughes, May Davis, Eleanor North, Fred McDermitt, Lewis Branton, H. Johnstone, E. J. Hobson, Maud Emmerson, Charles Leach, Lizzie Mann, John Lewis, Maria Summers, W. Jackson, Samuel Evans, Edmond Whetter, D. Scott, Joshua Freeman, Sarah Langtry, Edwin Mork.



Happy the child while driving his toy,
So full of delight and glee;
But sorrow comes quickly, and over he goes—
Then rubs his head and cries "O! poor me!"

Thus many a man builds his castle aloft
And goes bravely sailingly on,
But a slight deviation from doing right—
A tip-up and all hope is gone.

HUMOROUS.

German Exchange.—"The other night," said a traveller, "I got chatting with a German, and asked him what he was doing." "Vell," he replied, "shoost now, I'm doing nodings; but I've made arrangements to go into pizness." "What are you going into?" "Vell, I goes into bartnership mit a man." "Do you put in much capital?" "No; I dosen't put in no gabital." "Don't want to risk it, eh?" "No; but I puts in ze experience." "And he puts in the capital?" 'Yes, dat is it. We goes into pizness for dree year; he puts in ze gabital, I puts in ze experience. At ze end of ze dree year I vill have ze gabital, and he vill have ze experience."

One of the social stars of Paris is rebuked by a friend, who says, sternly: "Cora, if I were you I should be afraid of having bad luck. The way you neglect your poor old blind father is awful, and you so rich now." "Neglect him? Why, you are mistaken." "No, I ain't. Isn't he begging at a street corner not half a mile from here?" "Well, and every time I pass don't I give him a penny?"

"Come, pa," said a youngster just home from school, "how many peas are there in a pint?" "How can anybody tell that, you foolish boy?" "I can, every time. If you don't believe it, try me." "Well, how many are there, then?" "Just one p in every pint, pa."

"I am at your service," said a young clerk the other evening to a handsome young lady, in answer to her inquiry for a bow. "I am," replied she, "much obliged to you, but I want a buff and not a green one." He sunk into his shoes and she went out.

Altering the Complexion.—Bill: "I say, Mary, run and ask Jule to come and play with us." Mary: "You know, Bill, mother says you ain't to call him Jule; his name's Jul-ius." Bill: "Well, what does she call me Bill for, then? I shan't call him Jul-ius until she calls me Bill-ious."—*Judy*.

A Pennsylvania Dutchman, who married his second wife soon after the funeral of the first, was visited with a two hours' serenade in token of disapproval. He expostulated pathetically thus: "I say, poys, you ought to be ashamed of yourselfs to be making all dis noise ven dar vas a funeral here so soon."

A Fifeshire man took his child to the minister to be baptized, who asked him, "Are you prepared for so solemn and important an occasion?" "Prepared!" he echoed, with some indignation; "I had a firlot o' bannock bakin', two hams, an' a gallon o' the best Highland whiskey, and I wad like to ken what better preparations ye expeck frae a man in my condition o' life?"

A Scotch farmer once took his wife to see the wonders of a microscope. The various curiosities seemed to please the woman very well, till the animalculæ professed to be contained in a drop of water were shown off. These seemed to poor Janet not so very pleasant a sight as the others. She sat patiently, however, till the "water-tigers," magnified to the size of twelve feet, appeared on the sheet, fighting with their usual ferocity. Janet now rose in great trepidation, and cried to her husband: "Come awa', John." "Sit still, woman, and see the show," said John. "See the show, man! What wad come o' us if the awful-like brutes wad brak' out o' the water?"

Daniel Webster once affirmed in company that no woman ever wrote a letter without a postcript. "My next letter shall refute you," said a lady of his acquaintance. Soon after he received a letter from his fair disputant, where, after her signature, stood "P. S.—Who is right now—you or I?"

A gentleman took his little boy to a model farm to see the wonders of the place. After they had been there a short time, the little fellow ran crying to his father, being at the same time pursued by a big turkey cock, which was trying to get a piece of bread out of his hand. "What, my boy," said the father, "are you afraid of a turkey? Why, you ate part of one yesterday!" "Yes, papa," responded the little fellow, wiping his eyes, "but this one isn't cooked."

Train up a Child, etc.—Mamma: "Maud, could you eat another piece of bread and butter?" Maud: "Yes." Mamma: "Yes, what?" Maud: "Yes, what—Yes, please; but you ought to say 'Yes, what, dear?'"

Athletic sports for ladies—Jumping to conclusions; walking round a subject; running through a novel; skipping full descriptions.

A Useful Scrap-Book.

One who has never filled a scrap-book cannot imagine its exceeding usefulness. A good one may be procured for a dollar or so. Cut out your favorite articles, items, receipts, &c., and lay them in the book. When you have accumulated a few and have a spare half hour, get a small board, a towel, or piece of old muslin, and a brush, with a cup of boiled flour paste, or it is said dissolved gum tragacanth is very good; the ordinary mucilage is apt to stain the paper. Lay each piece on the board, gum or paste the back, and place it smoothly in the book, laying the cloth over it to smooth it and absorb any moisture. When the book is partially dry it can be placed under pressure, and then it is always ready. The whole takes very little time when once arranged, and the advantage is that you save just what you want, and nothing else, in strong and durable form, while you thus have a book of reference—an encyclopædia of practical knowledge—always within reach.

A FEW TIMELY HINTS.—Suet and lard keep better in tin than earthen. Suet keeps good all the year round if chopped fine and packed down in stone jars covered with molasses. Do not let coffee or tea stand in tin. Scald your woodenware often, and keep your tinware dry. When mattrasses get hard and full of bunches, rip them open, take out the hair, pull it to pieces thoroughly, let it lie a day or two to air, and wash the tick; thus prepared it will be as good as new. There should always be a heavy, flat stone on top of your pork to keep it under the brine. There is a good deal of pork that gets rusty by floating around on top of the pickle; then this stone is an excellent place to keep a bit of fresh meat in the summer when you are afraid of its spoiling. It is easy to have a supply of horse radish all winter; have a quantity grated while the root is in perfection, and put in bottles filled with strong vinegar; then it is ready for use at all times. Keep a bag for all old pieces of tape and string; they will come in use. Keep a box for old buttons, so you may know where to go when you want one. Run the heels of stockings faithfully, and mend thin places as well as holes; a stitch in time saves nine. A little salt sprinkled in starch tends to prevent it from sticking. Always have plenty of dish water, and have it hot. There is no need of asking the character of a domestic if you have seen her wash dishes in a little greasy water.

The strawberry crop will be immense this year. They will begin to ripen in about ten days in the latitude of St. Louis.

The weather is decidedly warm. Vegetation is growing wonderfully fast. All kinds of stock have been doing well on grass since the first of April.

The Kirby Harvesting Machines.

We call the attention of our readers to the advertisement of Messrs. A. Harris, Son & Co., to be found on cover.

This firm is one of the oldest in Canada, having been established in the Mower and Reaper Trade for thirteen years. The machines produced by them are considered second to none made in the Dominion. A peculiar feature of their business is that they turn out nothing but Mowers and Reapers, devoting all their energies to the improvement and perfecting of the machines they build. It must be evident that any firm who so conduct their business, without having their attention divided among a variety of implements, are enabled to produce their specialty in the most perfect form. Certain workmen are employed continuously on certain parts; some on guards, some on shafts, some on sections, and others on the different parts used, so that every piece is produced by a mechanic skilled in the particular part he prepares. Every piece of the machine is thus made as perfect as possible, and all fit with a nicety and a precision not otherwise attained. Messrs. A. Harris, Son & Co. employ about 75 workmen, and produce about 1,500 Mowers and Reapers annually. Their factory is a large four-storey building, with a total floorage of 600 feet in length by 36 in width. They occupy, besides, large warehouses for storage. This establishment is one of the leading industries of the City of Brantford. They do a large trade throughout the Dominion, and in Manitoba and Prince Edward Island their business is very great, arising from the fact that their machines are so admirably adapted for gathering the heavy grain crops produced in the extreme provinces of the Dominion.

We are informed that there are upwards of seven thousand Kirby Machines now in use in Canada, and we notice that Messrs. A. Harris, Son & Co., with a liberality that is commendable, have made a large reduction in the price of the wearing parts of their machines, thus enabling their customers to renew their machines at the lowest possible cost.

We commend the readers of the ADVOCATE to the advertisement or to a visit to Messrs. A. Harris, Son & Co.'s establishment, should they visit the City of Brantford.

Stock Notes.

Mr. Jas. Douglas, of Athelstaneford, Scotland, twenty years ago the most prominent breeder of Shorthorns in North Britain, died in February. Several importations from his herd were made to Canada and the United States. Mr. Douglas relinquished breeding some years ago. He was widely known as an enterprising farmer as well as breeder, and was a man of mark in agricultural circles in Great Britain during all the most active part of his life.

Mr. F. W. Stone, Guelph, has sold to Messrs. Grant and Campbell, of Woodville, Ont., the fashionably-bred Shorthorn bull, Seraph, red, calved March 2nd, 1876; sire, 3rd Duke of Springwood 16928 (3087); dam, imp. Serenade by Cherry Duke (25752), &c.

Mr. George Fox, Elmhurst, England, has had the misfortune to lose his red heifer, the Duchess of Elmhurst, out of imported Duchess of Airdrie 20th, by Duke of Geneva 9th (28391). He writes that the disease of which she died is locally known as "black leg" or "quarter evil." It is said that 5,000 guineas had been offered for this heifer. Mr. Fox adds: "The three great drawbacks to cattle breeding are—cows returning to bull (not holding), abortion and 'black leg.' Any practical suggestions for the prevention or cure of either or all of the above would be a great boon to breeders. Veterinary science, so far as I have been able to learn, has discovered no cure or specific for either."

Messrs. Lingham & Son, drovers, of Belleville, Ont., have received an order by telegraph from one of the army contractors in England, for a large supply of beef cattle. This order will be filled at once with cattle purchased in Canada. If the lot in question prove satisfactory, further orders will follow.

John Snell's Sons, Edmonton, report sales during the past month as follows:—To Dr. L. E. Brown, Eminence, Ky., a pair of Cotswolds and a Berkshire sow. To H. W. Goodale, Montana Territory, two Cotswold yearling rams at $100 each. To H. P. Livermore, Oakland, California, a pair of Berkshires. To Wm. Sharpe, Keystone, Ind., one Cotswold ram. To B. R. Musgrave, Terre Haute, Ind., one Berkshire sow. To A. Wilson, Burgessville, Ont., a pair of Berkshires. To T. Wilford, Crosshill, Ont., a pair of Berkshires. To A. Dinsmore, Windermere, Ont., two Berkshire sows.

Messrs. J & R. Hunter, Alma, Ont., have sold to Robert Holloway, Monmouth, Ill., Shorthorn bull Lord Aberdeen, by imp. Knight or Warlaby (29014), out of Lady Fanny by Rob Roy (22740); to Alex. Wood, St. Mary's, Can., Booth Royal by Baron Booth of Killerby, dam Rosy Gem by Knight of Warlaby; to Samuel Johnston, Howick, yearling bull Reformer; to R. & J. Slimmon, Winfield, yearling bull Gauntlet; to Wm. Jackson, Clifford, yearling bull Waverly; to Messrs. Wood, Stratford, Queen of the May 2d, and to Henry Groff, Almira, heifer Princess.

Some Jersey cattle from the herd of R. H. Stephens, Slocum Lodge, St. Lambert's, P. Q., brought excellent prices at A. McClintock's sale, at Millersburg, Ky., on the 30th ult. The following were the figures realized:—May Bud, $340; Juliette, $290; Princess, $235; Flora, $320; Cherry, $230; total, $1,415. Mr. Stephens writes, regretting that his herd is so reduced in numbers by late sales that he will have no more to offer until the autumn.

Col. Laurie, of Oakfield, Halifax Co., Nova Scotia, will offer for sale on the 8th May next some fine thoroughbred Devon bulls, cows and heifers. As this stock is mainly selected from the importations of the Provincial Board of Agriculture and from his own breeding, farmers in the Maritime Provinces in want of good stock will find at this sale a rare opportunity of improving and increasing their herds.

Mr. W. B. Mills, of Arden, the former Reeve, is said to be the owner of the largest flock of sheep in the County of Frontenac. He has wintered over six hundred ewes, and at the present time has nearly two hundred lambs. Mr. Mills spares neither time nor money in procuring first-class animals.

Great Sale of Shorthorns in Australia.

The last mail from Australia brings the report of Messrs. Robertson's fifth annual sale at Colac, Melbourne, Victoria. It was, like its predecessors, a splendid success, ten Shorthorn bulls averaging £792 15s., against £389 7s. 6d. for twelve sold last year. Cherry Oxford 5th, described as "a handsome strawberry roan," and the winner of a second prize at the Polwarth and South Grenville Show, was started at 500 gs., and eventually realized 1,250 gs.; he remains in Victoria. The great attraction of the sale was 24th Duke of Derrimut, a roan calved May 1, 1876, and bred very similarly, though from a different female line, to Cherry Oxford 5th. He was put up at 800 gs., and was finally purchased for 2,453 gs. The other bulls were all yearlings, and made respectively 650 gs., 500 gs., 450 gs., 450 gs., 400 gs., 500 gs., 300 gs., 700 gs., and of these, three go to New South Wales, and three to Queensland, so that they were pretty equally distributed over the three great Australian settlements. Four pure Shorthorn heifers were offered. Oxford's Summerton, a two-year old, realized 1,600 gs., and the four averaged £1,102 10s. These high prices are considerably above the average of last year, but then seventeen heifers were offered against only four this season.

Commercial.

FARMERS' ADVOCATE OFFICE,
London, May 1, 1878.

The past month has been to a great extent a repetition of the previous one. The Eastern Question seems no nearer a solution than ever. Farmers have been busy with their seeding, consequently the deliveries of grain have been light. There is considerable wheat yet to come forward—more than any previous year at this season.

WHEAT.—The very light deliveries, together with the unsettled state of the Eastern Question, has resulted in very little business being done in Canadian wheats. Farmers are now nearly through their seeding, and in fact many of them are already through, so that we may look for more liberal deliveries for the next month or six weeks. The crop prospects are universally good all over America, and the spring wheat is now well, if not all in the ground. This, with the indication of an early harvest, should make farmers free sellers of their wheat, and no doubt the disposition will be to sell pretty close. And we think farmers will act wisely by so doing. Should the Eastern Question come to a peaceful solution, we must see a heavy decline, but should the reverse be the case we cannot see anything to warrant any very great advance. Chicago, Detroit and Milwaukee all report large quantities of wheat still in the hands of the farmers, which only await the conclusion of seeding to be brought to market.

PEAS.—Are somewhat higher, with very few coming forward, and what few there are, are being picked up and sent forward on London, Liverpool and Glasgow accounts.

CLOVER SEED.—Rules very quiet, with little enquiry unless at low figures. There has been some enquiry and some offers made for car lots for June shipment, but prices have been too low to result in anything being done.

BUTTER.—Rules about the same, with no change to note. We advise extreme caution in handling and operating in this article the coming season. Let every dealer be a free seller, and whatever disposition there is to hold, let it be done by the farmers themselves.

CHEESE.—Many of the factories are now well in operation, and the first of May will see nearly every factory in the country started. Should the weather continue as propitious as it now is, we may look for a heavy make of May cheese. Stocks of old are getting low, and the present low price in Liverpool, it is to be hoped, will clear the market well out before the new is ready to go forward.

London Markets.

Deihl wheat	$1 95	to	$2 05
Treadwell	1 90	to	2 00
Red	1 85	to	1 90
Spring	1 50	to	1 70
Barley	80	to	1 00
Peas	95	to	1 05
Oats	88	to	93
Corn	85	to	95
Flour, fall wheat	3 50	to	3 25
" mixed	3 25	to	3 00
" spring	2 00	to	2 75
Bran	80	to	70
Cornmeal	1 75	to	1 50
Oatmeal	3 00	to	2 55
Wool, fleece	20	to	28
PRODUCE.			
Roll Butter, fresh	16	to	15
Tub Butter	10	to	20
Lard	9	to	10
Cheese, per lb	11½	to	12½
Eggs, per dozen	10	to	11
Hay, per ton	9 00	to	10 00
Clover (at market prices)	3 50	to	3 75
" (at merchant's prices)	4 00	to	4 25
Timothy seed	1 50	to	1 75
Potatoes	50	to	60
Carrots	25	to	30
Onions	60	to	70
Beef, per 100 lbs	3 50	to	5 00
Lamb, per lb	6	to	7
Mutton "	6	to	7
Dressed Hogs, per 100 lbs	3 50	to	4 00
Apples	60	to	1 10

Little Falls Cheese Market.

Little Falls, N. Y., April 29.

CHEESE.—The market is more active to-day than ever before this season. Seventy factories were represented, with 4,100 boxes offered, nearly all skimmed, most of which sold for 10c to 12c; average, 10⅞c to 11⅛c. The market is ¼c lower than last week. Farm cheese brought 8c to 10¾c.

BUTTER.—20c to 24c, fully 4c less than last week, 21c to 22c being the prevailing figures.

Liverpool Markets.

Liverpool, April 29, 1878.

Flour, 26s to 26s 6d; Spring Wheat, 10s to 10s 10d; Red Winter, 11s 3d to 11s 6d; White, 11s 4d to 11s 8d; Club 11s 6d to 12s 4d; Corn, 26s to 27s 9d; Oats, 3s 3d; Peas, 36s; Barley, 3s 8d; Pork, 47s; Bacon 26s to 27s 6d; Cheese, 64s.

Montreal Markets.

Grain unchanged; flour, superior, $6 to $6.10; extra, $5.70 to $5.75; fancy, $5.30 to $5.75; strong bakers', $5.25 to $5.40; Ontario, bags, $2.25 to $2.60; city, bags, $2.70.

Toronto Markets.

Spring Wheat, $1.10 to $1.13; Red, do; Treadwell, $1.15 to $1.18; Deihl, $1.18 to $1.21; Barley, 48c to 55c; Peas 68c to 70c; Flour, $4.25 to $5.75; Hogs $5.00 to $5.25; Butter 5c to 17c.

NEW YORK.—Wheat, $1.26½ to $1.33½; Corn, 43½c to 45c Oats, 29c to 30c.

CHICAGO.—Wheat, $1.13; Oats, 27c; Barley, 48c; Pork lower $8.50 to $8.55.

DETROIT.—Wheat lower, $1.31½ to $1.34½.

Western Acreage.

Crop reports from the Western States say that the acreage of spring wheat exceeds the large extent of last year by 15 to 20 per cent. The wheat fields present a fine healthy appearance, the grain coming up thick and the color being good. The crops having been got in unusually early, and made such good progress in the first stages of growth, a great point has been gained towards a good crop, as the plant will be the better able to withstand dry weather or insects. The Western prospects are thus unusually promising.

Barley in the Western States.

Accounts from the Western States show that there is an average decrease in the amount of barley sown for the crop of 1878, amounting to 35 per cent., as compared with last year. The Chicago *National Board of Trade* has the following:—"Minnesota reports from thirty-one counties show a decrease of 27 per cent., seven reporting about the same as last year, six a decrease of 50 per cent., and but two any increase at all. Wisconsin reports eighteen counties, showing an average decrease of 35 per cent., two reporting the same as last year, several a decrease of 50 per cent., and none showing any increase. Iowa reports twenty-two counties, showing an average decrease of 26 per cent., seven reporting the same as last year, eight a decrease of 50 per cent. each, and but one showing any increase at all. Nebraska reports nineteen counties, showing an average decrease of 51 per cent., three reporting the same as last year, several showing a decrease of 75 per cent. each, and but one any increase at all. Reports from twelve counties in the State of Kansas show an average decrease of 27 per cent. But one county shows any increase over last year. The State of Illinois not being a very heavy barley growing State, reports about a dozen counties showing an average decrease of 15 per cent., four reporting about the same as last year."

The Next Wool Clip.

The April wool circular of Walter Brown & Son, New York, expressed the opinion that prices for the next clip would open at low figures. That of Mauger & Avery, under date of April 15th, says that little can be predicted as to the market:

"It depends upon the fever of the buyers. Farmers have learned this, and when they find several buyers competing for their clips, as they did last summer, they sell. There have been very few seasons when wools have not netted the farmer more in the clipping season than they would if sold later; and at this time, when there are so many anxious to handle the comparatively small amount of the clip, the chances are that there will be no room for material advance over the prices at which the bulk of last year's clip was marketed.

"Farmers are censured for the dishonest manner in which in many localities, they put up their wools. It is but fair to state in their defence that the local buyer is aware of it and is largely responsible for it, as he, either for the sake of his commission, knowingly pays full price for such wools, or else, if he happens to be a storekeeper, for fear of losing a customer he does not prosecute the offender, and thus the majority of the farmers who would take the same pride in the condition of their fleeces that they do in their stock, are discouraged from keeping up their standard. If farmers would put in their fleeces a tag, with their name and address, they would ere long find buyers who would appreciate honesty, and if the local buyers will not discriminate between light and heavy wools, they can find responsible houses in the East who will obtain their relative value.

Our Meat Exports.

The following paragraph from *Bell's Messenger*, London, April 8th, seems to support the opinion that our exportation of fresh meats has become as much a regular feature in our transatlantic trade as that of products of any other kind:

"The quantity of American beef and mutton brought to Liverpool last week was very large, and was conveyed in the following steamers: The City of Montreal brought 592 quarters of beef, 76 carcasses of mutton, and 176 dead pigs; the Sarmatian, 600 quarters of beef; the England, 785 quarters of beef and 472 carcasses of mutton; the Britannic, 1,580 quarters of beef and 650 carcasses of mutton; and the Nevada, 3,000 quarters of beef and 1,200 carcasses of mutton. This last consignment is by far the largest that has yet arrived in this country in a single steamer, and even exceeds the quantity brought during many weeks by all the steamers. The steamer Faraday reached the river with 299 head of live oxen, while the Lake Nepigon had on board 80. The totals for the week were—6,557 quarters of beef, 2,398 carcasses of mutton, 176 dead pigs, and 377 live cattle."

In another part of the same paper it is stated, on the authority of a parliamentary return, that Great Britain imported in the year 1877, 7,649 cattle and 10,275 sheep from Canada, and 11,538 cattle and 13,120 sheep from the United States—against 273 cattle from Canada and "one head of cattle and one sheep" from the United States, in 1874.

It is proposed to start a butter factory at Wroxeter, and a meeting has been held to consider the project fully. The capital stock will probably be $2,500, in 250 shares of $10 each. One is also to be erected in Walkerton by Messrs. Peter Todd & Co.

The Eastern complications are having a very unfavorable effect on British India freights. There is just now more idle shipping at Calcutta than was ever before known to be there at one time.

Why they Fail.

There have been not less than twenty-five grocery merchants in this city who ingloriously wound up business under the mallet of the constable or sheriff within the last two months. Now the secret of this is simply that the unfortunate merchants failed to take in the cash when the goods went out. It really seems that our merchants will never try the cash system, but instead follow up the old trade ways, and so long as they are followed just so long may we expect to hear of failures. Stop it, grocers, and say "Cash" in the future and don't vary from the rule.—*Western Grocer.*

Patrons of Husbandry.

626. North Bay—James H. Wager, M., Napanee; Jno. C. Carscallan, S., Napanee. 627. Balsam Grove—D. Kennedy, M., Peterboro;' W. Stewart, S., Peterboro.' 628. Otter—Thos. Miller, M., Lombardy; Clark Nichols, S., Lombardy. 629. Sunny Glen—Thos. McBratney, M., New Dublin; Jno. B. Barry, S., New Dublin. 630. Bethel—Wm. Evans, M., Camden East; James N. Switzer, S., Camden East. 631. Fairfield—Brock Cowan, M., Fairfield East; A. C. Johns, S., Fairfield East. 632. Glen Huron—Jno. McLeod, M., Glen Huron; Jno. Jamieson, S., Glen Huron.

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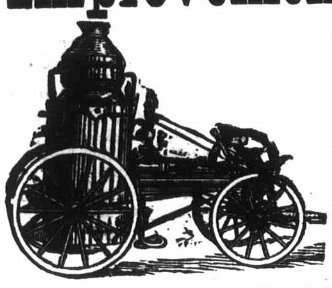

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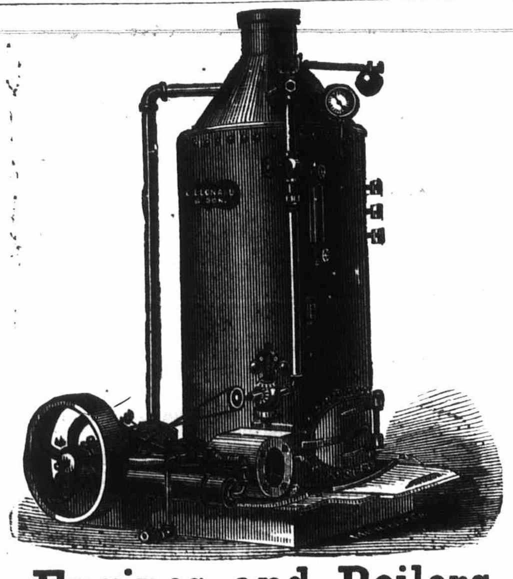

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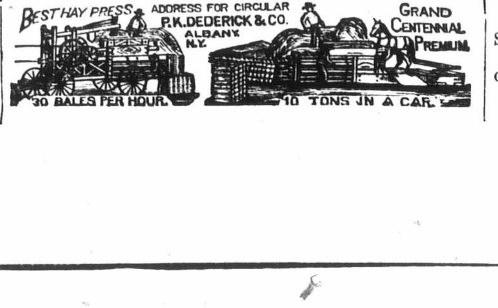

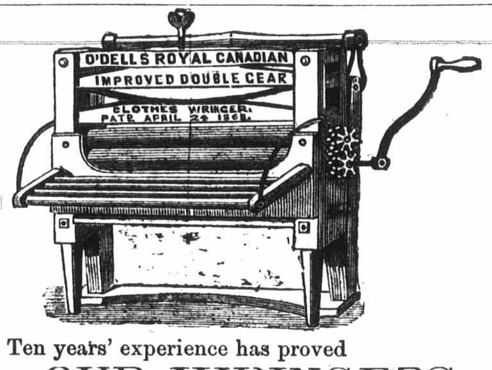

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